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WSEG REPORT 116 ✓

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AIR-TO-AIR ENCOUNTERS IN
SOUTHEAST ASIA (U) ✓

Volume III: Events from 1 March 1967 to
1 August 1967 and Miscellaneous Events

February 1969

Comprising
IDA REPORT R-123 ✓

John S. Attinello, Project Leader

INVENTORY FEB 24 1975

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REPORT R-123-Vol-3

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AIR-TO-AIR ENCOUNTERS IN SOUTHEAST ASIA

Volume III Events from 1 March 1967 to 1 August 1967 and Miscellaneous Events

(u) (S)

February 1969 ✓

2 402/p

This report has been prepared by the Systems Evaluation Division of the Institute for Defense Analyses in response to the Weapons Systems Evaluation Group Task Order SD-DAHCIS 67 C 0012-T-104A dated 6 December 1966.

SD-DAHCIS-67-C-0012

In the work under this Task Order, the Institute has been assisted by military personnel assigned by WSEG.

IDA/HQ, WSEG

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FOREWORD

This report is a product of the Systems Evaluation Division of the Institute for Defense Analyses in conjunction with the Weapons Systems Evaluation Group in response to WSEG Task Order SD-35-T-104, as modified in a memorandum for Director, WSED, from Director, WSEG, dated 4 August 1966. The memorandum resulted from a request by the Deputy Director, Tactical Warfare Programs, ODDR&E. The Task was coordinated with the Joint Chiefs of Staff, (J-3 and J-5).

The RED BARON Project produced four volumes. Those members who made primary contribution to Volume II were as follows:

John S. Attinello	Howard K. Hostler, Maj., USA
Velma M. Archer	Ralph L. Kuster, Jr., Maj., USAF
Douglas N. Beatty	Richard C. Stewart, Capt., USN
John W. Rubino	John W. Walden, Cdr., USN
Charles W. Gardner	David D. Young, LCol., USAF
Earl A. Thomas	Charles R. Shaw, Col., USA

At its inception (October 1966) the RED BARON Project team consisted of:

John S. Attinello, Project Leader
Douglas N. Beatty, Ass't Project Leader
John W. Walden, Cdr., USN, Senior Navy
Malcolm J. Agnew, LCol., USAF, Senior Air Force

Phillip J. Conley, Jr., LCol., USAF, and Thomas J. Hughes, Capt., USN, also worked part time on the project from its inception, primarily acting as an interview-debrief team. LCol. Agnew and Cdr. Walden were the other team.

In November John Rubino, Charles Tiffin, William Eason, Capt., USN, and Charles R. Shaw, Col., USA, joined the project.

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In December, Robert J. Lynch, Jr., Col., USMC, joined, and Philip Brooks, Col., USAF, became Senior Air Force representative. Richard C. Stewart, Capt., USN, was assigned in February 1967. These later military arrivals shared their time with other WSEG projects.

While developing interview methods and techniques, the project was valuably assisted by two psychologists from IDA/RESO, W. Sinaiko and W. Richard Kite.

For interviews in the U.S., teams consisting of military and civilian project members supplemented the two teams designated initially to collect data in the combat theater. In the SEA theater, two Navy-Air Force teams (Conley-Hughes and Agnew-Walden) conducted the interviews. LCol. Agnew and Cdr. Walden also interviewed SEA returnees at European bases.

As interviews were conducted, it became apparent that much more data were being collected than had been initially estimated from official reports. Therefore, a rapid increase in qualified personnel was needed to collate the data for publication.

Roy G. Anderson, Rear Admiral, USN, Senior Navy Member of WSEG, through appropriate channels, obtained the services of four Navy fighter pilots for a period of two weeks. The assistance to the RED BARON Project of the following Navy pilots is acknowledged:

Dennis E. Becker, Lt., USN
Benjamin Cloud, LCdr., USN
Samuel C. Flynn, LCdr., USN
William D. Kiper, LCdr., USN

A. J. Beck, Major General, USAF, Senior Air Force Member of WSEG, with the cooperation of Headquarters, USAF, obtained the services of nine tactical fighter pilots for a thirty-day period. The assistance to the RED BARON Project of the following Air Force pilots is acknowledged:

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Thomas H. Curtis, Maj., USAF
Leslie C. Long, Capt., USAF
Robert S. Maxwell, Capt., USAF
R. P. Moore, Maj., USAF
Sam P. Morgan, Jr., Capt., USAF
Michael G. Pennacchio, Capt., USAF
William P. Robinson, Maj., USAF
Ronald W. Scott, Capt., USAF
Ronald J. Ward, Maj., USAF

The project also acknowledges the assistance of the following individuals who assisted the interview teams in the data collection phase:

J. J. Berkow, Col., USAF, ARPA R&D Field Unit,
Bangkok, Thailand
R. Hiller, Assistant for Operations Analysis,
CINCPACAF Staff
E. Kapos, OEG Representative, CINCPACFLT Staff
G. Koyiades, COMNAVOCEANO
R. Linsenmeyer, Chief, Scientific Research Advisory
Group, CINCPAC Staff
J. V. Patterson, Col., USAF, ARPA R&D Field Unit,
Saigon, Vietnam
B. Powers, OEG Representative, CINCPACFLT Staff
H. L. Wood, Col., USAF, Headquarters, 7th AF
D. G. Lynch, LCol, USMC, OPNAV

The commands, whose cooperation made it possible to reach the participants of air-to-air engagements, are also acknowledged.

COMMANDS

Commander-in-Chief, Pacific
Commander-in-Chief, U.S. Pacific Fleet
Commander-in-Chief, Pacific Air Forces
Commander, Seventh Air Force, Tan Son Nhut AB, Vietnam
Commander, Task Force Seventy-Seven
Deputy Commander, 7/13th Air Forces, Udorn Airfield,
Thailand
Commander, 8th Tactical Fighter Wing (TFW), Ubon Airfield,
Thailand
Commander, 366th TFW, Danang AB, Vietnam
Commander, 355th TFW, Takhli AB, Thailand
Commander, 388th TFW, Korat AB, Thailand

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Commander, 432nd Tactical Reconnaissance Wing, Udorn
Airfield, Thailand
Commanding Officer, USS KITTY HAWK (CVA-63)
Commanding Officer, USS TICONDEROGA (CVA-41)
Commanding Officer, USS BON HOMME RICHARD (CVA-31)
Commanding Officer, USS ENTERPRISE (CVA(N)-65)
Commanding Officer, USS HANCOCK (CVA-19)
Director, ARPA R&D Field Unit, Saigon, Vietnam
Director, ARPA R&D Field Unit, Bangkok, Thailand
Commander, 41st Air Division, Yakota AB, Japan
Commander-in-Chief, U.S. Air Forces, Europe
Commander, Seventeenth Air Force, Ramstein AB, Germany
Commander, 81st TFW RAF, Bentwaters, England
Commander, 36th TFW, Bitburg AB, Germany
Commander, 50th TFW, Hahn AB, Germany
Commander, Naval Air Forces, U.S. Pacific Fleet
Commander, Fleet Air, Miramar, California
Commander, Tactical Fighter Weapons Center, Nellis AFB,
Nevada
Commander, 15th TFW, McDill AFB, Florida
Commander, 831st Air Division (TAC), George AFB,
California
Commander, 835th Air Division, McConnell AFB, Kansas
Commander, 3525th PTW, Williams AFB, Arizona
Commander, 4531st TFW, Homestead AFB, Florida
Commander, 4453rd Combat Crew Training Wing, Davis-Monthan
AFB, Arizona

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I. INTRODUCTION

At the request of the Director of Defense Research and Engineering, the Weapons Systems Evaluation Group has undertaken a study of air-to-air encounters in Southeast Asia. The project code name is RED BARON. Data that have been collected on approximately 400 such encounters through 1 August 1967 will be analyzed primarily to assist in the selection of suitable research and development programs for future high-performance fighter aircraft. A secondary purpose of the study was to provide data for use by the military services and of the scientific community. This volume is a partial documentation for the secondary purpose.

A. DATA SOURCES

Data contained in this report were taken from two sources: the official reporting media and personal interviews with participants. Past IDA/WSEG experience in collecting combat data^{1,2} has shown that the official reporting media, which are designed primarily for military operational and statistical needs, are inadequate for many analytic purposes. The project groups conducting these earlier studies found that personal interviews with participants were necessary for R&D analyses. In Project RED BARON, interviews were considered the primary data source, supplemented, where available, by official reports.

¹WSEG Staff Study 134, Adequacy of Data from Southeast Asia Combat Air Operations for Research and Development Analyses of Aircraft Losses and Damages (U), SECRET, February 1967.

²WSEG Report 101, Requirements of Defense R&D Agencies for Data from Combat Air Operations in Southeast Asia, SECRET, August 1966.

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For purposes of this study, encounters that were investigated were defined to include the following types:

- Sighting of enemy aircraft (either visually or by radar),
- Either U.S. or enemy aircraft initiating hostile or evasive maneuvers,
- Either U.S. or enemy aircraft expending ordnance, and
- Loss or damage in combat of either U.S. or enemy aircraft.

During the data collection phase, an effort was made to assure the exhaustiveness of the information contained in this report. However, it was established that certain aspects of air-to-air combat could not be included. For example, during the conduct of CAP and escort missions, frequently it was necessary for the fighter force to intercept radar contacts which proved to be friendly aircraft. Also, during the course of missions, aircraft sighted were initially identified and called as enemy, only to be recognized later as friendly. These occurrences were not reported and therefore are not documented in this volume.

While numerous sightings of enemy aircraft are contained in this volume, it is believed that there are many other sightings which were not documented (and therefore not included). This is partially substantiated by the numerous instances which were mentioned during interviews for which no date or location was recalled and which were not correlated with reported sightings.

The first type was considered in detail only if the sighting was of R&D interest, e.g., if a U.S. aircraft made no attempt to engage enemy aircraft because of inferior or malfunctioning U.S. equipment. Where no R&D implications were indicated, sightings were noted to record the information collected for potential use for other analyses.

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Since "test type" instrumentation does not exist on most combat aircraft, the validity and quality of data are limited to the tolerances of human senses and recollections (aided where possible by official and personal records, notes, tapes, etc.). A detailed account of the precautions taken to insure the validity and quality of data gathered in such interviews is presented in Section II.

Originally the data sample consisted of 248 encounters through 1 March 1967. However, from this date through 22 May, 65 more encounters were identified (not including "sightings"). In the 23-month period from first encounter to 1 March, 47 "confirmed plus probable" MIG kills were reported. In the six-week period in April-May 1967, the 65 engagements resulted in 37 "confirmed plus probable" MIG kills.¹

B. DATA PRESENTATION

Though the analyses to be conducted in the RED BARON study were to be limited to exposing problems for R&D considerations, interest in the basic data was expressed in many areas of the military and scientific communities. To satisfy these needs the data have been formalized and are published in three volumes as follows:

Volume I: Account of F-4 and F-8 Events Prior to 1 March 1967 (U) (WSEG Log No. 126571)

<u>U.S. Aircraft Involved</u>	<u>No. of Encounters to 1 March 1967</u>
F-4B	13
F-4C	55
F-8	8
F-104	1
U-2	1
Total Events Reported Volume I	<u>78</u>

¹Concurrently, there was a shift in targeting policy (NVN airfields were bombed by U.S. aircraft from 23 April) and the introduction of new equipment (e.g., SUU-16A guns installed in some F-4C aircraft). Because of these factors the additional engagements were included in the RED BARON data base.

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Volume II: Account of F-105 Events Prior to 1 March 1967 (U)

<u>U.S. Aircraft Involved</u>	<u>No. of Encounters to 1 March 1967</u>
F-105	151

Volume III: Account of Air-to-Air Events from 1 March 1967 to 1 August 1967, and All Miscellaneous Events (U). Total number of events, 316.

For ease of study and analysis, the available information has been summarized under the following headings:

- Primary Mission and Tactical Situation
- Mission Route
- Aircraft Configurations
- Flight Conditions Prior to Encounter
- Initial Detection
- Action Initiated
- Situation Development
- Ordnance
- Equipment Problems
- Aircrew Comments
- Data Sources

Following the above, an edited narrative is presented which integrates all the information sources pertaining to the designated air-to-air engagement.

The names and official call signs of the participants have been replaced by standardized nomenclature to give anonymity to the interviewees. This precaution was followed throughout to encourage frank and honest answers to all questions posed by the interview teams.

II. DATA DEFINITION AND COLLECTION

A. BACKGROUND - GOALS AND LIMITATIONS

The broad goal formulated for the data definition/collection effort was to obtain sufficient data to enable reconstruction of the various air-to-air encounters in appropriate detail with maximum accuracy and completeness ("reconstruction" being the key word).

The scope and degree of detail was not simply defined. It revolved around the needs of the R&D community and the limitations of the available data. The primary limitation was human ability to sense and recall. There were no recording devices in U.S. aircraft, and, therefore, with few exceptions (such as taped communications and photographs), all data had to be extracted from the minds of participants and observers.

There was also the question of the adequacy, for event reconstruction, of data reported from Southeast Asia through the standard reporting systems. IDA/WSEG experience¹ showed that while these systems offered certain worthwhile information for R&D purposes, they were far from adequate for the purposes of this specific study.

It was decided that IDA/WSEG would interview participants in air-to-air encounters as the principal source of data.

¹WSEG Report 101, Requirements of Defense R&D Agencies for Data from Combat Air Operations in Southeast Asia (U), July 1966, (SECRET). WSEG Staff Study 134, Adequacy of Data from Southeast Asia Combat Air Operations for Research and Development Analyses of Aircraft Loss and Damage (U), February 1967, (SECRET).

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B. APPROACH

The data collection program involved several interrelated areas of operations. They were:

1. Identification of air-to-air encounters and the participants.
2. Development of more specific data needs and resolution of needs with limitations.
3. Collection of appropriate documentary information on Southeast Asia air-to-air encounters.
4. Development of optimum interview techniques.
5. Location of and arrangements for interviewing participants.

These operations were not necessarily sequential and were continued throughout the data collection phase.

Items 1 and 3 initially were interrelated, i.e., the means of identifying encounters was through search of existing documentation -- various formally and informally maintained "box scores" and other files.

Early information was gained from the Office of the Chief of Naval Operations and the USAF Air Staff. Additional basic documentation came from the USAF Tactical Fighter Weapons Center, CINCPACFLT, CINCPACAF, COMNAVAIRPAC, and the Commander, 7th Air Force. It was quickly determined that the various "box scores" did not agree. This was attributed to a variance in definition of what constituted an air-to-air encounter/engagement and possibly administrative or communications failures within the commands.

Additionally, early in the study, the CNO and the Chief of Staff, USAF, were advised of Project RED BARON and requested to provide reference to appropriate documentation. Numerous replies were received from various offices within the Services.

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Gradually, sources of documented information were increased until they included: standard reporting system (OPREPs, COACT, Navy 3480 Reports, Guided Missile Performance Reports); various reports of associated studies made by OEG representatives and other analytical groups; letters from pilots who could not be interviewed; various records kept at all levels of command; gun-camera films; tapes of communications made by pilots; and miscellaneous message traffic among military commands.

Identification of participants was a particular problem since there is no existing mechanism for providing this information. With a relatively few exceptions, names of participants were not included in reports. However, names were gradually acquired through informal communications with USN and USAF pilots and, as the interview program proceeded, other persons were identified by the interviewees.

Some specific items of data desired were defined by visits to various Service R&D and training organizations and through meetings with representatives of various industrial organizations concerned with components of U.S. fighter weapons systems. (These visits and conferences also provided information on the technical and operational aspects of the weapons systems concerned.) Eventually, a categorized list of data specifically desired from each encounter was formulated.

Having established the data requirements, an interview program was desired which would:

- Allow the greatest number of interviews, while
- Maximizing the quality, depth, and scope of information obtained from each interview.

There were uncertainties about the interview program, however. They involved such considerations as the human ability to recall stressful incidents and the effect of elapsed time between the event and attempt to recount it. Large numbers

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of people throughout the world had to be interviewed, great quantities of interview data had to be reduced, and time and manpower had to be considered.

With the assistance of IDA psychologists, H. W. Sinaiko and W. R. Kite, basic interview concepts were delineated. These concepts stressed unhurried informality, anonymity of the interviewee, a chronological approach to the entire flight in question (not just the air-to-air encounter period of it), and much use of visual aids -- maps, sketches, airplane models -- to reconstruct events.

A systematic program was developed to interview a maximum number of participants in the combat theater and throughout CONUS and Europe. There was little chance to control the elapsed time between events and interview. As a result, the elapsed time varied from days to more than one year.

Efficiency of operation was approached in various ways. Several levels of encounter were defined according to their complexity and intensity,¹ and the basic interview procedure was somewhat expanded or abbreviated according to the level of encounter and the knowledge of the interviewee. Data formats were devised which attempted to facilitate the recording (and subsequent reduction) of information while stimulating the memory of the interviewee.

A total of ten persons were trained as interviewers. Where it was possible to communicate with a participant but not practical or possible to interview him, he was contacted by mail.

While there was the desire to interview a maximum number of pilots, it was superseded by a desire to maximize coverage over the largest number of encounters. Consequently, where a

¹Sighting only (visual or radar); either side taking hostile or evasive action; expenditure of ordnance by either side; loss or damage by either side.

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choice had to be made as to whom to interview, breadth of coverage was the first consideration.

At the start, various test interviews were conducted, their results evaluated, and improvements made before a large scale program was undertaken. Minor changes in procedure were made throughout the program.

C. DESCRIPTION OF INTERVIEW PROCEDURE¹

In spite of the small changes that evolved and flexibility included to accommodate each situation, the basic interview procedure remained largely constant after the early test cases.

Ideally, the interviewee was given advance notice and a general idea of what would be discussed. The interview team consisted of two persons, one a military pilot with a significant amount of flying experience and the second person a military officer or civilian. The team would meet with one crewman at a time in a closed room, with minimum distraction, and with what was intended to be more than ample time allotted for the meeting. The team attempted to create an air of relaxed informality.

The interviewee was given an explanation of the study, how it came about, what it hoped to accomplish, and what his role was. It was emphasized that his name would not appear in print and that, in general, attempts would be made to preserve the anonymity of the persons interviewed. This was done to encourage frank and honest answers. The complete interview procedure was explained in detail.

Next, the pilot was asked to give an uninterrupted narrative of the encounter in question. He was asked to start from planning for the mission and discuss all aspects through the flight's return to base. He was first given examples of the kind of detail desired. Early in the project it became standard for the interviewers to use a tape recorder for the

¹A more detailed discussion is presented in Volume IV of this report.

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narrative phase. This, of course, depended upon the interviewee's consent and he was always free to go back and erase anything he wished from the tape. He was assured that the tape was only for the use of the interviewers in gaining complete, accurate information from the meeting and its use was limited to the project.

Next, depending on the intensity and complexity of the encounter, a sketch of the action was made. Again, the sketch covered a greater part of the mission than just the air-to-air encounter, dealing with ingress and egress as well. The technique was to put a transparent paper overlay on a large scale map and trace the paths, in plan view, of the various aircraft known to have been present (as they were believed to be) relative to known geographical points. The third dimension to the picture was introduced by means of a keyed time-sequence vs. altitude plot at the top of the overlay.

With regard to time, early in the study it became clear that the air-to-air combatant rarely had any reasonable concept of the time duration of events or phases of the combat. He could, however, recall well the sequence of events. This caused the injecting of time-sequences into the interview process. The procedure was for the interviewer to "stop the action" at a point where something significant was occurring and try to elicit a detailed account of the scene at that instant -- the location and altitude of each participant; status of the interviewee's aircraft in the way of speed, g's, fuel state, avionics modes, etc.; action by the individual and his reasons therefor; communications which took place; enemy actions; etc.

After such a stop the description would continue until the next significant event occurred at which point the action would be stopped again. These stops correspond with the "T" (or "Time") marks in events and pictures. While one team member

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worked with the pilot in making the sketch, the other kept notes on a specially designed note pad.

Upon completion of this step-by-step microscopic phase, the interviewers consulted their checklist on data items and asked specific questions about points which had not come out.

Finally, the interviewee was encouraged to comment on the whole range of considerations which might be of interest to the study -- comments derived from his experience in this specific encounter as well as from his overall experience.

The duration of an interview was from minutes to several hours, depending on the significance and complexity of the encounter and the knowledge of the interviewee.

D. GENERAL COMMENTS ON DATA

The Project identified 248 air-to-air encounters that occurred prior to 1 March 1967. Participants in 164 of these encounters were interviewed, with a total of 331 interviews conducted.¹ In addition, 37 written accounts of engagements were received. In general, priority was given to the more complex encounters; events for which no interviews were conducted were usually a sighting only, with no R&D significance.

The study group found that human ability to recall the details of incidents stressful to them is sometimes quite remarkable. With regard to the validity of recall, various comparisons were made between OPREP reports of the encounter and interviews and between interviews of various participants in the same encounter. There was generally good agreement. Where significant discrepancies appeared, they could usually be traced to the confusion of a fast moving, complex situation

¹If an individual was interviewed in connection with two or more different encounters, this would be considered as two or more interviews.

rather than memory failure or some psychological phenomena. (Discrepancies between various accounts of the same event did cause some difficulty in the final reconstruction process. In almost all cases, discrepancies were resolved through repeated study of the data, use of logical deductions, and/or reinterview.)

Intuitively, it might appear that the best information would be obtained by minimizing the time lapse between encounter and interview. However, there are opinions and illustrations which counter this. The thought cannot be proved or disproved at this time. As noted earlier, elapsed time between encounter and interview ran from a period of days to more than a year. Dates of events and interviews have been included in the published data.

The interview techniques, in general, were highly regarded by interviewees for effectiveness in stimulating accurate, detailed recall. In some cases, through the procedures used, interviewees were able to correct and clarify their conceptions of events.

E. EVENT RECONSTRUCTIONS

The account of each event is presented in at least two basic parts: (1) An outline which gives an abbreviated presentation of the highlights of the event, and (2) A narrative of the encounter.

All of the events contained in this Volume are summarized in the following tabulation. A Glossary of Terms was developed to aid in the interpretation of the events. The glossary also contains descriptions and illustrations of the more common aircraft maneuvers.

The events in Volume III describe encounters with enemy aircraft which occurred during the period 1 March 1967 to 1 August 1967. In addition, other encounters which occurred

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in the time period covered by Volume I and Volume II are also described. These events, involving aircraft which rarely encountered MIGs or about which little is known, are included since a knowledge of their occurrence is important for a complete picture of the air-to-air war. For this same reason, also included are those events with suspected MIGs, whose presence was only surmised from electronic contacts. It is felt that this comprehensive coverage is prerequisite for total understanding of the air-to-air operations in Southeast Asia.

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LIST OF EVENTS

Event	Aircraft Involved No.-Type			Results Lost/Damaged	
	Date/Time	U.S.	Enemy	U.S.	Enemy
III-1	3 Apr '65/1110H	4 A-4C	1 MIG-17	0/0	0/0
III-2	4 Apr '65/1150H	4 F-100D	1 MIG-17	0/0	1/0?
III-3	4 Apr '65/1150H	4 F-100D	2 MIG-17	1/0	0/0
III-4	14 May '65/unknown	? F-104	? MIG	0/0	0/0
III-5	20 May '65/1235H	1 RB-66	1 MIG	Sighting	
III-6	20 May '65/1300H	MIGCAP	2 MIG	0/0	
III-7	20 Jun '65/1835H	4 A-1H	2 MIG-17	0/0	1/0
III-8	12 Oct '65/day	2 RF-101	2 MIG-17	0/0	0/0
III-9	15 Nov '65/1445H	2 RF-101	2 MIG	0/0	0/0
III-10	16 Nov '65/1638H	2 RF-101	2 MIG	Sighting	
III-11	25 Nov '65/1448H	{ 6 A-4E 2 A-4C	3 MIG-17?	0/0	0/0
III-12	25 Nov '65/1510H	2 RF-8A	2 MIG-19	Sighting	
III-13	26 Nov '65/1123H	2 RF-101	4-6 MIG	0/0	0/0
III-14	15 Jan '66/1200H	{ 1 RF-8A 1 F-8C	1 MIG-21	Sighting	
III-15	19 Jan '66/0950H	{ 2 F-4B 1 EA-3B		Radar	
III-16	19 Jan '66/0953H	1 EA-3B		Radar	
III-17	20 Jan '66/0832H	{ 1 F-4B 1 EA-3B		Radar	
III-18	8 Feb '66/1000H	1 F-4B	2 Unidentified	Radar	
III-19	10 Feb '66/1349H	1 EA-3B	3 Unidentified	Sighting	
III-20	12 Feb '66/144CH	2 RF-101	2 Unidentified	Sighting	
III-21	20 Feb '66/Unknown	{ 1 EA-3B 1 F-4B	1 MIG-170 (Poss)	Radar	
III-22	15 Mar '66/1121H	2 RF-101	1 MIG	Sighting	
III-23	17 Mar '66/1222H	2 RF-101	8 MIG	Sighting	
III-24	8 Apr '66/0906H	2 F-4C	1 MIG ?	0/0	0/0
III-25	12 Apr '66/Unknown	KA-3B	MIGs	1/0	0/0
III-26	27 Apr '66/Unknown	2 F-4C	? Unidentified	Radar	
III-27	28 Apr '66/1405H	2 F-4B	1 Unidentified	Radar	
III-28	29 Apr '66/1745H	1 A-1E	1 MIG	1/0	0/0
III-29	12 Jul '66/1135H	{ 2 A-4C 1 A-4E	1 MIG-15 1 MIG-15/17	Sighting	
III-30	24 Jul '66/1805H	1 EC-121M	1 MIG-21	Radar	
III-31	29 Jul '66/1610H	1 RC-47	MIGs	1/0	0/0
III-32	16 Aug '66/--56H	4 A-4	2 MIG-17	0/0	0/0
III-33	23 Aug '66/1135H	2 A-4	3 MIG-17	Sighting	
III-34	10 Sep '66/0830H	EC-121	1 MIG-17	0/0	0/0
III-35	10 Sep '66/0941H	{ 1 EB-66B 4 F-4C	2 MIG-21	Sighting	
III-36	10 Sep '66/2020H	2 F-4B	MIGs	Radar	
III-37	24 Sep '66/2020H	2 F-4B	1 Unidentified	Radar	
III-38	5 Oct '66/0235H	1 F-4B	Unidentified	Radar	
III-39	6 Oct '66/0026H	1 E-1B	Unidentified	Radar	
III-40	9 Oct '66/1013H	4 A-1H	4 MIG-17	0/0	1/1
III-41	10 Oct '66/Unknown	EA-3B	Unidentified	Radar	
III-42	10 Oct '66/1450H	4 R-4C	Unidentified	Radar	
III-43	Nov '66/Unknown	2 RF-101	2 MIG-19	Sighting	
III-44	28 Nov '66/1155H	2 F-8E	MIG (Poss)	Radar	
III-45	28 Nov '66/1412H	{ 4 F-4C 1 EB-66C	MIG (Poss)	Radar	
III-46	2 Dec '66/1420H	4 F-4B	Unidentified	Radar	
III-47	4 Dec '66/0818H	EB-66C	2 MIG-21	Sighting	
III-48	4 Dec '66/1130H	2 F-4C	2 Unidentified	Radar	
III-49	5 Dec '66/1057H	2 EB-66	1 MIG-21	0/0	0/0
III-50	14 Dec '66/1602H	USN A/C	1 MIG-21 (Poss)	Sighting	
III-51	1 Jan '67/1545H	2 RF-101	MIGs	Radar	
III-52	2 Jan '67/1315H	1 RF-4C	2 Unidentified	Sighting	
III-53	3 Jan '67/0734H	1 RF-4C	1 Unidentified	Radar	
III-54	6 Jan '67/0919H	2 EB-66	2 MIG	0/0	0/0
III-55	15 Jan '67/0905H	1 C-135	1 MIG-17	Sighting	
III-56	16 Jan '67/1035H	1 RF-101	1 MIG (Poss)	Sighting	
III-57	16 Jan '67/1555H	1 EB-66	2 MIG-17	Sighting	
III-58	16 Jan '67/1855H	1 RF-4C	2 MIG	0/0	0/0
III-59	17 Jan '67/1539H	1 EB-66B	1 MIG-21	Sighting	

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Event	Date/Time	Aircraft Involved No.-Type		Results Lost/Damaged	
		U.S.	Enemy	U.S.	Enemy
III-60	17 Jan'67/1540H	2 RF-101	2 Unidentified	Sighting	
III-61	20 Jan'67/0955H	4 F-105	2 MIG-17	Sighting	
III-62	21 Jan'67/0825H	2 F-4C	2 MIG-21	Sighting	
III-63	21 Jan'67/1613H	3 F-4C	2 Unidentified	0/0	0/0
III-64	21 Jan'67/1620H	4 F-105	1 MIG-17	Sighting	
III-65	22 Jan'67/1600H	2 F-102	4 Unidentified	Sighting	
III-66	22 Jan'67/1130H	1 B-66	1 MIG-17	0/0	0/0
III-67	28 Jan'67/1620H	2 RF-101	2 MIG-17	Sighting	
III-68	28 Jan'67/1629H	4 F-105	3 MIG-21	Sighting	
III-69	28 Jan'67/1632H	4 F-105	4 MIG-17	0/0	0/0
III-70	4 Feb'67/Unknown	3 F-105	2 MIG-21	0/0	0/0
III-71	5 Feb'67/1154H	3 F-4C	1 Unidentified	0/0	0/0
III-72	10 Feb'67/1418H	2 RF-101	1 MIG-19/21	Sighting	
		1 IL-14	1 MIG-6		
III-73	16 Feb'67/1624H	4 F-105	2 MIG ?	Sighting	
		1 F-4C			
III-74	19 Feb'67/0859H	3 F-105	3 Unidentified	Sighting	
III-75	19 Feb'67/0902H	4 F-4C	2 MIG ?	0/0	0/0
III-76	22 Feb'67/1624H	4 F-105	4 MIG-21	Sighting	
III-77	23 Feb'67/1500H	2 RF-4C	2 MIGs	Sighting	
III-78	23 Feb'67/1532H	4 F-105	1 MIG-21	Sighting	
III-79	25 Feb'67/0948H	1 RF-101	2 Unidentified	0/0	0/0
III-80	25 Feb'67/1105H	1 RF-4C	2 Unidentified	0/0	0/0
III-81	5 Mar'67/0703H	1 RF-4C	7 MIG	0/0	0/0
III-82	5 Mar'67/1615H	4 F-105	1 MIG-15	Sighting	
III-83	7 Mar'67/1618H	2 RF-4C	2 MIG-17 (Poss)	Sighting	
III-84	8 Mar'67/1400H	2 RF-4C	1 MIG-17	0/0	0/0
			4 Unidentified		
III-85	8 Mar'67/1603H	4 F-105	2 MIG-21	0/0	0/0
III-86	9 Mar'67/0351H	1 RF-4C	1 MIG (Poss)	Radar	
III-87	10 Mar'67/1553H	4 F-4C	1 MIG-21	0/0	0/0
		14 F-105			
III-88	10 Mar'67/1556H	4 F-105	3 MIG-17	Sighting	
III-89	10 Mar'67/1556H	12 F-105	2 MIG-21	0/0	2/1
			4 MIG-17D		
III-90	10 Mar'67/After-noon	2 F-105	4 MIG-21	0/0	0/0
III-91	10 Mar'67/1558H	4 F-105	1 MIG-17	0/0	0/0
III-92	11 Mar'67/Unknown	4 F-105	1 MIG-17	Sighting	
III-93	12 Mar'67/	4 F-4C	1 MIG	Sighting	
III-94	16 Mar'67/1650H	2 RF-4C	2 MIG-17	Sighting	
III-95	26 Mar'67/1616H	4 F-105	1 MIG-17	Sighting	
III-96	26 Mar'67/1613H	4 F-105	4 MIG-17	0/0	1/0
			1 MIG-21		
III-97	26 Mar'67/1017H	4 F-105	1 MIG-17	Sighting	
III-98	26 Mar'67/1620H	1 B-66	2 Unidentified	Sighting	
III-99	26 Mar'67/1645H	2 RF-4C	1 MIG-21	0/0	0/0
III-100	26 Mar'67/1620H	4 F-105	1 MIG-17	0/0	0/0
III-101	26 Mar'67/Unknown	4 F-4C	3 MIG-17	0/0	0/0
III-102	26 Mar'67/1615H	3 F-4C	8 MIG-17	0/0	0/0
III-103	27 Mar'67/1617H	1 B-66	1 MIG-21	Sighting	
III-104	29 Mar'67/1641H	4 F-105	2 Unidentified	Sighting	
III-105	29 Mar'67/Unknown	4 F-4C	Unidentified	0/0	0/0
III-106	30 Mar'67/0945H	4 F-105	3 MIG-21	Sighting	
III-107	30 Mar'67/1641H	4 F-105	2 MIG-21	Sighting	
III-108	8 Apr'67/1610H	2 RF-4C	2 MIG-21	0/0	0/0
III-109	8 Apr'67/1635H	4 F-105	2 MIG-21	Sighting	
III-110	11 Apr'67/1325H	2 F-104	1 MIG	Sighting	
III-111	11 Apr'67/1615H	4 F-105D	3 MIG-21	0/0	0/0
III-112	12 Apr'67/1239H	4 F-105	2 Unidentified	Sighting	
III-113	13 Apr'67/1415H	2 F-4B	1 MIG	0/0	0/0
III-114	19 Apr'67/1655H	4 F-105	8-10 MIG-17	1/0 (Prob)	1/0
III-115	19 Apr'67/Unknown	2 RF-4C	2 MIG	0/0	0/0
III-116	19 Apr'67/1658H	4 F-105	11 MIG-17	0/1	2/0
III-117	19 Apr'67/1702H	4 F-105D	11 MIG-17	1/0	1/4
		12 A-1E			
III-118	19 Apr'67/1700H	4 F-105D	2 MIG-17	0/0	0/0

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		U.S.	Enemy	U.S.	Enemy
III-119	19 Apr '67/1700H	4 F-105D	7 MIG-17	0/0	0/0
III-120	19 Apr '67/1709H	{ 4 F-4C 4 F-4C 4 F-4C	4 MIG-17 (Poss) 2 MIG-17 2 MIG-17	0/0	0/0
III-121	20 Apr '67/0856H	4 F-105	3 MIG-17	0/0	0/0
III-122	20 Apr '67/0913H	4 F-105	1 MIG-21	0/0	0/0
III-123	21 Apr '67/1629H	4 F-105	{ 2 MIG-17 2 MIG-17 1 MIG-21	Sighting	
III-124	21 Apr '67/1653H	4 F-105	2 MIG-17	Sighting	
III-125	22 Apr '67/1534H	4 F-105	6 MIG-17	0/0	0/0
III-126	22 Apr '67/1635H	2 RF-4C	1 MIG-21	0/0	0/0
III-127	22 Apr '67/1542H	4 F-105	4 MIG-17	0/0	0/0
III-128	22 Apr '67/1635H	4 F-105	2 Unidentified	Sighting	
III-129	22 Apr '67/1638H	4 F-105	1 MIG-21	Sighting	
III-130	23 Apr '67/1622H	4 F-105	2 MIG-21	0/0	0/0
III-131	23 Apr '67/1623H	8 F-105	{ 6 MIG-21 3 Unidentified	0/0	0/0
III-132	23 Apr '67/1655H	3 F-4C	4 MIG-21	0/0	0/0
III-133	23 Apr '67/1652H	4 F-4C	1 MIG-17	0/0	0/0
III-134	24 Apr '67/0945H	1 F-4C	1 MIG-21	0/0	0/0
III-135	24 Apr '67/1615H	4 F-105	{ 1 MIG-17 6 MIG-21	Sighting	
III-136	24 Apr '67/1612H	{ 2 F-105D 2 F-105F	4 MIG-17	0/0	0/0
III-137	24 Apr '67/1645H	2 F-4B	7 MIG-17	0/0	2/0 (Prob)
III-138	24 Apr '67/1619H	4 F-105	{ 6 MIG-21 1 MIG-17	Sighting	
III-139	24 Apr '67/1700H	4 F-4C	3 MIG-17	Sighting	
III-140	24 Apr '67/1700H	1 A-6A	1 MIG	0/0	0/0
III-141	25 Apr '67/1002H	4 F-105	{ 10 MIG-17 2 MIG-21	0/0	0/0
III-142	25 Apr '67/1005H	4 F-105	1 MIG-17	Sighting	
III-143	25 Apr '67/1002H	4 F-105	1 MIG-17	0/0	0/0
III-144	25 Apr '67/1000H	4 F-105	MIGs	Sighting	
III-145	25 Apr '67/1005H	3 F-105	3 MIG-17	0/0	0/0
III-146	25 Apr '67/1005H	4 F-105	2 MIG-17	Sighting	
III-147	25 Apr '67/1109H	2 F-8E	2 MIG-17D	0/0	0/1 (Poss)
III-148	25 Apr '67/1000H	4 F-105	3 MIG-17	0/0	0/0
III-149	25 Apr '67/1017H	{ 2 EB-622 2 RF-4C	3 MIG-21	0/0	0/0
III-150	25 Apr '67/1112H	2 A-4C	2 MIG-17	1/0	0/0
III-151	25 Apr '67/1006H	4 F-105D	4 MIG-17	Sighting	
III-152	26 Apr '67/1616H	4 F-105	4 MIG-17	Sighting	
III-153	26 Apr '67/1617H	4 F-105	{ 8 MIG-17 1 MIG-21	0/0	0/0
III-154	26 Apr '67/1620H	4 F-105D	8 MIG-17	0/0	0/0
III-155	26 Apr '67/1620H	4 F-105	2 MIG-21	0/0	0/0
III-156	26 Apr '67/1620H	4 F-105D	2 MIG-21	Sighting	
III-157	26 Apr '67/1624H	4 F-4C	10 MIG-21	0/0	1/0
III-158	28 Apr '67/1640H	4 F-4C	2 MIG-21	Sighting	
III-159	28 Apr '67/1630H	4 F-105	8 MIG-17	Sighting	
III-160	28 Apr '67/1653H	4 F-105	2 MIG-17	0/0	0/0
III-161	28 Apr '67/1630H	4 F-105	8 MIG-17	0/0	0/0
III-162	28 Apr '67/1635H	2 F-103D	9 MIG-17	0/0	1/0
III-163	28 Apr '67/1636H	4 F-105D	1 MIG-17	0/0	1/0
III-164	28 Apr '67/1636H	4 F-105	1 MIG-17	0/0	0/0
III-165	28 Apr '67/1648H	{ 2 F-105F 2 F-105D	5 MIG-17	0/0	0/0
III-166	28 Apr '67/Unknown	4 F-105	1 MIG-17	Sighting	
III-167	28 Apr '67/1653H	4 F-105	1 MIG-17	0/0	0/0
III-168	28 Apr '67/1700H	4 F-105	1 MIG-17	Sighting	
III-169	29 Apr '67/1110H	1 RF-101	1 MIG-21	Sighting	
III-170	29 Apr '67/1615H	4 F-105	{ 2 MIG-21 2 MIG-17	Sighting	
III-171	29 Apr '67/1615H	4 F-105	1 MIG-17	Sighting	
III-172	29 Apr '67/1615H	4 F-105	1 MIG-17	Sighting	

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Event	Date/Time	Aircraft Involved No.-Type		Results Lost/Damaged	
		U.S.	Enemy	U.S.	Enemy
III-173	29 Apr '67/1612H	4 F-4C	13 MIG-17	0/0	1/0
III-174	29 Apr '67/1700H	{2 F-105	2 MIG-17	1/1	0/0
		{2 F-105	1 MIG-21		
III-175	29 Apr '67/1615H	4 F-105	1 MIG-17	0/0	0/0
III-176	30 Apr '67/0226H	1 RF-4C	1 MIG	Radar	
III-177	30 Apr '67/0930H	4 F-105	4 MIG-17	Sighting	
III-178	30 Apr '67/0900H	4 F-105	2 MIG	Sighting	
III-179	30 Apr '67/0905H	3 F-4C	12 MIGs	0/0	0/0
III-180	30 Apr '67/0906H	1 F-105	2 MIG-17	0/0	1/0
III-181	30 Apr '67/0923H	4 F-105	1 Unidentified	Sighting	
III-182	30 Apr '67/1521H	2 RF-4C	2 MIG	0/0	0/0
III-183	30 Apr '67/1648H	4 F-105	2 Unidentified	Sighting	
III-184	30 Apr '67/1624H	2 F-105	MIGs	2/0	0/0
III-185	30 Apr '67/1715H	4 F-105	2 MIG-21	1/0	0/0
III-186	30 Apr '67/1713H	4 F-105	4 MIG-21	0/0	0/0
III-187	1 May '67/1015H	4 F-105	6-8 MIG-17	0/0	0/0
III-188	1 May '67/1250H	1 F-4E	2 MIG-17	0/0	0/0
III-189	1 May '67/1008H	4 F-4C	2 MIG-17	Sighting	
III-190	1 May '67/1021H	4 F-4C	8 MIG-17	0/0	1/0
III-191	1 May '67/1011H	4 F-105	8 MIG-17	0/0	0/0
III-192	1 May '67/Unknown	4 F-105	4 MIG-17	0/0	0/0
III-193	1 May '67/Unknown	4 F-105	2 MIG-17	0/0	0/0
III-194	1 May '67/1245H	2 F-8E	4 MIG-17	0/0	1/1
III-195	1 May '67/1248H	4 F-8C	2 MIG-17	0/0	0/0
III-196	1 May '67/1256H	3 A-4C	MIG-17s	0/0	0/0
III-197	1 May '67/1255H	2 A-4C	2 MIG-17	0/0	1/0
III-198	1 May '67/1244H	4 A-4E	3 MIG-17	0/0	0/0
III-199	1 May '67/1710H	2 R-4C	2 Unidentified	Sighting	
III-200	1 May '67/1718H	8 F-105	3 MIG-17	Sighting	
III-201	1 May '67/Unknown	? F-4	? MIGs	Sighting	
III-202	1 May '67/1725H	4 F-4C	3 MIG-21	0/0	0/0
III-203	2 May '67/0951H	4 F-105	1 MIG-21 (Poss)	Sighting	
III-204	2 May '67/0917H	4 F-105	2 MIG-17	0/0	0/0
III-205	3 May '67/1630H	2 RF-101	1 MIG	0/0	0/0
III-206	3 May '67/1705H	3 RF-4C	1 MIG-21	0/0	0/0
III-207	3 May '67/1435H	4 F-4C	{2 MIG-21	0/0	1/0
			{5 MIG-17		
III-208	3 May '67/1710H	4 F-4C	2-3 Unidentified	0/0	0/0
III-209	4 May '67/1425H	4 F-4C	2 Unidentified	Sighting	
III-210	4 May '67/1433H	4 F-4C	{4 MIG-17	Sighting	
			{4 MIG-21		
III-211	4 May '67/1435H	4 F-105	{3 MIG-21	0/0	0/0
			{2 MIG-17		
III-212	4 May '67/1435H	4 F-105	1 MIG-21	0/0	0/0
III-213	4 May '67/1615H	2 RF-4C	2 MIG-17	Sighting	
III-214	4 May '67/1441H	4 F-105	1 MIG-21	Sighting	
III-215	4 May '67/1453H	1 E8-66C	1 Unidentified	0/0	0/0
III-216	5 May '67/1730H	4 F-105	2 MIG-21	Sighting	
III-217	4 May '67/1453H	8 F-105	1 MIG-21	0/0	0/0
III-218	5 May '67/Unknown	8 F-105	2 MIG-21	Sighting	
III-219	8 May '67/0343H	1 RF-4C	1 Unidentified	0/0	0/0
III-220	12 May '67/1638H	4 F-4C	{2 MIG-21	Sighting	
III-221	12 May '67/1638H	12 F-105	{2 MIG-21	Sighting	
			{5 MIG-17		
III-222	12 May '67/1644H	4 F-4C	5 MIG-17	1/0	0/0
III-223	12 May '67/1642H	4 F-105	5 MIG-17	0/0	0/0
III-224	12 May '67/1642H	4 F-105	? MIG-17	0/0	0/0
III-225	12 May '67/1643H	4 F-105	4 MIG-17	0/0	1/0
III-226	12 May '67/1645H	4 F-105	2 MIG-17	Sighting	
III-227	12 May '67/1755H	2 F-105	1 MIG-21	0/0	0/0
III-228	12 May '67/1618H	4 F-105	6 MIG-17	0/0	0/0
III-229	13 May '67/1610H	2 RF-4C	1 MIG-21	0/0	0/0
III-230	12 May '67/1623H	1 F-105	1 MIG-17	0/0	1/0
III-231	13 May '67/1623H	4 F-105	4 MIG-17	0/0	0/0
III-232	13 May '67/1610H	4 F-4C	9 MIG-17	0/0	0/0
III-233	13 May '67/1620H	F-105	3 MIG-17	0/0	2/0
III-234	13 May '67/1621H	4 F-4C	10 MIG-17	0/0	2/0

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		U.S.	Enemy	U.S.	Enemy
III-235	13 May '67/1621H	4 F-105	5 MIG-17	0/0	0/0
III-236	13 May '67/1622H	4 F-105	3 MIG-17	0/0	2/0
III-237	13 May '67/1617H	3 F-105D	6 MIG-17	0/0	0/2
III-238	13 May '67/1623H	4 F-105	7 MIG-17	0/0	0/0
III-239	14 May '67/1605H	4 F-4C	16 MIG-17	0/0	2/0
III-240	14 May '67/1611H	4 F-4C	10 MIG-17	0/0	1/0
III-241	14 May '67/1600H	4 F-105D	2 MIG-17	0/0	0/0
III-242	14 May '67/1600H	4 F-105D	6 MIG-17	Sighting	
III-243	14 May '67/1611H	4 F-105D	2 MIG-21	Sighting	
			4 MIG-17		
III-244	14 May '67/1614H	{ 1 F-105F	4-5 MIG-17	0/0	0/0
		{ 3 F-105D			
III-245	19 May '67/Unknown	2 F-8E	2 MIG-17	0/0	2/0
III-246	19 May '67/Unknown	4 F-8C	1 MIG-17	0/0	1/0
III-247	19 May '67/A.M.	2 F-8C	2 MIG-17	0/0	1/0
III-248	19 May '67/1140H	2 A-6A	3 MIG-21	0/0	0/0
III-249	19 May '67/1530H	2 A-4C	5 MIGs	Sighting	
III-250	19 May '67/1630H	3 F-4C	1 Unidentified	Sighting	
III-251	19 May '67/1641H	4 F-105	4 MIG-17	Sighting	
III-252	20 May '67/1629H	8 F-4C	12-15 MIG-17	1/0	4/0
III-253	20 May '67/1610H	{ 3 F-4C	1 Unidentified	Sighting	
		{ 2 EB-66			
III-254	20 May '67/1630H	3 F-105	7 MIG-17	0/0	0/0
III-255	20 May '67/1630H	4 F-4C	{ 1 MIG	Sighting	
			{ 1 Unidentified		
III-256	20 May '67/1630H	4 F-105D	2 MIG-17	0/0	0/0
III-257	20 May '67/1630H	4 F-105D	8 MIG-17	0/0	0/0
III-258	20 May '67/1625H	4 F-4C	4-5 MIG-21	0/0	2/0
III-259	20 May '67/1628H	{ 2 F-105	3 MIG-21	0/0	0/0
		{ 2 F-105D			
III-260	20 May '67/1630H	4 F-105	1 MIG-17	0/0	0/0
III-261	21 May '67/0853H	4 F-4C	1 Unidentified	Sighting	
III-262	21 May '67/0856H	8 F-105	{ 1 MIG-17	Sighting	
			{ 2 Unidentified		
III-263	21 May '67/0900H	4 F-4C	2 Unidentified	Sighting	
III-264	21 May '67/0905H	4 F-105	2 Unidentified	0/0	0/0
III-265	21 May '67/1420H	2 RF-4C	Unidentified	0/0	0/0
III-266	21 May '67/1616H	3 F-105	2 MIG-17	Sighting	
III-267	21 May '67/1620H	2 F-4C	2 MIG-17	Sighting	
III-268	21 May '67/1034H	3 EB-66	1 MIG	Sighting	
III-269	21 May '67/Unknown	4 A-4	3 Unidentified	Sighting	
III-270	22 May '67/0903H	4 F-4C	3 MIG-17	0/0	0/0
III-271	22 May '67/1351H	2 RF-101	2 MIG (Prob)	Sighting	
III-272	21 May '67/1500H	4 A-4E	{ 2 MIG ?	0/0	0/0
			{ 1 MIG-17		
III-273	22 May '67/1445H	2 RF-4C	3 Unidentified	Sighting	
III-274	22 May '67/1527H	4 F-105	2 MIG-17	0/0	0/0
III-275	22 May '67/1527H	4 F-4C	2 MIG-17	0/0	0/0
III-276	22 May '67/1605H	4 F-105	{ 1 MIG-21	Sighting	
			{ 1 MIG ?		
III-277	22 May '67/1605H	4 F-4C	4 MIG-21D	0/0	2/0
III-278	22 May '67/1606H	4 F-105	2 MIG-21	0/0	0/0
III-279	22 May '67/1611H	4 F-105	2 MIG-21	Sighting	
III-280	22 May '67/Unknown	4 F-105	1 MIG-21	0/0	0/0
III-281	24 May '67/1715H	4 F-105	1 MIG-17	Sighting	
III-282	25 May '67/0858H	3 F-4C	1 Unidentified	Sighting	
III-283	30 May '67/1610H	6 F-4C	2 Unidentified	Sighting	
III-284	30 May '67/1516H	4 F-105	4 MIG-17	0/0	0/0
III-285	30 May '67/1612H	4 F-105	4 MIG-17	0/0	0/0
III-286	20 May '67/1616H	4 F-105	4 MIG-17	Sighting	
III-287	30 May '67/1616H	2 F-105	4 MIG-17	0/0	0/0
III-288	30 May '67/1616H	4 F-105	1 MIG-17	0/0	0/0
III-289	30 May '67/1635H	4 F-4C	? Unidentified	Sighting	
III-290	30 May '67/1656H	4 F-4C	{ 6 MIG-17	0/0	0/0
			{ 3 MIG-21		
III-291	31 May '67/1551H	4 F-4C	4 MIG-17	1/0	0/0
III-292	31 May '67/1610H	4 F-4C	1 MIG-17	0/0	0/0

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LIST OF EVENTS

Event	Aircraft Involved No.-Type			Results Lost/Damaged	
	Date/Time	U.S.	Enemy	U.S.	Enemy
III-293	31 May '67/1648H	3 F-105	2 MIG-21	0/0	0/0
III-294	31 May '67/1650H	4 F-105	4 MIG-17	Sighting	
III-295	31 May '67/1650H	4 F-105	2 MIG-17	Sighting	
III-296	31 May '67/1650H	4 F-105	6 MIG-17	Sighting	
III-297	31 May '67/1700H	4 F-4C	1 MIG-17 (Poss)	Sighting	
III-298	2 Jun '67/0930H	4 F-105	2 MIG-21	0/0	0/0
III-299	2 Jun '67/1528H	4 F-4	8-10 MIG-17	0/0	3/0 ?
III-300	2 Jun '67/1015H	8 F-105	2 MIG-21	Sighting	
III-301	2 Jun '67/1630H	4 F-4C	1 MIG-17	Sighting	
III-302	2 Jun '67/1633H	2 F-105	4 MIG-17	0/0	0/0
III-303	2 Jun '67/1628H	4 F-4	8-10 MIG-17	0/0	0/0
III-304	3 Jun '67/1640H	{2 F-4D 2 F-4C	5 MIG-17	0/0	0/0
III-305	3 Jun '67/1650H	{2 F-4C 2 F-4D	2 MIG-17 1 MIG-21	Sighting	
III-306	3 Jun '67/1651H	2 F-105	2 MIG-17	Sighting	
III-307	3 Jun '67/1653H	4 F-105	{2 MIG-21 1 MIG-17	Sighting	
III-308	3 Jun '67/1652H	3 F-105	3 MIG-17	0/0	2/0
III-309	5 Jun '67/1638H	4 F-105	{5 MIG-17 3 MIG-21	0/0	0/0
III-310	5 Jun '67/1643H	4 F-105	6 MIG-21	Sighting	
III-311	5 Jun '67/1646H	4 F-105	{3 MIG-21 16 MIG-17	Sighting	
III-312	5 Jun '67/1742H	{2 F-4C 2 F-4D	6-7 MIG-17	0/0	1/0
III-313	5 Jun '67/1545H	4 F-4C	4 MIG-17	0/0	1/0
III-314	5 Jun '67/1535H	{2 F-4D 2 F-4C	8-12 MIG-17	0/0	1/0
III-315	6 Jun '67/0412H	1 RF-4C	1 MIG (Poss)	Radar	
III-316	6 Jun '67/1540H	4 F-105	1 MIG-17	Sighting	
III-317	7 Jun '67/2137H	1 F-105F	1 Unidentified	0/0	0/0
III-318	11 Jun '67/0900H	4 F-105	1 MIG-21	0/0	0/0
III-319	10 Jun '67/1312H	2 RF-4C	1 MIG-21	0/0	0/0
III-320	11 Jun '67/0909H	1 F-105	2 MIG	Sighting	
III-321	11 Jun '67/0915	4 F-105	{2 MIG-17 2 MIG-21	Sighting	
III-322	11 Jun '67/0930H	1 RF-101	1 MIG-21	0/0	0/0
III-323	11 Jun '67/1645H	4 F-105	3 Unidentified	0/0	0/0
III-324	11 Jun '67/1634H	3 F-105	2 MIG-17	Sighting	
III-325	11 Jun '67/1658H	2 F-105	2 Unidentified	Sighting	
III-326	12 Jun '67/1604H	4 F-105	1 MIG-21	Sighting	
III-327	13 Jun '67/1636H	4 F-105	? MIG	Sighting	
III-328	13 Jun '67/1639H	8 F-105	10-11 MIG-21	Sighting	
III-329	16 Jun '67/1615H	2 RF-4C	1 MIG-17	Sighting	
III-330	18 Jun '67/0902H	4 F-105	1 MIG-21	Sighting	
III-331	19 Jun '67/0931H	4 F-105	2 MIG-21	Sighting	
III-332	20 Jun '67/1635H	4 F-4C	2 Unidentified	Sighting	
III-333	21 Jun '67/0900H	4 F-105	2 MIG	Sighting	
III-334	23 Jun '67/0050H	1 F-105	1 MIG	Sighting	
III-335	23 Jun '67/0050H	4 F-105	1 Unidentified	0/0	0/0
III-336	27 Jun '67/0915H	3 F-4C	{1 MIG-21 1 Unidentified	Sighting	
III-337	26 Jun '67/1732H	1 F-4C	2 MIG-17	1/0	0/0
III-338	27 Jun '67/0920H	{? F-105 ? F-4C-0	2 MIG-17	Sighting	
III-339	29 Jun '67/1710H	2 EA-1F	2 Unidentified	0/0	0/0
III-340	11 Jul '67/0838H	4 A-4	5 MIG-21	0/0	0/0
III-341	17 Jul '67/0900H	{4 F-8 1 A-4E	2 MIG-21	0/0	0/0
III-342	18 Jul '67/1402H	4 A-4E	4 MIG-21	0/0	0/0
III-343	19 Jul '67/1650Z	4 F-4D	8 MIG-17	0/0	0/0
III-344	20 Jul '67/1652H	4 F-4C	1 MIG-21	0/0	0/0
III-345	21 Jul '67/1519H	{1 A-4C 1 F-8C	8 MIG-17D	0/2	1/2
III-346	27 Jul '67/1600H	2 F-4C	2 MIG-21	0/0	1/0

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GLOSSARY OF TERMS

(All Terms Unclassified Unless Otherwise Stated)

AA - air-to-air weapon
AAA - antiaircraft artillery
AAM - air-to-air missile
AAWC - Anti-Air-Warfare Commander
AB - afterburner
ACM - air combat maneuvering
ACT - air combat tactics
ADF - automatic direction finder
AEW - airborne early warning
AGL - above ground level
AIM-7 (D&E models) (SPARROW) - semiactive radar type, air-to-air missile
AIM-9 (B&D models) (SIDEWINDER) - passive IR type, air-to-air missile
AIM-9C (SIDEWINDER) - Radar guided air-to-air missile
AI radar - airborne intercept radar
Aircraft commander - a pilot designated pilot-in-command of a given aircraft (Air Force name for front seater in F-4)
ALKALI - Soviet air-to-air missile - radar beam rider type
ALQ-51 - Broadband deception ECM system
ALQ-71 - Noise jamming ECM pod (production model of QRC-160-1)
ANCHOR (Various colors) - see Figure 9 on page 34 - code names for specific refueling tracks
AN/APA-157 - CW radar illuminator and fire control computer for SPARROW missile system
Angle-off - angular position off the tail of the reference aircraft
APQ-72 - airborne intercept radar in F-4B aircraft

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- APQ-94 - airborne intercept radar in F-8E aircraft
- APQ-100/109 - airborne intercept radar in F-4C/D aircraft
- APR-25 - vector homing and warning system - providing 360° directional warning of threat signals in certain bands with instantaneous bearing to radiating source.
- APR-26 - crystal video airborne warning receiver to detect SA-2 guidance signals
- APR-27 - airborne radar warning receiver
- armed reconnaissance - an air mission flown with the primary purpose of locating and attacking targets of opportunity, i.e., enemy materiel, personnel, and facilities in assigned general areas or along assigned ground communications routes, and not for the purpose of attacking specific briefed targets.
- ASE circle - allowable steering error - circle on radar display provided by fire control computer.
- ATOLL - Soviet air-to-air missile, infrared seeker type
- autotrack - automatic tracking in which a servo mechanism keeps the radar beam trained on the target.
- Back - the individual occupying the back seat of the F-4; in Navy called RIO, in Air Force called pilot or GIB.
- BARCAP - Barrier combat air patrol - a MIGSCREEN for one or more missions
- barrel roll - See Figure 2 (page 27) - a 360° rolling maneuver in which the flight path of the aircraft describes a helix about the intended direction of the flight.
- BDA - bomb damage assessment
- BINGO (fuel) - minimum fuel quantity reserve established for a given geographical point to permit aircraft to return safely to home base or aerial refueling point.
- bogey - unidentified aircraft
- boresight mode - in the boresight mode the radar antenna is aligned and locked to the roll axis of the aircraft.
- break - an emergency turn in which maximum performance is desired instantly to destroy an attackers tracking solution.
- break X - minimum range indication for missile launch. X appears in the radar scope at minimum range.

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- CAP - combat air patrol - an aircraft patrol provided over an objective area, over the force protected, over the critical area of a combat zone, or over an air defense area, for the purpose of intercepting and destroying hostile aircraft before they reach their target.
- (NAVY) Condition I CAP (Standby): aircraft ready for immediate (maximum delay of two (2) minutes) takeoff. Aircraft with engine not running (starter batteries plugged in) will be positioned for take-off. Pilots in cockpit and deck crew on alert.
- CAS - calibrated air speed (knots)
- CBU-24 - canister dispensed air-to-ground bomblet type munition; the canister is carried externally on the aircraft and opens after release at a preset altitude.
- centerline tank - a fuel tank carried externally on centerline of aircraft.
- chaff - a type of confusion reflector, which consist of thin, narrow metallic strips of various lengths to provide different responses, used to create false signals on radarscope.
- Channel 97 - A TACAN station located during the period of the study at 20°27'N/103°43'E used for navigational aids. (SECRET)
- chandelle - a maximum performance climbing turn in which speed is converted to altitude while reversing direction.
- CMR-312 (Little Ears) - aural radar warning receiver
- CROWN - call-sign for rescue force commander
- CRT - Combat Rated Thrust - maximum augmented thrust condition of engine
- DF - direction finder
- DME - distance measuring equipment
- dot - (aim dot, steering dot) - electronic dot appearing in radar scope when radar is locked on providing computed steering vector information
- element - Air Force term for the basic fighting unit (two aircraft)
- EWO - electronic warfare officer
- FANSONG - tracking radar for Soviet SA-2 surface-to-air missile system (CONFIDENTIAL)
- fighting (wing) position - an area for the wingman in which optimum coverage and maneuverability is achieved in maximum performance maneuvers.
- finger-four formation - see Figure 6 (page 29) - also fingertip formation - a four-plane formation in

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which the aircraft occupy positions suggested by the four finger tips of either hand, the fingers being held together in a horizontal plane.

flak - antiaircraft fire

fluid element - the second or supporting element in fluid four formation, flying in a high or low element position.

fluid-four - see Figure 5 (page 29) - a tactical formation having the second element spread in both the vertical and horizontal planes to enhance maneuverability, mutual support and look-out ability.

fragged - mission directed by fragmentary operational order from higher headquarters.

Front - the individual in the front seat in the F-4 aircraft; in the Navy called the pilot, in the Air Force called the aircraft commander.

g - unit of acceleration (32.2 ft/sec^2)

gaggle - slang for a number of aircraft operating in close proximity, not necessarily in any semblance of formation.

GAM-83 - BULLPUP; air-to-ground guided missile

GEOREF - See Figure 11

GCI - ground control intercept

GUARD - emergency UHF radio channel usually monitored by all aircraft and ground stations as a secondary frequency.

Hard turn - a planned turn in which the intensity of the turn is governed by the angle-off and range of the attacking aircraft.

HEAT - armament switch setting for using infrared missiles

hot mike intercom - intercommunication system continuously active (hot)

IAS - indicated air speed

ICS - intercommunication system

ID - identification; to make identification

IFF - identification, friend or foe; aircraft transponding beacon received by radar distinguishing friend from foe.

Immelmann - see Figure 8 (page 30) - maneuver in which the aircraft completes the first half of a loop and then rolls over to an upright position thus changing direction 180° with a simultaneous gain in altitude.

IMN - indicated Mach number

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IP - initial point; a well-defined point, easily distinguishable visually and/or by radar, used as a starting point for a bomb run to the target.

IR missile - an infrared or heat-seeking missile

IRON HAND - a code name for a flight with special ordnance and avionics equipment whose mission is to seek and destroy enemy surface-to-air missile sites.

JCS target - a target appearing on the JCS target list

jinking - constant maneuvering in both the horizontal and vertical planes to present difficult target to enemy defenses by spoiling the tracking solution. Bank, pitch and velocity are all simultaneously changed in this maneuver.

karst - a limestone outcropping or ridge

KIAS - knots indicated air speed

kt - abbreviation for knot (nautical miles/hour)

KTAS - knots true air speed

LAU-3 - a rocket launcher adaptable to external bomb racks holding 19 2.75 inch air-to-ground folding fin rockets

LAU-17 adapters - stub pylon on F-4

loose deuce - a term to describe fighter tactics in which two to four airplanes maneuver to provide mutual support and increased fire power.

Lufberry circle - a circular tail chase, ascending or descending

M - abbreviation for Mach number

MER - multiple ejection rack

mi - nautical mile, as used in this report

MIGCAP - combat air patrol mission whose actions are directed against MIG aircraft

MIG SCREEN - mission wherein protecting fighters are placed between the threat and the protected force in a specific area

military power - maximum unaugmented thrust condition of engine

missile free - authority is granted to fire unless target is identified as friendly

missile tone - audio signal indicating AIM-9 is locked on to an IR source

MRT - military rated thrust - see military power

MSL - altitude referenced to mean sea level

OPREP - message report in joint operational reporting system

PANAMA - call sign for GCI site located near Danang

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pipper - aircraft weapon sight indicator (a dot of light within a lighted ring)

PIRAZ - positive identification radar zone

Pod formation - A flight formation configured to maximize the jamming of Fansong radar. Slight alteration is made to provide for better defense under MIG threat. (See Fig. 9)

PRF - pulse recurrence frequency

QRC-160 - noise jamming ECM pod

RAG - replacement air group

ready light - light which indicates a particular avionics/ munitions system is operating and available for use

RED CROWN - voice call for USS LONG BEACH (CLN-9)

RESCAP - rescue combat air patrol

RHAW - radar homing and warning

RIO - radar intercept officer

RO - abbreviated form of RIO

road interdiction - to prevent or hinder, by aerial means, enemy use of a road or route

ROLLING THUNDER - code name for air strikes against North Vietnam

Route Package - see Figure 9 - geographical division of North Vietnam for purposes of air strike targeting

udder reversal - a climbing aircraft maneuver in which direction is changed by rotation around the aircraft's vertical axis

SA-2 - Soviet surface-to-air missile system

SAW - surface-to-air missile

SAR - search and rescue

scissors - See Figure 1 (page 27) - a defensive maneuver in which a series of turn reversals are executed in an attempt to achieve offensive after an overshoot by the attacker.

SCAN-ODD - MIG airborne intercept radar
(CONFIDENTIAL)

section - a Navy term for a tactical element of two or more aircraft (usually two)/an Air Force term for two flights of four

SHRIKE (AGM-45) - air-to-surface radar seeking missile

SIDEWINDER - see AIM-9

SIDEWINDER tone - see missile tone

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SIF - selective identification feature - electronic device with variable codes for identification

SILVER DAWN - a code name for an intelligence collecting aircraft (SECRET)

"S" maneuver - a weave in a horizontal plane

Snap-up - a rapid pullup to establish a climb in order to launch a weapon

SPARROW - see AIM-7

"Split-S" maneuver - see Figure 7 (page 30) - 180° rotation about the aircraft longitudinal axis followed by a 180° change of heading in a vertical plane (half loop starting from top)

STBY - standby

steering dot - see dot

Switchology - a coined word addressing the human engineering considerations of switch arrangements

TACAN - tactical air navigation - an active electronic navigational system which locates the aircraft with respect to another installation

TARCAP - target combat air patrol - aircraft assigned the air-to-air defense role in the target area

TAS - true air speed in knots

TCA - track crossing angle - the angle between flight paths measured from the tail of the reference aircraft

Thud Ridge - A nickname given to a prominent geographical feature in North Vietnam. It is a ridge running in a general NW-SE direction from 21°40'N/105°25'E to 21°20'N/105°48'E.

TOT - time over target

TRACK (various colors) - see Figure 9 - code names for specific refueling tracks

TROJAN HORSE - a code name of a U-2 air reconnaissance program (SECRET)

unit (of turn) - divisions on an angle-of-attack indicator on F-4 aircraft

UHT - unit horizontal tail (applied to F-8 aircraft) - a tail design whereby the whole surface rotates about a pivot point

unloading - decreasing g's

V_c - closing velocity (relative)

vector box - see APR-25

WILD WEASEL - F-105F specially equipped for locating and attacking SA-2 sites (employed on IRON HAND missions)

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yo-yo - See Figures 3 and 4 (page 29)

High speed - an offensive tactic in which the attacker maneuvers through both vertical and horizontal planes to prevent an overshoot in the plane of the defender's turn.

Low speed - a dive for airspeed and a pull up for position closure.

ZUNI - five inch air-to-ground unguided rocket.

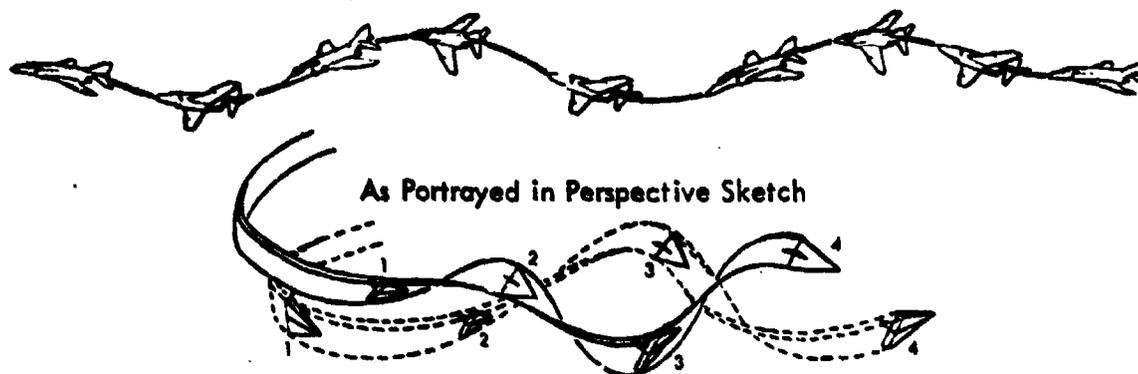


FIGURE 1. Scissors



FIGURE 2. Barrel Roll

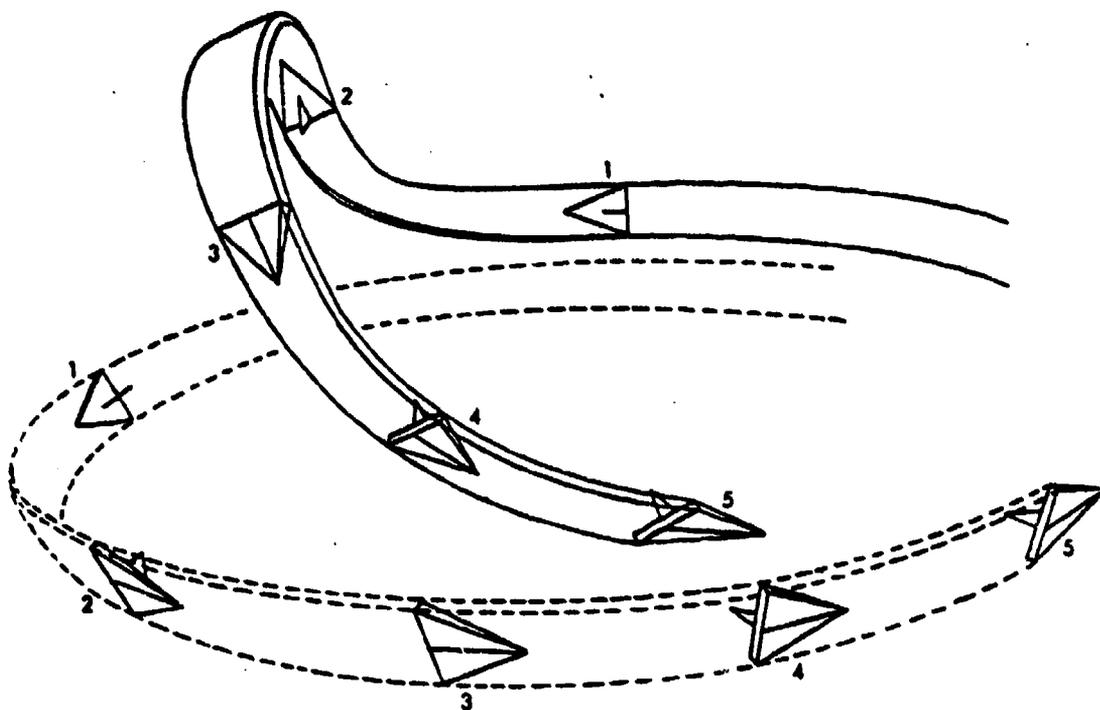
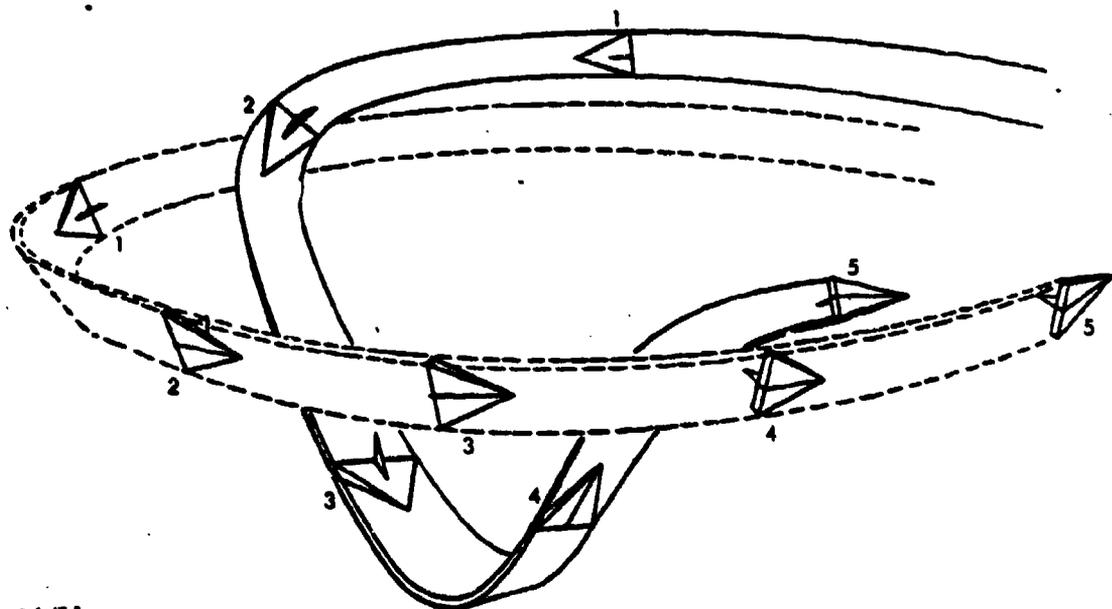


FIGURE 3. High-Speed Yo-Yo



6-4-67-2

FIGURE 4. Low-Speed Yo-Yo

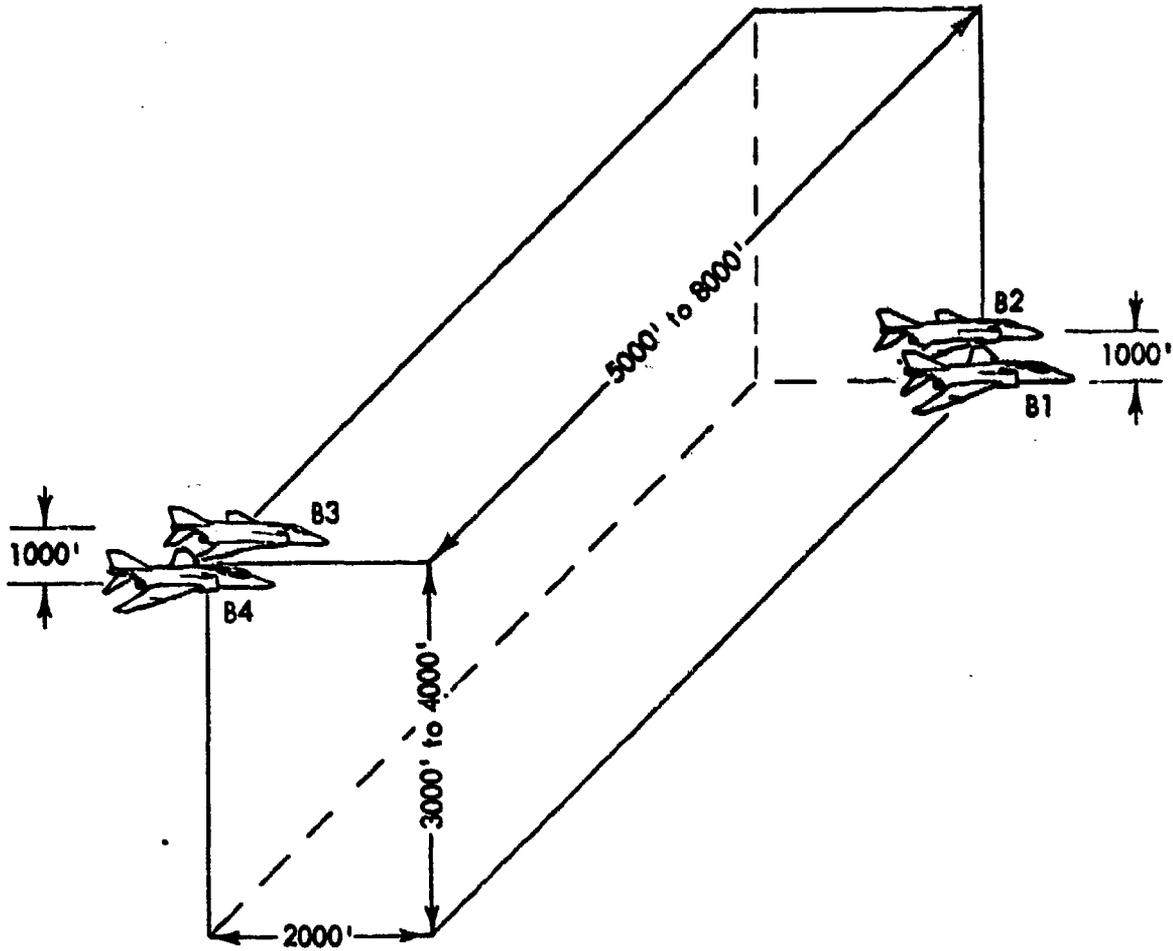
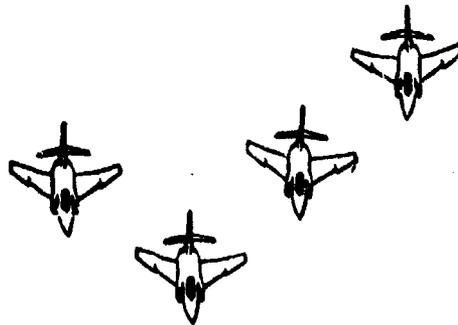


FIGURE 5. Fluid Four



6-4-47-3

FIGURE 6. Fingertip or Finger Four (All at Same Elevation)

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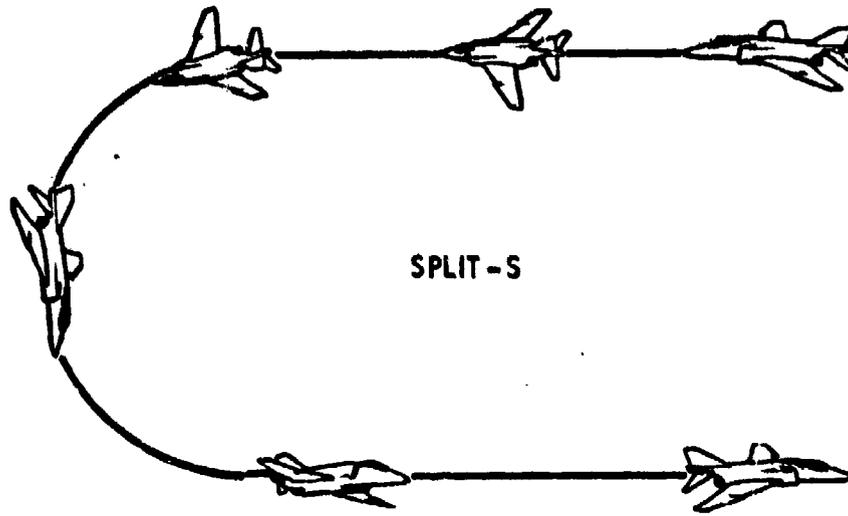


FIGURE 7. Split-S

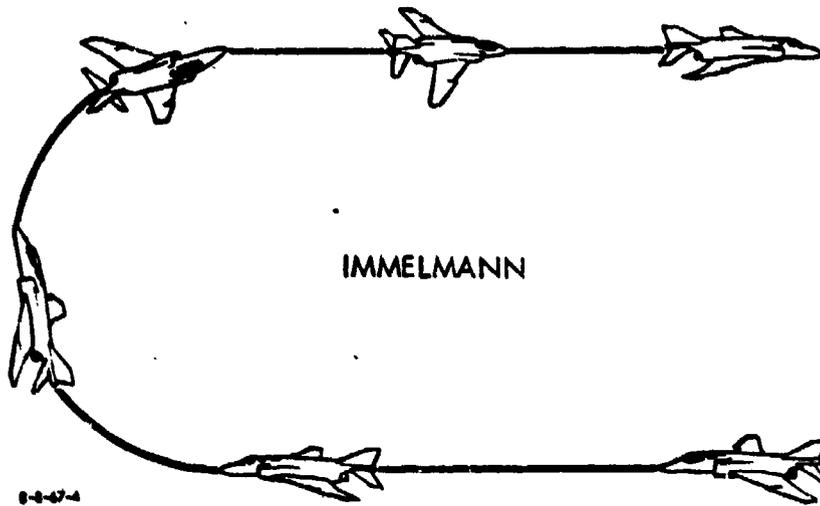


FIGURE 8. Immelmann

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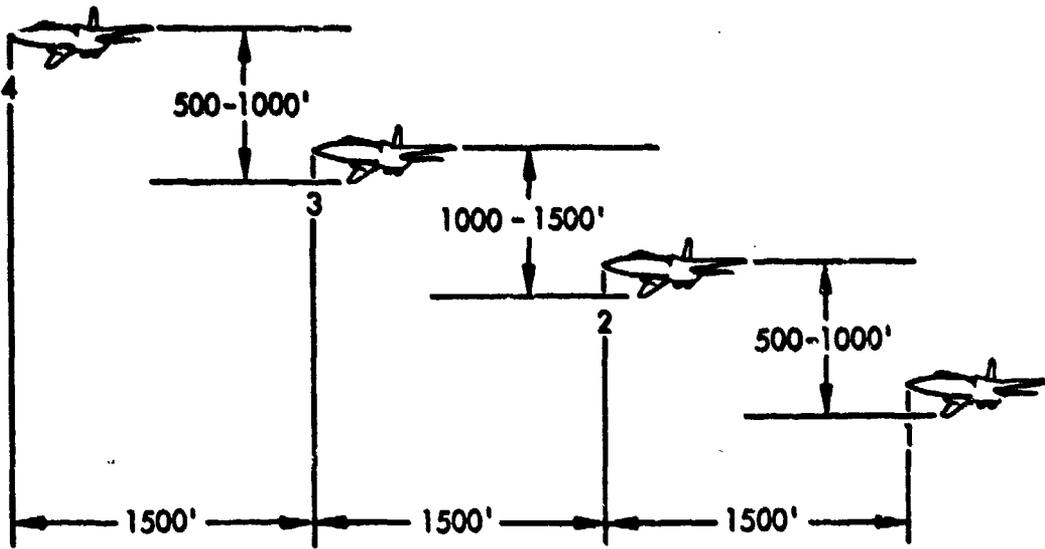


FIGURE 9. Pod Formation*
*Element may be on Left or Right

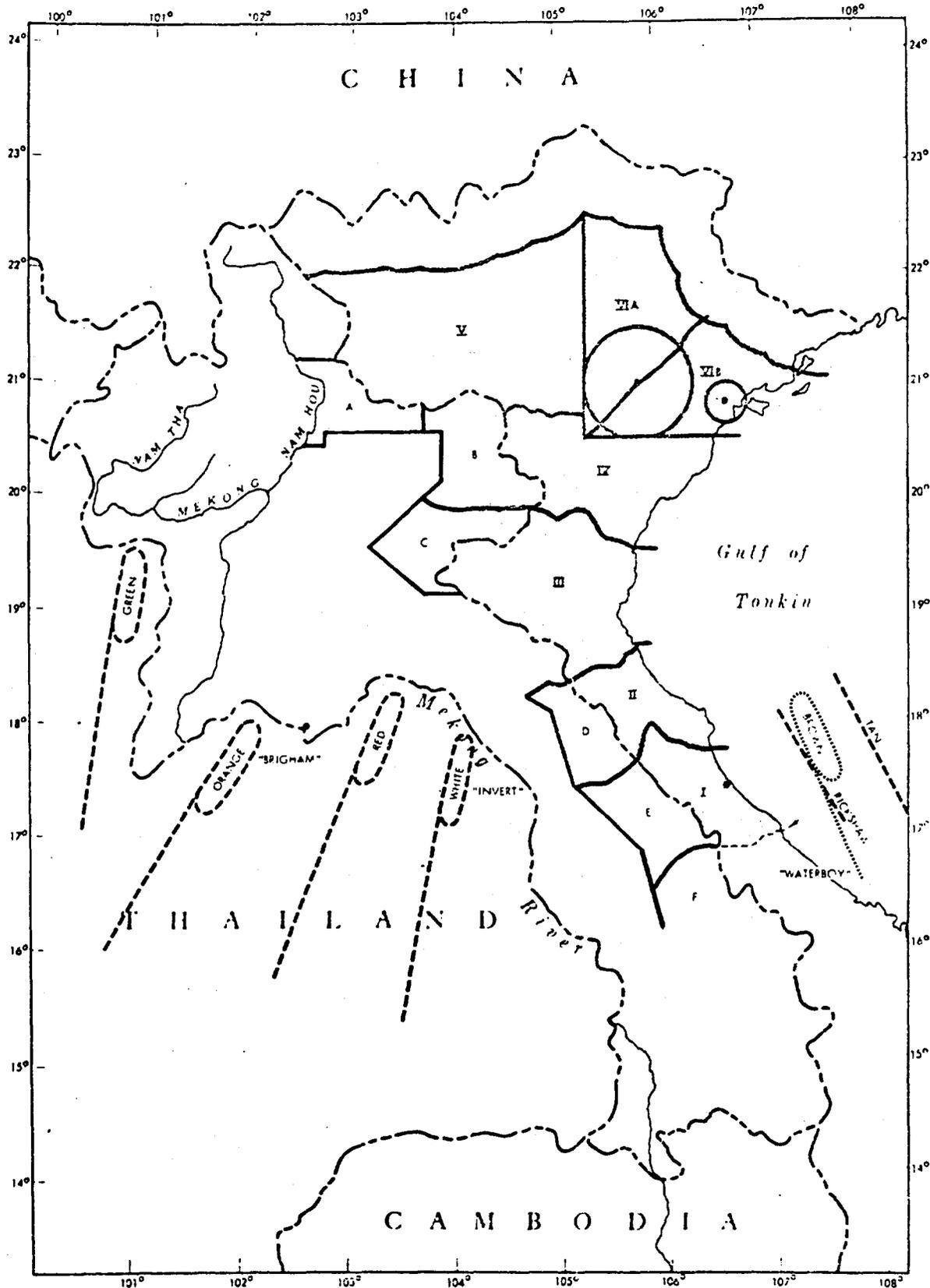
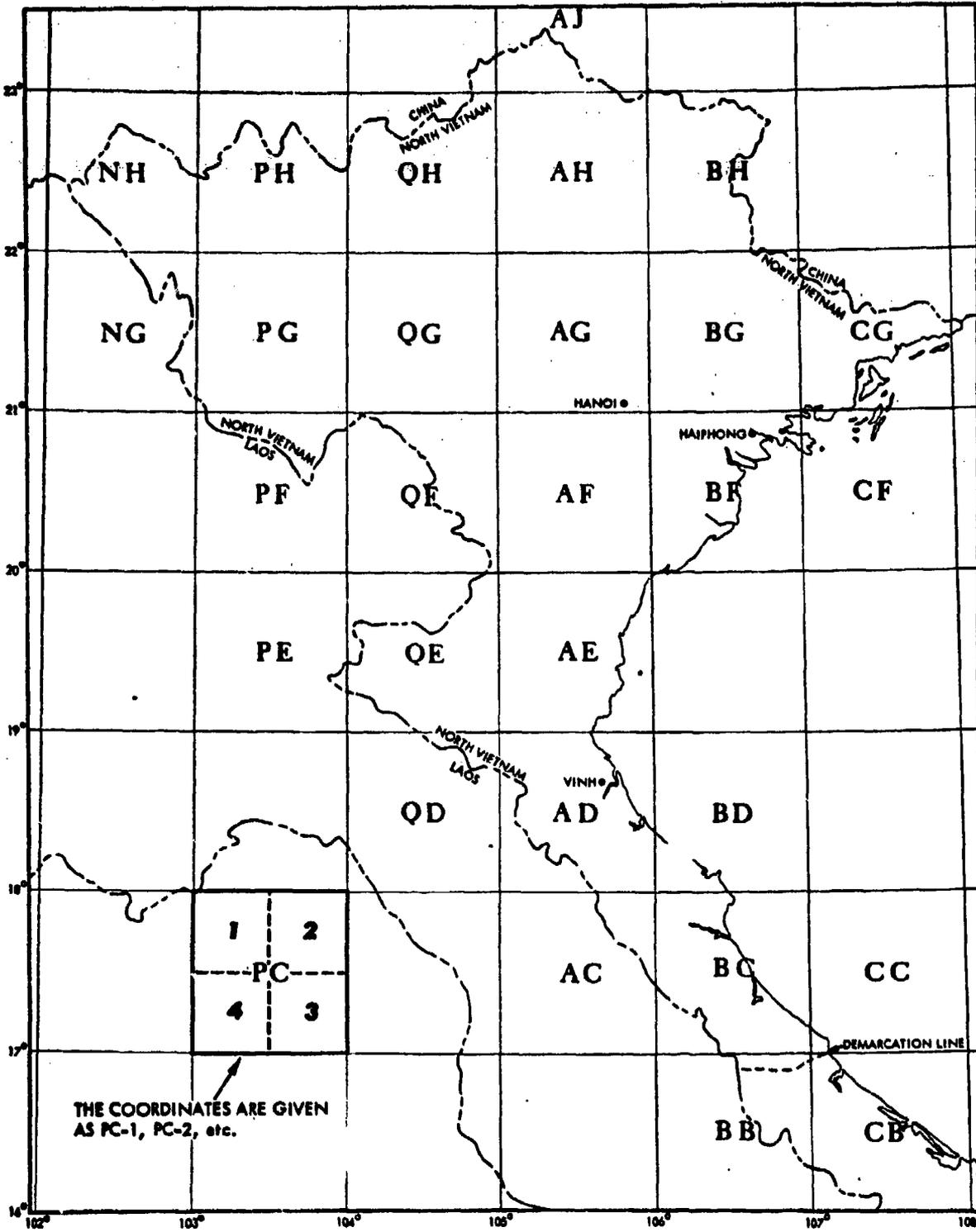


FIGURE 10. Location of Route Packages and Tanker Refuel Tracks



2-3-69-17

FIGURE 11. Map of North Vietnam Showing GEOREF Coordinates

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Event III-1

Aircraft Involved: Four A-4Cs vs one MIG-17

Result: No damage

Vicinity of Encounter: 19°58'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 April 1965/1110H

Two elements of A-4Cs (BLUE Flight) were part of a strike force (nine A-4Es, ten A-4Cs and eight F-8Es) attacking the Thanh Hoa Bridge. Part of the support was by a flight of F-8s (See Event I-1) included in the above eight and four F-4Bs. The F-4Bs were to provide TARCAP and were armed with two SPARROWS and two SIDEWINDERS. At the time of the event, the F-4Bs were in the target area.

2. MISSION ROUTE

BLUE Flight departed the aircraft carrier HANCOCK at 0855H at Yankee Station (17°N/109°E) and proceeded to Hon Me Island (19°23'N/105°56'E) at 25,000 feet altitude. At Hon Me, the elements headed 005° and let down to 6000 feet for the run into the target.

3. AIRCRAFT CONFIGURATIONS

Unknown

4. CONDITIONS PRIOR TO ENCOUNTER

Weather: 2/10 cloud cover with bases at 1000 feet. The visibility was 3 miles in haze. The haze layer extended to 12,000 feet altitude with visibility at the 5000 to 9000 feet levels at times reduced to a mile.

	<u>BLUE 1, 2</u>	<u>BLUE 3</u>
<u>Altitude:</u>	10,000 ft	15,000 ft
<u>Heading:</u>	080-090°	about 090°

5. INITIAL DETECTION

While egressing ten miles east of the target BLUE 2 saw and immediately identified one MIG-17 closing from 7:30, two miles away in a level pursuit, turning toward BLUE 1's 6 o'clock.

6. ACTION INITIATED

BLUE 2 called the MIG and both BLUE 1 and 2 started to break.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 turned and the MIG closed, shooting. After turning almost 120° the MIG broke off.

BLUE 3 heard the MIG call and on looking back saw the MIG attack and fire on BLUE 1 and 2. BLUE 3 broke left into the MIG but before BLUE 3 could attain a firing position, the MIG broke off.

8. ORDNANCE

	<u>No. fired/No. hit</u>
	Canon
MIG-17	1/0

11. DATA SOURCES

Messages, Reports: Air Combat Report 3480 from the USS HANCOCK
Pilots' statements, BLUE 2 and BLUE 3
CINCPACFLT Staff Study 3-67
CTG 77.7 OPREP 4 031451Z April 65
CTG 77.7 MSG 040202Z April 65
CTG 77.7 MSG 040221Z April 65

12. NARRATIVE DESCRIPTION

The strike force from the HANCOCK followed a strike by a force from the Coral Sea, who attacked the target at 1035H.

The HANCOCK attack elements (19 A-4Cs including the BLUE elements) cruised in a tactical formation with the F-8E (aircraft of Event I-1) elements split on either side and approximately 5000 feet above in order to provide intermediate cover. All F-8Es utilized their AI radar in the search mode to provide early warning. The retiring Coral

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Event III-1

Sea strike elements were detected about 10 degrees left of track and 30 miles ahead on AI radar and were initially called as bogeys but later identified as friendlies.

The HANCOCK strike force attacked the target commencing at 1042H and retired from the target by divisions, on a heading of 130 degrees, climbing to 32,000 feet for return. Fifteen A-4 (BLUE elements) remained over the target completing the final bombing run. BLUE 1 was the strike leader. Four F-8E aircraft (Event I-1) preceded them for flak suppression.

BLUE elements struck the target and rejoined as separate elements.

When the F-8 of Event I-1 reported being hit (at this time it was not determined to be by MIGs) his call was received by the BLUE elements and the A-4s proceeded outbound to rendezvous with him.

Since BLUE 1 and 2 were separated from BLUE 3 and 4, the actions of each element will be described separately.

BLUE 1 and 2

BLUE 1 and 2 were unaware of MIGs in the area and on hearing the report of the F-8 being damaged, they joined at 2000 feet and turned to rendezvous, climbing out on a 080-090 degree heading. BLUE 2 was flying tactical wing to the right (500 feet at 5 o'clock from BLUE 1).

They were climbing through about 10,000 feet, still in the haze layer as they crossed the coast. BLUE 2 saw two contrails coming from the south over the coast at 3 o'clock, and also saw two A-4Cs in a left turn at 10 o'clock, 3 miles away and slightly higher.

As BLUE 2 looked back he saw a single MIG-17 at 7:30 o'clock going to 6 o'clock two miles away, level, and closing in a pursuit turn. BLUE 2 called "MIG at 6, BLUE 1 break left now." This was the first time that any call had been made concerning enemy aircraft.

BLUE 2 jettisoned his tanks as BLUE 1 and 2 started to break left and down. After about 120 degrees of turn BLUE 2 saw tracers off of his right wing and could hear cannon fire. As the turn continued and BLUE 1 and 2 passed through a heading toward Hanoi, the MIG broke off.

BLUE 1 also observed the attack and breakoff. He called the MIG disengaging and BLUE 2 saw the MIG going from 4:30 to 6 o'clock with distance increasing.

BLUE 1 and 2 then rolled out on a heading of 130 degrees and egressed.

BLUE 3 and 4

After their last bombing run, when about two miles south of the target, BLUE 3 heard the F-8s call that he had been hit, and was proceeding outbound. BLUE 3 then decided to follow immediately in an effort to join, as the F-8 indicated he was alone.

A short time later, BLUE 3 heard BLUE 2 make the call of a MIG on BLUE 1 and 2's tail.

BLUE 3 continued toward the F-8 and as he crossed the coastline east of the target, he saw three aircraft at 10:30 o'clock about 3 to 4 miles away and below him 2000 to 3000 feet. BLUE 3 was at about 15,000 feet altitude at this time.

At first BLUE 3 thought they were A-4Cs; however, as the group closed, he realized that the last aircraft was a MIG-17. About at this point, the MIG was observed to fire (as evidenced by smoke puffs). BLUE 3, with a full load of 20mm, was two miles abeam at this point and broke left into the MIG. Before he could obtain a firing position, the MIG broke off and headed north, climbing. BLUE 3 called the MIG breaking off, but only BLUE 2 heard it.

BLUE 3 then proceeded to the carrier on heading of 130 degrees.

All of the foregoing events took place in a period of about 3 to 4 minutes.

The F-4 TARCAP from the Coral Sea were assigned an altitude of 25,000 feet. The TARCAP leader checked in with BLUE 1 just prior to the HANCOCK attack on the target, and indicated he was back overhead. (The F-4s had provided TARCAP for the Coral Sea strike and had retired some 70 miles for aerial refueling.) All MIG action occurred after the target was attacked and occurred below 16,000 feet altitude. After the MIG action had broken off, BLUE 1 advised the TARCAP that there was a reported MIG in the area that was possibly an A-4, that HANCOCK forces were clear of the area, and TARCAP was cleared to retire.

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Event III-2

Aircraft Involved: Four F-100Ds vs. MIG-17

Result: One MIG-17 probably destroyed

Vicinity of Encounter: 19°00'N/105°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 April 1965/1150H

GREEN flight (four F-100Ds) was fraged to fly Rescue Combat Air Patrol in support of a large force of F-105Ds attacking the Than Hoa Bridge at 19°50'N/105°48'E. GREEN flight was instructed to orbit just off shore southeast of the Than Hoa Bridge, and to monitor the primary mission frequency until needed for RESCAP and then to work with Search and Rescue. The flight was in a left-hand orbit at 18,500 ft altitude, 325 KCAS, with the westernmost portion of the flight path 2-3 mi off shore. Some of the F-105 flights were in orbit nearby waiting to be called in to bomb the target. The flights were briefed by intelligence to expect MIG activity because this was the day after the first MIG encounter in Southeast Asia.

2. MISSION ROUTE

Departed Danang Air Base, SVN, and proceeded directly to the pre-strike tankers for a full load of fuel and then direct to the orbit point in the vicinity of 19°00'N/106°00'E. GREEN flight left the orbit after the MIG engagement to refuel and RESCAP a downed F-105 aircrewman and then returned directly to Danang AB.

3. AIRCRAFT CONFIGURATION

F-100D GREEN 1, 2, 3, 4

2 - 335 gal ext fuel tanks
2 - LAU-3 2.75 FPAR PODS (19 Rocket Pods)
4 - M-39 20mm cannons, 200 rds HEI each
2 - empty inboard pylons
Empty centerline pylon (on 2 and 4 only)

MIG-17s

Guns
No external stores
Chicom marking

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 3000 scattered layer, 15,000 thin broke layer, 20,000 ft thin overcast cirrus layer. Haze from surface to about 12,000 ft with 3-5 mi vis slant range. Could see water and coast line.

	<u>F-100Ds</u>				
	1	2	3	4	MIG-17
<u>Altitude:</u>	18,500 ft				Slightly high
<u>Heading:</u>	Left orbit passing through west				East
<u>Airspeed:</u>	300-325 KCAS				Unknown
<u>Fuel State:</u>	Full internal + 1500 # in ext tanks				Unknown
<u>Flight Formation:</u>	Fluid four with 3&4 just under the overcast				Element of two

5. INITIAL DETECTION

GREEN flight had just completed the first orbit when they heard TAN flight (Event III-3) call MIGs. At almost the same time as the lead element passed through a westerly heading, GREEN 2 saw an aircraft at the 12:30 to 1 o'clock position about 2-1/2 to 3 mi out on a near reciprocal heading and closing fast.

6. ACTION INITIATED

At least two flight members called the bogey and the whole flight saw it about the same time since they were looking in the direction of the forewarned MIG activity. The bogey came out of the haze, flashed across the nose of the lead element, and whipped into a 70°-80° nose low turn to come in behind the flight.

7. SITUATION DEVELOPMENT

GREEN 1 and 2 broke hard left and up into the MIG-17 and jettisoned external stores. MIG 1 attacked GREEN 3 and 4, who also broke left, and fired at GREEN 3 from 90° angle off and then settled on GREEN 4 who accelerated away from the MIG. Right after the initial break, GREEN Lead called GREEN 2 to break hard because MIG 2 was on his tail. GREEN 2 pulled max "g" and forced the MIG to overshoot. After the MIG passed behind GREEN 2, Lead called that the MIG was now on him. GREEN 2 reversed and fired a burst of 20mm out

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Event III-2

of range at MIG 2 who promptly split-S straight down. GREEN 2 followed him, firing a second burst and then at 10,000 ft fired a long burst and noted a hit on the right horizontal stabilizer of MIG 2. GREEN 2 started his pullout at 7000 ft, pulling enough "g" to "grey out" and recovered just above the wave tops. Other sources indicate a MIG loss on this date, most probably the MIG described above.

GREEN 2 and 3 rendezvoused, refueled, and flew search and RESCAP in company with an HU-17 helicopter for one of the downed F-105 aircrew (see Event II-1) until almost out of fuel. They recovered at Danang.

8. ORDNANCE EXPENDED

GREEN 1, 3, 4 - No attempt
GREEN 2 - 400-500 rounds 20mm
MIG 1 - One burst at GREEN 3
Other burst at GREEN 1 and 4 likely

9. EQUIPMENT PROBLEMS

GREEN 3 - Both LAU-3 rocket pods failed to jettison electrically on first attempt. (Did jettison manually under fire)
GREEN 4 - Could not jettison stores.
GREEN 2 - Film pack had stripped sprocket holes - did not obtain film of incident.

10. AIRCREW COMMENTS

Experience

This squadron had one of the highest levels of tactical aircraft experience in SEA. All pilots had many F-100 hours (up to 2,500) and about 20 combat missions in SEA (escort and RVN close air support).

Comments:

F-100 could not match MIG turn. Flight members were expecting MIG activity since they had talked to the F-8 pilot who had been hit by MIGs the previous day and had examined his aircraft.

GREEN 2 - The haze complicated join up. Found GREEN 3 quickly. GREEN 4 exited area with all stores and GREEN Lead attempted to find and accompany 4.

11. DATA SOURCES

Project Interviews: GREEN 2, 4 November 1968
Aircrew Letters: GREEN 2, 19 February 1968
Messages, Reports:

2AD 060740Z April 1965
2AD 041437Z April 1965
2AD ZODC-CP-00946 April 1965

12. NARRATIVE DESCRIPTION

GREEN flight (four F-100Ds) was fragged to fly rescue air patrol for a force of F-105s attacking the Than Hoa Bridge at 19°50'N/105°48'E. A second flight of F-100Ds was on MIGCAP for the same force (see Event 2B). On the day previous a Navy F-8 Crusader was attacked and damaged by MIG action, the first MIG action of the Southeast Asian conflict. The members of both of the F-100 flights had an opportunity to view the resultant damage to the F-8 and to talk to the pilot after his recovery at Danang. Thus, the F-100 aircrews were expecting MIG activity as they pointed their aircraft toward North Vietnam on this date.

GREEN flight departed Danang AB in South Vietnam at 1045H and flew out the 335° radial of the Danang TACAN for 40 mi to rendezvous with the KC-135 tankers at 1102H and took on a full load of fuel before proceeding up the coastline to their orbit position. The instruction to GREEN flight was to orbit just off shore on the F-105 egress route and to monitor the strike frequency until needed, at which time they were to switch to the rescue frequency and aid in any rescue attempt with search for the aircrew and CAP for the rescue aircraft. The southwestern anchor point of the orbit was at 19°00'N/105°48'E, with the flight passing about 3 mi off shore on the western side of the left-hand orbit. Orbit altitude was 18,500 ft for the lead element and about 20,000 ft for the second element which was flying just below a 20,000 ft thin cirrus overcast. The flight was at loiter speed of 300-350 KCAS and attempted to fly a fluid four formation as much as possible within the confines imposed by the orbit.

The weather in the area was generally hazy with 3-5 mi visibility in the haze layer which extended from the surface up to 12,000 ft. A broken layer at 3,000 ft and a thin layer at 12,000 and 20,000 ft completed the picture, but the aircrews reported that they could see the water and the shoreline through the haze.

When GREEN flight switched over to strike frequency, they noticed a great deal of radio chatter. About 70 aircraft were on the frequency including both Air Force and Navy mission and direct mission support aircraft.

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Event III-2

GREEN flight was just entering the second orbit at about 1150H when they heard the F-100 MIGCAP flight (see Event III-3) call MIGs and the ensuing calls confirming that the MIGs were in fact MIGs. At almost the same time as the lead element of GREEN flight passed through a westerly heading, the flight saw a bogey at Lead's 1230 position about 2 1/2 to 3 mi range, slightly high, and closing almost head-on. Two of the flight members called the bogey as it flashed out of the haze and passed in front of the lead element. The bogey was definitely identified as a MIG-17 by GREEN 2 as he observed the MIG roll into a 70°-80° left bank turn into the flight from his, GREEN 2's, 9 o'clock position. The MIG was turning slightly nose low, so GREEN Lead and 2 tightened the left turn, entered a shallow climb, and jettisoned the fuel tanks (with about 1500 lbs of fuel in each), rocket pods and empty pylons. The first MIG swung in behind the second element while a second MIG-17 swung in behind the lead element, attacking GREEN 2.

GREEN Lead saw MIG 2 on GREEN 2's tail and called, "GREEN 2 break; there's one on your tail." GREEN 2 lit afterburner and pulled the F-100 into maximum "g", blanking out GREEN Lead, and he saw the second MIG about 2000 ft at his 7 o'clock position. The second MIG was nose low on GREEN 2, so GREEN 2 raised his nose more and held the "g" to insure what was already an overshoot. The MIG overshoot GREEN 2 and slid in behind GREEN Lead as GREEN 2 changed his mode selector from manual sight to radar and then started a nose high rudder reversal. At that time GREEN Lead called, "The MIG's on me now." GREEN 2 noted an airspeed of 250 KCAS as he lowered his nose and observed the MIG at 2,000-3,000 ft below him, 5,000 ft range, and about 2,000 ft behind GREEN Lead in good firing position. As GREEN 2's airspeed was building, he uncaged the sight and set the wingspan lever at 32 ft. Then GREEN 2, realizing that he did not have enough time to close on the MIG, pulled his nose up to show belly to the MIG and fired a burst of 20mm cannon hoping that the MIG would see the guns flashing and break off his attack on GREEN Lead.

The ruse was successful because the MIG reacted immediately by reversing from the left pursuit curve to a 45° right bank. GREEN 2 was still outside of effective gun range, noticed that his airspeed had built to 450 KCAS, came out of afterburner, and eased back on the power as he called, "Robin Lead reverse, 2's on the MIG now." But GREEN Lead did not hear GREEN 2's call and, noting that his airspeed was about 250 KCAS during the initial break, had lowered his nose to accelerate as the MIG approached him. As the MIG approached him, he continued to accelerate and go for separation as MIG 2 broke off.

As soon as MIG 2 saw that GREEN 2 had matched his turn from left to right, he reversed back to the right in a modified split "S" and headed straight down from an estimated 14,000 ft. GREEN 2, wary of an overshoot, went into a nose high roll to the left, looked for lead, and called a second time that he was on the MIG. (GREEN Lead did not receive the call. This was occurring at the same time that the F-100 MIGCAP and F-105s were engaged by MIGs). GREEN 2 could not locate GREEN Lead in the haze but did complete his roll to the vertical straight down attitude and added power to close on the MIG. GREEN 2 attempted to track the MIG from straight above at zero "g"; but being unable to do so, electrically caged the sight and fired a burst with no observed results. He then checked the altimeter passing through 10,000 ft, put the pipper on the MIG's tailpipe, and fired a long burst to 7,000 ft where he observed a flash on the MIG's right horizontal stabilizer and started his pullout.

The pullout was begun aggressively, causing almost a complete loss of vision (although GREEN 2 did not black out). GREEN 2 pulled the power to idle, threw out the speed brakes, held maximum "g" just short of blacking out, and pulled out of the dive on a southerly heading at "wave top level". The F-100 was overstressed as a result of the pullout. GREEN 2 stated that he had an impression of the MIG starting his pullout to the west. GREEN 2 recovered just southeast of the town of Than Hoa, about 1 1/2 mi off shore. (Other sources list a probably MIG-17 kill due to 20mm cannon fire at this time and date and is most likely the result of this encounter).

Meanwhile, the first MIG overshoot GREEN Lead and 2 and attacked GREEN 3 and 4. GREEN 3 and 4 also broke hard left into the attack and attempted to clear off their aircraft but were unable to electrically jettison their external stores. GREEN 3 was able to manually jettison his external stores as the MIG fired at him from a 90° angle off deflection. The MIG then pulled in behind GREEN 4 who could not jettison his stores. GREEN 4 broke harder and was able to dive away from the MIG and accelerate away from him in afterburner.

The flight attempted to rejoin after the engagement but was hampered by the haze. GREEN 2 and 3 were able to get together quickly; and then, GREEN Lead, noting that 2 and 3 were together, elected to follow GREEN 4 and provide cover for him as he egressed the area with all external stores.

GREEN 2 and 3 set up a search pattern for the downed F-105 pilot (see Event II-1) until they reached Bingo fuel. They then returned to the tanker, refueled, and returned to the search area to continue searching for the downed aircrew and CAP the rescue helicopter. At the second Bingo fuel, GREEN 2 and 3 returned to Danang and recovered. The flight time was 3 hr and 35 min, and no member of GREEN flight received any damage.

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Event III-3

Aircraft Involved: Four F-100Ds vs two
MIG-17s

Results: No damage

Vicinity of Encounter: 20°00'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 April 1965/1150H

PURPLE flight (four F-100Ds) was fringed to fly MIGCAP support for a force of F-105s attacking the Than Hoa Bridge at 19°50'N/105°48'E. Their assigned orbit was north of the target between the MIG airfields near Hanoi and the target. At least one flight of four F-100s was in the area to fly RESCAP for the same mission (See Event III-2).

2. MISSION ROUTE

PURPLE flight departed Danang, proceeded to rendezvous with a KC-135 tanker and then paralleled the coastline about 10 mi off shore to the orbit area.

3. AIRCRAFT CONFIGURATIONS

F-100D PURPLE 1, 2, 3, 4

- 2 - AIM-9B IR SIDEWINDER missiles (at least one on each inboard pylon)
- 2 - 335 gal external fuel tanks
- 4 - M-39 internally mounted 20mm cannons, 200 rds HEI for each cannon

MIG-17 MIG 1, 2

Cannons

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 3000 ft scattered, 12,000 ft scattered, 20,000 ft thin cirrus overcast with 3-5 mi visibility in a haze layer extending from the surface up to 12,000 ft.

	PURPLE	MIG
	1 2 3 4	1 2
Altitude:	18,500-20,000 ft	About 17,000 ft
Heading:	Southerly	About 225°
Speed:	300-350 KCAS	About 450 KCAS
Fuel State:	Fuel in drops	Unknown
Flight Formation:	Fluid Four	Echelon

5. INITIAL DETECTION

The lead element was turning through an easterly heading in a loose right orbit at 18,500 ft when PURPLE 2, flying on lead's right wing, element high left, saw two MIG-17s at his 9 o'clock about 3 mi away, 1000-2000 ft low on a southeast heading. Just prior to the MIG sighting, PURPLE 2 observed a flight of two F-105Ds at his 1 to 2 o'clock position about 5 mi away and about 2000 ft low in a left orbit passing through a southerly heading. PURPLE 2 felt that the MIGs were being vectored under GCI control toward the F-105s.

6. ACTION INITIATED

PURPLE 2 called the MIGs to PURPLE Lead and started looking for the MIG alert code word to warn the F-105s. PURPLE Lead saw some F-8s at his 10 o'clock high and thinking these were the aircraft PURPLE 2 was calling, he continued the loose right turn and called back, "Negative - friendly aircraft", attempting to keep radio chatter to a minimum.

7. SITUATION DEVELOPMENT

PURPLE 2 realized that there were confirmed MIG-17s now at 11 o'clock low, and crossing, and PURPLE Lead acknowledged with a quick reversal to the left and called, "Let's have at them." PURPLE 2 vectored lead back to the right in a descending turn in afterburner and the element was able to close on the MIGs, but not before the lead MIG shot and critically damaged the lead F-105. PURPLE Lead fired a missile that passed over the MIG's right wing without detonating and PURPLE 2 followed the second MIG up into the top half of a loop. PURPLE 2 yo-yoed over the top as the second MIG completed his loop and started a second loop. PURPLE 2 then dove to the right and met the MIG head-on firing 280 rds of 20mm from about 1000 ft down to 800 ft with no observed results. The first MIG broke left and up hard, then yo-yoed back down on the second F-105 critically enough that the pilot was forced to bail out near Danang.

PURPLE Lead and 2 rejoined and resumed MIGCAP with 3 and 4.

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8. ORDNANCE

	(No. fired/No. hit)		<u>Remarks</u>
	<u>Missiles</u>	<u>Cannons</u>	
PURPLE 1	1/0	-	
PURPLE 2	-	1/0	280 rds HEI
PURPLE 3	-	-	
PURPLE 4	1/0	-	No target
MIG-17	2/2	2/2	Hit two F-105Ds

9. EQUIPMENT PROBLEMS

None mentioned.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-100 Time</u>	<u>Combat Missions</u>	<u>Remarks</u>
PURPLE 1	7000	700	20	Sqd C.O., ADC background P-40, P-51 in WW II
PURPLE 2	2600	1800	30	
PURPLE 3	Unknown	---	Very experienced in tactical fighters---	
PURPLE 4	Unknown	---	Very experienced in tactical fighters---	

Comments on this Encounter

PURPLE 1 and 2 - Too much chatter on primary frequency. Flights were attempting to practice radio silence but just too many aircraft on one frequency.

PURPLE 1 - Day fighters not too effective over enemy GCI environment. MIGs easily slipped around small number of MIGCAP aircraft.

PURPLE 1 - Navy aircraft passing through the target area added to the location, identification, and discriminative task.

PURPLE 1 - F-105s orbiting on ingress and egress were very hazardous.

PURPLE 1 - Feels his flight of F-100s did a poor job of maintaining flight integrity.

11. DATA SOURCES

Project Interviews: PURPLE 1 - 6 November 1968, and PURPLE 2 - 4 November and 6 November 1968.

Messages, Reports: 2 AD 060740, April 1965.

12. NARRATIVE DESCRIPTION

PURPLE flight, consisting of four F-100Ds piloted by four very experienced tactical fighter pilots, was assigned a MIGCAP mission in support of a force of F-105s attacking the Than Hoa Bridge at 19°50'N/105°48'E in North Vietnam. These aircrews had an opportunity to view the damage to an F-8 Crusader that recovered at Danang AB on the previous day, the first U.S. aircraft damaged as a result of air-to-air conflict in SEA.

PURPLE flight departed Danang, proceeded to take on a full load of fuel from a KC-135 tanker and then paralleled the coastline about 10 mi off shore to their orbit area just north of Than Hoa. The flight established a figure eight orbit at 18,500 ft for the first element, about 20,000 ft for the second element, and were attempting to hold fluid four position at 300-350 KCAS.

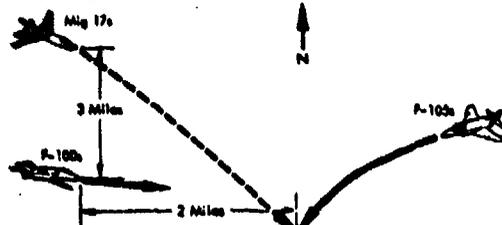
The orbit was mostly over land with hazy weather conditions limiting visibility, a broken cloud layer at 15,000 ft and thin overcast at 20,000 ft further restricted visibility over enemy territory where the enemy had a GCI capability. U.S. Navy F-4 and F-8 strike and BARCAP aircraft were in the area. U.S. Air Force F-105s were orbiting prior to being called into the target, were shuttling in and out from the target, and then were orbiting over the water for rejoin which further complicated the task of acquiring, identifying and stopping MIG aircraft vectored into the area by GCI radar. Another complication was the need for strict discipline in reducing the use of the single mission frequency used by about 70 aircraft. PURPLE Flight was instructed to call out only positively confirmed MIG aircraft. However, the radio chatter between the mission coordinator and F-105 flights under his direction fairly blocked the frequency.

When the action started, PURPLE Lead was turning through an easterly heading in a shallow right turn at 18,500 ft with PURPLE 2 on his right side and the second element was back to the left and just under the overcast at 20,000 ft. PURPLE Lead had just observed

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Event III-3

a flight of Navy F-8 aircraft at his 10 o'clock, a little high, but far out when PURPLE 2 identified two MIG-17s in close formation at his 9 o'clock about 2,000 ft low, 3 mi range in a loose left turn. The MIGs were moving faster than PURPLE flight and the MIGs' south-east heading would take them in front of PURPLE flight toward a flight of F-105s that PURPLE 2 had just seen at his 1 o'clock position about 5 mi range. The F-105s were observed in a left orbit turning from west to south and a few thousand feet below PURPLE flight, probably at about 300-325 KCAS (see Event II-1).



When PURPLE 2 called the MIG-17s, PURPLE Lead thought he was referring to the Navy aircraft and in an effort to reduce radio chatter replied, "Negative PURPLE flight, friendly aircraft". PURPLE 2 also saw the Navy aircraft and replied that they were confirmed MIG-17s passing under PURPLE flight's 11 o'clock low, on a 45° angle. At this time PURPLE 2 was looking for the MIG alert code word to relay the warning to other aircraft in the area.

At the second call from PURPLE 2, PURPLE Lead called, "Let's have at them", and racked the F-100 up on the left wing. PURPLE 2 transmitted the MIG alert and called PURPLE Lead to a right descending break since the MIGs had passed in front of the F-100s by this time. PURPLE Lead and 2 lit afterburner and reversed into a right descending turn that eventually put the MIGs at 11 o'clock about 10,000 ft range. A few more vectors from PURPLE 2 put the MIGs at the lead element's 12 o'clock position. The F-100s were initially falling further behind, but were able to accelerate in the afterburner descent to .9 to .95 Mach (480 to 500 KCAS) and close on the MIGs as the MIGs closed on the F-105s, which were still in a loose left orbit.

PURPLE Lead and 2 saw the lead MIG-17 fire on the lead F-105. PURPLE 2 saw hits on the F-105 with debris coming off the F-105. The Number 2 MIG maintained close formation on the lead MIG's right wing and was not observed to fire. PURPLE Lead hesitated to fire an AIM-9B IR missile at the MIG because of the proximity of the F-105 and by the time he was sure the MIG was the target, he had closed to within 3000 ft of the MIG. PURPLE Lead fired the SIDEWINDER as PURPLE 2 was calling that "He had his pipper on a MIG - Was he clear to fire?"

The SIDEWINDER missile passed 10 ft over the right wing of the lead MIG, but now the F-105 was in afterburner. PURPLE Lead elected not to fire the second missile for fear of hitting the F-105 and decided to close for a gun attack.

He cleared PURPLE 2 to fire and glanced over his shoulder to verify the position of PURPLE 2.

The two MIGs broke hard up when the first missile passed them, MIG 1 turning a little to the left and MIG 2 a little to the right, both flight paths about 20° off the vertical. The F-105 went into a sharp descending spiral so that when PURPLE Lead again locked forward, there were no MIGs or F-105s. The first MIG is reported to have yo-yoed onto the second F-105 and damaged that aircraft enough that the pilot could not attempt a landing and on bailout, experienced a chute malfunction. Both F-105 aircrews were lost.

PURPLE 2 followed the second MIG into the vertical but could not match the rate of turn and overshot the MIG's flight path. The MIG continued over the top pulling into a tight, off vertical loop and continued up in a second loop which would put him behind PURPLE 2. However, PURPLE 2 pulled up into a sort of high-speed yo-yo rather than the loop and when the MIG started back up into the second loop, PURPLE 2 whipped his F-100 into a right descending turn and cut into the top of the MIG's projected flight path. PURPLE 2 put his pipper on the MIG and fired 280 rounds of 20mm HEI in a 35° to 40° dive at the MIG with about 400 KCAS from a range of 1500 ft down to about 800 ft but did not observe any hits. The MIG was inverted and PURPLE 2 was right side up. PURPLE 2 had good tracking with his sight set on air-to-air, uncaged and manually ranged to 1500 ft.

PURPLE 2 passed over the MIG, belly to belly, passed through the MIG flight path with a bit of turbulence and banked to look for the MIG. The MIG went down into the cloud deck and was not seen again.

PURPLE Lead called the flight together so that they could be reformed and ready for additional MIG attacks. PURPLE 3 had jettisoned all stores including his missiles with the emergency jettison button and PURPLE 4 had jettisoned his tanks on the initial MIG break. PURPLE Lead and 2 jettisoned their tanks after rejoin to be ready for the next attack. PURPLE 4 fired an AIM-9B missile without a target, apparently to confirm its operational capability.

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Event III-3

PURPLE Lead reported that a missile passed between his aircraft and the MIG when he was initially about 10,000 ft behind the MIG. PURPLE Lead does not think that the missile was that of PURPLE 4 but rather a missile from a Navy Crusader.

PURPLE flight did not see any additional MIGs and returned to Danang with no further incidents.

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Event III-4

Aircraft Involved: F-104s vs MIGs

Results: No damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1965/Unknown.

11. DATA SOURCE

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

No other information is available except that the MIGs involved were from Hinan Island.

Event III-5

Aircraft Involved: One RB-66 vs MIG

Results: Sighting only

Vicinity of Encounter: 19°13'N/105°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1965/1235H.

11. DATA SOURCE

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

A B-66 saw an unidentified type MIG at 20 miles. The unidentified aircraft was at 25,000 foot altitude and was turning away.

Event III-6

Aircraft Involved: MIGCAP Flight vs two MIGs

Results: No damage

Vicinity of Encounter: 20°20'N/105°44'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1965/1300H

11. DATA SOURCE

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE flight, composed of aircraft of an unknown type, was on a MIGCAP mission when they saw a silver flash at 31,000 feet altitude. The MIG then jettisoned tanks and reversed course when approached. A second MIG was then seen alongside the first. BLUE flight started to go after the MIGs but stopped after a brief chase and broke off due to fuel.

SECRET

Event III-7

Aircraft Involved: Four A-1Hs vs two MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 20°10'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 June 1965/1835H

Four A-1Hs were on a recap mission. One other flight of four A-1Hs were about 30 miles distant, but were not on the same mission.

2. MISSION ROUTE

BLUE flight penetrated NVN coast approximately 5 miles south of Thanh Hoa, thence northwest at heading of 330°, turning to 315° about time of action.

3. AIRCRAFT CONFIGURATION

BLUE 1, 2, 3, 4

800-20mm rounds (4-20mm cannon)
Two LAU pods, 19 rounds each
Two 300 gal ext tanks
IFF, radio, TACAN

MIG 1, 2

Two rockets each (about 8" DIA)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: High overcast, solid ceiling 13,000 ft, clear, dusky as sun was starting to set.

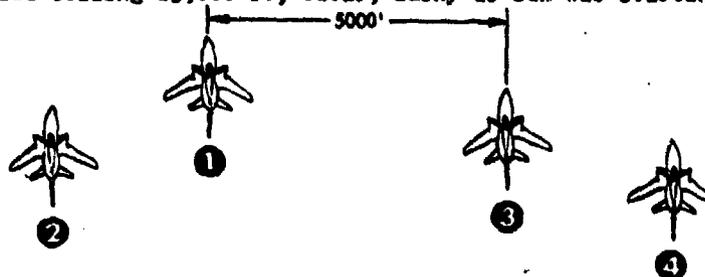
Altitude: 9000 ft

Heading: 310 degrees

Speed: 150 KIAS

Fuel: Unknown

Flight Formation:



5. INITIAL DETECTION

Warning of MIGs was first received by report from a picket destroyer, which was tracking MIGs as they closed on rear of first section. Visual recognition of the MIGs occurred as they overtook the first section of BLUE flight and passed it to the right.

6. ACTION INITIATED

After MIGs passed BLUE flight they turned back to launch a head-on attack. BLUE 1 observed MIGs firing two rockets. BLUE 1 ordered BLUE flight to reverse course and dive. All BLUE craft executed a split-S and started a rapid descent.

7. SITUATION DEVELOPMENT

After the MIGs turned back to attack BLUE flight, one MIG pursued BLUE 1 and 2 while the other MIG pursued BLUE 3 and 4. This pursuit took place at very low altitude in the form of a circular route around a ridge line. The engagement lasted about 5 minutes without one MIG breaking off. On the final attack one MIG attacked BLUE 1 and 2, and BLUE 3 and 4 on a head-on pass fired on the MIG, obtaining hits. One of the MIGs, hit by BLUE 3, then crashed.

8. ORDNANCE

	No. fired/No. h.		Remarks
	Cannon	Rockets	
BLUE 3	2/1	--	About 30 rounds per gun
BLUE 4	3/0	--	About 30 rounds per gun
MIG 1	No firing	2/0	
MIG 2	1/0	2/0	Fired unknown number of times

9. EQUIPMENT PROBLEMS

BLUE 3 indicated that his radio became inoperative en route to the area. Radio became operative later. No other significant problems, although as a result of the encounter three of the four engines were overboosted.

SECRET

SECRET

Event III-7

10. AIRCREW COMMENTS

BLUE 1 believed that, had he realized the hostile rockets were of the ballistic type, they could have downed the MIGs at the outset with their 20mm cannon, instead of talking evasive action.

The SAR destroyer's GCI assistance was fantastically helpful.

The MIG pilot that stayed with them was good.

BLUE 1 was surprised at the MIG-17 maneuverability. The A-1H could not complete a 180° turn in the time it took the MIG-17 to execute a wing over and roll in for a good attack.

11. DATA SOURCES

Messages, Reports: Debrief of BLUE 1 (17 Jan 67)
Debrief of BLUE 3 (17 Jan 67)
CTG 77.6 MSG 201523Z

12. NARRATIVE DESCRIPTION

The four A-1Hs entered North Vietnam from the sea, penetrating the coast about 5 miles south of Thanh Hoa. They then took up a heading of about 315°, at 9000 ft and 150 KIAS. The flight was in two sections abreast of each other and about 5000 ft apart, with BLUE 3 and 4 to the right of BLUE 1 and 2.

When at a position of 20°10'N/105°25'E the SAR picket destroyer reported two non-squaking, high speed contacts closing from a bearing of 347° and at 45 miles (about 135 miles from the SAR destroyer). The destroyer tracked the bogies and called them at 1, 3, and 5 o'clock to BLUE flight. The contacts were lost at 12 miles at 6 o'clock from BLUE flight. (It was felt that this was due to the fact that the targets had turned tail to the ship.)

BLUE 1 looked behind him, and within a short time picked up two bogies at 6:30 to 7 o'clock about 3000 ft above BLUE flight. (This put the bogies at about 12,000 ft altitude and 500 to 1000 ft below the overcast.) When seen, the bogies appeared to be about 2 miles away.)

The bogies, on a straight course, paralleling that of the A-1Hs, passed off to the left about 1 to 1-1/2 miles away without changing altitude. The bogies were estimated to be flying at about 350 to 400 kts. The wingman of the bogies was on the right and they were in a tight formation.

As the bogies passed out ahead, they were identified as MIG-17s due to their outline and shape. BLUE flight turned slightly toward the MIGs and started a slow descent. BLUE 1 felt that the MIGs were heading for the other A-1Hs, having lost contact with BLUE flight. He therefore called the other flight to warn them of the MIGs' presence.

As the MIGs got about 5 miles in front of BLUE flight, they abruptly turned 180° to the left and started back in a descent towards BLUE flight, approaching from 11 to 11:30 o'clock. At this time BLUE flight was at 8000 to 8500 ft altitude indicating 180 to 190 kts.

BLUE flight set up for a head-on pass at the MIGs since this type of attack was best for the A-1s. When the MIGs reached 3 to 4 miles range,¹ the lead MIG (MIG-1) launched two large rockets. BLUE 1 felt that these were air-to-air missiles and broke the flight off from the head-on attack and started to execute a split-S to the right and down. During this maneuver, BLUE 1 observed the rockets to burn out on a ballistic trajectory off to the right. BLUE 3 also observed one smoke trail to his left, after about 3000 ft of descent.

In the 50 to 60 degree dive, BLUE flight reversed course and leveled off at 150 to 200 ft AGL. BLUE flight was then heading about 140 degrees, toward the coast; and BLUE 3 and 4 were several hundred feet above BLUE 1 and 2 and were off to the beam.

At this point, BLUE flight observed the MIGs to be close behind them. One MIG was following each section of BLUE flight.

BLUE 1 observed a MIG to be 150 to 300 ft behind BLUE 3 and 4, firing steady (not in bursts). The tracers appeared to be passing beneath BLUE 3 and 4. Although there was a MIG close behind BLUE 1 and 2, he was not observed to fire.

BLUE 1 and 2, who had full power at this time, jettisoned tanks and broke right, around the edge of a karst cliff, putting the karst between them and the MIG.

As BLUE 1 and 2 broke right, BLUE 3 and 4 observed smoke trails and a rocket exploding on the ground in front of BLUE 1 and 2. BLUE 3 saw the MIGs behind them and jettisoned tanks and rolled off to the left. He observed the MIG behind him to continue to fire. BLUE 3 kept moving in and out of the MIGs' fire as the MIGs tried to pull lead.

¹Due to the lighting conditions, the range was difficult to estimate.

SECRET

Event III-7

Finally the MIG (MIG-2) overshot and climbed away. As the MIG did so, BLUE 4 got a snapshot but missed.

This MIG (MIG-2) then climbed up above BLUE flight, and although he stayed for the rest of the incident, did not again enter the flight.

BLUE 3 and 4 observed the other MIG (MIG-1) to follow BLUE 1 and 2 and failing on one pass, reversed for another from head-on. However, the MIG did not make it successfully and broke off without firing. BLUE 1 and 2 were at this time pulling maximum g's (in the buffet) and were in maximum power, keeping the airspeed at about 200 kts.

BLUE 1 and 2 ended up on the opposite side of the karst ridge from BLUE 3 and 4. The MIG, by climbing and executing a nose high reversal, could reposition on BLUE 1 and 2. BLUE 1 and 2 kept the MIG from getting a good position on them by maneuvering to keep the ridge between them and the MIG as the MIG rolled in. This was done by maneuvering through a saddle in the ridge. The MIG made several passes in this manner by use of the yo-yo maneuver.

After going around several times, BLUE 1 observed the MIG to be above them in a 90° bank as they passed through the saddle.

BLUE 1 and 2 passed through the saddle with the MIG behind. At this time BLUE 3 and 4 came back up over the karst at a 90° deflection to the MIG, and BLUE 3 fired but missed, observing the tracers to pass in front of the MIG.

The MIG then turned in to BLUE 3 and 4 in a climbing pass as BLUE 3 and 4 descended toward the MIG. On a head-on pass, BLUE 3 and 4 each had a good shot, as the MIG passed underneath BLUE 3 and above BLUE 4.

BLUE 3 held the nose down to stay on the MIG; and just before he broke off, he observed tracers go into the MIG and pieces come off. BLUE 3 and 4 turned back on him as BLUE 4 got off a quick burst but missed.

The MIG slowly increased his angle of bank and impacted the ground, exploding on impact and burned. The MIG was in a 90° bank when he passed BLUE 3 and 4.

BLUE 1 and 2 heard BLUE 3 call the hit on the MIG; and after passing to the other side of the karst, saw the burning wreckage.

All members of the flight then saw the other MIG depart toward Hanoi, climbing into the overcast. BLUE 1 and 2 started for the coast, with BLUE 3 and 4 following by about 15 miles. At this time the SAR destroyer called to say that there were numerous unidentified contacts coming to intercept them, so BLUE flight stayed at low altitude to the coast. The contacts broke off as BLUE flight passed over the coast.

BLUE 3 and 4 pulled 3 to 4 g's during their maneuvers. Although the rocket pads were armed, they were not fired for fear of hitting the other section. BLUE 3 fired with a fixed sight, with the pipper set to zero deflection. BLUE 3 utilized the tracers to assist in aiming.

BLUE 1 did not expect the MIG-17 to try to get down low and mix it up with the A-1s. During the engagement the altitude never exceeded about 700 ft except for the MIG's yo-yo which went up to about 2000 ft.

MIG-1 was never observed to fire his cannon.

Event III-8

Aircraft Involved: Two RF-101s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°45'N/104°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 October 1965/day

8. ORDNANCE

MIGs fired cannon.

11. DATA SOURCES

Messages, Reports:

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

Two RF-101s on a reconnaissance mission near Yen Bai were attacked by two MIG-17s. No damage.

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Event III-9

Aircraft Involved: Two RF-101s vs two MIGs
Results: No damage
Vicinity of Encounter: 21°41'N/104°58'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 November 1965/1445H

Two RF-101s (BLUE Flight) were on a photo-reconnaissance near the city of Yen Bai, NVN.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	<u>BLUE</u>
	<u>1</u> <u>2</u>
Altitude:	9,000 ft
Heading:	031°
Speed:	Unknown
Fuel State:	Unknown
Flight formation:	Loose staggered trail with wingman on the left.

5. INITIAL DETECTION

BLUE 2 sighted two MIG-type (model unknown) aircraft at 4 o'clock high (15,000 ft) crossing above and behind BLUE Flight. Positive identification was made at this time.

6. ACTION INITIATED

BLUE Flight maintained course and engaged afterburner for acceleration.

7. SITUATION DEVELOPMENT

The MIGs pulled up to a high perch position on the left side of BLUE Flight, then broke down to the right and opened fire (cannon) on BLUE 2 who was left and behind BLUE 1. BLUE 1 completed his photo run, and then broke down to the left while BLUE 2 maintained course. BLUE 2 pulled up into a steep climb until reaching 300 kts, then did a split-3 down to 500 ft with the MIGs in pursuit. During this maneuver, BLUE 1, ahead of BLUE 2, was able to elude the MIGs and make a maximum speed egress toward friendly territory. BLUE 2 increased to maximum speed and descended to 100 ft AGL. He elected to cross Yen Bai at low altitude in hopes of exposing the MIGs to their own ground fire. (Yen Bai is a heavily defended area with approximately 200 guns.) BLUE 2 crossed Yen Bai at 100 ft while receiving intense flak and AW fire; however, his high airspeed kept him out in front of the ground fire. One min and 30 sec after crossing Yen Bai, BLUE 2 entered a fog-filled valley and executed a rapid climb to 44,000 ft. The MIGs were not seen after this maneuver. Neither BLUE 1 or 2 received any damage and returned home safely.

8. ORDNANCE

MIGs - cannon fire - no hits

11. DATA SOURCES

2nd AD, OPREP-3, 151536Z Nov 65, DOCO-O 07312

12. NARRATIVE

See items 5-7.

Event III-10

Aircraft Involved: Two RF-101s vs two MIG-?
Results: Sighting only
Vicinity of Encounter: 21°38'N/106°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time 16 November 1965/1638H

11. DATA SOURCES

Messages, Reports:

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE Flight sighted two MIGs at 10 nmi range. BLUE Flight popped into the clouds, and lost sight of MIGs.

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Event III-11

Aircraft Involved: Six A-4Es and two A-4Cs vs
at least three MIG-17s

Results: No damage

Vicinity of Encounter: 21°04'N/106°32'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 November 1965/1448H

Eight A-4Es (BLUE and PURPLE Flights) and four A-4Cs (GREEN Flight) were on a strike mission against the Me Xa Highway Bridge (JCS 18.66). There were support aircraft for this mission.

2. MISSION ROUTE

The aircraft were from the USS Ticonderoga, operating from YANKEE Station.

3. AIRCRAFT CONFIGURATIONS

A-4E BLUE and PURPLE

2 - MK-82

2 - MK-83

A-4C GREEN

2 - MK-83

Bombs

8. ORDNANCE

(No. fired/No. hits)

	<u>Air-to-Air</u> <u>Rocket</u>	<u>Cannon</u>	<u>Remarks</u>
MIG 1	1/0		One rocket at PURPLE Flight
MIG 2	1/0		One rocket at PURPLE Flight
MIG 3		1/0	

9. EQUIPMENT PROBLEMS

One member of BLUE Flight's gun jammed (either BLUE 3 or BLUE 4).

11. DATA SOURCES

Messages, Reports:

CTG 77.7 251030Z OPREP-3
CINCPACFLT Staff Study 3-67
USN COMBAT REPORT FORM 3480-4

12. NARRATIVE DESCRIPTION

The weather was one-tenth cloud cover with 15 mi visibility. At 1445H PURPLE Flight was retiring at 500 ft altitude and 450 KIAS from a bombing run when they were attacked by two MIG-17s which fired rockets without obtaining hits. PURPLE Flight was unaware of this attack which was witnessed by BLUE 1 and 2 from 10,000 ft altitude as BLUE Flight rolled in on the target. The MIGs attacked PURPLE from 2000 ft altitude from the 5:30 o'clock high position.

A single MIG-17 (MIG 3) made a pass on BLUE 3 and 4 while they were in their dive bomb run and fired 23mm or 37mm cannon. BLUE 3 and 4 made an abrupt turn into the MIG and forced him to overshoot and pass between BLUE 3 and 4, under BLUE 3 and over BLUE 4. BLUE 3 and 4 were at 10,000 ft at the time and 350 KIAS, and the MIG made a pass from 8000 ft altitude from 4 o'clock low. Either BLUE 3 or 4 got into a gun tracking position but his guns would not fire. BLUE 3 and 4 then continued on and bombed the target, having received no damage from the MIG attack.

As GREEN 3 and 4 approached the bomb release point, they were attacked by two MIG-17s which fired cannon. GREEN 3 and 4 were at 6000 ft and 450 KIAS and the MIG attacked from 3000 ft altitude at 6 o'clock low. BLUE 3 and 4 jettisoned their tanks and one of the A-4s was hit by a single 23mm round. He retired from the scene at 1415H and recovered without further incident.

The other A-4C was repeatedly engaged by three MIG-17s at 3000-5000 ft altitude just east of the target area for about 5 min (he disengaged at 1653H). This A-4 encountered MIGs a total of five times. Although the MIGs, in five separate passes, fired cannon, no damage was sustained. The first encounter was by a single MIG-17 who made a flat pass from 9 o'clock, firing cannon from 3000 ft range. Both the MIG and the A-4 were at 3000-5000 ft, and the A-4 was at 500 KIAS. The second encounter was an attack by two MIG-17s, one from 7 o'clock and another from 4 o'clock in flat passes. The MIGs were at

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Event III-11

4000 ft altitude and fired cannon from a range of 1000 ft or less. The A-4 was at 5000 ft altitude and 500 KIAS. The last encounter was again by two MIG-17s who made a pass from 5 o'clock and 7 o'clock firing cannon from 2000 ft range. The MIGs and the A-4 were at 3000-5000 ft and the A-4 was at 500 KIAS.

All A-4 aircraft retired from the target area as soon as they had disengaged from the MIGs. The F-8E BARCAP attempted to locate the MIGs but were unsuccessful.

The enemy aircraft had two red stripes around the after fuselage and a large single star on the vertical tail. One pilot reported a good view of a dark-colored star with a yellow border.

Event III-12

Aircraft Involved: Two RF-8As vs two
MIG 19s

Results: Sighting only

Vicinity of Encounter: 20°08'N/107°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 November 1965/1510H.

11. DATA SOURCE

Project Interviews: None.

Messages, Reports:

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

Two RF-8As (BLUE Flight) at 25,000 feet altitude saw two MIG 19s at low altitude. BLUE Flight was in orbit, waiting to make a photo BDA (bomb damage assessment) run on the target hit by the aircraft of Event III-11. There was no engagement with the MIGs, who apparently did not see BLUE Flight.

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Event III-13

Aircraft Involved: Two RF-101s vs four to six
MIGs

Results: No damage

Vicinity of Encounter: 21°47'N/104°59'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 November 1965/1123H

Flight of two RF-101s (BLUE Flight) in NVN.

5. INITIAL DETECTION

On scanning aft, the number two man of BLUE Flight sighted four to six MIGs attacking and observed gun flashes.

6. ACTION INITIATED

BLUE Flight executed a left break in afterburner and descended to 200 ft AGL.

7. SITUATION DEVELOPMENT

No hits were sustained by BLUE Flight, and the MIGs made no further pursuit.

8. ORDNANCE

Cannon

MIGs No hits

11. DATA SOURCES

Messages, Reports:

CPF 262301Z Nov 65, (Navy Msg)
CINCPACFLT Staff Study 3-67

Event III-14

Aircraft Involved: One RF-8A and one F-8C vs
one MIG-21 (probable)

Results: Sighting only

Vicinity of Encounter: 19°40'N/107°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 January 1966/1200H

Two F-8s (BLUE Flight) on a photo reconnaissance mission in NVN. One aircraft was the photo airplane, the other was acting as escort.

5. INITIAL DETECTION

BLUE Flight sighted a delta wing silver aircraft on a westerly heading at 19°40'N/107°30'E at a range of 8 nmi (probable MIG-21). The unidentified aircraft passed directly over BLUE Flight at an estimated altitude of 40,000 ft. The bogey made no heading change, and no engagement followed.

11. DATA SOURCES

CTG 77.3, OPREP-4/068, 150658Z Jan 66

12. NARRATIVE DESCRIPTION

See item 5.

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Event III-15

Aircraft Involved: Two F-4Bs and one EA-3B vs
Radar Contact

Results: Radar contact

Vicinity of Encounter: 19°45'N/107°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 January 1966/0950H

Two F-4Bs (BLUE Flight) were on BIG LOOK CAP.

11. DATA SOURCES

CTG 77.6 190420Z Jan 1966 OPREP-3

12. NARRATIVE DESCRIPTION

BLUE Flight held two targets on airborne intercept gear at 50 mi at approximately 0950H. The estimated position of the targets was 30 mi southeast of Haiphong with an estimated speed of 350-375 kts and estimated altitude of 25,000 ft on a northerly course. The SAR DD could not confirm targets and directed BLUE Flight to remain with BIG LOOK EC-121 in the vicinity of 19°45'N/107°20'E.

Event III-16

Aircraft Involved: One EA-3B vs Radar Contact

Results: Radar contact only

Vicinity of Encounter: 20°30'N/108°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 January 1966/0953H

An EA-3B (GREEN Flight) from the Kitty Hawk was on ELINT mission over the Gulf of Tonkin.

11. DATA SOURCES

CTG 77.6 190420Z Jan 1966 OPREP-3

12. NARRATIVE DESCRIPTION

GREEN Flight, in position 20°30'N/108°18'E, altitude 30,000 ft, called MIG attack imminent at 0953H when a steady, apparent lock-on from a SCAN ODD signal was received from a bearing of 300T. GREEN Flight broke away from signal and accelerated. The signal shifted to search mode and the lock-on was not re-acquired. GREEN Flight returned to the carrier without further incident.

No visual contact was made at any time.

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Event III-17

Aircraft Involved: One F-4B and one EA-3B vs
Unidentified contact

Results: Radar contact

Vicinity of Encounter: 19°44'N/106°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 January 1966/0832H

An EA-3B (GREEN Flight) escorted by one F-4B (BLUE Flight) was flying ELINT in support of a BLUE TREE mission.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	<u>BLUE</u>	<u>GREEN</u>
<u>Altitude:</u>	30,000 ft	30,000 ft
<u>Heading:</u>	320°	320°
<u>Speed:</u>	.7 IMN	.7 IMN
<u>Fuel State:</u>	Unknown	Unknown
<u>Flight Formation:</u>	Unknown	Unknown

5. INITIAL DETECTION

GREEN Flight received a signal from a bearing of 350°, with contact closing from 20°20'N/106°25'E.

6. ACTION INITIATED

GREEN broke away and BLUE Flight attempted to acquire contact on radar.

7. SITUATION DEVELOPMENT

See item 12.

8. ORDNANCE

None

11. DATA SOURCES

CTG 77.6 200522Z Jan 66 OPREP-3

12. NARRATIVE DESCRIPTION

GREEN Flight, escorted by BLUE Flight, flying ELINT in support of a BLUE TREE mission, received indications of MIG airborne intercept tracking at position 19°44'N/106°30'E, time 0032Z. BLUE and GREEN Flights were flying at 30,000 ft, course 320°, and speed Mach 0.7 indicated at the time. The signal was first received from bearing 350° and the contact appeared to be closing from position 20°20'N/106°25'E. GREEN Flight gave warning to BLUE Flight and then broke away. GREEN Flight lost contact immediately after breaking.

BLUE Flight turned into the contact but was unable to acquire the target either visually or on radar. GREEN and BLUE Flights then returned to the carrier. Approximately 2 min of tape of the signal were recorded.

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Event III-18

Aircraft Involved: One F-4B vs two unknowns

Results: Radar contacts

Vicinity of Encounter: 18°40'N/107°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 February 1966/1000H

One F-4B (BLUE Flight) was an escort mission.

4. FLIGHT CONDITIONS

Weather: Unknown

	<u>BLUE 1</u> (both contacts)
<u>Altitude:</u>	22,000 ft
<u>Heading:</u>	335°
<u>Speed:</u>	320 KIAS
<u>Fuel State:</u>	Unknown Unknown
<u>Flight Formation:</u>	N/A

5. INITIAL DETECTION

BLUE Flight detected a contact on radar bearing 60°.

The second contact was picked up bearing 270° at 15 nmi range.

6. ACTION INITIATED

At both contacts BLUE Flight attempted to close on the target.

7. SITUATION DEVELOPMENT

See item 12.

8. ORDNANCE

None

11. DATA SOURCES

CG 1st MAW 081204Z Feb 66 OPREP-3

12. NARRATIVE DESCRIPTION

An F-4B was an escort mission weaving east to west and making good a track generally 335° at 320 KIAS and 22,000 ft. BLUE Flight contacted (on radar) an unidentified aircraft at 080200Z bearing 60° and located at approximately 18°40'N/107°42'E and orbiting. BLUE chased the contact to within 12 n mi range when the unidentified aircraft turned to approximately 18,000 ft, speed unknown. BLUE Flight returned to escort without visual contact.

At 080210Z, BLUE Flight, under same flight conditions as described above, contacted an unidentified aircraft orbiting at approximately 18,000 ft at location 18°40'N/107°42'E bearing 270° at 15 n mi from BLUE Flight. BLUE Flight closed to within 8 n mi when unidentified aircraft left orbit and proceeded on course 280° (garbled) speed unknown. BLUE Flight again returned to escort without visual contact.

SECRET

Aircraft Involved: One EA-3B vs three Contrails
Results: Sighting
Vicinity of Encounter: 20°00'N/111°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 February 1966/1349H

One EA-3B, BLUE Flight, flew a mission to update the electronic order of battle of Hainan Island.

2. MISSION ROUTE

The mission track is shown in the following table:

<u>Track Coordinates</u>	<u>Time</u>
Launch Cubi Point	0310Z
17°36'N/110°23'E	0432Z
18°00'N/108°15'E	0448Z
19°00'N/108°00'E	0458Z
18°00'N/108°15'E	0511Z
17°36'N/110°23'E	0523Z
20°00'N/111°50'E	0547Z
17°36'N/110°23'E	0613Z
Land Cubi Point	0730Z

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with visibility unlimited. Contrail level unknown.

BLUE

Altitude: 30,000 ft
 Heading: 030°
 Speed: Unknown
 Fuel: Unknown
 Flight Formation: N/A

5. INITIAL DETECTION

BLUE Flight observed two contrails at 8 o'clock high.

6. ACTION INITIATED

BLUE Flight reversed course.

7. SITUATION DEVELOPMENT

See item 12.

11. DATA SOURCES

VQ-1 CUBI PT 101234Z Feb 66 OPREP-4

12. NARRATIVE DESCRIPTION

During the mission the majority of intercepts were of the EW/GCI type. A SCAN FIX ECM intercept occurred a few seconds after the contrails were observed, and the height finder at Lung Men was active. BLUE Flight reversed course at 0549Z, position 20°00'N/111°50'E, maintaining visual contact and increased speed to .82 Mach. Bogeys reversed course and rapidly overtook BLUE Flight on parallel course commencing at 5 o'clock position. At this time a third contrail was observed.

When two bogeys reached the 3:30 o'clock position, they turned toward BLUE Flight and pushed over in a descent. Just prior to leaving the contrail level, the bogeys became visible but unidentifiable.

BLUE Flight commenced a rapid descent at 0554Z position 19°35'N/111°35'E as bogeys descended from the contrail level. The db level increased from 12 to 24 as the bogey's bearing moved aft. SCAN FIX and height finder contacts were lost in descent.

BLUE Flight commenced climb at 0601Z position 18°50'N/111°10'E and SCAN FIX was re-acquired at 0604Z at 18db as BLUE passed through 14,000 ft at 18°35'N/111°00'E. Closest approach was estimated to be 7 n mi.

SECRET

Event III-20

Aircraft Involved: Two RF-101s vs 2 Bogeys
Results: Sighting
Vicinity of Encounter: 22°35'N/103°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 February 66/1440H

A flight of two RF-101s (BLUE Flight) had just completed a photo reconnaissance run in NVN.

11. DATA SOURCES

2nd AD OPREP-3, 122049Z Feb 66, DOCC-0 13328
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

BLUE Flight sighted two bogeys in the vicinity of the Chinese border (22°35'N/103°05'E) at an altitude of 40,000 ft. Bogeys were on a southerly heading, but made an abrupt turn to the west at time of sighting. No positive identification could be made.

Event III-21

Aircraft Involved: EA-3B, F-4B vs possible
MIG-17D

Result: Radar contact only

Vicinity of Encounter: 18°48'N/107°16'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 February 1966/Unknown

An EA-3B (GREEN Flight) was on an ELINT collection mission, while an F-4B (BLUE flight) was on BLUE TREE Mission escort.

8. ORDNANCE

None

11. DATA SOURCES

Messages, Reports:

USAF Fighter Weapons School, Bulletin No. 3.

12. NARRATIVE

Green flight had received and held an ECM contact evaluated as SCAN ODD radar (carried by MIG-17D) signal. GREEN flight estimated that the MIG was in an intercept run position and immediately initiated evasive action, and called for BLUE flight support from BLUE TREE mission escort. BLUE flight made radar contact and initiated an intercept. The bogey turned and headed for the shoreline in the Thanh Hoa area. Pursuit was broken off due to the SAM envelope and no visual contact was made. Radar contact was lost when the bogey crossed the beach.

SECRET

SECRET

Event III-22

Aircraft Involved: Two RF-101s vs one MIG

Results: Sighting

Vicinity of Encounter: 20°50'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 March 1966/1121H

BLUE Flight was on a reconnaissance mission.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	BLUE		MIG
	1	2	
Altitude:	15,000 ft		40,000 ft
Heading:	Unknown		225°
Speed:	Unknown		600-600 kts

5. INITIAL DETECTION

BLUE 1 and 2 sighted bogey above.

6. ACTION INITIATED

None

7. SITUATION DEVELOPMENT

Bogey made a 180° turn 25 mi after being sighted. No incidents.

8. ORDNANCE

None

11. DATA SOURCES

160833Z, 2nd Air Division, DOCO-0 15359, Mar 1966

12. NARRATIVE DESCRIPTION

BLUE 1 and 2 were 20 n mi north of Sam Neua at 14,000 ft. They sighted a bogey at 20°50'N/105°00'E (believed to be a MIG because of his flight pattern) at 40,000 ft heading 225°. After about 25 n mi, the MIG made a 180° turn toward Hanoi at point 20°25'N/104°45'E and contact was lost. There was no further sighting.

SECRET

SECRET

Event III-23

Aircraft Involved: Two RF-101s vs eight MIGs
Results: Sighting
Vicinity of Encounter: Near Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 March 1966/1222H

A flight of RF-101s (BLUE Flight) on a reconnaissance mission near Hanoi, NVN.

5. INITIAL DETECTION

BLUE Flight sighted four flights of two MIGs each.

6. ACTION INITIATED

None

7. SITUATION DEVELOPMENT

First MIG flight was seen at 1222H. The MIGs approached to 5 n mi, made a 180° turn, and headed toward the Hanoi area at 1229H. The second and third flights of MIGs approached to within 20-25 n mi, made a 180° turn, and departed. The fourth flight closed to within 10 n mi, broke off south as if to set up for an intercept, but then departed toward Hanoi. All MIG flights were estimated to be at 30,000 ft altitude.

11. DATA SOURCES

CINCPACAF, 180035Z Mar 66, DIE 20481

12. NARRATIVE DESCRIPTION

See items 5 and 7.

Event III-24

Aircraft Involved: Two F-4Cs vs Bogey
Results: No damage
Vicinity of Encounter: 21°15'N/107°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 April 1966/0906H

Two F-4Cs (BLUE Flight) were on a SILVER DAWN/BIG EYE escort mission.

11. DATA SOURCES

35 TFW Danang PASTEL at 1510Z 8 April 1966

12. NARRATIVE DESCRIPTION

At 0906H, BLUE Flight, while flying a SILVER DAWN/BIG EYE mission at 30,000 ft altitude, 510 KTAS on a heading of 040° TRUE, and at a location of 20°15'N/107°30'E, received a call from Ethan Alpha that he had a radar lock on a bogey.

Ethan Alpha vectored BLUE 1 and 2 on a heading of 360° and at that time BLUE Flight picked up a radar lock. The bogey was heading 270°. The radar contact was acquired at 10° right and 15 mi range. BLUE Flight descended to 7000 ft altitude and the bogey was painted on radar above them.

BLUE Flight climbed to 10,000 ft altitude and closed to within 3 mi of the bogey and lost radar contact. Visual contact was not made due to heavy haze. The weather was heavy haze below 10,000 ft with visibility 2-3 n mi.

BLUE Flight started a search orbit at this time but broke off the search when they discovered they were over land. At 0910H, BLUE Flight turned to a heading of 120° to depart the area. Ethan Alpha lost contact with the bogey before BLUE Flight lost contact.

SECRET

SECRET

Event III-25

Aircraft Involved: KA-3B vs MIGs
Results: One KA-3B lost
Vicinity of Encounter: 21°N/110°E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 April 1966/Unknown

A KA-3B was enroute from Cubi Point to USS Kitty Hawk.

11. DATA SOURCES

WMCSD Listing of US Aircraft downed by MIGs
OP-05W Box Score

12. NARRATIVE DESCRIPTION

The KA-3B was tracked northeast of Hinan Island to Chinese coastline. Was downed by CHICOM MIG cannon fire. Suspect crew oxygen system malfunction was contributing cause to loss.

Event III-26

Aircraft Involved: Two F-4Cs vs Bogeys
Results: Radar contact
Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 April 1966/Unknown

11. DATA SOURCES

DIA Intelligence Summary 4-28-66

12. NARRATIVE DESCRIPTION

Two USAF F-4C aircraft at 26,000 ft altitude, on a MIGCAP mission for a B-52 strike at Mu Gia Pass, picked up two bogeys on radar approximately 25 mi southwest of VINH.

Event III-27

Aircraft Involved: Two F-4Bs vs Bogey
Results: Radar contact
Vicinity of Encounter: --

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1966/1405H

Two F-4Bs (BLUE Flight) were on BARCAP.

11. DATA SOURCES

CTG 77.7 281037Z April 1966 OPREP-4

12. NARRATIVE DESCRIPTION

BLUE Flight, from VF-96, were vectored on a bogey by an E-1B and a SAR destroyer. The bogey began to retreat toward Hanoi at this time (1405H) at an altitude of 4000 ft. BLUE Flight broke off the chase when they crossed the coast. They could not close less than 15 mi range and achieved no visual contact.

SECRET

SECRET

Event III-28

Aircraft Involved: One A-1E vs MIG
Results: A-1E lost probably to MIG
Vicinity of Encounter: 21°30'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1966/1745H

Two A-1Es (BLUE Flight) were on a RESCAP mission for a downed RF-101.

11. DATA SOURCES

CINCPACFLT Staff Study 3-67
7th AF 292155Z April 1966 OPREP-3 DOCCO-0-18654
NMCSO Listing of US aircraft downed by MIGs

12. NARRATIVE DESCRIPTION

BLUE 1 and 2 from Udorn were on a RESCAP mission. They were in the area of the downed RF-101 when a MIG alert was received. BLUE 1 and 2 then immediately departed the area but became separated.

When MIGCAP was re-established, BLUE 1 proceeded back to the orbit area and at this time noticed that BLUE 2 was missing. Radio contact was attempted without success.

BLUE 2 had sufficient fuel to remain airborne until 2030H.

Event III-29

Aircraft Involved: Two A-4Cs and one A-4E vs
one MIG-15 and one MIG-15/17

Results: Sightings

Vicinity of Encounter: 20°55'N/105°50'E and
21°02'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 July 1966/1135H

Two A-4Cs (BLUE Flight) were part of a force attacking the Co Trai railroad bridges. (21°42'N/105°55'E.) The strike force also included some A-4Es.

11. DATA SOURCES

CINCPACFLT Staff Study 3-67
OTG 77.8 120650Z Jul 66

12. NARRATIVE DESCRIPTION

An IRON HAND element BLUE Flight reported one MIG-15/17 taking off from Haiphong-Gai-Lam airfield (21°02'N/105°35'E) at 1135H.

An A-4E also sighted one MIG-15 flying at 20°55'N/105°58'E heading 120°. The MIGs avoided contact in both sightings.

SECRET

SECRET

Event III-30

Aircraft Involved: One EC-121M vs one MIG-21
Results: Radar contact only
Vicinity of Encounter: 19°15'N/106°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 July 1966/1805H

An EC-121 from Danang was on a BIG LOOK mission over the Gulf of Tonkin.

11. DATA SOURCES

CINCPACFLT Computer Listing of MIG Events
VQ-1 241245Z July 1966

12. NARRATIVE DESCRIPTION

An EC-121 BIG LOOK aircraft intercepted a CROSS-UP IFF signal at a range of 48 n mi. The contact appeared to be a MIG-21 making a low level intercept. As the contact was 44 mi away, the EC-121 commenced a diving right turn and headed for the SAR destroyer.

Two F-4Bs on BARCAP were vectored to investigate but the target faded.

This incident is thought to be the first observed attempted low altitude intercept by NVN aircraft against U.S. aircraft operating over water in the Gulf of Tonkin.

Event III-31

Aircraft Involved: One RC-47 vs MIGs
Result: One RC-47 lost
Vicinity of Encounter: 20°12'N/104°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 July 1966/1610H

The RC-47 was on a combat support - other mission.

11. DATA SOURCES

Messages, Reports:

7 AF 292245Z July 1966 DIO 30105
7 AF 220730Z August 1966 MSG 29241
XOXS 67-2567 - Description of air-to-air losses
NMCS listing of US aircraft lost to MIGs
DIA Intelligence summary of MIG events
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

An RC-47 on a combat support mission was heard to transmit that he was under attack by hostile fighters. The call was intercepted by A-1Es in an orbit south of the C-47 and relayed.

SAR and RESCAP aircraft were scrambled but the C-47 did not return to base. The C-47 was downed by MIG cannon fire and the crew is missing.

SECRET

SECRET

Event III-32

Aircraft Involved: Four A-4s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 20°06'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 August 1966/0656H

BLUE Flight (four A-4Es) and GREEN Flight (two A-4Es) on a search and destroy mission had located a train. BLUE 3 and 4 had expended all weapons and departed. BLUE 1 and 2 had also expended all weapons but were remaining in the target area to assist GREEN Flight (on an IRON HAND mission) that was inbound to help BLUE Flight destroy the train. There was a BARCAP flight over the target.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

Four A-4Es BLUE Flight

6 - MK-81 bombs
6 - MK-82 bombs
400 gal tank
20mm cannon (port gun not armed)

Two A-4Es GREEN Flight

4 - MK-81 bombs
2 - SHRIKE missiles

MIG-17

Silver
External tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds at 2000-3000 ft.

	<u>BLUE</u>	<u>GREEN</u>
	<u>1</u> <u>2</u>	<u>1</u> <u>2</u>
<u>Altitude:</u>	5000 ft	Unknown
<u>Heading:</u>	Approx. 300°	Approx. 160°
<u>Speed:</u>	300 kts	Unknown
<u>Fuel State:</u>	Unknown	Unknown
<u>Flight Formation:</u>	Element	Element

5. INITIAL DETECTION

BLUE 1 saw the MIGs come across target low and fast on a reciprocal heading.

6. ACTION INITIATED

BLUE Flight executed a left 270° turn to a heading of approximately east. In this turn the MIGs yo-yoed up and left and ended up at 6 o'clock to BLUE Flight.

7. SITUATION DEVELOPMENT

GREEN Flight was coming up to join BLUE Flight. The MIGs started firing 37mm at BLUE. BLUE 2 did a hard right 360° turn and as he did this, the MIGs broke off and departed.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
MIG 1 and 2	Unknown/0	Fired 37mm only

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>A-4 Hours</u>	<u>Remarks</u>
BLUE 1	3800	3200	Second Combat Cruise

No other experience information available.

SECRET

Event III-32

Comments on This Encounter

BLUE 1 - Recommends saving 20mm any time striking north of Thanh Hoa in case MIGs attack. The MIG acquisition of the A-4s should have been easy.

MIG shooting was poor.

Comments on Overall Experience

BLUE 1 - Likes gun in fighter.

Wants a "super SPARROW" that can hit any target as long as the target is in the windscreen at launch.

11. DATA SOURCES

Project Interviews: BLUE 1, 3 May 1967

Messages, Reports:

CTG 77.6 161222Z Aug 66 OPREP-3

12. NARRATIVE DESCRIPTION

BLUE Flight of four A-4Es was on an early morning mission and had arrived at the coast before sun-up. They crossed the coast near the hour glass rivers and turned south towards Thanh Hoa. At about 0628H they saw a train at 20°06'N/105°52'E and began to attack it with both bombs and guns. They made runs expending all of their ordnance and then called in an IRON HAND flight (GREEN Flight) which was orbiting off the coast. BLUE 3 and 4 departed at this time. The IRON HAND came in and attacked the train and BLUE 1 and 2 stayed to provide direction for the attack. After the IRON HAND flight had attacked, the force had made between 20 and 30 passes on the train. At this time they had been on the target about a half hour.

BLUE 1 and 2 were at 5000 ft altitude, at 300 KIAS, east of the target, heading approximately northwest when BLUE 1 saw an aircraft coming off of the target. The range was about 3 mi at 9 o'clock at BLUE 1. It was seen against the dark background and BLUE 1 recognized it as a MIG-17. The MIG was heading southeast and was pulling up at 2000 ft altitude. The MIG, at 450 kts, was observed to drop his tanks and light his afterburner.

BLUE 1 then called MIGs and instructed the members of GREEN Flight who had just pulled off the target to egress.

BLUE 1 and 2 then turned 270° into the MIGs, at 5 "g" in buffet, and joined on GREEN 1 and 2 in a line abreast formation.

During the turn, BLUE 1 saw a second MIG trailing the first.

As BLUE 1 and 2 made their turn, the MIGs executed a high speed yo-yo and ended up at 6 o'clock, pulling lead and firing their 37mm cannon. It was observed to fire slowly and the shells were seen to detonate in front of the A-4s. The MIGs were 2000 ft away and at co-altitude (about 1000 ft AGL).

BLUE 1 felt that the situation was not too critical so he did not jettison his tanks. At this, BLUE 1 switched to guard and called MIGs and his position.

At this time, the four A-4s (BLUE 1 and 2, and GREEN 1 and 2) were egressing to the east. BLUE 2 at this time broke off to the right and the MIGs broke off and departed the area toward the northwest. BLUE 2 completed a 360° turn and joined the rest of the A-4s for egress.

The BARCAP did not hear the A-4's MIG call.

SECRET

SECRET

Event III-33

Aircraft Involved: Two A-4s vs three MIG-17s
Results: Sightings only
Vicinity of Encounter: 20°30'N/107°06'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 August 1966/1135H.

11. DATA SOURCE

Project Interviews: None.

Messages, Reports:

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

Two A-4Es (BLUE Flight) observed MIG-17s on two individual encounters separated by 10 minutes.

In the first encounter, BLUE Flight observed two MIG-17s heading southeast to Ile de Cac Ba at 3000 feet altitude. These MIGs were observed to turn 180 degrees and return to the vicinity of Haiphong. At the point of closest approach the MIGs were five miles away.

A third MIG-17 was sighted as BLUE Flight was outbound from the target. This MIG was at 25,000 feet, heading west. The MIG turned toward BLUE Flight and then proceeded west again and disappeared.

No warnings were heard by BLUE Flight.

Event III-34

Aircraft Involved: EC-121 vs one MIG-17
Results: No damage
Vicinity of Encounter: 19°47'N/107°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 September 1966/0830H

11. DATA SOURCE

CINCPACFLT Computer Run Listing MIG Events
7 AF 1122320Z Sept 1966

12. NARRATIVE DESCRIPTION

A BIG LOOK aircraft detected a conical scan, SCAN ODD airborne intercept radar signal. The signal strength was 54 decibels at a bearing of 265° from BIG LOOK. At 0827H, BIG LOOK issued a MIG warning based on a bearing cutting the coastline at GEOREF CG-4 (area northeast of Haiphong).

Shortly after the warning, the PIRAZ ship (Red Crown) directed BIG LOOK to turn south. A turn was made to a heading of 180° true; the bogey platform was estimated to be within 5-10 mi range in lock-on mode (conical scan).

At 0831H a rapid bearing change of 300° in 1.5 min occurred coupled with a signal strength of 64 decibels indicating that the MIG circled BIG LOOK as BIG LOOK completed a turn descending into the clouds at 8000 ft.

The SCAN ODD signal faded at 0832H on a bearing of 330° as the BARCAP aircraft were vectored in pursuit.

BARCAP intercept was broken off as the MIG approached land and no visual sightings were obtained.

Note: This is the second attempted intercept of BIG LOOK aircraft (see Event III-45A)

The ECM data from this intercept indicated that the MIG circled the EC-121 as the EC-121 descended into a cloud bank.

The MIG aircraft was tracked by the PIRAZ ship which vectored the CAP toward the MIG. The MIG ran for the beach and no visual sighting was ever held as the BARCAP intercept was broken off as the MIG approached land.

SECRET

SECRET

Event III-35

Aircraft Involved: One EB-66B and four F-4Cs
vs two MIG-21s

Results: Sightings

Vicinity of Encounter: 21°43'N/104°14'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 September 1966/0941H

Four F-4Cs (BLUE Flight) were escorting two EB-66 (GREEN Flight) aircraft who were on an ECM mission.

11. DATA SOURCES

CINCPACFLT Staff Study 3-67
460 TRW 100944Z September 1966 CCE 11306
7th AF 112320 September 1966

12. NARRATIVE DESCRIPTION

The B-66s were in their orbit pattern between 22°15'N/104°06'E and 21°52'N/104°02'E from about 0935H until 1013H. The lead EB-66C (GREEN 1) was at 30,000-32,000 ft altitude and the EB-66B (GREEN 2) was at 28,000 ft altitude trailing GREEN 1 by 15 mi.

At 0941H GREEN 2 observed two MIG-21s at 24,000 ft heading 050°. GREEN 1 was at 21°43'N/104°14'E at 28,000 ft altitude heading 240°. The MIGs passed below GREEN 2. They were in sight 5 sec.

Three min later, BLUE Flight reported lock-on with the same MIGs but had zero overtake. BLUE Flight then broke off the chase and continued escort.

GREEN Flight had received three MIG alerts prior to the sighting but none were in the immediate vicinity.

Event III-36

Aircraft Involved: Two F-4Bs vs MIGs

Results: Radar contact

Vicinity of Encounter: 20°25'N/107°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 September 1966/2020H

Two F-4Bs from the USS CONSTELLATION were on a night escort mission over the Gulf of Tonkin.

11. DATA SOURCES

7th AF Computer Listing of MIG Incidents

12. NARRATIVE DESCRIPTION

Two F-4B aircraft made radar contact with MIG-17s after being warned of the MIGs presence by the agencies.

SECRET

SECRET

Event III-37

Aircraft Involved: Two F-4Bs vs Bogey
Results: Radar contact only
Vicinity of Encounter: 20°00'N/106°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 September 1966/2020H

11. DATA SOURCES

CTG 77.8 241530Z September 1966 OPREP-4

12. NARRATIVE DESCRIPTION

Two BARCAP aircraft, BLUE 1 and 2, were vectored by Red Crown to investigate a contact in the vicinity of 20°00'N/106°25'E. The time was 2020H and the contact was at about 7000 ft altitude.

After closing to about 30 mi, BLUE Flight was instructed to break off the intercept vector due to tentative assessment of the contact as a possible friendly aircraft.

BLUE Flight started to resume normal BARCAP station but were recommitted at 2030H on the same contact. In the meantime, the contact had orbited about 15 mi from the coast over water in the vicinity of 20°00'N/106°25'E.

As the BARCAP were committed the second time, BLUE 1 closed to 25 mi range and gained a momentary contact on his radar.

At this time the contact turned inland and accelerated from 250-500 kts and was lost overland.

BLUE 1 and 2 broke off the run about 10 mi from the beach.

Event III-38

Aircraft Involved: F-4B vs Contact
Results: Radar contact only
Vicinity of Encounter: 20°35'N/107°26'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 October 1966/0235H¹

11. DATA SOURCES

CTG 77.6 042305Z October 1966 OPREP-4

12. NARRATIVE DESCRIPTION

TARCAP aircraft obtained a lock-on on two high speed air contacts in the vicinity of 20°35'N/107°26'E at 1835Z. An E-1B aircraft held radar contact with two EF-10B aircraft in the area and one possible unknown. Contact was broken at 1834Z due to no positive identification.

¹Or 4 October, 1835Z.

SECRET

Event III-39

Aircraft Involved: E-1B vs Contacts

Results: Radar contact only

Vicinity of Encounter: 20°35'N/107°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 6 October 1966/0026H¹

11. DATA SOURCES

CTG 77.6 052136Z October 1966 OPREP-4

12. NARRATIVE DESCRIPTION

An E-1B aircraft held an unidentified high speed air contact in the vicinity of 20°35'N/107°20'E at 0025H, heading 200°.

The BARCAP was vectored to intercept, however, the bogey turned north and disappeared from the E-1B scope in the vicinity of 20°50'N/107°00'E at 0030H. The BARCAP did not acquire the bogey on AI radar.

¹ or 5 October 1966/1626Z

SECRET

SECRET

Event III-40

Aircraft Involved: Four A-1Hs vs four MIG-17s¹

Results: One MIG-17 destroyed and one MIG-17 damaged

Vicinity of Encounter: 20°32'N/105°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 9 October 1966/1013H

Four A-1Hs were orbiting with a helicopter at 19°45'N/106°10'E in a SAR position for a possible RESCAP for a downed strike aircraft.

2. MISSION ROUTE

The route was from the ship to 19°45'N/106°10'E. Then when called, entered coast heading 295° to 19°53'N/105°57'E for 15 miles, then 350° for 25 miles, then 030° for 12 miles and then vectors to 21°32'N/105°46'E. Egress was via the same route.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

2 LAU 10 rocket packs
20mm cannon (800 rounds)

MIGs

Guns
Blue-gray with red stars

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to broken clouds at 4000 feet with tops to 6000 to 7000 feet.
Visibility restricted by haze.

	<u>BLUE 1 and 2</u>	<u>BLUE 3 and 4</u>
<u>Altitude:</u>	500 ft	1500 ft
<u>Heading:</u>	Unknown	Unknown
<u>Air Speed:</u>	Unknown	260 kts
<u>Fuel:</u>	Unknown	Unknown

Flight Formation: Unknown

5. INITIAL DETECTION

Warning was given by an E-2A aircraft of bogeys approaching from the north. BLUE 2 then observed tracers going by BLUE 1's wing from 6 o'clock high.

6. ACTION INITIATED

BLUE 1 and 2 then broke and descended into valley with the MIGs following.

7. SITUATION DEVELOPMENT

BLUE 2 saw two MIGs follow BLUE 1 so he broke left taking two MIGs with him. He flew in and out of valleys which placed the attacking aircraft in difficult situations. The MIGs then attacked BLUE 2 but on their attack passed in front of him at which time he fired cannon and rockets at them, achieving cannon hits on one aircraft. By this time, BLUE 3 and 4 arrived with the helicopter and attacked the MIGs. BLUE 3 saw two MIGs on BLUE 2's tail and made two passes at them. BLUE 4 saw a MIG on his right, rolled in and destroyed the MIG.

8. ORDNANCE

	<u>No. fired/No. hits</u>			<u>Remarks</u>
	<u>20mm</u>	<u>ZUNI</u>	<u>Cannon</u>	
BLUE 2	~7/1	Several/0		One MIG damaged
BLUE 3	3/0			Two beam, one head-on
BLUE 4	1/1			One MIG destroyed
MIGs			Many/0	Once at BLUE 3 and many times at BLUE 1 and 2

9. EQUIPMENT PROBLEMS

None.

¹There were initial reports that these were SU-7s.

SECRET

Event III-40

10. AIRCREW COMMENTS

Experience: Unknown

Comments on this Encounter:

BLUE 3 - Observed open in-take on head-on pass.

BLUE 4 - Aircraft had one large tailpipe.

All BLUES: Delta wings, wing mounted on fuselage with wing root guns.

Comments from Overall Experience:

BLUE Flight: Consider rough terrain and low altitude as a major factor in their safety. Successful flight due to E-2A calling and bogeys and radar vectors to search area.

11. DATA SOURCES

Messages, Reports: OPREP-3 Z090438Z October 66 from CTG 77.5
OPREP-3 Z090745Z October 66 from CTG 77.5
OPREP-3 Z091719Z October 66 from CTG 77.5
OPREP-3 Z091018Z October 66 from CTG 77.5
Recommendation for Awards P 100108Z October 66 from Intrepid

12. NARRATIVE DESCRIPTION

BLUE Flight of four A-1Hs launched from the Intrepid at 0700H from a position of 19°17'N/106°38'E as target RESCAP for Phu Ly strike. The flight arrived on station at 19°45'N/106°10'E orbiting over the rescue helicopter. At 0922H the flight was advised that an F-4B was down and their assistance required at 20°32'N/105°46'E.

BLUE 1 and 2 proceeded to the SAR scene with BLUE 3 and 4 remaining to escort the helicopter. The flight crossed the coast at 19°53'N/105°57'E on a vector of 295° for 15 miles, then they proceeded on a vector of 350 degrees for 25 miles, then 030 degrees for 12 miles, as directed by the E-2A aircraft. BLUE 1 and 2 crossed the coast at 0925H at 4000 feet altitude, climbing to 6500 feet. BLUE 3 and 4 followed by about 10 minutes at altitudes between 6000 and 9000 feet. Both sections encountered moderate, inaccurate 37mm flak, concentrated mainly on the helicopter. Flak became very light after crossing the Song Ma River at 20°00'N.

BLUE 1 and 2 arrived on the rescue scene at 0953H and descended to 4500 feet for search. At 1010H BLUE Flight was warned by E-2A aircraft of bogeys approaching from the north at 27 miles. BLUE 1 and 2 headed for the mountains 8 miles away to get cloud cover, descending to 500 feet above the terrain.

Shortly thereafter (about 1013H), BLUE 2 observed tracers from 6 o'clock high going below and ahead of BLUE 1 and called a break. BLUE 1 broke right descending further into valleys to remain below the ridge lines. BLUE 2 saw two aircraft follow BLUE 1 in a climbing turn and then he broke left. BLUE 1 saw two other aircraft follow BLUE 2.

BLUE 1 made no attack runs and had no firing opportunities.

BLUE 1 and 2 then lost contact with each other and BLUE 2 soon observed himself under attack by three aircraft. BLUE 2 found several narrow valleys between ridges about 800 feet high. By flying into the valleys and around the ridges he forced the attacking aircraft into difficult maneuvering situations. The three aircraft attacked successively from all aspects, beginning runs from within low clouds. During these attacks each aircraft would usually pass in front of BLUE 2. At such time BLUE 2 would fire 20mm and ZUNI rockets. He obtained no rocket hits but at one time he saw his 20mm hitting the MIG as he fired from the enemy's 9 o'clock position. He observed debris coming from the wing root and smoke or fuel trailing as the MIG retired. BLUE 2 made no attack runs but was able to fire about 7 times.

After BLUE 2 had damaged the MIG, BLUE 3 and 4, escorting the helicopter, arrived on the scene at 1025H. BLUE 3 and 4 were at 1500 feet and about 260 knots (as a result of en route descent) BLUE 3 saw BLUE 2 low at his 10 o'clock position and under attack by two aircraft from the rear. BLUE 3 rolled left into an attack run and made two high side runs from above, firing 20mm. After the second run BLUE 3 rolled out into a head-on situation with the enemy aircraft. Both fired at each other, but no hits were achieved.

BLUE 4, after BLUE 3 began his attack, saw an aircraft low at 2 o'clock, about 1500 feet away. BLUE 4 began a high speed descent closing on the target. The enemy aircraft saw BLUE 4 and started a left climbing turn. BLUE 4 began firing at 300 feet and closed to 200 feet observing 20mm hitting the tailpipe section. The enemy aircraft then dropped sharply on its right wing and dove through the clouds followed by BLUE 4. Beneath the clouds BLUE 4 saw the aircraft and the pilot ejected and the seat separated from the pilot.

The enemy aircraft disengaged at 1035H. BLUE Flight continued the SAR mission until 1045H when BLUE 3 and 4 departed with the helicopter. BLUE 1 and 2 departed at 1105H, and crossed the coast at 1120H.

SECRET

SECRET

Event III-40

The crews of BLUE Flight considered the rough terrain, and low altitude as a major factor in their safety. The E-2A support with its timely reporting of bogey tracks navigation vectors was also a significant factor.

The four enemy aircraft were initially thought to be FITTER (SU-7) or FACEPLATE, based on the crew's description of the fuselage, wing and a report of the horizontal tail on the fuselage.

BLUE 1 and 2 landed on the carrier with about 300 pounds of fuel.

SECRET

SECRET

Event III-41

Aircraft Involved: EA-3B vs Bogey
Results: Radar contact only
Vicinity of Encounter: 20°08'N/107°16'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 October 1966/Unknown

11. DATA SOURCES

Messages, Reports:

PEC 130055Z October 66 PECPDC
FAIRECGNRON One 121500Z October 66
TAF 152237 October 66 DIO 30666

12. NARRATIVE DESCRIPTION

An EA-3B aircraft flying over the Gulf of Tonkin reported intercepting a SPIN SCAN B airborne intercept radar. The intercept frequency was 9320 MCS and was received in both search and track mode.

One DF heading 330° true from 20°08'N/107°16'E was reported. This bearing indicates the signal source was in the Cat Bi - Haiphong area.

The signal was later confirmed by analysis as belonging to a MIG-21D equipped to handle the air-to-air beam rider missiles. However, no quadrant marker pulses which would indicate missile guidance were observed during this intercept.

This was the first confirmed SPIN SCAN intercept in NVN.

Event III-42

Aircraft Involved: Four F-4Cs vs Unidentified

Result: Radar contact only

Vicinity of Encounter: 20 nmi from NVN coast

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 October 1966/1450H

11. DATA SOURCES

Messages, Reports:

CINCPACFLT Computer listing of MIG Events.

12. NARRATIVE DESCRIPTION

BIG EYE initiated a flight of F-4C to intercept an unidentified aircraft. PIRAZ held the F-4s and the unidentified aircraft and monitored the progress. The intercept was broken off 20 nmi from the coast, as the unidentified aircraft faded over southern China.

As the intercept was broken off, there was a border violation broadcast on the air for GEOREF CG-no color.

SECRET

SECRET

Event III-43

Aircraft Involved: Two RF-101s vs two MIG-19s
Results: Sighting
Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: November or December 1966

Two RF-101s (BLUE Flight) on a photo reconnaissance mission in NVN.

11. DATA SOURCES

Letter from BLUE 1.

12. NARRATIVE DESCRIPTION

BLUES Flight saw two MIG-19s at 6 o'clock about 5 mi away. The RF-101s accelerated and left the MIGs.

Event III-44

Aircraft Involved: Two F-8Es vs possible MIG
Results: Radar contact
Vicinity of Encounter: 20°39'N/106°09'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 November 1966/1155H

11. DATA SOURCES

CTG 77.4 280848Z November 66 OPREP-3/004

12. NARRATIVE DESCRIPTION

Just prior to 1155H, two F-8Es from the USS TICONDEROGA, who were on a BARCAP mission, were vectored by PIRAZ (Red Crown) to intercept one possible MIG aircraft.

At approximately 1155H when the two F-8Es (BLUE 1 and 2) were at 20°39'N/106°09'E, they were fired upon by six SA-2 missiles. At this time the F-8Es were heading 300° at 7500 ft MSL above a solid cloud layer with tops at 5000 ft when a missile away transmission was heard on guard channel.

BLUE 2 immediately reported a flashing red APR-27 light. BLUE 1 saw a SAM at BLUE 2's 6 o'clock about 1000 yd away and called a hard right break. This SAM detonated 500 ft from BLUE 2 and a second detonated 1500 ft from BLUE 2.

BLUE 2 then saw a third missile at BLUE 1's 6 o'clock and called a left break. This SAM detonated about 400 ft above BLUE 1. BLUE 1 then reversed and a fourth SAM detonated about 1000 ft at 10 o'clock. Two more SAMs passed between BLUE 1 and 2 and detonated 2500-3000 ft above the flight.

The hard break evasion tactics were successful in avoiding the missiles and the lowest altitude reached by BLUE Flight was 5500 ft.

After the SA-2 firings, PIRAZ observed four additional possible MIGs on radar which were trailing the original single bogey. BLUE 1 and 2 were then vectored clear of the area. It was believed that this was a trap to lure the BARCAP into a SAM envelope. However, no damage was sustained.

SECRET

Event III-45

Aircraft Involved: Four F-4Cs and one EB-66C
vs possible MIO

Results: Radar contact

Vicinity of Encounter: 20°35'N/104°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 November 1966/1412H

11. DATA SOURCES

432 TRW 281240Z November 1966 OPREP-4 CCE 18915

12. NARRATIVE DESCRIPTION

One EB-66C (GREEN 1) and its high cover of F-4Cs (BLUE Flight) were on an ELINT collection mission in North Vietnam and Laos.

GREEN 1 departed Takhl1 at 1240H and was on watch 1312H at a position of 17°42'N/103°02'E. The initial point was at 20°00'N/104°40'E. The route continued through 21°42'N/103°45'E; then through 21°42'N/104°50'E; then through 21°33'N/103°48'E (at 1402H); then to 19°00'N/104°24'E (at 1424H) and went off watch at 1432 at 18°12'N/103°44'E.

At 1409H, GREEN 1 picked up an AI radar in search mode at 11 o'clock position. At this time GREEN 1 was at 20°59'N/103°58'E heading 165° and at 27,000 ft. GREEN 1 was in the clear above an 8000-10,000 ft broken deck. GREEN 1 inquired of BLUE Flight if they were painting anything at that bearing. BLUE Flight confirmed a single return at 14 mi range with a speed of 500 kts.

At 1410H when at 20°51'N/103°59'E, GREEN 1 reported that he was lock-on by an AI radar. BLUE flight reported the bogey at 2 mi range from GREEN 1 and closing. Neither GREEN or BLUE crew members saw the bogey at any time during the intercept. As the bogey passed above or below GREEN 1 the AI radar returned to search. The fly-by occurred at 1412H at a location of 20°35'N/104°02'E.

GCI radars were unusually active and FIRECAN signals strong all during the incident. It is believed that the bogey could have been locked on chaff which had been dispensed by GREEN 1 (both RR-44 and RR-59 were being dropped at this time).

Although the intercepted AI radar signals were similar to that of the F-4C AI radar (APQ -72), the presence of a single F-4C in this area was highly unusual.

SECRET

SECRET

Event III-46

Aircraft Involved: Four F-4Bs vs Bogeys
Result: Radar contact
Vicinity of Encounter: 20°30'N/107°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 December 1966/1420H

Four F-4Bs (BLUE Flight) from the Coral Sea were on a flak suppression mission for a ROLLING THUNDER 52A strike. The target was at approximately 21°23'N/106°16'E.

11. DATA SOURCES

Coral Sea Report No. 036

12. NARRATIVE DESCRIPTION

BLUE Flight, armed with MK-82 bombs, performed a flak suppression function on active flak sites located near 21°23'N/106°16'E, between 1351H and 1358H.

SAM guidance radar was detected by the APR-27 at 1400H and chaff was dropped from 12,000 ft altitude.

The weather was clear, with 4-5 mile visibility in haze.

At 1420H, BLUE Flight detected two possible bogeys at 20°30'N/107°40'E. These bogeys were detected on radar and were at 15 miles range, low and closing at a rate of 600 kts. At this time BLUE Flight was at 25,000 ft altitude, heading 180 deg at 450 kts.

The bogeys turned to a heading of 090 and the closing rate dropped to 50 kts, with BLUE Flight in a 0.8 n mi trail position. Since it was determined that BLUE Flight could not overtake, due to fuel state, the incident was reported to RED CROWN. The F-4s were soon thereafter diverted for a SAR mission.

Event III-47

Aircraft Involved: EB-66C vs two MIG-21s
Result: Sighting
Vicinity of Encounter: 22°25'N/105°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/0818H

Two EB-66, one B and one C, (Blue Flight) were on an ECM mission.

11. DATA SOURCES

Messages, Reports:

432 TRW 041900Z Dec 66, MSG 18992
7th AF 042250Z Dec 66, MSG DIO 30926
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

BLUE 1 sighted two MIG-21s flying north at 11 o'clock position, approximately eight miles away. At the time of sighting, BLUE 1 was flying west on the first orbit at 0818H, position was 22°25'N/105°22'E. Both MIGs made left descending turns to the clouds and were lost from sight.

Immediately after, fighter bombers below were heard to call alerts for MIGs. Some fighter (no call sign heard) was heard to say, "Who got him?" Response was, "Number 3 or number 4 got him." This was believed to mean one of the MIGs was shot down. (Note: Possibly refers to Event 78, Vol. II.)

SECRET

Event III-48

Aircraft Involved: Two F-4Cs vs two
unidentified aircraft

Result: Radar contact

Vicinity of Encounter: 21°05'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1130H

Two F-4Cs (BLUE Flight) were on CAP over the Gulf of Tonkin, under the direction of RED CROWN.

11. DATA SOURCES

Messages, Reports:

7th AF 042250Z Dec 66, DIO 30926

12. NARRATIVE DESCRIPTION

At 1102H RED CROWN called MIG alert for area AF-2, and 28 minutes later BLUE 1 and 2 were vectored toward two bogeys orbiting at 2500 ft in area BG-4. Bogeys headed towards BLUE Flight but turned back at approximately 21°05'N/106°45'E. BLUE Flight then turned back southeast and bogeys went into an extended left-hand racetrack orbit.

BLUE Flight was vectored toward bogeys three times between 1130H and 1145H, as the bogeys attempted to draw U.S. aircraft into SAM envelope.

Each time the bogeys turned back to west when BLUE Flight reached the coast BLUE Flight's extreme position was 20°50'N/107°00'E and minimum distance to bogeys was 20 n mi. No visual contact was made.

SECRET

SECRET

Event III-49

Aircraft Involved: Two EB-66s vs one MIG-21
Results: No damage
Vicinity of Encounter: 21°05'N/104°07'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1057h

Two EB-66 aircraft orbiting between 20°30'N/104°30'E and 21°20'N/104°30'E. They were on active/passive ECM support for armed recce missions numbers FB-5643-3 and D-3A.

2. MISSION ROUTE

Departed Takhli, direct to 19°32'N/103°53'E, direct to 21°15'N/104°40'E, direct orbit between 20°30'N/104°30'E and 21°20'N/104°30'E, direct 18°15'N/103°10'E, direct Takhli. Refueling was as planned.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Not given.

BLUE
1 2

Altitude: not given
Heading: 30,000 ft
Speed: not given
Fuel State: not given
Flight Formation: BLUE 2 in trail with BLUE 1; undetermined distance, same altitude.

5. INITIAL DETECTION

Received MIG warnings: MIG, 6A at 0950, 1006 and AG-1 at 1009, QG-2 at 1015, AG-1 at 1017, and AG-1 at 1025. Observed possible MIG-21 at 1057H.

10. AIRCREW COMMENTS

None.

11. DATA SOURCES

Messages, Reports:

7thAF DIA(005) 052317Z Dec 66 DIO 30934
432TRW, OPREP-4 X Electronic Warfare 053 050922Z Dec 66
432TRW 19005

12. NARRATIVE DESCRIPTION

An EB-66 and an EB-66B at 21°05'N/104°07'E observed one silver, delta wing aircraft (possible MIG-21) heading east to west at true course of approximately 090°, altitude 10-15,000 ft and estimated airspeed of 350 kts. The aircraft did not alter its course nor appear hostile.

SECRET

Event III-50

Aircraft Involved: USN aircraft vs one possible
MIG-21

Result: Sighting

Vicinity of Encounter: 20°57'N/105°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1602H

11. DATA SOURCE

CTG 77.7 OPREP-3 PINNACLE 0002/CH1, 14 December 1966

12. NARRATIVE DESCRIPTION

A possible MIG-21 sighting was reported by USN aircraft flying from the USS Roosevelt. One silver gray aircraft was seen heading 230° at position 20°57'30"N/105°47'E, with a speed in excess of 500 kts. The altitude of the bogey was 200 ft and the time was 1602H. No aircraft markings were observed.

The flight who saw the bogey lost contact immediately after the sighting due to SAM evasion.

The weather for the coast in to west of Thanh Hoa was scattered cloud cover at 5000 ft. In the foothill region, there was broken cloud cover, with bases at 3000 ft and tops at 5000 ft. In the target area there was scattered cloud cover at 5000 ft. In general the visibility was 5-7 miles.

SECRET

SECRET

Event III-51

Aircraft Involved: Two RF-101s vs MIGs
Results: Radar contact only
Vicinity of Encounter: 21°08'N/104°41'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 January 1967/1545H

Two RF-101s (BLUE Flight) on a photo-reconnaissance mission in NVN. A BIG EYE aircraft had just called a MIG alert in area QG-3.

2. MISSION ROUTE

Flight departed Udorn on a heading of 028°, 15,000 ft, direct to TACAN Channel 97 and climbed to 20,000. Then direct 20°47'N/104°06'E heading 035°, 20,000 ft and 540 kts. Turned east to 090° direct to 20°47'N/104°46'E at 23,000 ft, 540 kts. Then direct to 20°25'N/104°41'E heading 210°, 8,000 ft at 0.98 Mach. (MIG chase began here). Then direct 20°18'N/104°22'E heading 240° at 1.05 Mach; and then direct to Udorn on a heading of 200°, 25,000 ft, 540 kts.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	BLUE
	1 2
Altitude:	20,000 ft
Heading:	080°
Speed:	0.98 Mach
Fuel State:	Unknown
Flight Formation:	Unknown

5. INITIAL DETECTION

At 1545H BLUE Flight got a vector equipment lock-on (X-band strobe) at their 10 o'clock position moving to 9 o'clock. The continuous strobe moved on around and held at their 6 o'clock position. At 1545H MOTEL called MIG alert in QG-3.

6. ACTION INITIATED

BLUE Flight made a break toward the Laos border, heading 210°, descended to 8,000 ft, and then took up a heading of 240°. As BLUE Flight broke, the strobe, which was continuous, moved to 6 o'clock.

7. SITUATION DEVELOPMENT

MOTEL then called a MIG alert at 1547H in QF-2.

BLUE Flight egressed on a heading of 240°, speed 1.05 Mach with the MIGs in tail chase; however, neither aircrew made visual contact with the MIGs. The BLUE Flight was at 20°10'N/104°15'E when a MIG alert was again called in QF-2. The MIGs broke off the chase at 20°20'N/104°35'E, at which time they were at or across the Laotian border. The vector signal was on one ring at the start of this attack and had increased to over two rings when the MIGs broke off.

11. DATA SOURCES

432TFW OPREP-3 011150Z January 67 FASTEL 00016

12. NARRATIVE DESCRIPTION

See items 5-7.

Event III-52

Aircraft Involved: One RF-4C vs two unidentified

Results: Sighting only

Vicinity of Encounter: 21°30'N/103°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 January 1967/1315H

11. DATA SOURCE

CINCPACFLT Study 6-68.

12. NARRATIVE DESCRIPTION

BLUE TREE aircraft saw contrails and was followed briefly by contacts until they broke off to the north.

SECRET

SECRET

Event III-53

Aircraft Involved: One RF-4C vs Bogey
Results: Radar contact only
Vicinity of Encounter: 20°26'N/103°43'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 January 1967/0734H

An RF-4C (BLUE 1) was on a weather recce mission in the north Laos NVN area.

2. MISSION ROUTE

BLUE 1 departed Udorn at 2135Z and proceeded directly to Mekong River 18°18'N/103°16'E. BLUE 1 turned north to Channel 97 (20°26'N/103°43'E). Forty miles south of Channel 97 he picked up an X-band strobe on radar.

3. AIRCRAFT CONFIGURATIONS

Centerline fuel tank

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 10,000 ft overcast, clear above. Visibility 10 mi.

BLUE

1

Altitude: 15,000 ft

Heading: 011°

Speed: unknown

5. INITIAL DETECTION

Forty nmi south of Channel 97, BLUE 1 received less than a one-ring return on X-band strobe at his 2 o'clock position.

6. ACTION INITIATED

No action was taken. BLUE 1 continued heading 011°.

7. SITUATION DEVELOPMENT

Still heading 011°, the strobe moved to BLUE 1's 6 o'clock position and increased to three-rings. Signal became intermittent as BLUE 1 turned to 030° at Channel 97. BLUE 1 turned to 140° and descended to 10,000 ft. The strobe disappeared. BLUE 1 turned back to course (030°). As BLUE 1 turned to 030°, the strobe came up again to three-rings at 6 o'clock. The pilot decided to abort the mission. He did a 180° turn at 21°10'N/104°25'E at 0739H to a heading of 190°, 10,000 ft, squawked emergency IFF and dropped centerline tank, proceeding directly to BAN BAN (19°30'N/103°30'E). Heading varied slightly and airspeed increased to Mach 1.3. Strobe continued intermittently from 4 o'clock to 8 o'clock position. Strobe signal diminished and quit at 19°30'N/103°30'E. BLUE 1 proceeded to 18°18'N/103°16'E and then directly to Udorn. No bogeys were seen visually. A ground operational check of APR 25/26 equipment showed fully operational. However, it never lit up in flight.

11. DATA SOURCES

Messages, Reports:

030145Z Jan 67 2EL FASTEL TUOC 00055 Jan 67

SECRET

SECRET

Event III-54

Aircraft Involved: Two EB-66s vs two MIGs

Result: No damage

Vicinity of Encounter: 21°00'N/103°33'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 6 January 1967/0919H

11. DATA SOURCE

RED BARON MIG Incident Summary of PACAF CP Event 9.

12. NARRATIVE DESCRIPTION

Two MIGs of unidentified type attempted to attack the B-66s. No damage occurred.

Event III-55

Aircraft Involved: One C-135 vs one MIG-17

Results: Sighting only

Vicinity of Encounter: 19°30'N/108°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 January 1967/0905H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Tanker called MIG under his nose and headed south; two F-104 CAP rendezvoused with tanker eight minutes later, but saw no MIGs; MIG warning had been passed 40 minutes earlier in Package VIB.

SECRET

Event III-56

Aircraft Involved: One RF-101 vs one MIG
(probable)

Results: Sighting only

Vicinity of Encounter: 20°47'N/102°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/1035H

One RF-101 (BLUE Flight) was inbound to his secondary target area on a routine reconnaissance mission in NVN.

2. MISSION ROUTE

Departed Udorn to 18°18'N/103°16'E; then direct to 20°19'N/104°01'E; then to 20°08'N/103°38'E; then to 21°05'N/102°30'E, south along 102°27'E, to 20°37'N/102°27'E; then to 18°20'N/103°18'E; direct to Udorn.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Thin cloud layer at 12,000 ft, clear above and below. Visibility unlimited.

BLUE

1

Altitude: 22,000 ft MSL
Heading: 330°
Speed: Unknown
Fuel State: Unknown
Flight Formation: Single Ship

5. INITIAL DETECTION

BLUE's vector equipment gave him an X-band signal at 1 o'clock for approximately 3 min. He then sighted a silver, swept wing aircraft at 1 o'clock, 4 nmi range, and 3000 ft above him. Bogey appeared to be in a quartering head-on attack.

6. ACTION INITIATED

BLUE 1 made a hard left break to a heading of 180° and descended rapidly into a cloud deck.

7. SITUATION DEVELOPMENT

BLUE 1 continued his turn to a heading of 050° and leveled off at 12,000 ft MSL in full military power with a TAS of 590 kts. He continued making evasive turns along a general heading of 050° until reaching 19°45'N/103°15'E. At this point BLUE 1 climbed back to 22,000 ft and returned to Udorn via 18°19'N/103°10'E without further incident. After the initial sighting, BLUE 1 had no further visual or electronic contact with the suspected MIG. BLUE 1 heard no MIG warnings issued prior to the incident. BLUE 1 did hear ETHAN issue a border warning on guard channel prior to the encounter. Due to the brief time of the encounter, BLUE 1 could not positively identify the aircraft encountered as a swept wing. However, he did not believe the aircraft was a delta wing type.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>RF-101 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	4150	78	Unknown	No prior air-to-air engagements

11. DATA SOURCES

Messages, Reports:

432TRW OPREP-3 160514Z Jan 67, PASTEL 00397
432TRW OPREP-3 160734Z Jan 67, PASTEL 00405
432TRW OPREP-3 160914Z Jan 67, PASTEL 00406

SECRET

SECRET

Event III-57

Aircraft Involved: One EB-66 vs two MIG-17s

Result: Sighting only

Vicinity of Encounter: 21°30'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/1555H

11. DATA SOURCE

RED BARON MIG Incident Summary of PACAF CP Event 29.

12. NARRATIVE DESCRIPTION

The crew of the B-66 sighted two MIG-17s. No other action occurred.

SECRET

SECRET

Event III-58

Aircraft Involved: One RF-4C vs two MIGs
Result: No damage
Vicinity of Encounter: Approximately
21°04'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/1855H

One RF-4C (BLUE Flight) was on a photo reconnaissance mission.

2. MISSION ROUTE

BLUE Flight departed Udorn and proceeded to Channel 97 at 25,000 ft; then to 20°03'N/104°37'E, descending to 8,000 ft; then to Pop Point 21°40'N/104°52'E in a left 90° turn over TOT, descending to mountain top level; thence to 20°49'N/104°01'E. From there he made a climb to altitude then proceeded direct to Udorn.

3. AIRCRAFT CONFIGURATIONS

RF-4C BLUE 1

No armament

MIGs

Unknown type
Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear

	<u>BLUE 1</u>
<u>Altitude:</u>	8000 ft
<u>Heading:</u>	240°
<u>Speed:</u>	540 KTAS
<u>Fuel State:</u>	Unknown

Flight Formation: None

5. INITIAL DETECTION

MIGs were detected visually at the 3 o'clock position, three miles away and turning into BLUE 1 on an intercept course. The MIGs were heading 150 deg and were turning in on BLUE 1.

6. ACTION INITIATED

BLUE 1 went into full afterburner, descended to the deck and accelerated out of the area at 700 KTAS.

7. SITUATION DEVELOPMENT

BLUE 1 lost sight of the MIGs as they approached his 6 o'clock position and never regained sight. Due to sunlight glinting off the APR-28/26 scope and other strobes on it, BLUE 1 was not able to determine if the MIGs were registering on the X-band radar warning gear.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None

11. DATA SOURCE

432 TRW 160619Z Jan 67, CPREP-3 TUOC 00410

12. NARRATIVE DESCRIPTION

BLUE 1 was a lone RF-4C on a reconnaissance mission at 8000 ft at 20°04'N/104°45'E when he observed two MIGs, silver in color, at his 3 o'clock position, 3 miles away, heading 150 deg. BLUE 1 was heading 240 deg at 540 KTAS. The MIGs turned into BLUE 1 at which time he unloaded the aircraft, descending to tree top level and accelerating to 700 KTAS out of the area all the way to Channel 97. BLUE 1 then climbed to altitude and returned home safely.

SECRET

SECRET

Event III-59

Aircraft Involved: One EB-66B vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 21°50'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/1539H

11. DATA SOURCE

RED BARON MIG Incident Summary of PACAF CP Event 34.

12. NARRATIVE DESCRIPTION

The crew of the B-66 sighted one MIG-21. No other action occurred.

Event III-60

Aircraft Involved: Two RF-101s vs two
unidentified

Results: Sighting only

Vicinity of Encounter: 21°40'N/104°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/1540H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight at 16,000 ft saw two silver aircraft at 6 o'clock on different heading.

SECRET

Event III-61

Aircraft Involved: Four F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°26'N/105°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 January 1967/0955H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Armed reconnaissance flight at 15,000 ft saw two MIGs at 8-9000 ft on perpendicular heading.

Event III-62

Aircraft Involved: Two F-4Cs vs two MIG-21s

Results: Sighting only

Vicinity of Encounter: 22°30'N/105°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/0825H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Lead of ECM escort at 31,000 ft saw two MIGs, possible MIG-21s, at 5 o'clock; MIGs maneuvered and headed away; MIGs closest point of approach was five miles.

Event III-63

Aircraft Involved: Three F-4Cs vs two unidentified

Results: No damage

Vicinity of Encounter: 21°28'N/106°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/1613H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Remaining three members of flight of aircraft downed by ground fire were in vicinity of downed aircraft; Lead saw two bogeys at 4-6 miles turning in behind flight; flight broke right and up and came under intense ground fire; lost sight of unidentified aircraft.

SECRET

SECRET

Event III-64

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting only

Vicinity of Encounter: 21°14'N/106°44'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/1620H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

After pulling off target, strike flight at 6000 ft saw MIG very low on opposite heading.

Event III-65

Aircraft Involved: Two F-102s vs four unidentified

Results: Sighting only

Vicinity of Encounter: 20°30'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 January 1967/1600H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

CAP Flight at 27,000 ft saw four unidentified aircraft at 18,000 ft; closest point of approach was 8-9 miles; unidentified aircraft may have been friendly.

Event III-66

Aircraft Involved: One B-66 vs one MIG-17

Results: No damage

Vicinity of Encounter: 22°20'N/105°28'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 January 1967/1130H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ECM aircraft at 28,000 ft saw MIG at 10 o'clock; MIG closed to two miles and turned away.

SECRET

SECRET

Event III-67

Aircraft Involved: Two RF-101s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 22°00'N/105°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 January 1967/1620H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo aircraft climbing through 10,000 ft saw MIGs directly above at 25,000 ft; MIGs, in orbit, apparently did not see flight, which descended to 100 ft and continued mission.

Event III-68

Aircraft Involved: Four F-105s vs three MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°16'N/106°41'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 January 1967/1629H

11. DATA SOURCE

-CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound flak suppression flight saw three MIGs 5-6 miles away; no hostile action.

Event JII-69

Aircraft Involved: Four F-105s vs four MIG-17s

Results: No damage

Vicinity of Encounter: 21°18'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 January 1967/1632H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight inbound to same target as flight of Event III-68 saw MIGs at 4-5 miles, 9 o'clock low; flight began turn into MIGs, but MIGs evaded.

SECRET

SECRET

Event III-70

Aircraft Involved: Three F-105s vs two MIG-21s

Results: No damage

Vicinity of Encounter: 22°13'N/104°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 February 1967/Unknown

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight at 18,000 ft saw MIGs breaking away from rear; MIGs turned sharply and disappeared.

Event III-71

Aircraft Involved: Three F-4Cs vs one unidentified

Results: No damage

Vicinity of Encounter: 18°07'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 February 1967/1154H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight climbing off target at 22,000 ft saw contrails at 3 o'clock; three minutes after sighting, unidentified aircraft was seen descending toward flight; unidentified aircraft remained at 5 miles off starboard wing for one minute; subsequent actions of unidentified aircraft indicated it may have been friendly, although silver in color.

Event III-72

Aircraft Involved: Two RF-101s vs one MIG-19/21,
one IL-14 and one MI-6

Results: Sighting only

Vicinity of Encounter: 20°25'N/103°55'E
21°27'N/103°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 February 1967/1418H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight at 21,000 ft saw silver, swept wing aircraft at 35,000 ft on a reciprocal heading, range 10 miles; 16 minutes later at second position shown, cargo plane at 4000 ft seen coming from Dien Bien Phu; flight flew over cargo aircraft to obtain photos, which subsequently revealed helicopter in vicinity, also.

SECRET

SECRET

Event III-73

Aircraft Involved: Four F-105s and four F-4Cs vs
two MIGs

Results: Sighting only

Vicinity of Encounter: 22°05'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 February 1967/1624H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

F-105 IRON HAND flight at 13,000 ft saw two possible MIGs pass in front at eight miles range; six minutes later, F-4C flight saw two unidentified aircraft at 20 miles; F-105s and F-4Cs in same general area.

Event III-74

Aircraft Involved: Three F-105s vs three
unidentified

Results: Sighting only

Vicinity of Encounter: 20°44'N/104°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 February 1967/0859H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight at 15,000 ft saw three silver aircraft flying over at 36,000 ft; no attack made; unidentified aircraft may have been F-104s, but were headed generally for area of Event III-75.

Event III-75

Aircraft Involved: Four F-4Cs vs two MIGs

Results: No damage

Vicinity of Encounter: 20°58'N/105°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 February 1967/0902H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Escort flight at 12,000 ft saw two MIGs descending from 1 o'clock; flight turned into MIGs and got lock-on at 17 miles, but was unable to close; MIGs continued and flight broke off; five SA-2s then fired at flight.

SECRET

SECRET

Event III-76

Aircraft Involved: Four F-105s vs four MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°31'N/105°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 February 1967/1624H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight made sighting at 6000 ft.

SECRET

SECRET

Event III-77

Aircraft Involved: Two RF-4Cs vs two MIGs
(probable)

Result: Sighting

Vicinity of Encounter: 21°45'N/104°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 February 1967/1500H

A flight of two RF-4Cs (BLUE Flight) were inbound on a photo reconnaissance mission of the Tung Tu (6M 1892) and Thang Quang (6M 1836) railroad sidings.

2. MISSION ROUTE

BLUE Flight departed Udorn direct to TACAN Channel 79 at 25,000 ft; then to 21°19'N/103°30'E at 20,000 ft; then to 20°54'N/104°14'E; then to 22°12'N/105°06'E (abort point), and returned via same route.

3. AIRCRAFT CONFIGURATIONS

RF-4C BLUE 1, 2

Vector equipment

MIG 1, 2

Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clouds, 6,000 ft broken to overcast. Visibility 2 to 3 miles in haze.

	BLUE	
	1	2
<u>Altitude:</u>	20,000 ft	
<u>Heading:</u>	Generally NE	
<u>Speed:</u>	Unknown	
<u>Fuel State:</u>	Unknown	
<u>Flight Formation:</u>	Unknown	

5. INITIAL DETECTION

Both BLUE 1 and 2 picked up strong X-band strobing at 21°45'N/104°05'E. Strobing had lasted for 1 1/2 minutes when BLUE Flight made a visual contact on two bogeys at 9 o'clock, 1 n mi range, at 15,000 ft. Unidentified aircraft were silver in color, and were flying a loose abreast formation.

6. ACTION INITIATED

BLUE Flight broke down and right, and lost contact with the unidentified aircraft.

7. SITUATION DEVELOPMENT

No engagement took place; BLUE Flight aborted their mission and returned safely to Udorn.

8. Ordnance

None

11. DATA SOURCES

432 TRW OPREP-3, 230930Z Feb 67, FASTEL 01398

SECRET

SECRET

Event III-78

Aircraft Involved: Four F-105s vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 21°20'N/103°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 February 1967/1532H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight joining up at 10,000 ft after target run; MIG seen at 14-15,000 ft; no engagement due to low fuel.

Event III-79

Aircraft Involved: One RF-101 vs two unidentified

Results: No damage

Vicinity of Encounter: 20°23'N/104°03'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 February 1967/0948H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo aircraft in turn at 26,000 ft picked up X-band, range-only light and indication of lock-on for next 30 seconds; at lock-on, RF-101 dived to 7000 ft, where lock-on broken due to cloud bank entry; RF-101 pilot looked back to see two aircraft pulling contrails; aircraft were silver and delta-winged. F-4C possibly in area at time of sight; point of closest approach of the unidentified aircraft was 12 miles.

SECRET

Event III-80

Aircraft Involved: One RF-4C vs two unidentified

Results: No damage

Vicinity of Encounter: 21°00'N/102°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 February 1967/1105H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo aircraft got X-band strobe, rolled out, saw two unidentified aircraft trying for tail position; RF-4C maneuvered and outran unidentified aircraft.

Event III-81

Aircraft Involved: One RF-4C vs ? MIG-?

Results: No damage

Vicinity of Encounter: 22°10'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 March 1967/0703H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo aircraft at 1500 ft received X-band strobe from rear; aircraft lit afterburner and maneuvered for 5 minutes until lock-on broken. MIG was not visually sighted due to overcast; mission aborted, partly due to weather, after MIG chase.

Event III-82

Aircraft Involved: Four F-105s vs one MIG-15
(probable)

Results: Sighting only

Vicinity of Encounter: 19°30'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 March 1967/1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight inbound to target at 23,000 ft saw an unidentified aircraft for about 5 minutes; unidentified aircraft described as MIG-15 or F-86 with color and markings unobserved.

SECRET

SECRET

Event III-83

Aircraft Involved: Two RF-4Cs vs two MIG-17s
(possible)

Results: Sighting only

Vicinity of Encounter: 21°00'N/103°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 7 March 1967/1618H

11. DATA SOURCE

CTN:PACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight enroute at 13,000 ft saw two silver aircraft with swept wings and blunt noses 2000 ft above; unidentified aircraft turned right and photo flight broke down into clouds.

SECRET

SECRET

Event III-84

Aircraft Involved: Two RF-4Cs vs one MIG-17
and 4 unidents

Results: No damage

Vicinity of Encounter: 21°13'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 March 1967/about 1400H

Two RF-4Cs (BLUE Flight) were on a reconnaissance mission against the Chi Pan RR yard.

2. MISSION ROUTE

BLUE Flight departed Udorn and proceeded to Channel 97 at 19,000 ft. From there they proceeded to 21°13'N/105°00'E at 1000 ft AGL. They then climbed to 6000 ft altitude. After encountering the MIGs they proceeded to 21°24'N/105°09'E and then to Channel 97.

8. ORDNANCE

None

11. DATA SOURCES

432 TRW 081110Z March 1967 OPREP-3 TUOC 01722

12. NARRATIVE DESCRIPTION

From 1558H to 1602H, BLUE Flight turned from the target area and climbed to about 6000 ft on a heading of 230°. They were on this heading about 1 1/2 min when an X-band strong (1 ring - steady) appeared at 3 o'clock.

The crew of BLUE 1 (Lead) saw four unidentified aircraft at 3 o'clock in two elements of two each, in trail about 500 ft apart. The lead element was seen to move toward the 6 o'clock position but visual contact was lost with both elements.

The X-band strobe continued and moved to the 6 o'clock position and increased to 3 rings. BLUE 2 then turned right across BLUE 1's track to check the 6 o'clock and saw one swept wing, blunt-nose silver aircraft identified as a MIG-17 about level with BLUE 1 and within 2 mi range.

BLUE 1 and 2 went to afterburner and descended to about 1000 ft altitude. The signal remained on during the descent, went off at level off, and came back on at 2 1/2 rings from the 5:30 o'clock position after about 30 sec, and remained on 20-30 sec.

The signal then went off and stayed off. The flight proceeded to channel 97 and climbed to 28,000 ft 25 mi prior to Channel 97.

The weather was broken to overcast.

BLUE Flight heard MIG calls for AF-3 about 1605H.

Event III-85

Aircraft Involved: Four F-105s vs two MIG-21s

Results: No damage

Vicinity of Encounter: 22°00'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 March 1967/1603H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound armed reconnaissance flight at 8000 ft saw two MIGs approaching at 15,000 ft. MIGs passed 1 mile ahead, lit afterburner, and turned, trying to get behind flight. MIGs broke off from 3000 ft just after completing turn and no firing was seen.

SECRET

SECRET

Event III-86

Aircraft Involved: One RF-4C vs possible MIG

Results: Radar contact

Vicinity of Encounter: 22°04'N/104°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 9 March 1967/0351H

One RF-4C (BLUE Flight) was on a reconnaissance mission.

2. MISSION ROUTE

Departed Udorn at 0312H, then proceeded direct to Channel 97 (21°27'N/103°43'E) arriving at 0336H. BLUE 1 then headed to 21°22'N/103°43'E at 8000 ft MSL, arriving at 0342H. On a heading of 050, BLUE 1 then descended to 5000 ft MSL and proceeded to 22°05'N/104°34'E. At 0350H BLUE 1 turned to a heading of 117°, descending to 4000 ft MSL (1000 ft AGL) with a speed of 540 kts.

5. INITIAL DETECTION

While on a heading of 117° at 22°04'N/104°40'E at 1000 ft AGL, BLUE 1 began to receive fluctuating power and activity lights for a few seconds and then launch lights at 0351H.

6. ACTION INITIATED

BLUE 1 made a left turn to 080°, varying altitude and airspeed.

7. SITUATION DEVELOPMENT

Thirty seconds later, BLUE 1 received a 3-ring X-band audio strobe and light from the 6 o'clock position. At the same time he received fluctuation activity, power, and launch lights as well as S-CONS from the 7 o'clock position.

BLUE 1 increased his speed to 600 kts plus and turned to 300° descending to 500 ft AGL. He maintained that heading for 1 min, then turned to 270° heading for a few minutes, then to 230° at 22°00'N/103°56'E at 0357H.

The 3-ring plus X-band strobe remained at 6 o'clock for 6 min until BLUE 1 got to the Black Mountains at 21°45'N/105°50'E at 0400H.

No further signals were received after this point. BLUE 1 then went direct to Channel 97 and then home.

8. ORDNANCE

None observed.

11. DATA SOURCES

432 TRW 082225Z March 1967 TUOC 01734

12. NARRATIVE DESCRIPTION

Additional comments:

BLUE 1 was to have passed near the Thai Nguyen iron and steel works at 21°33'N/105°52'E, and weather points at 21°40'N/105°40'E and 21°40'N/105°00'E. This part of the mission was not accomplished due to the MIG encounter.

During the mission, BLUE 1 was in an overcast with tops at 8000 ft MSL, bottoms at 500 ft AGL. Visibility was 10 mi above the overcast and less than 1 mi below.

No warnings were heard.

The possible enemy tactics used were to give false SAM launch signals to make BLUE 1 turn northeast (a turn south would have placed BLUE 1 in a SAM ring). When BLUE 1 turned, a probable MIG jumped him.

18 March 1967 1951Z

SECRET

Event III-87

Aircraft Involved: Four F-4Cs and four F-105s vs one MIG-21

Result: No damage

Vicinity of Encounter: 21°55'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 March 1967/1553H

BLUE Flight (four F-105s) was egressing from a strike on Thai Nguyen Iron and Steel Works (JCS 76.00). GREEN Flight (F-4Cs) was assigned a STRIKE-CAP mission.* The flight had completed its strike on JCS 76.00 and was egressing, trailing F-105 flights. GREEN had rendezvoused with F-105 strike force over Northern Laos inbound to target and maintained position above and behind the last F-105 flight for ingress and egress. Strike force probably consisted of IRON HAND leading, followed by a flak suppression flight, followed by three strike flights and the F-4 STRIKE-CAP flight.

2. MISSION ROUTE

Inbound unknown. Outbound, force was proceeding westerly from target toward Thud Ridge when attacked.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

6 750-lb bombs
(Probably carrying two 450-gal. wing tanks and QRC-60 pod.)
Camouflaged

F-4C GREEN 1, 2, 3, 4

6 750-lb bombs
4 SPARROW (AIM-7E)
1 370-gal. wing tank
1 450-gal. centerline tank
1 QRC-60
Camouflaged

MIG-21

Silver color
Air-to-air missile(s)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to broken clouds at altitudes below egress altitudes.

	BLUE				GREEN			
	1	2	3	4	1	2	3	4
<u>Altitude:</u>	14,000-18,000 ft (altitudes are not clear -- GREEN Flight was above BLUE Flight)				16,000-20,000 ft			
<u>Heading:</u>	300°				300°			
<u>Speed:</u>	400 KCAS				400 KCAS			
<u>Fuel State:</u>	Unknown				7,500 to 8,000 lb			

Flight Formation: Both flights in pod formation.

5. INITIAL DETECTION

BLUE Flight observed a single MIG-21 approaching from below at 6 o'clock, detection range above 5 miles or greater. GREEN 1 (front) observed the MIG at 10 o'clock, very low (nearly underneath him) just before the MIG fired a missile at BLUE Flight. Estimated altitude of the MIG was about 3000 ft. There was no evidence of MIG warning in this case.

6. ACTION INITIATED

BLUE Flight continued egress, taking evasive action when MIG was observed to fire missile at them. GREEN 1 had inoperative radar and on sighting MIG called it out and told GREEN 3, who was on his left wing, to go after him.

7. SITUATION DEVELOPMENT

BLUE Flight observed the MIG fire a missile from extreme range (several miles or more) and took evasive action by turning 45° and climbing toward the sun. The missile was observed to approach to about 2 miles behind the flight, then lost momentum and arched toward the ground. MIG broke off and BLUE continued egress.

*Mission carries bombs and air-to-air missiles; assigned to strike a given target, but jettison bombs and protects F-105s if MIGs become a clear threat on ingress. Follows F-105s out on egress to protect against MIGs.

SECRET

SECRET

Event III-87

GREEN 3 banked sharply to get a better view and both front and back sighted what appeared to be a MIG-21 below. At about the same time GREEN 3 (front) observed a missile leaving the MIG, followed by a prominent white trail of smoke. GREEN 3 could not see what the MIG was shooting at due to broken clouds between the MIG and GREEN Flight. GREEN 3 then rolled inverted, nose down, and fired a SPARROW, without a radar target, in an attempt to divert the MIG. The MIG broke right and GREEN lost sight of him under clouds shortly after the missile firing. He was not detected again. GREEN 3's missile followed a ballistic path, missing the MIG by about 1/2 mile. GREEN Flight continued egress. Later, at a point on the Red River just below Yen Bai, with GREEN Flight trailing the last flight of F-105s by 3 to 4 miles, F-4s and F-105s about 14,000 ft altitude, a flight of four MIG-21s was observed closing the F-105s from 5 o'clock, level. GREEN 1 radar was now operating and GREEN Flight turned toward the MIGs who then did a hard turn away and departed the area. GREEN continued to egress with the F-105s. GREEN Flight was just about at BINGO fuel.

8. ORDNANCE

(No. fired/No. hits)

SPARROW
AIM-7E

Remarks

GREEN 3	1/0	Fired without lock-on as a diversionary measure. Missile went ballistic.
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9. EQUIPMENT PROBLEMS - Green 1 radar was inoperative part of the time.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
GREEN 1 (front)	3000	220	55	10 years in ADC.
GREEN 3 (front)	4500	175	52	Most of time in fighters or interceptors; 100 missions in Korea in F-80; ADC after Korea.

Comments on this Encounter:

GREEN 3 (front) - A missile system which permits launch and missile guidance without fine tracking of the target would be highly desirable in a situation like this.

Comments from Overall Experience:

GREEN 1 (front) - The visual identification requirement is necessary in the SEA environment with many friendly aircraft in the air and our lack of ability to discriminate by other than visual means.

The SPARROW is basically a good missile -- it just needs better reliability.

Releasing the centerline tank offers problems in maneuvering to release and keeping the flight together as well as in maintaining position on the F-105s. There have been aircraft hit and damaged by centerline tanks

You always want more speed and maneuverability although the F-4 has the speed it needs and definitely has the maneuverability.

The F-4 can disengage from a MIG-21. If you have a MIG-21 making a pass from the rear quarter (either co-altitude or diving on you) you pull a hard break and cause him to yo-yo high. If he does this just right he's still in an awkward position. What you can do is break into him or, if he goes high enough, you can just unload, put the burners in, jink to spoil his tracking, and get out.

The F-4's ability to accelerate is a great advantage. It can turn well, and what it does best is roll. You can roll the airplane all day and this makes a big difference.

You absolutely have to have a pilot in the back seat of the F-4 rather than an RO. It would be difficult for an RO to understand the various tactical situations, and a pilot in the back could bring the aircraft home if the frontseater is hurt.

GREEN 3 (front) - Two people in the F-4 work out well. In addition to needing the other man to operate the weapon system, it's helpful to have somebody else looking around. There have been a number of cases where the extra set of eyes have spotted things.

The practice of having an RO in the back seat rather than a pilot is sound for day work or in just an interceptor role, but in night air-to-ground work it is extremely valuable to have a man to watch the instruments and this requires a pilot or a very experienced RO.

11. DATA SOURCES

Project Interviews: GREEN 1 (front) 6 March 1967
GREEN 3 (front) 10 March 1967

Messages: 388TFW Korat OPREP-3 101139Z, March 1967, DOI 0750
8TFW Ubon OPREP-3 101240Z, March 1967, DOI 03223
7AF message 110107Z, March 1967, DIO 22589

SECRET

Event III-87

12. NARRATIVE DESCRIPTION

As in paragraphs 1 through 7 above.

Event III-88

Aircraft Involved: Four F-105s vs three Mig-17s

Results: Sighting only

Vicinity of Encounter: 21°34'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 March 1967/1556H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight on egress from ALFA target when at 4500 ft BLUE 3 saw two silver MIGs 7 miles off starboard wing at same altitude; speed was increased and visual contact lost. When approximately 20 miles to northwest and at 5000 ft, BLUE 4 saw one silver MIG 5-7 miles range at 2 o'clock. MIG winged over and was not seen again.

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Event III-89

Aircraft Involved: Twelve F-105s vs two MIG-21s
and four MIG-17Ds

Result: Two MIG-17Ds killed, one MIG-17 damaged
Vicinity of Encounter: 21°38'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 March 1967/1556H

BLUE Flight (four F-105s) was the mission lead for a strike of sixteen F-105 aircraft from Takhlil. The target was the Thai Nguyen steel mill. Primary mission of BLUE Flight was flak suppression in and around the target area. IRON HAND flight, EB-66 ECM flights, MIGCAP and other support aircraft were airborne in connection with this mission which took place on the same day as the initial strike on this target.

2. MISSION ROUTE

Takhlil to GREEN ANCHOR extended to North Star Tracking Station, to Red River, east to Cho Mi, then south into the target. Egress west to Red River.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

4 CBU-24 (centerline)
2 450-gal. wing tanks (inboard)
1 AIM-9B (left outboard) (BLUE 1 and 3 only)
1 QRC-160 (right outboard)
All camouflaged and carrying 20mm cannon.

MIG-17

Cannon
Silver color
Not camouflaged

MIG-21

AAM
Silver color
Not camouflaged

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER*

Weather: Clouds 3000 ft scattered, visibility about 5 miles in haze over the target and in the valley around the target area.

	BLUE			
	1	2	3	4
Altitude:	4,000-5,000 ft			
Heading:	280°-290°			
Speed:	550 KCAS			
Fuel State:	Approx. 1000 lb above BINGO			

Flight Formation: Left echelon almost line abreast, BLUE 3 on the right, with 1, 4 and 2 to the left, in that order.

5. INITIAL DETECTION

Numerous MIG warnings in the area from BIG EYE and the preceding strike force. Coming off the target, as the flight was rejoining, BLUE 1 sighted four MIG-17Ds at 2 o'clock, approximately 2000 ft down, distance 1 to 2 miles. MIGs were in a 70° echelon to the right, 1500-2000 ft between each airplane, on a westerly course.

6. ACTION INITIATED

BLUE 1 and 3 rolled into the MIG-17s, attacking from the MIGs 7 to 8 o'clock position. BLUE 1 did a descending barrel roll, rolling in behind the first two MIGs, but ahead of the second two. BLUE 3 followed BLUE 1 with a high side pass from 9 o'clock, pulling in behind the fourth MIG. BLUE 2 had lost his radio receiver when popping up to go in on the target and was not aware of the situation. He lost contact with rest of flight and egressed. BLUE 4's actions are not known.

7. SITUATION DEVELOPMENT

BLUE 1 rolled in between MIG 2 and 3 and tried unsuccessfully to fire his AIM-9B at the MIGs ahead. (He had thrown the wrong switches and the missile would not fire.) BLUE 1 fired cannon and damaged MIG 2. BLUE 3 fired cannon (after experiencing switching

*Refers to the encounter with four MIG-17s.

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Event III-89

problems in trying to fire his missile) at MIG 4 as the MIG was firing at BLUE 1 and downed the MIG. BLUE 3 then took MIG 3 under cannon fire (after MIG 3 had fired on BLUE 1) and scored hits and a probable kill. MIG 1 successfully disengaged; BLUE Flight did not give chase due to fuel and mission considerations.

8. ORDNANCE

	(No. fired/No. hits)	Remarks
	<u>20mm</u>	
BLUE 1	Unk/1	Tried to fire AIM-9B but failed to throw proper switches.
BLUE 3	975 rd/damaging 1 downing 1	Wanted to fire AIM-9B but unable to throw proper switches in time. Did not use gunsight -- too much switching required.
MIG-17s (3, 4)	Unk/0	
	<u>AAM</u>	
MIG-21s	1/0	

9. EQUIPMENT PROBLEMS

BLUE 2's radio receiver became inoperative as he popped up for his pass at the target. Later, his gun failed to fire as a MIG-21 crossed ahead of him. Pilot attributed the gun failure to a "bad contact."

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3277	604	76	TAC background. Had several MIG encounters before this one.
BLUE 2	~1200	900	12	Completely TAC background. This was first mission into Route Package VIA.
BLUE 3	~2650	300	79	ADC and TAC background. Had never fired a missile in F-105.

Comments on this Encounter:

BLUE 1 - Could not get a missile off because he missed one of five switches that must be thrown. Could not get the gunsight set up in time to get any use out of it even though switching was practiced every day -- in the excitement of the encounter, one switch was forgotten.

BLUE 3 - There is a need for a capability to go simply and instantaneously from air-to-ground to air-to-air modes. Did not go air-to-air coming off the target because was too busy with speed brakes, afterburner, flaps.

Comments from Overall Experience:

BLUE 1 - There is always a lot of apprehension about the enemy's capabilities, but once you really see what they can do -- the weaknesses and limitations of their equipment and personnel -- then it can be seen that our people are more effective.

BLUE 2 - No MIG-21 pilot I've ever seen has been very aggressive.

BLUE 3 - To get an electrically caged gunsight an F-105 will put the sight right on top of the combining glass. This is no mils depression. Everyone uses various methods to bugger the F-105 system.

The MIG-21s sometimes run right through their own flak. Sometimes they follow the F-105s up in the "pop" maneuver, through the flak, and try to attack over the target.

11. DATA SOURCES

Project Interviews: BLUE 1, 17 March 1967
BLUE 2, 29 May 1967
BLUE 3, 17 March 1967

Messages: 355TFW OPREP-3 101400Z, March 1967, DOTO-0-10782
7AF message 110107Z, March 1967, DIO 22589
355TFW OPREP-3 110944Z, March 1967 DOTO-0-S-10804

12. NARRATIVE DESCRIPTION

Just as the flight approached the target heading 170°, 550-600 KCAS, altitude 3000 ft, in a left echelon for a right roll-in, BLUE 3 sighted two MIG-21s at BLUE 1's 4 o'clock,

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Event III-89

5,000-6,000 ft out. The MIGs fired a missile as BLUE 1 pulled up in his pop maneuver. BLUE 3 in his pop broke into the MIGs as he made his right roll in on the target. The flight lost sight of the MIG-21s at this point and, since they were in their bomb run did not attempt to engage.

The flight came off the target on a westerly heading. While in the process of joining up (5 or 6 miles west of the target) BLUE 1 sighted four MIG-17s at his 2 o'clock low 1 to 2 miles out. The flight formation at this time was BLUE 3 on the right with the flight echeloned left. BLUE 1 called the MIGs; BLUE 3 acknowledged the call. BLUE 1 initiated the attack by turning right, into the MIGs making a right high-g barrel roll coming out on the first MIG element's 6 o'clock position.

BLUE 1 tried to fire his AIM-9B at the MIG-17s ahead but the missile would not fire because he had not thrown the proper switches. MIGs 1 and 2 took evasive action with BLUE 1 following at speeds of 500 to 600 KCAS, doing barrel rolls and S-turns between the deck and about 4000 ft. BLUE 1 fired cannon at MIG 2 without a sight and observed sparkles on the MIG's wing. The MIG-17s disengaged by turning sharply. BLUE 1 did not attempt to reengage since it was not his mission to pursue MIGs and because of being at BINGO fuel.

BLUE 3 rolled in immediately after BLUE 1. He made a 90° high side pass on the second MIG element rolling out on MIG 4's 6 o'clock position approximately 1000 ft back. BLUE 3 jettisoned his wing tanks and went afterburner as he started his pass. He also attempted to set his armament switches for "missiles air" but was unable to accomplish this due to the time required and his proximity to the enemy. As he reversed his turn on the MIGs, he saw two MIG-21s coming toward his 6 o'clock. He disregarded these two aircraft and pressed his attack on the MIGs in front of him. (The MIG-21s were not sighted again.) As BLUE 3 closed on MIG 4 the MIG was firing cannon at BLUE 1. BLUE 3 fired and the MIG turned right. BLUE 3 fired again observing hits on the MIG at this time. The MIG then broke hard left. As he passed in front of BLUE 3 at 3,000 to 4,000 ft, BLUE 3 fired again observing hits on the aft fuselage, canopy and a fire starting in the left wing. The MIG rolled down and went straight in, exploding upon impact with the ground. BLUE 3 pulled off to the right. At this point MIG 3 crossed in front of him from right to left. The MIG was attacking BLUE 1, firing its cannon. BLUE 3 pulled up and left, abreast of the MIG. The MIG, seeing BLUE 3, turned right, into BLUE 3. BLUE 3 fired his cannon at this time and he thinks he hit the MIG. Then the MIG broke hard left, and BLUE 3 fired again. The MIG continued left and disengaged. BLUE 3 felt he also hit the MIG in the left turn. At this point BLUE 1 called to disengage and BLUE 1 and 3 egressed the area without further incident.

At no time did BLUE 3 have a gunsight (unable to change switch settings). He used the top of the combining glass and just pointed the aircraft in the general direction. Most of his shooting was done within 800 ft or so.

BLUE 3 was in afterburner most of the time and had observed the MIG-17s light afterburners.

BLUE 2 had lost his radio receiver in his pop maneuver going in on the target. Coming off target BLUE 2 lost sight of the rest of the flight and was not aware of contact with the MIG-17s. He joined with the first F-105 he saw and, upon joining, learned that it was an F-105F trying to hit a SAM site. A MIG-21 turned in on the F-105F and BLUE 2 tried to fire his gun at the MIG. The gun would not fire. As BLUE 2 turned into the MIG, the MIG turned away. BLUE 2 was at BINGO fuel and egressed.

Actions of BLUE 4 are not known.

The MIG-17s that were engaged by BLUE Flight were also engaged by two other flights of F-105s, GREEN and PURPLE.

At 1556H GREEN Flight, on egress from the target, was at 21°34'N/105°40'E, heading 273°, altitude 4500 ft when GREEN 3 observed two silver MIG-17s at his 3 o'clock position, approximately 7 miles away at the same altitude, beginning a turn to the southeast. GREEN 3 continued to pick up speed and lost visual contact with the MIGs. While near 21°45'N/105°25'E, heading 315°, altitude 5000 ft, GREEN 4 saw one silver MIG-17 at his 2 o'clock position 5 to 7 miles away. The MIG was at 10,000 ft altitude and was executing a wing over. GREEN 4 passed out of the area without further incident.

At approximately 1556H, PURPLE Flight of four F-105s observed a SAM detonation directly over the target at 11,000 ft. On egress, when at approximately 21°35'N/105°40'E, heading 270°, altitude 6000 ft, PURPLE 4 sighted a MIG at his 3 o'clock position about 2000 ft to the right. PURPLE 4 called bogey at 3 o'clock and went to afterburner. By the time the MIG-17 was able to roll in behind PURPLE Flight, they were at 580 kts and pulled away.

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Event III-90

Aircraft Involved: Two F-105s vs four MIG-21s
Results: No Damage (except by ground fire)
Vicinity of Encounter: Near 21°35'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 March 1967/Afternoon

BLUE Flight was on an IRON HAND mission for a strike in the Thai Nguyen area.

11. DATA SOURCES

Messages, Reports:

USAP citation quoted in AF/Space Digest

12. NARRATIVE DESCRIPTION

BLUE 1 was shot down and BLUE 2 withdrew due to battle damage, both caused by ground fire.

BLUE 3 and 4 were attacked by two MIG-21s on two separate encounters, while BLUE 3 and 4 were attacking SAM sites in the vicinity of the target.

Event III-91

Aircraft Involved: Four F-105s vs one MIG-17

Results: No damage

Vicinity of Encounter: 21°35'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 March 1967/1558H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight was on egress from Thai Nguyen at 6000 ft. BLUE 4 saw MIG at 2000 ft, off right wing and called bogey. Flight lit afterburners and outran MIG at 580 knots before MIG could roll in.

Event III-92

Aircraft Involved: Four F-105s vs one MIG-17

Result: Sighting Only

Vicinity of Encounter: 21°31'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 March 1967/Unknown

BLUE Flight (four F-105s) sighted one MIG-17.

11. DATA SOURCES

WESG team visit to Southeast Asia

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Event III-93

Aircraft Involved: Four F-4Cs vs one MIG

Results: Sighting only

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 March 1967/Unknown

BLUE Flight sighted one MIG, type unidentified. There was no maneuvering.

11. DATA SOURCES

WESG team in Southeast Asia.

Event III-94

Aircraft Involved: Two RF-4Cs vs two MIG-17s

Results: Sighting only

Vicinity of Encounter:

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 March 1967/1650H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight at 24,000 ft saw two MIGs at 8 o'clock high, 1-2 miles range. Flight descended and accelerated, losing MIGs.

Event III-95

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting only

Vicinity of Encounter: 21°02'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

At 1616H, second flight (same force as Event III-96) of F-105s was pulling off target when Lead saw one MIG-17 maneuvering with F-4C flight (Event III-102).

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Event III-96

Aircraft Involved: Four F-105s vs four
MIG-17s and one MIG-21

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°01'N/105°29'E

1. PRIMARY MISSION AND TACTICAL SITUATIONS

Date/Time: 26 March 1967/1613H

Four F-105s (GREEN Flight) had just pulled off target in the Hoa Lac area when they spotted MIGs and engaged them. GREEN Flight was part of larger strike force.

3. AIRCRAFT CONFIGURATIONS

GREEN 1, 2, 3, 4

Guns

MIGs

AA missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility 3 miles in haze with a broken cloud condition.

	GREEN			
	1	2	3	4
<u>Altitude:</u>	4000 ft			
<u>Heading:</u>	250°			
<u>Speed:</u>	520 kts			
<u>Fuel State:</u>	Unknown			
<u>Flight Formation:</u>	Unknown			

5. INITIAL DETECTION

Immediately after GREEN Flight pulled off the target, GREEN Lead observed one MIG-17 taking off from Hoa Lac Airfield at approximately 1613H.

6. ACTION INITIATED

GREEN Lead and GREEN 2 began a left turn to approximately 150 degrees to follow MIG-17 for possible engagement.

7. SITUATION DEVELOPMENT

At this time GREEN Lead observed three more MIG-17 aircraft orbiting the airfield at Hoa Lac. GREEN 1 and 2 then concentrated their attention on the nearest MIG-17. The MIG began a turn to the right. GREEN Lead started firing and observed ordnance impacting on the left wing of the MIG with pieces of material tearing off MIG after 274 rounds of 20mm had been fired. MIG began a hard left descending turn. GREEN Lead and GREEN 2 overflew the MIG-17 and lost sight of him.

8. ORDNANCE

	(No. Fired/No. Hits)	
	<u>20mm</u>	<u>AAM</u>
		<u>Remarks</u>
GREEN 1	274/several	
GREEN 2	---	
GREEN 3	---	
GREEN 4	---	
MIG-17 1, 2, 3, 4	---	
MIG-21	---	1/0
		Hit MIG-17 in left wing.
		Went to left of GREEN 3 and 4.

11. DATA SOURCES

Messages, Reports:

OPREP-3 261330Z March 1967 from 355 TFW DOTO-0-10987

12. NARRATIVE DESCRIPTION

GREEN Flight (part of larger strike force) was engaged with MIGs and missiles from time over target (0813Z to 0824Z). Immediately after GREEN Flight pulled off the target (heading approximately 250 degrees, altitude approximately 4000 ft) GREEN Lead observed one MIG-17 taking off from Hoa Lac Airfield. Lead and GREEN 2 began a left turn to 150 degrees to follow MIG for possible engagement. At this time GREEN Lead observed three more MIG-17s orbiting the Hoa Lac Airfield at approximately 300 ft in single ship trail with 3000 to 5000 ft spacing. MIGs were silver with red star. Lead and GREEN 2 then concentrated their attention to the nearest MIG-17 and pressed the attack. As Lead and

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Event III-96

GREEN 2 closed on the MIG, the MIG began a right turn. Lead and GREEN 2 followed, turning inside the MIG. GREEN Lead began firing and observed ordnance impacting on left wing with pieces of material tearing off MIG after 274 rounds of 20mm had been fired. MIG went into hard left descending turn. Lead and GREEN 2 over flew the MIG-17 at this time and broke right losing sight of the MIG. The altitude of the flight at this time was approximately 2500 ft in the vicinity of 21°01'N/105°29'E, the time 0820Z. At the same time BLUE Flight (Event III-102) observed a MIG-17 impact in the same vicinity. GREEN Lead and GREEN 2 then turned left to heading of 180 degrees then back to 360 degrees to sweep target area and to provide CAP for the remainder of the strike force.

GREEN 3 and 4 were jumped by one probable MIG-21 just as they pulled off the target at altitude 4000 ft, airspeed 520 kts, heading approximately 270°. MIG-21 was approximately 3000 ft above and descending to their 6 o'clock position. GREEN 3 made a hard left turn to 180 degrees. As GREEN 3 and 4 started to pull away from MIG, MIG fired an ATOL missile which passed level and approximately 500 yards left of GREEN 3 and 4. Airspeed at this time was 550 kts, altitude 3500 ft. As GREEN 3 and 4 were turning back to a westerly heading to join with GREEN Lead and GREEN 2 they observed a camouflaged surface-to-air missile launched from vicinity of 20°53'00"N/105°22'20"E. Flight altitude approximately 4000 ft, airspeed 520 kts. Missile did not appear to guide but was climbing at approximately a 45 degree angle and passed 200 yards low and behind GREEN 3 and 4. On a south-to-north track, detonation was observed by GREEN 3 to be at about 12,000 ft. GREEN 3 and 4 then pressed the attack against point of missile launch which is approximately 3.5 miles north of Lead 58. After attack on SAM position, GREEN 3 could not relight afterburner and was forced to leave the area.

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Event III-99

Aircraft Involved: Two RF-4Cs vs one MIG-21

Results: No damage

Vicinity of Encounter: 20°43'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1645H

Two RF-4Cs (BLUE Flight) were on a reconnaissance mission against Hoa Binh.

11. DATA SOURCES

432 TRW 261110Z March 1967 OPREP-3 TUOC 02198.

12. NARRATIVE DESCRIPTION

BLUE Flight departed Udorn and proceeded to Channel 97. From Channel 97 they proceeded to 21°00'N/104°55'E at 30,000 ft altitude. From there, they proceeded to 20°50'N/105°20'E descending to 15,000 ft.

At 1645H, when BLUE Flight was at 20°52'N/105°20'E and 15,000 ft altitude, they saw three SAMs at 11 o'clock. When seen, the SAMs were 2000 ft away. BLUE 1 and 2 broke left and down.

BLUE 1 and 2 then egressed separately from the target, jinking from 12,000-18,000 ft altitude and changing heading. When BLUE 2 was at 20°43'N/105°12'E, he saw three more SAMs; one was out of control, another passed to the right, and the third exploded at 3 o'clock level, 1500 ft away. BLUE 1 saw one MIG at 20°43'N/105°05'E at 2 o'clock high about 2 mi away turning into BLUE 1. The MIG appeared dark in color with a flat nose and delta wing. BLUE 2 was about 1 mi in front of BLUE 1 at this time.

The weather was clear with 5-7 mi visibility.

Numerous MIG calls were heard but no SAM calls.

Event III-97

Aircraft Involved: Four F-105 vs one MIG-17

Results: Sighting only

Vicinity of Encounter: 21°04'N/105°31'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1017H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight pulling off same target as that of Events III-95, 96, 102 saw a MIG 6000 ft below but no attempt was made by MIG to engage. MIG may have been one involved in engagement in referenced events.

Event III-98

Aircraft Involved: One B-66 vs two unidentified

Results: Sighting only

Vicinity of Encounter: 19°45'N/106°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1620H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Jamming aircraft saw two swept-wing, silver aircraft and turned 180°; no further contact.

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Event III-100

Aircraft Involved: Four F-105s vs one MIG-17

Result: No Damage

Vicinity of Encounter: West of Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1620H

Four F-105s on a strike mission west of Hanoi.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 4

Guns

MIG-17

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility 3 miles in haze with a broken cloud condition.

BLUE 4

Altitude: 3,500 ft

Heading: 240°

Speed: Unknown

Fuel State: Unknown

Flight Formation:

Trail for target engagement.

5. INITIAL DETECTION

BLUE 4 observed a MIG-17 in chase on an unknown flight as he was coming off the target.

6. ACTION INITIATED

BLUE 4 jettisoned his bombs and engaged the MIG-17.

7. SITUATION DEVELOPMENT

As BLUE 4 came off the target he observed one MIG-17 in chase on an unknown flight at 5 o'clock, low. BLUE 4 rolled in on the MIG in a scissors maneuver from 3,500 ft with the MIG at 3,000 ft. After BLUE 4 made one gun-firing pass, the MIG broke left and away from BLUE 4 and the friendly flight he has been chasing. Encounter ended at 1621H. BLUE 4 estimated no damage to MIG.

8. ORDNANCE

BLUE 4 fired guns - number rounds unknown.

MIG-17 - unknown.

9. EQUIPMENT PROBLEMS

BLUE 4 - bombs failed to drop during pass on target.

11. DATA SOURCES

Project Interviews: BLUE 1, (Lead)

Messages, Reports:

OPREP-3 261330Z March 67, from 366JFW
TAKHLI RTAFB DOTO-0-1097

12. NARRATIVE DESCRIPTION

See Items 5, 6, and 7.

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Event III-101

Aircraft Involved: Four F-4Cs vs three MIG-17s

Result: No damage

Vicinity of Encounter: Near Hoa Lac Airfield
(21°01'N/105°29'E)

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/unknown

Four F-4Cs on a STRIKE/CAP mission in the vicinity of Hoa Lac Airfield.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

Bombs

Air-to-air armament unknown

MIG-17

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to broken clouds with haze.

BLUE
1 2 3 4

Altitude:

Unknown

Heading:

Unknown

Speed:

Approximately 540 kts.

Flight Formation

Trail for bomb delivery

5. INITIAL DETECTION

BLUE 2 spotted three MIG-17s as he pulled off the target. Time unknown.

6. ACTION INITIATED

BLUE Lead did not spot MIGs, but instructed flight to go get them.

7. SITUATION DEVELOPMENT

BLUE Flight was pulling off the target when BLUE 2 spotted three MIG-17s on downwind at Hoa Lac Airfield. BLUE 2 called the MIGs and Lead replied, "Rog, I don't have them; go get them." BLUE 2 rolled up, trying to get some lateral separation. At this time BLUE 2 hit BINGO fuel and broke off. Lead said to rendezvous at Alpha Point which was about midway in on the egress and coming out of the target area. About one minute later BLUE 2 saw a SAM hit BLUE Lead. Lead was at about 15,000 ft when he was hit. BLUE Lead called out, "We're over Alpha Point. We've been hit. We're bailing out. We're bailing out."

11. DATA SOURCES

Project Interviews: BLUE 2

12. NARRATIVE DESCRIPTION

See items 5, 6, and 7.

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Event III-102

Aircraft Involved: Three F-4Cs vs eight MIG-17s

Result: No damage

Vicinity of Encounter: 21°02'N/105°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 March 1967/1615H to 1627H

Three F-4Cs (BLUE Flight) on a STRIKE/CAP mission. BLUE 2 aborted in the air due to the loss of his ECM pod. The target was Son Tay, the Army barracks just east of Hanoi, and the Hoa Lac area.

2. MISSION ROUTE

Departed Ubon and refueled on ORANGE ANCHOR. From there to Channel 97, then direct to 21°04'N/104°32'E, then direct to 21°07'N/105°28'E, then direct to within 15 miles of the target. Egress was direct to 21°04'N/104°32'E then to Channel 97 and then to air-to-air refueling on ORANGE ANCHOR.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 3, 4

4 - SPARROW
6 - 750 lb bombs
1 - Left outboard wing tank
1 - Centerline tank
1 - ECM pod on right outboard station

MIG-17s MIG 1 through 8

AAM missiles
Guns
Silver color
No AB noted

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility 3 miles in haze with a broken cloud condition.

	BLUE		
	1	3	4
<u>Altitude:</u>	6,000 MSL		
<u>Heading:</u>	107°		
<u>Speed:</u>	540 kts		
<u>Fuel State:</u>	Full internal plus some in external tanks.		

Flight Formation: Unknown

5. INITIAL DETECTION

BLUE 3 sighted the MIGs at BLUE flight's 8 o'clock position at approximately 1615H.

6. ACTION INITIATED

BLUE flight dropped external stores, lit afterburners, and went into a hard left turn. BLUE 4 fell out on the first turn.

7. SITUATION DEVELOPMENT

BLUE flight enroute to target area broke out of weather and into clear in a valley 15 to 20 miles southwest of target and almost immediately they spotted F-105s egressing from target with eight MIGs in close pursuit and attacking the F-105s. The MIGs spotted BLUE flight and came off the F-105s and approached BLUE flight at their 8 o'clock position. BLUE flight jettisoned ordnance, lit afterburner and went into a hard left turn. BLUE 4 fell out on the turn. BLUE flight continued turning in a big horizontal circle with the MIGs in pursuit firing their cannons. This engagement lasted for approximately 10 minutes. BLUE flight hit BINGO fuel and the MIGs departed one way and BLUE flight another. Evidently the MIGs were also low on fuel. During encounter BLUE 1 locked on, interlocks out and armed, but missile would not fire. Several opportunities to fire missiles were prevented because of proximity to MIGs. BLUE flight received ground fire (37-57mm) while engaging these MIGs.

8. ORDNANCE

The only fire was from the MIGs (cannon fire). No hits.

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Event III-102

9. EQUIPMENT PROBLEMS

BLUE 1 - Missile failed to fire.
BLUE 2 - Lost ECM pod and aborted early in the mission.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>
BLUE 3	3,000	240	65

Comments on this Encounter

A flight does not normally go in with 3 members. Should not be up in Route Package VI when the visibility was 2-3 miles, particularly since they have OGI. The first time you will see them will be at your 7 o'clock. They should have ignored the SAM threat and worked more in the vertical.

Comments on Overall Experience

SAMs will be fired at CAP aircraft even with MIGs in the area. Also flak will be fired. There is a high degree of coordination between AAA, SAMs and MIGs. A tactic is for a MIG-17 to keep at low altitude, hoping to draw you in to a flak trap. This may have happened on 20 May 1967.

11. DATA SOURCES

Project Interviews: BLUE 3, 3 June 1967

Messages, Reports:

8 TFW	261643Z	Mar 1967	OPREP-3	DOI	03649
8 TFW	261220Z	Mar 1967	OPREP-3	DOI	03639
8 TFW	270540Z	Mar 1967	OPREP-3	DOI	03655

12. NARRATIVE DESCRIPTION

BLUE flight was on a STRIKE/CAP mission. Their TOT was about 10 minutes behind the F-105s which were striking the same target. The F-105s were strung out with 2-3 miles between flights and BLUE flight was passing them as the F-105s egressed from the target.

As BLUE flight broke out of the weather and into the clear in a valley 15-20 miles southwest of the target, BLUE 3 saw a flight of F-105s at 9 o'clock egressing and almost immediately saw 8 MIG-17s in close pursuit and attacking the F-105s. He called MIGs at 8 o'clock.

The MIGs immediately broke into the BLUE flight and ended up at 8 o'clock to BLUE flight. BLUE flight broke left and jettisoned ordnance into a mountainside at 21°02'N/105°22'E. Tanks were also jettisoned. BLUE flight was at 4500-6000 ft MSL heading 90-107 degrees at the time. The ensuing encounter lasted from 1615H to 1627H in a 4-5 mile radius of Hoa Lac airfield.

In the break BLUE 4 became separated from BLUE 1 and 3. BLUE 4 hassled with some of the MIG-17s but then was able to disengage and egress.

During his fight BLUE 4 sighted a silver MIG-21 in pursuit of an F-105, (Event III-96) but only for a short time and did not see the MIG-21 again.

Shortly after the break into the MIG-17s, BLUE 4 observed a MIG-17 in an approximate 15 degree nose down attitude, 3000 ft below him, belly up and corkscrewing toward the ground. The altitude of the MIG-17 was about 500 ft AGL. Although BLUE 4 did not see the impact due to his engagement, he felt that there was no way for the MIG to recover. The MIG-17 was silver in color with a red star on the lower right wing surface. This was the MIG kill of Event III-96. BLUE 1 also saw this MIG and helped confirm it.

BLUE 4 was fired on by cannon in two different head-on passes by the MIGs. Another time he was fired on as the MIG crossed from 7:30 o'clock, 200 yards to the rear. The MIG's cannon was firing from the lower left nose. The MIG overshot and at this time BLUE 4 broke off due to BINGO fuel, and returned to base.

BLUE 1, with BLUE 3 as wingman, initially started to turn with the MIGs. The MIGs were in a 7:30-6:30 o'clock position 1 1/2 miles back and were able to close and fired on several occasions. BLUE 3 was able to see the tracers fired at them.

Due to the SAM activity that day (one aircraft had been lost to a SAM previous to the encounter) BLUE 1 elected not to operate in the vertical. Therefore, BLUE 1 and 3 in afterburner and pulling 7-8 g's stayed low. They slightly yo-yoed (several thousand feet) and the fight varied from about 2000 to 8000 ft. Most of the time the BLUE 1 and 3 were about 5000 ft. Despite the restricted tactics BLUE 1 and 3 were able to keep the MIGs from tracking them. The MIGs could never pull sufficient lead on BLUE 3 who was outside of BLUE 1.

During the encounter BLUE 1 locked onto a MIG-17 and with interlocks out and missiles armed attempted to fire a SPARROW. No missile left the airplane. A thorough check of

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Event III-102

the aircraft had negative results. The system and missiles were checked with the missiles still on the aircraft, but no reason was found for the failure for the missiles to leave. The missiles were removed and checked and although a minor hydraulic leak was found in one, and a slight guidance problem was found in another, no reason was found which would have prevented the missiles from firing.

In several other opportunities, missiles were unable to be fired because BLUE 1 was too close to the MIG.

After a short period (BLUE 3 estimates 10 minutes) the MIGs suddenly disappeared. At this time BLUE 1 and 3 were at BINGO fuel, and it was surmised that the MIGs were also probably out of fuel or ammunition so they broke off. Previous to this BLUE 1 and 3 had not been in a position to disengage.

BLUE flight received 37/57mm flak throughout the engagement.

Event III-103

Aircraft Involved: One B-66 vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 20°50'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 March 1967/1617H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Aircraft on ECM orbit at 28,000 ft saw MIG pass 2 miles ahead. MIG turned away and was not seen by B-66 escorts.

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Event III-104

Aircraft Involved: Four F-105s vs two unidentified

Results: Sighting only

Vicinity of Encounter: 21°20'N/108°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 March 1967/1641H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound IRON HAND flight at 16,000 ft saw two contrails above 35,000 ft. MIG warnings had been heard.

Event III-105

Aircraft Involved: Four F-4Cs vs Unknown

Results: No damage

Vicinity of Encounter: 21°26'N/106°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 March 1967/Unknown

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound strike flight jettisoned ordnance when MIG call was received.

Event III-106

Aircraft Involved: Four F-105s vs three MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°10'N/104°08'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 March 1967/0945H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight concluding armed reconnaissance saw single MIG at 3 o'clock high. MIG was joined by two others to rear of flight but no engagement ensued. MIGs were probably on defensive patrol.

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Event III-107

Aircraft Involved: Four F-105s vs two MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°00'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 March 1967/1600H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

F-105 flight at 10,000 ft saw two MIGs at 4 o'clock high and 4-5 miles range; no engagement; MIGs were apparently patrolling Hoa Lac Airfield defensively.

Event III-108

Aircraft Involved: Two RF-4Cs vs two MIG-21s

Results: No damage

Vicinity of Encounter: 21°20'N/103°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 April 1967/1610H

Two RF-4Cs (BLUE Flight) were on a reconnaissance mission against the Yen Bai airfields.

11. DATA SOURCES

432 TRW 081034Z OPREP-3 TUOC 02500

12. NARRATIVE DESCRIPTION

BLUE Flight proceeded from Udorn to Channel 97 and then headed direct toward Yen Bai. The visibility was 2 mi in haze.

BLUE Flight on a heading of 011° at 10,000 ft altitude saw two MIG-21s below them at 21°20'N/103°54'E. The MIGs were about 4000 ft below BLUE Flight at 3 o'clock and were in a right climbing turn toward BLUE Flight's 6 o'clock.

BLUE Flight went to afterburner and broke down and to the right, jettisoning tanks, and departed the area.

The MIGs were lost from sight after the turn. The RF-4Cs had been receiving X-band strobes of two rings intermittently for 1 min prior to the sighting.

After 4-5 min from the abort, BLUE Flight heard MIG calls in AG-1 and then in AG-4.

SECRET

Event III-109

Aircraft Involved: Four F-105s vs two MIG-21s
Results: Sighting only
Vicinity of Encounter: 21°25'N/104°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 April 1967/1635H
BLUE Flight was to strike Rt. 601 Highway Bridge.

11. DATA SOURCES

Messages, Reports

7AF 082143Z DIO 22856 April 1967

12. NARRATIVE DESCRIPTION

At 1635H, BLUE Flight was at 21°25'N/104°02'E rolling in on target (Rt. 601 Highway Bridge) from 17,000 ft when two MIG-21 aircraft were sighted. The MIGs were at 30,000 ft in level flight at a heading of 280°, 10 o'clock high with respect to BLUE. The MIGs made one wide orbit, apparently at same altitude. They then rolled out on a heading of 45° and disappeared.

Event III-110

Aircraft Involved: Two F-104 vs one MIG
Results: Sighting only
Vicinity of Encounter: 19°47'N/106°29'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 April 1967/1325H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Turning F-104s saw silver colored aircraft and contrail at 35-40,000 ft heading west over Gulf of Tonkin; unident reversed direction and headed for Hainan; although may have been a friendly (DD held friendly track in area), other similar activity occurred in days following.

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Event III-111

Aircraft Involved: Four F-105Ds vs three MIG-21s
Result: No damage
Vicinity of Encounter: 20°50'N/104°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 April 1967/1615H

BLUE Flight was on a strike mission into Route Package VI. Target hit was road segment at 21°08'N/104°10'E.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, and 4

6 - M117 bombs
1 - AIM-9B (carried by 3 aircraft only)
1 - M61 Cannon
Avionics - Unknown (probably had QRC-160 ECM pods)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

BLUE 1, 2, 3, and 4

Altitude: 18,000 ft
Heading: 040°
Speed: Unknown
Fuel State: Unknown

5. INITIAL DETECTION

BLUE 1 observed three MIG-21s, approximately 10 miles away at 20,000 to 22,000 ft, on a heading of 230°.

11. DATA SOURCES

Messages, Reports

388TFW 111110Z PASTEL DOI 1735, for DOCO, April 1967.

12. NARRATIVE DESCRIPTION

While inbound to the target area at 18,000 ft, heading 040°, at vicinity 20°50'N/104°00'E, BLUE lead observed three MIG-21s approximately 10 miles away at 20,000 to 22,000 ft, heading 230°. The MIGs were observed to light afterburner and execute a 270° turn on an attack heading on BLUE Flight. BLUE Flight went into afterburner and executed a 270° turn for eventual head-on approach to MIGs. BLUE Flight was at speed of approximately 500 KCAS and still carrying ordnance. At approximate range of 7 miles, BLUE Flight observed the MIGs break away from attack heading and egress area in afterburner in a northerly direction at an estimated speed of 450 KCAS. Due to distance between flights, speed of MIGs, and ordnance load on BLUE Flight, the flight leader broke off the chase. BLUE Flight then went on to target and delivered ordnance.

Event III-112

Aircraft Involved: Four F-105s vs two Props

Results: Sighting only

Vicinity of Encounter: 17°44'N/106°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 April 1967/1239H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

One of F-105s saw two silver colored, low wing, mono-prop planes at 3500 ft; identities were too small to be A-1s and resembled T-28s.

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Event III-113

Aircraft Involved: Two F-4B vs one MIG

Results: No Damage

Vicinity of Encounter: 19°52'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 April 1967/1415H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

BARCAP lead, under E-2A control, made radar contact on unident at 12 miles; both BARCAP turned to investigate and wingman briefly saw what appeared to be a MIG-17 type aircraft; unident dived into clouds and contact not regained.

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Event III-114

Aircraft Involved: Four F-105s vs eight to ten
MIG-17s

Result: F-105F loss to a MIG,¹ one MIG-17
shot down

Vicinity of Encounter: 20°53'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/1655H

BLUE flight (consisting of four F-105F WILD WEASEL aircraft) was fraged to suppress SAM activity while a force of 16 F-105Ds and 8 F-4Cs attacked JCS 22.00, the Xuan Mai Army Barracks at 20°53'N/105°35'E. The F-4C aircraft were assigned strike/cap which gave them the secondary mission of air superiority. Six other flights had MIG encounters in this area. (See Events III-116, -117, -118, -119, -120.)

2. MISSION ROUTE

BLUE flight departed Takli AB, flew to GREEN ANCHOR for refueling, direct to Channel 97, and direct to the Black River at 20°58'N/105°21'E. Their primary target was a series of SAM sites about 5 mi southwest of Hanoi. This route would pass a few miles north of Hoa Binh but the IRON HAND flight route would vary as they prepared to attack known SA-2 sites. The first MIG encounter occurred just north of Hoa Binh. Return route was direct to GREEN refueling anchor and from there dependent on the aircraft. BLUE 2 was shot down in the vicinity of 20°44'N/105°32'E.²

3. AIRCRAFT CONFIGURATIONS

4 - F-105Fs³

- 1 - 650 gal centerline tank
- 2 - CBU-24s on inbd stations
- 1⁴ - AGM-45 (SHRIKE)
- 1⁴ - QRC-160 ECMPOD
- 1 - M-61 20mm cannon

MIG-17

- Red star with yellow border outline on top of wing.
- All - Large red star completely covering vertical stabilizer.
- All - External fuel tanks (dropped).
- Unguided (2.75 PFAR type) rockets.
- One MIG camouflaged - others silver - red star on side.
- Possible booster on one MIG.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, 7-10 mi visibility

	<u>Encounter 1</u>				<u>Encounter 2</u>	
	BLUE				BLUE	
	1	2	3	4	1	2
Altitude:	5,000 ft				In pop up	
Heading:	070°				Northerly	
Air Speed:	500 KTs				450 KTs +	
Fuel State:	10,000 +				10,000 +	
Flight Formation:	Rt hand echelon				Trail	

BLUE 3 had reported equipment trouble so BLUE 4 was flying in the element head position.

5. INITIAL DETECTION

BLUE flight was inbound to the target area descending through 5,000 ft MSL on a heading of 070° and preparing to attack a FANSONG radar signal emitting from their

¹Carried as probable loss to MIG in present official "Box Score"; however, eyewitness (see #3, Event III-116) saw MIG shooting at F-105F with debris coming off F-105F.

²Route of flight described in 432TRW OPREP-3, TUOC 02772 April 1967 is completely erroneous after Channel 97.

³432TRW OPREP-3 02771 April 1967. OPREP-3 indicates two F-105Fs and two F-105Ds; however, BLUE 4 named two crew members per aircraft for this flight.

⁴BLUE 1 carried 2 AGM-45 missiles and no QRC-160.

6 o'clock position when BLUE 4 saw eight MIG-17s in two flights of four aircraft. The MIGs were attacking almost head-on from BLUE 4's 2 o'clock position. The time was 1655H and this first encounter occurred in the vicinity of 20°53'N/105°25'E (about 5 mi north-east of Hoa Binh).

6. ACTION INITIATED

BLUE 4 called a MIG warning to the flight and with BLUE 3 on his right wing, broke right into the MIGs. The first flight of MIGs fired unguided rockets from a range of 3,000-4,000 ft. The rockets were ineffective. The second flight of MIGs was attacking BLUE 3 and 4 as the first flight overshot. BLUE 3 and 4 selected afterburner, jettisoned fuel tanks and ordnance but retained the QRC-160 and AGM-45 missile. BLUE 4's afterburner did not light and, as a result, BLUE 3 accelerated past BLUE 4 and they became separated. BLUE 1 and 2 continued in their attack on the FANSONG radar.

7. SITUATION DEVELOPMENT

Three separate engagements ensued. BLUE 4, without after burner, was the victim of three or four MIG-17s for a few minutes. The MIGs fired about 17 rockets in groups of three or four and made multiple cannon passes until they either became bored or ran out of ammunition and fuel. BLUE 4 stayed in the area attempting to aid in the rescue and then egressed, refueled, and returned to Takhli. BLUE 3 was able to separate from the MIGs and attempted to return to the troll area. He was again engaged by MIGs, managed to escape and egressed, recovering at Udorn AB.

BLUE 1 and 2 fired an AGM-45 at the FANSONG radar about 5 mi southwest of Hanoi and followed up the attack by dive bombing with the CBU-24s. They were attacked by MIGs during the pop up and during the recovery from the dive bomb run. BLUE 1 attacked and shot one MIG-17 down (verified by film). BLUE 2 apparently was hit by a second MIG during this time, called that he had a "hot air overheat light" on, and then called a second light on and said he would have to get out. BLUE 1 observed the chutes and received two good beeper signals in the vicinity of 20°44'N/105°32'E. See Event III-116 for more information on BLUE 2.

BLUE 1 orbited the bail-out area while he initiated rescue procedures and attempted to establish communications with the downed crew. He was jumped by more MIGs and forced to withdraw due to low fuel. BLUE 1 refueled and returned to the bail-out area where he was again attacked by MIGs during the rescue attempt. (See Event III-117 for related MIG engagements during the rescue attempt in which a second MIG was shot down and an A-1 was lost to a MIG). The rescue attempt was not successful and BLUE 1 recovered at Udorn AB.

8. ORDNANCE

	(No. fired/No. hits)	
	<u>Cannon</u>	<u>Remarks</u>
BLUE 1	3/1	Confirmed MIG kill
BLUE 2	-	
BLUE 3	-	
BLUE 4	1/1	
MIG 1	Yes plus unguided rockets	About 17 rockets total
MIG 2	Yes plus unguided rockets	in groups of 3 to 4
MIG 3	Yes	

9. EQUIPMENT PROBLEMS

BLUE 4 - AB failure
 BLUE 2 - Reported Hot Air Overheat Light on. Then a second light on and they would have to get out.
 BLUE 3 - "Lost all his equipment" - apparently WILD WEASEL equipment.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	Unknown	Unknown	Unknown	TAC background
BLUE 2	Unknown	Unknown	Less than 10	TAC background. F-105 instructor Nellis. F-105 tour in Germany.
BLUE 3	Unknown	Unknown	About 95	
BLUE 4	2400	500	64	9 yrs. rated, 4 mos. in SEA

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Event III-114

Comments

BLUE 4 feels that the MIG-17's ability to stay with him at 450 kts CAS, make a firing pass, and easily reposition for another firing pass is important.

BLUE 4 observed that the MIGs only fired at him when he started to turn and not when he was straight and level.

11. DATA SOURCES

Project Interviews: BLUE 3 (Pilot and EWO),
Messages, Reports:

432TRW OPREP-3, 02771 April 1967, 191300Z
432TRW OPREP-3, 02772 April 1967, 191315Z
355TFW OPREP-3, 11274 April 1967, 191757Z

12. NARRATIVE DESCRIPTION

BLUE flight was a flight of four F-105F WILD WEASEL aircraft on an IRON HAND mission assigned the task of suppressing SA-2 FANSONG radar and missile operation. The task was in support of a large force of F-105 and F-4 aircraft attacking JCS 22.00, the Xuan Mai Army Barracks and Insurgency School located about 12 mi southwest of Hanoi. During the initial MIG attack, the flight split into three separate units, with BLUE 1 and 2 attacking an SA-2 site, BLUE 3 attempting to separate from MIG aircraft and return to the task of suppressing SA-2 sites, and BLUE 4, without an afterburner, attempting to survive the attack of three to four MIG-17s.

As BLUE flight approached the target area, they were in a descent from 15,000 ft passing through 5,000 ft, on a heading of 070°, in the process of preparing to launch an AGM-45 against a FANSONG radar signal emitting at their 12 o'clock when BLUE 4 saw two flights of MIG-17s attacking from his 2 o'clock position. BLUE 4 was flying element lead position as a result of BLUE 3 experiencing equipment failure. The flight was in a right echelon so that the element could "look through the flight" for SAMs or MIGs from the high threat area, i.e., the delta around Hanoi, as they were passing about 5 mi north of Hoa Binh in the vicinity of 20°53'N/105°25'E. BLUE 4 called the MIGs to the rest of the flight and, with BLUE 3 on his right wing, immediately broke right into them. All of the MIGs were observed to drop their fuel tanks with fuel streaming out of the tanks. BLUE 3 jettisoned the centerline fuel tank and the two CBU-24s, retaining the QRC-160 and the AGM-45 Shrike missile. Both aircraft selected afterburner power. The first flight of MIGs fired unguided rockets from a range of 3,000-4,000 ft but the rockets appeared to tumble about 1,500 ft in front of the MIGs and were completely ineffective. The first flight of MIGs overshot but the second flight of MIGs turned into BLUE 3 and 4. About this time, BLUE 4's afterburner failed to light and BLUE 3, in afterburner, passed BLUE 4 and they became separated for the rest of this flight. BLUE 1 and 2 were not under direct MIG attack at this time and were able to continue the attack on the SA-2 site. The rest of this reconstruction will cover each member of the flight separately starting with BLUE 4, BLUE 3, and then BLUE 1 and 2, although all three entities were engaged by MIGs during the same time period.

BLUE 4, attempting to get his afterburner lit, unloaded his aircraft and pointed it down from 5,000 ft to gain some airspeed. He was only able to descend a few thousand feet because of the mountainous terrain but increased his airspeed to about 450 kts. He turned from his easterly heading to 240° and headed back across the Black River. The MIGs attacked BLUE 4 during this maneuver and one came into BLUE 4's view as he turned. BLUE 4 fired 47 rounds of 20mm HEI at the MIG as he passed the nose of the F-105, and BLUE 4 estimates that the MIG was damaged. The MIG continued away from BLUE 4 and was observed pulling out just above the treetops.

In the vicinity of 21°50'N/105°12'E, two more MIGs rolled in behind BLUE 4 and BLUE 4 was forced into a scissoring engagement lasting about 4 min. BLUE 4 was jinking to avoid being a stabilized target for the repeated firing passes and jettisoned his ordnance as he egressed, first the centerline fuel tank and then the CBU-24s. Before BLUE 4 jettisoned the AGM-45, one silver-colored MIG-17 with a red star on the side flew up to a position 200 ft to the left of BLUE 4 and sat there for 3-4 sec looking over at the AGM-45 Shrike missile on the outboard wing pylon. The MIG broke away when BLUE 4 turned into him.

BLUE 4 continued to fly the mountainous terrain contour attempting to unload, dive, and increase airspeed when the terrain permitted. But due to the rising feature of the terrain in the area (a rise from about 2,000 ft to almost 10,000 ft) he was unable to accelerate to an airspeed over 450 kts. With each hard jink to avoid a MIG pass, his airspeed would fall off to about 420-430 kts. The Electronics Warfare Officer (EWO) in the rear cockpit was advising the pilot as the MIGs were coming in, relaying the enemy position, and what direction to jink in order to avoid the MIG fire. As BLUE 4 crossed over the town of Hoa Binh (nestled in a bend of the Black River Valley between 3,500 ft peaks) there were three or four MIGs attacking him but the 37mm antiaircraft batteries opened up on both the F-105 and the MIGs. However, the MIGs continued the attack as BLUE 4 progressed up the Black River Valley. The MIGs appeared to give up the chase one at a time until there was only one MIG left, and this MIG turned back at about 20°45'N/105°00'E.

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BLUE 4 heard BLUE 1 call that BLUE 2 had bailed out. BLUE 4 reversed course and returned as far as he dared knowing that he could not engage any MIGs nor suppress any SAM threats without ordnance. He was able to relay radio calls to the rescue agency and remained in the area until his fuel ran low. He then egressed to GREEN ANCHOR for post-strike refueling and returned to Takhli AFB.

Return now to the initial encounter to retrace BLUE 3's engagement. BLUE 3 observed that the MIG-17s had a large red star that completely covered the vertical stabilizer and were silver colored except for one that was camouflaged. As BLUE 3 jettisoned the CBUs and fuel tank, he was immediately engaged by a MIG-17 coming into his 6 o'clock position at 3,000 ft range -- but not in position to fire. BLUE 3 broke and forced the MIG to overshoot but in so doing, slowed down too much and could not overtake the MIG as the MIG climbed away.

BLUE 3 then turned in an attempt to return to the target area but observed another MIG-17 on his tail but could not get this MIG to overshoot. BLUE 3 dove to the deck between the hills accelerating as he dove and lost the MIG. BLUE 3 once again attempted to return to the troll area but over the city of Hoa Binh, BLUE 3 observed a MIG below him at 4,000 ft going away to the north. BLUE 3 set up for an attack on the MIG thinking that the MIG pilot had not seen him but the MIG went to afterburner and turned so tight that the attack was nullified and the MIG came back in on BLUE 3's tail. However, this MIG could not close and BLUE 3 lost him. A short time later, the EWO informed BLUE 3 that another MIG was on their tail. But at this time, BLUE 3 was below Bingo fuel. He went to afterburner, accelerated away from the MIG on the deck, and egressed. BLUE 3 did not have enough fuel to attempt a rendezvous with a tanker and elected to recover at Udorn AFB.

Return again to the initial encounter to reconstruct the flight path of BLUE 1 and 2. As previously stated, BLUE 1 and 2 were not under immediate MIG attack when BLUE 3 and 4 engaged the force of eight MIG-17s. BLUE 1 continued to prepare for an attack on the FANSONG radar at their 12 o'clock position, and both BLUE 1 and 2 launched an AGM-45 shrike missile at a SAM site in the vicinity of 20°52'N/105°45'E.

BLUE 1 and 2 probably swung right in a southerly heading while waiting for the missile impact to mark the SA-2 site and then swung back around to their right in the pop-up for CBU-24 delivery. Delivery heading was to the north with release at 7,000 ft. BLUE 1 observed a couple of MIG-17s attempting to get into his 6 o'clock as they approached the SA-2 site but apparently the MIGs were not able to close and were not a threat at that time. As BLUE 1 rolled off of the target, he picked up a MIG-17 low at his 9 o'clock position.¹ BLUE 1 turned to get behind the MIG and paralleled his course. The MIG turned north toward Hoa Loc Airfield and BLUE 1 rolled in from above and fired a burst of 20mm, but did not see any hits. BLUE 1 then rolled in at the MIG's 6 o'clock and fired another burst hitting the MIG in the left wing. BLUE 1 observed the left wing start to disintegrate, pulled up to avoid collision with the MIG, and watched it crash in a rice paddy. During the attack on this MIG, BLUE flight moved 5-10 mi from the target toward the west/southwest.

During the time that BLUE 1 was shooting at the MIG-17, he thought that BLUE 2 was on his wing but in the process of coming off of the target, BLUE 2 apparently became separated from BLUE 1 and came under attack of another MIG. BLUE 2 called that he had a "Hot Air Line Overheat light on" and shortly thereafter repeated the first message with an additional warning light on and that he would have to get out. BLUE 1 advised BLUE 2 that he was not in sight and to head southwest. BLUE 1 headed in that direction and picked up two chutes in the vicinity of 20°44'N/105°32'E. Two good beepers were also heard. See Event III-116 for more information on BLUE 2.

BLUE 1 orbited the area attempting to locate and talk to the downed pilots without success until his fuel was running low and he observed a MIG-17 at his 6:30 o'clock position. He lit afterburner and egressed the area to GREEN ANCHOR to refuel. Prior to leaving the rescap area, BLUE 1 requested aid until the choppers could effect a pickup. The F-105s in Event III-117 and two A-1s responded (see Event III-117).

BLUE 1 returned to the rescap as a single ship since he knew the location of the downed pilots and could lead the rescue force to the spot. On arriving in the area, BLUE 1 called on GUARD Channel and heard a very brief beeper in response. BLUE 1 called repeatedly on GUARD Channel for the next 7 min but received no further response from the ground.

¹There is a disparity between the action reported by the 432TRW OPREP-3 and the information relayed to the interviewers by BLUE 4 and his backseater. BLUE 4 states, "I discussed the incident with Major (BLUE 1) in detail, later, after we were on the ground, and I'll try to explain exactly what he told me". The above follows BLUE 4's narration; however, according to the OPREP, the reader is led to believe that BLUE 1 shot the MIG down after BLUE 2 bailed out and was on the ground with the MIG heading 090° when initially seen by BLUE 1. The OPREP appears to compress the action as reported by BLUE 4 and reduces the number of MIG encounters to a total of two MIG-17s. The correct story cannot be determined because BLUE 1 was lost to possible MIG action about 10 days after this occurrence.

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Event III-114

BLUE 1 observed four more MIG-17s orbiting the area and pulled in on one and fired. The MIG dropped his fuel tanks but did not go down. BLUE 1 thought that he had hit this MIG but had to let him go as two more MIGs were maneuvering on him. BLUE 1 went to afterburner and exited the area to a position about 20 mi west of the downed crewmen. BLUE 1 made one more pass through the area as the F-105s in Event III-117 arrived, but observed nothing and was forced to depart by low fuel. BLUE 1 recovered at Udorn AB. BLUE 1 fired a total of 700 rounds of 30mm HEI on the three passes.

BLUE 1 and his EWO reported a red star with a yellow border outline on the top of the wing on the MIGs which they engaged.

Event III-115

Aircraft Involved: Two RF-4Cs vs two MIGs

Results: No damage

Vicinity of Encounter: 21°05'N/104°57'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/Unknown

Two RF-4Cs (BLUE Flight) were on a reconnaissance mission against the Son Tan army supply depot and airfield located near 21°05'N/105°30'E. At 20°45'N/104°04'E it was determined that the weather would preclude the mission accomplishment so BLUE Flight started a left turn to proceed to Channel 97.

11. DATA SOURCES

432 TRW 191330Z April 1967 OPREP-3 TUOC 02773

12. NARRATIVE DESCRIPTION

BLUE Flight was at 21°05'N/104°57'E at an altitude of 19,000 ft in a left turn to a heading of 210° when BLUE 2 sighted two unidentified aircraft. The aircraft were turning to BLUE Flight's 7 o'clock position, 3000-4000 ft above and 1 1/2 mi behind. BLUE Flight lit the afterburners and outdistanced the unidentified aircraft. No further contact was made.

Numerous MIG calls were received throughout the mission.

The weather was 5/8 coverage with tops at 12,000 ft and bases at 6000 ft.

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Event III-116

Aircraft Involved: Four F-105s vs eleven
MIG-17s

Results: Two confirmed MIG-17 kills
One F-105D slightly damaged

Vicinity of Encounter: 20°45'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/1658H

ORANGE flight (four F-105Ds) was the first of four F-105D strike flights and two F-4C strike/cap flights fringed to attack JCS 22.00, the Xuan Mai Army Barracks at 20°53'N/105°35'E. The force also included a WILD WEASEL flight (Event III-114) which preceded the attack force into the target area. All of the flights listed above were attacked by MIGs on this date. (See Events III-114, -117, -118, -119, -120). The flights were in trail with Time-on-Target separation of 2-3 min.

2. MISSION ROUTE

ORANGE flight departed Takhli RTAFB and proceeded directly to GREEN ANCHOR for refueling, direct to Channel 97, at 19°28'N/103°43'E, direct to the Black River at 20°55'N/105°21'E and direct to the target at 20°53'N/105°35'E. Egress was planned via the reverse route with post strike refueling on GREEN ANCHOR and then direct to Takhli.

3. AIRCRAFT CONFIGURATIONS

F-105D ORANGE 1, 2, 3, 4

- 6 - M117 bombs on centerline MER
- 2 - 450 gal fuel tanks on inboard wing stations
- 1 - QRC-160 ECM Pod on outboard station
- 1 - AIM-9B IR missile on outboard station (1 and 3 only)
- 1 - M61 20mm cannon 1029 rds each

MIG-17s

Cannon

Three designs were seen: camouflaged, white, or silver; all with Red Stars.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear near the target with 10-15 mi visibility. Broken cloud buildups to the south and west of the target over the mountains.

	ORANGE				MIG	
	1	2	3	4	1	11
<u>Altitude:</u>	6,000 ft				6,000 ft	
<u>Heading:</u>	066°				240°	
<u>Speed:</u>	550-600 KTAS				Unknown	
<u>Fuel State:</u>	10,000 lbs plus					
<u>Flight Formation:</u>	Standard Pod				Two elements of two	

5. INITIAL DETECTION

As ORANGE flight approached the pop-up point, heading 066°, at 6,000 ft and 550 KCAS, ORANGE Lead and 2 observed four MIG-17s approaching from the opposite direction at their 1-2 o'clock position. Two of the MIGs were 1500 ft above and two MIGs were 1500 ft below ORANGE flight.

12. NARRATIVE DESCRIPTION

ORANGE flight (four F-105Ds) was the first strike flight in a string of four F-105 and two F-4C flights fringed to bomb the Xuan Mai Army Barracks, 12 mi southwest of Hanoi. A F-105F WILD WEASEL flight preceded ORANGE flight into the target area by about 3 min and was jumped by MIG-17s upon entering the area (see Event III-114). ORANGE flight departed Takhli RTAFB, flew directly to GREEN ANCHOR for pre-strike refueling, directly to Channel 97 for a precise doppler navigation system fix, directly to 20°53'N/105°00'E, and then direct to the pop up point at 20°58'N/105°32'E with a planned right roll in on the target and a right roll off the target to egress over the reverse route.

As ORANGE flight passed the Black River (their push up power point), they lit the afterburner and accelerated preparatory to going into the pop up maneuver on the target. Shortly before the pop up point, ORANGE 3 and 4, who were flying pod formation with the element on the right (so that the element would be looking out over the valley toward Hanoi), saw an F-105F (believed to be BLUE 2, Event III-114) coming head-on from ORANGE 3's 12 o'clock and ORANGE 4's 11 o'clock position in a climbing left turn with a MIG-17 on his tail firing. The F-105F was climbing in a 20°-30° left climbing turn and passed within 3000 ft of the flight before it exited at the 3 o'clock position. ORANGE 3 observed the MIG-17 firing and saw smoke trailing from the F-105F. Two beepers were heard shortly

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Event III-116

after. After the MIG fired and hit the F-105F, he entered a whifferdill and turned back on ORANGE flight but was no threat because of the range and ORANGE flight's high speed. ORANGE flight was at 6000 ft, 550-600 KCAS, headed east.

As the F-105F and MIG were passing, ORANGE Lead and 2 saw four MIG-17s (three dark colored and one silver) approaching from the opposite direction with two MIGs 1500 ft above ORANGE flight and two MIGs 1500 ft below. The MIGs apparently were in the right front quadrant because the two low MIGs pulled up in a wing over and started to come in at ORANGE Lead's 5 o'clock while the two high MIGs made a sweeping turn to the right and attempted to come in behind ORANGE 3 and 4. At this time, ORANGE Lead called to jettison and lead; 2 and 4 cleaned off the bomb racks and tanks retaining the ECM pods and SIDE-WINDERS. ORANGE 3 and 4 did not see the four MIGs and ORANGE 3, thinking that ORANGE Lead was talking about the lone MIG chasing the F-105F, attempted to call lead and have the flight retain the ordnance since this lone MIG was no longer a threat at the airspeed of 550-600 kts. ORANGE 3 also feared for the safety of the aircraft since the flight was almost 200 kts over safe jettison speed. He elected to retain the ordnance and proceed to the target. ORANGE Lead and 2 broke right into the MIGs and narrowly missed having a mid-air collision with 3. The MIGs broke off the attack when ORANGE Lead and 2 turned in to the pop and bombed the target. ORANGE 4 stayed on ORANGE 3's wing.

ORANGE Lead and 2 reversed back to the left to cover 3 and 4 in the pop; and as they turned from south to northeast at 6000 ft 550 kts, Lead saw two MIG-17s in loose formation at about 2000 ft altitude in his 10 o'clock position headed 080°. ORANGE Lead reengaged afterburner and broke into a right descending turn to attack the lead MIG who made a hard right break. ORANGE Lead cut the MIG off in the turn, obtained a good firing tone, and fired the AIM-9B at about 2000 ft range. The MIG continued the tight turn and the missile passed about 200 ft astern without detonating. The MIG then reversed back to the right and ORANGE Lead broke contact. ORANGE 2 attempted to break right with the MIG but was unable to turn with him and broke off to rejoin Lead.

During this timeframe, ORANGE 3 and 4 went through the pop up. ORANGE 3 selected a building and released his ordnance on the target. He then saw ORANGE 1 and 2 attacking the two MIGs and a third lone MIG-17 pull into their 6 o'clock. ORANGE 3 jettisoned the fuel tanks and empty MER rack as he pulled out in a shallow right turn to attack the MIG. As ORANGE 3 pulled into the MIG's 6 o'clock, the MIG broke into a hard right turn and came in behind ORANGE 3 and 4. ORANGE 3 called 4 to afterburner, entered a right turn toward the hills, and the MIG fell behind and broke off.

The flight rejoined over the hills and decided to come back into the area to look for other MIGs while the rest of the strike force attacked the target. As they were maneuvering in the target area, ORANGE Lead saw a MIG-17 (dark color with Red Star) turning from a heading of north toward east at 2000 ft. ORANGE Lead made a hard right turn to position himself inside of the MIG's turn, closed to 600 ft at the MIG's 5 o'clock, and fired about 200 rounds of 20 at the MIG. He did not observe any ordnance impact but did believe that the MIG was damaged. ORANGE Lead overtook the MIG and passed 75 ft over the MIG's canopy and broke away from the MIG which was no longer observed.

As ORANGE Lead was closing on the above MIG-17, ORANGE 3 observed a second MIG-17 climb up from below ORANGE Lead and pull into his 6 o'clock. ORANGE 3 rolled over and started to drop in behind the MIG but the MIG reversed hard to the right and down. ORANGE 3 turned hard right to stay inside of him but the MIG came back at ORANGE 3 in a quartering head-on turn. ORANGE 3 turned the M-61 cannon on at 1500 ft range and fired 500-600 rounds down to 100 ft range. The MIG flew through the stream of 20mm shells and ORANGE 3 saw many hits on the wing and along the fuselage with debris coming off of the MIG. The MIG passed over the canopy smoking and was lost in the large blind spot at the F-105s 6 o'clock at about 2000 ft altitude. ORANGE 4 reports that he was attempting to maintain position on 3 during the series of high "g" turns and maneuvers and was unable to keep track of the MIGs after the first encounter. However, other sources list this as a confirmed kill.

ORANGE 3 immediately dropped his nose in afterburner and went into a swinging right turn to keep his airspeed up and saw another MIG two miles to his left and going away at 1500 ft headed northwest, from 2500 ft. ORANGE 3 and 4 dove to the treetops at the MIG's 6 o'clock and closed using intermittent afterburner. ORANGE 3 was attempting to set the MIG up for a missile shot against a sky background. At this time, ORANGE 4 saw another MIG-17 turning in from the left and called 3 to break hard. ORANGE 3 did not hear the call due to the confusion on the channel and 4 again called for a break as the MIG selected for a target and closed inside of 3000 ft. ORANGE 4 called once more for a break as the MIG was preparing to fire, and when no response came from 3, broke to the left. ORANGE 4 lit afterburner and was able to accelerate away from the MIG. ORANGE 4 could not contact ORANGE 3 to arrange a rendezvous so he headed west and departed the area. As ORANGE 3 closed to about 3000 ft on the MIG he was pursuing, the MIG broke hard left as if warned by radar or another MIG of ORANGE 3's approach. ORANGE 3 broke left with the MIG and at 1700 ft range attempted to fire the cannon but could only get about 10 sporadic rounds to fire as he jiggled the stick and recycled the trigger until at about 1000 ft range, with 50° angle off and 500 kts, ORANGE 3 saw a puff on the right wing about midway in the center of the wing. There was no flash, just a puff. As ORANGE 3 overshot the MIG's flight trajectory, he dumped the nose in afterburner and accelerated away. When he

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Event III-116

leveled off, he again squeezed the trigger and the cannon functioned perfectly. Knowing that he had a partial capability with the cannon plus a SIDEWINDER missile, he swung around to the left to reenter the area.

As ORANGE Lead and 2 were maneuvering in the same general area on a southerly heading at 5,000 ft and 500 kts, ORANGE Lead saw a MIG headed northeast at 2,000 ft altitude. Lead made a hard left turn and descended to position himself behind the MIG. But the MIG entered a hard jinking maneuver and descended to 1,000 ft as ORANGE Lead closed to 3,000 ft and started firing in short bursts. At 1,500 ft, Lead saw sparkling impacts behind the canopy and the MIG entered a sharp descending turn from 1,000 ft of altitude or less. Lead passed over the MIG and made a hard turn but was unable to see any evidence of the MIG and estimated that the MIG was probably destroyed. Later this was changed to a confirmed kill. ORANGE 1 and 2 departed the area and returned to Takhlil with no further incidents. While ORANGE 3 was maneuvering in the area near Hoa Binh, he saw an F-105F pursuing a MIG-17, fire on it, and hit the MIG with smoke coming from the MIG.

ORANGE 3 was flying southwest near the west bend of the Black River at Hoa Binh; he saw a lone silver colored MIG-17 at low altitude maneuvering as though trying to land in the field north of the city between the river and the mountains. The MIG was about 500 ft above the mountains, about 2,000-3,000 ft MSL and very slow, about 200 kts. ORANGE 3 dived into the MIG's 6 o'clock and observed that the MIG did not have gear down and was not smoking. When ORANGE 3 closed to about 3,000 ft range, the MIG broke hard right in a climbing maneuver. ORANGE 3 reefed his aircraft into a right turn but could not get a tone with the SIDEWINDER and elected to use the cannon. ORANGE 3 pulled the nose of the F-105 up until the MIG was blanked out under the nose and squeezed the trigger but again could only get a few sporadic rounds to fire as he closed on the MIG and jiggled the stick under the seven "g's". ORANGE 3 was greyed out but he could see the MIG coming out from under his nose and in a last attempt, fired the SIDEWINDER from about 200-500 ft range hoping that the missile would hit the MIG. The missile was not observed as ORANGE Lead overshot the MIG and passed through the MIG's jet-wash. The turbulence created by the jet-wash tore ORANGE 3's hand off of the stick and thumped his head down, causing him to momentarily lose control of the aircraft. He recovered in a descent at 500 ft AGL and heard the F-4C flight call a bogey at 3 o'clock low. Believing that he was the last F-105 in the area, he started to depart the area and found that he had less than 3,000 lb of fuel, barely enough to make Udorn without post-strike refueling. He had less than 1,000 lb on the post strike tanker but refueled and returned to Takhlil with no further problems.

While enroute to the tanker, ORANGE 3 noticed a deep oval shaped gouge in the bottom left corner of the bullet-proof windshield. The gouge, extending from a few inches from the bottom of the pane toward the top, was about 4 in long, 1.5 in wide, and at least 1/4 in deep. ORANGE 3 felt that this was a bullet ricochet fired from one of the MIGs but did not recall a MIG that obtain head-on nose alignment. More probably the gouge was caused by debris coming off one of the MIGs. On return to Takhlil, ORANGE 3 observed that his cannon was completely fired out.

ORANGE flight returned to base with no other damage than the windshield.

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Event III-117

Aircraft Involved: Four F-105Ds and two A-1Es
vs eleven MIG-17s

Results: One A-1E lost to MIG-17
One MIG-17 killed by F-105D
Four MIG-17s damaged

Vicinity of Encounter: 20°53'N/105°35'E
(1st Encounter)
20°37'N/105°18'E
(2nd Encounter)

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/1702H (1st Encounter); 1718H (2nd Encounter)

BUFF flight (four F-105Ds) was the second strike flight fraggged to attack JCS 22.00, the Xuan Mai Army Barracks at 20°53'N/105°35'E. The force consisted of four F-105D strike flights, two F-4C strike/cap flights, and one F-105F WILD WEASEL flight. The WILD WEASEL flight arrived in the target area first and was jumped by MIG-17s while inbound. The first strike flight (Event III-116) was attacked by MIG-17s in the target area. BUFF flight did not see any MIGs until they were outbound after bombing the target. BUFF flight's second MIG encounter occurred after post strike refueling when BUFF flight returned to the target area for rescap of BLUE 2 in Event III-114. SANDY flight (two A-1Es) responded to a downed pilot call and proceeded to the area of BLUE 2 in Event III-114, where they were jumped by four MIG-17s.

2. MISSION ROUTE

BUFF flight departed Takhli RTAFB and proceeded directly to GREEN ANCHOR for refueling, direct to Channel 97 at 19°28'N/103°43'E, direct to the Black River at 20°53'N/105°35'E. Egress was over the reverse route with a MIG encounter in the vicinity of 20°53'N/105°35'E and then direct to Channel 97 and GREEN ANCHOR. BUFF flight refueled and returned direct to 20°37'N/105°18'E where a second MIG encounter occurred. The flight again egressed directly to GREEN ANCHOR and subsequently recovered at Takhli. SANDY 01 and 02 departed Udorn RTAFB, flew direct to Channel 97, and orbited east of Channel 97 until called by RED CROWN to proceed to the 089 radial at 103 mi from Channel 97. The flight was jumped by four MIG-17s in that vicinity, 20°40'N/105°30'E, and SANDY 01 was lost to MIG fire. SANDY 02 egressed direct to Channel 97 and recovered back at Udorn RTAFB.

3. AIRCRAFT CONFIGURATIONS

P-105D BLUE 1, 2, 3, 4

- 6 - M117 bombs on centerline MER
- 2 - 450 gal fuel tanks on inbd wing stations
- 1 - QRC-160 ECM pod on outboard station
- 1 - M61 20mm cannon 1029 rds
- BLUE 1 and 3 carried one AIM-9B IR missile on other outboard station.

A-1E SANDY 01 and 02

- 2 - CBU-22
- 5 - LAU-32
- 1 - LAU-32 WP
- 4 - M47
- 4 - 20mm M3 cannon with 200 rds each
- 1 - SUU-11 (7.62mm) 1600 rds

MIG-17

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear near the target with 10-15 mi visibility. SANDY 02 reported a 300 ft cloud layer starting 40 mi west of Hanoi to Channel 97. BUFF 1 stated broken cover to the south and west because "we were in the clouds on the way to 97 and during re-fueling".

	<u>Encounter 1</u>				<u>Encounter 2</u>				<u>SANDY</u>	
	<u>BUFF</u>				<u>BUFF</u>					
	1	2	3	4	1	2	3	4	01	02
<u>Altitude:</u>		5,000 ft				5,000 ft			2,000 ft	
<u>Heading:</u>		250°				080° about			Turning from W to N	
<u>Speed:</u>		500 KCAS				700 KTAS			150 KTAS	
<u>Fuel State:</u>		8000 lbs				8,000 lbs			Unknown	
<u>Flight Formation:</u>		Fluid 4 with element on right side				Element 1.5 n mi in trail			Wing	

5. INITIAL DETECTION

Encounter 1 - BUFF flight had been alerted to MIGs in the area by radio calls from other flights. They bombed the target and were egressing on a heading of 270° at 4,000 ft MSL altitude, 500 KCAS when BUFF Lead saw two MIG-17s at his 2 o'clock position; he headed south at about 2,000 ft altitude, 3,000-4,000 range.

Encounter 2 - BUFF flight used the UHF/DF to home in on SANDY 02. The MIGs were observed about 2 o'clock at several miles range with the elements making butterfly passes on SANDY 02. SANDY 02 was right on the deck.

6. ACTION INITIATED

Encounter 1 - BUFF Lead called the two MIGs crossing at 12 o'clock and his intent to attack. He entered a lazy left wing over descending to 1,500 ft with BUFF 2 crossing to his right side.

Encounter 2 - BUFF Lead and 2 flew through the middle of the flight of MIGs causing them to scatter. BUFF 3 and 4 swung in behind one element of the MIGs and engaged in a Lufberry chase. BUFF Lead and 2 then entered a wide turn and reengaged. SANDY 02 came under attack a few more times and then managed to duck under a 300 ft cloud layer and egress.

7. SITUATION DEVELOPMENT

Encounter 1 - BUFF 1 and 2 each jettisoned the empty MER rack and the two empty 450 gal fuel tanks, lit afterburner, and went into a medium bank, 2-3 "g's", descending turn and leveled out at 1500 ft about 3,000 ft behind the MIGs, closing at 600+ kts. BUFF 3 and 4 stayed high in trail and covered the lead element. The two MIGs, unaware that BUFF was behind them, made a left 90° turn toward the target area as BUFF Lead closed to 1500 ft range and prepared to fire. Just as BUFF Lead started to fire, he saw a flight of F-105s head-on and about 200 ft above him (see Event III-119). This diverted his attention and he momentarily lost track of the MIGs. The MIGs were reacquired over the town of Hoa Binh in a left turn. BUFF 1 closed to an estimated 800 ft, tracked one of the MIGs, and opened fire with the 20mm cannon. He immediately saw sparkles in the left wing root area. BUFF 1 also saw sparkles on the other MIG and realized that BUFF 2 was firing. The MIGs snapped into a hard left nose down spiral from about 1,000 to 1,500 ft, right over Hoa Binh.

BUFF 1 and 2 could not begin to match the turn so they rolled wings level and started back to Channel 97. The MIGs were not observed again.

As BUFF 1 and 2 broke off from the two MIGs, BUFF 3 saw a lone MIG at his 9 o'clock position about 1,000 ft low headed toward him. BUFF flight was in a left turn through north at 5,000-6,000 ft, 500 kts. The MIG "made an instantaneous turn into our 6 o'clock position", in "perfect gun range". BUFF 3 and 4 increased the rate of turn and BUFF 3 told 4 to "slide to the outside of the turn and high", and to jettison the tanks and go afterburner. The MIG, initially at 1,000-1,500 ft, had opened to about 2,500 ft, broke off rapidly to avoid the tanks and MER from the second element. The flight then rejoined and egressed to GREEN ANCHOR for post-strike refueling.

Encounter 2 - BUFF 1 and 2 attacked a MIG and fired an AIM-9B with good tone but probably inside minimum range. The missile passed about 5 ft under the MIG without detonating. BUFF 3 broke into the lead MIG that had gone back after SANDY 02. The sequence of aircraft was MIG 1, BUFF 3, MIG 2, BUFF 4, and two more MIGs behind BUFF 4. SANDY 02 was observed departing the area.

As BUFF 3 opened fire on MIG 1 and observed hits on the left wing and fuselage (also observed by BUFF 1 immediately after firing the missile), BUFF 4 called, "BUFF 3, break right, 3 - break right, F-105 - break right now; 17s firing on you". BUFF 3 observed the "big red balls" going past from the MIG 2, 500 ft behind him. BUFF 4 was firing on MIG 2 from 200 ft with a high angle off but missed. BUFF 3 at about 275 KCAS, was able to wallow into a right turn using full rudder and used full forward stick to drop the nose and dive into a cloud in a valley below him and escape the MIG.

BUFF 1 with 2 on his wing, attacked MIG 3 behind BUFF 4 and forced MIG 3 to break off to the right. BUFF 1 made a high speed yo-yo and reattacked, firing at the MIG from about 1,000 ft range as the MIG flew straight away. With the pipper on top of the canopy, "Sparkling" behind the cockpit area was observed immediately. BUFF Lead pulled up to avoid ramming the MIG, and the MIG blew up underneath him slamming his head down on his chest.

BUFF 3 returned to the engagement and saw an F-105 firing on a MIG with two MIGs behind him. One of these two MIGs was firing on the F-105. BUFF 3 attacked the two rear MIGs as he observed the F-105 hitting the MIG in front of him. BUFF 3 fired his AIM-9B and observed it turn directly for the MIG but was forced into a scissor maneuver with the second MIG and could not observe the results. During one of the crossovers, BUFF 3 fired at the MIG but missed and then dove for separation.

BUFF 1 called for egress and BUFF flight rendezvoused with the tankers. The tankers came pretty far north to pick up the fighters who were extremely low on fuel. BUFF

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Event III-117

Flight returned to Takhli RTAFB with no further problems. The second MIG engagement lasted about 6 min with an overall flight time of about 5 hrs.

8. ORDNANCE

	(No. fired/No. hits)		
	<u>Cannon</u>	<u>Missiles</u>	<u>Remarks</u>
BUFF 1	3/2	1/0	926 rds 20mm total. One MIG kill; 1 damage
BUFF 2	2/1	-	Damage observed
BUFF 3	2/1	1/0	Extensive damage observed
BUFF 4	1/1	-	Damage observed
MIG 1	-	-	---
MIG 2	1/0	-	---
MIG 3	1/0	-	---
MIG 4-8	Unknown	-	---

MIG firing does not include at least eight firing passes on SANDY 02 (the A-1H) or the MIG firing pass on SANDY Lead which resulted in a hit and loss.

9. EQUIPMENT PROBLEMS

BUFF 1 - Gun camera film did not work
BUFF 3 - Strike camera was inoperative

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>NVN Missions</u>	<u>Remarks</u>
BUFF 1	1300	900	61	All TAC background
BUFF 2	Unknown	-	-	---
BUFF 3	1200	900	35	All TAC background
BUFF 4	Unknown	-	-	---
SANDY 01	Unknown	-	-	---
SANDY 02	Unknown	-	-	---

Comments on this Encounter

BUFF 1 - Flight felt MIG pilots were very aggressive and made no mistakes.

BUFF 1 - After refueling, the flight returned to the target area at 30,000 ft because "it was obviously a MIG day".

BUFF 1 and 3 - Need better turn capability in F-105.

BUFF 3 - Played their slow-speed game because of situation with SANDY 02 demanded it.

SANDY 02 - Missiles and F-4s would be no good in this "on deck hassle". Thankful for the F-105 gun.

SANDY 02 - Felt that as long as he could see the MIGs initiate their pass or just prior to firing, he could avoid them by maneuvering in the crags and valleys of the mountainous terrain. He does not feel that he could have crossed the 10 mi wide valley successfully while under attack and that the MIGs could have hit him in the karst formation where he stayed if they had teamed up on him from opposite sides.

Comments from Overall Experience

BUFF 3 - Don't ever, ever attempt to stay at low airspeed and turn with a MIG-17.

BUFF 1 - Missile should arm immediately after leaving the rail even if we lose a few aircraft in training.

SANDY 02 - A-1H has much better visibility than A-1E. Had to lean way forward and toward the right to see MIGs coming in from that direction.

SANDY 02 does not think the MIGs were very proficient.

11. DATA SOURCES

Project Interviews: BUFF 1, 31 May 1967; BUFF 3, 29 May 1967; SANDY 02, 24 October 1968
Messages, Reports:

OPREP-3 - 355TFW, DOTO 7-11274, 191757Z, April 1967
OPREP-3 - 432TRW, TUOC 22776, 191340Z, April 1967
Combat Loss Report - A-1E, 1845H, 19 April 1967.

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12. NARRATIVE DESCRIPTION

Encounter 1

BUFF flight was the second strike flight of F-105s fraggged to attack JCS 22.00, the Xuan Mai Army Barracks, located at the foot of the mountains about 12 mi west/southwest of Hanoi. Time on target was spaced about 2-3 min apart so that the flights were spaced about 20 mi in trail of each other. BUFF flight was about 4 mi to the right (south) of the flight in front of him (see Event III-116) and to the rear when that flight called they were under MIG attack. The members of BUFF flight strained to acquire the MIG targets but were unable to see them - primarily because the action approached the other flight from that flight's 12 o'clock. BUFF Lead determined that there was no threat to his flight and proceeded to the target.

After bombing the target, BUFF flight was egressing to the west crossing the Black River for the first time north of Hoa Binh, when they heard a second flight call that they were under MIG attack. The flight proceeded to the second check point on the Black River just to the east of Hoa Binh at about 4,000 ft, 500 KCAS, when BUFF Lead saw two MIG-17s at his 2 o'clock at about 2,000 ft altitude headed south. The MIGs proceeded south passing about 4,000 ft in front of BUFF flight who lit afterburner and executed a wingover to a left descending turn which was completed at about 1,500 ft, 3,000 ft behind the MIG-17s. BUFF flight was flying fluid four formation with the element on the right spread beyond normal pod formation distance for better MIG lookout. BUFF Lead was able to identify the MIGs by their shape and color.

Apparently the MIGs did not know that BUFF flight was behind them because they entered at 45° bank burn and turned to a heading of about 090°. BUFF Lead thought that the MIGs had seen the Thuds behind them and that the MIGs were turning to engage so BUFF Lead and 2 jettisoned the empty MER rack and the two empty 450 gal fuel tanks, retaining the QRC-160 and AIM-9B on the outboard stations. BUFF 3 and 4 turned with the lead element but stayed 2,000 ft high and to the rear for cover but did not clean their aircraft off at this time.

BUFF Lead with 2 on his right wing (BUFF 2 crossed over during the initial turn), closed at 500 to 600 KCAS, and just started to squeeze the trigger when his attention was diverted to a flight of F-105s coming head-on 200 ft above him (see Event III-119). BUFF did not have enough time to break from his course; but when he attempted to reacquire the MIGs, he could not pick them out of the ground clutter. The MIGs were silver with red stars on the tail and red flaps and ailerons. The next time he saw them they were in a 2 "g" left turn right over the town of Hoa Binh. BUFF Lead closed to 800 ft, put the piper on the nose of the MIG, and fired a 2 sec burst. He immediately saw the left wing and wing root area start sparkling from the hits. BUFF Lead also saw sparkles on the Number Two MIG from cannon hits as BUFF 2 fired at MIG 2. BUFF Lead's sight was set at "guns air" with the radar set in "search and attack standby" which should have given him about 1,500 ft fixed range "g" computing only. BUFF 2's sight setting is unknown. The MIGs were in a loose echelon formation with 30°-45° of bank and snapped into a steep nose-down spiral as they were hit. They were last observed in the spiral at about 1,000 ft altitude over the town of Hoa Binh. BUFF Lead stated, "It was absolutely impossible for us to follow them through that turn". No smoke or debris was seen coming off of the MIG.

Shortly after the lead element passed over the MIGs, BUFF 3, turning through north at 5,000-6,000 ft altitude and 500+ KCAS, saw a MIG-17 at his 9 o'clock position about 1,500 ft away and a little low "make an instantaneous turn into our 6 o'clock. BUFF 3 rolled further into the turn, gradually increasing bank and "g" so that BUFF 4, who was on the outside of the turn, could stay with him and called for BUFF 4 to go high, jettison ordnance, and go afterburner. At this time, the second element jettisoned the empty MER rack and the empty fuel tanks right in the MIG pilot's face. The MIG apparently lost some speed in the turn because his range had opened to about 2,500 ft; and at the last time he was seen, the tanks were headed right for him. BUFF 3 jinxed back and forth a couple of times to make sure there were no more enemy fighters and then rejoined the lead element, and the entire flight headed for Channel 97 and then to GREEN ANCHOR for post strike refueling.

On the way to the post strike refueling tankers, BUFF heard that a WILD WEASEL F-105 was down (Event III-114) but did not hear RED CROWN direct any support flights in to assist in the rescue attempt. BUFF flight volunteered to return to the area but RED CROWN was reluctant to grant permission because of the lack of external fuel tanks and the resulting short time on station. However, since no other aircraft were available to return to the area, BUFF was granted permission to take on a full internal load of fuel and return. When the flight completed refueling, they were about 200 mi southwest of the downed aircrew. BUFF Lead took the flight back into the area at 30,000 ft altitude to conserve fuel and because "it was obviously a MIG day".

BLUE Lead (Event III-114) was just arriving back in the area of the downed aircrew as BUFF flight was coming off the tanker. BUFF flight and BLUE Lead were in contact with each other and BUFF flight knew that BLUE Lead was under MIG attack. As BUFF flight was letting down about 20 mi west of the area, BLUE Lead called and said there were MIGs all over the area, and he could not raise either of the aircrew on the radio. F was out of gas and would have to depart the area.

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As BUFF flight descended through 10,000 ft, SANDY 02 (A-1E wingman) called that four MIG-17s had jumped the flight and that SANDY 01 had been hit and was going in. He rather excitedly requested the F-105s to "come back and help me". At this point the story will digress and cover the actions of the A-1E flight which led up to this situation.

SANDY was a flight of four A-1Es which departed Udorn RTAFB and flew direct to their orbit position a few miles from Channel 97. Their arrival at this orbit position was timed with the air strikes further north so that they would be in the most optimum position to assist in any rescue attempts. Briefly stated, their mission was to proceed to the position of a downed aircrew immediately upon notification by CROWN (the rescue coordinator) and take charge of the rescue attempt, determining whether the position and enemy defenses were amenable to rescue attempt. On the scene they would vector the "Jolly Greens" in and coordinate enemy anti-rescue fire suppression using both their ordnance and that of any available jets in the area.

On this date, SANDY flight was orbiting east of Channel 97 when CROWN called the aircrew down at 20°44'N/105°34'E and for SANDY 01 and 02 to head toward the border and hold there a couple of minutes. Enroute, CROWN called and directed SANDY 01 and 02 to proceed to the 089° radial of Channel 97 for a distance of 103 mi (20°30'N/105°32'E), about 32 mi southwest of Hanoi and to hold west of the downed aircrew until some fighters arrived. SANDY 01 and 02 flew into the area at 11,000 ft, 140-160 KCAS, with SANDY 02 flying echelon formation about 100 ft left of SANDY 01. With the arrival of BLUE 1 (Event III-114), the A-1Es proceeded up to the area of the downed aircrew at 11,000 ft MSL. SANDY 02 saw the Thud burning and had located the position of one of the downed aircrew when BLUE 1, orbiting in the area, was jumped by MIGs. The SANDIES returned across a small valley to their position at 20°30'N/105°32'E (about 15 mi) and arrived at 1,000 ft AGL, about 2,500 ft MSL. They made a 180° turn to the right and were just rolling wings level headed north when SANDY 02 saw four MIG-17s at his 5 o'clock position, 3,000 ft high. The MIGs were in two elements of two with one element attacking each A-1E. SANDY 02 was on SANDY 01's left wing, level in altitude and about line abreast at a distance of 100 ft. The MIGs started firing 2-3 sec after 02 picked them up.

SANDY 02 called, "Break right" as he broke right over SANDY 01 into the MIGs. As 02 passed over 01, he observed 01 in a 15° right bank roll rapidly to the left with pieces of aircraft (or possibly but not likely ordnance) coming off of SANDY 01's left wing from about halfway out to the wing tip. The MIGs missed and overshot SANDY 02 and as he completed 180° of turn headed for the weeds, he saw SANDY 01 in a 120° banked spiral hit the top of a piece of karst. At this time he was calling CROWN appraising them of the situation and urgently requested help. CROWN called back and said, "They would send someone up". SANDY 02 did not observe a chute or beeper from 01.

As SANDY 02 rolled out on a southerly heading, the MIGs started making individual passes from the four cardinal compass points and appeared to be well disciplined in not interfering with each other's pass. They appeared to favor a quartering stern attack but did not let this interfere with their turn.

SANDY 02, at about 100 ft AGL, jettisoned all of his ordnance except the SUU-11 after the second MIG pass and with full power maneuvered around the Karst formation at a max airspeed of 140 kts slowing to 90 kts in the hard breaks. He was able to observe the MIGs as they started their individual passes and followed the policy of tightening the turn into the MIG as the MIG approached firing position. Upon rolling wings level after one of these passes, SANDY 02 saw a MIG approaching head-on, slightly above him, firing from 500 ft range. SANDY 02 clamped down on the trigger and fired the SUU-11 at the MIG without aiming but did kick the rudder back and forth hoping that the dispersion would get the MIG. However, no damage was observed. The MIGs made at least five firing passes before the F-105 flight arrived.

As BUFF flight returned to the area of the downed F-105F aircrew, they were in radio contact with BLUE Lead on GUARD Channel and learned that the SANDY flight was in the area and waiting for the arrival of the rescue choppers. BUFF 3 reported that he, "Thought he heard something to the effect 'SANDY 01, I'm hit; they're killing me; SANDY 01 is going in". No other flight members report hearing this. Shortly after, SANDY 02, who had been operating on the rescue frequency, came up on GUARD Channel and said that SANDY 01 had been shot down by MIGs and that at least four MIGs were attempting to shoot him down. SANDY 02 naturally sounded pretty excited. BLUE 1, the WILD WEASEL leader, answered him with, "Get the down on the ground, down on the deck and keep it moving. Just start turning and keep it moving". Sandy 02 replied, "I can't get away".

BUFF Lead told SANDY 02 to stay on the deck and keep turning, that the MIGs could not match his turn and to transmit for a DF. Both BUFF Lead and 3 were checking for the DF which indicated the 4-5 o'clock position. At this time, BUFF flight was down to about 5,000 ft traveling at about 700 kts in an attempt to close on SANDY 02. BUFF flight swung into a steep right turn with the DFs continuing to indicate right. After about 2 min, SANDY 02 saw the four F-105s at his 2 o'clock position at about 3.5 mi range, headed about west/northwest and called, "F-105s, I'm at your 3 o'clock; come right, come right, come right". SANDY 02 was headed south/southeast but had to take immediate evasive action and rolled out headed northwest. At this time, SANDY 02 saw the Thuds due west of him, about

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one mile away and a little high in a tight right turn through north. The four F-105s were in loose trail with a MIG-17 behind them. SANDY 02 called, "F-105s break; one of those are on your tail."

At the time of the first call in the above paragraph, BUFF 3 saw the fire from SANDY 01's aircraft and then SANDY 02 right on the treetops jinxing in hard turns with the four MIGs making gunnery-type passes on him. BUFF flight was perpendicular to SANDY 02's heading as they broke right into the MIGs with the second F-105 element trailing the first element by about a mile on the outside of the turn. BUFF Lead did not see the MIGs until he was relatively close to them and rather than pull off to attack a specific MIG, aimed the flight for the center of the MIG formation in an attempt to divert the MIGs from the A-1. The MIGs scattered as BUFF 1 and 2 went through their formation but one of them recovered and was rolling back in on SANDY 02. BUFF 3 saw this MIG and elected to rack the F-105 into a hard left turn to attack this MIG and immediately got into a low altitude left handed Luffberry at an airspeed below 300 kts. The order of aircraft was MIG, BUFF 3, MIG, BUFF 4, and two more MIGs.

BUFF Lead made a wide sweeping turn back and saw a MIG turn and head north toward Hoa Lac Airfield. The MIG was flying straight away as BUFF Lead pulled into the MIG's 6 o'clock position and fired an AIM-9B at an estimated range of 1,200 ft and 500 KCAS. The missile passed 5 ft under the MIG but did not detonate. (The proximity fuze probably did not have enough time to arm.) BUFF Lead was closing on the MIG with a clear blue sky for background and a good tone prior to firing. He then turned back to the right to enter the fray and immediately observed the Luffberry with BUFF 3 firing and hitting MIG 1.

Just as BUFF 3 started firing, BUFF 4 called, "BUFF 3 break right; BUFF 3 break right; F-105 break right now; MIG-17 firing on you". BUFF 3 had pulled 6-7 "g's" getting into the MIGs' 6 o'clock and as a result was slowed down to 275 kts and only able to pull 2-3 "g's" for tracking. However, the MIG was not pulling it in tight and BUFF 3 was able to track and hit the MIG along the left wing and just aft of the canopy on the fuselage. As he was firing, BUFF 3 saw the "Big orange balls going over the canopy and decided that it was time to break right; but when he attempted to reverse, the F-105 was sluggish to respond due to the high angle of attack. BUFF Lead finally fed in full rudder and forward stick and dove into a nearby cloud hoping that there "wasn't a mountain on the other side". The MIG continued to fire as BUFF 3 rolled the aircraft over and entered the cloud but was not behind BUFF 3 when he exited the cloud. During this time, BUFF 4 was firing at the MIG behind BUFF 3 from a range of 200 ft with a fairly high angle off but apparently missed. BUFF Lead observed the situation and thought that the MIG was going to blow up at any time but he did not observe any hits on the MIG either.

As BUFF Lead closed on the Luffberry, BUFF 4 called, "Somebody come help me; I have a MIG on my tail and I can't shake him". BUFF 2 called that BUFF Lead's tail was clear and BUFF Lead at 450-500 kts was easily able to slide in behind the MIG that was firing on BUFF 4. BUFF Lead had changed the gun sight switches to "Missiles air" prior to firing the AIM-9B but changed back to "Guns air" as he entered the Luffberry circle. BUFF Lead fired a short burst at the MIG and the MIG broke hard right. In order to avoid an overshoot, BUFF Lead reversed right into a high speed yo-yo; and as he was again sliding down behind the MIG, the MIG broke up. BUFF Lead in afterburner closed rapidly (about 200 kts overtake) to 1200 ft, placed the pipper on top of the canopy and opened fire. Immediate hits were observed behind the canopy on the fuselage; and as BUFF Lead closed to about 100 ft, the MIG started a slow roll. BUFF Lead snapped up hard to avoid a collision with the MIG and was passing over the MIG when a violent explosion occurred with fire on both sides of BUFF Lead's aircraft. The explosive force snapped BUFF Lead's head down on his chest and BUFF Lead, thinking that he had rammed the MIG, called, "I hit him; BUFF Lead is hit", and he received the reply, "Roger, BUFF Lead is hit bad". BUFF Lead pulled up, turned slowly to the southwest, and checked his aircraft over. After he had found no indications of damage, he called, "BUFF Lead is okay", and reentered the engagement.

The MIG-17s made at least three more firing passes on SANDY 02 after the arrival of the F-105s but they were not nearly so well organized. SANDY 02 continued to maneuver around the karst formations to frustrate the MIGs, fearing that he could not survive crossing the 10-mi wide valley which was between his position and the safety of the mountain ranges on the other side. BUFF Lead called, "SANDY you better go home; we are running out of gas and cannot stay much longer". By this time the MIGs were firmly engaged with the F-105s; and SANDY 02 started out across the valley at 160 kts, wide open. One MIG looked like he was starting a pass on SANDY 02 after he started out but the MIG never completed the run. SANDY 02 headed out on a southwest heading; and as he neared the far side of the valley, he saw a deep narrow valley in the vicinity of 20°28'N/105°12'E in the same direction with the tops in a broken cloud layer about 300 ft above the valley floor. He ducked under the cloud layer and followed the valley to a point 25-30 n mi east/southeast of Channel 97, climbing up one time in route to get a steer from SANDY 03 and 04. SANDY 02 recovered at Udorn with 30 min of fuel left.

When BUFF 3 exited the cloud he dove into to shake the MIG on his tail, he accelerated and climbed to 5,000 ft and turned back toward the engagement. The engagement was taking place between 3000 ft AGL and the tree tops. BUFF 3 saw an F-105 in a left turn (thought to be BUFF 2) firing at a MIG in front of him and with two MIG-17s behind him. BUFF 3 observed the F-105 hit the MIG as he rolled over and descended toward the MIG that was

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firing on the F-105. At this time, BUFF Lead saw this situation with BUFF 3 having a MIG at his 2 and 10 o'clock positions. BUFF Lead dove down and fired a short burst at one MIG from a fairly high angle off just as the MIGs broke hard right into BUFF Lead. BUFF Lead found one of the MIGs coming right back at him, chased by BUFF 3.

As the MIGs broke right in front of BUFF 3, BUFF 3 reversed right and started tracking one of the MIGs but did not think he could hit the MIG with the cannon because of the high rate of turn and the range. BUFF 3 then fired the AIM-9B from 2,500 ft range, co-air speed at about 350 kts, at 2,500 ft altitude and a 20° angle off. BUFF 3 waited until the MIG was above the horizon and then after obtaining a good growl tone, "pulled the nose up just a little bit ahead of the MIG to give the missile a better chance" and fired. The missile went directly for the MIGs tailpipe but BUFF 3 did not observe the results because the other MIG broke into him and he was forced to counter break into the MIG.

BUFF 3 and the second MIG entered a series of scissor maneuvers with BUFF 3 chopping power and throwing speedbrakes in an attempt to keep the MIG out of his 6 o'clock. BUFF 3 felt that afterburner, unloading, acceleration, and egress would have been the better course of action if it were not for the A-1 in the area and the requirement to keep the MIGs engaged. The two adversaries rolled out line abreast at a distance of 600 ft and looked at each other for a few seconds with an air speed below 300 kts at 1,500 ft of altitude in mountainous terrain. BUFF 3 was wondering what to do next as he attempted to roll over the top of the MIG on his right. The MIG countered by rolling down and left under BUFF 3 and then turned back to the right. But BUFF 3 was slowing down faster than the MIG; and as the MIG came back to the right, BUFF 3 dumped the nose, lit the afterburner, and fired at the MIG as he passed in front of him. BUFF 3 continued to descend to the treetops. At this time, BUFF Lead called to disengage and BUFF 3 crossed the valley and continued to accelerate as he climbed up into the mountains. BUFF 3 accelerated in afterburner until he had 600 kts in order to outrun the MIG.

BUFF Lead called for a fuel check and found that the flight was 2,000 lbs below the Bingo established on the way in. The flight leveled off at 26,000 ft with BUFF Lead the high man at 2,000 lbs of fuel and BUFF 3, the low man at 1,000 lbs of fuel, not enough to return to Udorn and the relief tanker 100 mi away. The tanker reported at Channel 97 and when BUFF Lead asked if the tanker could come any faster, the tanker said he had it firewalled in their direction. BUFF Lead estimates that the tanker probably picked them up over North Vietnam. BUFF 3 estimates that he started taking on fuel with less than 30 sec of fuel left. BUFF 3 refueled first.

As the flight closed at high speed toward the tankers, BUFF 3 started to overshoot and used all available drag devices to decelerate and was just sliding under the tanker as the tanker entered a cloud. The tanker boomer came to the rescue by giving close-in vectors to BUFF 3 for hook-up. At this time, BUFF Lead was down to 800 lbs and was able to hook up on the second tanker. All aircraft returned to Takhli RTAFB with no damage after a 4 hr and 15 min mission. There was no damage on SANDY 02 aircraft either.

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Event III-118

Aircraft Involved: Four F-105Ds vs two MIG-17s

Result: No damage

Vicinity of Encounter: 20°56'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967, 1700H

PURPLE flight (four F-105Ds) was the third strike flight fragged to attack JCS 22.00. See Event III-116 for further details.

2. MISSION ROUTE

Same as Event III-116.

3. AIRCRAFT CONFIGURATIONS

F-105 PURPLE 1, 2, 3, 4

Same as Event III-116.

MIG-17 1, 2

Silver

MIG-17 3

Olive Drab

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Altitude: 4,000 ft

Heading: Unknown

Speed: Unknown

Fuel State: Unknown

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
PURPLE (Lead)	5650	370	Approximately 75

11. DATA SOURCES

Messages, Reports

355TFW, 201121Z, DOTO-0, 11296, April 1967 SECRET

12. NARRATIVE DESCRIPTION

PURPLE flight on ingress to the target spotted two silver MIG-17s at 20°56'N/105°20'E at an altitude of 7,000-8,000 ft. At the time PURPLE flight was crossing the Black River at 20°56'N/105°20'E, the MIGs were in a left hand turn and attempted to roll in behind PURPLE; however, PURPLE flight continued to the target and the MIGs broke off.

On egress from the target, PURPLE 4 spotted one camouflaged MIG-17, olive drab in color. He was sighted at PURPLE 4's 8 o'clock position, approximately 3,000-4,000 ft behind PURPLE Lead. PURPLE 2 and 3 attempted to move into firing position but the MIG broke right and disappeared from view as he passed to the left of PURPLE 2 and 3. There were no further sightings and the flight returned to Takhli.

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Event III-119

Aircraft Involved: Four F-105Ds vs seven MIG-17s

Result: No damage

Vicinity of Encounter: 20°45'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/1700H.¹

TAN flight was one of approximately ten flights striking JCS 22.00, the Xuan Mai Army Barracks at 20°53'N/105°35'E, about 15 mi southwest of Hanoi. Encounters by other flights are described in Events III-114, -116, -117, -118, -120.

2. MISSION ROUTE

The mission route was not given but appears to be from Takhl1 RTAFB, to refueling rendezvous, to Channel 97 at 20°28'N/103°43'E, and then direct to the target with planned egress over the reverse route.

3. AIRCRAFT CONFIGURATIONS

Not given but most probably 6 x 750 bombs centerline, 2 x 450 gal fuel tanks on the inboard pylons with TAN Lead and TAN 3 carrying 1 x AIM-9B and 1 QRC-160, and TAN 2 and 4 carrying 2 x QRC-160.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear but reduced visibility (approximately 5 mi) in haze at the lower altitudes.

TAN			
1	2	3	4

<u>Altitude:</u>	5,000 ft
<u>Heading:</u>	066°
<u>Speed:</u>	540 kts
<u>Fuel State:</u>	Unknown
<u>Flight Formation:</u>	Line abreast formation, No. 3 on the right.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
TAN 1	2/0	Fired two bursts; both were too far out; no hits

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
TAN 1	approx 1200	825	71	All TAC background
TAN 2	-----	not interviewed	-----	-----
TAN 3	approx 5000	850	not given	Most of time in fighters. Flew 105 F-80 missions in Korea.
TAN 4	-----	not interviewed	-----	-----
		but was an experienced F-105 pilot from Germany		

Comments on this Encounter

TAN 3 - Because of the MIG activity, there was a lot of talking on the radio and TAN 3 had difficulty in warning rest of flight on presence of MIGs. As a result, when he broke to engage a MIG that was attacking another F-105, he became separated from the rest of his flight, including his wingman No. 4, who did not see him break away. Thus, No. 3 did not drop his ordnance on target but was forced to jettison it when he discovered that he was without a wingman and could not continue to the target alone. One of the earlier flights (ORANGE flight) had jettisoned their ordnance load (see Event III-116) and did most of the radio calling thus, in effect, jamming the channel.

¹Time estimated.

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Event III-119

Comments from Overall Experience

TAN 1 - Normally has seen MIGs in a low position waiting on a known ingress or egress route or at least in an area where they can cover one or more of these. Generally two to four MIGs are orbiting. This type of activity has increased since the U.S. has started to bomb airfields. When the MIGs see the ordnance drop, they disengage. Occasionally the F-105s have been able to fool them by dropping the wingtanks. The F-105s like to keep their tanks in case a RESCAP situation develops since the wingtanks provide additional endurance on station.

11. DATA SOURCES

Project Interviews: TAN 1, 29 May 1967; TAN 3, 29 May 1967
Messages, Reports:

355TFW 20 1121Z April 67 OPREP 3 DOTO-0 11296 SECRET.

12. NARRATIVE DESCRIPTION

TAN flight was the last flight of the strike force and had been alerted to the presence of MIGs in the target area by MIG warnings and radio chatter of other flights engaged with MIGs. TAN flight initially sighted four MIG-17s at 3 o'clock low while inbound to the target. TAN Lead told everyone to hold their ordnance and continue in to the target. The MIGs were at a range of about 1 n mi and, although they started to turn into TAN flight, it was more or less as a token try since TAN flight was inbound at high speed and the MIGs were positioned for the egress route rather than ingress. The MIGs could not press the attack and TAN flight continued in and all aircraft except TAN 3 dropped ordnance on the target. (TAN 3 separated from the flight subsequent to this sighting and rejoined on egress. TAN 3's individual MIG encounter follows this flight narrative.)

TAN flight came off the target slightly south of ingress route (near Hoa Binh). As they came back to the ridge line, they encountered several MIG-17s. TAN 1 pursued a MIG at his 2 o'clock position thinking he was in a tail chase on this MIG. TAN 1 began firing "way too far out"; and when he quickly realized that the MIG was approaching head-on rather than going away on the same heading, he stopped firing and broke off this encounter.

Then a second MIG came across TAN 1's nose. TAN 1 did not sight him until he started crossing his nose and then fired a short burst, hoping to hit him but does not believe he did. MIG 2 continued on his way and TAN flight continued their egress.

A third MIG was approaching TAN 1 head-on and he rolled inverted and started "coming down" to fire and stopped when he saw F-105s right in trail in the way (BUFF flight - see Event III-117 prior to RESCAP). TAN flight disengaged and proceeded to Channel 97. (All three of the above encounters happened in about a minute and a half period of time.)

TAN 3's Individual Encounter

TAN 3 reported that while inbound to the target after the initial sighting, he saw an F-105 with two MIG-17s chasing him (later identified as BLUE 4 - see Event III-114). They were coming from above and went down past TAN 3's 6 o'clock position. TAN 3 was at 5,000 ft; the MIGs were very close to BLUE 4 and the formation passed TAN 3 within 2,000-3,000 ft. "There was so much chatter on the radio at the time," that TAN 3 was unable to call out the MIGs or call for a break, but he pulled straight up and finally was able to get off a call that there was an F-105 behind them in trouble with MIGs. TAN 1 and 2 did not see TAN 3 break and, unknown to TAN 3, TAN 4 also failed to see the break.

TAN 3 pulled behind the MIGs and they broke off BLUE 4. One MIG went northeast towards the rest of the flights and the other was below TAN 3 and scissored for a few turns. TAN 3 still had his ordnance and was undecided what to do (i.e., drop bombs or pursue MIG). He still thought that TAN 4 was with him.

The MIG turned and headed back up the Black River in a northwesterly direction. When TAN 3 called, "Okay No. 4, let's press on to the target," TAN 4 advised TAN 3 that he was still with the lead element. TAN 3 then jettisoned his ordnance and attempted to follow the MIG but lost him in the haze.

He then went north and found the flights of F-105s coming off the target. Although they were still calling off MIGs at various clock positions, TAN 3 could not find any MIGs. TAN 3 turned and left target area. He caught up with the rest of TAN flight as they approached Channel 97.

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Event III-120

Aircraft Involved: 1) Four F-4Cs vs four poss. MIG-17s
2) Four F-4Cs vs two MIG-17s
3) Four F-4Cs vs two MIG-17s

Result: No damage

Vicinity: 1) 20°55'N/105°22'E
2) 20°40'N/105°30'E
3) 20°53'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 April 1967/1709H, 1714H, 1715H

BLUE Flight and GREEN Flight consisting of four F-4C aircraft each attacked target JCS 22.00 at 20°51'N/105°34'E. BLUE Flight preceded GREEN Flight by approximately 4,000 ft. They were part of a larger strike force, which included eight flights of F-105s, of which four had MIG encounters (see Events III-116, -117, -118, 119, and an IRON HAND flight (see Event III-114)).

2. MISSION ROUTE

Danang to WHITE ANCHOR, to Channel 97, to 20°58'N/105°21'E to target. Return to 20°30'N/105°25'E to 20°10'N/104°54'E to WHITE ANCHOR to Danang. BLUE Flight which had hung ordnance jettisoned it in Ordnance Jettison area 16°05'N/108°38'E after leaving tanker and before returning to Danang.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4 / GREEN 1, 2, 3, 4

6 - M-117 bombs
4 - AIM-7 (SPARROW)
1 - ALQ-71
2 - 370 gal wing tanks
1 - 600 gal centerline tank
TACAN on, IFF (GREEN 3) off

MIG-17

Part 1 - silver color, no marking
Part 2 - silver color, one with stars on wings, one - no marking

4. FLIGHT CONDITION PRIOR TO ENCOUNTER

Weather: Clear
(Part 1 unknown)

Part 2,3

	<u>BLUE</u>				<u>GREEN</u>
	1	2	3	4	3
Altitude:		10,000 ft			5,000 ft
Heading:		200°			185°
Speed:		500 KTAS			520 KTAS
Fuel State:		unknown			8-9,000 lb

Flight Formation:

Part 1 BLUE: Pod formation
Part 2 BLUE: Flight had just come off the target, formation unknown
Part 3 GREEN: Encompassing target - GREEN 3 and 4 about 4,000 ft behind lead element - straight and level - not yet in Pod formation.

5. INITIAL DETECTION

Part 1

Just prior to striking target, BLUE Flight sighted four silver aircraft, possible MIG-17s, approximately 7 miles abeam on reciprocal heading, low. Estimated position of suspected MIG: 20°55'N/105°22'E

Part 2

BLUE Flight sighted one MIG-17, silver, no markings, at flight's 4 o'clock position, low, and MIG 2 at 9 o'clock position, 2,000 ft from BLUE 2. MIG altitude estimated as 2,000 ft AGL, heading of 202° true.

Part 3

GREEN 3 encountered a MIG-17 at his 10 o'clock position, low, at a range of 4,000 ft. The MIG was flying at 400 kts at an altitude of 2,000 to 3,000 ft AGL on a heading of 360° in a left turn.

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Event III-120

6. ACTION INITIATED

Part 1

No action was taken by either BLUE Flight or the silver aircraft.

Part 2

The flight came off target and proceeded straight ahead. The MIG-17s appeared to be in a steep bank attempting to turn on BLUE 4, but broke off when they overshot the turn.

Part 3

GREEN 3 pulled up and directed GREEN 4 to follow, however, GREEN 4 did not receive MIG call and proceeded to post-strike join-up point. GREEN 3 then engaged MIGs.

7. SITUATION DEVELOPMENT

Part 2

After overshooting the turn, the MIGs broke right and back into the heavily defended area of JCS 22.00. For this reason BLUE Flight did not pursue the MIGs.

Part 3

GREEN 3 then attacked MIGs, firing four AIM-7s in boresight; all missiles failed to hit targets.

8. ORDNANCE

(No. fired/No. hits)

	<u>AIM-9</u>	<u>Remarks</u>
GREEN 3	4/0	Missiles fired in boresight mode, interlocks out. Target was at 200 ft AGL. Missiles fell short and impacted ground.

No other ordnance was expended.

9. EQUIPMENT PROBLEMS

GREEN 3 made several radio calls but these were not received by GREEN 4. There was a lot of activity on the air since approximately 40 aircraft were using the same frequency.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>GREEN 3</u> Front	3,015	768	115	Instructor at McDill for two yrs teaching AIM-7. Participated in "Charging SPARROW" program.
Back	616	330	95	Participated in "Charging SPARROW" program.

Comments on this Encounter

GREEN 3 (Front):

1. Felt the APQ-100 was poor radar for this mission because of ground return problem. In an overtake situation radar has tendency to lock on ground return. Furthermore, the narrow beam used for search results in a low probability of intercept due to long scanning cycle.

2. Had no difficulty arriving at MIG's 6 o'clock position using vertical maneuvers, but at low altitude of encounter (MIG was at 200 ft AGL) could not keep radar locked. Carrying AIM-9 or gun would have been helpful.

3. Could have carried AIM-9s -- would only require a spacer -- the drag penalty would not be significant, perhaps another 10 percent for four missiles.

11. DATA SOURCES

Project Interview: GREEN 3 (Front), 22 June 67

Messages, Reports:

366TFW 211130Z OPREP-3, PASTEL 573, April 1967
366TFW 200330Z OPREP-3, PASTEL 574, April 1967
366TFW 200330Z OPREP-3, PASTEL 573, April 1967 (superseded by message 1 above)
366TFW 230500Z DOC 00121, April 1967
7AF 201607Z DIO 22957 April 1967

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Event III-120

12. NARRATIVE DESCRIPTION

Part 1:

See Item 5.

Part 2:

BLUE Flight, at 12,000 ft, heading 100°, 500 KTAS, sighted the target. BLUE lead rolled in on target at a 45° dive angle. At 8,000 ft altitude, heading 180°, Lead released six M-117s. He was followed by BLUE 2, 3, and 4, each dropping six bombs except for BLUE 2 who retained three hung M-117s. Minimum altitude attained was 5,000 ft. Flight remained at 5,000 ft for a time then climbed on new heading of 235°. While flying at 10,000 ft the flight observed two MIG-17s with no markings, silver in color. MIG 1 at flight's 4 o'clock position and MIG 2 at flight's 9 o'clock position, low at 2,000 ft. MIGs were flying at unknown speed on a heading of 202°. MIGs appeared to be in a steep bank trying to close on BLUE 4, but broke off when they overshot turn. They then immediately broke right and back into the heavily defended area of JCS 22.00. For this reason, BLUE Flight did not offer pursuit. No ordnance was expended by either side.

Part 3:

GREEN Flight, while flying at 14,000 ft altitude, airspeed 480 kts, heading 100°, at 20°51'N/105°34'E, sighted target JCS 22.00. Lead and GREEN 2 rolled in on target at a 45° dive angle. At 8,000 ft altitude heading 180°, Lead and GREEN 2 released six M-117 bombs. GREEN 3 and 4 followed, using same tactics, releasing five bombs each. Minimum altitude attained was 5,000 ft. At this point, GREEN 3, on a heading of 185°, encountered a MIG 17. The enemy aircraft was at 10 o'clock low, in level flight approximately 4,000 ft away. The MIG was flying at a speed of 400 kts at an altitude of approximately 2,000 to 3,000 ft AGL on a heading of 360° in a left turn. This was about 5 miles south of the target and GREEN Flight was just beginning to reform. GREEN 3 noticed that the MIG was attacking GREEN 4. He called GREEN 4 to advise him that he was under attack and did an over-the-top barrel roll to the left. The MIG reversed to the right and rolled out heading north. Apparently GREEN 4 did not receive the MIG call and proceeded straight ahead. He was called again, but GREEN 3 still received no response from GREEN 4. GREEN 4 proceeded to the post-strike join-up point. GREEN 3 descended to the MIG's 6 o'clock position, slightly lower than the MIG, who was then at about 5,000 ft altitude and more or less straight-and-level. He obtained a full system lock-on at 1-1/2 miles with approximately an 80 kt rate of closure. At this time an F-105 closed in front of GREEN 3 and fired at the MIG, striking the MIG's left wing with cannon fire. (See Event III-114) The MIG was observed to make a hard roll and descended in a hard turn to the right. The MIG's altitude was approximately 2,000 ft AGL when descent was initiated and pull-out was made at about 200 ft AGL in a right hand turn. The F-105 disengaged to the left. GREEN 3 continued tracking and attempted to fire a missile but the AIM-7 did not fire as the radar broke lock at that point. The MIG remained on the deck and was orbiting at an altitude of about 100-200 ft AGL. GREEN 3 set up a highspeed yo-yo on him and tried to break him out of the ground return with the radar, but could not do it. GREEN 3 returned to boresight and interlocks out. Two more lock-ons were made, but immediately broke lock. GREEN 3 fired without a lock-on in boresight as minimum range was very close if not already exceeded. The AIM-7 went down and left. The MIG reversed and started a hard left turn, still at 200 ft AGL. To prevent an overshoot, GREEN 3 nosed into the MIG's 6 o'clock position with 1-1/2 miles separation at 5,000 ft. He then started down, going to idle, trying to lock-on from boresight. Again, the radar would try to lock-on but would continue to cycle to a break lock. GREEN 3 descended to the MIG's altitude, closing to about one mile. At this point, tracking in boresight, he fired a second AIM-7 missile. The AIM-7 was observed to strike the ground and explode between 200 to 400 ft to the left and behind the MIG. The MIG made a hard turn to the right and as GREEN 3 was about to overshoot, he started another high-speed yo-yo reversing right.

At this point, another MIG-17 entered the encounter at GREEN 3's 2 o'clock position. MIG 1 reversed back to the left, remaining at 200 ft. MIG 2 went over the top of the first MIG at about 180° out of phase. At the top of GREEN 3's high-speed yo-yo, he reversed to the left and into the first MIG's 6 o'clock position with 1-1/2 miles of separation. GREEN 3 started down very steeply in idle and pulled out at the MIG's altitude. He made another lock-on at one mile and closing and fired a third AIM-7, which impacted the ground but did not explode. MIG 2 was maneuvering towards GREEN 3's 7 o'clock position, whereupon GREEN 3 executed another yo-yo and continued a hard right turn, closing on MIG 1. GREEN 3 descended toward the second MIG, because MIG 2 was higher (approximately 500 ft AGL and in a better position to attack). MIG 2 was at 90° to GREEN 3's course in a right hand turn. GREEN 3 made a boresight lock-on but by then the MIG was head-on. He fired a fourth AIM-7 at a range of one mile. Almost immediately, the radar again broke lock. GREEN 3 continued tracking with his reticle, but the missile went left and short. GREEN 3 then reversed to the right, pulled up in a steep climb and disengaged, joining the remainder of the flight and returned to base. At no time did the MIGs fire any ordnance. GREEN 3 had to disengage at this point because he had exhausted his ordnance.

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Event III-120

Missile Firing Parameters

	Missile			
	1	2	3	4
Airspeed at launch, KTAS	450	450	500	500
Altitude at launch, ft AGL	500	200	200	500
G-loading at launch	1	1	1	1
Aircraft target altitudes	-	level left turn	level left turn	level
Overtake velocity, kts	80	100	100	901
Relative angle of attacking Aircraft to target flt path	10°	10°	10°	0°
Range and angle-off of target	3000', 10° 6 o'clock	10°/1 1/4 nm	10°/6 o' clock/1 nm	headon 1 nm
Miss Distance and direction	-	-	-	-
Radar lock-on	-	-	-	yes- broke lock
Launch mode	Interlocks out, boresight mode, kept enemy in gunsight reticle to missile impact			
MIG warning received	GCI	GCI	GCI	GCI
Method of Acquisition	Visual	Visual	Visual	Visual
Cdr evaluation	AIM-7E does not have a capability against targets in described environment. Ground return presented on APQ-100 radar negates lock-on capability at low altitude. The MIG-17 was easily out-maneuvered using high-speed yo-yo tactics.			

Event III-121

Aircraft Involved: Four F-105s vs three MIG-17s

Results: No Damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 April 1967/0856H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight inbound to ALFA target saw two MIGs at 3 miles range; MIGs went into afterburner, began roll-in, and disappeared; flight saw another MIG while egressing; MIG passed 3000 ft overhead without hostile action.

Event III-122

Aircraft Involved: Four F-105s vs one MIG-21

Results: No Damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 April 1967/0913H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG observed at 11,000 ft, 6 miles range; MIG began attack, but F-105s turned into it; MIG broke off; point of closest approach was 4 miles.

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Event III-123

Aircraft Involved: Four F-105s vs two MIGs,
two MIG-17s and one MIG-21

Results: Sighting only

Vicinity of Encounter: 21°22'N/107°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 April 1967/1629H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight saw two MIGs while inbound before cloud intervened; Two minutes later, two MIG-17s seen at 10 miles; flight continued on course and lead saw one MIG-21 inverted before cloud intervened.

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Event III-124

Aircraft Involved: Four F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 20°28'N/107°26'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 April 1967/1653H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight egressing at 19,000 ft saw two silver MIGs headed north from the vicinity of orbiting tanker; no hostile actions.

Event III-125

Aircraft Involved: Four F-105s vs six MIG-17s

Results: No damage

Vicinity of Encounter: 60 miles NE of Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 April 1967/1534H

11. DATA SOURCES

Messages, Reports:

DIA Summary of Air Engagements over North Vietnam, 2 May 1967

12. NARRATIVE DESCRIPTION

F-105 attacked by MIG. No ordnance expenditure reported.

Event III-126

Aircraft Involved: Two RF-4Cs vs one MIG-21

Results: No Damage

Vicinity of Encounter: 20°25'N/103°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 April 1967/1635H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight at 30,000 ft saw MIG at 3 miles range; MIG made several attempts to gain position, but was outmaneuvered and finally broke off; X-band strobing received throughout encounter.

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Event III-127

Aircraft Involved: Four F-105s vs four MiG-17s

Results: No damage

Vicinity of Encounter: Hon Gay

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 April/1542H

11. DATA SOURCES

Messages, Reports:

DIA Summary of Air Engagements over North Vietnam, 2 May 1967

12. NARRATIVE DESCRIPTION

F-105s attacked by MiGs. F-105s evaded attack. No ordnance expenditures reported.

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Event III-128

Aircraft Involved: Four F-105s vs two unidentified

Results: Sighting only

Vicinity of Encounter: 21°13'N/107°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 April 1967/1635H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight at 17,000 ft saw two silver unidentified at 3 o'clock; no attempt at engagement.

Event III-129

Aircraft Involved: Four F-105s vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 20°08'N/107°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 April 1967/1638H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight inbound over Gulf of Tonkin at 16,000 ft saw MIG 4 o'clock high; MIG passed above and behind; MIG silver.

Event III-130

Aircraft Involved: Four F-105s vs two MIG-21s

Results: No Damage

Vicinity of Encounter: 21° 6'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 April 1967/1622H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flak suppression flight inbound to ALFA target saw two MIGs 9:30 o'clock high; MIGs dived toward flight, but were engaged by MIG CAP flight Event 118.

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Event III-131

Aircraft Involved: Eight F-105s vs six MIG-21s
and three unidentified

Results: No Damage

Vicinity of Encounter: 21°45'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 April 1967/1623H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Two flights inbound to same ALFA target incident of Event 647; one flight observed maneuvers of other with MIGs; flight which maneuvered was inbound at 20,000 ft when two MIGs seen at 8 miles; MIG CAP in Event 118 engaged these MIGs, which were the same MIGs seen in Event 647; 2 minutes later, flight saw a lone MIG which began tail attack, but broke off when F-105s punched tanks; a single MIG was seen three minutes later; MIG did not maneuver; three unidentified seen 10 minutes later beneath flight; two MIGs seen 15 minutes later; flight began climb to engage, but broke off due to low fuel.

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Event III-132

Aircraft Involved: Three F-4Cs vs four MIG-21s

Result: One MIG destroyed

Vicinity of Encounter: 22°05'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 April 1967/1655H

BLUE flight on a CAP/STRIKE mission took the place of a F-105 flight that had aborted due to pod loss to strike target. While ingressing to target BLUE flight encountered two flights of two MIGs each.

2. MISSION ROUTE

From Danang refueling in and out and back to Danang.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3

6 M117 bombs
Wing tanks
4 AIM-7 missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Generally clear, one cirrus trailing a cumulus-nimbus thunderhead to the west of Thia Nguyen Steel Mill.

Altitude: 15,000 to 18,000 ft

Speed: 450 kts

Fuel State: Full internal

Flight Formation: 3-ship formation

5. INITIAL DETECTION

First flight of two MIGs sighted after several warnings. In addition to general Geo-Ref warnings, other flights preceding BLUE flight called MIGs. BLUE 1 reported that the first two MIGs crossed in front in a zoom type climb from right to left. BLUE 3 reported that the two MIGs were coming in from the left 9 o'clock position. Both reported that the second flight of two MIGs came in from the right. It is the latter two with which this event is primarily concerned.

6. ACTION INITIATED

Reversed to attempt engagement.

7. SITUATION DEVELOPMENT

After detecting the first flight of two MIGs, BLUE flight jettisoned bombs and wing tank and started "left turn to pursue." (BLUE 1's statement). The MIGs apparently saw BLUE flight and "started a diving turn back to our left" and having higher air speed at the time were able to separate on a heading of approximately 180° from that of BLUE flight. BLUE flight reversed to the right to rejoin strike force and detected two more MIGs "passing off our right wing" about 3,000 to 4,000 ft. At the time of the second acquisition BLUE flight was at approximately 24,000 ft, about Mach .9, heading east with about 9500 lb fuel. BLUE flight turned to engage MIGs. BLUE 1 was able to obtain full lock-on against MIG 3 losing sight of MIG 4. BLUE 1 fired an AIM-7 at MIG 3 which guided and followed MIG 3 into thin cirrus-type clouds. BLUE 1 did not follow with flight into the clouds because of the presence of SAM activity and the high altitude. BLUE 3, crossing back of BLUE 1, detected MIG 4 above at about 32,000 to 34,000 ft, pulling contrails in a left turn toward the north at about 10 or 11 o'clock position. BLUE 3 pursued MIG 4 achieving full system lock and fired one AIM-7 which impacted on the right aft fuselage and detonated causing at least severe aircraft structural damage. Enemy aircraft slowed, turning over from about 30,000 to 32,000 ft and descended impacting ground. No chute was observed.

8. ORDNANCE

(No. fired/No. hits)

	<u>AIM-7</u>	<u>Remarks</u>
BLUE 1	1/?	Fired full system.
BLUE 2	1/1	Fired full system.
BLUE 3	0/0	

9. EQUIPMENT PROBLEMS

None reported.

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Event III-132

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3400-3600	220	91-92	Strategic Fighter Wing 55-56. Flew F-84Gs, F-84Fs and F-101As. Instructed 4 years on F-105. Then went to Air Commander and through RTU to F-4C.
BLUE 3	3500	200		TAC fighter. F-84 in Korea. F-100 and F-4C School.

Comments on this Encounter:

BLUE 1: "At the air-to-air ranges we were working this day the SPARROW was the best weapon. I don't think SIDEWINDERS would have done any better for us. But I was shooting against a blue sky and good radar. We've had other engagements pointing down at low altitude. The SPARROWS just ain't any good down there."

BLUE 3: "The one thing I learned is that you can't afford to be complacent up there. You have to keep looking around. He (MIG 4) thought he was out of the fight, home free. He made no evasive maneuvers. I don't think he ever saw me or knew what hit him."

11. DATA SOURCES

Project Interviews: BLUE 1 and BLUE 3 (front)

Messages: OPREP-3 366TFW FASTEL 705 April 1967
OPREP-3 366TFW FASTEL 711 April 1967

12. NARRATIVE DESCRIPTION

BLUE flight of three F-4Cs were on a CAP/STRIKE mission against JCS 76.00. Prior to channel 97 another flight of F-105s aborted and BLUE flight took their place. While ingressing to target at about 22°05'N/105°05'E BLUE flight sighted two MIGs. Prior to the sighting they had heard several MIG warnings from central Geo-Ref and other flights in the strike force. There is some inconsistency as to whether the MIGs passed from right to left or vice versa. However, since BLUE flight was unable to engage these two MIGs the direction is not too pertinent. BLUE flight jettisoned bombs and tanks and started a turn to pursue MIGs. Lead was passed to BLUE 3 who was on the left. "The MIGs saw us. They immediately started a diving turn back to the left; in other words, it made our turn so that we weren't going to make any money on them at all because they had more speed than we did at the time." The MIGs ended up heading 180° from BLUE flight. BLUE 1 resumed the lead and called a reverse to rejoin strike force and sighted two more MIGs passing off the right wing. The MIGs were described as having a long cylindrical fuselage, and delta wings with wing "fenkes" on the leading edge. The vertical stabilizer was wide with a blunt top. The horizontal stabilizers were swept back. The canopy resembled an F-100. A slight ridge-line ran down the spine of the fuselage. They were bright silver in color. No markings of any type were observed. The aircraft were MIG-21s. At the time of sighting the second two MIGs, BLUE flight was now at about 24,000 ft and at approximately Mach .9. BLUE 1 led the turn pursuing MIG 3 which was now about 1-1/2 to 2 miles ahead and in a climb. In turning to pursue, the MIGs went afterburner and MIG 3's wingman began sliding outside. BLUE 1 lost sight of MIG 4. BLUE 1 maintained near level flight in order to gain speed at the same time trying to reduce the angle-off and obtain a boresight lock-on. Picking up speed with afterburner, BLUE 1 started climbing also and was able to pull lead and get his piper on the MIG, who apparently did not see him and continued in at a 30° bank climbing turn. BLUE 1 began to pull up on the MIG and after obtaining a boresight lock-on switched to full system and maintained the lock-on. The range gates were right, the ASE circle was right, the in-range light on, I had interlocks in and we had a negative closure rate 60 to 80 kts on him." BLUE 1 noticed that with the negative closure rate he was approaching maximum range and "squeezed the trigger." After a momentary delay the missile launched so the interlocks had been satisfied. The missile was observed to go straight ahead building up speed apparently locked onto the MIG which at this time was high enough to be pulling contrails. BLUE 1 fired at about 27,000 ft with 20° noseup pulling approximately 1-1/2 g's at speed of about Mach .95. The MIG was doing about 1.1 (BLUE 1's estimate). The missile apparently tracked well and followed the MIG into a cirrus cloud with the missile about 1500 to 2000 ft behind and closing. BLUE 1 took evasive action to miss the cloud and lead his flight down to an altitude where they could maneuver SAMs if necessary. While BLUE 1 was firing on MIG 3, BLUE 2, who was on the outside, had fallen behind in trail estimated to be 6 or 7 miles. BLUE 3 crossing back over BLUE 1's left wing looked up to follow the missile and sighted MIG 4 in a gradual turn at the contrail level. BLUE 3 went afterburner and closed rapidly obtaining a radar lock-on. Closing range fast, still locked on, BLUE 3 "pulled up just on a simulated perch position. All parameters met." He fired an AIM-7 which initially appeared to be going to the right of MIG 4 but made a mid-course correction, detonating on the right aft fuselage. The hit

SECRET

Event III-132

was also observed by BLUE 1. The MIG slowed rapidly, turned over and descended to impact on the ground. BLUE 3 followed it down and did not see the pilot eject, but the canopy was turned away from him most of the time.

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Event III-133

Aircraft Involved: Four F-4Cs vs one MIG-17

Result: No engagement

Vicinity of Encounter: 21°33'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 April 1967/1652H

BLUE Flight of four F-4Cs from 366TFW on Strike Mission JCS 76.00 (Thai Nguyen Iron and Steel Complex)

2. MISSION ROUTE

Depart Danang, refuel prior to target area.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 - ALQ-71
24 - XY 17M bombs
16 - AIM-7
2 - External fuel tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>BLUE Flight</u>	<u>MIG 17</u>
<u>Altitude:</u>	14,000 ft AGL	1000 ft AGL
<u>Heading:</u>	060°	170°
<u>Speed:</u>	500 KIAS	

5. INITIAL DETECTION

BLUE 3 prior to roll in on target sighted one silver MIG-17 at his 9 o'clock position low with approximately a reciprocal heading.

6. ACTION INITIATED

Since MIG had approximately a 2 mile vertical separation with reciprocal heading, BLUE 3 elected to strike target rather than attempt to engage MIG.

7. SITUATION DEVELOPMENT

BLUE Flight rolled into target. MIG was lost to view almost immediately. MIG exhibited no hostile intent but seemed primarily interested in clearing target area.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

No interviews.

11. DATA SOURCES

366TFW DNG 23 April 1967, Change 1 to OPREP 3.

SECRET

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Event III-134

Aircraft Involved: One F-4C vs one MIG-21

Results: No Damage

Vicinity of Encounter: 21°05'N/103°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/0945H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight of four F-4s on RESCAP for F-4 downed in Event 118 incident; when headed for tanker at 29,000 ft, No. 4 saw MIG closing from 5 o'clock; No. 4 turned, losing contact in turn.

Event III-135

Aircraft Involved: Four F-105s vs one MIG-17
and six MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°35'N/105°45'E
21°20'N/104°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Armed recce flight made two sightings; one MIG-17 and one MIG-21 seen at first coordinates shown, and five MIG-21s at second.

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Event III-136

Aircraft Involved: Two F-105Ds and two F-105Fs
vs four MIG-17s

Result: No damage

Vicinity of Encounter: 21°30'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/1612H

BLUE Flight of four F-105s was an IRON HAND patrol up and down both sides of Thud Ridge. Flight was from 15th Squadron 388 TFW Korat.

2. MISSION ROUTE

BLUE 3 and 4 recovered at Udorn with low fuel.

3. AIRCRAFT CONFIGURATIONS

F-105D

1 - AIM 9
6 - Mk-82

F-105F

1 - AGM-45
2 - CBU-24

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Cloud cap over end of Thud Ridge, otherwise clear.

Altitude: 6000 ft

Heading: 134°

Speed: Unknown

5. INITIAL DETECTION

Observed four MIG-17s in a loose fingertip formation at range of 6 to 7 miles at 9 o'clock. The MIG-17s were lower at 3000 to 4000 ft, heading 300°.

6. ACTION INITIATED

BLUE Flight continued on course and MIGs were lost to sight on other side of Thud Ridge.

7. SITUATION DEVELOPMENT

After making a turn around Thud Ridge, BLUE Flight on a heading of approximately 310°, observed two MIG-17s closing from the 7 o'clock position at range estimated about 4000 ft. BLUE 1 called MIGs and went afterburner, breaking up over the ridge and into the clouds in an essentially 270° turn, coming down over the west side of the ridge heading 215°, sighting the other two MIG-17s heading 150° and just about abeam about 1000 ft below. BLUE 1 was unable to pull lead on MIG 1 but was able to on MIG 2.

8. ORDNANCE

BLUE 1 - 337 rounds 20mm (M-61)

Sight set with 154 mils depression and not computing (air-to-ground mode.)

9. EQUIPMENT PROBLEMS

After 100-125 rounds, gun malfunctioned firing from one barrel only - a less effective rate of fire.

10. AIRCREW COMMENTS

There should be a simpler way to change switches when going from the air-to-ground to air-to-air mode.

11. DATA SOURCES

Project Interviews: Red Baron Interview BLUE 1, front and back

Messages, Reports:

OPREP 3 355 TRV Takh11 D011295 24 April 1967

12. NARRATIVE

BLUE Flight flying flak and SAM suppression mission up and down both sides of Thud Ridge sighted four MIG-17s and later encountered the apparently same MIGs resulting in a brief firing pass by BLUE 1. BLUE 2 never did get into position to fire his AIM-9. The MIGs never acquired a firing position against BLUE Flight. BLUE 1 fired 337 rounds of 20mm (M61) at MIG 2 ranging from 1200 ft down to 800 ft at 80° to 90° deflection. However, for approximately the last two-thirds of the rounds expended, BLUE 1's gun was malfunctioning and firing through one barrel only. BLUE 1 did observe the MIG to snap violently to the right. MIG went afterburner headed south. BLUE jettisoned tanks and ordnance and led his flight out of the area as his mission was completed since the strike force was also egressing the area.

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Event III-137

BLUE 2 then observed a low-fuel warning and discovered that his wing fuel was not transferring. "After a thorough re-check of aircraft switches" BLUE 2 headed towards the nearest coastout point, towards the tanker. Radio contact was made with the tanker but distance and altitude separation prevented rendezvous. Prior to fuel exhaustion crew ejected and were picked up twenty minutes later and delivered back to YANKEE STATION in excellent condition.

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Event III-138

Aircraft Involved: Four F-105s vs six MIG-21s
and one MIG-17

Results: Sighting only

Vicinity of Encounter: 21°30'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/1619H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight saw several MIGs, but no attempts made at engagement; while inbound, one MIG-21 seen 2 miles away; 5 minutes later, after hitting target, one MIG-17 seen at 2 miles; one MIG-21 seen 12 minutes later, and four more seen the following minute.

Event III-139

Aircraft Involved: Four F-4Cs vs three MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°05'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/1700H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight saw MIGs at 1000 ft when in bombing run; MIGs scattered from formation when ordnance hit ground.

Event III-140

Aircraft Involved: One A-6A vs one MIG

Results: No Damage

Vicinity of Encounter: 21°22'N/106°23'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 April 1967/1700H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Member of airfield strike flight downed by AA; wingman orbited position of downed crewman until warned by downed crewman that MIG was attacking; orbiting aircraft out-manuevered and evaded.

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SECRET

Event III-141

Aircraft Involved: Four F-105s vs ten MIG-17s
and two MIG-21s

Result: No damage

Vicinity of Encounter: 21°08'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1002H

Four F-105s (BLUE Flight) were attacking an Alfa target. Other aircraft striking the same target are those of Events III-141, -143, and -148.

8. ORDNANCE

(No. fired/No. hit)

20mm

BLUE 1/0 200 rounds

11. DATA SOURCES

CINCPACFLT Staff Study 6-68

12. NARRATIVE DESCRIPTION

BLUE Flight was engaged by four MIG-17s (which may have been the same as those of Events III-141, -143, and -148) on ingress and one MIG fired from 3 o'clock but missed. BLUE 4 fired 200 rounds at a passing MIG but achieved no hits.

The MIGs tried to reverse and pursue but could not catch the F-105s as they rolled in on the target.

Six more MIG-17s and two MIG-21s were seen orbiting over Phuc Yen.

SECRET

SECRET

Event III-142

Aircraft Involved: Four F-105s vs one MIG-17

Result: Sighting only

Vicinity of Encounter: 21°08'N/105°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/Approximately 1005H

Two flights (BLUE and GREEN) of F-105s were part of a strike mission against the Hanoi transformer site (JCS 82.24 Strike). BLUE Flight was attacked by MIGs on ingress and was forced to jettison ordnance 2 miles prior to reaching the target.

GREEN Flight reported ordnance delivered all around the target area. No hits were observed in the target area.

Both flights reported heavy 37/57/85mm AA fire as well as SAM and MIG harassment. Numerous MIG sightings in the vicinity of Phuc Yen airfield.

11. DATA SOURCES

Messages:

355 TFW OPREP-3 250930Z April 67

12. NARRATIVE DESCRIPTION

See Events III-144 and -151

SECRET

SECRET

Event III-143

Aircraft Involved: Four F-105s vs one MIG-17

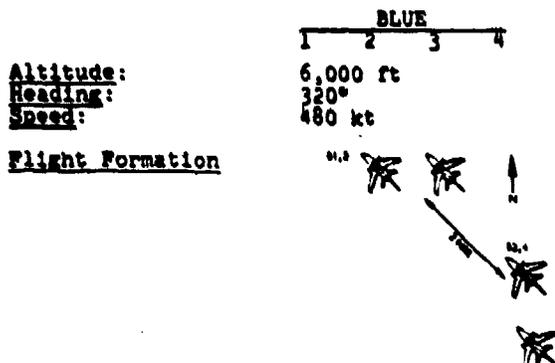
Result: No damage

Vicinity of Encounter: 21°08'N/105°50' E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1002H

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER



5. INITIAL DETECTION

BLUE 3 sighted a silver MIG-17 at the 12:30 o'clock position at a range of approximately 2 miles, in a left turn with 30° of bank.

6. ACTION INITIATED

As he continued his left turn into BLUE 3, the MIG was observed to be in afterburner. At a range of approximately 750 ft, BLUE 3 fired at the MIG which was now in a very hard left turn. Possible hits were reported.

7. SITUATION DEVELOPMENT

BLUE 3 broke off to the right and headed for Thud Ridge.

8. ORDNANCE

(No. fired/No. hits)

	MK-61 20mm	Remarks
BLUE 3	198-0	Possible hits

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	Total Hours	F-105 Hours	Combat Missions
BLUE 2	1000	150	50

11. DATA SOURCES

Project Interviews: BLUE 2, 8 June 1967.

Messages:

388 TFW OPREP-325053Z Apr 67

12. NARRATIVE DESCRIPTION

See Event III-148.

SECRET

Event III-144

Aircraft Involved: Four F-105s vs several MIGs

Result: Sighting only

Vicinity of Encounter: 21°08'N/105°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/Approximately 1000H

This flight of four F-105s was part of a strike against the Hanoi transformer sight (JCS 82.24 Strike).

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 3	1200	900	40

11. DATA SOURCES

Project Interviews: BLUE 2

Messages:

355 TFW OPREP-3 250930Z April 67

12. NARRATIVE DESCRIPTION

On the way into the target BLUE Flight encountered heavy flak. BLUE 2 was shot down by 85mm AAA. BLUE 3 became separated from the rest of the flight as he proceeded to the target area. While at about 10,000 ft BLUE 3 sighted a MIG-17 approaching his 6 o'clock position. As he broke to the right, BLUE 3 jettisoned his bombs and headed out of the area. In the vicinity of Phuc Yen he saw three or four more MIG-17s. Continuing toward Thud Ridge, two more MIG-17s approached the 6 o'clock position on BLUE 3. He engaged afterburner and evaded the MIGs. Airspeed and altitude at this time were over 500 kts and about 6,000 ft, respectively. The MIGs were silver in color. (See Events III-141 and III-151.)

Event III-145

Aircraft Involved: Three F-105s vs three
MIG-17s

Results: No damage

Vicinity of Encounter: 21°00'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1005H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight at 8000 ft after pulling off same ALFA target as Events III-143, -148, -138 saw three MIGs in a descending left turn; MIGs continued turn and departed.

Event III-146

Aircraft Involved: Four F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°05'N/105°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1005H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight striking same ALFA target as Event III-135 sighted two MIGs.

SECRET

SECRET

Event III-147

Aircraft Involved: Two F-8Es vs two or more
MIG-17Ds

Result: Possible damage to one MIG

Vicinity of Encounter: Haiphong

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1109H

BLUE 1 and 2 were one of three sections of F-8s assigned the mission of flak suppression in support of a strike group.

2. MISSION ROUTE

Departed YANKEE STATION and proceeded to the target in the vicinity of Haiphong.
(JCS target 45)

3. AIRCRAFT CONFIGURATIONS

F-8E BLUE 1, 2

8 - ZUNI Rockets (Vt fuzed)
4 - MK-12 20mm guns (284 rds)
ALQ-51; APR-27; IFF/Stby; TACAN/On; Radar/IR mode

MIG-17D MIG 1, 2

Dull silver color
Afterburner

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	BLUE		MIG	
	1	2	1	2
Altitude:	3,000 ft		500 ft	
Heading:	Northerly		170°	
Speed:	350 KIAS		---	
Fuel State:	5,500-6,000 lb		---	

5. INITIAL DETECTION

The MIGs were initially sighted by the strike flight leader. BLUE 1 acquired visual contact with the MIG at 1 o'clock, 70° down at a range of approximately 3,000 ft. The altitude of the MIG was 500 ft.

6. ACTION INITIATED

As the MIG made a gentle left turn toward the strike group, BLUE 1 maneuvered into the 6 o'clock position on the MIG, cracked, and fired a burst of 60 rds of 20mm. This burst was fired at a range of 1,500 ft while in a 2 g tracking run. Sparkles, indicating hits, were observed near the left wing root and in the left mid-fuselage. When the MIG saw the tracers he broke hard right.

7. SITUATION DEVELOPMENT

BLUE 1 closed the range to 1,100 ft but his guns would not fire. He then increased his lead to 100 MILS and fired two VT fuzed ZUNI rockets. A second pair of rockets were fired and observed to pass the MIG low at 6 o'clock. The MIG reversed his turn. BLUE 1 reestablished a tracking lead and fired a third pair of rockets. One rocket detonated approximately one-half wing span distance from the MIG at 4 o'clock. No reaction from the MIG was observed. BLUE 1 fired the last pair of rockets and then departed after tracking the MIG for approximately 2-1/4 minutes.

While BLUE 1 was attacking MIG 1, MIG 2 was trying to maneuver behind BLUE 2 and after the second turn reversal ended up on the outside of the turn. BLUE 2 engaged the MIG, attained a firing position, fired 20mm and six rockets with no success.

8. ORDNANCE

	(No. fired/No. hits)		
	20mm	ZUNI	Remarks
BLUE 1	60 rds/prob.	8/0	Observed probable 20mm hits. One rocket detonated approximately 20 ft from a MIG.
BLUE 2	Unknown	6/0	

9. EQUIPMENT PROBLEMS

BLUE 1. Guns jammed after firing one short burst of 20mm. Post flight inspection revealed two extractor springs broken, one feeder mechanism failure and one ammo chute jammed.

SECRET

Event III-147

10. AIRCREW COMMENTS

Comments on this Encounter

BLUE 1. F-8 had sufficient maneuverability to turn with the MIG. Estimated no more than 4 g required in this engagement. Used afterburner fully modulated to the minimum output position.

11. DATA SOURCES

Project Interviews: BLUE 1, date unknown.

Messages:

CTG 77.7 OPREP 3 250645Z April 67

12. NARRATIVE DESCRIPTION

Three sections of F-8s were to provide flak suppression for a strike group of A-4s. As the group approached the target area, the strike leader sighted the MIGs below the strike group. The F-8s engaged the MIGs allowing the strike group to continue to the target.

After engaging the MIGs in close combat for approximately 2 1/4 minutes, the F-8s disengaged due to no usable ordnance. Upon departure, one MIG was observed to be trailing light grey smoke from the left wing root.

During this same time, approximately 15 SAMs were fired at the strike group that was only 2 to 4 miles away from the MIG engagement.

See Event III-150.

SECRET

SECRET

Event III-148

Aircraft Involved: Four F-105s vs three
MIG-17s

Result: No damage

Vicinity of Encounter: 21°03'N/105°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1000H

Four F-105s, BLUE Flight, were providing flak suppression during a strike against the Hanoi railroad yard.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

- 2 - 450 gal external fuel tanks
- 1 - GRC 160 pod (B2 and B4 had 2 pods)
- 1 - SIDEWINDER (AIM-9B on B1 and 3)
- 1 - MK 61 20mm gun

MIG-17 MIG 1, 2, 3

Silver color/M-1, 2
Camouflaged, possibly/M-3

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear sky, good visibility, BLUE Flight was recovering from an ordnance delivery run in which CBU-24/29 were dropped on flak sites.

Altitude: Approximately 6,000 ft

Heading: SW-W

Speed: 550-600 kts

5. INITIAL DETECTION

BLUE 2 first sighted MIG 1 low at 9 o'clock at a distance of approximately 1 1/2 miles.

6. ACTION INITIATED

BLUE 2 continued outbound to rendezvous with BLUE 1 and to establish the ECM Pod formation as MIG 1 was no immediate threat. At about this time three SAMs detonated about 3 miles off to the left. BLUE 2 turned right to look for BLUE 3 and 4 and saw two MIGs in trail at a range of about 1,500 ft. The lead MIG fired at BLUE 4 without success.

7. SITUATION DEVELOPMENT

The range between BLUE 4 and the MIGs was increasing and they were no longer a threat. BLUE 2 resumed his outbound heading and reacquired a visual contact of MIG 1. By this time the MIG had closed to a range of 3/4 mile and 4,000 ft below BLUE 2. At this time BLUE 2 became concerned with the improving accuracy of an 85mm AA gun firing at him with the rounds bursting between him and the MIG. BLUE 2 broke right to get away from the AA but observed heavier flak in that direction so reversed back to the left. Now the MIG had closed to a distance of 1,500 ft, slightly back of 9 o'clock and approximately 500 ft low. The MIG appeared to be tracking BLUE 1 at this time. Eventually the MIG broke away without firing at BLUE 1 or 2.

8. ORDNANCE

MIG 2 fired guns at BLUE 4 without scoring a hit.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 2	3800	700-800	40

Comments on this Encounter

BLUE 2. Impressed with the turning maneuverability of the MIG-17, and with the density of the flak over Hanoi.

11. DATA SOURCES

Project Interview: BLUE 2, 6 June 1967.

Messages: 388 TFW OPREP-3 250342Z April 67.

SECRET

Event III-148

12. NARRATIVE DESCRIPTION

Four 105s were on a flak suppression mission in the vicinity of Gia Lam air base. While recovering from the ordnance delivery run three MIG-17 fighters attacked the F-105s. MIG 1 was observed by BLUE 2 to maneuver to a 6 o'clock position on BLUE 1. BLUE 2 turned into the MIG and closed to within 300-400 ft with the MIG at 9 o'clock. When the MIG saw BLUE 2 he broke left and down. The F-105 tried to follow the MIG but by the time the MIG had turned beyond 150° the F-105 (BLUE 2) had turned only 20°-30°. The MIG disengaged and headed toward the heavy flak area over Hanoi.

Although MIG 2 fired at BLUE 4, MIG 2 and 3 were quickly left behind as BLUE 3 and 4 accelerated and outran the MIGs.

See Event III-143.

SECRET

SECRET

Event III-149

Aircraft Involved: Two EB-66s, and two
RF-4Cs vs three MIG-21s

Result: No damage

Vicinity of Encounter: 21°10'N/104°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1017H

Three EB-66s aircraft (GREEN flight) with four F-4C escorts (BLUE flight) were on an ELINT/ECM mission over North Vietnam. At the time of the encounter GREEN 1 and BLUE 1 and 2 were at the northern end of a North-South orbit. BLUE 3 and 4 were escorting GREEN 2 and 3.

2. MISSION ROUTE

The time that GREEN flight was at various points in its track are given in Table 1.

TABLE I(S)

LOCATION	TIME(H)
Depart Taklhi	0840
17°22'N/103°57'E	0916
Fighter rendezvous at 19°50'N/104°00'E	0936
21°47'N/104°14'E	0951
Orbit through IP at 21°08'N/103°54'E	1015
Encounter	1017
Arrive Taklhi	1121

11. DATA SOURCES

432 TRW 250730Z April 1967 OPREP-3 FASTEL 308

12. NARRATIVE.

At 1011H, when at 21°25'N/104°15'E at 30,000 feet, heading 188 degrees, GREEN 2 notified BLUE 3 and 4, his cover, to set up an orbit in a clear area while GREEN 2 and 3, in a close formation, entered a hazy cloud deck. They were instructed to rejoin on the other side of the weather.

Upon completion of a turn to the North, while in the haze, GREEN flight learned that all the strike flights which they were supporting had returned to base. Therefore, at 1015H, GREEN 2 notified BLUE 3 and 4 that GREEN 2 and 3 were departing their orbit on heading of 215 degrees. VHF communications jammers were off as was normal in turns to clear UHF for periodic listenings for warnings.

Minutes later, without indications on the APS-54, GREEN 3 called contrails high at 12 o'clock, on the same heading. GREEN flight was at 21°10'N/104°00'E and the time was 1017H. GREEN 2 saw three contrails 600-700 feet above, forward and weaving as if the aircraft were attempting to slow down. GREEN 2 identified three silver MIG-21 aircraft since they continued to turn silhouette up while weaving.

The number two MIG broke down into a right turn for spacing for a left, high side pass, into GREEN 2's 8 o'clock position. The number three MIG broke left and down but hazy clouds obscured further view. Later BLUE 3 stated the third MIG attempted a pass also. The number one MIG remained weaving 600-700 feet above GREEN flight. GREEN 2 and 3 dived down in a cirrus cloud deck patched with cumulus dropping 200 units of RR-44 chaff and 50 units of RR-59. They then took up a heading of 180-220 degrees at 24,000 feet and remained in the clouds for about 20 minutes climbing gradually to 28,000 feet to maintain cloud cover.

MIG warnings were not received nor did BLUE flight see the MIGs until after the initial encounter.

Subsequent MIG warnings were heard as shown in Table 11.

TABLE II
Mig Warnings (s)

Origin	TimeH	Location
MISMATCH	1038	QG-3
MOTEL	1045	QG-3
MOTEL	1048	AG-4

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Event III-150

Aircraft Involved: Two A-4Cs vs two MIG-17s

Result: One A-4C lost

Vicinity of Encounter: 20°48'N/106°41'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/1112H

The two A-4s (BLUE 1 and 2) were part of a strike against the Haiphong ammunition depot. A total of 25 attack aircraft participated in the strike. As the strike group approached, the multiple SAMs were observed and heavy barrage and tracking 37/57/85mm AA fire was encountered throughout the strike. Two MIG-17 aircraft were observed to take off from Kien An airfield.

2. MISSION ROUTE

The strike group departed YANKEE STATION and proceeded to the target area.

3. AIRCRAFT CONFIGURATIONS

A-4C BLUE 1, 2

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear sky with 10-mi visibility in light haze.

BLUE
1 2

Altitude: 3,000 ft (approximately)

Heading:

Speed: 450 kts

Fuel State:

Flight Formation

Section of two airplanes

5. INITIAL DETECTION

While in his bombing run, BLUE 1 sighted two MIGs approaching the 6 o'clock position on his section.

6. ACTION INITIATED

BLUE 1 released his bombs and called a break to the right. BLUE 2 released his bombs and broke right behind his leader as the flight descended to 2000 ft.

7. SITUATION DEVELOPMENT

BLUE 1 called BLUE 2 to "pull harder", tighten his turn, and he then reversed his turn. After several turns the A-4s were scissoring with each other, providing mutual defense. BLUE 2 jettisoned his bomb racks during the defensive maneuvering. Because a MIG was firing at him and he had to execute a hard turn, approximately 4 g, BLUE 2 last saw BLUE 1 trailing light grey smoke. It was estimated that the MIG fired three one-second bursts at BLUE 2, after maneuvering in high-g turns down to approximately 1000 ft.

8. ORDNANCE

The MIGs fired on both BLUE 1 and 2 an unknown number of rounds.

9. EQUIPMENT PROBLEMS

None reported

10. AIRCREW COMMENTS

BLUE 2. "Could not evade the MIG at maximum speed, no afterburner. When attack aircraft have inferior capability compared to enemy aircraft, CAP cover has to be very good."

11. DATA SOURCES

Messages, Reports:

CTG 77.7 OPREP 3 250620Z April 67

CTG 77.7 OPREP 5 251810Z April 67/008

Modified Aircraft Combat Loss Report (Navy)

12. NARRATIVE

As the strike group approached the target area, heavy AA fire and SAMs were encountered. Prior to roll-in for the bombing attack the strike leader observed four MIG-17s at an altitude of approximately 1000 ft. While BLUE 1 and 2 were in their bombing run, BLUE 1 saw

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Event III-150

two MIGs maneuvering into his 6 o'clock position. He released his bombs and called a right break. After heavy maneuvering BLUE 1 and 2 ended up in a scissors. BLUE 2 last saw BLUE 1 trailing light smoke. Other members in the strike saw BLUE 1 burst into flame and crash.

A red star was observed on the wing of the MIGs.

The TARCAP was not with the strike group but was maintaining an "on call" station just off the coast. Although the TARCAP attempted to locate and engage the MIGs, no contact was made.

See Event III-147.

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Event III-151

Aircraft Involved: Four F-105Ds vs four MIG-17s

Result: Sighting only

Vicinity of Encounter: 21°13'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 April 1967/Approximately 1005H

This flight of four F-105Ds (BLUE Flight) was part of a strike against a transformer plant north of Hanoi. Heavy defenses, including SAMs, flak and MIGs were encountered in the target area.

2. MISSION ROUTE

The flight approached the northern end of Thud Ridge from the west and headed south-easterly down Thud Ridge into the target area.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

Armed with bombs and equipped with external fuel tanks.

MIG-17 MIG 1, 2, 3, 4

Dull, silver color
External fuel tanks.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Considerable bad weather enroute to the target area. In the target area the weather was clear with good visibility.

BLUE
1 2 3 4

Altitude: 6-7,000 ft
Heading: Southeasterly
Speed: 500 kt CAS
Fuel State: 10,000 lb

Flight Formation

Approximately line abreast

5. INITIAL DETECTION

BLUE 3 and 4 sighted four MIGs at about 9:30 o'clock at a range of approximately one mile with about 90° angle off headed towards the F-105s. MIG warnings had been received.

6. ACTION INITIATED

While in an echelon formation, the MIGs jettisoned their external tanks and rolled into a turn to close to the 6 o'clock position on BLUE Flight. When BLUE Flight saw the MIGs they engaged afterburner and accelerated to 550 kt CAS in a shallow dive descending approximately 2000 ft.

7. SITUATION DEVELOPMENT

The F-105s opened the range on the MIGs and continued into the target area.

8. ORDNANCE

No air-to-air ordnance fired by either the F-105s or the MIGs.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 4	640	375	60+	Went directly to F-105 from flying school.

Comments from Overall Experience

BLUE 4: "The F-105 is a fantastic airplane for this mission."
"On VFR strike missions you don't need two people."

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Event III-151

11. DATA SOURCES

Project Interviews: BLUE 4, 30 May 1967.

12. NARRATIVE DESCRIPTION

As stated in paragraphs 5, 6, 7.
See Events III-137 and III-144.

Event III-152

Aircraft Involved: Four F-105s vs four
MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°08'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 April 1967/1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight striking same target as Events III-157 and -153 saw MIGs orbiting north of target; may have been same MIGs as some of those in referenced incidents.

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Event III-153

Aircraft Involved: Four F-105s vs eight
MIG-17s and one MIG-21

Result: No damage

Vicinity of Encounter: 21°20'N/105°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time 26 April 1967/1617H

Four F-105Ds (BLUE Flight) were part of a strike force attacking the Hanoi transformer yard (JCS 82.24). The strike force consisted of 20 F-105s of which four were IRON HAND, and four F-4Cs as MIGCAP (Event III-157). The encounters of the strike aircraft with MIGs are described in Events III-153, -157, and 156. At approximately the same time (1630H) another group of eight F-105s was conducting a strike against the Hanoi railway and high-way bridge (JCS-13.00).

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	BLUE	
	1 — 2 — 3 — 4	
Altitude:	4,500 ft	
Heading:	150°	

5. INITIAL DETECTION

On ingress to the target BLUE Flight observed four MIG-17s on a 290° heading at 4,500 ft.

6. ACTION INITIATED

As MIGs crossed in front of flight, BLUE 3 fired a M-61 three-second burst at one MIG. No damage noted.

7. SITUATION DEVELOPMENT

At this point two of the MIGs broke right to come in behind flight and the other two turned left and down. BLUE 1 and 2 turned in behind two MIGs, following them down to approximately 2000 ft. It was estimated that the MIGs were flying at a maximum speed of 480 kts. BLUE 1 tried firing but gun failed to fire. BLUE 2 pulled to within 1000 ft of one MIG and fired a one-second burst before breaking off. No damage was noted. BLUE 1 and BLUE 2 overshot the MIGs due to considerable overtake speed. The MIGs broke away and the BLUE Flight proceeded to target.

On egressing just after pulling off the target the BLUE Flight crossed Phuc Yen Airfield, at 3000 ft, heading 360°, speed of 630 kts. They observed four MIG-17s on approximately 140° heading at their 11 o'clock position, and same altitude. The MIGs were in a left turn, descending in scattered trail formation. Leading MIG was firing at F-105s (probably Event III-154) which were just west of the Ridge Line and proceeding north. The MIGs passed in front of BLUE Flight and BLUE 3 fired at one MIG. Another MIG turned to position himself approximately 6000 ft behind BLUE 2. The MIG began firing but the range was excessive and he was under leading. While BLUE 2 was in a left turn with MIG still in position, BLUE 1 pulled up and then down, causing the MIG to break hard right and down. This concluded the encounter.

At the same time as the above encounter, BLUE 4 observed a MIG-21 at the same altitude, in his 10 o'clock position on a heading which would place BLUE 4 in a firing position. However, the MIG began a left turn. BLUE 4 positioned himself behind the MIG momentarily and fired, but could not stay with the MIG's turn due to the overtake speed. BLUE 4 broke off without any visible damage to the MIGs and continued to egress without further sightings.

8. ORDNANCE

	(No. fired/No. hits)		Remarks
	<u>20mm</u>	<u>Cannon</u>	
BLUE 1	1 Attempt/0		Failed to fire
BLUE 2	1/0		
BLUE 4	1/0		
MIG-17		2/0	At BLUE and at aircraft in Event III-154

9. EQUIPMENT PROBLEMS

BLUE 1's M-61 gun failed to fire.

11. DATA SOURCES

55 TFW 261555 April 67 OPREP-3 DOTG-O 11414

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Event III-154

Aircraft Involved: Four F-105Ds vs eight
MIG-17s

Result: No damage

Vicinity of Encounter: Approximately
21°20'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 April 1967/Approximately 1620H

Four F-105Ds (BLUE Flight and GREEN Flight) were part of a strike force attacking the Hanoi transformer yard (JCS 82.24). The strike force consisted of 20 F-105s, of which four were IRON HAND, and four F-4Cs as MIGCAP (Event III-157). The encounters of the strike aircraft with MIGs are described in Events III-153, -154, and 156. At approximately the same time (1630H) another group of eight F-105s was conducting a strike against the Hanoi railway and highway bridge (JCS 13.00).

8. ORDNANCE

(No. fired/No. hits)

Air-to-Air Missiles

MIGs

4/0

11. DATA SOURCE

7AF 262332Z April 67 Msg DIO 26438

12. NARRATIVE DESCRIPTION

As BLUE Flight came off the target they sighted four MIG-17s approximately 10 miles east and no contact was made. BLUE Flight sighted four MIG-17s on egress. The MIGs fired two salvos of two missiles each which missed as BLUE Flight turned. The MIGs did not give further chase.

Event III-155

Aircraft Involved: Four F-105s vs two
MIG-21s

Results: No damage

Vicinity of Encounter: 21°19'N/105°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 April 1967, 1620H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight egressing from same ALFA target as Events III-153 and -157 while at 8,000' had two MIGs pass through flight; MIGs passed about 2,000' behind lead and 3,000' ahead of #3; no firing.

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Event III-156

Aircraft Involved: Four F-105Ds vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: Approximately
21°20'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 April 1967/Approximately 1620H

Four F-105Ds (BLUE Flight) were part of a strike force attacking the Hanoi transformer yard (JCS 82.24). The strike force consisted of 20 F-105s, of which four were IRON HAND, and four F-4Cs as MIGCAP (Event III-157). The encounters of the strike aircraft with MIGs are described in Events III-153, -154, and -156. At approximately the same time (1630H) another group of eight F-105s was conducting a strike against the Hanoi railway and highway bridge (JCS 13.00).

11. DATA SOURCE

7AF 262332Z April 67 Msg DIO 26438

12. NARRATIVE DESCRIPTION

BLUE Flight sighted two MIG-21s during egress but no contact was made.

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Event III-157

Aircraft Involved: Four F-4Cs vs approximately ten MIG-21s

Result: One MIG-21 destroyed

Vicinity of Encounter: General area of 21°13'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 April 1967/1607H to 1624H.

Four F-4Cs (BLUE Flight) were flying MIG CAP for a strike on JCS 82.24, the Hanoi transformer site located at 21°08'27"N/105°50'55"E. The strike force consisted of twenty F-105s of which four were IRON HAND. The encounters of the strike aircraft with MIGs are described in Events III-153, -154, and -156. At approximately the same time (1630H) another group of eight F-105s struck JCS 13.00.

2. MISSION ROUTE

BLUE Flight departed Danang and refueled on White Anchor. After refueling the flight proceeded direct to Channel 97, then direct to 21°46'N/104°47'E, then direct to 21°43'N/105°17'E, then direct to 21°20'N/105°43'E, then direct to the target. On egress the flight again refueled on White Anchor.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

- 4 - AIM-7E (except for BLUE 1 who had three AIM-7E)
- 4 - AIM-9B
- 1 - 370 gallon external tank
- 1 - QRC-160 ECM pod
- 1 - 600 gallon centerline tank
- IFF and TACAN. (Both On.)

MIG-21s

Silver
No markings visible
Clean.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Thud Ridge obscured by cumulus clouds. Five to six-eighths broken to the south. Bottoms at 5-9000 feet MSL, tops at 10-12,000 feet. Good visibility above and below the clouds.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	11-12,000 feet MSL			
<u>Heading:</u>	146 degrees			
<u>Speed:</u>	450 KTAS			
<u>Fuel State:</u>	12,000 pounds			

Flight Formation

Pod element on the left.

5. INITIAL DETECTION

While proceeding down Thud Ridge BLUE Flight heard the IRON HAND Flight call MIGs. The first contact was a visual acquisition of a single MIG-21 by BLUE 3 at the flight's 9 o'clock position. BLUE 2 (backseat) also saw the MIGs at about the same time. The MIG was at 6000 feet MSL heading 320 degrees. There were no warnings from the agencies.

6. ACTION INITIATED

Blue lead instructed BLUE 3 and 4 to attack the MIG while BLUE 1 and 2 followed to provide cover.

7. SITUATION DEVELOPMENT

The MIG which BLUE 3 and 4 were attacking disappeared into the clouds, but they saw another MIG-21 and attacked this MIG. At this time BLUE 1 and 2 saw a MIG-21 chasing an F-105 and split the flight to follow the MIG.

From this point on BLUE 1 and 2 and BLUE 3 and 4 were operating independently. BLUE 3 and 4 subsequently attacked other MIG-21s but were never able to achieve a firing position before the MIGs disappeared into clouds. At BLUE 2's bingo they egressed.

After the MIG on the F-105 disappeared into cloud cover BLUE 1 and 2 attacked other MIGs with BLUE 1 firing 2 SPARROWS and 2 SIDEWINDERS at a MIG-21, all of which missed.

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Event III-157

He then fired a single SPARROW at another MIG-21 and, although BLUE 1 did not see the missile intercept, he is credited with a kill. When BLUE 2 reached bingo fuel the flight egressed.

While egressing BLUE Flight saw two MIG-21s and one MIG-17 in the area of Phuc Yen.

8. ORDNANCE

(No. fired/No. hits)

	<u>AIM-7E SPARROW</u>	<u>AIM-9B SIDEWINDER</u>
BLUE 1	3/1	2/0

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	3100	350	60-70	1900 hrs in F-100.

Comments on this Encounter

BLUE 1 had no problem identifying the MIGs due to their silver color and delta wing shape.

Felt that they could turn with the MIG-21, possibly due to the ability of pilot. Although the MIGs made several passes they could not turn with the F-4.

The MIGs appeared to be in an orbit, operating singly.

The F-4s kept turning to defeat not only the MIG-21s but also the SAMs and AAA.

11. DATA SOURCES

Project Interviews: BLUE 1-Front, 23 June 1967.

Messages, Reports:

366TFW 261120Z April 1967 OPREP-3/008 FASTEL 739.

366TFW 261845Z April 1967 OPREP-3
Section I Fastel 806
Section II Tastel 807.

366TFW 271030Z April 1967 MSG DCO 822.

Raytheon Letter Subject Missile Firing DID 28 April 1967.

12. NARRATIVE DESCRIPTION

BLUE Flight was providing MIG CAP for a force of F-105s. The F-105s, from KORAT were ingressing in a "gaggle" with BLUE Flight trailing the formation.

While ingressing at 1607H, when BLUE Flight was at approximately 21°38'N/105°09'E, heading 082 degrees, at 450 KTAS and 15,000 feet altitude, they observed three SAM bursts of dirty brown smoke at the same altitude at approximately 21°32'N/105°19'E. No SAM calls were heard at this time or at any other time during the mission.

At 1611H, when BLUE Flight was at 21°24'N/105°38'E, heading 146 degrees at 10,000-12,000 feet MSL, they observed two SAM detonations at approximately 8000 to 10,000 feet MSL at approximately 21°17'N/105°38'E. About 30 seconds later, with the speed and heading the same, BLUE Flight saw three more SAMs in flight, headed approximately 330 degrees, at 8 nautical miles range at 2 o'clock. These SAMs were at 6000 feet MSL, and climbing at a 60 degree angle. None of the SAMs sighted during ingress were fired at BLUE Flight.

At 1612H BLUE Flight was at approximately 21°20'N/105°43'E, at 11,000-12,000 feet MSL, heading 146 degrees; they heard the IRON HAND Flight lead call MIGs. Very shortly thereafter, BLUE 3 (as reported by OPREP) and BLUE 2 backseat (as reported by BLUE 1) saw one MIG-21 (MIG 1) at 9 o'clock. MIG 1 was at 6000 feet MSL and was heading about 320 degrees.

BLUE 3 and 4 were high on the left and were instructed by BLUE lead to go after MIG 1 with BLUE 1 and 2 following in trail to provide cover.

BLUE Flight had jettisoned their centerline tank when it became empty (at approximately the time when the flight crossed the Red River). When the engagement started BLUE 1 failed to jettison the outboard tank. However, it was empty and was retained throughout the encounter.

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Event III-157

As the elements of BLUE Flight turned left to engage MIG 1 a SAM passed between the elements about 2000 feet in front of BLUE 1 and 2, heading 340 degrees. The time was 1613H and the position approximately 21°16'N/105°50'E. No bursts were observed nor did the missile appear to track.

As the flight continued their left descending turn MIG 1 broke to the deck and disappeared into the clouds at about 5000 feet MSL.

At this time (1614H) BLUE 3 and 4 saw another MIG-21 (MIG 2) at 9 o'clock low, one nautical mile distant, heading 280 degrees, and turned left into him.

Meanwhile, BLUE 1 and 2, after completing about 180 degrees of turn saw a MIG-21 (MIG 3) chasing an F-105. MIG 3 was below and to the left of BLUE 1 and 2. BLUE 1 lead called BLUE 3 and 4 and told them he was breaking off from them and separating the elements to cover the F-105. From this point on BLUE 1 and 2 and BLUE 3 and 4 were operating separately.

BLUE 3 and 4 continued on after MIG 2, who broke down and left, disappearing into the clouds.

As BLUE 3 and 4 were turning right through a heading of 150 degrees to join with the other element, they spotted two more MIG-21s (MIG 4, 5) at 8:30 o'clock low, approximately 5 nautical miles distant, turning through 250 degrees. MIG 4 and 5 were lost from view as BLUE 3 and 4 continued to turn right toward Phuc Yen and spotted another MIG-21 (MIG 6) at 3 o'clock low on the downwind leg of the airfield's traffic pattern, heading about 280 degrees.

BLUE 3 and 4 made a descending right turn to engage but MIG 6 turned left and broke down into clouds and disappeared. BLUE 3 and 4 made a 180 degree turn south of the field and saw another MIG-21 (MIG 7) at 2 o'clock low just north of the field heading northwest. They gave pursuit but MIG 7 broke left and down disappearing into clouds.

At this time, about 1621H, BLUE 3 and 4 had two SAMs in booster phase fired at them approximately 1-1/2 seconds apart. The closest missile passed approximately 50 feet directly above BLUE 3. When attacked by the SAMs BLUE 3 and 4 were at 8000 feet MSL at 21°18'N/105°47'E heading 320 degrees. The SAMs were heading 330 degrees and passed close enough to have caused a proximity burst had they been tracking.

Shortly thereafter BLUE 3 and 4 heard BLUE 2 call bingo fuel and they egressed. At no time did BLUE 3 and 4 achieve a position to fire on any of the MIGs.

While BLUE 3 and 4 were pursuing their MIGs independently, BLUE 1 and 2 were similarly engaged. As soon as the flight split into two elements, BLUE 1 and 2 broke down and left into MIG 2. MIG 3, who was on the F-105's tail, immediately broke off from the F-105 and disappeared into cloud cover.

BLUE 1 and 2, on looking around saw several more MIG-21s orbiting over Phuc Yen between 6000 and 8000 feet MSL. They picked up one (MIG 8) at 10 o'clock, heading south in traffic pattern about 1-1/2 miles away and broke left into him. MIG 8 turned left and BLUE 1 and 2 followed.

BLUE 1 held 1-1/2 mile separation on MIG 8 and went to boresight for acquisition. After lock on in boresight the backseat went to full system, interlocks in. With parameters met, BLUE 1 fired two AIM-7E missiles in ripple. They both went out of sight beneath the nose maintaining a straight flight path in reference to launch, and one was observed to detonate just south of Phuc Yen. Neither missile appeared to guide and the second one appeared to barrel roll.

MIG 8 was in a leisurely left turn at 6000 feet when attacked by BLUE 1. The missile select lights had been on for at least five minutes previously but BLUE 1 had placed the missile power switch to standby after the five minute tune-up period. Upon reaching the target he placed missile power switch on once again but had it only 5 seconds prior to placing missile arm switch to arm. The select lights were all illuminated just prior to arming the SPARROWS.

MIG 8 was outside of BLUE 1 at 45 degrees off BLUE 1's flight path at 12 o'clock. At launch BLUE 1 was at 400 KCAS at 6000 feet MSL pulling 3-4 g's. BLUE 1 had 50 knots overtake on MIG 8 and was from 30 to 45 degrees angle off at 1.5 n mi range.

The bit check previous to take off was satisfactory and on return the system was carefully checked, but no explanation of the failure of the first two missiles was discovered.

BLUE 1 then pressed on after MIG 8 and fired two SIDEWINDERS in ripple, as MIG 8 had continued his left hand turn. BLUE 1 focused on one missile which started to guide but as MIG 8 came to a cloud he rolled off into it and the missile did not follow and missed at 6 o'clock by 100-200 feet. The other missile was not observed.

BLUE 1 had selected the SIDEWINDER due to the failure of the first two SPARROWS and had ripple fired to increase the chance of success.

At firing MIG 8 was 20 degrees off the nose of BLUE 1, in a left turn at 6000 feet MSL. BLUE 1 was at 450 KCAS at 6000 feet MSL pulling 2-2 1/2 g's. His angle off from the

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Event III-157

MIG was 20 degrees and the range was 1 mile. BLUE 1 had a good tone and had kept the target in the gun sight reticle before and during firing. Although tone definition was good on missile firing the SIDEWINDERS could have homed on the cloud background which was present.

BLUE 1 lost sight of MIG 8 as he went into the cloud. Other MIG-21s were still seen circling at 10 o'clock. BLUE 1 spotted one co-altitude at about 2 miles away and pulled in a hard turn and got inside of MIG-21 (MIG 9). Due to the cloud buildup BLUE 1 went back to radar mode and at 2-1/2 miles made a boresight acquisition and lock on. A switch to full system was then made, interlocks in.

MIG 9 was also in a gentle left turn and at 2 miles range BLUE 1 fired a SPARROW and after a short delay the missile launched and tracked the target nicely. At this time however, MIG 9, with the missile tracking good and closing from 1000 feet range, made a slight right roll and entered a cloud. BLUE 1 followed the contact for a while until the radar broke lock. BLUE 1 felt that he had held lock long enough for intercept and since the MIG was taking the most leisurely evasive action and the missile was guiding, he was credited with a kill. The time was about 1622H.

At launch BLUE 1 was at 450 KCAS at 6000 feet MSL. The MIG was also at 6000 feet MSL with both in a left turn. BLUE 1 was pulling 2 g's and had 60 knots overtake on the MIG. The MIG was 2 miles away at 12 o'clock and 5 degrees angle off.

The MIGs last known position was 20°19'N/105°50'E, altitude 5000 feet MSL, heading 340 degrees, speed about 420 KTAS.

At this time BLUE 1 saw another MIG-21 (MIG 10) low at 10 o'clock and turned to engage when BLUE 2 called bingo fuel. The flight then started to egress from the target area to the northwest, and while egressing they spotted two MIG-21s and one MIG-17 in the Phuc Yen traffic pattern and four silver MIGs, identity undetermined and two IL-28s in revetted sites on the field.

Throughout the engagement, the MIGs seemed to maintain their left orbit at 6000-8000 feet altitude tightening their turn and ducking into a cloud when attacked. BLUE 1 and 2 remained in a general left turn working mostly in the horizontal. BLUE 1 did go into high speed yo-yo to attack MIG 9, but their altitude ranged only from 4000-8000 feet, and the speed was never below 400 knots. Both BLUE 1 and 2 used afterburner in hard turns to keep inside of the MIGs. Although all the MIGs were in the same general area, they seemed to be operating as singles. Due to their pattern the MIGs were acquired at 10 o'clock. However, some MIG-21s made very high angle off passes at BLUE 1 and 2. They could not match the turn however and posed no threat. BLUE 2 saw this situation on several occasions but did not bother to call them out. The MIGs were not in afterburner and BLUE 1 had no trouble getting a 6 o'clock position on them.

The battle took place close to Phuc Yen and as BLUE 1 and 2 passed close to the field, they came under AAA fire, despite the proximity of MIGs. All of the flight members felt that the MIGs could have landed at Phuc Yen at any time but chose instead to lure the flight over the field and there appeared to be a coordination between SAMs, MIGs and AAA which was abetted by the low clouds. The operations conducted by BLUE Flight had to account for these defenses when conducting their search.

BLUE Flight started to egress about five minutes after the strike force had left the target. While egressing at 14,000 feet MSL heading 270 degrees, the flight observed one SAM burst at their altitude 5 miles away at approximately 21°23'N/105°12'E at 1624H. In all some twelve SAMs were fired at the flight.

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Event III-158

Aircraft Involved: Four F-4Cs vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 20°55'N/105°13'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/Shortly after 1640H

Four F-4Cs (BLUE Flight) were to provide MIGSCREEN for the strike force from Takhli, which were attacking JCS 18.38. The strike force consisted of 16 strike aircraft and was supported by an IRON HAND Flight. All of the strike flights except one encountered MIGS (Events III-161, -162, -163) and the IRON HAND Flight (Event III-164) also encountered MIGS.

2. MISSION ROUTE

Departed Danang, and refueled on BROWN ANCHOR. From there, direct to Channel 97, then direct to 20°48'N/105°06'E, direct to 20°57'N/105°27'E, then direct to target area orbit in the vicinity of 21°04'N/105°39'E. The egress route was direct to 21°08'N/105°31'E, direct to 20°50'N/105°00'E, then direct to 20°23'N/104°55'E, then direct to 19°00'N/104°20'E, then direct to Channel 85, and then to Danang.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4 --Tank configuration unknown but probably one centerline and one outboard.

4-AIM-7E
4-AIM-9B
1-QRC-160 pod

MIG-21

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear visibility unlimited

BLUE
1 2 3 4

Altitude: 17,000 ft AGL

Heading: 240°

Speed:

Fuel State:

Flight Formation

Pod

5. INITIAL DETECTION

While outbound BLUE 3 saw two MIG-21s below the flight. The MIGs were at 2000 ft altitude, heading 240°, turning left towards Hanoi.

6. ACTION INITIATED

BLUE Flight continued on, while keeping the MIGs under surveillance.

7. SITUATION DEVELOPMENT

MIGs were lost from view.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

None interviewed

11. DATA SOURCES

366 TFW 781300Z OPREP-3 FASTEL 865

12. NARRATIVE

BLUE Flight was fragged to fly MIGSCREEN for five strike force flights. (These are the flights in Events III-161, -162, -163, and -164 plus one other which did not encounter MIGs.) BLUE Flight started with the flight of Event III-163 from rendezvous to target and return. BLUE Flight rendezvoused with the strike force at 16:16H. They stayed above the flight in Event III-163 to the target and set up an orbit at 21°04'N/105°39'E. The target of the strike force was JCS 18.38.

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Event III-158

At 1633H, BLUE 4, while flying at 18,000 ft AGL, and 500 KTAS, was in a left turn, turning through 360° had two SAM missiles detonate near the aircraft. BLUE 4 was the last aircraft in a Pod turn formation. BLUE 3 saw a SAM missile detonate at BLUE 4's 6 o'clock position within 75 ft of the aircraft. Approximately 7 seconds later BLUE 3 saw a second SAM detonate at BLUE 4's 6 o'clock position within 75 ft.

The second SAM was in booster and after the burst the crew saw the booster section continue out of the burst and go above them. The two bursts were orange in color and appeared to be the size of a dirigible.

BLUE 4 had a total of 12 holes in the stabilator, aft fuselage, and lower wing. BLUE 4 lost PC-2 hydraulic system, but BLUE Flight was able to return to home base without further incident. The missiles appeared to be traveling in a near vertical path. They were not observed prior to detonations. All QRC-160 were operational.

On the outbound leg from the target, BLUE 3 saw two MIG-21 aircraft below the flight. The MIGs were on a heading of 240° turning left toward Hanoi. The MIGs stayed at 2000 ft and disappeared to the east toward Hanoi. BLUE 1 (Lead) elected to maintain flight discipline and escort BLUE 4 out of enemy territory. Four crew members saw the MIGs.

SECRET

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Event III-159

Aircraft Involved: Four F-105s vs eight
MIG-17s

Results: Sighting

Vicinity of Encounter: 20°52'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967, 1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight ingressing to same ALFA target Event III-162 saw three silver MIGs cross its track at 1,000' AGL; when about 2 miles away, MIGs began sweeping turn, but no further contact made; one minute later, #3 saw five silver MIGs at 10,000' altitude and 6-8 miles range.

Event III-160

Aircraft Involved: Four F-105s vs two
MIG-17s

Results: No damage

Vicinity of Encounter: 20°58'N/105°24'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967, 1653H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight returning from strike on target of Event III-165 saw two MIGs orbiting; #4 began turn, but lost sight of MIGs.

SECRET

Event III-161

Aircraft Involved: Four F-105s vs eight
MIG-17s in 3 separate
encounters

Results: No Damage

Vicinity of Encounters: 21°02'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/1630H

Four F-105s (BLUE Flight) were part of a strike force attacking JCS 18.38 Dan Phuong causeway 12 miles west of Hanoi. The other aircraft in this strike force (including support aircraft) which encountered MIGs are those of Events III-158, -162, -163, -164.

2. MISSION ROUTE

Departed Takhli and proceeded overland to the target. The general route after leaving Channel 97 is about the same as that described in Event III-158.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

6 - 750-lb bombs

B-3 had an AIM 9

Tank configuration unknown, probably each had a QRC-160 pod, camouflaged.

MIG-17

Silver

No external stores of tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Unknown

5. INITIAL DETECTION

On ingress BLUE Flight saw three MIG-17s 2 to 3 miles out on the right.

6. ACTION INITIATED

The MIGs were no threat due to their position and the flight continued on.

7. SITUATION DEVELOPMENT

BLUE Flight delivered ordnance on the target, and on egress a flight of two MIG-17s were out-manuevered by BLUE 1 and 2.

An additional flight of three MIG-17s made a head-on pass at BLUE Flight, and fired at the flight. BLUE 1 fired at these MIGs but obtained no hits.

8. ORDNANCE

(No. fired/No. hits)

	<u>CANNON</u>	<u>Remarks</u>
BLUE 1	3/0	B bursts at the last 3 MIGs
BLUE 2	1/0	
MIG 1	1/0	Fired at BLUE Flight at least once. BLUE 3 only saw MIG 2 firing.
MIG 2	1/0	Fired at BLUE Flight at least once. BLUE 3 only saw MIG 2 firing.
MIG 3	1/0	Fired at BLUE Flight at least once. BLUE 3 only saw MIG 2 firing.

9. EQUIPMENT PROBLEMS

None reported

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 3	~2500	400		Had ADC experience

Comments on this Encounter

Tough to counter a head-on firing pass.

SECRET

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Event III-161

11. DATA SOURCES

Project Interviews: BLUE 3, 31 May 67

Messages:

355 TFW 281800 April 67 OPREP-3 DOTO-0 11439

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound and about 2 minutes from the target when they saw a flight of three MIG-17s. The MIGs were off the right 2 to 3 miles. BLUE 3 called them to the rest of the flight, but BLUE 1 ascertained that the MIGs were of no threat since BLUE Flight had already increased speed for the run in to the target. The flight continued on past Hoa Lac and received heavy AAA fire from an estimated nine 85mm batteries.

The flight struck the target and egressed to the west. In this interval the MIGs came east to the egress route.

On egress, a flight of two MIG-17s was out-maneuvered by BLUE 1 and BLUE 2.

BLUE 3 and 4 were about three-quarters of a mile behind BLUE 1 and 2, who were very close together. Near 20°47'N/105°30'E BLUE Flight came upon an additional three MIG-17s. The MIGs were first seen by BLUE 3 about 10° off to the right, as the MIGs were turning in towards BLUE 1. They were 1 to 1 1/2 miles in front when first seen, heading about 90° to BLUE Flight's course and not closing at that instant. The MIGs never crossed in front of BLUE Flight. These MIGs had already been called by other flight members when BLUE 3 saw them. The MIGs were in a turn and BLUE 3 got a good top view of them.

The MIGs ended up in a generally head-on pass to BLUE Flight and made a 140° pass (180° would be exactly nose on).

BLUE 3 was at 3000 to 4000 ft altitude at 600 KTAS with BLUE 4 on the left. BLUE 3 let up for missiles-air, since the wingman was in a good position.

A MIG that had previously been unseen, came across in front of BLUE 3, passing from the left. The MIG was unseen until he filled the wind screen about 500 ft away and due to the high rate of closure passed quickly off to the right and disappeared.

A MIG that had been seen at BLUE 1's one o'clock position rolled steeply into BLUE 3 and the muzzle flashes were seen as the MIG passed to the 3 o'clock position and out of sight. BLUE 3 could not fire due to the position of BLUE 1.

BLUE 1 fired deflection bursts of 20mm at each of the three MIG-17s as it broke away. There was no further contact after BLUE Flight passed through the MIGs.

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Event III-162

Aircraft Involved: Two F-105Ds vs at least
nine MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°06'N/105°34'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/1630H to 1635H

Four F-105Ds (BLUE Flight) were part of a strike force of 16 F-105s in a strike against JCS 18.38, the Dan Phong Highway causeway, 12 miles west of Hanoi. BLUE Flight was the first strike flight and followed the flak suppression flight (Event III-163). The other aircraft in the strike force which encountered MIGs are those of Events III-161 and -163. One other strike flight saw no MIGs. The actions of IRON HAND flight are described in Event III-164. The actions of the F-4 support aircraft are given in Event III-158. Also, there were the normal support aircraft such as B-66 and BIG EYE.

After hitting the target BLUE 1 and 2 were separated from BLUE 3 and 4. Consequently, most of the action involves only BLUE 1 and BLUE 2.

2. MISSION ROUTE

BLUE Flight left Takhli and refueled on GREEN ANCHOR. From aerial refueling the flight proceeded to Channel 97 and then ingressed directly to the target on a heading of about 048°.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 3

2 - 3000 lb bombs
1 - AIM-9B
1 - QRC-160 Pod
650 gal centerline tank
IFF - Squawking; TACAN - receive only
Camouflage paint

F-105D BLUE 2, 4

2 - 3000 lb bombs
1 - QRC-160 Pod
650 gal centerline tank
IFF - Squawking; TACAN - receive only
Camouflage paint

MIG-17 MIG 1-9

Silver color, no marking noted
External tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: VFR. Clear with 15 miles visibility
Flight conditions unknown

5. INITIAL DETECTION

BLUE Flight saw MIG-17s on ingress to the target. The MIGs were at 4 o'clock 5 to 6 miles out of the line of flight. Although MIG warnings were received, they were not correlated with the MIGs that were encountered.

6. ACTION INITIATED

BLUE Flight increased speed and the MIGs were left behind.

7. SITUATION DEVELOPMENT

BLUE Flight continued on and hit the target. As BLUE Flight pulled off the target, BLUE 1 and 2 pursued one MIG-17 in a turning chase, firing one AIM-9B which missed.

Two more MIG-17s made a head-on pass and both BLUE 1 and 2 and the MIGs fired without effect. BLUE 1 and 2 continued hard right and sighted another MIG-17. Both BLUE 1 and BLUE 2 fired on the MIG with BLUE 1 scoring a kill. While firing on this MIG, BLUE Flight was attacked by two more MIG-17s from 5 o'clock firing. These MIGs broke off as BLUE 1 and 2 broke hard right.

While egressing a single MIG-17 made a head-on firing pass but scored no hits. Shortly thereafter, the BLUE 1 and 2 were attacked by two more MIG-17s, one from 5 o'clock and the other from 7 o'clock; both were firing. BLUE Flight unloaded and outran the MIGs.

8. ORDNANCE

(No. fired/No. hits)

	<u>20mm</u>	<u>AIM-9B</u>	<u>Cannon</u>	<u>Remarks</u>
BLUE 1	2/1	1/0		Expended 800 rounds. One MIG-17 killed by cannon fire.
BLUE 2	3/0			Expended 1000 rounds
MIG 2,3,5,6,7,8 & 9			1/0	Each made one firing pass, no hits

SECRET

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SECRET

Event III-162

9. EQUIPMENT PROBLEMS

BLUE 1 - The gun camera was inoperative.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	3000	1400	78

Comments on this Encounter

Had preplanned to use the AIM-9B first, and set up to do so on MIG 1. The sun was not a factor. Felt that aggressiveness in attacking the MIGs is the key to success.

The MIGs seemed to be eager to disengage. BLUE 2 did an excellent job of covering and warning of attacking MIGs. This was due to the fact that BLUE 1 and 2 had flown together for the past 50 missions, and BLUE 2 knew what to expect. Due to cluttered communication channels, the wingman must be able to stay with the lead with a minimum of communication.

Switchology is unacceptable. It needs to be more simplified. The switchology definitely degraded the attack against MIG 1.

The low level acceleration and maximum speed relative to the MIG-17 was a real advantage, and was utilized successfully as a defense maneuver.

Comments from Overall Experience

On previous missions to Route Package VI and the Hanoi area, BLUE 1 had seen six to eight MIGs on different occasions.¹ These sightings were head-on passes with MIG-17s or observations of MIG-17s or 21s outside of engagement distances.

11. DATA SOURCES

Project Interviews: BLUE 1, 30 May 1967

Messages, Reports:

355 TFW	291240Z	Apr 67	OPREP-3	DOTO-0	011456
355 TFW	281823	Apr 67	OPREP-3	DOTO-0	011441
355 TFW	281800	Apr 67	OPREP-3	DOTO-0	11441

12. NARRATIVE DESCRIPTION

BLUE Flight (consisting of four F-105a) was ingressing to the target. On crossing the Black River, MIG-17s were sighted at 4 o'clock, low approximately 5 to 6 miles out of the line of the strike force. BLUE Flight went to afterburner and increased airspeed, and the MIGs fell behind and were lost from view.

BLUE Flight hit the target, and after roll in, BLUE 1 and 2 were separated from BLUE 3 and 4. They did not rejoin until they all reached Channel 97 on egress.

Although MIG warnings were issued, BLUE Flight was unable to correlate them with their specific encounters and, as a result, did not get warning for the MIG encounters. The first indication of MIGs was when they were seen. During the MIG encounters which followed, BLUE 1 and 2 did not request CAP support nor communicate with the CAP aircraft (Event III-129A).

As BLUE 1 and 2 recovered from the bomb run, BLUE 1 saw a MIG-17 at 2 o'clock about 1 1/2 miles out. At this time, BLUE 1 and 2 were at 3000 ft altitude (about 1000 ft AGL) in the vicinity of 21°05'N/105°34'E. BLUE 1 and 2 turned toward MIG 1, gaining rear quadrant advantage in the vicinity of the MIG's 4 o'clock.

BLUE 1 had planned to use the SIDEWINDER first, and attempted to reset the switches to that mode. In doing so, BLUE 1 had to take his eyes from the MIG to look inside the cockpit. On looking back at the MIG, BLUE 1 discovered that the MIG had gained 15° to 30° of turn on him and was increasing the lateral separation. BLUE 1 then pulled the pipper up to place it on the MIG. BLUE 1 got a tone about two seconds prior to launch and held the tone until launch. The tone after launch was not recalled. In order to put the pipper on the MIG, BLUE 1 had to pull over 2 1/2 g's.

BLUE 1 then released g to about 1, and at 1500 ft altitude AGL and at 400 kts, BLUE 1 fired an AIM-9B. At firing, BLUE 1 had about 15° angle off, and the range was 3000 ft. BLUE 1 was in a slight climbing right turn with about 15° of bank.

¹The RED BARON files contain no other events with BLUE 1 as a participant, so it is unknown if these sightings are contained in previous events.

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Event III-162

The MIG was also in a turn at about the same speed and altitude as BLUE 1. As the SIDEWINDER left the rail, the MIG tightened his turn even more, but it was estimated by BLUE 1 that the MIG was probably outside of parameters due to range and angular deflection even before this maneuver. Since the target was at about 1000 ft AGL, background IR radiation may have affected tracking.

The missile appeared to guide towards the MIG, but the missile passed about 1000 ft behind and 400 ft below the MIG.

After a 360° turn, BLUE Flight (BLUE 1 and 2) then broke off the engagement and turned toward the west for egress. On rolling out on a westerly direction, BLUE 1 and 2 saw two MIG-17s (MIG 2, 3) heading 170° at 2000 ft. The MIGs and BLUE 1 and 2 turned right into each other and ended up in a head-on firing pass as both the MIGs and BLUE 1 and 2 fired. BLUE 1 did not see the MIGs muzzle flashes and no hits were observed.

BLUE Flight passed MIG 2 and 3 on the left, head on, in a right turn. As the flight continued a hard right turn, they sighted another MIG-17 (MIG 4) at 21°02'N/105°19'E. MIG 4 was at BLUE 1's 2 o'clock position about 1 1/2 to 2 miles out. BLUE 1 and 2 were in the vicinity of 2000 to 3000 ft MSL and about 350 to 370 kts airspeed, in afterburner. When seen, the MIG was in a gentle left turn with about 30° of bank. As MIG 4 turned, BLUE 1 and 2 were able to turn inside; and as he came into range, BLUE 1 and 2 fired.

BLUE 1 started firing at 1000 to 1300 ft range, and after a burst of 200 to 400 rounds, BLUE 1 saw the left wing start to emit smoke and fire. BLUE had the sight set up for manual gage. The MIG passed through the piper at such an angle that BLUE 1 felt that the MIG was in the firing envelope. (BLUE 1 felt that had the MIG been turning harder, the proper lead would not have been possible). The impacts all appeared to be in the left wing root as recorded by BLUE 2's KA-71 strike camera.

BLUE 1 fired at 15° to 20° angle-off and down to 800 ft range. As the MIG began to burn (which was confirmed by BLUE 2) the MIG tightened his turn to the left and entered a steep diving spiral, towards the Black River; when last seen the MIG was about 500 to 1000 ft from the ground. BLUE 1 and 2 never saw the MIG hit the ground.

As the MIG started to out turn BLUE 1 and 2, BLUE 1 started a high yo-yo to the outside to position for another firing pass.

At this time, BLUE 2 called that two MIG-17s (MIG 5 and 6) were attacking from 5 o'clock. BLUE 1 saw the MIGs at about 1000 ft range and both were firing. BLUE 1 and 2 initiated a hard right descending turn, and unloaded in afterburner. The MIGs disengaged after about 30° of turn, scoring no hits. BLUE 1 and 2 still had the centerline tank in place, as well as pylons, but they jettisoned the tank at this time.

On egress, a single MIG-17 (MIG-7) made a short head-on ineffectual firing pass, and continued to the north as BLUE Flight continued southwest.

BLUE 1, with BLUE 2 on the right, climbed slightly; and shortly after the attack by MIG 7, BLUE 1 and 2 were attacked by three more MIG-17s (MIG 8, 9, 10). Two MIGs were at 5 o'clock and the other was at 7 o'clock. The MIGs were about 1000 to 1500 ft range and were firing. BLUE 1 saw the rounds pass over the canopy and the muzzle flashes on the nose of the MIGs. BLUE 1 and 2 went to afterburner and negative g and descended to 300 to 400 ft above the ground. The flight rapidly outdistanced the MIGs and safely egressed.

The engagements were all about 1500 to 3000 ft; and except for accelerating away, the speeds were about 400 kts. At the start of the engagements, BLUE Flight had about 7000 lb of fuel, which would have given them some ten minutes in the target area so that use of afterburner was not restricted. The encounters on egress occurred between 1630H and 1635H.

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Event III-163

Aircraft Involved: Four F-105Ds vs one MIG-17

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°01'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/1636H

Four F-105Ds (BLUE Flight) were part of a strike force attacking JCS 18.38, the Dan Phong Highway Causeway, 17 miles west of Hanoi. BLUE Flight was the flak suppression flight and led the strike force to the target. The other aircraft in the strike force which encountered MIGs (one flight did not) are those of Events III-161 and -162. The IRON HAND support aircraft for this strike were those described in Event III-164. The CAP aircraft were the flight of Event III-158.

2. MISSION ROUTE

Departed Takhlit and after aerial refueling proceeded to the target, directly from Channel 97, over the same route as the strike flights (Event III-161 and -162). Egress was the reverse route.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 3

1 - QRC-160 Pod
2 - 450 gal tanks
4 - CBU
Full 20mm
1 - AIM-9B (SIDEWINDER)
IFF: BLUE 1 operating, BLUE 2, 3, 4 on standby
TACAN on receive only
Camouflaged

BLUE 2, 4

1 - QRC-160 Pod
2 - 450 gal tanks
4 - CBU
Full 20mm load

MIG-17

Drop tanks
Dark Olive drab

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clean with 15 mile visibility

BLUE
1 2 3 4

Altitude: 8000-10,000 ft
Heading: Southwesterly (Egressing) In a right hand turn
Speed: 550 kt
Fuel State: 8000-9000 lb
Flight Formation:

Pod, almost line abreast, element on the left, BLUE 2 on the right of Lead.

5. INITIAL DETECTION

BLUE Flight had heard MIG warnings so they knew that MIGs were airborne. On egress BLUE 1 saw a MIG-17 and called it out. The MIG-17 was chasing an F-105F.

6. ACTION INITIATED

After making a positive identification of the MIG-17, the flight attacked.

7. SITUATION DEVELOPMENT

BLUE 1 set up a SIDEWINDER attack and fired but the missile failed to guide. As BLUE 1 turned off to follow the missile's flight, BLUE 2 closed in and fired at the MIG. The first burst missed and on the second burst the gun jammed.

BLUE 1 then moved in and fired 20mm at the MIG. The MIG exploded, resulting in a kill.

8. ORDNANCE

(No. fired/No. hits)

	<u>SIDEWINDER</u> <u>AIM-9B</u>	<u>Cannon</u> <u>20mm</u>	<u>Remarks</u>
BLUE 1	1/0	1/1	Missile failed to guide. Cannon made a kill.
BLUE 2		2/0	Gun jammed on second burst.

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SECRET

Event III-163

9. EQUIPMENT PROBLEMS

BLUE 1 - Gun camera did not operate
BLUE 2 - Gun jammed

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	5000	285	76
BLUE 2	3100	200	--

Comments on this Encounter

BLUE 2 felt that the MIG never saw them. BLUE 2 initially thought the MIG that he attacked was a second MIG.

11. DATA SOURCES

Project Interviews: BLUE 2, late May 1967
Messages, Reports:

355TFW 281900Z Apr 67 OPREP-3 DOTO-0 11440

12. NARRATIVE DESCRIPTION

BLUE Flight had attacked the target and was egressing, when BLUE 1 visually acquired an unidentified aircraft and called it out. He delayed his attack a few seconds to make a positive identification.

When seen the MIG was at 11 o'clock at 1 to 2 miles range,* passing from BLUE Flight's left to right. The MIG was in a right level turn (20° to 30° of bank) heading approximately 330°, and was trying to set up an attack on an F-105F. (From the time and location, probably one of the aircraft from Event III-164). At the time of sighting, BLUE Flight was at 8000 to 10,000 ft altitude and the MIG was at 5000 to 7000 ft altitude.

Although previous MIG warnings had been heard, BLUE Flight was not warned of this specific MIG. While inbound, BLUE Flight had communicated with the supporting CAP aircraft (Event III-158) but did not contact them during egress or during the MIG encounter.

When the MIG was identified, BLUE Flight turned into trail of the MIG. It was surmised that the MIG never saw BLUE Flight make the attack. BLUE Flight did not jet-tison stores, but went to afterburner to close on the MIG.

BLUE 1 closed slightly on the MIG and fired his SIDEWINDER when in range. Although BLUE 1 had a tone for 4 to 5 seconds prior to launch, the missile failed to guide, and went high and to the left. When he fired, BLUE was 1 1/2 miles* from the MIG at about 30°, angle off at the MIG's 4 o'clock. Both BLUE 1 and the MIG were in a right turn with BLUE 1 pulling 1 1/2 g with about 10° of bank in a slight descent. BLUE 1 had about 200 kt of overtake at launch, and both aircraft were in the 5000 to 8000 ft altitude region.

As the SIDEWINDER took off, BLUE 1 momentarily broke off his attack and rolled out to follow its flight, in order to assure that it was not going to guide on the F-105F that the MIG had been attacking. The F-105F at this time was about 4000 ft or more ahead of the MIG and appeared to have the MIG in sight. The F-105F was unloading and keeping the MIG at an angle off.

The MIG tightened his turn slightly and slid across in front of BLUE 2. BLUE 2 went to afterburner and made a firing pass but was not in good tracking position. During this pass BLUE 2 fired 277 rounds from 1500 to 1000 ft range but observed no hits. BLUE 2 then closed further and with a good trailing position attempted to fire again but the gun jammed. BLUE 2's gun camera film showed the MIG to be in good position for the second attempt and the pipper to be on the MIG. The sight was set for missiles-air, and BLUE 2 had not attempted to attain a radar lock. During the firing passes BLUE 2 pulled 2 to 3 g's and was at about 550 kt airspeed. The overtake was between 50 and 100 kts.

During the attack of BLUE 1 and 2, BLUE 2 had maintained position on the inside of the right turn and the element (BLUE 3 and 4) had automatically moved into a covering position. After his gun jammed, BLUE 2 tried for a little bit longer to make the gun fire, then came out of his right bank and moved outside to BLUE 1's left wing. As soon as BLUE 2 broke off, BLUE 1 came back in and closed on the MIG.

*This estimate is based on BLUE 2's 4000 to 5000 ft estimate and the 1 1/2 mile firing range.

*BLUE 2 estimated 1/2 mile.

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Event III-163

The MIG steepened this turn to about 60° of bank and BLUE 1 closed to 1500 ft and fired his 20mm cannon. BLUE 1 expended approximately 700 rounds as he closed from 1500 to 700 ft range, with about 10° angle off.

The MIG took hits in the left wing and erupted in a large ball of fire. As it subsided the MIG then began a slow diving right spiral with the left wing on fire.

BLUE 1's gun camera did not work and he did not see the MIG impact the ground but BLUE 2 and 3 observed the impact and all members of BLUE Flight observed the resulting explosion at location 21°01'N/105°25'E at 1636H.

BLUE Flight took another look around for any other MIG aircraft, and not seeing any then continued to egress.

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Event III-164

Aircraft Involved: Four F-105s vs one MIG-17

Result: No damage

Vicinity of Encounter: 21°02'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/1636H

Four F-105s (BLUE Flight) were on an IRON HAND mission in support of the strike force attacking JCS 18.38.

2. MISSION ROUTE

Departed Takhli and ingressed overland. See Event III-158 for general route after leaving Channel 97.

3. AIRCRAFT CONFIGURATIONS

At least three of the aircraft in BLUE Flight were F-105Fs, and carried AGM-45s. Other stores unknown.

8. ORDNANCE

(No. fired/No. hits)

20mm Cannon

BLUE 1 at least 1/0

BLUE 2 1/0

11. DATA SOURCES

Messages, Reports:

DIA Summary of Air Engagements
355 TFW 281300 OPREP-3 DOTO-D 11439
RED BARON MIG Incident Summary

12. NARRATIVE DESCRIPTION

BLUE Flight provided IRON HAND support. During the mission ten MIG-17s were sighted. In addition BLUE 1 and 2 engaged and fired on one MIG-17. One AGM-45 was launched at a FANSONG signal with unknown results.

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Event III-165

Aircraft Involved: Two F-105Fs and two F-105Ds
vs five MIG-17s

Result: No damage

Vicinity of Encounter: 20°55'N/105°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/1648H

Two F-105F and two F-105D aircraft (BLUE Flight) were on an IRON HAND mission in support of 16 other F-105s, attacking JCS 20.00. The aircraft in Events III-158 and -166 were part of this strike force, all from Korat.

2. MISSION ROUTE

The exact route is unknown but it generally was overland from Channel 97 direct to the target.

3. AIRCRAFT CONFIGURATIONS

BLUE Flight carried AGM-45 shrike, CBU-24, and MK-82 bombs. The AGM-45 was carried on all aircraft. No AIM-9Bs were carried.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Generally clear, visibility 10 miles or better

	BLUE			
	1	2	3	4
<u>Altitude:</u>	5000 ft			
<u>Heading:</u>	350°			
<u>Speed:</u>	Unknown			
<u>Fuel State:</u>	Unknown			
<u>Flight Formation:</u>	Unknown			

5. INITIAL DETECTION

BLUE 1 saw two MIG-17s at 12 to 1 o'clock 3 to 4 miles away. BLUE 3 saw three more MIG-17s at about the same time. The MIGs were at 5000 ft heading 180°.

6. ACTION INITIATED

BLUE 1 started to attack the two MIGs that he had seen. BLUE 2, 3, and 4 broke down and to the left.

7. SITUATION DEVELOPMENT

BLUE Flight attacked the two MIGs with BLUE 1 getting off a burst at the lead MIG on a head-on pass and another burst at the second MIG with a little deflection. The lead MIG fired at BLUE 1. The other three MIGs then started to come in for an attack. BLUE Flight went to afterburner and exited the area.

8. ORDNANCE

(No. fired/No. hits)

	<u>SHRIKE</u>	<u>GUN</u>	<u>Remarks</u>
BLUE 1	2/1		BLUE 1 thought he observed two hits.
MIG 1		1/0	

9. EQUIPMENT PROBLEMS

BLUE 1 - No sight reticle

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3900	900	48	Had flown B-57s Had flown F-105s since 1963

Comments on this Encounter

Suspected that the MIG tactic in this event was to work in two pairs and a single. The two attacking from head-on were supplemented by three from the rear, two from one side and a single from the other side. (However, BLUE 1 did not see these other three).

The MIGs turned much more rapidly than had been expected.

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Event III-165

11. DATA SOURCES

Project Interviews: BLUE 1, 6 June 1967

Messages, Reports:

388 TFW 281405 April 1967 OPREP-4 DOI 1367

12. NARRATIVE DESCRIPTION

BLUE Flight was on an IRON HAND mission. They had fired once and observed the impact of one missile and the explosion of the white phosphorous warhead. The launch sequence was for all four flight members to pull up and each launch one missile simultaneously. After the shrike launch, the flight had a SAM launch indication and the flight broke around to the left.

BLUE Flight proceeded to an area west of Hoa Lac airfield (which was still operational at this time), and while in the vicinity of 20°55'N/105°22'E on a heading of 350° at 5000 ft altitude, BLUE 1 saw two MIG-17s at 12 to 1 o'clock 3 to 4 miles away. The MIGs were turning around a hill and appeared to be turned toward the north.

BLUE 1 called them out and BLUE Flight started to attack. At about the same time that BLUE 2 saw these two MIGs, BLUE 3 saw three more MIG-17s; however, BLUE 1 never saw the latter three MIGs.

BLUE 1 proceeded to attack the two MIG-17s that he had seen while BLUE 2, 3, and 4 broke down and to the left. Due to the range and the consequent time lapse, BLUE 1 was able to set up his sight for air to air. However, on firing, no sight picture was available.

Both BLUE 1 and the lead MIG-17 (MIG 1) pulled in toward each other, ending up in a head-on pass. BLUE 1 observed muzzle flashes in three positions on the MIG's nose, and BLUE 1 fired 150 to 200 rounds at him (the gun camera film did not show the flashes on the MIG's nose). MIG 1 passed about 30 ft below BLUE 1.

Immediately behind MIG 1 was the wingman (MIG 2) and BLUE 1 got a shot at this MIG also, with a little deflection, on a quartering head-on shot. BLUE 1 thought that he observed two hits on the outboard right wing. However, the gun camera film did not confirm this. However, the gun camera film did indicate a puff of smoke came from the MIG which was unnoticed by BLUE 1.

After passing MIG 2, BLUE 3 reported that the other three MIGs were coming in for an attack. BLUE Flight jettisoned four CBU-24 and 12 MK-82 in the vicinity of 21°01'N/105°19'E, went to afterburner and exited the area.

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Event III-166

Aircraft Involved: Four F-105s vs one MIG-17

Result: Sighting only

Vicinity of Encounter: 21°05'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967/Unknown (TOT was 1650H)

Four F-105Ds, (BLUE Flight) was one of four strike flights from Korat attacking the Hanoi Railroad and Maintenance Shops (JCS 20.00). The flight in Events III-158 and -165 were other members of this strike force which encountered MIGs.

11. DATA SOURCES

Messages, Reports:

388TFW 281405Z Apr 67 OPREP-4 DOI 1367

12. NARRATIVE DESCRIPTION

BLUE Flight struck the target at 1650H and orbited in the vicinity of 21°09'N/104°15'E as RESCAP for the aircraft lost in Event III-158. Sometime during the mission, BLUE Flight observed one MIG-17 at 10,000 ft altitude. Two F-4s were in pursuit of the MIG.

BLUE Flight carried AIM-9B armament (at least three), and 24 M-117 bombs.

During the mission, BLUE Flight observed two SAM bursts at 12,000 to 14,000 ft altitude, 3/4 to 1 mile away at 12 o'clock.

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Event III-167

Aircraft Involved: Four F-105s and one
MIG-17

Results: No damage

Vicinity of Encounter: 20°50'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967, 1653H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight from same ALFA target as that of Event III-165 saw MIG below; MIG turned in; flight punched tanks and accelerated away.

Event III-168

Aircraft Involved: Four F-105s and one
MIG-17

Results: Sighting

Vicinity of Encounter: 21°05'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 April 1967, 1700H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight egressing from same ALFA target as that of Event III-165 saw a MIG at 10,000' being pursued by two F-4s.

Event III-169

Aircraft Involved: One RF-101 vs one MIG-21

Results: Sighting

Vicinity of Encounter: 21°00'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967, 1110H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo A/C covering Hoa Lac airfield fired on by SA-2 when at 15,000'; MIG sighted at 4 o'clock, 6 miles at same time; MIG climbing; no further sighting.

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Event III-170

Aircraft Involved: Four F-105s vs two MIG-21s
and two MIG-17s

Results: Sighting

Vicinity of Encounter: Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967, 1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flak suppression flight for strike on bridge in Hanoi saw two MIG-17s at 8000' and two MIG-21s at 17,000' while inbound. MIG CAP was aircraft of Event III-173.

Event III-171

Aircraft Involved: Four F-105s vs one MIG-17s

Results: Sighting

Vicinity of Encounter: Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967, 1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight on Hanoi bridge saw MIG-3 minutes before target at 8500'; MIG attempted turn, but was lost. MIG CAP was aircraft of Event III-173.

Event III-172

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting

Vicinity of Encounter: Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967, 1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Another strike flight on same target as aircraft in Events III-170, -171, -172, and -175 saw MIG while pulling off; no attempt to engage since MIG CAP seen nearby.

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Event III-173

Aircraft Involved: Four F-4Cs vs thirteen MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 20°49'N/105°34'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967/1612H to 1625H

Four F-4Cs (BLUE Flight) were on a MIOCAP mission for a strike on JCS 13.00. (There is no report of the F-105 force encountering MIGs.)

2. MISSION ROUTE

BLUE Flight left Danang and refueled on WHITE ANCHOR. From air-to-air refueling, the flight proceeded direct to Channel 97, and then direct to 20°55'N/105°37'E. The return route was to Channel 97 and past strike refuel on WHITE ANCHOR.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 AIM-7E
4 AIM-9B
1 600-gal. centerline tank
1 370-gal. outboard tank
1 QRC-160 pod

MIG-17 (1-13)

Not MIG-17D
12 were silver
1 was camouflaged mottled brown/green with no markings.
Some armed with air-to-air missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds with bases at 10,000 ft. Visibility was 10 miles.

	1	2	3	4
<u>Altitude:</u>	12,000-14,000 ft			
<u>Heading:</u>	About 160° (in right turn)			
<u>Speed:</u>	540 KTAS			
<u>Fuel State:</u>	Full internal			
<u>Flight Formation:</u>	Pod			

5. INITIAL DETECTION

MOTEL had called MIGs in the incident area but there were no specific warnings for the MIGs engaged. BLUE Flight was at 20°49'N/105°34'E when BLUE 4 sighted four MIG-17s. The strike force also called the MIGs to BLUE Flight. The MIGs were at 20°52'30"N/105°32'30"E heading 290° at 3,000 to 5,000 ft AGL. When seen, the MIGs were at 9 o'clock to BLUE Flight. The backseater was the first to see the MIGs in BLUE 3.

6. ACTION INITIATED

BLUE Flight turned to attack the MIGs.

7. SITUATION DEVELOPMENT

The flight of four MIGs split, with BLUE 1 and 2 going after the lead element, and BLUE 3 and 4 separated and engaged the trailing element.

BLUE 1 and 2 attacked the MIGs and BLUE 1 fired an AIM-9B which downed a MIG-17. BLUE 1 and 2 were subsequently attacked by numerous MIG-17s which fired both cannon and air-to-air missiles. During the engagement BLUE 2 was hit and destroyed by 37/57 AAA fire.

BLUE 3 and 4 engaged several MIG-17s two elements of which fired on BLUE 3 and 4 with no damage.

8. ORDNANCE

	(No. fired/No. hits)			Remarks
	AIM-9B	AAM	Cannon	
BLUE 1	1/1			AIM-9B recorded a kill
MIG 5			2/0	Two bursts of three seconds each
MIG 6		2/0		Launched at BLUE 2

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Event III-173

	(No. fired/No. hits)			Remarks
	<u>AIM-9B</u>	<u>AAM</u>	<u>Cannon</u>	
MIG 9				At least 1/0 fired at BLUE 3 and 4
MIG 11				At least 1/0 fired at BLUE 3 and 4

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>
BLUE 3 (front)	3100	350	60-70

Comments on this Encounter:

MIGs were very aggressive and would not fight in the vertical. The MIGs would not follow the F-4s in a climb and stayed near the deck. As the F-4s attacked, a pair of MIGs would be vectored into the flight's 6 o'clock. The MIGs kept them on the defensive.

A gun would have been of value to attack the MIG that reversed into them (MIG-13), but this was the only chance to use a gun that he had.

The ability to climb and unload and accelerate worked well against the MIG-17. Every time he looked back there were two MIG-17s at 7 o'clock.

11. DATA SOURCES

Project Interviews: BLUE 3 (front), May 1967

Messages: 366TFW 291715 April 1967 OPREP-3 FASEL 916
366TFW 300830Z April 1967 OPREP-3 FASEL 933

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound with the strike force when at 1612H, while at 20°53'30"N/105°14'E, BLUE 4 sighted a SAM lift off from the vicinity of lead 15 (VN-083) at the flight's 3 o'clock position. The flight was heading 074 degrees at 17,000 ft AGL at 480 KTAS in Pod formation. This SAM did not track and passed low and to the 6 o'clock position about 3000 ft away, and was not observed to detonate.

The force continued on the same heading to 20°58'N/105°31'E when at 1614H, the entire flight observed three SAMs lift off. One was from Lead 41 (VN-002) and two others at 10 o'clock were from VN-015. When the SAMs were launched BLUE Flight started a slightly descending right turn to put the SAMs off to the left, however, the SAMs were not observed in flight.

In the right turn, as the flight passed through a heading of 160 degrees at 14,000 ft AGL and 540 kts, BLUE 4 sighted and called a flight of four MIG-17s. BLUE 3 backseat sighted the MIGs almost simultaneously. BLUE Flight had jettisoned the centerline tank before entering the area, and at the call jettisoned the outboard tank. BLUE Flight was at 20°49'N/105°34'E at this time. The MIGs which were just called by the strike force, were headed 290 degrees, at 300 to 500 ft AGL, and at 20°52'30"N/105°32'30"E. They were at 9 o'clock to BLUE Flight. The MIGs appeared to be positioning themselves on the last strike flight. BLUE Flight continued their right turn and started to descend. BLUE 3 lost sight of the MIGs momentarily and during this time the MIG flight split into two elements with the trailing element about 2 miles to the left and one mile behind on a parallel course. BLUE Flight continued to turn to the right and as they turned through west BLUE 3 saw BLUE 1 and 2 start after the lead element of MIGs (MIG 1 and 2), which were at 3 o'clock. Shortly thereafter BLUE 3 saw the second element of MIGs (MIG 3 and 4) off to their 10 o'clock about 5 miles, heading in the same direction as BLUE Flight.

At 1616H the elements of BLUE Flight split with BLUE 1 and 2 continuing a right hand turn after MIG 1 and 2, while BLUE 3 and 4 about one mile on trail turned left to engage MIG 3 and 4. Since the actions of the elements occurred independently of each other, the actions of BLUE 1 and 2 will be described first followed by those of BLUE 3 and 4.

BLUE 1 and 2 pressed in on MIG 1 and 2. BLUE 1 was unable to hold lock-on for an AIM-7 firing due to ground clutter. BLUE 1 then closed to 3000-2800 ft range, and with zero angle off, and 50 kt closure fired a SIDEWINDER at MIG 2. The time was 1617H and the position was 21°01'N/105°19'E. BLUE 1 had 1 g on the aircraft at firing and was at 6000 ft AGL, and 550 KTAS. The missile guided nicely and closed to within about 100 ft, when MIG 2 broke hard right (estimated 5-6 g's) following MIG 1. The missile passed about 50 ft over the left wing and detonated about 100 ft forward of the MIG's nose. This was credited as a kill due in part to the sighting of wreckage by BLUE 4.

Immediately after the missile detonation, BLUE 1 saw MIG 1 continue to break right. BLUE 1 and 2 unloaded and pulled up, losing sight of MIG 1 and 2. BLUE 1 and 2 leveled off at about 13,000 ft in the vicinity of 21°04'30"N/105°26'E; at this time (1618H) BLUE 1

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Event III-173

observed two MIG-17 (MIG 5 and 6) closing on their 6 o'clock position from 3000 ft range. At the same time BLUE 1 also saw two more MIG-17s (MIG 7 and 8) at his 1:30 o'clock position.

BLUE 1 and 2 attempted to accelerate, unload and continue their turn to egress from the highly coordinated and massing MIG force. At this time with MIG 7 and 8 in front and MIG 5 and 6 behind BLUE 1 observed a SAM detonation at co-altitude (13,000 ft AGL) at 6 o'clock about 250 ft range. The burst was white in color, and a sharp buffet of short duration was felt as a direct result of the blast.

At this time BLUE 1 observed MIG 5 (the lead MIG) at 6 o'clock fire about two bursts of 3 seconds duration each from his cannon. These rounds passed about 15 ft above and left of BLUE 1's canopy. Still unloading and accelerating BLUE 1 and 2 winged over from 13,000 ft AGL down to 6000 ft.

BLUE 2 was in position on the inside of the turn, still attempting to disengage from the MIGs. As BLUE 1 and 2 bottomed out, with BLUE 1 at 6000 ft and BLUE 2 at about 4500 ft, BLUE 1 backseat observed a heavy concentration of ground fire. BLUE Flight was at 20°54'N/105°32'E, and the AAA fire, presumably 37/57mm, came from 20°52'15"N/105°32'30"E, and almost enveloped BLUE 2. BLUE 2 rolled over to the right about 135 degrees of bank, 45 degrees nose down, and dove toward the ground. The time was 1622H. Just prior to impact BLUE 1 frontseat observed the white part of a chute. BLUE 2 was observed to impact at 20°54'30"N/105°34'30"E. At no time was any beeper signal or voice communication heard.

As BLUE 2 rolled over, engulfed in heavy ground fire, BLUE 1 front observed two air-to-air missiles launched from the second of the two MIG-17s on the tails of BLUE 1 and 2 (MIG 6). He saw these missiles drop, one from each side from the wings of MIG 6 and launch toward the spot where BLUE 2 had been. The missiles, unidentified as to type, went off into space and were not observed to detonate.

At 1624H BLUE 1 accelerated to 550 KTAS at 6000 ft AGL, and reversed his course to heading of 250 degrees and joined BLUE 3 and 4. BLUE 1 was unable to contact ETHAN to initiate a SAR effort.

BLUE 3 and 4 had followed BLUE 1 and 2 during their initial right descending turn after MIGs 1 and 2. While heading about 290 degrees descending through 4000 ft AGL at 550 KTAS, and following BLUE 1 and 2 by about a mile, BLUE 3 and 4 spotted MIG 3 and 4 at 10 o'clock low about 5 miles distant. MIG 3 and 4 were abeam and slightly south of BLUE 1 and 2, who appeared to be unaware of the presence of MIG 3 and 4.

BLUE 3 and 4 turned slightly left to engage MIG 3 and 4. As BLUE 3 and 4 came in, MIG 3 and 4 saw them and started up to the right. BLUE 3 and 4 overshot due to their high speed and so they pulled up. The MIGs out-turned BLUE 3 and 4 so BLUE 3 and 4 kept climbing. As they continued two more MIG-17s (MIG 9 and 10) closed on their 6 o'clock firing. The MIGs were in range and BLUE 4 saw the shells pass his aircraft.

From that time on BLUE 3 and 4 were on the defensive. Although BLUE 3 and 4 used the vertical, the MIGs would follow only a little way up and then would break off. As BLUE 3 and 4 would attempt to dive to reattack, two more MIG-17s would attack. This happened at least one more time (MIG 11 and 12) with these MIGs also firing at BLUE 4.

During one of the passes that BLUE 3 and 4 made, they were coming down in a tight turn accelerating from 400 kts. There were two MIGs at their 6 o'clock and another MIG-17 (MIG 13) came into view and crossed into the inside of BLUE 3 and 4's turn. MIG 13 then did a rudder reversal back into BLUE 3 and 4, ending up in a head-on pass, and passed BLUE 3 about 100 ft away.

BLUE 1 subsequently joined BLUE 3 and 4, who were in a left turn. BLUE 3 and 4 had MIGs on their tail at this time, who broke off when BLUE 1 approached. BLUE 1 did not observe these MIGs.

As BLUE 3 and 4 were egressing BLUE 4 saw an aircraft burning on the ground at 1624H in the vicinity of 20°55'N/105°18'E, which was later surmised to be the MIG 17 that BLUE 1 had downed with the missile.

During their engagement with the MIGs, BLUE 3 and 4's altitude varied from 200 ft AGL to 6000 ft; while their speed varied between 400 kts and Mach 1.1. The MIGs never climbed above 3000 ft.

Of the returning members of BLUE Flight four crew members validated nine MIG-17s and two crew members validated an additional four MIG-17s. One crew member validates the camouflaged MIG-17.

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Event III-174

Aircraft Involved: Two F-105s vs two MIG-17s
Two F-105s vs one MIG-21

Result: One F-105 lost/one F-105 damaged

Vicinity of Encounter: 21°30'N/104°30'E to
21°12'N/104°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967/1700H

Four F-105s (BLUE Flight) were the flak suppression flight in the strike force attacking JCS 20.00 (location 21°03'N/105°53'E). A description of the other MIG encounters of this strike force are contained in Events III-165 and -166. After hitting the target, BLUE 1 and 2 were separated from and behind BLUE 3 and 4. Only BLUE 3 and 4 encountered the MIG-21. BLUE 1 and 2 separately encountered two MIG-17s. There was no CAP aircraft for this mission.

2. MISSION ROUTE

BLUE Flight departed Korat at 1505H, and had pre-strike refueling on RED ANCHOR. From Channel 97 BLUE Flight then proceeded direct to the target on a heading of 010° at 16,000 ft. On egress the flight proceeded to 21°45'N/104°48'E, and then back to Channel 97. BLUE 4 landed in Udorn due to low fuel.

3. AIRCRAFT CONFIGURATION

<u>F-105D:</u>	<u>BLUE 1, 2</u>	<u>BLUE 3</u>	<u>BLUE 4</u>
	3-CBU-24	4-CBU-24	4-CBU-24
	1-CBU-29	1-QRC-160 pods	2-QRC-160 pods
	(Prob 2-450 gal tanks and pods.)	1-AIM-9B	2-450 gal tanks
	B1 probably carried 1 AIM-9B		

MIG-21

Clean silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to broken clouds 10,000 to 12,000 ft. Haze at lower altitudes. Visibility was good (about 15 miles) above clouds. The weather was generally clear over the target and bail out area, and broken in the incident area.

	<u>BLUE 1, 2</u>	<u>BLUE 3, 4</u>
<u>Altitude:</u>	9,000 ft	18,000 ft
<u>Heading:</u>	340°	220°
<u>Speed:</u>		450-500 CAS
<u>Fuel State:</u>		9,000 lb

Flight Formation

BLUE 1 and 2 were separated from BLUE 3 and 4 with BLUE 1 and 2 about 10 miles behind. BLUE 4 was on BLUE 3's right.

5. INITIAL DETECTION

BLUE 1 and 2 heading 340° and at 9000 ft, saw two MIG-17s at 5000 ft heading 140° and turning right. This sighting occurred previous to that of BLUE 3 and 4.

BLUE 3 and 4 in the vicinity of 21°30'N/104°30'E saw an unidentified silver aircraft at 7 o'clock position 6 to 8 miles away. BLUE 3 and 4 were heading 220° at 18,000 ft. The unidentified aircraft was on a conversion course; BLUE 3 and 4 were alert for MIGs since they had heard BLUE 1 and 2 call MIGs.

6. ACTION INITIATED

BLUE 1 and 2 turned to follow the MIG-17s that they had seen. BLUE 3 and 4 turned into the unidentified aircraft.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 lost the MIG-17s in a low deck of clouds over Thud Ridge, haze, and low setting sun. BLUE 1 and 2 then broke off and continued to egress. During egress they heard BLUE 3 and 4 encounter the MIG-21.

BLUE 3 and 4 were able to force the MIG-21 initially to overshoot but the MIG then executed a barrel roll, and despite the efforts of BLUE 3 and 4 to unload, and to turn and accelerate away in afterburner, the MIG gained a firing position. The MIG-21 shot down BLUE 3 and damaged BLUE 4 before breaking off.

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Event III-174

8. ORDNANCE

(No. fired/No. hits)

	<u>Probable Cannon</u>	<u>Remarks</u>
MIG-21	At least 2/2 ¹	BLUE 3 lost and BLUE 4 damaged

9. EQUIPMENT PROBLEMS

BLUE 4's CBU-24 failed to release properly over the target. BLUE 3 QRC-160 pod was inoperative.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 4	1000	150	50

Comments on this Encounter

Believed that his airplane did not have an advantage to escape from the MIG-21 at this flight condition due to external stores, paint and age. It did not perform as well as the charts might indicate, since the charts are for a clean aircraft.

The MIG pilot was good. The MIG was GCI vectored and had a good overtake, which precluded successful evasion.

11. DATA SOURCES

Project Interview: BLUE 4, 8 June 67

Messages, Reports:

432 TRW 281205Z OPREP-3 TUOC 03009
388 TFW 281318Z OPREP-3 DOF 1366
Air Staff USAP XOX 67-2567 Combat Loss F-105D SN 58-1151

12. NARRATIVE DESCRIPTION

BLUE Flight was on a flak suppression mission against JCS 20.00. The flight proceeded directly to the target from Channel 97. Egress from the target was to be up Thud Ridge in order to evade any MIGs which might be south of Hanoi and to minimize the AA and SAMs.

The flight hit the target at 1645H, attacking flak sites on opposite sides of the target. As a result, the two elements of BLUE Flight were separated laterally several miles when they came off the target. The flight had attacked the target from a heading of 074°. They rolled in from 16,000 ft with a 45° dive. The release altitude was 8000 ft AGL (about 9500 ft MSL) and recovery was 5000 ft AGL. The axis of attack was 045° and BLUE Flight dropped on a heading of 330°. BLUE 4's CBU failed to release over the target and were later jettisoned.

The flight then turned to a heading of 340° to proceed to 21°47'N/105°17'E. The elements were still separated with BLUE 1 and 2 about 10 miles behind BLUE 3 and 4.

BLUE 1 and 2 who were at 9000 ft and heading 340° up Thud Ridge on egress observed two MIG-17s. The MIGs were at 5000 ft altitude heading 140° and in a right turn. BLUE 1 and 2 turned to follow and started to attack the MIGs, but lost them in a low deck of clouds over Thud Ridge. The visibility was also reduced due to haze and low setting sun.

BLUE 1 and 2 then broke off and again headed toward 21°47'N/105°17'E. Due to the attack on the MIG-17s, BLUE 3 and 4 were now estimated to be approximately 60 miles ahead of BLUE 1 and 2, on the planned course. About 4 minutes later, (at about 1704H) BLUE 1 and 2 heard BLUE 4 call BLUE 3 that "they are coming at us," and then heard BLUE 3 call that he was hit, and heard BLUE 4 report of an attack by a MIG-21.

BLUE 1 and 2 then proceeded to the position of the downed aircraft which was given as 040° radial and 56 miles from Channel 97. BLUE 1 and 2 observed what was assumed to be the downed aircraft burning on the Black River somewhere between 21°15'N/104°17'E and 21°12'N/104°23'E. BLUE 1 and 2 heard no beeper and recovered at Korat.

After egressing from the target, BLUE 3 and 4 reached the end of Thud Ridge and started back towards Channel 97, heading 220° at 18,000 ft altitude with a speed of 450-500 KCAS. They had heard the encounter of BLUE 1 and 2 and were watching for MIGs. However, they received no other warning. When in the vicinity of 21°30'N/104°30'E BLUE 3 and 4 simultaneously observed an unidentified silver aircraft, that had come out of some clouds on their left. BLUE 3 and 4 were in a clearing and off to the left a few miles were some stratus type clouds with tops at 20,000 ft and bottoms at 16,000 ft. Below, over the mountain tops it was broken to overcast. The visibility in the clear was good.

¹AF combat loss records give ordnance type as unknown, cannon is indicated based on BLUE 4's interview.

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Event III-174

When seen, the aircraft was at 7 o'clock, altitude 2-3¹ miles away. The aircraft was on a conversion course and had considerable overtake.

BLUE 3 and 4 started a left level turn into the unidentified aircraft. BLUE 4 jettisoned tanks and followed immediately by BLUE 3. As the aircraft closed it was recognized as a fighter-type and then a MIG-21. The MIG turned with the flight which, on recognizing the aircraft as a MIG, BLUE 3 and 4 unloaded to accelerate.

BLUE 4 was in afterburner and since it was on the right, started to cross over behind BLUE 3 in order to stay inside of the turn. As BLUE 4 crossed over, he felt a thump and took a hit. (One hole in speed brake petals and one on the afterburner can.) BLUE 4 did not observe the MIG firing.

The MIG appeared to overshoot, with a crossing angle of 30° to 40°. The MIG came by high (about 4000 ft above the flight) and overshot to the right. BLUE 4 looked to the right and momentarily observed the MIG high, as if he had executed a barrel roll.

When next seen the MIG was able to reposition behind BLUE 3 and 4 at about 1 mile distance. BLUE 3 and 4 were still in an afterburner descending turn. Attempting to lose the MIG, BLUE 4 then saw the underside of the MIG and assumed that the MIG was firing at them. Immediately thereafter BLUE 3 called that he was hit. (This was the only communication from BLUE 3.)

When hit, BLUE 3 was descending through 10,000 ft. BLUE 3 immediately started to slow down, and BLUE 4 could see fire and smoke in BLUE 3's aft section, and kept advising BLUE 3 to abandon the aircraft. BLUE 3's aircraft started to descend and erupted in fire from the right wing back approximately 1 minute after initial aircraft damage.

During this time BLUE 4 was doing wide "S" turns in an attempt to keep both BLUE 3 and the MIG in sight. BLUE 4 saw the MIG a few times during this period but the MIG did not press the attack. BLUE 4 did not observe any firing.

BLUE 3 ejected at 1000 ft AGL at 1704H on a heading of 240°, at approximately 21°13'N/104°18'E. BLUE 4 saw two black objects separate from BLUE 3's aircraft and the aircraft impact. BLUE 4 did a 360° turn but was unable to see a chute or hear a beeper.

After staying in the immediate area for 1 to 2 minutes, BLUE 4 was unable to determine the location of the MIG and was unsure of his aircraft's condition. BLUE 4 then exited having failed to see a chute or hear a beeper. BLUE 4 recovered at Udorn, due to low fuel. He was unable to refuel due to insufficient thrust, resulting in unstable airspeed. The cause was battle damage.

During the encounter BLUE 4 did not see the MIG fire, and observed the MIG to be clean of external stores.

Although a SAR was initiated, it was called off at 1818H and BLUE 3 was listed as missing.

¹The OPREP-3 281205 gives 6-8 miles, but this appears to be long considering the weather description and ensuing action.

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Event III-175

Aircraft Involved: Four F-105s vs one MIG-17

Results: No damage

Vicinity of Encounter: 20°55'N/105°08'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 April 1967, 1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight egressing from same as Event III-172 saw MIG at 4 o'clock low, went into afterburner, jinked, and lost MIG.

Event III-176

Aircraft Involved: One RF-4C vs MIG

Result: Radar contact

Vicinity of Encounter: 20°47'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967/0226H

One RF-4C (BLUE flight) from Udorn was ingressing to Hoa Lac airfield on a reconnaissance mission.

11. DATA SOURCES

432 TRW 290011Z OPREP-3 TUOC 0302U

12. NARRATIVE

BLUE flight was ingressing on a heading of 067 degrees at 500 feet AGL when he received x-band (conical scan) strobing from 10:30 o'clock. BLUE flight was at 20°47'N/104°55'E and the time was 0226H. The target run was aborted at 20°58'N/105°16'E, at 0229H due to heavy ground fog in valleys and MIG alerts being called for QF-4 and QG areas.

On egress, at 21°00'N/104°48'E, on a heading of 240-245 degrees, and 500 feet AGL, x-band strobing was again received varying in intensity from 1 to 2 1/2 rings, and moving from 5 to 7 o'clock position during jinking turns. The time was 0233H.

The strobing continued to a point about 20 miles south of channel 97 (20°20'N/103°43'E). BLUE flight was tracked through a series of hard jinking turns and changes in altitude from 500 feet to 20,000 feet MSL. BLUE 1 was at 1.0 Mach throughout and the audio tone (sweep) was steadily becoming more rapid.

Break in the intercept was abrupt with termination of radar signals at 0243H. No visual contact was made with the other aircraft. MIG alerts were received throughout the engagements, broadcast for QF and QG areas. No friendly aircraft were known to be in the area at this time.

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Event III-177

Aircraft Involved: Four F-105s vs four
MIG-17s

Results: Sighting

Vicinity of Encounter: 21°28'N/106°23'E

1. PRIMARY TACTICAL SITUATION
Date 11 1967, 0900H

11. DATA
CINC Study 6-68.

12. NARRATIVE
CON

Flight saw at least four silver MIGs at 10-12,000' above
and involved with other flights.

Event III-178

Aircraft Involved: Four F-105s vs two MIG-?

Results: Sighting

Vicinity of Encounter: 21°29'N/106°27'E

1. PRIMARY TACTICAL SITUATION
Date 11 1967, 0900H

11. DATA
CINC Study 6-68.

12. NARRATIVE
CON

Observers for target of Event III-177 saw two MIGs trailing an F-105
possibly that of Event III-179.

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Event III-179

Aircraft Involved: Three F-4Cs vs two MIG-47s and two MIG-21s at 0902H; two MIG-21s and two MIG-17s at 0903H; four MIG-17s at 0905H. Also see Event III-137.

Result: No damage

Vicinity of Encounter: - Route Package VI-A

a. 21°28'30"N/106°41'00"E at 0902H

b.

c. 21°28'N/106°54'E at 0905H

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967/0905H

BLUE 4 aborted due to radio problems after 35 minutes of flight leaving three F-4Cs to fly MIGCAP for strike force of F-105s attacking target at 21°26'N/106°20'E.

2. MISSION ROUTE

Danang AB direct TAN ANCHOR direct 21°08'N/107°38'E, direct 21°33'N/106°24'E direct 21°29'N/106°17'E direct cover over target direct 21°10'N/107°15'E direct 21°08'N/107°38'E direct TAN ANCHOR direct Danang AB.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3

- 4 - AIM-7E SPARROW
- 4 - AIM-9B SIDEWINDER

a. MIG-17 MIG 1, 2

All MIGs silver color - no markings observed
Cannon

b. MIG-21 MIG 1, 2

Silver color - no markings
Air-to-air missile

c. MIG-17 MIG 1, 2

Silver color
Cannon

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear. Haze layer at 12,000 ft. Visibility above haze 15 plus miles.
Visibility below haze 7 miles.

a. Conditions at 0902H

	BLUE	MIG-17
	1 2 3	1 2
Altitude:	10,000 ft	below 10,000 ft
Heading:	280°	090°
Speed:	500 kts	
Flight Formation:	"QRC fighting formation"	

b. Conditions at 0903H

	BLUE	MIG-21
	1 2 3	1 2
Heading:		200°
Flight Formation:		Loose trail, MIG-17s in front followed by MIG-21s. MIG-21s left MIG-17s during BLUE's turn and not sighted again.

c. Conditions at 0905H

	BLUE	MIG-21
	1 2 3 4	1 2
Altitude:	6000 ft	
Heading:	090°	090°
Speed:	460 kts	(less than 460 kts)

5. INITIAL DETECTION

At 0902H F-4s trailing high and to rear of last F-105 flight inbound to target sighted two MIG-17s at 2 o'clock, low position, heading 090°.

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Event III-179

At 0903H BLUE flight observed two MIG-17s followed by two MIG-21s in loose trail chasing four egressing F-105s. All aircraft (F-105s and MIGs) on 080° heading at BLUE's 10 o'clock low position.

At 0905H, as BLUE flight started to roll in against the four MIGs, BLUE 3 observed two additional MIG-21s in a pop-up maneuver in 3 o'clock low position, climbing at 15° heading 200°.

6. ACTION INITIATED

a. BLUE flight feinted toward first MIGs acquired at 0902H. MIGs turned and fled heading northeast. BLUE returned to MIGCAP high and behind last flight of F-105s.

b. At 0903H, BLUE flight lead called for flight to roll in against the four MIGs attacking the F-105s.

c. BLUE flight rolled in against four MIGs firing on F-105s. At 0905H, one of the two MIG-21s approaching from 3 o'clock low position (90° heading) fired an air-to-air missile which was defeated by the roll maneuver initiated to attack the four MIGs pursuing F-105s on a 200° heading. BLUE flight took no action against the second pair of MIG-21s and lost contact with them.

7. SITUATION DEVELOPMENT

BLUE flight completed right turn to a heading of 090° at 6000 ft and 460 kts and began closing (40 kts overtake) on the two MIG-17s which were pursuing the F-105s. The MIG-21s originally following the MIG-17s had left the formation and BLUE never observed them again. BLUE lead approached the rear MIG-17 and when MIG was at 12 o'clock, 5° depression, lead received a boresight lock which went to full system as the first AIM-7 was fired at a range of approximately 2.5 miles. One second later a second AIM-7 was launched (0905H). The missiles appeared to track, closing within 200 ft of the MIG-17 when the MIG turned right and down in a 2 1/2 g maneuver. The two missiles continued straight ahead passing behind and to left of the MIG-17.

8. ORDNANCE

(No. fired/No. hits)

	<u>SPARROW</u> <u>AIM-7E</u>	<u>SIDEWINDER</u> <u>AIM-9B</u>	<u>Remarks</u>
BLUE 1	2/0	0/0	Fired two AIM-7E "full system"
BLUE 2, 3	0/0	0/0	
MIGs-17-1,2			Fired cannon
MIGs-21-1,2			Fired one missile (BLUE flight unable to ascertain whether ATOLL or ALKALI)

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

From BLUE lead: SUU-16 gun would have been more effective weapon in this encounter.

11. DATA SOURCES

Messages, Reports:

366 TFW JOPREP OPREP-3 FASTEL 929 1200442 April 1967
366 TFW JOPREP OPREP-3 FASTEL 932 1200741 April 1967
Raytheon Conf. Memo R. E. Klein to C. Kaough dated 2 May 1967

12. NARRATIVE DESCRIPTION

BLUE flight consisting of three F-4Cs, assigned MIGCAP mission for three flights of F-105s attacking target at 21°26'N/106°20'E. (BLUE 4 aborted due to radio problems after 35 minutes of flight). BLUE flight trailed high and to rear of last F-105 strike flight inbound to the target. BLUE flight at 0902 local time at 10,000 ft, 500 kts, heading 280° over 21°28'30"N/106°41'00"E sighted two MIG-17s at 2 o'clock low position on a heading of 090°. BLUE flight feinted toward MIGs but MIGs turned and departed area on a northeast heading. BLUE flight returned to its original position behind F-105 flight.

At 0903H, BLUE flight observed two MIG-17s followed by two MIG-21s all silver color with no distinguishable markings in a loose trail formation pursuing four egressing F-105s. All aircraft were on a 080° heading and were at BLUE's 1 o'clock low position. The MIG-17 in the lead position was observed to fire cannon bursts at the F-105s. BLUE lead called the flight to roll in against the MIGs.

As BLUE flight started down to attack the two MIG-17s and two MIG-21s, BLUE 3 observed two additional MIG-21s beginning an attack on BLUE flight from the 3 o'clock

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Event III-179

low position. The MIG-21s in a pop-up maneuver on a 200° heading were climbing toward BLUE at approximately 15°. BLUE 3 observed an air-to-air missile approaching BLUE flight exhausting a white vapor trail and climbing at about 15° also. This missile was too small to be confused with a SAM but BLUE 3 crew could not determine whether it was an ATOLL or ALKALI missile. Although the enemy air-to-air missile appeared to guide, BLUE's rolling maneuver (to begin the attack against the first group of four MIGs) defeated the missile. BLUE momentarily lost sight of the two MIG-21s which launched the missile and these MIG-21s were never sighted again.

BLUE completed its right turn to a heading of 090° and started closing on the two MIG-17s pursuing the F-105s. The two MIG-21s originally with the MIG-17s were no longer in the area and were believed to have left the formation of four while BLUE was in the turning maneuver. BLUE was at 6000 ft, 090° heading at 460 kts (40 kts overtake speed) pulling 1 g with the trailing MIG-17 at lead's 12 o'clock position and 5° depression angle. BLUE lead received a boresight lock-on which went to full system as the first AIM-7E was fired. One second later the second AIM-7 was fired. Both missiles launched and appeared to be tracking.

As the AIM-7s closed to within 200 ft of the MIG-17, the MIG turned right and downward in a 2 1/2 g maneuver defeating the missiles. The two missiles continued on a straight course, passing behind and to the left of the MIG. The missiles were never observed to detonate.

BLUE flight climbed and joined last F-105 flight egressing the area. All aircraft and crews recovered normally.

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Event III-180

Aircraft Involved: One F-105 vs two MIG-17s;
(BLUE flight of four F-105s
encountered seven MIG-17s in
this event) Also see Event
III-136.

Result: One MIG-17 killed

Vicinity of Encounter: 21°28'N/106°31'E
Route Package VI-A

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967/0906H

Strike on target at 21°26'N/106°20'E. Rail yards approximately 14 mi northeast of Bac Giang. BLUE flight was the third flight on target.

2. MISSION ROUTE

Takhl1 direct to BROWN ANCHOR to middle of Gulf of Tonkin for doppler update to tip of the Ile Bamun, direct to reservoir (21°28'N/106°31'E).

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1

2 - 450 gal tanks
6 - 750 bombs
2 - AIM-9B (SIDEWINDER), left outboard
1 - QRC-160 Pod, right outboard

F-105 BLUE 2

2 - 450 gal tanks
6 - 750 bombs
2 - QRC-160 Pods

F-105 BLUE 3

2 - 450 gal tanks
6 - 750 bombs
2 - AIM-9B (SIDEWINDER), left outboard
1 - QRC-160 Pod, right outboard

F-105 BLUE 4

2 - 450 gal tanks
6 - 750 bombs
2 - QRC-160 Pods

MIG-17

Silver color with red stars

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Flight coming in south of target on 245° heading. Had descended to 5000 ft and were pulling up slightly to acquire target.

Weather: Clear with scattered clouds

	BLUE				Remarks
	1	2	3	4	
Altitude:		4500 to 5000 ft			
Heading:		245°			
Speed:		550 kt			
Fuel State:	9800 lb				BLUE lead had 1500 to 2000 lb above 7.8 Bingo

5. INITIAL DETECTION

At last turn point, south of target (Reservoir at 21°28'N/106°31'E) BLUE 4 sighted three MIG-17s at 3 o'clock, level position, approximately 1 mi range. BLUE 4 called MIGs. Lead instructed flight to maintain position and hold ordnance.

After BLUE lead dropped ordnance on target (4500 to 5000 ft altitude), two MIG-17s were sighted at 11 o'clock high (7000 ft altitude) at 1 mi range.

6. ACTION INITIATED

BLUE flight continued to target as MIGs turned into the flight at right angles (abeam) and began firing at 1500 ft range, the tracers appearing well behind the flight since the MIGs were not pulling lead. BLUE flight continued to target as MIGs could not make turn or accelerate to the F-105 speed.

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Event III-180

Still in afterburner. After attack on target, lead dropped both 450 gal tanks, set up air-to-air gun sight, and pursued the MIGs at approximately 100 kts overtake speed (550 kts after coming off target).

7. SITUATION DEVELOPMENT

BLUE flight continued to target.

BLUE lead estimated distances as less than 1 mi and too close for missile attack. As distance closed, the MIGs tightened their right turn and began descending. Lead believed MIGs did not detect the attack, but were beginning an attack themselves. As lead tightened turn at high overtake speed, he was required to pull so much lead that the piper disappeared from the combining glass (approximately 4 g's). Lead then decided to estimate lead without sight - using the pilot boom for a reference.

8. ORDNANCE

BLUE 1, 2, 3, 4

1000 rounds 20mm each
2 AIM-9B IR missiles each

MIG-17 1, 2

Cannon

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Mission</u>	<u>Remarks</u>
BLUE Lead	1300	900		(200 Navy hours?)

Comments on this Encounter

The "new" procedure for calling MIGs was in effect - Charlie Hotel - Bravo Hotel, etc. "Though they call them, you never know where they are. They give you what general area they are in and you look for them and get a stiff neck and never see them. Then the other times when you do not hear a call, there they are."

11. DATA SOURCES

Project Interviews: BLUE lead, 29 May 1967
Messages, Reports:

355TFW Takhli Air Base, Thailand, JOPREP/OPREP-3, 300915 April 1967

12. NARRATIVE DESCRIPTION

BLUE flight was the third and last flight of F-105s striking rail yards northeast of Bac Giang (21°26'N/106°20'E) at approximately 0900 hours local time. The reservoir south of the target was the last turn point and as the flight, which had descended to 5000 ft altitude on a heading of 245°, began pulling up slightly to acquire the target, BLUE 4 called three MIG-17s at 3 o'clock, level position, approximately 1 mi away. BLUE lead determined MIGs to be no immediate threat and instructed flight to maintain position and hold ordnance.

BLUE flight, accelerating, continued to target as MIGs turned and approached abeam (90° to BLUE flight). When about 1500 ft away, MIGs began firing cannon whose tracers appeared well behind BLUE flight since the MIGs were not pulling lead. BLUE flight continued to target as MIGs could not turn nor accelerate to become a threat to the F-105s. BLUE flight popped up and rolled in to target. BLUE 3 was attacked by a MIG-17 as he came off target. BLUE 3 jinked through flak and the MIG broke off the attack.

As BLUE lead came off the target on a heading of approximately 080° and speed of 550 kts (afterburner), lead sighted two MIG-17s at 11 o'clock, 3000 ft above and a mile away. The MIGs were in a gentle right turn. BLUE lead jettisoned fuel tanks, set up guns for air-to-air and with approximately 100 kts overtake speed, closed on the MIGs. The MIGs did not appear to be aware of BLUE lead's attack but they began increasing their right turn and descending. As range closed to approximately 1000 ft, lead required so much lead on the target that the piper moved off the combining glass. (BLUE lead estimated pulling approximately 4 g's). Without a sight, BLUE lead sighted estimated lead on the enemy wingman with the pilot boom as a reference point. Lead fired cannon ahead of the MIG and then swept the fire down and through the target. Lead noted impacts on MIG 2's left side, beginning at the nose and ending at the wing root. Lead had only time to fire approximately 150 rounds before the distance to the MIG became so short that it appeared he would collide. He broke left to avoid running into the MIG and climbed in a yo-yo. MIG 2 slowly rolled out straight and level, smoke and flame pouring

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Event III-180

from the left wing, passing to BLUE lead's 5 o'clock position where lead lost sight of the MIG. BLUE 2, about 1 mi in trail from lead, sighted the burning MIG and reported that it was in a spin. Neither BLUE lead or BLUE 2 saw the MIG impact the ground.

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Event III-181

Aircraft Involved: Four F-105s vs one unident

Results: Sighting

Vicinity of Encounter: 21°25'N/107°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967, 0923H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight egressing from an ALPA target at 17,000' saw a silver unident on reciprocal heading; unident turned and disappeared to south.

Event III-182

Aircraft Involved: Two RF-4Cs vs two MIGs

Results: No damage

Vicinity of Encounter: 21°54'N/104°14'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967, 1521H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound photo flight received MIG warning, followed by X-band signal increasing in intensity; maneuvers did not decrease intensity, so RF-4s turned and dived; two MIGs seen at 11 o'clock while in dive; speed increased and MIGs not seen again.

Event III-183

Aircraft Involved: Four F-105s vs two unidents

Results: Sighting

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967, 1648H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Egressing ALPA strike flight at 17,000' saw two afterburner lights at 35-40,000', but could not see aircraft.

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Event III-184

Aircraft Involved: Two F-105s vs unknown number of MIGs. See also Event III-138

Result: Two F-105s lost

Vicinity of Encounter: 21°20'N/104°56'E
Route Package ?

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967/1624H

BLUE flight ingressing at 8000 ft altitude at 560 kts enroute to area of JCS 82.24 target to provide IRON HAND support.

3. AIRCRAFT CONFIGURATIONS

Possible MIG-21s - not sighted

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Few scattered clouds, visibility 7 mi "down sun" and 4 mi "up sun"

	BLUE			
	1	2	3	4
<u>Altitude:</u>		8000 ft		
<u>Heading:</u>		85°		
<u>Speed:</u>		560 kts		

5. INITIAL DETECTION

At 1617H BLUE flight heard MIG-21 warnings for the (geographical) area through which they were flying. They did not see MIGs at any time though two F-105s were shot down. First indication of enemy's presence was at 1624H when BLUE 1 observed BLUE 3 torching, flame out and then aircraft go out of control.

6. ACTION INITIATED

Two "good" parachutes sighted and two beepers heard. BLUE 1 and 2 made three 360° turns while chutes were descending and established voice contact with BLUE 3. BLUE 1 and 2 were unable to establish voice contact with BLUE 4 and assumed BLUE 4 also downed.

7. SITUATION DEVELOPMENT

As BLUE 1 and 2 circled the two parachutes from BLUE 3 (Pilot and EWO), tracers and four puffs of 37mm cannon were observed passing over the chutes but no enemy aircraft sighted. Both chutes landed at 21°18'30"N/104°59'40"E. Aircraft impacted at 21°17'00"N/105°01'50"E. BLUE 1 and 2 returned to tanker then escorted Sandy 1 and 2 back to RESCAP area. BLUE 1 and 2 orbited area until Bingo fuel reached then returned to base.

8. ORDNANCE

No US ordnance expended

9. EQUIPMENT PROBLEMS

None reported

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 3 (F-105F)</u>				
Front	3840	"UE" time 1190	93	Seven months in theater
EWO	1315	318	93	Seven months in theater
<u>BLUE 4 (F-105D)</u>				
Front	573	311	61	Five months in theater

11. DATA SOURCES

Messages, Reports:

355TFW Takhl1 RATFB 301708Z April 1967 JPCCO FASTEL 355 DOTO-0 11484 April 1967
355TFW JOPREP OPREP-3 PINNACLE 030 (All same message)

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Event III-184

12. NARRATIVE DESCRIPTION

BLUE flight of four F-105s were inbound to the area of JCS target 82.24 in vicinity of 21°20'N/104°56'E flying at 8000 ft altitude on a heading of 85° at 560 kts to provide TRON HAND support. At 1617H the flight received a MIG-21 warning for the area through which they were flying. At 1624H BLUE lead observed BLUE 3 (an F-105F with a two-man crew) torching. BLUE 3 flamed out shortly afterwards, and the aircraft was observed to go out of control.

Two good chutes were seen and two beepers heard. BLUE 1 and 2 began circling the chutes as they descended making voice contact with BLUE 3 pilot but not the EWO. BLUE 1 and 2 made three 360° turns in the descent during which they observed tracers and four puffs of 37mm cannon fire pass over the tops of the chutes. No enemy aircraft was observed.

Both chutes from BLUE 3 landed at 21°18'30"N/104°59'40"E and BLUE 3 aircraft impacted at 21°17'00"N/105°01'50"E. Voice contact again established with BLUE 3 but two other beepers were heard still transmitting. BLUE 1 and 2 attempted to contact BLUE 4 but were unable to do so. BLUE lead reported downed pilots to CROWN, also adding that BLUE 4 was also probably down. Neither lead nor BLUE 2 saw BLUE 4 hit or receive (messages).

BLUE 1 and 2 returned to the tanker to refuel and then escorted two RESCAP aircraft to the area of BLUE 3. (See Event III-138). BLUE 3 pilot reported several times that the RESCAP aircraft were directly overhead. BLUE 1 and 2 orbited the area until Bingo fuel was reached and then they returned to base.

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Event III-185

Aircraft Involved: Four F-105Ds vs two MIG-21s
Also see Event III-139

Result: One F-105 lost
Vicinity of Encounter:

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967/1715H

Strike on Hanoi Transformer Station, JCS target 82.24.

2. MISSION ROUTE

Departed Takhli Channel 97 direct 21°30'N/104°45'E direct 21°36'N/105°24'E
direct 21°19'N/105°42'E direct 21°08'N/105°46'E direct target (JCS 82.24, Hanoi
Transformer Station) direct 21°15'N/105°53'E direct 21°22'N/105°45'E. Sgress
reverse route.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

6 - M-117 bombs
1 - AIM-9B

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

In RESCAP orbits BLUE 1 and 2 low, BLUE 3 and 4 high

Weather: Scattered visibility 7 to 10 miles

	BLUE			
	1	2	3	4
Altitude:	low	low	15-16,000'	15-16,000'
Heading:			approx 260° when hit, counterclock- wise orbit	

Speed:

Fuel State:

Flight Formation:

5. INITIAL DETECTION

BLUE 3 "felt jolt" and "heard a thud" at approximately 1715H while in counterclock orbit, high (15-16,000 ft) on RESCAP.

6. ACTION INITIATED

BLUE 4 instructed BLUE 3 to break left. As BLUE 3 broke left and down, BLUE 4 observed MIG-21 3 o'clock and high. BLUE 4 engaged second MIG-21 as BLUE 3 turned into MIG which had made the initial attack.

7. SITUATION DEVELOPMENT

BLUE 3 and 4 went to afterburner to Mach 0.95 heading for cloud jinking at approximately 10,000 ft altitude. Both BLUE 3 and 4 then headed for Channel 97 for refueling.

8. ORDNANCE

(No. fired/No. hits)

BLUE 1	0/0
BLUE 2	0/0
BLUE 3	0/0
BLUE 4	0/0
MIG	unknown/1

Remarks

U.S. expended no ordnance

BLUE 3 sighted ball of flame - BLUE 4

SECRET

SECRET

Event III-185

9. EQUIPMENT PROBLEMS

None reported

11. DATA SOURCES

Messages, Reports:

432TRW NMCC 301235Z April 1967

12. NARRATIVE DESCRIPTION

BLUE flight of four F-105D aircraft departed Takhlī 1505H, 30 April 1967 for strike on JCS 82.24 target, Hanoi Transformer Station. After pre-strike refueling on GREEN ANCHOR, flight proceeded to target. Enroute, Strike Force Commander aborted the strike mission to set up RESCAP for a downed F-105F (See Event III-184). A good beeper signal was heard from the downed crew and the Strike Force Commander believed rescue possibility was high.

BLUE flight set up a high cover at 16,000 to 17,000 ft altitude over the downed aircraft near 21°21'N/105°05'E. When the low cover altitude aircraft (GREEN 1, 2, 3, 4) reached Bingo fuel and proceeded to the tankers for refueling, BLUE 1 and 2 went to low cover altitude and BLUE 3 and 4 stayed high at 15,000 to 16,000 ft in a counterclockwise orbit at 350 kts.

Then the second element of GREEN flight (GREEN 3 and 4) returned to the rescue area and directed the incoming SAR aircraft.

At 1715H on a heading of approximately 260°, BLUE 4 "felt a jolt and heard a thud" and immediately called BLUE 3 to break left "because of MIGs." As BLUE 3 broke left and down, he saw a MIG-21 on the right going out to his 3 o'clock position and high. BLUE 3 turned into the MIG as the MIG continued his left turn returning across and to the left of BLUE 3. BLUE 3 then saw a second MIG-21 engaging BLUE 4.

BLUE 3 and 4 lit afterburner, accelerating to Mach 0.95 and jinking headed for the clouds at approximately the 10,000 ft level. BLUE 3 and 4 headed for Channel 97. Enroute BLUE 3 asked BLUE 4 several times if he "had him in sight," BLUE 4 answered affirmatively. At 1720H, approximately 10 seconds after last transmission, BLUE 3 looked behind and saw a ball of flame which he assumed was BLUE 4. BLUE 4 went down at approximately 21°03'N/104°55'E.

BLUE 1 and 2 called to BLUE 3 and reported sighting BLUE 4 going down and that they also saw a chute with a man waving. BLUE 3, low on fuel, continued to Channel 97 for a tanker where he refueled and recovered at Udorn. A cursory check of the aircraft after landing revealed no visible battle damage.

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Event III-186

Aircraft Involved: Four F-105s vs two
MIG-21s

Results: No damage

Vicinity of Encounter: 20°52'N/103°58'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 April 1967, 1713H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

IRON HAND flight returning from Hanoi Shrike firings with remainder of ALPA strike force; at 26,000', two MIGs drove through force on near-reciprocal bearing at same altitude; no attempt to engage.

Event III-187

Aircraft Involved: Four F-105s vs six to
eight MIG-17s

Results: No damage

Vicinity of Encounter: 20°58'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967, 1015H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

F-105 MIG CAP flight at 3000' when 6-8 MIGs approached from 5 o'clock low; flight broke after receiving MIG warning from aircraft of Event III-186 and made 270° turn; MIGs were attacked by other flights; BLUE lead observed a burning MIG-17 on the ground; after initial break, BLUE was out of position and unable to engage; no further MIGs sighted.

Event III-188

Aircraft Involved: One F-4B vs two MIG-17s

Results: No damage

Vicinity of Encounter: 21°25'N/106°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967, 1250H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

TAR CAP for strike (diversionary for Kep strike) saw F-8E shutdown of MIG described in Event III-196; leader of F-4B TAR CAP flight then sighted another MIG at 12 o'clock low and was pursuing MIG at 200' altitude when hit by automatic weapons fire; F-4B returned to ship.

SECRET

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Event III-189

Aircraft Involved: Four F-4Cs vs eight MIG-17s.

Result of Encounter: Sightings only

Vicinity of Encounter: 20°32'N/105°03'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1008H

Flying MIG SCREEN Orbit, .8 Mach

2. MISSION ROUTE

Danang to WHITE ANCHOR for refuel, direct to Channel 97, thence to orbit station.

3. AIRCRAFT CONFIGURATIONS

Not stated but probably 4 AIM-7 and 4 AIM-9B each. Absence of guns positively stated.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear 7 mile visibility. Little haze.

Altitude: .8 Mach AGL

Heading: 210°

Speed: 450 kts

Flight Formation: Pod

5. INITIAL DETECTION

BLUE flight observed three to five MIG-17s approaching from 9 o'clock to engage the flight.

6. ACTION INITIATED

BLUE flight immediately descended to engage MIGs at an altitude below 1,000 ft.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 sought to maneuver to open range but lost sight of MIGs. Several other MIGs were subsequently sighted usually very low and low heading in opposite direction.

BLUE 3 and 4 attempted to engage another MIG-17 but lost it in the haze and hills. Another MIG-17 passed across the front of BLUE 3 and 4 but with speed and climb separated.

9. EQUIPMENT PROBLEMS

BLUE 1 lost transmitter and interphone for tanker frequency.

10. AIRCREW COMMENTS

BLUE 1 and 2 said that they had about 20 seconds of close range tracking and probability of a gun kill would have been excellent.

BLUE 3 and 4 also reported that they would have had a good opportunity as a MIG flew close from left to right.

11. DATA SOURCE

OPREP 3

12. NARRATIVE DESCRIPTION

This event is characterized by a large number of friendly and hostile sightings so that it is difficult to determine the exact number of separate hostile aircraft actually sighted. Other friendly flights were simultaneously engaging MIGs in the same vicinity. BLUE 1 and 2 after losing sight of the initial flight of MIGs thought they saw a SAM firing which was in fact the impact of a MIG-17 shot down by PURPLE flight. PURPLE flight warned BLUE flight of another MIG coming their way. BLUE flight again attempted to engage but was unable to obtain a position for missile firing. BLUE 3 and 4 sighted another MIG-17 and went in low and rolled in but the MIG made a hard turn and was lost in the haze and the hills. After reconitering the area for ten more minutes without additional MIG sightings, the BLUE flight egressed the area to Channel 97 and the tanker.

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Event III-190

Aircraft Involved: Four F-4Cs vs eight MIG-17s

Result: One MIG destroyed

Vicinity of Encounter: 20°35'N/105°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 67/1021H

BLUE flight was one of two flights scheduled for MIGCAP Barrier with F-105 flights covering a RESCAP mission.

2. MISSION ROUTE

Departed Danang, pre-strike refueling with WHITE ANCHOR, proceeding via Channel 97 to MIGCAP area 20°30'N/105°00'E to 21°10'N/105°30'E.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 AIM 7-E QRC Pod right outboard
4 AIM 9-B Left outboard and centerline tanks

MIG 17s

Cannon

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility 5 to 10 miles, clear

Altitude: 5,000 AGL

Heading: 030°

Speed: 500 kts

Fuel State: Approximately 14,000 lb, Centerline jettisoned

Flight Formation: Pod stacked left

5. INITIAL DETECTION

BLUE 1 detected 2 or 3 bogeys approaching from 11:30 o'clock at approximately 8000 ft and descending. BLUE 1 called the bogeys to BLUE flight and to the preceding flight of F-105s at AGL 1000 ft. BLUE 1 then changed the call to MIGs which were closing rapidly in an apparant head-on pass.

6. ACTION INITIATED

The preceding flight of F-105s broke down and left. BLUE flight pulled up in a vertical and rolled to the right and the MIGs passed thru the hole. BLUE flight's maneuver enabled it to end up at the 6 o'clock position of MIG 1 and 2.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 pressed, continued to press repeated attacks against MIG 1 until it was destroyed and then became engaged with additional MIGs that subsequently entered the engagement without result. BLUE 3 and 4 first engaged MIG 2 and then other MIGs without result.

8. ORDNANCE

(No. fired/No. hits)

	<u>AIM-7E</u>	<u>AIM-9E</u>
BLUE 1	3/0	3/0
BLUE 3	2/0	1/0

9. EQUIPMENT PROBLEMS

BLUE 1 was unable to obtain a lock-on with the AIM-7 throughout the engagement even when in one instant conditions were ideal. Post-flight equipment check revealed that the feeder horn was burned out. It is not determinable at what point the failure occurred.

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>
<u>BLUE 1</u>	3300	900	90-95

At this time the MIGs were beginning the tactic of staying low and continuously turning. The only thing I did different was perhaps to stay with the same MIG. Though I had other opportunities to grab another MIG, I stayed with this one and never let him out of my sight. I kept pressing the attack. Every attack right on him until he clutched up."

SECRET

Event III-190

11. DATA SOURCES

Project Interviews: BLUE 1
Messages, Reports: OPREP 3 PINNACLE/033 366TFW
A.F. Staff Message Supplement to OPREP 3 (40732) 5 May 67

12. NARRATIVE DESCRIPTION

After the maneuver was initiated, the two elements of BLUE flight operated independently and are narrated separately for clarity.

BLUE 1 had attained a 6 o'clock position too quickly to allow time for setting up the manual procedure (subsequently to be described) and attempted a boresight mode firing of the AIM-7E. The firing was unsuccessful and the MIG then broke down and went very low to the ground. This was apparently at this time a standard defense procedure against AIM-7 attacks. BLUE 1 then maneuvered for an AIM-9B attack pulling up in a high-speed yo-yo and back down on the MIG's 6 o'clock and fired an AIM-9B. The AIM-9 was observed to go straight out and, in BLUE 1's assessment, could not distinguish between the plane and the ground. BLUE 1 was also of the opinion that the repeated missile attacks were having a psychological effect on the MIG pilot as revealed by the violence of his maneuvers. "I was shaking him up a little bit and he was really beginning to crank it around." BLUE 1 executed another high-speed yo-yo and went to the manual system with the AIM-7E.

[Note: Since BLUE 1 interview was so explicit in the details of the manual procedure he attempted they are included in the description of this event for what informational value they may have.] "We have a track switch which we call auto-track or acquisition on jam. In this manual position, you can lock onto an imaginary target anywhere you want to. You just squeeze it into full system and it locks on. It then gives you a Vc based on a little switch we call manual Vc and we set it up for 150 knots." This requires the pilot to estimate the rate of closure: "But it isn't as difficult as it sounds; because we are always coming in from the 6 o'clock, it is merely necessary to assume that you will be closing on him and that you will not be closing faster than 300 knots." It searches the area between 0 and 300 knots. The 300 knots is below ground speed which is necessary to prevent locking on the ground. "So this is what we (sic) recommend and any time we come from a 6 o'clock, we put on this 150 knot closing." "Now we lock on to our imaginary target, and we get the full attack display every bit of it pure nonsense, none for real... The only important thing is that the missile has been put into the narrow gate to search the area between zero and 300 knots."

Coming back down out of the maneuver BLUE 1 again in the 6 o'clock position fired on AIM-7E in the manual procedure described above. The missile appeared to be tracking well but seemed to "loose out at the last minute." BLUE 1 could not be sure that he kept his reticle on the MIG illuminating it continuously for the whole missile flight. The missile did however pass close to the MIG which again reacted by turning severely. BLUE 1 again executed a high speed yo-yo repositioning at the MIG's six o'clock again set up for manual firing of the AIM-7E. BLUE 1 fired the AIM-7 which appeared to track well with the speed gate locked on. However, it was BLUE 1's opinion that with the sharp right turn the MIG was pulling (50 ft above ground level), the missile was going to pass behind the MIG's 6 o'clock. At this point the MIG hit the ground and was destroyed.

In the above time interval at least 5 or 6 additional MIGs had joined the battle and there was another flight of F-4s and two flights of F-105s all joined in the melee.

To continue the action of the first element of BLUE flight, BLUE 1 immediately picked up another MIG we can designate as MIG 3 and had no trouble seizing and maintaining the MIG's 6 o'clock using the same verticle maneuvers as in the previous encounter. BLUE 1 made two firing passes at MIG 3; one was dry, the other was an AIM-9B shot that was outmaneuvered.

In the last maneuver against MIG 3, BLUE 1's wing man, BLUE 2, had become separated. BLUE 1 states that whenever he came into the top of the high-speed yo-yo he would check to see if his Number 2 was still with him and he had been until the last maneuver. BLUE 1 looked around and observed BLUE 2 down, on the deck at about 350 kts turning with a MIG. BLUE 1 called BLUE 2 to break right and go afterburner, but he didn't. He was observed to fly a couple of "wifferdills" and was upside down and there was nother MIG joining the attack. BLUE 1, who had lost airspeed, now got turned around and started down from 12,000-14,000 ft to aid BLUE 2. As he came in high at the MIG's 6 o'clock they broke off their attack and started turning again. BLUE 1 instructed BLUE 2 to join on him which he did and the element resumed the offensive. BLUE 1 sighted a MIG high, 5000 ft, running straight and level at about 4 miles. BLUE 1 started to close on the MIG, keeping low. Everything was right for an AIM-7 shot and the MIG was clear on the scope. However, continuous attempts to lock on were unsuccessful. BLUE 1, by then closing rapidly, switched over to AIM-9B and at about 1 mile range fired the AIM-9. The MIG apparently saw the SIDEWINDER and though the AIM-9 had good tone and was guiding well the MIG was able to "flat out-turn" the AIM-9B. "The SIDEWINDER was giving her all she's got but it just couldn't begin to hack it."

After this shot BLUE 1 was fairly close to Hanoi and approaching BINGO fuel, so the element egressed the area.

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Event III-190

Details on the 2nd element are not complete since there was no interview.

BLUE 3 and 4 engaged a total of three MIGs and sighted four or five additional ones. Most of the MIGs were silver colored but two were camouflaged. The first MIG engaged turned hard left and BLUE 3 was unable to fire. A second MIG was spotted in a left turn. BLUE 3 got a lock-on and fired two AIM-7s. The first AIM-7 did not guide and the second AIM-7 guided but exploded behind the MIG's tail. A third MIG was sighted and turned hard left into BLUE 3. BLUE 3 fired an AIM-9B at this MIG while in a hard left turn at very close range and it missed. Additional MIGs had by now attained a rear quarter position on BLUE 3 and 4 and one of them was firing a cannon at BLUE 4. BLUE 3 and 4 were able to disengage by increasing airspeed. BLUE 3 reported that he would have been able to hit MIG 3 if he had had a gun. The MIG engagement was broken off after approximately 15 minutes because of BINGO fuel. The altitude of the engagements varied from 200 ft to 5000 ft AGL. Visibility was 5 to 7 miles. No SAM or AAA activity reported. One MIG was reported to have afterburner.

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Event III-191

Aircraft Involved: Four F-105s vs eight MIG-17s

Result: No damage

Vicinity of Encounter: 20°36'N/105°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1011H

BLUE flight was flying BARCAP for a RESCAP mission.

2. MISSION ROUTE

Departed Ubon, normal routing, refueling at North Station before proceeding to take barrier position.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

Wing tanks and QRC
2 AIM-9Bs
20 mm gun

MIG-17s

Afterburner specifically mentioned several times.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility 5 to 7 miles, clear.

Altitude: 5,000 - 7,000 ft

Heading: Northeast

Speed: 450-500 kts

Fuel State: Not stated at least 15 minutes before BINGO.

5. INITIAL DETECTION

Two MIGs reciprocal heading low at 12 o'clock passed under flight. No MIG warning received prior to this sighting.

6. ACTION INITIATED

BLUE flight turned right and observed another MIG at its 12 o'clock. The flight attempted a quartering head-on pass against this MIG but could not attain a firing position. The MIG also attempted to engage BLUE flight in a scissors-type maneuver. BLUE flight broke off and immediately encountered approximately eight MIGs operating independently (no apparent formation or elements). The flight then became engaged in a near continuous series of maneuvers. It is not known whether some of these MIGs were among those previously sighted.

7. SITUATION DEVELOPMENT

In the ensuing melee both BLUE 1 and BLUE 2 fired an AIM-9B under difficult high-g maneuvers without success. The first missed the MIG by approximately 5000 ft when the MIG initiated a high-g turn just prior to launch. The second was fired with excessive angle-off. BLUE 1 and BLUE 2 each attempted three or four snapshots with 20mm during the dogfight but no effectiveness was noted. The dogfight lasted about 15 minutes after which BLUE 3 and BLUE 4 reached BINGO fuel. The flight then increased airspeed and disengaged, headed southwest for post strike AAR. BLUE flight observed a single MIG 19(?), 1100 AGL on a northerly heading as it egressed the area.

8. ORDNANCE

(No. fired/No. hits)

	<u>AIM-9B</u>	<u>20mm gun</u>
BLUE 1	1/0	3 or 4 snapshot bursts
BLUE 2	1/0	3 or 4 snapshot bursts

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS (Relate to MIG-17 vs F-105)

BLUE 1. The ability of the MIG to turn and reverse direction is very impressive when you first see it no matter how much you have been briefed. In a hassle you have to keep your airspeed up; you cannot afford to slow down and try to turn with him. The only opportunity you are likely to have to down a MIG is to spot him at a distance and position yourself before he is sure you are there, because there is no comparison between maneuverability and turning radius.

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Event III-191

11. DATA SOURCES

Project Interviews: BLUE 1
Messages, Reports:

OPREP PASTEL 11501 May 67
OPREP 3 335 TFW PINNACLE 02

12. NARRATIVE DESCRIPTION

This is an unusual F-105 event in that it was one of several flights participating in a RESCAP operation where a flight of F-105s was configured for air-to-air engagement rather than as a strike mission. The Commander's evaluation of this type mission stated that--"This type mission scheduled on a random basis would be of benefit in countering the recent increased MIG activity. The enemy could never be certain whether he was intercepting an offense or a defense."

BLUE flight was engaged by several MIG-17 aircraft operating without apparent coordination. The MIG aircraft depended on rapid turning and circling with jinking to keep their 6 o'clock clear. BLUE 1 states they never flew straight and level. In the course of the maneuvering one MIG pulled up in the right quarter of BLUE 1 crossing at about 45° going away to the left forward. BLUE 1 started a climb with the MIG which immediately turned over into a semi-split-S bringing his nose down. BLUE 1 could not stay with him in this maneuver. "The 105 is not an aircraft to split-S with at 5,000-6,000 ft." BLUE 1 coming out of this encounter sighted another MIG low in a gentle turn. Believing he was unseen, BLUE 1 attempted to roll in and began tracking at about 7000 ft out. He then realized that the MIG had made a 270° turn in "practically no space at all" and was coming back on him at about 45° angle. BLUE 1 fired an AIM-9B but since he was pointed groundward he realized that there was little possibility of the AIM-9B tracking and it did not. There were one or two subsequent opportunities for fleeting snapshots without apparent effect.

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Event III-192

Aircraft Involved: Four F-105s vs four MIG-17s

Result: No Damage

Vicinity of Encounter: 20°40'N/105°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/unknown

BLUE flight of four F-105s on strike mission.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown, not a factor
Altitude: 6500 ft
Heading: 035°
Speed: 450 kts
Flight Formation: Pod

5. INITIAL DETECTION

BLUE flight observed two flights of two MIG-17s diving from high out of the sun at 10 o'clock position.

6. SITUATION DEVELOPMENT

BLUE flight started a turn into the MIGs when the MIGs started a left turn to come into the 6 o'clock position. BLUE flight went afterburner and jettisoned bombs.

8. ORDNANCE

F-105

Not stated

MIG-17s

Guns

9. EQUIPMENT PROBLEMS

None

11. DATA SOURCE

OPREP 3/PINNACLE-001

12. NARRATIVE DESCRIPTION

Two flights of two MIG-17s dove out of the sun from the 10 o'clock position on BLUE flight, firing guns as they came. BLUE flight attempted to turn into the MIGs but when the MIGs made a left turn to attain a 6 o'clock position, BLUE flight jettisoned bombs and went afterburner. The MIG flight passed over BLUE flight by approximately 1500 ft and were then engaged by a flight of F-4s. No further contact by BLUE flight.

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Event III-193

Aircraft Involved: Four F-105a vs two MIG-17s

Result: No damage

Vicinity of Encounter: Hoa Lac Airfield

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 67/unknown

BLUE flight had just completed a strike on Hoa Lac Airfield when it was attacked by two MIG-17s.

2. MISSION ROUTE

Inland route to target.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

Wing tanks, Pod, Guns

BLUE 1 and 3

AIM-9B

MIG-17s MIG 1 and 2

Guns

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, good visibility

Altitude: 5000 ft

Heading: West

Speed: 500 kts

Fuel State: Approximately 9000 lb

5. INITIAL DETECTION

Coming off target BLUE 4 sighted two MIG-17s at BLUE flight's 6 o'clock, and alerted flight.

6. ACTION INITIATED

BLUE 3 looking back on BLUE 4's warning saw two MIGs at 6 o'clock high on a tight left turn. The lead MIG appeared to be firing on BLUE flight. BLUE 3 went afterburner, punched fuel tanks and broke left. The MIGs then reversed and departed the area.

7. SITUATION DEVELOPMENT

The MIGs apparently attempted only a single firing pass then separated without attempting to continue the engagement.

8. ORDNANCE EXPENDED

(No. fired/No. hits)

BLUE flight 0/0

MIG lead Cannon fire

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

"On that day their tactics were just hit and run. I have seen that subsequently. They seem reluctant to engage in a prolonged battle with the 5s"

11. DATA SOURCE

Project Interviews: BLUE 3

12. NARRATIVE DESCRIPTION

BLUE flight, following a strike against Hoa Lac Airfield, was regrouping and departing the area at approximately 5000 ft, headed in a westerly direction. BLUE 3 and 4 were almost a half mile behind BLUE 1 and 2 and closing. BLUE 4 then called MIGs at 6 o'clock. BLUE 3 looked back and saw two MIG-17s at 6 o'clock, high in a tight left turn attacking the flight. BLUE 3 punched fuel tanks and went afterburner and could see little puffs of smoke coming from MIG lead which appeared to be gunfire. BLUE 3 broke hard left attempting to turn into the MIGs. BLUE 4, accelerating rapidly, passed right through the MIG flight

SECRET

Event III-193

before he could fire. BLUE 1 and 2 pulled high to the right planning to come down behind the MIGs. Before any of this could be accomplished, the MIGs reversed to the right and departed the area.

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INTRODUCTION TO EVENTS III-194, -195, -196, -197 and -198

On 1 May 1967, carrier aircraft from the BON HOMME RICHARD struck Kep Airfield (JCS 9.1 at 21°23'26"N/106°15'58"E) with the primary targets being MIG aircraft in the rivetted area at the northeast end of the airfield and the support area south of the runway. The strike force composition by aircraft type, number, and the time on target is given in Table 1, as well as the event in which MIG action against the force is described.

Table 1 (S). BON HOMME RICHARD STRIKE FORCE (U)

Aircraft No. Type	Function	Target	Time on Target	Event No.
Six A-4C	Strike	JCS 9.1	1245H	No MIGs Encountered
Two A-4C	Flak Suppression	Flak sites	1244H	
Four A-4E	Flak Suppression	Flak sites	1244H	
Four A-4E	IRON HAND		1240H-1247H	
Four F-8C	TARCAP			
Four F-8E	TARCAP			

Also airborne in support of the force were four A-1H for RESCAP, two EA-1F ECM aircraft and two F-8E and two F-8C as BARCAP.

The strike aircraft launched at 1150H. The target weather was clear with 5 miles visibility in haze.

The strike force encountered intense AAA fire at the target although flak suppression and IRON HAND sorties had silenced several sites prior to the roll-in of strike aircraft. MIG-17 fighters were also encountered in the target area both before, during and after the attack. No SAM opposition materialized, although enroute to the target, the aircraft of Event III-194 saw a possible SAM explosion at very high altitudes over the target. Only one member of this flight encountered ALQ-51 lights, but no APR-27 was received.

All attack aircraft were equipped with APR-27/ALQ-51.

The strike aircraft sighted a minimum of seven MIGs on the field and at least four airborne.

Four sorties dropped VT fused MK 81 bombs in the rivetted area while two other sorties dropped VT fused MK 82 in the support area. Two other sorties (the aircraft of Event III-195) attacked two MIG-17 aircraft on a taxiway with 29 VT fused ZUNI rockets. Post strike photography showed three MIG-17s burning. Flak suppression with CBU-24 was accomplished by four IRON HAND and six other flak suppression sorties.

A total of ten AGM-45s were fired, five against FIRECAN and five against PANSONG radars. One explosion was noted in a flak site and the site was silenced. Two sites were silenced by CBU-24s. Although flak was generally suppressed to the south of the target, heavy 37/57/85mm fire continued to come from the northeast sector adjacent to the runway.

At least four MIG-17s were airborne and the MIGs pursued their attack through areas of heavy flak. The results of the aerial battles were two confirmed kills and two MIGs damaged.

All friendly aircraft returned on board with one A-4C of the strike force (Event III-196) damaged in the wing by ground fire and another A-4C of the flak suppression (Event III-197) damaged by ground fire.

Also on 1 May 1967 aircraft from the carrier ENTERPRISE attacked cargo ships, at 1255H (exact location of this strike is unknown).

SECRET

Event III-194

Aircraft Involved: Two F-8Es vs four
MIG-17s

Results: One MIG-17 destroyed
One MIG-17 damaged

Vicinity of Encounter: 21°26'N/106°28'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1245H.

Four F-8E (BLUE Flight) was TARCAP for a strike on Kep Airfield. Although BLUE Flight ingressed as a unit only BLUE 3 and 4 encountered MIGs. The actions of BLUE 1 and 2 are unknown.

2. MISSION ROUTE

Departed Yankee Station and aerial refueled just after launch, then proceeded to the target.

3. AIRCRAFT CONFIGURATIONS

F-8E BLUE 3, 4

1 - AIM-9C
2 - AIM-9D
(Dual fuselage pylons with 4 LAU-7A launchers)
284 rounds 20mm
ALQ-51 - APR-27
IFF-On; TACAN-On; Radar-On.

NOTE: Configuration of BLUE 1 and 2 unknown.

MIG-17

MIG-17D model
Some armed with AAM.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear. Other conditions unknown.

5. INITIAL DETECTION

BLUE Flight heard calls of MIGs from the strike leader. These MIGs were first seen when BLUE Flight observed two afterburner lights high at one o'clock. They then saw two separate groups of MIGs in sections of two pass from north to south.

6. ACTION INITIATED

The other TARCAP flight (Event III-198) turned after these MIGs and BLUE Flight continued to the target.

7. SITUATION DEVELOPMENT

After reaching orbit station, BLUE Flight split into two sections. BLUE 3 and 4 saw three MIG-17s pass below the flight and attack the trailing MIG, destroying him with a SIDEWINDER (AIM-9D).

On egress BLUE 3 and 4 saw a MIG-17 chasing an A-4 (BLUE 2 of Event III-194). This MIG was attacked but BLUE 3 could not get a missile tone; however, BLUE 4 fired 120 rounds of 20mm fire at the MIG hitting the MIG in the left wing.

8. ORDNANCE

(No. fired/No. hits)

	<u>SIDEWINDER</u> <u>AIM-9D</u>	<u>Cannon</u>	<u>Remarks</u>
BLUE 3	1/1		One MIG killed
BLUE 4		1/1	One MIG damaged

9. EQUIPMENT PROBLEMS

BLUE 3 - Pressurization turbine was running hot. The failure to achieve a tone during the second attack was caused by the fact that the second AIM-9D was fired first and that there was no automatic stepping for the next missile. A good tone was later achieved on the first AIM-9D.

10. AIRCREW COMMENTS

Experience: No data except BLUE 4 was an Air Force exchange officer.

SECRET

SECRET

Event III-194

Comments on this Encounter

BLUE 3

The switchology to set up the missiles for firing was a problem.

The AIM-9Ds were short so only two were carried. The AIM-9C was loaded at the pilot's desire.

BLUE 4

Would have preferred a Gatling gun.

The F-8 sight was poor. The sight ladder was confusing since it was highly lighted and the gyro piper passed through it, which was disconcerting.

11. DATA SOURCES

Project Interviews: BLUE 3 and BLUE 4, June 1967.

Messages, Reports:

CTG 77.7 011550Z May 1967 OPREP-4 RT 554.
CTG 77.7 011700Z May 1967 OPREP-5 001.
CTG 77.7 010655Z May 1967 OPREP-3 001.

12. NARRATIVE DESCRIPTION

BLUE Flight was one of two TARCAP flights supporting a strike on JCS 9.1. On ingress to the target BLUE Flight heard calls of MIGs from the strike leader. Near the target, BLUE Flight observed two aircraft afterburner lights high at 1 o'clock, passing north to south. There were two separate groups of MIGs in sections of two, which were subsequently seen, for a total of four MIGs in all.

The other TARCAP flight (Event III-198) turned to engage so BLUE Flight continued on to the target and set up a CAP station 3-5 miles northeast of Kep. At this time the actions of BLUE 1 and 2 became unclear. It is not known if they engaged MIGs although they must have sighted them. BLUE 1 and 2 are not mentioned in the account of BLUE 3 and 4's actions.

While the strike group was on the target four MIG-17s were observed to take off from Kep and pass under the BLUE Flight. The MIGs were heading east northeast at 1000 feet altitude in order to jump the strike force. At this time, BLUE Flight was heading west at about 4000 feet altitude. Two MIG-17s (MIG 1, 2) were in a lead section but the second section had split and the third MIG-17 (MIG 3) was alone and about one mile behind MIG 1 and 2.

BLUE 3 and 4 made a hard descending right turn to attack MIG 3 not using afterburner. The MIGs apparently did not see BLUE 3 and 4's attack. BLUE 3 gained a 6 o'clock position to MIG 3 and at 4000-6000 feet range, 1000 feet altitude and 400 knots fired an AIM-9D. The missile was observed to fly directly up the MIG's tailpipe and explode. The MIG was not in afterburner. MIG 3 disintegrated rapidly, and MIG 1 and 2 were not seen again.

With the element to echelon right, BLUE 3 and 4 returned to CAP altitude. Shortly thereafter while turning south BLUE 4 saw another MIG-17 (MIG 4) chasing an A-4. The A-4E in this case was BLUE 2 of Event III-195.

BLUE 3 and 4 were at 3000 to 3500 feet altitude and about 350 knots. The MIG passed below BLUE 3 and 4 from right to left on a heading perpendicular to that of the F-8s. The MIG was at about 500 feet altitude.

BLUE 3 and 4 broke left and down, and called the A-4 that he had a MIG on his tail. The A-4 was weaving to prevent the MIG from tracking. The MIG was in afterburner and about 2000 feet in trail of the A-4. The A-4 headed for a hill located at 21°24'N/106°28'E. The MIG apparently noticed BLUE 3 and 4 on his tail and broke left on top of the hill. The A-4 broke right and disengaged.

BLUE 4 first fired about 40 rounds of 20mm at 10-15 degrees angle off at the MIG's 7 o'clock position. BLUE 4 was coaltitude at 2000 feet range closing. The MIG disengaged when he saw the 20mm by breaking left and down. One continued to fire for a total of about 120 rounds of 20mm with the piper tracking as the MIG broke. BLUE 4 saw numerous hits in the MIG's left wing as he closed to 1200-1500 feet range.

MIG 4 continued the left turn with lower speed than BLUE 4 and BLUE 4 had to pull up and break off due to a hill.

The MIG was in afterburner; however, except for an initial use to accelerate, BLUE 4 did not use afterburner. BLUE 4 had sufficient g capability to adequately lead the MIG.

BLUE 3 then engaged MIG 4. Although he was able to attain a good position on the MIG (4000 to 6000 feet astern of MIG 4 as MIG 4 made moderate to violent high-g maneuvers and returned to a northwest heading at low altitude), BLUE 3 could not get a SIDEWINDER tone.* Although BLUE 3 shifted to the AIM-9C he was unable to obtain a radar lock due to ground clutter.

*See equipment problems, paragraph 9, for possible cause.

SECRET

Event III-194

MIG 4 attempted to draw BLUE 3 into a heavy flak area located at 21°27'N/106°22'E, but BLUE 3 disengaged. BLUE 3 and 4 rejoined and remained in the general area of 21°25'N/106°25'E until the Enterprise group was off the target. The estimated time of departure from final CAP station was at 1257H.

Event III-195

Aircraft Involved: Four F-8Cs vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°15'N/106°16'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1248H.

Four F-8Cs (BLUE Flight) were part of a TARCAP supporting a strike on JCS 9.1.

8. ORDNANCE

AAM

MIG 17

2/0

11. DATA SOURCES

Project Interviews: None.

Messages, Reports:

CTG 77.7 011550Z May 1967 OPREP-4 RT55A.

12. NARRATIVE DESCRIPTION

On ingress to the target, BLUE Flight saw, and turned to engage two MIG 17s which were initially seen at one o'clock high. These are the same MIGs seen initially by the F-8s in Event III-194).

BLUE Flight subsequently observed two MIG 17s at 21°15'N/106°16'E, diving toward the target area from 15-20,000 feet. The MIG lead aircraft fired two air-to-air missiles toward aircraft in the area. The missiles appeared to maneuver, but did not hit any aircraft.

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Event III-196

Aircraft Involved: Three A-4Cs vs MIG-17s

Result: No damage

Vicinity of Encounter: 21°18'N/107°07'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1256H.

Three A-4Cs were part of the six strike aircraft attacking JCS 9.1 (see Table 1 of the introduction to this event).

8. ORDNANCE

MIGs fired cannon with no hits.

11. DATA SOURCES

Project Interviews: None.

Messages, Reports:

CTG 77.7 011550Z May 1967 OPREP-4.

CTG 77.7 011700Z May 1967 OPREP-5.

12. NARRATIVE DESCRIPTION

As BLUE Flight ingressed, the first defenses encountered were two MIG-17s which passed under the flight at approximately 21°26'N/106°26'E without attempting to attack or fire.

The flight encountered very intense AAA, of 37/57/85mm approximately one minute from roll in. The pilots reported that it was the most intense they had ever encountered. No AAA was received after roll in due to flak suppression aircraft hitting the target area first.

On the bombing run one member of BLUE Flight saw four MIG-17s airborne in pursuit of the flight in Event III-195. BLUE flight continued the run and then egressed. While egressing they observed the F-8 of Event III-194 to down a MIG-17 with a SIDEWINDER. The MIG's tail was blown off and the MIG tumbled and impacted at about 21°26'N/106°28'E.

Subsequently, during egress, the flight was jumped by two MIG-17s (possibly three) at 1256H, position 21°18'N/107°07'E. The MIGs rolled in from 10 o'clock high. BLUE Flight (composed of three aircraft at this time) was on a heading of 105 degrees, at 5000 feet and 450 knots. BLUE Flight turned with the MIGs and at the same time 37mm AAA opened up from the ground, and during the break a member of BLUE Flight was hit. As the flight righted and jettisoned tanks they lost the MIGs. The member who had been hit observed the right wing tip to be missing.

All aircraft recovered on board safely.

SECRET

SECRET

Event III-197

Aircraft Involved: Two A-4Cs vs two MIG-17s

Result: One MIG destroyed

Vicinity of Encounter: 21°21'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1244H.

Two A-4Cs (BLUE Flight) were part of the flak suppression support for a strike on JCS 9.1.

2. MISSION ROUTE

From BON HOMME RICHARD, north to the ingress point (probably north of Haiphong) and west to Kep. Egress was the reverse route.

3. AIRCRAFT CONFIGURATIONS

A-4C BLUE 1, 2

4 - LAU-10 rocket pod loaded with VT-fused ZUNI rockets (mounted on TERS)
90 rounds 20mm
400 gallon centerline tank
grey and white paint scheme
IFF-Off; TACAN-Off; ALQ-51, APR-27 On.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Unknown.

5. INITIAL DETECTION

As BLUE 1 and 2 pulled off the target, they saw two MIG-17s coming from the southwest. The MIGs were inside BLUE Flight's turn at 1500 feet range.

6. ACTION INITIATED

As the MIGs attacked BLUE 1, BLUE 2 attacked the MIGs, while calling for BLUE 1 to break.

7. SITUATION DEVELOPMENT

BLUE 1 executed a high-g barrel roll and forced the MIGs to overshoot. As the MIGs split, BLUE 1 selected the second one of the MIGs and fired three ZUNI rockets at him, one of which hit, resulting in a kill.

BLUE 1 then attacked the lead MIG but his guns would not charge.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>ZUNI Rocket</u>	<u>Remarks</u>
BLUE 1		3/1	One MIG-17 killed
BLUE 2	2/0		
MIGs	At least 1/0		

9. EQUIPMENT PROBLEMS

BLUE 1's guns were jammed.

BLUE 1's radio transmitter became inoperative during the engagement.

10. AIRCREW COMMENTS

Experience

BLUE 1 was on LSO. Had considerable experience in F-4, as well as A-4.

11. DATA SOURCES

Project Interviews: BLUE 1, June 1967.

Messages, Reports:

CTG 77.7 011700 May 1967 OPREP-5/001.

CTG 77.7 011550 May 1967 OPREP-4/007.

12. NARRATIVE DESCRIPTION

BLUE Flight of two A-4Cs were part of the flak suppression aircraft assigned to a strike on Kep Airfield. —

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SECRET

Event III-197

Since no flak sites on the northeast side were observed active (the assigned target) BLUE 1 and 2 attacked MIGs on the taxiways at Kep as briefed. BLUE 1 expended 13 of 16 ZUNI (VT fused) and BLUE 2 expended 16 ZUNI on two MIG-17 aircraft in Area D of the target.

BLUE 1 and 2 had attacked on a north-south run and on coming off the target made a left roll out. On rolling out they saw two MIG-17s (MIG 1, 2) coming out of the southwest. The MIGs were inside of BLUE Flight's left turn and closed to 1500 feet range.

As the MIGs closed they overshot BLUE 2 and concentrated their attack on BLUE 1, with both MIGs firing cannon. While MIG 1 and 2 were closing and firing at BLUE 1, BLUE 2 got behind MIG 2 and called for BLUE 1 to break.

BLUE 1 went into a high-g barrel roll over the top. The MIGs pulled up and attempted to follow but could not match the turn. As the MIGs pulled up BLUE 2 fired two bursts of 20mm at MIG 2 but achieved no hits.

As a result of the barrel roll, BLUE 1 forced the MIGs underneath and out in front. At 1 o'clock at 500 feet and they split; and BLUE 1 rolled down to position on MIG 2; BLUE 2 broke right and disengaged.

BLUE 1 fired one ZUNI with 50 mil lead and 3 g, at MIG 2 but it missed. He then added lead to 75 mil and with 3 g at 800 feet range, with a plan view of the MIG at about 30° angle off, BLUE 1 fired two more ZUNI rockets. One ZUNI was observed to detonate. After using the ZUNI pods they were jettisoned.

BLUE 1 rolled hard right to check his 6 o'clock position and lost visual contact with MIG 2. As BLUE 2 pulled back to the left a MIG passed at 10 o'clock in a sixty degree dive and impacted at approximately 21°21'50"N/106°30'30"E. BLUE 2 observed black smoke rising from the impact area and BLUE 1 was credited with a kill.

After checking his 6 o'clock, BLUE 1 then acquired and went after the lead MIG (MIG 1) but BLUE 1's guns would not charge. (In post flight - rad haz inspection the rad haz clips were found to be jammed.)

BLUE 1 then disengaged. He left Kep with 2500 pounds of fuel and it took 18 minutes to get out because much avoidance was required. During the engagement BLUE 1 had lost his transmitter. He finally arrived at the carrier with 800 pounds of fuel.

Post flight inspection showed a small nick in the leading edge flap. It was thought to be from AAA fire and not due to the MIG's attacks.

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SECRET

Event III-198

Aircraft Involved: Four A-4Es vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°23'N/106°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/after 1244H.

Four A-4E (BLUE Flight) were part of the flak suppression support for a strike on Kep Airfield.

8. ORDNANCE

(No. fired/No. hits)

Cannon

BLUE 1

1/0

Remarks
Estimate possible damage.

MIG 2, 3

At least once/0

At BLUE 2.

11. DATA SOURCE

Project Interviews: None.

Messages, Reports:

CTG 77.3 011550Z May 1967 OPREP-4/007.

12. NARRATIVE DESCRIPTION

During egress from the target MIGs appeared in the area. One MIG-17 (MIG 1) passed in front of BLUE 1 in a slow turn. BLUE 1 fired 20mm at MIG 1, and MIG 1 then rolled inverted and pulled down, recovering at low altitude and departed the area. BLUE 1 estimates possible damage to this MIG.

BLUE 2 was jumped by two MIG-17s (MIG 2, 3), with the MIGs at 3 o'clock position. BLUE 2 descended to extremely low altitude and evaded MIGs by a series of high-g turns.

Two F-8Es TARCAP (Event III-194) chased the MIGs away.

SECRET

SECRET

Event III-199

Aircraft Involved: Two F-4Cs vs two unidents

Results: Sighting

Vicinity of Encounter: 20°40'N/107°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967, 1710H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Two bogey sightings separated by 5 minutes by CAP orbiting at coastline for drone flight; bogeys above 30,000'; distance too great for identification.

Event III-200

Aircraft Involved: Eight F-105s vs at least three MIG-17s

Results: Sighting

Vicinity of Encounter: 21°50'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967, 1718H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight of four F-105s, part of ALFA strike on Thai Nguyen Steel Plant, saw two MIGs at first time and position ingress at 6 o'clock; MIGs trailed for 15 miles until two F-4C MIG CAP (see Event III-197) closed; MIG CAP had been following strike force; while egressing, second F-105 flight saw two silver aircraft which turned and were lost.

Event III-201

Aircraft Involved: ? F-4? vs ? MIG-?

Results: Sighting

Vicinity of Encounter: Near Chinese Border

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/unknown

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Silver MIGs sighted by F-4 aircraft near China/NVN border.

SECRET

SECRET

Event III-202

Aircraft Involved: Four F-4Cs vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°50'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 1 May 1967/1725H

Four F-4Cs (BLUE flight) were flying MIGCAP for the strike force. There was another flight of F-4s on MIGCAP for the same strike, four with BLUE flight following the strike force.

2. MISSION ROUTE

The flight departed Ubon and then refueled on ORANGE ANCHOR extended. Then they proceeded to Channel 97 for rendezvous with strike force, and then up to Yen Bai for ingress to the target down Thud Ridge.

3. AIRCRAFT CONFIGURATIONS

Each F-4C

- 4 - AIM 7E
- 4 - AIM 9B
- ECM Pod right outboard
- 370 gal. tank left outboard
- Centerline tank

MIG-17

Silver, no marking

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered, broken deck of clouds, 7 miles visibility.

Altitude: 11,000-12,000 ft

Heading: 130°

Speed: 500 kts

Fuel State: 12,000 lb

Flight Formation: Pod formation, stacked slightly low.

5. INITIAL DETECTION

BLUE 3 Back called "MIGs at 6 o'clock". The MIGs were moving toward 8 o'clock and were about 1,000 ft AGL about two miles away. The MIGs were silver.

6. ACTION INITIATED

BLUE 1 Front (Lead) immediately looked at "deep 6 o'clock" and saw three delta winged airplanes 5-7 miles behind in trail about 2,000 - 3,000 ft apart. BLUE 1 announced he had them and led formation into a left break down and to the left going afterburner.

7. SITUATION DEVELOPMENT

After about a 180° to 220° diving turn BLUE 1 closed at the 8 o'clock position and realized that the three delta aircraft were F-4s. The MIGs were gone.

8. ORDNANCE

No firing.

9. EQUIPMENT PROBLEMS

None reported

11. DATA SOURCES

RED BARON Interview: BLUE 1 Front

Messages, Reports:

OPREP-3 011300 May 67, 8TFW - DOI 05015

12. NARRATIVE DESCRIPTION

The nature of this event is made clearer by an explanation rather than a narrative.

After the debriefing it became clear the BLUE 3, (back) had actually seen MIGs. The procedure had been that if a man in the flight sights a MIG he does not take his eye off it. He calls it. If the flight leader does not pick it up immediately, he will give that man the lead of the flight until he does. In this event BLUE 1 looking down called, "I have them. There are three of them in trail." That was exactly what BLUE 3 (back) saw - three MIGs in trail. BLUE 1 then continued to lead the flight down after 3

SECRET

SECRET

Event III-202

delta winged aircraft low 2,000-3,000 ft that turned out to be F-4s that should have been escorting another strike flight ten minutes earlier but were late. BLUE flight was unable to require the MIGs which were very low in the mountains with the low scattered puffy rain clouds.

BLUE flight saw no SAMs.

The other F-4 flight, which was leading the strike force, was fragged to orbit in the vicinity of 20°32'N/105°03'E to 21°16'N/105°16'E. The flight flew direct from Channel 97 to 20°35'N/104°50'E, arriving at 1725H. Due to poor visibility (2-3 miles in haze) the flight determined to cover the strike force egress route in accordance with special instructions. At 1726H the flight proceeded to the vicinity of 21°40'N/104°30'E. All strike flights egressed at 1745Z without seeing MIGs or SAMs.

SECRET

SECRET

Event III-203

Aircraft Involved: Four F-105s vs one possible
MIG-21

Results: Sighting

Vicinity of Encounter: 20°54'N/104°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 May 1967, 0951H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Egressing strike flight at 17,000' saw single bogey at 26,000'; bogey, which looked like MIG-21, disappeared into clouds without hostile action.

Event III-204

Aircraft Involved: Four F-105s vs two MIG-17s

Results: No damage

Vicinity of Encounter: 21°30'N/107°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 May 1967, 0915H

11. DATA SOURCE

- CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Egressing strike flight at 6000' saw two MIGs make pass from 9000' and 9 o'clock; MIGs rolled in to 2000' behind #2 F-105; flight went supersonic and left MIGs; no firing seen.

Event III-205

Aircraft Involved: Two RF-101s vs at least
one MIG-?

Results: No damage

Vicinity of Encounter: 21°40'N/105°33'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 May 1967, 1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight saw black puffs 25-50' away and observed single MIG tracking 2 miles to right; no further contact.

SECRET

SECRET

Event III-206

Aircraft Involved: Three RF-4Cs vs One MIG-21

Result: No damage

Vicinity of Encounter: 21°51'N/104°13'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 May 1967/1705H

Three RF-4Cs (BLUE Flight) were on a reconnaissance mission against JCS 82.24.

8. ORDNANCE

Alkalai AA-1

MIG-21 2/0

11. DATA SOURCES

432 TRW 031200Z May 1967 OPREP-3 TUOC 03211

432 TRW 040000Z May 1967 OPREP-3 TUOC 03244

12. NARRATIVE

At 1657H while heading 019 degrees at 25,000 feet MSL, at 20°45'N/104°50'E, BLUE Flight received a 3-ring x-band from the 11 o'clock position.

At 1704H while heading 019 degrees at 20,000 feet MSL when at 21°51'N/104°13'E, still inbound to the target, BLUE Flight noted the x-band signal move from 11 o'clock to 9 o'clock position.

Thirty seconds later BLUE Flight observed a single silver MIG-21 with no markings at 24,000 feet MSL, at 10 o'clock high, in a pursuit curve slipping to 7 o'clock position. BLUE Flight broke left and down, and at this time two missiles were seen to pass off to the right. One missile was observed to explode off the right wing, 300 feet away, at the same altitude. The missile appeared fat and stubby resembling the AA-1 Alkalai. During the high g evasive maneuver, the missile seemed to be on a straight trajectory rather than tracking his aircraft. The backseater observed the missile to detonate in a white puffy burst.

BLUE Flight dropped tanks and exited the area in a descent at Mach 1.4. The x-band signal continued at 6 o'clock with a strength of three rings until 20°40'N/103°25'E. The time that the MIG broke off was 1710H.

On sighting the MIG-21, the flight dispersed 8 carts of chaff.

BLUE 1 and 2 jinked to channel 97 at 10,000 feet altitude and BLUE 3 continued his descent to the deck and proceeded to channel 97.

BLUE Flight : that the MIG-21 was GCI vectored for about 10 minutes prior to contact since the flight received strobes of 1-1/2 to 2 rings and the signal moved from 1 to 2 o'clock position while the flight was on a heading of 019 degrees.

The weather was 2/8 coverage with tops at 12,000 feet MSL. The visibility was 5-6 miles in haze.

One member of BLUE Flight received a MIG warning "Bandits at 70 miles."

SECRET

Event III-207

Aircraft Involved: Four F-4Cs vs a) two MIG-21s
b) five MIG-17s

Result: One MIG-21 destroyed

Vicinity of Encounter: a) 21°08'N/105°51'E
b) 21°03'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967/1435H

Four F-4Cs (BLUE flight) were on a MIGCAP mission in support of a force of 20 F-105s from Takhli which were striking JCS 82.24. In addition, another flight of F-4Cs were also on MIGCAP for this force. The flights of F-105s which encountered MIGs are those of Events III-211 and III-212.

2. MISSION ROUTE

Departed Ubon and effected rendezvous with the strike force at the ORANGE ANCHOR drop off. From there the force proceeded to Channel 97. From Channel 97 direct to 21°37'N/104°54'E then direct to 21°34'N/105°33'E, then direct to 21°08'N/105°51'E down the right side of Thud Ridge. Egress was the same route with post strike refueling on ORANGE ANCHOR.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 - AIM-7E SPARROW
4 - AIM-9B SIDEWINDER
1 - QRC-160 Pod
1 - 600 gal centerline tank
1 - 370 gal wing tank

MIG-21

Clean
Silver

MIG-17

Clean
No afterburner
Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds at 2000 to 4000 ft, visibility 15 miles.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	14,000 ft			
<u>Heading:</u>	150°			
<u>Speed:</u>	500 kts			
<u>Fuel State:</u>	12,000 lb			
<u>Flight Formation:</u>				

Pod with BLUE 2 high on the right and the element (BLUE 3, 4) on the left, slightly low, almost line abreast.

5. INITIAL DETECTION

BLUE flight received MIG warnings and knew MIGs were in the area. They heard one of the first or second F-105 flights call MIGs. BLUE 2 saw two MIG-21s, at 11 o'clock level, attacking a flight of F-105s and called them out.

6. ACTION INITIATED

BLUE flight warned the F-105s and broke into the MIG-21s going to afterburner and jettisoning tanks.

7. SITUATION DEVELOPMENT

BLUE 1 fired three SPARROWS at one of the MIG-21s, missing with all three. He then fired four SIDEWINDERS, one of which hit the MIG-21 resulting in a kill.

Outbound from the target BLUE flight engaged five MIG-17s in the vicinity of Hoa Lac airfield. During this engagement, BLUE 2 fired three AIM-9Bs without scoring a hit. BLUE flight then disengaged due to Bingo fuel and egressed.

SECRET

SECRET

Event III-207

8. ORDNANCE

(No. fired/No. hits)

	<u>SPARROW</u>	<u>SIDEWINDER</u>	<u>Remarks</u>
BLUE 1	3 ¹ /0	4/1	All fired at MIG-21. One MIG-21 killed.
BLUE 2		3/0	Fired at MIG-17
MIGs	None		

9. EQUIPMENT PROBLEMS

BLUE 1's cockpit mounted gun camera did not work due to improper loading. BLUE 3's left outboard tank would not jettison.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	4900	230	50	Second MIG kill. Third air-to-air engagement.
Back	350	90	86	
<u>BLUE 3</u>				
Front	4200	845	20	First encounter with MIG-17
<u>BLUE 2</u>				
Front	2750	430	--	
Back	720	410	--	

Comments on this Encounter

BLUE 1 (Front) fired everything he had at the MIG-21. With a gun, he would have got a couple of MIG-17s in the second fight. He made many dry passes at them. For other comments see Events III-102, -207, and -252).

BLUE 3 - It was the first time that he had seen the MIG-17s get into a tight little turn and stay there. It was amazing how the MIG-17 turned. The turns effectively negated the missile attacks. Since the F-4s had no guns, a tight turn orbiting low to the ground was a successful defense.

To combat the MIG's defense tactics should be to work two elements in the vertical. One keeps the MIGs busy, and the other should drift off to get separation. When the second element returns he should call the first element to pull up and away, leaving a SPARROW shot for the second element.

11. DATA SOURCES

Project Interviews: BLUE 1, 4 June 1967; BLUE 3, 2 June 1967

Messages, Reports:

8 TFW 041120Z May 1967 OPREP-3 DOI 05080
8 TFW 041435Z May 1967 OPREP-3 DOI 05086
AIM 7D/E Missile Performance Reports for BLUE 1

12. NARRATIVE DESCRIPTION

BLUE flight was one of two flights of F-4Cs providing MIGCAP for a force of F-105 striking the Hanoi transformer station, JCS 82.24.

BLUE flight rendezvoused with two flights of F-105s which was the flight of Event III-211 and one other (GREEN flight). This was accomplished at ORANGE ANCHOR drop off and CAP position was taken immediately. The force proceeded to Channel 97 and orbited waiting for the rest of the strike force. After two orbits, rendezvous was completed and the ingress course was set.

¹Although official sources indicated BLUE 1 fired 3 AIM-7E, both BLUE 1's interview and BLUE 3's interview state that BLUE 1 had no ordnance remaining during the engagement with the MIG-17s. It is concluded that one AIM-7E on BLUE 1 did not tune properly and, therefore, was unable to be fired. BLUE 1's firing sequence tends to confirm this.

SECRET

Event III-207

The force from Takhli flew flights in trail. The first escort (F-4C) flight was near the front of the formation. That placed the IRON HAND flight out front. The strike force was led by the mission commander with the first flight of F-4s a little high and out to his right. BLUE flight was about 1 to 1 1/2 mi in trail of the last F-105 flight (GREEN flight) and about 2000 ft higher. The flight in front of GREEN flight was the flight of Event III-211.

The flight jettisoned the centerline tank about Yen Bai. During ingress MIG calls were heard for the target area via the BULLSEYE system.

After hitting the turn point at 1432H, BLUE flight proceeded down Thud Ridge for about 3 minutes. During this time the first or second F-105 flight made a call "MIGs at 9 o'clock low." This alerted BLUE flight to the MIGs location direction.

When about 5 to 6 mi from Phuc Yen (1435H), BLUE 2 saw two MIG-21s and called them out. BLUE 1 immediately spotted them, instantly identifying them as MIG-21s, and called to jettison tanks and go to afterburner. BLUE 3's outboard tank did not jettison.

When seen, the MIGs were at 10 to 11 o'clock from BLUE flight level and crossing left to right angle off 45°. They were at about the same altitude as BLUE flight and had apparently chandelied up from off the deck. The MIGs were turning in on a flight of F-105s (GREEN flight) immediately preceding BLUE flight.

The MIGs were at GREEN flight's 7 to 8 o'clock position, about 1 mi back.

BLUE 1 also saw some MIGs attacking the other flight in front of GREEN flight. [These are the F-105s in Event III-211] and called this flight to break right.

BLUE flight broke into the two MIG-21s which were crossing rapidly from left to right. One MIG continued to turn after the GREEN flight but the second MIG broke right, going down and under BLUE flight turning 180° and diving for the deck. This MIG was not seen again.

BLUE flight started after the first MIG and vector rolled for position. BLUE 1 obtained an immediate lock-on, in boresight. This MIG broke right and started an evasive maneuver.

The MIG outturned BLUE flight but BLUE 1 and 2 went high to stay with the MIG's turn. BLUE 3 and 4 also went high but were unable to match the turn and ended up high and to the outside. The MIG then reversed as BLUE 1 and 2 came over the top. As the MIG reversed to the left, BLUE 3 and 4 were looking head-on at the MIG and would have had a SPARROW shot if BLUE 1 and 2 had not maintained position on the MIG. However, BLUE 1 and 2 were able to reverse their turn and stay with the MIG. The MIG passed under BLUE 3 and 4 as they went high and outside of the turn again.

Sometime during this turning fight BLUE 1 ripple fired three SPARROW missiles at the MIG, according to the firing reports. There is some inconsistencies in the data with OPREP 041112 indicating a firing interlocks in at about a mile range. Interlocks is also supported in OPREP 0414135.

The missile firing reports give much larger firing ranges and interlock out. Considering the type of action encountered, the firing range of 4 mi which was given seems large. In all cases the MIG-21 target was given at 8500 ft altitude, 0.9 Mach and at 20° aspect to BLUE 1, who was at 8000 ft altitude and at .9 Mach pulling 4 g's with a slight overtake. The missile select light had been on 5 minutes prior to launch.

The first missile failed to guide and went ballistic and rapidly passed out of sight. The second and third missiles appeared to guide but passed behind the MIG-21 and were lost from view.

One source, OPREP 041120Z, reported BLUE 1 firing three SPARROWS, indicating that the third one was fired out of parameters at the MIG after the first three SIDEWINDERS were fired. No source indicates more than three SPARROWS were fired.

No further SPARROW firings by BLUE 1 were indicated in this event; however, after firing the last SIDEWINDERS, BLUE 1 was reported as being out of ordnance. Since BLUE 1 was loaded with eight missiles, it is concluded that one AIM-7 must have detuned and, therefore, was not able to be fired in the fight. It is a possibility that a fourth AIM-7E was fired by BLUE 1 and not indicated in the OPREPS; but due to the consistency of the report of three SPARROWS fired, this situation is considered unlikely.

The MIG-21 continued to turn and started to climb with BLUE 1 violently maneuvering to stay behind. At about 17,000 ft the MIG-21 was a little slow and he reversed. BLUE 1 observed the MIG to be down sun and high against a clear sky.

BLUE 1 went to HEAT and got a good tone, then pulled lead enough to put the target on the edge of the missile field of view. BLUE 1 fired two SIDEWINDERS which passed behind the MIG. The third SIDEWINDER fired, guided, and exploded 5 to 10 ft under the MIGs tail at the 5 o'clock position. This missile scored the kill. A fourth SIDEWINDER was fired while the MIG was in a violent evasive maneuver and burning, but it missed and its further flight was unobserved.

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Event III-207

For all launches a good tone was achieved, with the target tracked 1 to 3 seconds prior to each launch. For all of the launches BLUE 1's airspeed was 540 KTAS, altitude 15,000 ft, at 1 1/2 to 2 g's. BLUE 1's aircraft was banking and slightly climbing with a slight overtake. The firing range was 4000 to 5000 ft. The angle off was from 10 to 25° with the missile which scored a hit being fired at 20°.

After the third exploded, no pieces were observed to come off the aircraft but the MIG went into a violent maneuver, pulling hard to the left and then snapping back to the right in a roll. The MIG straightened out and jinked right and left. At about this time the MIG started to burn and BLUE 1 fired his fourth SIDEWINDER at the MIG, which did not guide.

The MIG kept turning and then leveled off in a 15° dive and headed toward Phuc Yen. The MIG began to burn brightly with fire coming from the left side of the fuselage from the canopy back. The fire was brilliant white with pieces coming off (like a magnesium flame).

BLUE flight followed the MIG at about 1/2 mi range. As they neared Phuc Yen, the flight started to receive heavy 85mm flak. BLUE 3 called for BLUE 1 to break right. BLUE 1 did so and did not see the MIG crash. However, BLUE 3 observed the MIG to continue on and cross the runway to impact 100 yards, south of the runway near an 85mm flak site. No ejection from the MIG was observed.

After breaking right to a heading of west, BLUE flight climbed to between 8000 and 10,000 ft and then made a turn to the west of Phuc Yen, heading east. At a point between Hanoi and Thud Ridge the flight turned right to a heading of south and after crossing Hanoi, turned right to a heading of west. Since the MIG-21 engagement, the flight had not been able to regain their pod formation.

Just as BLUE 3 rolled out from the turn, a SAM passed through the flight. The SAM passed 100 to 300 ft under the nose of BLUE 3. The first that BLUE 3 saw of the SAM it was very close coming from 7 o'clock from the south. BLUE 3 broke down into the direction from which the SAM had originated and as he rolled out, another exploded 500 ft off the right wing.

The F-105 force had by this time egressed up Thud Ridge so BLUE flight descended and egressed out over the valley heading for Hoa Lac. No flak was observed.

When at about 4000 ft altitude and about 5 mi east of Hoa Lac, BLUE 1 saw five MIG-17s circling the field. BLUE 3 and 4 were in a fluid four formation at this time and were back of and slightly higher than BLUE 1 and 2. The MIGs were at about 2000 ft altitude. At this time BLUE 3 had about 9000 lb of fuel and was at about 550 kts.

BLUE flight had heard no MIG warnings for Hoa Lac.

BLUE flight descended to the MIGs altitude and started to engage them. BLUE 1 by this time had no ordnance left. Although the engagement occurred right over Hoa Lac airfield and BLUE flight altitude varied from 1500 to 8000 ft, no flak or ground fire was encountered.

The MIGs did not attempt to shoot at BLUE flight as BLUE 1 and 2 and BLUE 3 and 4 yo-yoed up and down to stay with the MIGs. The MIGs stayed in a tight left turn at about 2000 ft altitude. This meant that BLUE flight was either too close for a SPARROW shot or was pulling too many g's for a SIDEWINDER attack.

Despite this, BLUE 2 attempted to fire a SIDEWINDER. Three AIM-9Bs were launched against a hard turning MIG-17, but all missed due to angle off and ground IR background. For all three launches BLUE 2 was at 450 KTAS and 2000 to 3000 ft altitude, pulling 2 to 3 g's. The MIG-17 was nose high in a hard left turn and BLUE 2's aircraft was nose low with 100 kts overtake. The track crossing angle was about 30° at firing. The range was 3000 to 4000 ft with 30° angle off. The tone was good for all launches. BLUE 2 had no radar lock and the missiles were launched visually.

After several turns with the MIGs, BLUE 3 and 4 pulled up and went out about 3 to 4 mi to the east and turned to come back in. BLUE 3 got a radar lock on the MIGs which were still under attack by BLUE 1 and 2. As he turned inbound, BLUE 3 asked if he could come in and received an affirmative answer from BLUE 1. BLUE 3 failed to communicate the exact situation, however, and BLUE 1 and 2 did not pull out of the MIG's pattern to allow a SPARROW shot.

Not getting the SPARROW shot, BLUE 3 pressed on in for a SIDEWINDER attack and with a good growl selected a MIG who was in a slight left turn. BLUE 3, with about 1 1/2 g's on the airplane and looking up at the MIG, started to close into firing parameters. At this time BLUE 2 came from the outside of the turn and slid in between the MIG and BLUE 3. Due to BLUE 3's closure, he had to pull up and break off the attack.

BLUE 3 and 4 went out and tried the same tactic again but again, due to confusion about the tactic, failed to get off a shot. By this time BLUE 4 was at absolute BINGO and the flight broke off and egressed.

SECRET

Event III-207

At one time during the fight BLUE 3, warned by BLUE 1, saw a MIG-17 at his 7 o'clock in a hard left turn. Due to the angle off, BLUE 3 could see the top of the MIG's wing and the paint scheme. Two thirds of the top of the wing was red and from the tip in 4 or 5 ft it was solid red and then the red tapered off to the leading and trailing edges which tapered off towards the fuselage.

During egress, BLUE 4 jettisoned four AIM-9s due to fuel considerations. After refueling with ORANGE ANCHOR, the flight returned to base.

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Event III-208

Aircraft Involved: Four F-4Cs vs two to three unident

Results: No damage

Vicinity of Encounter: 21°32'N/103°57'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 May 1967, 1710H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG CAP flight for ALFA strike held to west due ALQ-71 failure, and observed four wing tip vortex condensation trails at 1 o'clock in a high-G turn into a split-S maneuver; then observed 2-3 silver A/C; unidents 30 miles from flight; unable to distinguish A/C type or markings due distance; seemed to be on attack heading toward flight, which turned to attack, but lost visual contact.

Event III-209

Aircraft Involved: Four F-4C vs two unident

Results: Sighting

Vicinity of Encounter: 21°20'N/104°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967, 1425H, 1440H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Lead of ECM escort flight at 29,000' picked up a bogey at his 3 o'clock position approx 4 miles out at 5-10,000' altitude; lead was unable to distinguish A/C type; 15 minutes later, flight at 29,000' picked up a bogey at 3 o'clock position, level and 5-7 miles away; at approx 5 miles, bogey dropped to approx 22,000' and passed flight 5 miles to right.

Event III-210

Aircraft Involved: Four F-4Cs vs four MIG-17s and four MIG-21s

Results: Sighting

Vicinity of Encounter: 21°15'N/105°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967, 1433H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG CAP flight at 16,000' was ingressing along Thud ridge when lead spotted three silver and one camouflaged MIG-17 heading directly beneath; a climbing silver MIG-21 was simultaneously sighted but all MIGs disappeared before maneuvering could be initiated; at 1435H, #3 sighted two silver MIG-21s at second position shown; no pursuit initiated; lead at base of Thud ridge spotted one MIG-21 climbing into a cloud; no pursuit undertaken due low fuel.

SECRET

SECRET

Event III-2

Aircraft Involved: Four F-105s vs one MIG-21 and no
MIG-17s

Result: No damage

Vicinity of Encounter: Near 21°08'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967/ about 1435H

Four F-105Ds (BLUE flight) were part of a strike force from Takhli attacking JCS 82.24, which included 16 strike aircraft (of which BLUE flight was one and the flight of Event III-212 and GREEN flight of Event III-207 were also members). In addition, the force included a flak suppression flight and an IRON HAND flight was in the area between 21°34'N/105°33'E and 21°21'N/105°45'E.

The strike force was supported by a MIGCAP of eight F-4Cs. The flight of Event III-207 was part of these.

11. DATA SOURCES

Messages, Reports:

355TFW 041330 May 67 OPREP-3 DOTO-011557

12. NARRATIVE DESCRIPTION

BLUE flight was warned of a MIG attack by its F-4 cover (Event III-207) and was directed to break right. The flight broke retaining ordnance but when warned a second time, dropped its ordnance in the vicinity of Phuc Yen airfield. The flight observed one MIG-21 break off after a single pass.

Two MIG-17s pressed an attack on egress but the flight successfully evaded them.

SECRET

SECRET

Event III-212

Aircraft Involved: Four F-105s vs one MIG-21
Result: No damage
Vicinity of Encounter: Near 21°08'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967/Shortly after 1435H

Four F-105s (BLUE flight) were part of a strike force from Takhli attacking JCS 82.24, which included 16 strike aircraft (of which BLUE flight was one and the flight of Event III-211 and GREEN flight of Event III-207 were also members). In addition, the force included a flak suppression flight and an IRON HAND flight was in the area between 21°34'N/105°33'E and 21°21'N/105°45'E.

The strike force was supported by a MIGCAP of eight F-4Cs. The flight of Event III-207 was part of these.

8. ORDNANCE

	<u>Soviet AAM</u>	<u>Remarks</u>
MIG-21	1/0	Fired out of range

11. DATA SOURCES

Project Interviews: BLUE 3, June 1967
Messages, Reports:

355TFW 041330Z May 67 DOTO-0 11557

12. NARRATIVE DESCRIPTION

BLUE flight was part of the strike force and was armed with 18 x 750 lb bombs and 6 x 500 lb bombs. It is not known which member carried the 500 lb bombs. BLUE 3 had 2 x 450 gal tanks, an AIM-9B and a QRC-160 pod. The bombs were mounted on a MER rack on the centerline. BLUE 4 had two QRC-160 pods, two 450 gal tanks, and bombs.

On egress from the target, still retaining the MER rack, AIM-9B, pod and tanks, BLUE 3 and 4 headed up Thud Ridge. They were at about 8000 ft and 550 kts when BLUE 3 looked down and saw a single, silver MIG-21 with red markings.

The MIG was about 4000 ft below and 2000 ft out at 8 o'clock, paralleling their course. The MIG followed BLUE 3 and 4 about a quarter of the way up Thud Ridge when he started an easy left turn and disappeared.

Although not seen by BLUE 3, on egress a MIG-21 launched a missile at BLUE flight but the launch was out of range and the missile was ineffective.

It was surmised that the MIG-21 seen by BLUE 3 was the same MIG who was trying to catch up with the flight for an interception when the flight turned at the top of Thud Ridge.

SECRET

Event III-213

Aircraft Involved: Two RF-4Cs vs Two MIG-17s

Result: Sighting

Vicinity of Encounter: 21°59'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967/1615H

11. DATA SOURCES

432 TFW 041200 May 1967 OPREP-3 TUOC -3267

12. NARRATIVE

Two RF-4Cs were on a mission against JCS 82.24. The weather was scattered clouds with two-eighths coverage, with bases at 4500 feet MSL. Visibility was 7 miles in haze.

The flight departed Udorn and flew to 18°25'N/103°25'E at 20,000 feet. From there they proceeded to 20°26'N/103°43'E then to 21°55'N/104°14'E and then to 21°58'N/104°30'E. From there, at 2000 foot altitude, they proceeded to 20°26'N/103°43'E and then to Udorn at 29,000 feet.

At 1614H when at 21°50'N/104°30'E the two RF-4Cs heard a MIG call from Red Crown of "MIGs heading 310 degrees Northwest." At the same time the flight received a yellow border violations call.

Descending from 20,000 feet to 2000 foot altitude, the flight did not receive any signals.

At 1615H when at 21°54'N/104°30'E in a descent on a heading of 910 degrees the flight observed two MIG-17s. The MIGs were at 10,000 foot altitude at 10 o'clock position heading 310 degrees.

The RF-4Cs descended to the deck and broke left and did not notice the MIGs to make any move to engage. The mission was aborted and the flight returned to base. No markings were observed on the MIGs.

SECRET

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Event III-214

Aircraft Involved: Four F-105s vs one MIG-21

Results: Sighting

Vicinity of Encounter: 21°28'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967, 1441H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ALFA strike flight saw MIG four miles ahead; flight was descending through 10,000'; MIG made no hostile moves.

Event III-215

Aircraft Involved: One EB66C vs one unident

Results: No damage

Vicinity of Encounter: 21°06'N/103°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967, 1453H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ECM flight at 32,000' escorted by the aircraft in Event III-209, observed a dark, unident A/C making a low pass, coming in to 5 miles from 1:30 o'clock and then departing.

Event III-216

Aircraft Involved: Four F-105s vs two
MIG-21s

Results: Sighting

Vicinity of Encounter: Yen Vien RR Yard

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 May 1967, 1730H, 1748H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Number 4 of ALFA strike flight, after completing bomb run, saw one MIG and recovered at alternate base due low fuel; at second time shown, remainder of flight was egressing at 22,000' when it saw one MIG, 20 miles away at 8 o'clock position in a tight orbit; no hostile action observed.

SECRET

SECRET

Event III-217

Aircraft Involved: Eight F-105s vs one MIG-21

Results: No damage

Vicinity of Encounter: 21°06'N/103°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 May 1967, 1453H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Two flights reported seeing one MIG-21 in the general vicinity of Sam Neua in Laos; MIG made a descending pass on #2 of one flight and came within 4,000' before #2 broke hard left and lost sight of MIG.

Event III-218

Aircraft Involved: Eight F-105s vs two MIG-21s

Results: Sighting

Vicinity of Encounter: 20°58'N/105°33'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 May 1967, Unknown

11. DATA SOURCE

- CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight unable to acquire target due to poor visibility and heavy cloud cover; flight leaving target vicinity when they heard another strike flight call two MIGs at first flight's 6 o'clock position; first flight jettisoned ordnance safe but did not see any MIGs.

Event III-219

Aircraft Involved: One RF4C vs ? Unident

Results: No damage

Vicinity of Encounter: 21°20'N/104°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 May 1967, 0343H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound photo A/C received X-band signal ahead while at 1,000' altitude; subsequent stronger X-band signal at 6 o'clock led to mission abort; photo A/C broke right and egressed, followed for 8 minutes by X-band signal.

SECRET

SECRET

Event III-220

Aircraft Involved: Four F-4Cs vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: Approximately 15 miles northwest of Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1638H

A flight of four F-4Cs (ORANGE flight) was providing TARCAP for a strike group of 16 F-105s. The target was the Ha Dong Army barracks/supply area three miles northwest of Hanoi, JCS 31.00.

5. INITIAL DETECTION

Two MIG-21s were observed to be in pursuit of four F-105s.

6. ACTION INITIATED

The F-105s continued toward the target area as the F-4Cs engaged the MIG-21s.

11. DATA SOURCES

Messages, Reports:

388 TFW OPREP-3121155Z May 1967 OPNAV OP-OSW Box Score

12. NARRATIVE DESCRIPTION

Sixteen F-105s, in flights of four aircraft (including BLUE, GREEN, and BLACK flights of Event III-221), were on a strike against target number JCS 31.00, Ha Dong Army barracks and supply area northwest of Hanoi. A flight of F-4Cs was providing MIGCAP in the area.

The entire strike force encountered intense AW/37/57 and 85 mm AA fire from the target area. An extremely hostile environment of heavy flak, SAMs and MIGs prevailed in the target area.

While inbound to the target area, BLUE flight (a flight of F-105s) was briefly pursued by two MIG-21s. The MIGs broke off their attack as they were engaged by ORANGE flight. GREEN flight (another F-105 flight) observed two MIG-21s during ingress to the target and one MIG-17 during egress. No attempt to engage was made by either side. BLACK flight (a flight of F-105s) sighted four MIG-17s while inbound to the target but no attempt was made to engage.

SECRET

SECRET

Event III-221

Aircraft Involved: Twelve F-105s vs two MIG-21s and five MIG-17s
Result: Sighting only
Vicinity of Encounter: Approximately 3 to 15 miles northwest of Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1638H

Sixteen F-105s (including BLUE, GREEN, and BLACK flights), in flights of four aircraft, were on a strike against target JCS 31.00, Ha Dong Army barracks and supply area northwest of Hanoi. A flight of F-4Cs was providing MIGCAP in the area.

2. MISSION ROUTE

The strike group from Korat, approached the target area from the northwest.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4; ERCWN 1, 2, 3, 4; BLACK 1, 2, 3, 4

6 - M-117 bombs
1 - M-61 GREEN

F-105 GREEN 1, 2, 3, 4

4 - CBU-24
1 - M-61 GREEN

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

The entire strike force encountered intense AW/37/57 and 85 mm AA fire from the target area. An extremely hostile environment of heavy flak, SAMs and MIGs prevailed in the target area.

5. INITIAL DETECTION

While inbound to the target area, BLUE flight was briefly pursued by two MIG-21s. The MIGs broke off their attack as they were engaged by a flight of F-4s (see Event III-220). GREEN flight observed two MIG-21s during ingress to the target and one MIG-17 during egress. No attempt to engage was made by either side. BLACK flight sighted four MIG-17s while inbound to the target but no attempt was made to engage.

6. ACTION INITIATED

None.

11. DATA SOURCES

Messages: 388 TFW OPREP-3121155Z May 1967
CINC PACFLT staff study 6-68

12. NARRATIVE DESCRIPTION

See paragraphs 1, 4 and 5.

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Event III-222

Aircraft Involved: Four F-4Cs vs five MIG-17s

Result: One F-4C lost

Vicinity of Encounter: 20°59'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1644H.

A flight of four F-4Cs (BLUE Flight) was providing MIGCAP for a strike group of F-105s. Inbound to the target the entire strike forces encountered SAMs and AA fire. No MIG warning was received prior to the sighting of the MIGs.

2. MISSION ROUTE

BLUE Flight departed Danang and proceeded to the WHITE ANCHOR refueling area then to Channel 97 and directly to target JCS 31.00. After egress from the target area the flight refueled at WHITE ANCHOR and returned to a position 40 miles northwest of Hanoi to provide RESCAP for an F-105 pilot who had been shot down earlier. When at BINGO fuel, the flight proceeded to RED ANCHOR for refueling and then returned to base.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 3

2 SPARROW (AIM-7E)
2 SIDEWINDER (AIM-9B)
1 20mm gun (SUU-16)
1 QRC-160 ECM pod

F-4C BLUE 2, 4

4 SPARROW (AIM-7E)
4 SIDEWINDER (AIM-9B)
1 QRC-160 ECM pod

MIG-17s

Silver with red star on top of wings.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear in the area of the encounter.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	5000 to 7000 ft			
<u>Heading:</u>	northwest			
<u>Speed:</u>	400 to 500 kts			
<u>Fuel State:</u>	No external tanks			
<u>Flight Formation:</u>	Fighter escort in two elements of two fighters each.			

5. INITIAL DETECTION

As the F-105 strike group began egress from the target area with BLUE Flight providing fighter cover, the backseater in BLUE 3 called, "MIGs 11 o'clock, low." No MIG warning had been received.

6. ACTION INITIATED

BLUE 4 was told by BLUE 3 to close up the formation and BLUE 4 replied that he was experiencing difficulty with the afterburner in the left engine. BLUE 1 (Lead) reported contact with the MIGs at 10 o'clock low and that he was initiating an attack. BLUE 3 acknowledged and indicated support of the attack.

7. SITUATION DEVELOPMENT

Moments later BLUE 3 sighted two more MIGs at 9 o'clock and reported to BLUE 1 that he was terminating his support to BLUE 1 and was attacking the second section of MIGs. While maneuvering to attack, BLUE 3 sighted a fifth MIG making a run on him in his 7-8 o'clock position. A SAM missile call at this time directed the attention of the crew of BLUE 3 elsewhere and the diversion was sufficient to cause BLUE 3 to lose sight of the MIGs. In an effort to relocate the MIGs, BLUE 3 made a jinking climb to approximately 9000 ft. From this position BLUE 3 saw a fireball at one o'clock low which was BLUE 4.

Prior to this, BLUE 1 and 2 pursued the first section of MIGs. BLUE 1 gained a firing position on MIG 2 and launched a SPARROW (AIM-7) missile in the boresight mode. As the missile was launched, MIG 2 tightened his turn. After guiding directly toward the MIG, the missile detonated at approximately 100 ft, 6 o'clock from MIG 2. BLUE 1, with BLUE 2 on his wing, yo-yoed off and maneuvered into position again. Once again the MIG tightened his left turn and the SPARROW, although tracking nicely at the MIG's 6 o'clock position, burst approximately 100 ft short of MIG 2. Again BLUE 1 and 2 yo-yoed off high,

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Event III-222

but this time a single F-4C was observed, low, on a reciprocal heading with two MIGs slowly closing from his 7 o'clock position. Repeated warnings were given over the radio but the F-4C failed to take any evasive action. When finally hit, the F-4C burst into flame. This F-4C was BLUE 4.

8. ORDNANCE

	(No. fired/No. hits)		
	SPARROW	Gun	
	AIM-7E	SUU-16	Remarks
BLUE 1	2/0	1/0	Gun would not fire.
BLUE 2, 3	0/0		
MIG 1			One F-4C shot down.

9. EQUIPMENT PROBLEMS

BLUE 1 - Gun would not fire. No firing pulse to the electric primer, electrical leads broken.

BLUE 3 - APQ-100 failure. No SPARROW capability. Generator malfunction indicated after refueling during ingress to the target.

BLUE 4 - Experienced some difficulty with the afterburner on the left engine.

10. AIRCREW COMMENTS

BLUE 1 (Lead) - BLUE Flight was using a discreet communication channel for internal flight communication while monitoring the strike group frequency on an auxiliary receiver. Guard channel was also being monitored for any MIG warnings. None were received.

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead) front, 22 June 1967.

Messages: 366TFW OPREP-3 121330Z May 1967
366TFW OPREP-3 122100Z May 1967
366TFW OPREP-3 131425Z May 1967
AIM-7D/E Missile Firing Report

12. NARRATIVE DESCRIPTION

A flight of four F-4Cs (BLUE Flight) was providing MIGCAP for a strike group of F-105s against target JCS 31.00. While in the target area the flight encountered SAMs and AA fire. Previous to entering the area BLUE 1 test fired his gun, but it failed to fire.

As the strike group began egress from the target area on a northwesterly heading, BLUE Flight was providing fighter cover. Four MIGs were sighted at 1 o'clock, low, by BLUE 3 (back). When directed by BLUE 3 to close up the formation, BLUE 4 advised that he was experiencing difficulty with the afterburner on his left engine. BLUE 3 decided at that time not to use afterburner to insure that BLUE 4 could maintain a fighting wing position. Within seconds BLUE 1, with BLUE 2 in fighting wing, and BLUE 3 and 4 providing support, initiated an attack on MIG 2 (the second MIG of the section). A moment later BLUE 3 sighted two more MIGs at 9 o'clock with approximately one mile separation from the lead section. BLUE 3 called BLUE 1 and reported the MIGs stating that his element was separating from the lead element to attack this second section of MIGs. BLUE 1 acknowledged this transmission and pressed on with his attack.

The lead element, BLUE 1 and 2, made a descending left turn in behind the lead MIG section and closed the range to about one mile for the trailing MIG, MIG 2, which was in a gentle left climbing turn at approximately 4500 ft AGL, 500 ft below BLUE 1, at the 12 o'clock position. MIG 2 was acquired in the boresight mode and BLUE 1 launched one SPARROW (AIM-7E) missile. As the missile fired, MIG 2 tightened his left turn. Although the missile appeared to be guiding directly toward the MIG, the fuze detonated the warhead 100 ft short of the target at the MIG's 6 o'clock position. To prevent overshooting the MIG as he continued his left turn to the inside, BLUE 1 and 2 pulled up into a higher yo-yo. At this time BLUE 1 feels he could have made a successful gun attack against the MIG if his gun had been operating properly. As he maneuvered down from the yo-yo, BLUE 1 kept MIG 2 at his 12 o'clock and descending to co-altitude, 5000 ft AGC. MIG 2 was acquired in the manual track mode and another SPARROW was launched from a range of 1-1/2 mile. Once again MIG 2 tightened his left turn and the missile, although tracking nicely at the MIG's 6 o'clock position, detonated approximately 100 ft short of MIG 2.

Again BLUE 1 and 2 yo-yoed off high to gain separation. At this time BLUE 1 saw an F-4C at 11 o'clock low, on a reciprocal heading, in a slight left turn, with two MIG-17s slowly closing from his 7 o'clock position. It is possible, according to BLUE 1, that the two MIGs were MIG 1 and 2. After checking that BLUE 2 was still in his fighting wing position, BLUE 1 called over his radio, "Single F-4, you have two MIGs on your tail!" This F-4C was BLUE 4 who had become separated from BLUE 3. BLUE 1 called several times for the F-4 to take it down and left but there was no visible response. The single F-4 continued in a slight left turn as the MIGs closed the range to approximately 1500 ft and

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fired two bursts of what appeared to be 37mm which missed. The F-4 then began to climb slightly while still in a left turn and the MIGs continued to close to about 1000 ft in range. BLUE 1 then called, "Ok, take it up!" hoping that the MIGs would pass under the F-4. But, once again the F-4 (BLUE 4) failed to respond and continued in a slight, left, climbing turn. The MIGs closed to a range less than 1000 ft and fired three more bursts at BLUE 4 as the entire aft section of the airplane burst into flames. After about five seconds during which the burning airplane maintained pitch and bank, the left bank increased and the airplane pitched nose down. As the nose of the airplane passed through the horizon, BLUE 1 saw one seat eject and saw a good chute open. BLUE 2, who was trailing BLUE 1 saw one chute collapsing on or near the ground and saw another good chute approximately 2000 ft above it.

From the point where BLUE 3 sighted the second section of MIGs the two BLUE elements separated. Because of a radar failure, BLUE 3 did not have a SPARROW capability but did have two SIDEWINDERS and a 20mm SUU-16 gun. As BLUE 3 maneuvered to attack it is not definitely known whether BLUE 4 followed, although from his previous position, and in the absence of any radio transmission to the contrary, it was assumed that he did follow the maneuvers. As BLUE 3 made a descending 3 g left turn towards the MIGs (MIG 3 and 4) he was attacked by a single MIG (MIG 5) from the 7-8 o'clock position. Continuing in a left descending turn, BLUE 3 increased to about 4 g which was more than adequate to cause MIG 5 to overshoot. At this time a SAM call directed the attention of the crew of BLUE 3 elsewhere and although the SAM was not sighted the diversion was sufficient to cause BLUE 3 to lose sight of MIG 5 as well as MIG 3 and 4. A jinking climb at high speed was made to about 9000 ft in an effort to relocate the MIGs. The MIGs were not sighted, so BLUE 3 maneuvered to position his element opposite and above the lead element in an effort to get a rear quartering shot at the MIG which BLUE 1 was chasing. After at least one 360 degree, low-g turn at speeds from 420 kts to 500 kts between altitudes of 5000 ft and 10,000 ft, all during heavy flak and occasional SAM calls, BLUE 3 sighted a fireball at 3 o'clock low. His first impression was that an F-105 had been hit by a SAM but a quick visual and radio check confirmed BLUE 4 was not with BLUE 3. Just prior to seeing the fireball, BLUE 3 heard the transmissions of BLUE 1. BLUE 3 observed one chute, well away from the fireball.

While making a circle of the chute BLUE 1, 2 and 3 received a loud and clear signal from one emergency beeper.

During the entire encounter, which lasted four to five minutes, BLUE Flight encountered extremely heavy flak, five MIG-17 enemy fighters, and several SAMs. BLUE Flight departed the area with BINGO fuel, proceeded to WHITE ANCHOR for aerial refueling, and returned to a point 40 miles northwest of Hanoi to provide RESCAP for a F-105 pilot who had been shot down earlier. Intense ground fire was encountered while trying to pinpoint a beeper signal. At BINGO fuel, BLUE Flight proceeded to RED ANCHOR and aerial refueled before returning to base. Flight duration was 4 hours, 50 minutes.

MISSILE FIRING PARAMETERS
SPARROW (AIM-7C) FIRING BY BLUE 1

ITEM (AT TIME OF FIRING)	Attempt	
	1	2
AIRCRAFT TYPE	F-4C	F-4C
ALTITUDE	6000 ft	5000 ft
MACH	.85	.85
HEADING		
ATTITUDE	Level	Level
FIGHTER ASPECT TO TARGET	10°	0° angle-off
TARGET TYPE	MIG-17	MIG-17
ALTITUDE	5000 ft	5000 ft
SPEED	MACH .75	MACH .75
MANEUVER	Left-hand turn	Left-hand turn
FIRING RANGE	1-1/4 mile	1-1/2 mile
FIRING MODE	Boresight	Manual track range only
POLARIZATION CLUTTER GATE SELECTION BIT CHECK AND READY AND SELECT LIGHT	With range track linear override narrow satisfactory	Linear override narrow satisfactory
RESULTS	After initial drop AIM-7 guided up the MIG's tail but burst about 100 ft short at the MIG's 6 o'clock.	Same as first firing

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Event III-223

Aircraft Involved: Four F-105s vs five MIG-17s

Result: No damage

Vicinity of Encounter: 21°15'N/105°95'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1642H

Four F-105s (BLUE Flight) were providing flak suppression for a following strike flight of F-105s. (See Event III-225).

2. MISSION ROUTE

The flight approached the target area from the northwest, flying southeasterly along the west side of Thud Ridge.

3. AIRCRAFT CONFIGURATIONS*

F-105 BLUE 1, 3

2 450-gal. external fuel tanks
6 750-lb bombs
1 SIDEWINDER (AIM-9B)
1 QRC-160 ECM pod
1 M-61 20mm gun

F-105 BLUE 2, 4

2 450-gal. external fuel tanks
6 750-lb bombs
2 QRC-160 ECM pods
1 M-61 20mm gun

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Low, scattered clouds at 2500 ft with good visibility under the clouds, tops at 5000 ft.

	BLUE			
	1	2	3	4
<u>Altitude:</u>		2000 ft AGL		
<u>Heading:</u>		152°		
<u>Speed:</u>		550 kts plus		
<u>Flight Formation:</u>	QRC-160 ECM Pod formation			

5. INITIAL DETECTION

BLUE 1 (Lead) called, "MIGs at 12 o'clock." A flight of four MIG-17s was sighted at a range of approximately 1 to 1-1/2 miles in front of BLUE Flight. The MIGs were heading in the opposite direction.

6. ACTION INITIATED

BLUE Flight engaged afterburner and continued on course as the MIGs maneuvered toward the rear of BLUE Flight.

7. SITUATION DEVELOPMENT

At approximately the same time the flight of four MIGs was sighted, a single MIG-17 was sighted very low at 3 o'clock. The MIG made a climbing right turn towards BLUE Flight and fired his gun at BLUE 4, who was furthest to the right in the formation of BLUE Flight. BLUE Flight had accelerated to more than 600 kts. Unable to close the range, the MIG fired two missiles or unguided rockets at BLUE 3 and 4 which fell short by 2000 ft. The missiles (rockets) were fired at an estimated range of 1-1/2 miles. The flight of four MIGs, that had turned and attempted to close the range, turned too late and BLUE Flight outran them without further expenditure of ordnance. At some point during the encounter BLUE 4 fired a burst from his gun without effect.

8. ORDNANCE

	(No. fired/No. hits)	
	<u>20mm</u>	
BLUE 4	Short burst/0	
	<u>23/37mm</u>	<u>Rockets/AAM</u>
MIG 5	Unknown/0	2/0

*Estimated configurations obtained from an aircrew interview, but not definitely identified with this event.

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Event III-223

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2		600	70	Instructed in the RTU
BLUE 3	5000	85		
BLUE 4	600	338	68	

Comments on this Encounter:

It looked like areas had been set up. First a MIG area followed by a heavy flak area nearer the target.

11. DATA SOURCES

Project Interviews: BLUE 2, 30 May 1967
BLUE 3, 30 May 1967

Messages: 355TFW OPREP-3 121359Z May 1967

12. NARRATIVE DESCRIPTION

During ingress to the target, BLUE Flight was intercepted by a flight of four MIG-17s and by a single MIG-17. The flight of four MIGs approached nearly head-on and were unable to attain a firing position on BLUE Flight, which had increased speed to more than 600 kts. The single MIG made a climbing, turning intercept into a position behind BLUE Flight. After firing at BLUE 4 with a gun, MIG 5 launched two AAMs or rockets. No hits resulted from either the gun firing or the rockets. At some time during the encounter BLUE 4 fired his gun. No hits were observed. BLUE Flight opened the range on the MIGs and continued to the target. After bombing the flak sites the flight departed the area heading northwesterly along the north side of Thud Ridge and crossed to the west at the northern end of the ridge.

A MIG warning had been received that positioned the MIGs relative to Kanoi. This allowed BLUE Flight to determine that the MIGs were in their area.

See Event III-225.

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Event III-224

Aircraft Involved: Four F-105s vs MIG-17s

Result: No damage

Vicinity of Encounter: 21°15'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/About 1642H

Four F-105s (BLUE Flight) were part of a large strike force from Takhli attacking a target near Phuc Yen aircraft. BLUE Flight was attacking with the flight of Event III-223. The force also included the flight of Event III-225.

9. EQUIPMENT PROBLEMS

Although the AIM-9B that BLUE 1 carried checked out all right on the ground, he could not get a tone after becoming airborne.

11. DATA SOURCE

Project Interview; BLUE 1, June 1967 (See Event III-225 for experience)

12. NARRATIVE DESCRIPTION

As BLUE Flight came off the target, BLUE 1 was several hundred yards in front of BLUE 2, 3 and 4. At this time some MIG-17s came in from the right and rolled in behind the trailing flight members.

BLUE Flight was at 600 kts and stayed ahead of the MIGs. There was no firing.

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Event III-225

Aircraft Involved: Four F-105s vs four MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°15'N/105°44'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1643H

Four F-105s (BLUE Flight) were inbound to the target on a bombing mission. A flak suppression flight of F-105s was approximately 2 to 3-1/2 miles ahead. (See Event III-223).

2. MISSION ROUTE

The strike group departed TACAN Channel 97 and proceeded to Thud Ridge then south-easterly along the west side of the ridge toward the target area.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1 and 3

2 450-gal. external fuel tanks
6 750-lb bombs
1 SIDEWINDER (AIM-9B)
1 QRC-160 ECM pods
1 M-61 20mm gun

F-105 BLUE 2 and 4

2 450-gal. external fuel tanks
6 750-lb bombs
2 QRC-160 ECM pods
1 M-61 20mm gun

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Low, scattered clouds at 2500 ft with tops at 5000 ft. Visibility was good below the clouds and was approximately five miles with haze among the scattered clouds.

	1	2	3	4
Altitude:	6000 ft			
Heading:	150°			
Speed:	600 kts			
Fuel State:	11,000 lb			

Flight Formation: QRC-160 ECM Pod formation, echelon to the right.

5. INITIAL DETECTION

A MIG warning from the lead flight was received prior to sighting the MIGs. Two MIGs were sighted as they were maneuvering to attack the flight ahead.

6. ACTION INITIATED

BLUE 1 (Lead) turned right about 35° and fired approximately 200 rounds of 20mm at an angle-off of about 60° (4 o'clock to the MIG) at a range of 4000 ft.

7. SITUATION DEVELOPMENT

As the MIGs reversed their turn and commenced a descending turn to the left, BLUE 1 closed the range to 1000 ft and fired approximately 200 rounds to a range of 800 to 600 ft with 90° angle-off (9 o'clock to the MIG). BLUE 1 broke off his run at 3000 ft of altitude with the MIG trailing white smoke as it continued in a steep dive (70°) with about 130° of left bank. With about 75° angle-off, at a range of 1200 ft, BLUE 2 fired a short burst and noted that the MIG was already smoking. BLUE 2 lost sight of the MIG due to clouds but did observe a flash on the ground which could have been the MIG.

8. ORDNANCE

	(No. fired/No. hits)	Remarks
BLUE 1	400 rds/unk	Gun was fired in two bursts of about 200 rounds each. Hits not observed; however, the MIG was trailing smoke after the second burst. Fired one burst. May have fired snapshots at MIG 3 and 4. See paragraph 10.

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Event III-225

9. EQUIPMENT PROBLEMS

No specific problems, but BLUE 1 stated he fired his gun in the air-to-ground mode rather than the air-to-air mode because he did not have time to change the switches in the cockpit.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	2912	1115	85	

Comments on this Encounter: BLUE 1 (Lead) -- BLUE 3 and 4 may have fired snapshots at MIG 3 and 4. The high speed of the F-105 (600 kts plus) prevented the MIGs from attaining a firing position on the F-105s.

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead), 29 May 1967

Messages: 355TFW OPREP-3 131431Z May 1967

12. NARRATIVE DESCRIPTION

BLUE Flight was part of a strike group that encountered MIG-17 fighters while inbound to the target. As the lead flight, a flak suppression flight of four F-105s, approached the target area, the strike group was intercepted by five MIG-17s. In trying to intercept the lead flight the MIGs ended up in position for BLUE Flight to attack. One MIG was damaged and although not actually observed to impact with the ground, a fireball was sighted below a cloud which was attributed to the crash of the MIG. The MIGs left the area and BLUE Flight continued to the target without further MIG encounters.

Event III-226

Aircraft Involved: Four F-105s vs two MIG-17s

Results: Sighting

Vicinity of Encounter: 21°17'N/105°49'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967, 1645H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight ingressing to target at altitude 6000' and jinking observed two silver MIGs pass on a reciprocal heading at the same altitude.

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Event III-227

Aircraft Involved: Two F-105Ds vs one MIG-21

Result: No damage

Vicinity of Encounter: 21°08'N/104°19'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 May 1967/1755H

Two F-105D airplanes (BLUE Flight) were on a road interdiction mission but were diverted to RESCAP. While performing the RESCAP mission a MIG-21 launched an AAM at BLUE 2. The missile did not appear to track and missed BLUE 2 by about 2000 ft. BLUE Flight was in a turn at an altitude of 20,000 ft when the MIG launched the missile. The MIG broke off his attack after launching his missile.

8. ORDNANCE

(No. fired/No. hits)

	<u>AAM</u>	<u>Remarks</u>
MIG-21	1/0	Missile did not appear to guide, missed by 2000 ft. BLUE 2 in a turn at 20,000 ft.

11. DATA SOURCES

Messages: 388TFW OPREP-4 121236Z May 1967
FASTEL DOI 1633 May 1967

Event III-228

Aircraft Involved: Four F-105s vs six MIG-17s

Results: No damage

Vicinity of Encounter: 21°25'N/105°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967, 1618H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight in ALFA group at altitude 9000' observed two silver MIGs approx five miles out and approaching flight from 9 o'clock, swinging to 7 o'clock; lead lowered nose to increase speed as a flight of F-4s proceeded to intercept MIGs; on egress, #3 and 4, while in vicinity of 21-35/105-35 at altitude 6000' were approached by 4 MIGs from 10 o'clock high in descending left turn; MIGs were attempting to pull into 6 o'clock position; when #3 first observed MIGs, he called for afterburner and turned on westerly heading; MIGs came to within 3500' of #3 at 4's 6 o'clock position, but broke off as section gained speed.

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Event III-229

Aircraft Involved: Two RF-4Cs vs one MIG-21

Result: No damage

Vicinity of Encounter: 19°34'N/104°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1610H

11. DATA SOURCES

Messages, Reports:

432TRW 131108Z May 1967 OPREP-3 TUOC 03717

432TRW 131325Z May 1967 OPREP-3 TUOC 03724

12. NARRATIVE DESCRIPTION

Two RF-4Cs (BLUE Flight) departed Udorn and flew at 20,000 ft to 19°11'N/104°10'E. They then proceeded to the target (Route 7, segment J) at 19°24'N/104°08'E at 5000 ft AGL. The weather was broken clouds with four-eighths coverage with tops at 12,000 ft. It was clear above the clouds with good visibility.

At 1610H, after completion of the target run, BLUE Flight climbed to 22,000 ft, heading 098°, with a speed of 540 kts. When at 19°34'N/104°20'E, BLUE 1 Front saw a dark-colored aircraft at 14,000 ft altitude. The aircraft was at 9 o'clock position about 7 mi away and was on a heading of 098°. The aircraft turned into BLUE Flight and gained altitude in an attempt to make a tail pass.

BLUE Flight broke left, lit afterburners and turned into the aircraft. The aircraft seemed to be in excess of MACH 1 and could not turn with the RF-4C. At this point both BLUE 1 Front and Back identified the aircraft as a MIG-21. In the turn, the aircraft were about 1 mi apart.

The MIG-21 then departed the area heading 360°. BLUE 1 received three rings plus X-band TWS and range only for 10 sec as the MIG was making the pass from 7-8 o'clock position.

BLUE 1 then rejoined BLUE 2 and returned to Udorn.

The F-102 pilots from Udorn were queried but they were not in RP III, nor made a pass on any aircraft during this time. Another flight of RF-4Cs heard MIG calls as, "Bandits 80 southwest" at approximately 1558H. BLUE 1 and 2 did not hear this or any other MIG call, however. Also, there were no other F-4s in the area at the time of the incident.

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Event III-230

Aircraft Involved: One F-105 vs one MIG-17

Results: One MIG-17 destroyed

Vicinity of Encounter: 21°19'N/105°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/Just after 1623H

Four F-105s (BLUE Flight) were part of a force of 16 aircraft attacking the Vinh Yen Army Barracks (JCS 34.00). The actions of the other aircraft of this force are described in Events III-231, -233, and -238. The probable order of flights attacking the target was that of Events III-230, -231, -235, and -238.

2. MISSION ROUTE

Departed Korat and after refueling proceeded overland, via Channel 97, across the Red River delta to the target. Egress was overland. (See also Event III-233).

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1

6 750-lb bombs
1 AIM-9B
2 450-gal tanks
1 QRC-160 pod
IFF standby

(BLUE 2, 3, 4 were probably identical except for the lack of AIM-9B on 2 and 4.)

MIG-17

Drop tanks
Camouflaged

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility very good, some scattered cumulus clouds in the target.

BLUE 1

Altitude: 7000 ft
Heading: 280-300°
Speed: 550-600 kts
Fuel State: 10,000

Flight Formation: BLUE 1 had just pulled off the target. Other flight members strung out behind.

5. INITIAL DETECTION

On pulling out from his bomb run, BLUE 1 saw a camouflaged airplane at 10 o'clock low, turning to the left. The airplane was about 1000 feet away.

6. ACTION INITIATED

As BLUE 1 continued to observe the airplane, he saw a red star on the aircraft which identified it as a MIG. BLUE 1 then pulled in behind the MIG, who was opening on BLUE 1.

7. SITUATION DEVELOPMENT

The MIG apparently did not see BLUE 1 and without a sight, BLUE 1 fired 500 rounds at the MIG, hitting the MIG in the right wing. The MIG caught fire and broke down and to the right. BLUE 1 could not follow, but BLUE 2 saw the MIG burning. BLUE 1 is credited with a kill.

8. ORDNANCE

(No. Fired/No. Hits)

	<u>Cannon</u> <u>20mm</u>	<u>Remarks</u>
BLUE 1	2/1	Two bursts for a total of 500 rounds.

9. EQUIPMENT PROBLEMS

None

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10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	4000	900	53	Primarily TAC experience. First time he had seen a MIG.

Comments on this Encounter:

Felt his training and long experience helped, since things happened so fast that he was forced to react without thinking about it. An individual with less experience would have had some problems.

Would have liked a shorter-range missile.

Comments from Overall Experience:

Wants to be able to switch from ground attack mode to air-to-air attack without letting go of throttle and stick.

Would like a computing gun sight that can be used for missiles-air at the same time.

The enemy does not hesitate to use flak even when there are MIGs in the area. They appear to have a system in which the AAA outside a given corridor will shoot across or over the corridor where the MIGs are operating. In this case the MIGs apparently have an altitude restriction. SAMs are also fired when the MIGs are up.

11. DATA SOURCES

Project Interviews: BLUE 1, 6 June 1967

Messages, Reports: 388TFW 131145Z May 1967 OPREP-3 DOI 1654
388TFW 131208Z May 1967 OPREP-3 DOI 1658

12. NARRATIVE DESCRIPTION

BLUE Flight was one of four flights attacking JCS 34.00. BLUE Flight was the last flight to hit the target, and the force had proceeded inbound in a gaggle.

Inbound to the target BLUE Flight got launch lights intermittently but no SAMs were launched. The IRON HAND Flight, which proceeded the strike flights, indicated that it was probably a MIG day. MOTEL, the warning agency, also was broadcasting numerous MIG warnings over guard channel. No flak was seen inbound.

As BLUE Flight proceeded inbound, they heard the first flight to hit the target call, "MIGs over the target." BLUE 1 concentrated on acquiring the target, and as he rolled in he heard members of previous flights calling that they were engaged with MIGs.

BLUE 1 concentrated on the target, and dropped his ordnance. As he started to pull the nose up he looked left and low and saw a camouflaged airplane. At this time BLUE 1 was at 6,000 to 7,000 feet altitude, in full afterburner, heading 280° to 300°, with a speed between 550 and 600 knots. The MER and external tanks were still on the airplane.

BLUE 1 felt that it was not unusual to see a camouflaged airplane, when hitting a target, due to the proximity of other friendly aircraft. When first seen, the aircraft was about 1000 feet away at 10 o'clock low. The aircraft was in a left turn and was going faster than BLUE 1.

As BLUE 1 continued to observe the aircraft he saw red stars on it and therefore recognized it as a MIG. (BLUE 1 felt that perhaps the MIG was attempting to position on F-105s which had already struck the target and never saw him.) BLUE 1 then saw the big vertical tail and identified it as a MIG-17. He did not notice the external tanks until they were seen in the gun camera film.

The MIG made no evasive maneuvers and BLUE 1 pulled in behind the MIG and started firing. He observed no hits, and realized that this was due to the fixed-sight piper which was set at 126 mils for bombing.

BLUE 1 then stopped firing and was going to set up the sight when the MIG reversed to the right. BLUE 1 then had to pull hard to stay with the MIG. BLUE 1 pulled his nose past the MIG and started firing again, still without a computing sight. As BLUE 1 passed his bullet stream through the MIG, he observed hits on the MIG's right wing tip, and then an explosion at the right wing root. BLUE 1 also saw hits on the MIG's nose and some pieces coming off the airplane.

When he opened fire the second time, BLUE 1 scored hits at about 2000 to 2200 feet range. The first attempt was made at a closer range since the MIG was pulling away from BLUE 1.

When the MIG was hit, he broke down sharply and to the right. As the wing exploded, BLUE 1 stopped firing, then broke left and passed over the MIG. The MIG at this time was at about 110° to 120° of bank. BLUE 1 heading in a generally southeasterly direction could then see Thud Ridge.

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BLUE 1 looked back and saw the other members of his flight at 7 o'clock, 3000 to 4000 feet back. He continued to turn and the flight rejoined. No flight member except BLUE 1 actually saw the MIG-17. However, when coming off the target one other flight member (OPREP indicates BLUE 2, interview says BLUE 3) saw an explosion and thought that BLUE 1 had been hit. While seeing this, the flight member was turning right as a pre-planned post-target jink and when he turned back to the left BLUE 1 came up in front. No flight member saw the MIG impact.

The whole encounter was estimated by BLUE 1 to have lasted 5 to 90 seconds.

In all firings BLUE 1 expended a total of approximately 500 rounds of ammunition. BLUE 1 fired the gun at the MIG because he was too close to fire the SIDEWINDER. By the time the MIG had gained separation, he was maneuvering too much for BLUE 1 to use the missile.

While in the target area BLUE 4 saw a SAM but no evasive action was required. The flight did encounter intense 37/57/85mm AAA from the target area.

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Event III-231

Aircraft Involved: Four F-105s vs 4 MIG-17s

Results: No damage

Vicinity of Encounter: 21°17'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/about 1623H

Four F-105Ds (BLUE Flight) were part of a strike force of 16 aircraft attacking the Vinh Yen Army Barracks (JCS 34.00). BLUE Flight was performing flak suppression for the other flight members. The actions of the other aircraft of this force are described in Events III-230, -233, and -238. The probable order of flights striking the target were the flights of Events III-230, -231, -233, and -238.

2. MISSION ROUTE

Departed Korat and after refueling proceeded overland via Channel 97, across the Red River delta direct to the target. Egress was also overland. (See also Event III-235).

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4
4 CBU-24s
2 450-gal tanks
1 QRC-160 pod
1 AIM-9B SIDEWINDER on B-1 and B-3 only

MIG-17

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility good with scattered clouds over the target.

BLUE 1, 2

Heading: 250°
Altitude: 6,000 ft
Airspeed: Unknown
Fuel State: "

Flight Formation: "

5. INITIAL DETECTION

BLUE Flight sighted 2 MIG-17s over the target as they rolled in.

6. ACTION INITIATED

BLUE Flight hit the target, ignoring the MIGs.

7. SITUATION DEVELOPMENT

As BLUE 1 and 2 jinked off the target, 2 MIG-17s appeared in front of them. BLUE 2 got a shot at one of these MIGs but scored no hits. Also a single MIG-17 passed between BLUE 3 and 4 as they started their roll-in.

8. ORDNANCE

(No. fired/No. hits)

	<u>20mm Cannon</u>	<u>Remarks</u>
BLUE 2	1/0	Fired 440 rounds

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 2	--	300	35

Comments on this Encounter:

BLUE 1 - Since they were dropping CBUs and did not require precise sighting, the sight was set up for guns-air. The MIG was too close to set up the sight if it was already set up.

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11. DATA SOURCES

Project Interviews: BLUE 1, 7 June 1967

Messages, Reports: 388 TFW 131140Z May 1967 OPREP-3 DOI 1655
388 TFW 131208Z May 1967 OPREP-3 DOI 1658

12. NARRATIVE

BLUE Flight was one of the first two flights on the target. As they rolled in, they sighted 2 MIG-17s (MIG 1,2) right over the target. By the time they expended their ordnance, however, MIG 1 and 2 were out of sight.

Immediately after pull off from the target, when BLUE 1 and 2 were jinking left at an altitude of 6,000 ft, heading 250°, they saw two more MIG-17s (MIG 3,4). At this time BLUE Flight was one mile south of 21°17'58"N/105°35'22"E. MIG 3 and 4 were at BLUE 1's 2 o'clock going to 10 o'clock at 1,500 ft range, and were turning in front of BLUE 1.

BLUE 1 was unable to achieve a firing position. BLUE 2 stayed with the MIGs as they moved to his 12 o'clock and fired 440 rounds at one (MIG 4) without any visible results.

As soon as MIG 4 saw BLUE 2 coming in on him, he broke hard right and passed between BLUE 1 and 2 who were about 300 ft apart at this time. MIG 4 was silver with two external wing tanks. The other MIG was not observed again.

As BLUE 3 and 4 started their roll into the target from 17,000 ft altitude a MIG-17¹ (MIG 5) passed between them. This MIG was headed in the opposite direction to BLUE 3 and 4.

When in the target area BLUE Flight observed AAA and a SAM which burst in front of the flight about 300 ft in front of BLUE 4.

¹Suspected to be one of the others seen.

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Event III-232

Aircraft Involved: Four F-4Cs vs nine MIG-17s

Results: No damage

Vicinity of Encounter: 21°40'N/105°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1610H

Four F-4Cs (BLUE Flight) were flying MIGCAP for a strike force which was attacking JCS 19.00 (see Events III-230, -231, and -233 for strike force MIG encounters). The flight of Event III-235 also was part of the MIGCAP.

2. MISSION ROUTE

BLUE Flight departed Ubon and after aerial refueling proceeded to the northwest end of Thud Ridge. It was in this vicinity that the engagement occurred. (See Event III-235.)

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 AIM-7E SPARROW
4 AIM-9B SIDEWINDER
1 370-gal external tank
1 600-gal centerline tank
1 QRC-160 ECM pod

MIG-17

Bright silver
Red star on vertical tail
Wing tanks on one MIG
One MIG had four broad orange and green stripes around rear of fuselage
Had afterburners
One had black rails on the wings

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds at 4000 feet with tops at 6000-8000 feet. Visibility good.

	BLUE			
	1	2	3	4
<u>Altitude</u> :	9-10,000 ft			
<u>Heading</u> :	096°			
<u>Speed</u> :	540 KTAS			
<u>Fuel State</u> :	14-16,000 lb			

Flight Formation: Pod formation on the left rear of the strike flights. Elements to the right, BLUE 2 on the left.

5. INITIAL DETECTION

BLUE Flight heard MIG calls from the agencies and inbound strike flights, but not for the MIGs that BLUE Flight saw. BLUE 1 backseat initially acquired four MIG-17s at 9 o'clock low. The MIGs were in an east-west turn at about 5000 feet altitude.

6. ACTION INITIATED

BLUE Flight went to manual frequency and turned left into the four MIGs.

7. SITUATION DEVELOPMENT

In the turn, BLUE Flight was jumped by four more MIG-17s. BLUE 2 was unable to communicate with BLUE 1 because he was on a different frequency, and became separated from BLUE 1 when he was attacked by two MIG-17s, one of which fired at him. BLUE 2 then disengaged and egressed.

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BLUE 1 then attacked the MIGs that were originally sighted and fired two SPARROWS at one MIG. Both SPARROWS missed when fired in the boresight mode. BLUE 1 subsequently made six more passes at the MIGs but could not achieve a firing position. Although BLUE 1 never saw a MIG fire at him, BLUE 1 backseat observed one MIG-17 to fire at them from out of range.

During the initial turn, BLUE 3 and 4 were attacked by four MIG-17s who overshot. BLUE 3 and 4 then started to come back but were fired on by two more MIG-17s. BLUE 3 and 4 disengaged again. On returning to the battle area, they saw four more MIG-17s, low. As BLUE 3 and 4 turned to attack the MIGs, they were, in turn, attacked by two more MIGs. The MIGs were firing. One of the low MIGs made a head-on pass, and when BLUE 4 reached BINGO fuel, they egressed.

8. ORDNANCE

	(No. fired/No. hits)		Remarks
	SPARROW AIM-7E	Cannon	
BLUE 1	2/0		Fired in boresight
MIG-17		1/0	At BLUE 2
MIG-17		1/0	At BLUE 1
MIG-17		1/0	At BLUE 3 and 4
MIG-17		1/0	At BLUE 3 and 4
MIG-17		1/0	At BLUE 3 and 4
MIG-17		1/0	At BLUE 3 and 4

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-4 Hours	Combat Missions	Remarks
BLUE 1 (Front)	3000	250	65	ADC experience
BLUE 2 (Front)	3300	200	65	TAC and KC-135
BLUE 3 (Front)	3000	170	54	TAC background

Comments on this Encounter:

BLUE 1 (Front) - Should have tried for more separation on the attacks.

BLUE 2 (Front) - When engaged, his airspeed was too low. This was due in part to the requirement to stay with the F-105s. Due to the location of the encounter the F-105s had not started to increase their speed for the run into the target.

It appeared that the MIGs were staying in a fixed geographical area. Therefore the tactic was to enter this at high speed and then dash out after the attack.

BLUE 3 (Front) - The lack of visibility at 6 o'clock prevented BLUE 3 from knowing when the MIGs had disengaged.

The biggest lesson learned was the experience gained for the backseater so he could know when the enemy was in a really critical position. The backseater needs to be able to provide this information since he can see more to the rear than the frontseat.

11. DATA SOURCES

Project Interviews: BLUE 1 (Front), 4 June 1967
BLUE 2 (Front), 4 June 1967
BLUE 3 (Front), 4 June 1967

Messages, Reports: 8TFW 131600 May 1967 OPREP-3 DOI 05234
8TFW 131220 May 1967 OPREP-3 DOI 05229
8TFW 140714 May 1967 OPREP-3 DOI 05243
AIM-7D/E Missile Performance Report, BLUE 1

12. NARRATIVE DESCRIPTION

BLUE Flight was part of the MIGCAP for a strike force attacking JCS 19.00. BLUE Flight was trailing the strike force about 2000 feet high and one-half to three-quarters of a mile back, and the other F-4 flight (Event III-231) was about half way up the line of bombers.

When the centerline tank became dry (at near the point where they crossed the Red River) it was jettisoned.

On the way into the target, just before the flight reached Yen Bay, they heard a MIG warning saying that the MIGs were north and west of Hanoi. The lead F-4 flight (Event III-231) also called a single MIG at 9 o'clock. Consequently, BLUE flight was looking for MIGs at 9 o'clock.

BLUE 1 backseat then saw four silver MIG-17s circling low at 9 o'clock. BLUE 1 then started a left descending turn into the MIGs. At this time BLUE 1 called the flight to make

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a prebriefed change from the common strike frequency to a manual frequency which would be used just by BLUE flight (a change not made by BLUE 2).

As BLUE flight turned to attack the four low MIG-17s, other MIG-17s made a coordinated attack on BLUE flight from the right and high. These latter MIG-17s were not seen by any member of the strike force or the other flight of F-4Cs. As a result of this attack, BLUE flight split up, and the actions of the three independent units will be described separately.

BLUE 1

BLUE 1 broke to the left after the four low MIGs. Since he did not know that BLUE 2 was out of radio contact, he assumed all was well since no calls of MIGs at 6 o'clock were received. After about 90 degree of turn, BLUE 1 looked for BLUE 2 but could not find him. However, BLUE 1 continued to maneuver, mostly in the vertical, and subsequently lost contact with BLUE 3 and 4 also.

As BLUE 1 continued to turn, he again saw the original four low MIG-17s going around in a small orbit at about 2000 feet altitude. BLUE 1 was in a good position so he started an attack. However, since the aircraft he was attacking was tail on, he was not sure if they were BLUE 3 and 4 or MIGs. At a range of about 2 miles, BLUE 1 made positive identification and obtained a lock-on in the boresight mode. At about one and one-half miles, BLUE 1 fired a SPARROW missile. When he fired, BLUE 1 was at 480 KTAS, and 3000 feet altitude pulling a 2 g, in a slight climb. The MIG-17 was at about 300 knots. About the time BLUE 1 fired, the MIG-17 had tightened his turn and was pulling 6-8 g's in a 90 degree bank. BLUE 1 kept tracking the MIG with the pipper during the missile flight. The SPARROW seemed to guide, but did not make the turn and missed the MIG by 200-300 feet, passing behind.

BLUE 1 then pulled some lead on the MIG-17 and about one-half mile range fired the second SPARROW. BLUE 1 had pulled sufficient lead so that the MIG was just on the radome. The missile went ballistic and passed 100 feet in front of the MIG. When the second missile was fired, BLUE 1 and the MIG were at about the same altitude and airspeed as the first shot, with the MIG still in a high-g turn. At the second firing the MIG was almost 90 degree angle off to BLUE 1.

Although BLUE 1 thought he was firing in full system, interlocks out, the backseat had not switched to full system. Therefore, BLUE 1 fired in the boresight mode with a range lock.

Before firing, the select and ready lights were indicating satisfactory. The polarization was linear and clutter was normal. Gate selection was wide.

BLUE 1 then went into a high speed yo-yo to reposition on the MIGs. He pulled up to 8-10,000 feet altitude, clearing his 6 o'clock. The MIGs were still turning in their "wagon wheel," so BLUE 1 went 4-5 miles away and then descended low and approached the MIGs at 600 knots, trying to get a lock-on. BLUE 1 did not stay high for long periods due to the threat of SAMs. BLUE 1 made 6 passes, similar to the one described above, and although he obtained a radar lock-on to a target on two of these, no ordnance was fired. This occurred, since that by the time acquisition and lock-on was completed, BLUE 1 was too close. As BLUE 1 would start his attack, the MIGs would start to turn into him and three of the attacks resulted in head-on passes. The passes were not all made on the same MIG. All of the lock-ons that BLUE 1 achieved were made in the boresight mode. Due to the MIGs' maneuvers, BLUE 1 was unable to achieve a tail shot with a SIDEWINDER.

During the maneuvers BLUE 1 backseat was clearing the 6 o'clock, since he was able to see MIGs closer to the 6 o'clock than BLUE 1 front. Although the MIGs tried to get into a firing position, they were unsuccessful except for one case. In this situation BLUE 1 back saw a MIG-17 firing but the MIG was out of range.

BLUE 1 called BLUE 3 and 4, and after 3-4 minutes located them. Sometime during BLUE 1's passes he saw BLUE 3 and 4 making a head-on pass with a MIG.

BLUE 1 reached BINGO fuel as the strike force was passing back through the area, so he egressed. When BLUE 1 reached the tanker, the flight of Event had preceded him.

BLUE 2

During ingress BLUE 2 heard MIG calls, one for a silver airplane, but was unable to identify them as having been made by any specific flight. When BLUE Flight was several minutes prior to the turn point, BLUE 2 heard a call of MIGs at 9 o'clock.

BLUE 2 then saw BLUE 1 start a gradual left turn, but BLUE 2 did not see any MIGs. BLUE 2 continued to look for MIGs and then noticed that BLUE 1 had increased his turn to the left. At this time BLUE 2 went to afterburner and executed a barrel roll over the top to get on the outside of BLUE 1's turn and get into position.

As BLUE 2 dropped down on BLUE 1's right wing, BLUE 2 front looked to his left and saw a single MIG-17 about 1200-1500 feet away, making a diving turn from 7-7:30 o'clock. BLUE 2 was heading about east and the MIG was approaching from a southerly heading.

BLUE 2 front had prebriefed to have the backseat change radio channels, but this was not accomplished. Therefore, the other flight members did not hear BLUE 2's call of "MIGs at 7 o'clock." Also BLUE 1 did not see BLUE 2's situation.

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BLUE 2 did not realize that he was on the strike frequency so he then started to turn right to permit BLUE 1 to sandwich the MIG. As BLUE 2 started to turn, BLUE 2 back called for a tank drop, and since BLUE 2 was at 380 KIAS at this time, he jettisoned the left outboard tank. (The centerline tank had been previously jettisoned.) When the tank was jettisoned the first MIG broke off. (This was seen by BLUE 3 backseat.)

As BLUE 2 continued in his right break, he was attacked by another MIG-17 who was shooting at BLUE 2. This MIG was about 750-1000 feet away. BLUE 2 backseat could see the underside of the MIG and the tracer ammunition. BLUE 2 at this time was at 6 g in burner but at a low airspeed.

With the backseat keeping track of the MIG, BLUE 2 then unloaded and tried to pick up airspeed, and at the same time attempted to jink sufficiently to spoil the MIG's tracking solution. BLUE 2 passed through a cloud at about 4000 feet and then saw the Red River. He did a 180 degree turn and since neither the MIG nor the other flight members were seen, BLUE 2 then egressed to a position outside of SAM coverage. On instructions, he then went to the tanker.

BLUE 3 and 4

BLUE 3 and 4 heard the MIG calls from the F-105s indicating MIGs to the left. They followed as BLUE 1 went into a left turn, selecting afterburner to stay with him. The left turn took them away from the strike force and after about 20 degrees of turn BLUE 3 saw a MIG-17 off to the left, making a 90 degree, low attack on BLUE 3 and 4. The MIG was pointed directly at BLUE 3 at this time, making it difficult to judge the distance to the MIG.

BLUE 3 continued to unload, thinking that BLUE 1 had seen this MIG; therefore, he did not call it. As the MIG closed, BLUE 3 and 4 tightened their turn and the MIG over-shot. There were three more MIGs behind the first one. The second two were together, followed by a single MIG at the end. During this turn BLUE 3 backseat called a MIG-17 on BLUE 2.

At this time BLUE 3 and 4 split off from BLUE 1 and 2, turning inside from the right, and unloaded and accelerated to about 600 knots, after about 180 degrees of left turn. At this time BLUE 3 started to pull the nose up to turn back, but the backseat called two MIG-17s at 6 o'clock shooting. Although the MIG-17s were at about 1200 feet range, they were not visible from the front seat, and BLUE 3 felt they were not an immediate threat. He continued a 2 g descending turn and headed for the Red River.

BLUE 3 could not tell when the MIG disengaged due to the poor visibility at 6 o'clock. He also was not communicating well with the backseater (semantics confusion, not equipment problems).

BLUE 4 stayed with BLUE 3 throughout the encounter. They both came under 85mm AAA fire from along the Red River. When BLUE 3 reached the Red River he came out of afterburner, turned, slowing to 400 knots and jettisoned his external tank. Then BLUE 3 and 4 selected afterburner and after contacting BLUE 1 returned to the battle area at 520 knots, and 5000 feet altitude, heading east. The fuel state at this time was about 8000 pounds.

BLUE 3 then saw four MIG-17s in a left turn at about 10 o'clock low. The MIGs were at about 3000 feet, so BLUE 3 started to execute a high speed yo-yo to 10,000 feet altitude to position for an attack. As he passed through 6000 feet, BLUE 3 backseat called two MIG-17s at 6 o'clock. These MIGs were shooting at BLUE 3 and 4.

BLUE 3 and 4 then unloaded and continued to turn. The two MIGs at 6 o'clock fell behind, out of position. The MIGs which were seen at low altitude reversed in a right turn, and as BLUE 1 continued his left turn at 3 g he spotted a MIG-17 in a right turn. BLUE 1 was about 40 degrees angle off and considered shooting, but the backseater was looking at the trailing MIGs. At this time another aircraft came into view. The aircraft was heading toward BLUE 3 and BLUE 3 had a shot, but hesitated for a moment to make a positive identification. By this time the aircraft, identified as a MIG, was inside missile range and after approaching to several thousand feet, the MIG broke right.

BLUE 4 at this time called BINGO with 6000 pounds of fuel so BLUE 3 and 4 egressed by unloading and accelerating to 600 knots. As they crossed the Red River they again received AAA fire and a SAM was fired, passing between BLUE 3 and 4.

BLUE 3 and 4 then continued to the tanker.

BLUE Flight was engaged with the MIGs for about 12 to 15 minutes.

It was felt that the MIG tactics in this encounter were to decoy the F-4s with the low flight of MIGs while a high flight of MIG-17s performed the attack.

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Event III-233

Aircraft Involved: Five F-105s vs three MIG-17s
Results: Two MIG-17s destroyed
Vicinity of Encounter: 21°28'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/About 1620H

Four F-105Ds (GREEN Flight) were part of a 20 aircraft strike force attacking the Yen Vien Railroad Yard (JCS 19.00). The other flights of this force which encountered MIGs were those described in Events III-237 and -238. The MIGCAP for this force was provided by the aircraft of Event III-232.

There was IRON HAND, and ECM (B-66 aircraft) support for this mission.

2. MISSION ROUTE

GREEN Flight departed Takhli and proceeded to refuel on GREEN ANCHOR. The flight then proceeded to the Red River on a heading of 030 and then on a heading of 090 to Thud Ridge. They then proceeded down Thud Ridge to the target. Egress was the reverse route.

3. AIRCRAFT CONFIGURATIONS

F-105D GREEN 1, 3

Centerline MER rack (Stores had already been jettisoned on the target)

2 450 gal tanks (dry)

1 AIM-9B

1 QRC-160 POD

F-105D GREEN 2, 4

Carried a QRC-160 pod in place of the 1 AIM-9B.

IFF-standby; TACAN-receive only

MIG-17

Dull silver

One was observed to have an afterburner

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cumulus, clear below the clouds.

GREEN 1, 2, 3, 4

Altitude: 7000-7500

Heading: 260° turning from 310°

Speed: 0.9 Mach (550 knots)

Fuel State: 8000 lb

Flight Formation: Pod formation modified for MIG defense. GREEN 3 was line abreast of Lead. Element was to the right.

5. INITIAL DETECTION

While egressing two MIG-17s turned in front of GREEN Flight, about a mile away.

6. ACTION INITIATED

GREEN Flight attacked the MIGs.

7. SITUATION DEVELOPMENT

GREEN fired a SIDEWINDER at a MIG, resulting in a kill. GREEN 3 attacked another MIG and also shot him down with a SIDEWINDER. GREEN 3 was subsequently attacked by another MIG-17 who fired at him. GREEN 3 disengaged and the flight egressed without further encounters.

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8. ORDNANCE

	<u>SIDEWINDER AIM-9B</u>	<u>Cannon</u>	<u>Remarks</u>
GREEN 1	1/1		One MIG destroyed
GREEN 3	1/1		One MIG destroyed
MIG-6		1/0	At GREEN 3

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
GREEN 3	2500	3-400		ADC Experience

Comments on this Encounter

Don't try to turn with a MIG-17. Must attack only those MIGs that are in a 10-15 degree cone in front of the F-105, so that the speed can be kept up, and the MIG closed on rapidly.

A MIG flying in between other aircraft is a difficult target. During ingress the aircraft are spaced too tightly to fire.

If you have a two mile separation of flights, the SIDEWINDER can be fired at MIGs between the flights.

GREEN 3 liked the SIDEWINDER, and if the MIGs stayed out in force he would propose carrying the two missile pylon.

11. DATA SOURCE

Project Interview: GREEN 3, June 1967.

Messages, Reports:

355 TFW 131400Z May 1967 OPREP-3 DOTO-O-11685

355 TFW 131531Z May 1967 OPREP-3 DOTO-O-11691

12. NARRATIVE

GREEN Flight was the last flight to strike the target. On ingress, as GREEN Flight turned to go down Thud Ridge, the escort flight of F-4C (Event III-232) broke off to the left and became engaged behind GREEN flight, to the east. This engagement was still under way in the same area some four minutes later when GREEN 3 came back up the Ridge.

While coming down Thud Ridge, GREEN 3 had seen the IRON HAND aircraft off to the left at 10 o'clock, firing their SHRIKE missiles toward the target area.

During ingress MIGs were called by MIG alert, which indicated that the MIGs were at Hanoi and were moving to the northwest of Hanoi. GREEN 3 did see some MIG afterburner lights as the MIGs broke through the overcast about three minutes prior to the target. (This was at the same point at which MIGs were met on the way out.)

GREEN Flight expended its ordnance on the target and started to egress up Thud Ridge. A member of a previous strike flight had become separated due to engine trouble, and this F-105 (BLUE 2 of Event 162) had joined and was flying formation with the four members of GREEN Flight. GREEN 2 was on left of Lead, GREEN 3, GREEN 4 and BLUE 2 were stacked up to the right of Lead.

The flight of five members proceeded up Thud Ridge at a heading of about 310 deg. They passed through a cloud for about five seconds and on coming out found themselves at the turn point at the northwest end of Thud Ridge.

As they started to turn to the left one of the other flights called MIGs at the turn. GREEN 3 then saw two MIG-17s (MIG 1, 2) about 10 deg. off to the right and about a mile away. GREEN 1 called for the flight to attack the MIGs. GREEN 3 lit his afterburner at this time to gain speed.

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Event III-233

When sighted the flight was at $21^{\circ}28'N/105^{\circ}30'E$, heading 260 deg, at 550 knots at 7500 feet altitude. The MIGs were at about 1 o'clock to GREEN 3 and were at 7500 feet altitude, slightly descending, and turning to the right. This put GREEN flight at the MIG's 6 o'clock.

GREEN 3 rolled right and selected the MIG on left of the pair (MIG 2). As soon as GREEN 3 centered on the MIG, he received a tone from the SIDEWINDER. GREEN 3 had been off of the target for several minutes and he had set up for missiles.

At the same time as GREEN 3's attack, GREEN 1 selected the other MIG-17 (MIG 1) and commenced on attack. GREEN 1 fired his SIDEWINDER and the missile impacted directly on or very near the tail pipe. Pieces of MIG 1 immediately began coming off of the aircraft and grey smoke was trailing from the aft section. MIG 1 immediately broke hard left and headed down. GREEN 1 followed MIG 1 down and observed its impact at $21^{\circ}38'N/105^{\circ}28'E$. This impact was also observed by BLUE 1 of Event III-237.

MIG 2 who was under attack by GREEN 3, started a left hand turn, however GREEN 3 had no trouble tracking the MIG with about 10 deg of left bank and only 1 g on the aircraft. At 4000 feet range level, GREEN 3 fired and the missile tracked true and exploded at MIG 2's right rear quarter at 4 o'clock. Just after GREEN 3 fired, GREEN 1 crossed over in front, but was behind the SIDEWINDER fired by GREEN 3.

When hit, MIG 2 immediately rolled up into a steep left bank to about 45 deg of bank with oil or a light grey smoke emanating from the rear.

GREEN 3 lit afterburner and pulled up into a hard left turn to try to keep MIG 2 in sight. MIG 2 at this time was heading about 120 deg and going back to GREEN 3's 8 o'clock position. GREEN 3 pulled up to 8-9000 feet and in doing so reduced his speed considerably.

Since GREEN 3 heard more calls of MIGs in the area, he continued a left turn but started down to pick up speed. At this time, he lost sight of MIG 2. When last seen MIG 2 had started a right turn. BLUE 2 saw MIG 2 impact at $21^{\circ}31'N/105^{\circ}28'E$, and observed the tail to come off previous to the crash.

As GREEN 3 lowered his nose, he had completed about 180 deg of turn from his original heading. At this time GREEN 3 picked up a MIG-17 on the inside of GREEN 3's turn. This MIG-17 was MIG 6 of Event III-237. MIG 6 was above GREEN 3 and pointed at him. Although MIG 6 was shooting in the general area of GREEN 3, MIG 6 was too far away and was not pulling sufficient lead to threaten GREEN 3.

GREEN 3 felt that perhaps GREEN 4 was trailing and might be under attack so he rolled up and headed down at about a 30 deg dive until he reached 550 knots. By this time GREEN 3 could not see MIG 6.

GREEN 3 had separated from GREEN 1 and 2 on his initial attack on MIG 2. GREEN 4 had remained with him throughout the engagement although he did not see GREEN 3's SIDEWINDER detonate or the attack by MIG 6. GREEN 3 and 4 then egressed and by the time they reached the RED RIVER they had been joined by BLUE 2 and a single F-4C.

GREEN 3 did not see GREEN 1 fire his missile.

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Event III-234

Aircraft Involved: Four F-4Cs vs at least
ten MIG-17s

Results: Two MIG-17s destroyed

Vicinity of Encounter: 21°31'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1621H

Four F-4Cs (BLUE Flight) were part of a MIGCAP for a strike against JCS 19.00 (for strike flight events, see III-231, -232, -233). The flight of III-235 was also part of the MIGCAP.

2. MISSION ROUTE

BLUE Flight departed Ubon and refueled on ORANGE ANCHOR. From refueling, they proceeded direct to Channel 97, then direct to 21°38'N/105°55'E, then direct to 21°34'N/105°33'E, then direct to 21°05'N/105°55'E, then direct to 21°34'N/105°33'E, then direct to 21°38'N/105°55'E, then direct to Channel 97.

3. AIRCRAFT CONFIGURATION

F-4C BLUE 1, 2, 3, 4

4 AIM-7F SPARROW
4 AIM-9B SIDEWINDER
1 370-gal tank
1 QRC-160 pod
1 600-gal centerline tank
Camouflage paint

MIG-17

Bright silver, red stars bordered in gold on the wings
Had afterburner

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds at 4000 ft. Tops at 6000-8000 ft. Visibility good.

	BLUE			
	1	2	3	4
<u>Heading:</u>	270° turning from 330°			
<u>Altitude:</u>	9000-10,000 ft			
<u>Airspeed:</u>	550 kts			
<u>Fuel State:</u>	9000-10,000 lb			

Flight Formation: Pod element to the right, BLUE 2 on the left.

5. INITIAL DETECTION

While inbound, BLUE 1 backseat saw two MIG-17s low at 9 o'clock and called them. These MIGs were not a threat however and BLUE flight continued on with the strike force.

On egress BLUE 4 saw a MIG but it was lost in the clouds. Shortly thereafter, BLUE Flight saw an engagement between F-105s and MIG-17s.

6. ACTION INITIATED

BLUE 1 and 2 broke to go after the MIGs on the F-105s and BLUE 3 and 4 stayed high for cover.

7. SITUATION DEVELOPMENT

BLUE 1 started to attack one of the MIG-17s and fired two SIDEWINDERS at him as the MIG reversed. One SIDEWINDER hit the MIG for a kill.

BLUE 1 saw two more MIG-17s high and fired a SIDEWINDER at them. BLUE 1 did not have a tone and the missile missed. BLUE 1 attacked a third MIG with a SPARROW but the MIG and missile both disappeared into a cloud.

During the initial break, BLUE 2 became separated and egressed separately from the rest of the flight.

BLUE 3 and 4 saw a MIG and BLUE 3 locked on and fired three SPARROWS at the MIG. One hit and destroyed the MIG.

BLUE Flight then egressed.

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Event III-234

8. ORDNANCE

	(No. fired/No. hits)			Remarks
	SPARROW AIM-7E	SIDEWINDER AIM-9B	Cannon	
BLUE 1	1/0	3/1		Tried to fire two SPARROWS; one MIG kill
BLUE 3	3/1			Tried to fire two SPARROWS; one MIG kill
MIG-17			1/0	At BLUE 4

9. EQUIPMENT PROBLEMS

The centerline tank on BLUE 4 would not jettison.

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-4 Hours	Combat Missions	Remarks
BLUE 1 (Front)	4200	825	22	
BLUE 3 (Front)	2800	150	25	Second Route Package VI mission
BLUE 3 (Back)	450	250	68	
BLUE 4 (Front)	3500	150	34	All fighter experience

Comments on this Encounter:

BLUE 1 - This was the first time that he saw indications of coordinated tactics between two flights of MIGs. This required the F-4s to keep flight integrity and element support. The offensive split is not any good if you are outnumbered.

The MIG tactic displayed on this day was as follows:

There were two groups of MIG-17s. One was a low element who stayed in a tight turn. There was also a high element of two or a flight of four. As the F-4s would attack the low element, the high flight could achieve an attack position. As the F-4s would disengage, the MIGs would switch with the low element floating high, and the high flight staying low.

BLUE 3 (Front) - On this day, SAMs were fired at them, and the F-4s dropped chaff. It was felt that the SAMs exploded in the chaff clouds. The Air Force and the Navy had experienced good results from chaff against SAMs. However, the F-4s had no chaff dispenser so the chaff was carried in the speed brakes. The chaff was dropped just before a turn since the ECM pod coverage was limited during maneuvers. There should be an integral chaff dispenser on the aircraft.

Must stay in the vertical in order to successfully fight the MIG-17. Most of the fighter pilot training and experience is to get in close for a gun kill and this has become something of a reflex. It will take a lot of training to educate pilots to keep back in missile parameters. Due to the lack of experience, pilots returning with a little excess fuel were practicing air combat tactics.

BLUE 3 (Back) - Even though the first lock-on failed, a second try was worthwhile since the second lock-on held. It pays to keep trying. The battle is not over just because you have fired.

BLUE 4 (Front) - The man in the backseat was helpful due to the extra set of eyes since he could keep track of the MIGs. The failure of the centerline tank to jettison could have caused real problems if they had not disengaged when they did. The performance with the tank on is reduced sufficiently that BLUE 4 felt he could not successfully disengage or fight the MIG-17.

The flight was prebriefed for the wingman not to call MIGs unless they were a real threat.

It was important for the F-4 to be worked in the vertical. The vertical was used for two purposes, to out-zoom an enemy and to help reduce your turn radius. However, the maneuver was not used for both purposes at the same time (i.e., either/or).

The roll axis was used (i.e., a roll about the longitudinal axis) to reduce the angle off for AIM-9 firing.

When the element lead pulls out from a vertical maneuver, the wingman must use a roll opposite to the leader's direction of turn in order to stay in place. This makes the roll rate important, as well as slab (horizontal tail) authority.

11. DATA SOURCE

Project Interviews: BLUE 1 Front, 2 June 1967
BLUE 3 Front, late June 1967
BLUE 3 Back, 4 June 1967
BLUE 4 Front, 4 June 1967

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Event III-234

Messages, Reports: 8TFW 13122Z May 1967 OPREP-3 DOI 05229
8TFW 140714Z May 1967 OPREP-3 DOI 05243 Sections I and II
8TFW 131600Z May 1967 OPREP-3 DOI 05234
8TFW 140926Z May 1967 OPREP-3 DOI 05252
AIM-7D/E, Missile Performance Report BLUE 1 and 3

12. NARRATIVE DESCRIPTION

BLUE Flight was part of a MIGCAP supporting a strike force composed of 20 F-105 aircraft which were attacking JCS 19.00. The first three F-105 flights were in a "V" formation; two other flights followed 2 miles back. BLUE Flight was with the first three flights while the other MIGCAP flight (Event III-233) trailed the last F-105 flight.

The centerline tanks were jettisoned near Yen Bay but the tank of BLUE 4 would not release. Although this could have caused an abort, it was decided to continue on with the hung tank.

As the flight turned right to a heading of east, they heard MIG calls of 30 miles; 40 miles and then 50 miles northwest of Hanoi so they felt that they would see MIGs. About halfway between the Red River and Thud Ridge, BLUE 1 backseat saw two MIG-17s very low at 9 o'clock and called them out. BLUE 1 front did not see these MIGs as they passed under a cloud, but BLUE 3 did. Since the MIGs were not a threat to the strike force, BLUE flight maintained position and continued on.

About one minute later, MIGs started to threaten the last two strike flights and the other CAP flight (Event III-332) went after these MIGs. BLUE 1 heard the communication from that flight that they were changing frequency and, as prebriefed, BLUE Flight also changed over to an auxiliary channel. At this time the strike frequency was severely cluttered with SAM, AAA, and MIG calls from the strike and IRON HAND flights.

As BLUE Flight started down Thud Ridge, they heard the communications¹ resulting from the start of the engagement described in Event III-231. BLUE 1 contacted the lead of that event and inquired if help was needed.

The reply was "I've got one" and BLUE 1 interpreted this to mean there was one MIG, so BLUE Flight continued on with the strike force after advising the other F-4 flight.

As BLUE Flight continued down Thud Ridge they received 57mm and 85mm flak from the southern part of the ridge. Also four SAMs, in trail, were fired at the flight but they did not appear to guide. As the F-105s hit the target, BLUE Flight made a turn and positioned to escort the egressing F-105 flights back up Thud Ridge.

The F-105 force was spread out as they started back up the ridge. There were singles as well as groups of four and six; some were going up the west side, and others were going up the east side of Thud Ridge. BLUE Flight elected to stay with the group on the east side. Although BLUE Flight could see the F-105s on the west side of the ridge, they were partially obscured by the broken cloud deck. BLUE Flight found it difficult to keep up with the egressing force due to the F-105's high airspeed. Also during this time, two more SAMs were fired at BLUE Flight and BLUE Flight dropped some chaff.

On the way up the ridge, BLUE 4 called a MIG at 10 o'clock very low. BLUE 1 did not see this MIG and called BLUE 4 to take it. BLUE 3 then saw the MIG at 12 o'clock but he, too, lost sight of the MIG as it went into cloud. Several members of the flight observed the MIG at different times but they were unable to maintain contact long enough to start an attack.

All during the egress, BLUE Flight had continued to monitor the conversation of those members of Event III-233 which were engaged with MIGs. The number 3 man of this event requested aid; and at the northwest of Thud Ridge, BLUE Flight turned west to assist the other F-4s.

At this time, BLUE Flight was 2-3 miles east of Thud Ridge; and as they turned to a westerly heading, BLUE Flight saw at 10 o'clock a dogfight on the west side of the ridge between four F-105s and four MIG-17s.

The MIGs were first seen as flashes of silver at 5 to 10 mile range, and then were identified as enemy at 2 to 3 miles. The MIGs and the F-105s appeared to be in a level left turn at about 6000-7000 ft altitude in the vicinity of 21°30'N/105°25'E.

BLUE Flight jettisoned tanks (except BLUE 4's centerline tank), went afterburner, and approached in two elements in trail. On reaching the area of the engagement, BLUE 1 and 2 broke down into the MIGs while BLUE 3 and 4 crossed over to provide high cover. When they reached the area of the F-105s, BLUE Flight was at Mach 1.2. The elements split and the following description covers first, BLUE 1 and 2, and then BLUE 3 and 4.

BLUE 1 and 2

As BLUE 1 and 2 started after the MIGs, they observed the F-105s to be scattered. BLUE 1 and 2 concentrated on one F-105² with two MIG-17s about 1000 ft behind, firing at the F-105. BLUE 1 observed this from 2 miles out while he was in his descent. Since BLUE 1 was descending in afterburner, he was overtaking these MIGs rapidly.

¹Such as "You got MIGs at 7 o'clock"; "Little burner"; "Pull more g's"; "Get your airspeed back up."

²BLUE 1 thinks there could have been two F-105s.

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Event III-234

The F-105, which was in a hard left turn, executed a 270° high-g snap roll underneath and headed for the deck out to the right. The MIGs were forced to overshoot and started to reverse to the right to go with the F-105.

BLUE 1 had been in a slight left diving turn and when the MIGs reversed, he started to pull up because he no longer had a good attack pass. (BLUE 1 could not turn with the MIGs.) Just before the MIGs disappeared under the radome at 6000-7000 ft range, they reversed to the left; so BLUE 1 continued his dive, put the piper on the second of the MIGs, and fired two SIDEWINDERS.

When he fired, BLUE 1 did not remember (as per interview) having a tone, although a good tone was reported in the OPREP sources.¹ He was at about 500 kts at 6000 ft indicated altitude with the wings level in a slight dive. The MIG was in a slight left turn and BLUE 1 was about 10° angle off. He had 200 kts overtake on the MIG. BLUE 1 had been unable to obtain a radar lock-on in this situation due to ground clutter. BLUE 1 had just pushed the stick forward and put the piper on the MIG. He had less than 2 g on the aircraft at firing.

After firing, BLUE 1 pulled off hard to the right and then reversed back to see the first SIDEWINDER detonate 30 ft behind the MIG. The second SIDEWINDER was unobserved. The MIGs, when first seen, had been in afterburner and had continued so for the entire engagement.

After the SIDEWINDER exploded, the MIG-17 continued on around to the left in a tight diving spiral, leaving his leader. The MIG was on fire from the left wing root all the way down the left side of the fuselage. Although BLUE maneuvered to try to keep contact with the MIG, the MIG was lost from BLUE 1's sight as it maintained the diving spiral. However, BLUE 4 backseat observed the MIG to enter a spin at 1500 ft altitude, burning fiercely. No ejection was seen. Although no flight member saw the MIG impact, BLUE 1 is credited with a kill.

Shortly after losing sight of the MIG that he killed, BLUE 1 saw two MIG-17s high at 10 o'clock. The MIGs were in a hard left turn. BLUE 1 immediately pulled the nose over and without a tone, fired one SIDEWINDER. The missile went ballistic, but BLUE 1 felt that it was fired too hastily to permit guidance and was fired outside g parameters.

At this time BLUE 1 was at 12,000-15,000 ft altitude. He then saw two MIG-17s at 8-9 o'clock heading down in a straight descent toward a cloud. The cloud was at about 3000 ft altitude. When seen, the MIGs were headed in the opposite direction to BLUE 1.

BLUE 1 turned and got behind one of the MIGs, within SPARROW range and with plenty of overtake. BLUE 1 achieved a lock-on in the boresight mode and switched to full system, interlocks out, although BLUE 1 was looking down on the MIG. BLUE 1 attempted to ripple fire two SPARROWS but the first one did not leave the aircraft.

When he fired, BLUE 1 was at about 4000 ft range. The MIG was at 5000 ft altitude and 0.78 Mach, heading about 200°.

BLUE 1 was at about 6000 ft altitude and 500 kts in a slight turn. He had first seen the MIG at about 2 miles range and lock-on was achieved at 1 mile. BLUE 1 fired under conditions of linear polarization and clutter override.

The SPARROW seemed to be tracking and both the MIG and the missile disappeared into the cloud at 21°36'N/105°23'E with the missile following by 1-1/2 to 2 seconds. BLUE 1 followed with a lock for sufficient time for missile intercept and then pulled off. Due to the size of the cloud, BLUE 1 was unable to check to see if the MIG came out of the cloud.

At this time, BLUE 1 recognized that he had lost BLUE 2 and was operating alone. Therefore, he called for BLUE 2 and both egressed.

BLUE 1 did not know exactly when BLUE 2 became separated; but during one turn, BLUE 1 turned hard into BLUE 2 and at the same time, BLUE 2 came very close to hitting an F-105. As BLUE 2 came over the top to dodge the F-105, he lost contact with BLUE 1. BLUE 2 then egressed.

BLUE 3 and 4

All of BLUE Flight saw the battle between the MIG-17s and F-105s about the same time. As BLUE Flight entered the battle, each element of BLUE Flight started after a separate target.

As BLUE 1 and 2 went after their MIGs, BLUE 3 backseat observed BLUE 1 to fire a missile and the missile to detonate near the wing root and the fuselage of a MIG-17.

As BLUE 3 and 4 entered the fight in a dive, BLUE 3 saw F-105s with two MIGs on their tails. He also saw two MIG-17s high but these were no threat. BLUE 3 also saw two more MIG-17s, inverted, in a rolling turn over the top, trying to dive on the F-105s. The MIGs were at 10,000 to 12,000 ft altitude.

¹The PIPPER was set for the AIM-9 so BLUE 1 should have had a tone.

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Event III-234

BLUE 1 was at Mach 1.2 at this time and since the last two MIG-17s were slow, he pulled up in an attempt to get a radar lock on them. BLUE 1 saw that he was going to be too close so he pulled up and barrel rolled to the outside. After completing this maneuver, he was still too close, so another one was executed. At this time, BLUE 3 was in a good position and achieved a radar lock-on one of the MIGs as the other split off.

BLUE 3 attempted to fire only two missiles from an overhead attack but inadvertently fired three. BLUE 1 had acquired the MIG in the boresight mode and had switched to full system, interlocks out. Just after the first missile was fired, the radar broke lock. BLUE 1 backseat immediately went back to boresight and obtained another lock-on and then switched back to full system. Shortly after the second radar lock was achieved, the second missile was fired followed by the third.

The first missile was fired when BLUE 1 was at about 10,000 ft altitude, at Mach 0.9, pulling 2-3 g's. The MIG was at about 8000 ft at Mach 0.8 heading about 220° in a slight diving turn. BLUE 1 was in a 20° to 30° dive with about 20° angle off, not in afterburner. The closing velocity was 50 to 100 kts. BLUE 1 had detected and locked on to the MIG at 2-1/2 mile range. For all firings, the system was set for linear polarization, normal clutter and narrow gate.

The first missile dropped below the nose out of BLUE 3's sight, failed to guide, and missed the MIG by about 100 ft. The second missile, fired in about the same conditions as the first except for a slightly lower altitude, dropped out of sight but reappeared, and was seen by BLUE 3 to impact the MIG-17 on top of the fuselage just behind the canopy: The MIG-17 disintegrated, resulting in a kill for BLUE 3. When the second missile was fired, the system had been switched to full system by the backseater and interlocks were still out. The third missile was fired in the same parameters as the second. It was last observed apparently guiding to the vicinity of the destroyed MIG-17. When hit, the MIG was at about 6000 ft altitude. All firings were made at 4000 to 5000 ft range.

Shortly after the third missile was fired, BLUE 3 was at a range such that he needed 4 to 5 g's to keep track of the MIG.

Shortly after the MIG exploded, BLUE 3 heard a call indicating MIGs at 3 o'clock. No call signs were given so BLUE 3 turned and checked that position but no MIGs were seen. BLUE 3 reversed and started to look for other MIGs but BLUE 4 called BINGO fuel.

BLUE 4 had stayed with BLUE 3 throughout the fight despite the hindrance of the centerline tank. (BLUE 3 had purposefully limited his use of afterburner.) When BLUE 4 called BINGO, he had 3000 pounds less fuel than BLUE 3.

As BLUE 3 and 4 entered their vertical maneuver, just prior to BLUE 3's firings, BLUE 4 observed a MIG-17 make a pass. BLUE 4 was climbing at the time and the MIG was making a level turn, and had about 40° angle off. Therefore, although the MIG was firing his cannon, he was not a threat to BLUE 4 and this MIG was not called to BLUE 3.

BLUE 4 watched BLUE 3 reverse in the vertical and fire his missiles and as the MIG overshot, BLUE 4 rolled in the opposite direction of BLUE 3's reversal and observed the first missile to miss the MIG-17 by about 100 ft; the second one hit the MIG. BLUE 4 did not see BLUE 3's third missile but he did not have BLUE 3 and the MIG under constant observation.

After BLUE 4 called BINGO, BLUE 3 saw two flights of F-105s with MIG-17s after them but the F-105s were accelerating away from the MIGs and were not in trouble. He saw the MIGs start to break away and BLUE 3 and 4 then unloaded and jinked out, joining some F-105s for egress.

BLUE 3 first saw BLUE 1's MIG spinning and also saw BLUE 1 once during the battle.

Although BLUE 3 was looking down on the MIG when he achieved a radar lock, the use of the boresight mode put the ground line in a different location than the MIG return and permitted acquisition.

BLUE 3 front did not realize that three missiles had been fired until he noticed during egress that three of the lights were out. BLUE 3 front was not certain which of the missiles hit the MIG. His plan was to fire two missiles at the first MIG and then drop back and fire two at the second MIG.

BLUE Flight reported 37/57mm fire from 21°30'N/105°25'E during the MIG encounter.

As part of the overall action of 12, 13, and 14 May 1967, the USAF Tactical Analysis Bulletin 67-4 indicated that intensity of MIG operations on those days was the highest that had been experienced at the time of the Bulletin publication (June 1967).

The aircraft of Events III-232 and III-233 could have encountered the same group of enemy aircraft; therefore, some of the MIGs seen by BLUE Flight of III-234 could be the same MIGs as those seen by the F-4s of Event III-231.

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Event III-235

Aircraft Involved: Four F-105s vs 5 MIG 17s

Results: No damage

Vicinity of Encounter: 21°19'N/105°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1621H

Four F-105s (BLUE flight) were part of a strike force of 16 aircraft attacking the Vinh Yen Army barracks (JCS 34.00). The actions of the other aircraft of this force are described in Events III-230, -231, and -238. The probable order of flights striking the target were the flights of Events III-235, -231, and -230.

2. MISSION ROUTE

BLUE flight departed Korat and refueled on RED ANCHOR. From RED ANCHOR the flight proceeded direct to 20°28'N/103°43'E then direct to the target 21°19'25"N/105°36'21"E. Egress was direct to 21°00'N/104°54'E, then direct to RED ANCHOR for post strike refueling. The altitude to the target was 16,000 feet; from the target 10,000 feet.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

6 750-lb bombs (one aircraft had 6 500 lb bombs instead of the 750 lb bombs)

2 450-gal. wing tanks

1 AIM-9B (BLUE 1 and 3 only)

1 QRC-160 pod (BLUE 2 and 4 had 2 pods)

MIG-17

Silver

4. FLIGHT CONDITIONS PRIOR TO THE ENCOUNTER

Weather: 4/8 cover of scattered clouds. Visibility 15 miles.

BLUE 1, 2, 3, 4

Altitude: 15,000

Heading: Unknown

Speed: 0.9 Mach

Fuel State: -

Flight Formation: - Pod formation modified for MIG defense.
The element was up about 2000 feet high, with wingman almost level.
All members about line abreast.

5. INITIAL DETECTION

Just prior to roll in, BLUE 1 saw two MIG-17s, low. Inbound, BLUE flight had received MIG warnings from the agencies so they were looking for the MIGs.

6. ACTION INITIATED

BLUE flight proceeded to roll in on the target.

7. SITUATION DEVELOPMENT

BLUE 1 kept in contact with the two MIGs, and after bombing the target, started to attack them. Before he could fire on them, BLUE 1 was attacked by three more MIG-17s from 4 o'clock high. The lead MIG of this latter three fired on BLUE 1, and as BLUE 1 broke, the MIGs overshot and disengaged.

8. ORDNANCE

Cannon
MIG-3 1/0 at BLUE 1

9. EQUIPMENT PROBLEMS

None.

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Event III-235

10. AIRCREW COMMENTS

Experience	Total Hours	F-105 Hours	Combat Msns	Remarks
BLUE 1	5000	350	50	Had flown most of Century series fighters and the F-4.

Comments on this encounter

The MIGs had used a bait to try to trap the F-105s.

Comments on overall experience

BLUE 1: Liked the light indications on the F-105 to tell when the bombs come off.

There is a real switchology problem in going from air-to-ground to air-to-air. This needs to be simplified. There are too many switches to throw. In this engagement there was not enough time to do it.

Felt the MIG-17 would not use his radar for gun tracking so the radar warning would not do any good.

Liked the high speed at low altitude capability of the F-105.

11. DATA SOURCES

Project Interviews BLUE 1, 5 June 1967

Messages

388 TFW 131208Z May 1967 OPREP-3 DOI 1658

388 TFW 131141Z May 1967 OPREP-3 DOI 1656

12. NARRATIVE DESCRIPTION

BLUE flight was the lead flight of a strike force of 16 F-105s and BLUE 1 was the force commander. The 16 F-105s were in a "box" formation with two flights line abreast. Two flights of F-4s from Danang provided MIGCAP, flying behind and about 2000 feet higher than the strike force. While inbound to the target, BLUE flight heard warnings from the agencies (ETHAN), that MIGs were in the area. While at 15,000 feet altitude and just prior to roll in, BLUE 1 saw two silver MIG-17s (MIG 1, 2) flying in trail formation about 1000 feet apart. MIG 1 and 2 were about 10,000 feet below BLUE flight and did not appear to be making any attack.

BLUE flight then rolled in and just after setting up his bomb run with a roll into the left, BLUE 1, looked to his right and observed MIG 1 and 2 descend, almost parallel to BLUE 1's course, and start to make a left turn towards BLUE flight. At this time, it was not clear to BLUE 1 if the MIGs had seen him.

BLUE 1 released ordnance at 8000 feet, and as he came off the target he was going 0.9 to 0.92 Mach in minimum afterburner. The external tanks were still on. As soon as BLUE 1 got the nose up off the horizon he again saw MIG 1 and 2 who were at 10 o'clock level. The altitude was about 5000 feet.

BLUE 1, with the flight following in fingertip formation made a hard right turn to put the MIGs at 12 o'clock, and then, with the MIGs at about 2000 feet range in a hard left turn, BLUE 1 made a hard left turn to make a high deflection pass on MIG 1 and 2. At this time BLUE flight was at 21°19'N/105°36'E, heading about 340 degrees and the time was 1621H.

As BLUE 1 began to pull lead for a gun attack, he was attacked by three more MIG-17s (MIG 3, 4, and 5). The MIGs were in an echelon with MIG-4 and MIG-5 slightly behind MIG-3. These MIGs were silver in color with no markings noted. They made a quartering stern attack on BLUE 1 from 4 o'clock high. MIG 3 commenced firing across BLUE 1's left wing.

On seeing MIG 3, 4 and 5 attack, BLUE 2 called for BLUE 1 to break right. He called a second time that bullets were passing BLUE 1's wing. BLUE 1 had MIG 1 and 2 in the wind screen and was estimating lead (he did not have time to switch to a computing sight). When warned the second time, BLUE flight broke right and after about 40 degrees of turn reversed back to the left.

The right break caused MIGs 3, 4, and 5 to overshoot and they went over the flight to the south and were not seen again. The first two MIGs, "the bait" (MIG 1, 2) had

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Event III-235

initiated a hard climbing turn once they had brought BLUE flight behind them and were now 180 degrees out from BLUE flight heading in an opposite direction to MIGs 3, 4, and 5.

After the engagement BLUE flight egressed on a heading of 250 degrees at 10,000 feet altitude in MIG defensive formation (see paragraph 4).

BLUE flight observed AAA in the target area and saw two SAMS detonate in the distance but took no evasive action.

BLUE 2 was close enough to MIG 2 to see the spoilers on him.

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Event III-236

Aircraft Involved: Four F-105s vs three MIG-17s

Results: Two MIG-17 destroyed

Vicinity of Encounter: 21°33'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1622H

Four F-105s (BLUE flight) were part of a 20 aircraft strike force attacking the Yen Vien Railroad Yard (JCS 19.000). The other flights of this force which encountered MIGs were those described in Events III-237 and -238. The MIGCAP for this force was provided by the aircraft of Events III-232 and -233. There was an IRON HAND flight and B-66 ECM support also.

2. MISSION ROUTE

BLUE flight departed Takhli and after refueling crossed the Red River at about 21°37'N/104°55'E. From there they proceeded to 21°34'N/105°33'E. They then proceeded down Thud Ridge, north and east of Phuc Yen to the target. Egress was back up Thud Ridge. The attack on the target was on a south-southwesterly heading.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 3

6 750 lb bombs

2 450 gal tanks

1 AIM-9B

1 QRC-160 pod

BLUE 1 squawking IFF, Rest of flight IFF off TACAN receive only

TACAN receive only

BLUE 2, 4

6 750 lb bombs

2 450 gal tanks

2 QRC-160 pods

MIG-17

Dull Silver

No external stores

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cumulus clouds bases 3-4000 feet, tops 5-6000 feet. Visibility good.

BLUE 1, 2, 3, 4

Altitude: 7500-800 feet

Heading: 320°

Speed: 550 kts

Fuel State: 8000 lb

Flight Formation: Pod formation, element (BLUE 3 and 4) on the right of BLUE 1, almost line abreast, 1000 feet out, level.

5. INITIAL DETECTION

While egressing, BLUE flight detected three MIG-17s at 1000 feet, about 10 miles away. The MIGs were in a climbing right turn, heading west.

6. ACTION INITIATED

BLUE flight turned left to position at the MIG's 6 o'clock.

7. SITUATION DEVELOPMENT

The MIGs continued to turn right and started a head on pass at BLUE flight. As they turned BLUE 1 fired a SIDEWINDER which missed. As the MIGs continued to close from head on, BLUE 1 and 3 fired their cannon. BLUE 2 saw one MIG start to trail smoke and the following flight saw the pilot eject from one MIG and another spinning. BLUE 1 and 3 are each credited with a kill. The MIGs were not observed to fire.

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Event III-236

8. ORDNANCE

	(No. fired/No. hits)	Cannon 20mm	Remarks
	SIDEWINDER AIM-9B		
BLUE 1	1/0	1/1	One MIG killed
BLUE 3		1/1	One MIG killed

9. EQUIPMENT PROBLEMS

BLUE 3 had a pressurization failure.

10. AIRCREW COMMENTS

Experience

	Total Hours	F-105 Hours	Combat Missions	Remarks
BLUE 1	3300	690	97	This was third MIG engagement.
BLUE 3	1400	550	82	This was third MIG engagement.

Comments on this Encounter

BLUE 1

The gunsight is bad. The radar is such that a lock-on for ranging cannot be achieved at below about 10,000 feet altitude due to ground return. Unless full capability is used (radar mode) the sight does not compensate for bullet drop. The sight is not suitable for the environment. The switchology necessary to activate the sight is bad.

BLUE 3

Although he heard MIG calls inbound they did not register as being significant.

The aggressiveness of the flight enabled them to get the MIGs.

The pilots entering the theatre do not have sufficient experience.

The engagement was fought on terms advantageous to the F-105.

11. DATA SOURCES

Project Interviews: BLUE 1, June 1967; BLUE 3, June 1967.

Messages, Reports

355 TFW 131400Z May 1967 OPREP-3 DOTO-O-11685

355 TFW 131457Z May 1967 OPREP-3 DOTO-O-11687

355 TFW 131616Z May 1967 OPREP-3 DOTO-O-11688

12. NARRATIVE

BLUE Flight was on a strike against JCS 19.00. A strike force from Korat (See Events 157, 158, 159, 160) was hitting a target in the vicinity about 5 minutes after BLUE Flight TOT. This target was in the vicinity of BLUE Flight's egress route, consequently they were expecting to see MIGs.

On ingress, the force flew in a string of flights in trail, about one mile apart. Although MIG warnings were received, no MIGs were seen by the flight either inbound or in the vicinity of the target.

BLUE Flight struck the target first and was the first flight out during egress. Since MIGs were up but BLUE flight had not been attacked, they anticipated that they would see some.

While egressing up Thud Ridge, at 21°33'N/105°25'E on a heading of 320 deg, BLUE flight saw aircraft silhouetted against the white clouds. The aircraft were in a climbing, right turn, heading about west, 10 miles away, at 10-10:30 o'clock to BLUE flight. When first seen the MIGs were a little bit low. All of the flight members saw them simultaneously.

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Event III-236

After 3-4 seconds BLUE 1 and 3 recognized the aircraft as MIG-17s by the blunt nose. The three MIGs were in an element with a wingman in a fighting wing position on the lead. The third MIG-17 (MIG 3) trailed as a single aircraft element.

BLUE 1 called for an attack on the MIGs and BLUE Flight lit the afterburner to close on the MIGs. The tanks were not jettisoned. BLUE 1 intended to duck under the clouds so BLUE Flight descended. As the flight closed, the MIGs stayed in their right turn but before BLUE Flight could get into the clouds, the MIGs evidently saw the F-105s because they tightened their turn to the right, to start a head-on pass at BLUE Flight.

At this time BLUE 1 concentrated his attack on MIG lead while BLUE 3 concentrated his attack on MIG 3.

As the MIGs continued to turn right into BLUE Flight, the flight had to reduce their left hand turn.

When the MIGs reached about 5-6000 feet, BLUE 1 fired a SIDEWINDER at the MIGs. At firing BLUE 1 was almost head-on to the MIG-1 when he fired, and did not have a tone. BLUE 1 was straight and level in 1-g flight and fired the missile to try to break up the MIG's attack. The altitude at firing was 7000 feet. The MIGs had gone high in their turn, and were descending slightly as they headed for the flight. The missile went ballistic and passed 200 feet from the MIGs.

As the MIGs had turned, BLUE 3 had a broadside view of a MIG. Although he had a tone from his SIDEWINDER, he was pointed in the general direction of the sun and felt most of the growl came from that source. Therefore he did not fire.

As the MIGs closed to 3000 feet, BLUE 1 and 3, now in a slight (not more than 15 degree) right bank started to fire at the MIGs. They continued to fire in a single burst tracking the MIGs well, as they closed to about 1000 feet.

The MIGs passed by very rapidly within 300 feet of BLUE Flight. As they passed, BLUE 2 saw white smoke with a pink cast trailing from one of the MIGs.

At firing BLUE 1 had the sight set for missile-air but BLUE 3 was estimating lead with a fixed pipper depressed at 12 mils. BLUE 3 fired about 200 rounds at the MIG. BLUE 1 felt that the 15-20 foot diameter dispersion of the M-61 at the range of firing was enough to cover the MIG.

Members of a trailing flight of F-105s saw a pilot eject from one of the MIGs which was smoking and another MIG spinning. BLUE 1 and 3 are credited with kills.

As the MIGs passed over, BLUE 1 looked back to watch, then and saw some other aircraft behind them. He then called for the flight to "take it down". BLUE Flight reversed to the left, rolled, and broke for the deck.

The only aircraft BLUE 3 saw were some F-105s about a mile behind. BLUE lead felt that the flight was not in a good posture to turn after the MIGs and fuel was low so the flight egressed.

BLUE 2 and 4 did not fire.

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Event III-237

Aircraft Involved: Three F-105s vs six MIG-17s

Result: Two MIG-17s damaged

Vicinity of Encounter: 21°13'N/105°44'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1617H

Four F-105s (BLUE Flight) were part of a 20 aircraft strike force attacking Yen Vien Railroad Yard (JCS 19.00). The other flights of this force which encountered MIGs were those described in Events III-236 and -238. The MIGCAP for this force was provided by the aircraft of Events III-232 and -233.

2. MISSION ROUTE

BLUE Flight departed Takhli and ingressed to the target overland. Egress was via the reverse route.

3. AIRCRAFT CONFIGURATIONS

MIG-17

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cumulus, clear below clouds.

BLUE

Altitude: 6000 ft
Heading: 325°
Speed: Unknown
Fuel State: Unknown
Flight Formation: Unknown

5. INITIAL DETECTION

While egressing BLUE 1 sighted a single MIG-17 at 12 o'clock, who made a head-on pass at the flight.

6. ACTION INITIATED

The flight continued on.

7. SITUATION DEVELOPMENT

About one minute later BLUE Flight saw three MIG-17s and BLUE 1 attacked one of these, firing his cannon. Although BLUE 1 had to break off his attack when threatened by another MIG-17, the MIG was damaged.

Later another MIG-17 fired rockets at BLUE Flight without effect.

BLUE Flight also saw a MIG-17 crash, and another in a descending spiral, and saw a MIG attacking the number 3 aircraft of Event III-236. BLUE 3 got on this MIG's tail and damaged him.

8. ORDNANCE

	(No. fired/No. hits)		<u>Remarks</u>
	<u>Cannon</u> 20mm	<u>AA</u> <u>Rockets</u>	
BLUE 1	1/1		One MIG damaged
BLUE 3	1/1		One MIG damaged
MIG		1/0	

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience:

	<u>Total</u> <u>Hours</u>	<u>F-105</u> <u>Hours</u>	<u>Combat</u> <u>Missions</u>
BLUE 1	5800	350	80

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Event III-237

11. DATA SOURCE

Messages, Reports: 355TFW 131400Z May 1968 OPREP-3 DOTO-0-11685
355TFW 131456Z May 1968 OPREP-3 DOTO-0-11689
355TFW 131614Z May 1968 OPREP-3 DOTO-0-11690

12. NARRATIVE DESCRIPTION

After hitting the target BLUE 2 became separated from the flight.

While egressing the target area in the vicinity of 21°13'N/105°44'E at 1617H, at 6000 feet altitude, BLUE 1 sighted one MIG-17 (MIG 1) at 12 o'clock. MIG 1 made a head-on pass at co-altitude. MIG 1 and BLUE Flight continued on their respective headings without firing.

BLUE Flight continued on a 325° heading for approximately one minute when at 21°22'N/105°34'E BLUE 1 spotted three MIG-17s (MIG 2, 3, 4) in a gentle left turn at BLUE Flight's 10:30 high position at 8000 feet altitude. BLUE Flight was at the MIG's 6 o'clock.

BLUE 1 positioned himself on the number 2 MIG (MIG 3) and began firing. BLUE 1 fired from 1000 to 400 feet range, with an angle off of 40° at MIG 3's 8 o'clock, slightly high. BLUE 1 was forced to break off the attack on MIG 3 when the number 3 MIG (MIG 4) threatened BLUE 1's 6 o'clock position. BLUE 1 claimed damage to MIG 3.

BLUE Flight continued on course, jinking between 6000 and 8000 feet altitude. In the vicinity of 21°30'N/105°30'E, one MIG-17 (MIG 5) attempted to fire rockets at BLUE 1 and 2 from their 7 o'clock low position. The rockets fell short and dropped off without threatening BLUE Flight.

In the area 21°38'N/105°28'E, BLUE 1 saw one MIG-17 in a descending spiral. The MIG crashed into the ground. This was GREEN 1's kill of Event III-233.

At approximately 1620H, BLUE 3 sighted a MIG-17 (MIG 6) closing on GREEN 3 of Event III-233. GREEN 3 was after two other MIG-17s, one of which was trailing white smoke. BLUE 3 got into firing position on MIG 6 and fired one good burst, observing hits, before MIG 6 broke hard right and was lost from sight.

BLUE 2 saw another MIG-17 crash in the vicinity of 21°34'N/105°28'E. This was GREEN 3's kill of Event III-233.

BLUE Flight had received MIG warnings prior to their encounter. They also had contact with the CAP flights in the proximity but did not request support.

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Event III-238

Aircraft Involved: Four F-105s vs seven MIG-17s

Results: No damage

Vicinity of Encounter: 21°19'N/105°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 May 1967/1623H

Four F-105s (BLUE Flight) were part of a force of 16 aircraft attacking the Vinh Yen Army Barracks (JCS 34.00). The actions of the other flights are described in Events III-230, -231, and -235. There was MIOCAP and IRON HAND support for this mission. The probable order of flights striking the target were the flights of Events III-236, -231, -238, and -230.

2. MISSION ROUTE

BLUE Flight departed Korat and after aerial refueling, proceeded directly to the target from Channel 97 (see Event III-233). Egress was up Thud Ridge and then overland for refueling.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 3

6 - 750 lb bombs
2 - 450 gal tanks
1 - AIM-9B
1 - QRC-160 pod
Camouflaged

F-105D BLUE 2, 4

6 - 750 lb bombs
2 - 450 gal tanks
2 - QRC-160 pod

MIG-17

Silver with red star on fuselage
Drop tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cumulus with bases at about 10,000 ft, clear with good visibility below clouds.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	15,000 ft			
<u>Heading:</u>	300°			
<u>Speed:</u>	550 kts			
<u>Fuel State:</u>	About 8000 lb			
<u>Flight Formation:</u>	BLUE Flight was in a dive starting a bomb run. BLUE 1 and 2 were together as an element and, some distance behind, BLUE 3 and 4 were together (BLUE 4 was only several hundred feet away from BLUE 3).			

5. INITIAL DETECTION

The flight had heard MIG calls and were looking for MIGs. BLUE 3 saw two MIG-17s at low altitude as he started to roll-in.

6. ACTION INITIATED

BLUE Flight ignored the MIGs and continued the bomb run.

7. SITUATION DEVELOPMENT

At various stages of the bomb run, individual members of BLUE Flight encountered MIG-17s.

BLUE 1 was attacked by a single MIG-17 during pullout from the target. The MIG fired at BLUE 1, and BLUE 1 escaped by breaking for the deck.

BLUE 2 heard BLUE 3 call MIGs during the bomb run but the first MIG he saw was one that pulled in front of him from 11 o'clock. BLUE 2 fired at the MIG but no hits were observed.

During his dive on the target, BLUE 3 saw two MIG-17s following himself and BLUE 4 immediately thereafter, three MIG-17s in trail overshot BLUE 3 from 9 o'clock high. BLUE 3 then saw BLUE 4 attacking some MIGs and went to join him.

BLUE 4 initially started after the MIG on BLUE 1 and fired on this MIG. BLUE 4 then went after another MIG but did not achieve firing position. BLUE 4 then joined with BLUE 3 for egress.

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8. ORDNANCE

	<u>20mm Cannon</u>	<u>23/37mm Cannon</u>	<u>Remarks</u>
BLUE 2	1/0		170 rounds
BLUE 4	1/0		Several hundred rounds
MIG 3		1/0	Fired at BLUE 1

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	4000	200	45	
BLUE 3	3800	700-800	60	

Comments on This Encounter

BLUE 2 - The switchology prevented switching from air-to-ground to air-to-air, consequently he had no sight. He would like a minimum of switching required to go from air-to-ground to air-to-air like a gunsight with trigger actuation.

The M-61 cannon is a better air-to-air weapon than a rocket, due in part to the low altitude of the engagement.

The SIDEWINDER is limited by "g's" and therefore not too useful in this environment.

BLUE 3 - The MIGs which attacked during the bomb run were sufficiently distracting to cause the bombs to miss the target.

The flight integrity was lost (BLUE 2 and 4 left their element leads). This precluded successful attacks on MIGs in the target area after the bomb run was complete.

11. DATA SOURCES

Project Interviews: BLUE 2, June 1967; BLUE 3, June 1967

Messages, Reports:

388TFW 131201Z May 1967 OPREP-3 DOI 1657
388TFW 131208Z May 1967 OPREP-3 DOI 1658

12. NARRATIVE DESCRIPTION

BLUE Flight proceeded to the target in a gaggle. Inbound, MIG warnings were heard which indicated MIGs were in the target area. The MIGs were first encountered by the members of BLUE Flight after the bomb run had commenced. Since each member encountered MIGs at different times and were separated from each other, the actions of each are described individually.

BLUE 1

During pullout from the target, BLUE 1 observed a single silver MIG-17 (MIG 3) at 5 o'clock level, approximately 1500-2000 ft away. MIG 3 was firing at BLUE 1. BLUE 1 then rolled over and broke right and accelerated away on the deck, losing MIG 3.

BLUE 2

As BLUE 2 was bottoming out from his bomb run at about 4500 ft altitude, heading northwest at 550 kts, a single MIG-17 (MIG 4) pulled out in front in a climb. Although BLUE 2 had heard BLUE 3 call MIGs during the dive bomb run, this was the first MIG he saw. MIG 4 was at 11 o'clock to BLUE 2 and about 2000 ft range and filled the windscreen.

BLUE 2 did not have time to switch to air-to-air, so with a fixed pipper depressed for bombing, BLUE 2 fired at MIG 4. BLUE 2 guessed at the lead necessary and fired 170 rounds but none were observed to hit. MIG 4 rolled left to an almost inverted altitude and dived for the ground heading west. This was the last BLUE 2 saw of MIG 4. BLUE 2 retained his tanks throughout the engagement.

BLUE 2 saw another MIG-17 during egress.

BLUE 3

While starting his roll in to the target from 17,000-18,000 ft altitude, BLUE 3 looked down and saw two MIG-17s. The MIGs were at a very low altitude and were in the target area directly underneath BLUE Flight. After setting up his dive, BLUE 3 looked around to check BLUE 4 who was on the right. At this time, BLUE 3 saw two MIG-17s (MIG 1 and 2) coming down at the same dive angle as BLUE 3 and 4. MIG 1 and 2 were not gaining on BLUE 3 and 4 and were at BLUE 3's 4-5 o'clock position. The MIGs were below the plane

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Event III-238

of BLUE 3's flight path but were back far enough to be above BLUE 3. Although MIG 1 and 2 were following the bomb runs, they were not in firing position and were not a threat. Since there was another flight of F-105s behind BLUE Flight, the MIGs could not maneuver to attack BLUE 3 and 4 without coming under attack.

As BLUE 3 looked back to acquire the target, he saw three more MIG-17s (MIG 5, 6, and 7) in a level turn at his 9 o'clock. As MIG 5 passed underneath, BLUE 3 felt that MIG 5, 6, and 7 could make an attack on BLUE 4. All three MIGs overshot and when BLUE 3 looked back, he could not find BLUE 4.

After rolling over and looking for BLUE 4, BLUE 3 acquired him as BLUE 4 was going after some MIGs. BLUE 3 then went on and released ordnance on the target. Due to the distractions caused by the MIG attacks, BLUE 3 dropped his ordnance a little long of the target.

BLUE 3 did not see the MIG attacking BLUE 1.

On pullout from his bomb run, BLUE 3 took up a heading of about 030 to pick up BLUE 4. BLUE 4 was attacking a MIG at this time. In front of BLUE 4, BLUE 3 observed two more MIG-17s followed by two F-105s. These F-105s were followed by two more MIGs who were in turn followed by two more F-105s. [BLUE 3 suspects these F-105s were from Takhli.]

After BLUE 4 unsuccessfully attacked the MIG, BLUE 3 joined on him, and BLUE 3 and 4 egressed up Thud Ridge, joining BLUE 1 at the top. They then came back across the delta in a formation for egress.

BLUE 4

During his dive bomb run, BLUE 4 observed MIG 3 attacking BLUE 1 and went after MIG 3. BLUE 4 fired on MIG 3 but no hits were observed. MIG 3 broke off to the right. BLUE 4 then started after another MIG-17 that was in a descending left turn. MIG 8 went into a steep dive at 4000-5000 ft altitude and BLUE 4 broke off. He then was joined by BLUE 3 for egress.

BLUE Flight saw no AAA or SAMs during this mission. The MIGs seemed to be aware of the target area and were orbiting there, waiting for the strike force. The MIG attacks seemed to be well coordinated.

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Event III-239

Aircraft Involved: Four F-4Cs vs 16 MIG-17s

Results: Two MIG-17s destroyed

Vicinity of Encounter: 20°46'N/105°08'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/Between 1605H and 1625H

Four F-4Cs (BLUE Flight) were part of the CAP escorting a strike force of F-105s from Korat which was attacking JCS 31.00, four miles southwest of Hanoi. The other strike force, from Takhl1, was attacking north of Hanoi. The strike flights which encountered MIGs were those of Events III-241, -242, -243 and the other CAP flight which encountered MIGs are the aircraft in Event III-240.

There were the normal B-66 and IRON HAND support aircraft for this mission.

2. MISSION ROUTE

Departed Danang and refueled on WHITE ANCHOR. From aerial refueling they went to Channel 97, from there direct to 20°59'N/105°48'E, then direct to the target area, then direct to 20°50'N/105°00'E, then direct to 18°10'N/103°20'E and then back to home base. BLUE 2 missed aerial refueling due to an incorrect vector, since he egressed with another flight (Event III-240) and recovered at Nakkon Phanom due to low fuel.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 3

2 AIM-9B
2 AIM-7E
1 SUU-16 gun pod
1 QRC-160
2 370-gal tanks
BLUE 1 IFF on, TACAN receive only
BLUE 1 had no gun camera on the aircraft.

F-4C BLUE 2, 4

4 AIM-9B
4 AIM-7E
1 QRC-160 pod
1 600-gal tank
1 370-gal tank

MIG-17

Afterburners
Dull silver
Red stars on wing tips and fuselage
Guns
At least one with missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Tops 3,000 to 4,000 ft in some places; visibility good.

	BLUE			
	1	2	3	4
<u>Altitude:</u>		19,000 ft		
<u>Heading:</u>		075°		
<u>Speed:</u>		500 KTAS		
<u>Fuel State:</u>		(12,000-13,000 lb internal tanks)		(1,000-1,500 lb external tanks)

Flight Formation: Pod; element on the right.

5. INITIAL DETECTION

BLUE Flight heard MIG warnings when they departed the tanker. The lead F-105 (Event III-241) flight called the CAP that MIGs were at 12 o'clock low. BLUE 3 called bogeys at 9 o'clock. BLUE 1 then spotted two F-105s outbound being chased by four MIG-17s, in two elements.

6. ACTION INITIATED

BLUE 1 and 2 jettisoned tanks and started to attack the one element of MIGs while BLUE 3 and 4 started to attack the other element and jettisoned tanks.

7. SITUATION DEVELOPMENT

The engagement separated into different parts, each fought by an element of BLUE Flight.

BLUE 1 and 2 lost the element of MIGs as the MIGs turned away. BLUE 1 and 2 subsequently fired two SPARROWS and some 20mm at two other MIG-17s. BLUE 1 then successfully attacked another MIG-17. In dodging the explosion BLUE 2 became separated and egressed separately. BLUE 1 then fired an AIM-9 at another MIG and followed with a gun attack but was out of ammunition, and egressed.

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BLUE 3 and 4 fired an AIM-7 at the MIGs without success. Another attack was made on another MIG-17, and fired another AIM-7 without success. BLUE 3 then selected another MIG-17 and attacked with the gun, scoring a kill. BLUE 3 and 4 then egressed.

8. ORDNANCE

	(No. Fired/No. Hits)				Soviet ATOLL	Remarks
	SIDEWINDER AIM-9B	SPARROW AIM-7E	SUU-16	Cannon		
BLUE 1	1/0	2/0	3/1			One MIG-17 killed. BLUE 1 used all of his 20mm ammunition.
BLUE 3		2/0	1/1			One MIG-17 killed.
MIG-17					2/0	Seen by aircraft of Event III-240
MIG-17				1/0		High angle off.

9. EQUIPMENT PROBLEMS

BLUE 3 had an outboard tank that would not jettison.

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-4 Hours	Combat Missions	Remarks
<u>BLUE 1</u>				
Front	4500	250	63	
Back	360	93	11	First mission in Route Package VI.
<u>BLUE 2</u>				
Front	2900	350	72	Two years in F-105s.
Back	600	330	--	

Comments on this Encounter:

BLUE 1 - Front

The MIG pilots were aggressive and good.

The MIG that BLUE 1 hit did not see him.

The MIGs used afterburner freely, as seen when they passed across BLUE 1's nose. When in trouble, they would go to afterburner and descend into the cloud deck.

Looking at the radar scope will not permit detection of the MIG's movements in sufficient time to follow him.

Never had a chance to shoot the SUU-16 air-to-air before this encounter.

Some 20mm were wasted on head-on passes. The tracers that they got later will help a lot. Would like to have had a lead-computing sight.

The SUU-16 was a very good gun.

The backseater was used for lookout, much the same as a wingman, since the frontseater who was flying wing had to pay too much attention to flying in order to stay with his lead.

The SAM was shot at them when they went up high, which could account for the fact that the MIGs did not follow them up.

The enemy appeared to use the F-4's IFF to sort out the F-4s from the MIG-17s.

The second AIM-7 failure to guide could have been due to being locked on the ground clutter.

BLUE 3

The initial MIGs that were seen were probably vectored to attack outbound elements of the Takhli force.

The MIG-17 tactics were good. Missile capability is degraded by the low altitudes, because the radar tends to lock on to the ground return. An IR missile with a good capability against a high-g target would be best. The SPARROW system has suffered from reliability and fusing problems. The AIM-7 is not the answer to this environment.

The kills with the gun mode could not have been made with a missile. The MIG-21 kills by missiles have been due to the MIG-21 climbing away against a clear sky, giving the missile a good target.

The SUU-16 was a very good system.

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Comments on Overall Experience:

BLUE 3

The "C" model F-4 is limited in station capability since they must be operated in pairs. It is impossible to make an individual station selection without modifying the aircraft. Lack of minor items such as cannon plugs have complicated making the modifications.

11. DATA SOURCES

Project Interviews: BLUE 1 and 3, 22 June 1967.

Messages:

366TFW 141800Z May 67 OPREP-3 JPCCO PASTEL 468 (Pt 1)
366TFW 141800Z May 67 OPREP-3 JPCCO PASTEL 469 (Pt 2)
366TFW 180830Z May 67 OPREP-3 DCO 00157 (Sections 1 and 2)
366TFW 141100Z May 67 OPREP-3 DCOI 443
Letter-Raytheon OLD 0413, 15 May 67

12. NARRATIVE DESCRIPTION

BLUE Flight was trailing the strike force, to provide CAP coverage. BLUE Flight was first alerted to the presence of MIGs in the target area by a MIG warning received from the agencies for the Hanoi area at approximately 1600H. At this time BLUE Flight was departing Channel 97 with the strike force. Most of the MIG calls were close to Hanoi with some MIGs coming out of the west. The calls continued all the way to the engagement.

In the ensuing encounters 16 MIG-17s were seen by members of BLUE Flight, seven of which were engaged. Eight MIG-17s were seen by BLUE 1 and 2, and an additional eight by BLUE 3 and 4. The MIG engagement permitted the strike force to attack JCS 31.00.

At 1605H while ingressing 2000 feet above, and in trail of the last strike flight, BLUE Flight heard MIGs being called by the lead F-105 flight (Event III-241). The MIGs were called for 12 o'clock low, coming under.

BLUE 3 (front seat) looked down and saw two silver bogeys going from 12 to 6 o'clock, underneath the strike flights. BLUE 3 then called bogeys at 9 o'clock low and indicated that he felt they were MIGs. At this time BLUE Flight was at 19,000 feet altitude, about 500 KTAS (400 IAS) heading 075° at 20°46'N/105°08'E.

BLUE Flight turned left, and BLUE 3 recognized the bogeys as two F-105s, which had appeared silver from the distance. It was seen that the two F-105s (probably from Takhl1, who initially were on a reciprocal heading to BLUE Flight) were being chased by four MIG-17s in two elements of two aircraft each with the elements separated in trail by about one mile.

BLUE 1 and 2 selected the lead element of MIGs and called that they would attack them and continued a left hand turn to engage. BLUE 1 and 2 jettisoned tanks.

BLUE 3 and 4 chose to attack the rear element and from this point on the battle was fought separately. The actions of all members occurred within a 15-mile arc, north and east of 20°46'N/105°08'E, over land enclosed by a horseshoe bend in the Black River.

First Element - BLUE 1 and 2

As BLUE 1 and 2 dived on the lead element of MIGs (MIG 1 and 2), the MIGs reversed from the F-105s and turned into BLUE 1 and 2. The MIGs made a diving left turn; and as they turned inside of BLUE 1 and 2, they passed head-on and were lost from view as they entered the cloud deck.

The MIGs operated close to the cloud deck throughout. Due to the altitude of the mountains in the general area, BLUE Flight did not descend beneath the cloud layer.

BLUE 1 and 2 then pulled up to the right to exchange airspeed for altitude. On reaching 7000 feet, BLUE 1 saw numerous MIG-17s in the area. At this time the other flight of F-4s (Event III-240) joined the battle in the general area.

The F-105s continued on to the target and after striking the target, egressed back through the battle area.

From 7000 feet altitude BLUE 1 saw two MIG-17s (MIG 3 and 4) in trail at 2 o'clock low and made a right diving turn into MIGs.

After making the first pass at MIG 1 and 2, the subsequent engagements were the result of BLUE 1 selecting a MIG and attacking. He attempted to pick a MIG as far away as he could with the backseat attempting to attain a radar lock for a SPARROW shot. The MIG's color blended with the clouds, making large separation difficult. When the MIGs came under attack, they turned into BLUE 1, resulting in a high rate of closure. By the time a lock could be achieved, they were inside minimum range.

BLUE 1 obtained a boresight acquisition on MIG 3, locked on, and switched to a full system lock. The missile was launched from the MIG's 4 o'clock, with MIG 3 at 11 o'clock from BLUE 1. BLUE 1 was at 500 knots true airspeed, and 6000 feet altitude, pulling 3g

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in a right turn and had 150 knots overtake. The MIG was at 5000 feet altitude, and the track crossing angle was 110 degrees. BLUE 1 had interlocks out, linear polarity, and wide gate, he was dividing his attention between the radar scope and the MIG and was visually estimating the lead. The SPARROW was fired at one and one-half miles range, and the missile select light had been on for 10 minutes prior to arming.

The missile went straight for the ground and failed to guide, dropping quickly from sight. (The OPREP 180830Z May 67 indicates that the missile was launched in a clutter environment, at approximately minimum range.)

BLUE 1 continued his attack on MIG 3 and switched to the gun and fired one burst at the MIG with no results. The MIG by this time was at a range of about 1500 feet, and had tightened his turn to the right. When he fired, BLUE 1 was in the MIG's forward quarter. The MIG passed beneath BLUE 1 and 2 and ducked into the cloud deck. The altitude was at 4,000 to 5,000 feet.

BLUE 1 and 2 then climbed again and when level at 8000 feet altitude spotted a single MIG-17 (MIG 5) at 2 o'clock low, heading south. BLUE 1 made a right diving turn into the MIG and at 2 miles out acquired a lock-on in bore-sight, and then switched to a full systems lock -- interlocks out. With the MIG at 12 o'clock, about co-altitude, BLUE 1 fired another SPARROW.

At firing, BLUE 1 was at 455 knots, and 6500 feet altitude, pulling 4 g's. MIG 5 was at 6000 feet in a level turn. BLUE 1 was at 130° angle off from the MIG so the pass was a quartering head-on. Although the sources give 100 knots overtake, the geometry would indicate that the actual closing velocity was much higher (more like 700 knots). BLUE 1 attempted to fire with the dot centered. The missile did not guide and dropped out of sight. There was considerable ground clutter and this could have contributed to the missile not guiding on the intended target.

BLUE 1 and 2 continued to press on after MIG 5, and BLUE 1 fired a long gun burst at MIG 5 as it crossed beneath him in a steep right bank and the MIG was lost from view before he crossed the bullet flight path.

BLUE 1 tried to keep his airspeed above 300 KIAS and stay at high speed and execute high-g pull ups. Both front and backseat were looking around for enemy aircraft and possible SAMs.

Although the MIGs engaged by BLUE 1 and 2 kept turning, they were unable to set up a complete wagon wheel pattern as BLUE 1 and 2 were able to break out individual MIGs.

After firing the second SPARROW at MIG 5, BLUE 1 pulled up tight to try to get behind the MIG after the head-on pass. In doing so, his speed was reduced to just at 300 knots. BLUE 1 then saw a MIG-17 (MIG 6) coming in with a good angle off. MIG 6 was firing cannon. BLUE 1 tightened his turn and let the MIG overshoot. BLUE 1 then reversed, and unloaded and went to afterburner. As soon as BLUE 1 started to accelerate in afterburner, MIG 6 broke off. (Although not seen by BLUE 1 this may have been the MIG which fired two AA missiles.)

BLUE 1 then climbed to 8000 feet and sighted more MIG-17s (MIG 7 and 8) in a spread formation turning right at 2 o'clock low, and 3000 feet away. BLUE 1 reversed and started a right turn with the MIGs, who were in a 60° bank. BLUE 1 selected MIG 8 and started to close on him.

BLUE 1 had a fixed 25 mil depression on the sight. This had been done so that the top of the ring could be used for missile firing pipper. Therefore, BLUE 1 estimated the required lead and with the MIG at about 300-350 knots and BLUE 1 at 450-500 knots (about 150-200 knots overtake). BLUE 1 started to fire at 2500-2000 feet range, over-leading the MIG. BLUE 1 planned to let the sight drift back across the MIG-17 hoping for the bullet stream to rake through him. As BLUE 1 closed to 1000 feet, still firing, the MIG started to tighten his turn. As BLUE 1 closed to about 300 feet range, and was just at the point of breaking off the attack, he saw the MIG fill his windscreen. He then saw his shells hit right behind the canopy and flames break out. The MIG exploded almost immediately. No chute was observed and the position was about 20°57'N/105°20'E. As the MIG exploded BLUE 1 reversed and went high, and reversed again and turned around the MIG. As the MIG descended, it broke in half. BLUE 1 lost contact with his wingman while avoiding the debris.

BLUE 2 saw BLUE 1 pulling lead on MIG 8 but BLUE 1 was pulling so much lead BLUE 2 felt that perhaps BLUE 1 did not see the MIG. During the attack, BLUE 2 moved high and out a little. When BLUE 1 broke, he went under BLUE 2's nose and as BLUE 2 turned aside from the explosion, he lost contact with BLUE 1. BLUE 1 and 2 achieved radio contact, and ascertained that they were not in visual contact. BLUE 2 immediately joined another flight of F-4s and continued with them through egress, eventually recovering at Nakon Phanom due to BINGO fuel.

While calling for BLUE 2, BLUE 1 spotted another single MIG-17 (MIG 9) at 10:30 o'clock low. The MIG was in a level left turn. BLUE 1 dived to the left to slightly above and in trail of MIG 9, and with a good tone, fired a SIDEWINDER. (BLUE 1 had only SIDEWINDER missiles left.)

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The SIDEWINDER was fired from 3500 to 4000 feet range with a good tone. However, the missile passed behind and beneath the MIG by 200 feet due to excessive g's (about 4g). The missile was launched from the MIG's 7:30 position. BLUE 1 was at 500 knots at 7000 feet altitude pulling 4g. The MIG was at about 7500 feet and was at about 20° angle off. A good tone was obtained and held for two seconds prior to launch.

BLUE 1 continued in for a gun attack, feeling that he had a better attack on this MIG, since it was felt that the MIG did not see BLUE 1. BLUE 1 rolled out of the turn, yo-yoed for separation and came down on the same MIG's tail but slightly above. BLUE 1 attempted to fire his gun from 2000 feet out but discovered that he had expended all of the 20mm ammunition. BLUE 1 was then too close for a SIDEWINDER attack. Although he had plenty of fuel and one SIDEWINDER left, he did not have a wingman. Therefore, BLUE 1 crossed over the MIG and broke in the opposite direction and egressed.

At this time MIGs were being called on the egress route and BLUE 1 decided to keep some ordnance in case he was attacked during egress. As BLUE 1 egressed he called BLUE 3 and 4 to join him on the outbound track.

Second Element - BLUE 3 and 4

When the elements of BLUE Flight split, BLUE 3 and 4 began to pursue the second MIG element of two which were initially at BLUE Flight's two o'clock position, low, turning from right to left. BLUE 3 and 4 rolled around and in a tight descending left turn caught the MIGs as they crossed and obtained a 6 o'clock position on the trailing MIG of the element of two. BLUE 3 attempted to obtain a radar lock in boresight. As they rolled in, BLUE 3 and 4 jettisoned tanks. One of BLUE 3's wing tanks failed to jettison and it remained on (with fuel in it) throughout the engagement.

The MIG immediately broke down and to the left, heading for the deck. The MIG was at 6000 to 7000 feet initially, and since BLUE 3 and the MIG were below 10,000 feet and with BLUE 3 looking down on the MIG, BLUE 3 was unable to get a lock and as he closed to nearly minimum missile range, he fired a SPARROW in the boresight mode. BLUE 3 felt the missile go but never saw it come out from under the nose of the airplane. At launch BLUE 3 was at 5000 to 6000 feet range and about co-altitude at 2000 to 3000 feet with the MIG who was at BLUE 3's 12 o'clock. BLUE 3 was in a 3-4g turn with 150 knots overtake and the MIG appeared to pull about 5-6g. BLUE 3 pressed in, turning and tracking the MIG. BLUE 3 attempted to fire the gun but could not reach the gun switch. The MIG tightened his turn and disappeared from BLUE 3's view.

BLUE 3 then pulled up into a high speed yo-yo and rolled over and saw two more MIG-17s at 9-10 o'clock low. BLUE 3 and 4 dove to engage in almost an identical attack to the first one. In boresight mode, BLUE 3 (back) was able to attain a radar lock. The aircraft was equipped with a switching device which automatically switched to full system after a boresight lock-on.

BLUE 3 then fired another SPARROW missile which like the first, was felt to leave the aircraft but was unobserved in flight. At firing BLUE 3 had a full system lock with interlocks out. The MIG was at BLUE 3's 12 o'clock in a left turn apparently pulling 5-6g's. BLUE 3 was also in a left turn at 450 knots, 4000 feet altitude pulling 3-4g's. He was closing in on the MIG at 100 knots and the range was about one mile. The MIG was at a track crossing angle of 20° with zero angle off.

Both SPARROW missiles were fired at low altitudes where radar interference can cause the system to break lock or to shift lock to the ground.

After firing the SPARROW, BLUE 3 pressed in making an increasing-g turn and again did a high speed yo-yo and rolled out at 7000 feet altitude.

BLUE 3 immediately saw two more MIG-17s in trail at 9 o'clock low in a left turn, going away from BLUE 3 and 4. BLUE 3 set up for a gun attack at this time.

All of the MIGs seen were in a big left hand orbit. It was not certain if BLUE 3 fired on the same MIGs more than once, however, he had the definite impression that he was looking at a new group of airplanes.

As BLUE 3 and 4 dove left to attack, BLUE 3 noticed a third MIG-17 trailing the previous two by about 3000 feet and chose to attack this one, to keep from getting sandwiched between the trailing MIG and the other element.

BLUE 3 started a yo-yo and a right barrel roll to position himself on the third MIG. At the top of the barrel roll, BLUE 3 observed a SAM to cross from east to west and detonate approximately 1 mile away. BLUE 3 had no warning and took no evasive action but continued to attack the MIG.

As BLUE 3 pressed in from 6000 to 7000 feet out, the MIG started to tighten his turn. Then the MIG reversed to the right. BLUE 3 reversed with the MIG and pulled 150 mills of lead and opened fire at 1500 to 2000 feet range. At firing BLUE 3 had about 100 knots overtake and almost 90° angle off. He fired a 2 to 2-1/2 second burst and as soon as the gun started shooting, he saw fire coming off the MIG. BLUE 3 had just the proper amount of lead and was not shooting in front of the MIG as he had thought. The bullets impacted in the MIG's midsection causing fire to burst from the fuselage. The MIG started burning on the right side about the wing root and aft along the fuselage.

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To keep from overshooting BLUE 3 did a high speed yo-yo and observed the MIG at 2 o'clock low still flaming, but in controlled flight in a nose low level descent. As BLUE 3 rolled in for another attack and as he passed the MIG he saw flames also coming from the left hand side of the fuselage. At that time the MIG burst into massive flames from cockpit aft, obscuring the tail. The MIG rolled hard right 135° and pitched down, out of control, and passed into the undercast at 4000 feet MSL position 20°54'N/105°16'E. BLUE 3 is credited with a confirmed kill.

At the same time BLUE 3 saw another vertical smoke trail from a crashing MIG-17 approximately 2 miles east.

BLUE 3 and 4 climbed to 7000 feet and looked down and saw a single F-4 (BLUE 1 of Event III-240) chasing a MIG at fairly slow speed. The MIG was weaving back and forth and the F-4 was observed to fire three missiles at the MIG. No other MIGs were seen.

BLUE 4 then reached BINGO fuel, and BLUE 3 and 4 egressed at 12,000 feet and 475 knots indicated until they were outside of the SAM defenses.

At one time during the engagement BLUE 3 saw a MIG at 6 o'clock to an F-4 who was firing missiles at a MIG in front of the F-4. BLUE 3 watched the trailing MIG fire for several seconds. BLUE 3 suspects the MIG fired out. The MIG was not closing and was firing out of range. The MIG scored no hits.

BLUE 3 saw another MIG and an F-4 go by on one of the times when BLUE 3 was firing but he did not pay much attention to them.

All of the MIG encounters of BLUE Flight occurred between 1605 and 1625H.

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Event III-240

Aircraft Involved: Four F-4Cs vs 10 MIG-17s

Results: One MIG-17 destroyed

Vicinity of Encounter: 21°50'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/1611H

Four F-4Cs (BLUE Flight) were part of the CAP supporting a strike on JCS 31.00. The other CAP flight's actions are described in Event III-239. The strike aircraft are those of Events III-241, -242, -243.

2. MISSION ROUTE

BLUE Flight departed Danang and refueled on WHITE ANCHOR. From tanker drop-off they flew direct to Channel 97; from there, direct to 20°59'N/105°48'E, direct to the target then direct to 20°50'N/105°E, then direct to 18°11'N/103°20'E, post strike refueled and returned to Danang.

3. AIRCRAFT CONFIGURATION

<u>F-4C</u>	<u>BLUE 2</u>	<u>BLUE 3</u>	<u>BLUE 4</u>
	4 AIM-7E	2 AIM-7E	3 AIM-7E
	4 AIM-9B	2 AIM-9B	4 AIM-9B
	1 600-gal tank	2 370-gal tank	1 600-gal tank
	1 370-gal OBD tank	1 SUU/16A gun pod	1 370-gal tank
	1 QRC-160 pod	1 QRC-160 pod	1 QRC-160 pod
	Camouflage paint		

MIG-17

Not "D" model, shiny silver
At least one had missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 6/8 cloud cover bases at 4000 tops at 7000 ft, visibility 10 miles.

BLUE Flight

Heading: 070°
Altitude: 17-18,000 ft
Airspeed: 525 KTAS
Fuel State: Unknown
Flight Formation: Pod

5. INITIAL DETECTION

BLUE 1 heard MIG call from the F-105s, but did not see the MIGs. (They were engaged by the F-4s in Event III-239.) He then sighted four silver MIGs at 11 o'clock low and two more at 11 o'clock level.

6. ACTION INITIATED

BLUE 1 jettisoned the centerline tank and chose to attack the four MIGs. When getting within 3-4 miles they were positively identified as MIG-17s.

7. SITUATION DEVELOPMENT

The MIGs were in a wagon wheel formation. BLUE 1 fired two SIDEWINDERS at a MIG but it turned and the missile missed. BLUE 1 and 2 attacked another MIG and were subsequently attacked by two more MIG-17s, which fired at BLUE 1 and 2.

BLUE 3 and 4 attacked these MIGs with BLUE 4 firing two SIDEWINDERS without results and BLUE 3 attempting to fire a SIDEWINDER which did not leave the aircraft.

BLUE 4 lost the MIGs and then BLUE 4 was fired on by a MIG, but was able to lose him. Another MIG pulled in front and BLUE 4 fired a SIDEWINDER without success. At the same time BLUE 3 disengaged from a MIG at his 5 o'clock. BLUE 3 and 4 then egressed, following a flight of F-105s.

BLUE 1, after the second engagement, saw a MIG-17 at the 11:30 position and attacked, firing two SPARROWS, one of which hit the MIG, resulting in a kill.

Shortly thereafter a SAM was fired at BLUE 1 and 2, and just after the burst BLUE 1 engaged another MIG-17 and fired two more SIDEWINDERS, but they missed. BLUE 1 then fired a SPARROW but it too missed, and BLUE 1 and 2 egressed.

8. ORDNANCE

	(No. fired/No. hits)			Remarks
	SPARROW AIM-7E	SIDEWINDER AIM-9B	Cannon	
BLUE 1	3/1	4/0		One AIM-7E kill
BLUE 4		3/0		
MIG-17			1/0	
MIG-17			1/0	
MIG-17			1/0	

9. EQUIPMENT PROBLEMS

BLUE 1's radio was not operating correctly and he did not receive the MIG calls from the other flight members.

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-4 Hours	Combat Missions
BLUE 1 (Front)	2600	450	63 missions; was a RIO in F-89s in ADC.
BLUE 1 (Back)	400	120	First RP-VI mission

Comments on this Encounter:

BLUE 1, 2 and 4 all felt that the SUU-16 would have been much more effective against the MIG-17s than any of the missiles.

BLUE 1 felt that they could not get set up for a head-on shot.

The MIG's wagon wheel was effective as a counter to the missiles but it was purely a defensive maneuver. It is subject to attack with a gun, however.

Need a missile with short minimum range, and can attack a target maneuvering at 5 or 6 g's.

BLUE 1 felt that while a gun would be useful against a MIG-17 he would not get a chance to use it against a MIG-21 and needed the missiles to deal with the MIG-21.

11. DATA SOURCES

Project Interviews: BLUE 1 Front, 22 June 1967

Messages, Reports: 366TFW 141410Z May 1967 OPREP-3 DCOI 448
366TFW 141100Z May 1967 OPREP-3 DCOI 442
366TFW 180830Z May 1967 OPREP-3 DCO-0 0158
Raytheon letter, Old 0413 15 May 1967

12. NARRATIVE

BLUE Flight was ingressing to the target area with the strike force, spaced between the flights of event III-242, -243. About 5 miles from the target, at 17-18,000 ft altitude, 525 KTAS, heading 070° in Pod formation, BLUE 1 happened to look down and his attention was drawn by several silver flashes, which on closer look appeared to be airplanes. Due to the silver color they were immediately assumed to be MIGs. There were four MIGs at 11 o'clock low and two more at 11 o'clock level. All of the MIGs were attempting to engage the strike force.

BLUE Flight immediately dived to engage the four low MIGs, and after approaching to within 3-4 miles, BLUE 1 could determine that they were MIG-17s, in a left hand orbit about 1,000 ft above the cloud tops (about 6,000-7,000 ft MSL). BLUE 1 estimated there were at least 10 MIG-17s in various positions in a left hand 360° turn. While the MIGs were in the pattern, they were pulling 2-3 g's. No director aircraft were observed. On seeing the MIGs, BLUE 1 did not jettison stores, because he had already jettisoned the 600-gal tank. He kept the 370 on throughout. BLUE Flight positioned at the 6 o'clock of the four MIG-17s, but the MIGs each broke in a separate direction. BLUE 1 selected one of the MIGs (MIG 1) for his attack.

BLUE 1 closed to 3,500-ft range with the target 30° off the nose and fired two AIM-9B missiles in minimum time. About the time of firing, the MIG tightened his left hand turn in a maximum-g maneuver. The MIG turned until BLUE 1 could see a plan view of the MIG from the top, and the MIG was 90° to BLUE 1's heading. Both missiles apparently did not guide, and missed, passing off to the rear of the MIG, 100 ft to 500 ft away and level.

At firing, BLUE 1 had a fair-to-good missile tone, and he held the tone for 3 seconds prior to launch. He was at 350 KIAS, at 5,000 ft altitude, pulling 2 g, with the MIG also at 5,000 ft. BLUE 1 had no overtake and was 20° angle off from the MIG. BLUE 1 had not achieved radar lock when he fired the missiles. There was cloud background with reflection which could have contributed to the missiles' miss.

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Event III-240

As the missiles missed, BLUE 1 Flight started to execute a high speed yo-yo reposition on the other MIGs, who still maintained the left hand "wagon-wheel" pattern.

BLUE Flight rolled over the top and positioned themselves behind another single MIG-17 (MIG 2). The time was now 1612H, and the position was within 10 miles of Lead 39 SAM site. The entire engagement took place in a 10-mile radius of this site.

BLUE 1 and 2 attempted to position on MIG 2, and BLUE 3 and 4 moved to a position about 2,000 ft out and high. MIG 2 rolled and dived into the cloud deck and contact was lost [BLUE 1 felt that he could have fired a SUU-16 during this time as he had good position].

While BLUE 1 and 2 were chasing MIG 2, BLUE 3 and 4 observed and called out two MIG-17s (MIG 3 and 4) who were making a descending hard left turn to position on BLUE 1. BLUE 1, due to a radio malfunction, did not hear the calls from BLUE 2, 3, and 4. Both MIG 3 and 4 were firing cannons.

BLUE 3 and 4 attempted to position themselves on MIG 3 and 4 and BLUE 4 fired two AIM-9Bs at MIG 3 who was at 6 o'clock to BLUE 1 and firing. These missiles did not appear to track and were not observed again. The missiles were fired out of parameters with no tone in an attempt to distract MIG 3 from BLUE 1's tail. The missiles were fired against a dark cloud and ground background.

MIG 3, apparently fired out and slid to the outside and ahead of BLUE 1. At this time BLUE 3 with a good tone triggered one AIM-9B but the missile did not leave the rails.

At this time MIG 4 was on the tail of BLUE 2 and firing. BLUE 2 broke down and left, and went into the cloud shelf and then came back out on top. The MIGs had now disappeared. BLUE 2 rejoined on BLUE 1 at once.

Also at this time, the pilot in BLUE 4 saw a MIG-17 (MIG 5) at his 7 o'clock, 2,000 ft range and closing. MIG 5 was firing, and closing with the projectiles passing the top left side of the canopy about 15 ft distant. BLUE 4 unloaded, went afterburner, broke down and then back up, jinking. When he leveled off at 12,000 ft, MIG 5 was gone.

BLUE 4 immediately saw another MIG-17 (MIG 6) in a left turn, then pulling up in front of him. BLUE 4 fired one AIM-9B from the MIG's 7 o'clock, 2,000 ft high, 2,500 ft range with a weak tone and a cloud IR background. The missile came off the rails but its flight was not observed. [BLUE 4 felt that if he had had a SUU-16 he could have obtained a good position to use it on this MIG.] The MIG broke left and BLUE 4 joined BLUE 3.

While BLUE 4 was attempting to disengage from MIG 5, who was on his tail, BLUE 3 observed still another MIG-17 (MIG 7) closing on his 5 o'clock from about 2,000 ft range. MIG 7 did not fire and BLUE 3 disengaged by turning into MIG 7 and going to afterburner.

BLUE 3 and 4 then joined up at about 1618H, did a 360° turn and proceeded to post strike refueling, following a flight of F-105s. BLUE 4 was at BINGO fuel at this time.

After breaking off their engagement with MIG 2, BLUE 1 and 2 visually acquired a lone MIG-17 (MIG 8) in a left turn at 11:30 o'clock, 2,000 ft high and 3,000 ft distant. With bore-sight acquisition BLUE 1 locked on and the backseater switched to full system, interlocks in. The radar scope showed a "break X." BLUE 1 pulled the trigger about three times but nothing happened. He then went to idle power, because he surmised that he was inside minimum range. After opening slightly on MIG 8, BLUE 1 fired two missiles in salvo at "R min." One missile went straight ahead and did not guide, the other SPARROW guided nicely and impacted on the right wing root of MIG 8.

BLUE 1 and MIG 8 were in a level, left hand turn during the attack with both in a 30° left bank at 5,000 ft altitude, pulling 3 g's. MIG 8 was 20° off the nose of BLUE 1 and both were at about 350 KIAS. At firing the track crossing angle was about 20°, with zero overtake.

The missile which failed to guide passed to the target's 6 o'clock position about 1,000 ft away. The missile which scored the hit was observed by BLUE 1, to go straight out and then break left from the outside of the turn to explode near the right wing root of the MIG-17. MIG 8 burst into flame and pitched up about 30°, stalled out, and descended tail first, in a nose high altitude at a rapid rate into the cloud deck.

The time was now about 1616H and BLUE 1 Front and BLUE 2 Back observed a SAM burst at their 10 o'clock level (8,000 ft MSL) 4,500 ft distant. It was felt that Lead 39 was the firing site and was attempting to hit BLUE Flight.

Just after the SAM burst, BLUE 1 engaged another MIG 17 (MIG 9). The MIG was in a left hand turn, in a 60° bank and appeared to be pulling about 4 g. At 3,500 ft range, BLUE 1 increased his turn to 5 1/2 to 6 g and put the pipper ahead of the MIG and released g to let the MIG come back through the sight. BLUE 1 got a tone (for about 2 seconds) and with MIG 9 20° off the nose (TCA 20°) and BLUE 1 at 350 KIAS and 6,000 ft altitude with 1/2 to 1 g on the aircraft, in a level turn 60° bank to the left and 50 kts opening, BLUE 1 fired two SIDEWINDERS. The SIDEWINDERS guided partially but the MIG started to pull maximum g's and pulled away from the SIDEWINDERS rapidly. The missiles passed aft of the MIG by 500 ft, and detonated about 2 seconds after they passed the MIG. There was no cloud IR background for these firings, and BLUE 1 had a good tone.

SECRET

Event III-240

BLUE 1 then broke off and went up, and saw three more MIG-17s come under him in an echelon formation. BLUE 1 picked out one of these and got a lock, by going below the MIG. On glancing down, BLUE 1 saw that the dot was in the ASK circle, and so he fired a SPARROW. Just as the missile was fired, BLUE 1 front saw the B-strobe start to travel off to the side. It was surmised that the radar had either been in memory hold, or it had locked on the ground, since the overtake with the MIG was about zero. At firing BLUE was about 350 KIAS and 6,000 ft altitude.

The missile went 90° off to the right and was not observed again.

BLUE 1 then saw two more MIG-17s and followed them through several 360° turns sitting on the tail of one of the MIGs. BLUE 2 was staying with BLUE 1 and BLUE 1 was clear, with the airspeeds varying from 280 to 350 knots. He was able to stay inside the turn but was always too close, or at too great an angle off, to get set up to fire. The MIG kept dipping into the clouds and coming back up, but by holding the turn BLUE 1 was able to keep position on him. Finally, the MIG ducked into the clouds and was not seen again. The MIG's wingman had previously disappeared.

The time now was 1620H and BLUE 1 and 2 after clearing the area and observing no more enemy aircraft proceeded directly to post-strike refueling.

Throughout the engagement, the MIGs when present had continued to stay in the left hand pattern, pulling 2-3 g's until attacked, and when the F-4s reached about 4,000 ft range, would tighten the turn and the F-4s would start to loose out at about 6 g. However, the F-4s could repeatedly reposition by executing a high-speed yo-yo.¹ Despite the capability of repeated attacks, the F-4s experienced difficulty in obtaining successful missile launch conditions due to the MIG maneuvers.

Just prior to BLUE 3's engagement with MIG 7, all of BLUE Flight observed one MIG-17 erupt into a ball of flame and dive, at an 80° angle into the cloud shelf. (One of the kills from Event III-239). About two minutes later BLUE 2 and 3 observed a MIG-17 in a 60° dive, at a high rate of speed, with a thin plume of white smoke trailing the aircraft (another of the kills of Event III-239).

At approximately 1615H BLUE 1 Front saw one MIG-17 fire two AA-2 ATOLL missiles at an element of the flight in Event III-239. The ATOLLS went straight ahead and maintained the heading of the MIG. The MIG's intended targets maintained a perpendicular flight path. The missiles appeared to miss by about 5,000 ft.

¹The F-4 was brought up, and at the top rolled over to an inverted position. On looking down, invariably another MIG-17 would be coming through and an outside roll would then give the F-4 a favorable position on the MIG.

NOTE: The interview of BLUE 1 and the OPREP sources do not completely agree on the order (number is the same) of missile firings. The OPREP has been followed in this case because of its inclusion of the other aircraft in the flight.

SECRET

SECRET

Event III-241

Aircraft Involved: Four F-105Ds vs two MIG-17s
Results: No damage
Vicinity of Encounter: 21°00'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/between 1600H and 1630H.

Four F-105 (BLUE Flight) were part of a 19 aircraft strike force from Korat attacking the Ha Dong Army Barracks (JCS 31.00). BLUE lead was the force commander. The other strike flights which encountered MIGs are those described in Events III-242 and -243. The actions of the IRON HAND support aircraft which encountered MIGs are described in Event III-239. The CAP flights which supported this strike are the aircraft whose actions are covered in Events III-237 and -238.

11. DATA SOURCE

388 TFW 141225Z May 1967 OPREP-3 DOI 1674

12. NARRATIVE

Inbound, BLUE lead saw MIG-17s in the target area and called MIG at 12 o'clock. These were not engaged.

BLUE lead observed two silver MIG-17s in the target area as the flight began egressing. BLUE lead attempted to attack them but had to break off when he came under SA-2 attack.

The SA-2 defenses were particularly strong. BLUE flight came under attack by a SAM just as they rolled in on their bomb run. The missile struck BLUE 2 causing severe damage. Other SAMs were launched and BLUE flight jettisoned 24X M-117 and escorted BLUE 2 from the target area under continuing SAM attack as well as MIG threat. In all, seven SAMs were seen.

BLUE 2 bailed out in the vicinity of 21°19'N/104°49'E due to damage from the SAM, and the rescue was successful.

SECRET

SECRET

Event III-242

Aircraft Involved: Four F-105Ds vs at least
six MIG-17s

Results: Sighting only

Vicinity of Encounter: About 20°53'N/105°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/Between 1600H and 1630H.

Four F-105 (BLUE Flight) were part of a 19 aircraft strike force from Korat attacking the Ha Dong Army Barracks (JCS 31.00). The other strike flights which encountered MIGs are those described in Events III-243 and III-244. The actions of the IRON HAND support aircraft which encountered MIGs are described in Event III-240. The CAP flights which supported this strike are the aircraft whose actions are disclosed in Events III-240 and III-241.

11. DATA SOURCE

388 TFW 141225 May 1967 OPREP-3 DOI 1674.

12. NARRATIVE

BLUE Flight saw two unidentified aircraft go down in flames in the vicinity of 20°53'N/105°32'E. One of these was also seen by the aircraft of Event III-240.

BLUE Flight also observed the five MIG-17s attack the IRON HAND Flight (Event III-239) as well as a dog fight between MIG-17s and F-4Cs at 20°52'N/105°12'E.

SECRET

SECRET

Event III-243

Aircraft Involved: Four F-105Ds vs two MIG-21s
and four MIG-17s

Results: Sighting only

Vicinity of Encounter: 20°50'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/1611H.

Four F-105 (BLUE Flight) were part of a 19 aircraft strike force from Korat attacking the Ha Dong Army Barracks (JCS 31.00). The other strike flights which encountered MIGs are those described in Events III-242 and III-244. The actions of the IRON HAND support aircraft which encountered MIGs are described in Event III-240. The CAP flights which supported this strike are the aircraft whose actions are described in Events and III-241.

11. DATA SOURCE

388 TFW 141226 May 1967 OPREP-3 DOI 1674

366 TFW 141100 May 1967 OPREP-3 DCOI 442.

12. NARRATIVE

As the strike force approached the target area two MIG-21s and four MIG-17s were seen by BLUE flight but these posed no threat to the force since the F-4s on MIGCAP (Events III-240 and III-239) immediately engaged them.

BLUE flight observed three SA-2s in the target area. One of which passed 100 feet from BLUE 1.

BLUE flight saw one unidentified aircraft go down in flames and they put the location of their sighting at 21°00'N/105°32'E.

SECRET

SECRET

Event III-244

Aircraft Involved: One F-105F and three F-105Ds
vs four or five MIG-17s

Result: No damage

Vicinity of Encounter: 20°53'N/104°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 May 1967/1614H.

Four F-105 (BLUE Flight) from Korat were providing IRON HAND support for a strike against JCS 31.00. The strike flights which encountered MIGs are the flights in Events III-241, -242, -243. The CAP support flights which encountered MIGs are those in Events III-241, -245.

2. MISSION ROUTE

Departed Korat and went to Channel 97 (probably with air-to-air refueling). After departing Channel 97 went overland to the target area.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1

2 - AGM-45
2 - CBU-24
1 - 650 gallon tank

F-105D BLUE 2

2 - AGM-45
6 - 500 lb bombs (MK 82)

F-105D BLUE 3

6 - 500 lb bombs (MK 82)
1 - AIM-9B

BLUE 4

6 - 500 lb bombs

MIG-17

Silver
Tanks.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Some cumulus in the area. Good visibility.

BLUE			
1	2	3	4
Altitude: 8-10,000 ft			
Heading: 230-250 degrees			
Speed: 550 kts, accelerating			
Fuel: 9-10,000 lbs			

Altitude:

Heading:

Speed:

Fuel:

Flight Formation

BLUE 2 and 4 in front of BLUE 1 and 3 by about 2000 feet and 500 feet below BLUE 1 and 3.

5. INITIAL DETECTION

BLUE Flight had just launched SHRIKE missiles at a SAM site and had completed a wing-over to the left, when they saw 4 or 5 MIG-17s making a descending, head-on pass.

6. ACTION INITIATED

The MIGs quickly passed through the flight and two of them turned to position on BLUE 1 and 3.

7. SITUATION DEVELOPMENT

BLUE Flight continued to accelerate and the MIGs could not close to firing position.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None.

SECRET

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
<u>BLUE 1</u>			
Front	1500	900	15
Back	Unknown	100	15 background

Comments on this Encounter

BLUE 1 Front surmised that the MIGs had been trying to follow them through the SHRIKE launch and did not catch up until BLUE Flight turned.

The F-4 MIGCAP certainly helped out, even though they were somewhat separated from the F-105s.

Amazed how quickly the MIG-17 could turn around to follow them without losing much speed. The turn rate of the MIG-17 was amazing.

The speed and acceleration of the F-105 was a saving factor.

Felt the FANSONG radar was directing the MIGs. The FANSONG had opportunity to fire and was illuminating them, but did not fire.

Comments on Overall Experience

Felt the QRC-160 pods did a good job, although they are not used by the IRON HAND aircraft unless there is a SAM launched. While searching, the pods are not operating. This is due to the fact that with pods operating, the electronic gear that is used to locate the SAMs is blinded.

If you can see the SAM in time, it can be outmaneuvered.

The IRON HAND aircraft are jumped by MIGs because of their role and the fact that they are separated from the strike force.

11. DATA SOURCES

Project Interviews: BLUE 1 Front and BLUE 1 Back, 6 June 1967.

Messages, Reports:

388TFW 141230Z May 1967 OPREP-3 DOI 1675.

388TFW 141225Z May 1967 OPREP-3 DOI 1674.

12. NARRATIVE DESCRIPTION

BLUE Flight had detected a SAM site at 21°04'N/104°44'E which was giving high PRF at 2-1/2 rings intermittent activity. When at 20°53'N/104°42'E at 1614H, BLUE 1 in a 50 degree loft, launched two SHRIKES, one with a white phosphorus and one with a high explosive warhead. BLUE 2 launched two SHRIKES also. At launch, BLUE 1 and 2 were heading 355 degrees at 16,000 feet, and 400 knots, and were 12 miles slant range from the site. BLUE 3 and 4 were on the right in fingertip formation (BLUE 2 on the left).

Immediately after firing, BLUE Flight executed a high-g wing-over to the left, and descended to gain airspeed. During this maneuver, BLUE 2 slid to the inside and ahead. BLUE 4 lost contact with the flight momentarily and the first one he saw was BLUE 2 so he joined on him.

On completion of about 130 degrees of turn and still descending BLUE 2 and 4 were out in front of BLUE 1 and 3 by approximately 2000 feet and below them by about 500 feet. BLUE 2 with BLUE 4 on the right bottomed out at 8-10,000 feet and 550 KCAS and a heading of 250 degrees, and slightly left of BLUE 1 and 3.

At this time four MIG-17s¹, in a diving pass from 11 o'clock passed through the flight. The MIGs were silver in color and no markings were seen. Small drop tanks were seen by BLUE 1. The MIGs came through almost head on and quickly passed through the formation. The MIGs were seen by BLUE 1 and 3 to be in trail in a disorganized pass such that they passed between the two elements of BLUE Flight.

The first two MIGs turned into the flight and ended up in trail 2000-3000 back of BLUE 1 and 3, with a slight negative overtake. BLUE 1 observed the 3rd and 4th MIG to roll inverted but did not see them after that although they could have been going after BLUE 2 and 4.

No firing was observed from the MIGs.

BLUE Flight continued to accelerate and joined in a defensive fingertip formation and egressed at 8000 feet altitude heading 260 degrees.

¹OPREP states 4 or 5 MIG-17s.

SECRET

Event III-244

On seeing the MIGs, BLUE Flight jettisoned the 650 gallon tank, and when the MIGs started to turn behind the flight the remaining ordnance (18 MK 82 bombs) was jettisoned at 20°53'N/104°42'E.

Although the BULLS EYE system was in effect at this time, no MIG warnings were given for the area in which the flight was operating. No X-band signals were received at any time.

SECRET

SECRET

Event III-245

Aircraft Involved: Two F-8Es vs two MIG-17s

Result: Two MIG-17s destroyed

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967/unknown

BLUE Flight (two F-8Es) were providing TARCAP and were covering strike aircraft's departure from the target. Aircraft were based on CVAs at YANKEE STATION.

3. AIRCRAFT CONFIGURATIONS

F-8E BLUE 1, 2

SIDEWINDER (AIM-9D)
20mm cannon

5. INITIAL DETECTION

An A-4E called that he had a MIG on his tail. BLUE 1 sighted the MIG. At a later time, after BLUE 1 and 2 had rejoined the strike group, BLUE 2 observed a MIG-17 making a pass on an F-8 aircraft ahead of him.

6. ACTION INITIATED

In the first sighting, BLUE 1 broke downward and commenced tracking the MIG. In the case of the latter encounter, BLUE 2 called a warning and engaged the MIG.

7. SITUATION DEVELOPMENT

BLUE 1 fired an AIM-9D at the first MIG. The missile did not guide, but apparently caused the MIG to level his wings and break off his attack on the A-4. The MIG commenced a turn as BLUE 1 fired another AIM-9D. This missile detonated immediately behind the enemy and severed his tail assembly. The MIG rolled inverted and dove into the ground.

In the second encounter, BLUE 1 fired 20mm and the MIG broke off his run on the F-8. BLUE 2 fired an AIM-9D which did not guide. BLUE 2 continued to track the MIG, firing 20mm and finally two additional AIM-9Ds. Both of these last two missiles impacted in the tail of the MIG. The enemy nosed over and crashed.

8. ORDNANCE

	(No. fired/No. hits)		<u>Remarks</u>
	<u>SIDEWINDER AIM-9D</u>	<u>20mm</u>	
BLUE 1	2/1	Unknown	First missile failed to guide.
BLUE 2	3/2	Unknown	

11. DATA SOURCES

Messages: CTG 77.0 OPREP-3 191403Z, May 1967

12. NARRATIVE DESCRIPTION

As above.

SECRET

Event III-246

Aircraft Involved: Four F-8Cs vs one MIG-17
Result: One MIG-17 destroyed
Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967/unknown

BLUE Flight (four F-8Cs) on flak suppression mission. Aircraft based on CVAs at YANKEE STATION.

3. AIRCRAFT CONFIGURATIONS

F-8C BLUE 1, 2, 3, 4

One aircraft carried ZUNI rockets and SIDEWINDERS (AIM-9D).
Configuration of rest of flight unknown.

5. INITIAL DETECTION

One of BLUE aircraft was pulling out of a ZUNI firing run when a MIG passed in front of him.

6. ACTION INITIATED

The BLUE aircraft which sighted the MIG turned and commenced tracking.

7. SITUATION DEVELOPMENT

BLUE fired an AIM-9D which blew the tail off the MIG. The MIG crashed. There was no ejection observed.

8. ORDNANCE

(No. fired/No. hits)
SIDEWINDER
<u>AIM-9D</u>

BLUE

1/1

11. DATA SOURCES

Messages: CTG 77.0 OPREP-3 191403Z, May 1967

12. NARRATIVE DESCRIPTION

As above.

SECRET

SECRET

Event III-247

Aircraft Involved: Two F-8Cs vs two MIG-17s
Result: One MIG-17 destroyed
Vicinity of Encounter: 20°40'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967/morning

BLUE Flight (unknown number of F-8Cs) providing TARGAP for Navy strike in the Hanoi area. Aircraft based on CVAs at YANKEE STATION.

3. AIRCRAFT CONFIGURATIONS

F-8C BLUE

SIDEWINDERS (AIM-9D)
20mm cannon

5. INITIAL DETECTION

En route to target area a MIG-17 was sighted directly behind an A-6A. In the target area one of BLUE Flight observed a MIG-17, low, at his 6 o'clock position.

6. ACTION INITIATED

In the first sighting, two members of BLUE Flight turned to attack the MIG. In the sighting in the target area, one member of BLUE Flight maneuvered to attack the MIG.

7. SITUATION DEVELOPMENT

One of the two BLUE Flight members who attacked the first MIG fired two AIM-9D missiles plus 20mm. The MIG dove away and BLUE Flight proceeded to the target area. In the case of the latter MIG, one of the BLUE Flight performed a high yo-yo and maneuvered behind the MIG. He then fired an AIM-9D at a range of 4000 ft. The MIG exploded and the pilot ejected.

8. ORDNANCE

	(No. fired/No. hits)	
	SIDEWINDER	
	AIM-9D	20mm
BLUE	3/1	0

11. DATA SOURCES

Messages: CTG 77.0 OPREP-3 191403Z, May 1967

12. NARRATIVE DESCRIPTION

As above.

Event III-248

Aircraft Involved: Two A-6As vs three MIG-21s

Results: No damage

Vicinity of Encounter: 20°15'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967, 1140H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike pair, part of six A-6 A/C strike group, egressing from target area at 10,000' after weather abort observed three MIGs far below; estimate MIGs were below 500'; one MIG broke upward, passing in front of flight; flight jettisoned 44 MK-82 and proceeded to coast out point; no further contact with MIGs.

SECRET

Event III-249

Aircraft Involved: Two A-4Cs vs five MIGs

Results: Sighting

Vicinity of Encounter: 20°59'N/105°26'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967, 1530H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

IRON HAND flight from Kitty Hawk observed five MIGs of unknown type very low in valley; no attempt to engage made.

Event III-250

Aircraft Involved: Three F-4Cs vs one unident

Results: Sighting

Vicinity of Encounter: 20°40'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967, 1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ECM escort flight at 31,000' observed a silver A/C; unable to distinguish type due to altitude.

Event III-251

Aircraft Involved: Four F-105s vs four MIG-17s

Results: Sighting

Vicinity of Encounter: Kep A/F

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 May 1967, 1641H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight observed four MIGs over Kep airfield; MIGs appeared to be in a traffic pattern and in the process of landing or takeoff, at an altitude of approx 2500'.

SECRET

SECRET

Event III-252

Aircraft Involved: Eight F-4Cs vs twelve-fifteen
MIG-17s

Results: Four MIG-17s destroyed and
one F-4C lost

Vicinity of Encounter: 21°20'N/106°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/from 1629H to 1640H.

Eight F-4Cs (BLUE and GREEN Flights) were providing MIG CAP for a strike force from Takhli, which was attacking the Bac Le Railroad Yards at 21°31'N/106°25'E (JCS 1079 and 1354). The flights of the strike force which encountered MIGs are those of Events III-245, -246, -247. There was IRON HAND and EB-66 support for this strike.

2. MISSION ROUTE

BLUE and GREEN Flights departed Ubon and refueled on TAN ANCHOR. From refueling, they proceeded direct to 19°00'N/106°47'E, then direct to 21°07'N/107°38'E, then direct to 21°20'N/106°32'E, and after the engagement egressed to 21°07'N/107°38'E. From there, they proceeded direct to TAN ANCHOR, for air-to-air refueling, then direct to Channel 109 and then direct to Ubon.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4 and GREEN 1, 2, 3, 4

- 4 - AIM-7E SPARROW
- 4 - AIM-9B SIDEWINDER
- 1 - QRC-160 pod
- 1 - 600 gallon centerline tank
- 1 - 370 gallon wing tank.

BLUE 1 - IFF-Off, TACAN-On.

MIG-17s

Silver, red star outlined in yellow with heavy red bar on each side of the star. Markings on top of wings and fuselage forward of horizontal stabilizer. No external stores. Had afterburners.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with scattered patches of clouds at 10,000 feet. Visibility was good.

	BLUE				GREEN			
	1	2	3	4	1	2	3	4
<u>Altitude:</u>	8,000 feet							
<u>Heading:</u>	West							
<u>Speed:</u>	540 KTAS							
<u>Fuel State:</u>	15,000 lb - some fuel in outboard tank							

Flight Formation

Pod formation modified to give MIG coverage; BLUE Flight's element was on the right 400-500 feet high. BLUE 2 was down about 200 ft. There was about 1500 ft between aircraft.

5. INITIAL DETECTION

BLUE and GREEN Flights heard MIG calls, indicating MIGs at 8-11 o'clock. As these were seen, other MIG-17s were detected at 2 o'clock. The MIGs were low, and, since they were silver, were easily seen and recognized at long ranges (up to 9 miles) against the dark background.

6. ACTION INITIATED

BLUE Flight went after the MIGs at 8 o'clock and GREEN Flight went after those at 2 o'clock.

7. SITUATION DEVELOPMENT

BLUE 1 engaged a MIG-17 and fired a SPARROW which missed. He then engaged a MIG-17 who was attacking GREEN 1 and killed the MIG with a SIDEWINDER. Meanwhile BLUE 3 engaged a total of three MIG-17s and fired four SPARROWS and three SIDEWINDERS but achieved no hits.

GREEN Flight attacked the MIG-17s and GREEN 1 fired two SPARROWS achieving a kill. During the first attack, GREEN 2 was shot down by a MIG-17. GREEN Flight was fired upon by MIGs in three separate instances, as GREEN 1 fired two more SPARROWS and a SIDEWINDER without success.

SECRET

SECRET

Event III-252

GREEN 3 and 4 attacked a MIG-17 and GREEN 3, after firing a SPARROW which missed, fired a SIDEWINDER which killed the MIG. GREEN 3 subsequently fired three more SIDEWINDERS and two more SPARROWS without success. GREEN 4 engaged two MIG-17s and fired two SPARROWS without success.

BLUE and GREEN Flights then started to egress but GREEN 1 reentered the area, and got below a MIG-17. GREEN 1 launched two SIDEWINDERS, one of which hit and killed the MIG.

8. ORDNANCE

	(No. fired/No. hits)		Cannon	Remarks
	<u>SIDEWINDER AIM-9B</u>	<u>SPARROW AIM-7E</u>		
BLUE 1	1/1	1/0		
BLUE 3	3/0	4/0		Attempted to fire one other AIM-9B
GREEN 1	4/1	3/1		
GREEN 3	4/1	2/0		
GREEN 4	-	2/0		Attempted to fire two other AIM-7E
MIG-17			1/0	At BLUE 3
MIG-17			1/0	
MIG-17			1/0	First pair that fired at GREEN 1
MIG-17			1/1	Hit and destroyed GREEN 2
2 MIG-17s			1/0	
2 MIG-17s			1/0	At GREEN 1
2 MIG-17s			1/0	

9. EQUIPMENT PROBLEMS

BLUE 1 - The radar scope in the rear cockpit of BLUE 1 failed.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	3000	300	82	
Back	650	450	85	
<u>BLUE 3</u>				
Front	2500	215	69	Six years in B-47s
Back	250	80	23	
<u>GREEN 1</u>				
Front	4900	225	56	Had been in previous MIG engagements; two MIG kills previous to 20 May; wing commander
<u>GREEN 3</u>				
Front	3100	200	87	
Back	500	200	92	
<u>GREEN 4</u>				
Front	3500	150	38	Had been in fighters all of his career
Back	500	100	19	One live missile fired; no simulator runs.

Comments

BLUE 1, Front - the elements of BLUE and GREEN Flights were coordinated. This coordination was necessary and the wingman had to stay with his lead. It was impossible to determine who the elements were (whether BLUE or GREEN) since there were no markings

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on the F-4s. Although they were coordinated, sometimes BLUE and GREEN elements were working together.

It was difficult to get into SIDEWINDER firing parameters against the MIG-17.

Used only minimum afterburner so the wingman would have full afterburner to use to keep up.

Although SAMs and AAA had been observed to be used in conjunction with the MIGs in previous engagements, none were used this day. There were instances in the past where MIG-21s lured F-105s into SAM rings and other MIGs would attempt to lure fighters up valleys into flak traps.

After the radar display failed, BLUE 1 no longer expected the AIM-7E to work so he tried to use HEAT for the rest of the flight.

Two flights of F-4s are needed to provide adequate coverage for the strike force. Mutual support between these flights is necessary. The prebriefed tactics of using the vertical against the MIG-17 were successful.

With the size of the MIG attacking force it was impossible to work as a flight. At best, they were left with coordinated elements. The wingman stays with the element leader and doesn't attack unless instructed to do so by the leader. A single aircraft or a three-ship flight is in a dangerous situation in this type of battle.

The chaff carried in the speed brakes helped against SAMs. If SAMs were guiding, it forced the fighters down to the deck and into flak. There were recorded cases of SAMs guiding at 200 feet AGL.

The MIGs are getting more aggressive.

BLUE 3, Front - by keeping his speed high, he could effectively fight the MIGs.

Communications were a problem since the backseater and the wingman missed several calls by BLUE 3, Front. BLUE 3 had trouble communicating with the backseater due in part to both tenseness and noise on the radio.

GREEN 1, Front - the turning ability of the MIG-17 is fantastic. It must be seen to be believed.

There was a lot of noise on the radio.

The MIG-17, when used as it was this day, is a more formidable opponent than a MIG-21. The MIG pilots were respected and must be. We must know the capabilities and advantages of our aircraft.

The counter to the MIG's wagon-wheel defence requires coordination and timing between two F-4 flights, with each of the flight's elements operating as a coordinated pair. By coming in low and coming up at the wagon-wheel (which can be done in those areas without flak), a coordinated pass with one element keeping the MIGs busy should permit some MIGs to be broken out of the circle.

As long as the MIGs stay in the circle they are very difficult to attack. If a tangential attack is made from outside the periphery, the MIGs can break into the attack, turning inside of the F-4. If an attack is made by cutting across the circle, a MIG can easily get on the tail of the F-4. The attacker cannot go to the inside of the circle since this is usually anchored over their home base, with corresponding dense flak.

The MIG-17 wagon-wheel is strictly a defensive maneuver against the F-4. However, the MIGs could use a low flight in the wagon-wheel pattern, and with a high flight for attack, have some offensive capability.

The addition of the gun on the F-4 would complement the missiles. It could be an advantage at low altitudes and close ranges. However, the gun is not a primary weapon. In some cases, achieving the parameters for a gun shot, would permit attack by the MIGs.

The MIGs are growing more aggressive. The MIG-21s on the second of January (Event III-52) were not the problem that the MIG-17s were this day.

Due to MIG attacks on IRON HAND Flights, the IRON HAND Flights are now getting CAP support. However, the F-4 cannot get too close to the IRON HAND flight due to the ECM pod interference with the SAM detection gear.

The F-105 force is better protected since the F-105s started to bunch up in gaggles. They are difficult to protect when they were strung out.

GREEN 1, Back - the problem with a boresight lock at low altitude is that the target return is difficult to find if the gyro is "in" due to the ground line. However, the target is a distinct blip if the gyro is "out". However, the gyro should be replaced to "in" before firing. The automatic switching to full system is a good feature.

By using the glare shield as a hand hold, and by keeping the shoulder harness lock open, the backseater can pull himself out of the seat and see well back towards 6 o'clock.

GREEN 4 - initially the fights of BLUE and GREEN Flights started separately in different locations. As long as the fights stayed apart, the F-4s were on the defensive. But when the fights merged, the three elements of BLUE and GREEN Flights were able to work

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together and gain the offensive. It is now standard that the flights will operate together when engaged by a superior force, since working together complicates the MIGs' coordination.

There was a single MIG operating low and near the center of the wagon wheel. This individual was thought to be the director. Every time that GREEN 3 and 4 would descend to an attack, a MIG would either cut across the circle to meet their attack or one would come up from low.

The MIG wagon-wheel tactic seemed like a good procedure in which to use people efficiently, if there were a lot of inexperienced pilots and only a few experienced ones.

A weapon is needed so that maneuvering targets may be attacked inside 2500-ft range. Due to the overtake and g's which exist in most fights the minimum range on the AIM-4 missile is about 6500-7000 feet. The lack of some sort of gun has given away a good chunk of air space wherein the F-4 cannot attack the MIG. The MIGs have realized this and have adopted tactics to defeat the missiles, mostly by high-g maneuvering.

To fight the MIG-17, the F-4 must be worked in the vertical. To fight the MIG-21 the F-4 must be worked in the horizontal plane. Working in the vertical must be an automatic reaction. The flight crews needed more training in this type of maneuvering. The crews that came to the theatre had diverse backgrounds (ADC, SAC) and had insufficient experience or training.

11. DATA SOURCES

Project Interviews: BLUE 1, Front, 3 June 1967; BLUE 3, Front, 4 June 1967; GREEN 1, Front, 4 June 1967; GREEN 1, Back, 3 June 1967; GREEN 4, Front, 4 June 1967.

Messages, Reports:

8 TFW 201215Z May 1967 OPREP-3 DOI 05363.

8 TFW 201535Z May 1967 OPREP-3 DOI 05365.

8 TFW 210245Z May 1967 OPREP-3 DI 05378 Sect. I, II, III.

AIM-7D/E Missile Performance Report for GREEN 1, GREEN 3, GREEN 4, BLUE 1 and BLUE 3.

12. NARRATIVE DESCRIPTION

BLUE and GREEN Flights were providing MIG CAP for a large strike force (five to seven F-105 flights). BLUE 1 was the MIG CAP force commander. The strike force was ingressing as a gaggle and BLUE Flight was flying line abreast with the second F-105 flight. Since the ingress was from the east, (heading west) BLUE Flight was about 2 miles north of the F-105s and about 3000 feet higher. The flight formation was a Pod formation slightly modified to give better lookout coverage for MIGs. GREEN Flight was to the right and high of the last F-105 flight, which put them about 3 miles back of BLUE Flight.

The force ingressed from the Gulf of Tonkin and as they crossed the coastal islands, the F-4s jettisoned their centerline tanks. As the force passed by a SAM site, about 20 miles east of Kep Airfield, two SAMs were fired as seen at BLUE 1's 11 o'clock. Just as the SAMs were fired BLUE 1 observed the IRON HAND Flight to pop up and fire two SHRIKES at the site. The SAMs immediately stopped guiding.

At about the time the SAMs were seen, one of the warning agencies, using the BULLSEYE warning system called "Bandits, BULLSEYE, low", followed by "Bandits 30 east, 36, low". This indicated to the flights that MIGs were 30 miles east of Hanoi at low altitude heading 360 degrees (north). This warning indicated that MIGs would be seen at 8-11 o'clock from BLUE Flight.

The F-105 force had planned to split and hit two targets on the Northeast Railroad and the CAP force had also planned to split in order to cover each part of the force. Before this happened, about 15 miles short of the target, BLUE 1 Front saw MIGs at 9 o'clock low, about 8 miles away. These MIG-17s were silver and were easily seen and immediately identified, even at 8 miles range, since they contrasted against the dark green vegetation. The MIGs passed underneath a cloud and when seen again were at 8 o'clock apparently attempting to attack the strike force. BLUE 1 called them out and GREEN 1 acknowledged. These MIGs were in GREEN 1's 9-10 o'clock position.

Immediately thereafter, a member of GREEN Flight called MIG-17s at 2 o'clock, low, heading south. The warning agency had not indicated these latter MIGs.

At this time the F-105s started to see MIGs and called them. The MIGs at 8 o'clock were still out about 5 miles.

At this time BLUE Flight started left to attack the MIG-17s seen in the 8 o'clock position, and GREEN Flight turned right to attack the MIG-17s seen in the 2 o'clock position. There were six to eight MIG-17s in each group and, at first, the engagements of BLUE and GREEN Flights were separated by 2-3 miles. The fights gradually coalesced, however, with the elements of each flight acting separately to provide support to other elements. The engagements took place within a 10 mile radius of 21°20'N/106°25'E.

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Due to the actions which followed, and the fact that each element from time to time was working with different elements (but not always certain of the specific identification) the actions of each element will be described separately.

As the F-4 engaged the MIGs, the F-105 force proceeded on to their assigned targets.

BLUE 1 and 2

As BLUE Flight went to afterburner and turned left to attack the MIGs, the MIGs had turned left and climbed, to attack the F-105s from over the top. This put the MIGs at BLUE Flight's 10 o'clock position, with the F-4s behind the MIGs. BLUE 1 did not immediately drop the outboard tank since it still had some fuel in it.

The MIGs continued to turn left and BLUE 1 concentrated on two MIG-17s at 10-11 o'clock. BLUE 1 locked on in the boresight mode. The backseat then switched to full system, interlocks out, gyro out, and BLUE 1 pulled lead on the MIG and fired a SPARROW. The missile guided perfectly but 2-3 seconds before intercept, the radar scope in the backseat went blank. Although only a faulty fuse had caused the back presentation to turn off (the frontseat scope was still operating) this was unknown to the backseater who then broke lock to go to boresight and the missile missed.

BLUE 1 had been descending, and he had obtained a lock on and fired at 7000 feet range. At the time of firing BLUE 1 was at about Mach 1 at 5000-6000 feet altitude, pulling 4 g's and closing in on the MIG at 350 knots. The angle off was 20-30 degrees. The polarization was linear and the clutter was in the override position. The MIG-17 was in a left turn at about 5000 feet altitude.

Due to the overtake, BLUE 1 closed on the MIG and when about 2000 feet away at several hundred feet altitude, he pulled up in a high speed yoyo, and switched to HEAT.

BLUE 1 made some other passes on MIGs and during one he saw an F-4 pass in front of him on fire. At this time, as he was coming back up in a left spiral, he saw an F-4 at 12 o'clock high, completely on fire. The tail and right wing were missing and above the burning F-4 were two parachutes. BLUE 1 saw the parts of the F-4 fall but lost contact with the chutes.

BLUE 1 made another pass on a MIG-17 but was unsuccessful in achieving SIDEWINDER launch parameters. BLUE 1 was in minimum burner all of the time. As he worked in the vertical (in a left turn) he repeatedly could see, many MIG-17s, all in a left orbit, at 10 o'clock.

BLUE 2 was clearing BLUE 1, and from 8500 feet altitude BLUE 1 saw a single F-4 (GREEN 1, recognized since he was a single) with a MIG-17 on him. BLUE 1 then started to attack this MIG. Before he could alert GREEN 1, GREEN 1 broke hard left. At this time GREEN 1 was about 1-1/2 miles away from BLUE 1. As GREEN 1 broke, the MIG-17 overshot. The MIG-17 made no move to reattack GREEN 1, but rolled to the right and headed straight toward Kep Airfield. (BLUE 1 could look past the MIG and see the runway about 8 miles away.) The MIG had been at about 4000 feet altitude and was diving toward the ground at about 20 degrees, with about one g on the aircraft, and not turning.

BLUE 1 got a good tone and fired a SIDEWINDER. When he fired, BLUE 1 was at 550 knots, at 2500 feet altitude with one g on the airplane. He was closing on the MIG at 250 knots. The MIG was straight ahead (0 degree angle off) at about 1500 feet altitude. The missile detonated to the left of the tailpipe. The MIG rolled over to the left, on fire, and went straight down from 1500 feet altitude. BLUE 1 is credited with a confirmed kill.

BLUE 1 and 2 then turned left and went back up to about 8500 feet altitude and returned to the battle area which was about 4 miles behind them.

BLUE 1 and 2 then made an attack on another MIG-17. This MIG was low, at about 200 feet altitude, and although BLUE 1 chased the MIG around, he could never get in a position for a SIDEWINDER attack. BLUE 1 could not get below the MIG so he could look up and get a tone differentiation.

When BLUE 2 called bingo minus 800 pounds, BLUE 1 and 2 disengaged. By this time the MIGs were seen moving off towards Kep, and BLUE 1 and 2 egressed without further incident. BLUE 1 and 2 had not been below 500 knots indicated throughout the fight.

BLUE 3 and 4

As BLUE 1 and 2 dived to engage their first MIG, BLUE 3 and 4 stayed high and behind for about two turns in order to provide support. After that, BLUE 3 and 4 lost track of BLUE 1 and 2 due to the confusion of MIGs and F-4s.

BLUE 3 and 4 then attacked a MIG-17 (MIG A) that was low. As BLUE 3 came in on the MIG he was unable to obtain a lock-on so he put the pipper on the MIG and fired a SPARROW in the boresight mode, looking down about 10 degrees on the MIG. The missile missed, without appearing to guide. The MIG was in a turn. The range at firing was about 1.5 miles. [See firing 1 of Table 1 for parameters.]

The MIG reversed his turn and BLUE 3 obtained a full system lock. With the steering dot centered, and the in-range light on, BLUE 3 fired his second SPARROW at MIG A. The

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missile seemed to guide initially but missed MIG A. [See firing 2 of Table 1 for additional details.]

With interlocks out, BLUE 3 pulled some lead on MIG A and fired his third SPARROW at the MIG. The missile passed just behind MIG A. [See firing 3 of Table 1.] The MIG at this time was in a left descending hard turn. BLUE 3 with good overtake, then went into a left climbing turn above the MIG. The MIG made no attempt to follow and did not come close to BLUE 3, and BLUE 3 successfully disengaged.

BLUE 3 and 4 came back around and rolled in on another MIG-17 (MIG B). BLUE 3 put the piper on the MIG and achieved a lock-on. Before BLUE 3 could fire, two other F-4s came between BLUE 3 and MIG B.

At the time that BLUE 3 and 4 rolled out, just as the other F-4s got between them and MIG B, BLUE 3 noticed another MIG-17 at 5 o'clock, firing. BLUE 3 could see the top of the wing so this MIG was not a threat to him but the MIG was close to tracking BLUE 4 so BLUE 3 and 4 went to full burner and started a climbing turn. The MIG started to follow but fell back and was only a threat for a few seconds. BLUE 3 and 4 then climbed to altitude to position for another attack.

BLUE 3 saw a lone MIG-17 (MIG C) and turned in on him and attempted to fire two SIDEWINDERS. One SIDEWINDER hung and the other missed. [See firing 4 and 5 of Table 1.] By the time BLUE 3 had got into range, MIG C had seen him and had started a break. In addition, BLUE 3 had a weak tone on the SIDEWINDER. The SIDEWINDER which missed, fell short of the MIG.

BLUE 3 and 4 then broke off since the MIG's actions indicated that BLUE 3 had been seen. BLUE 3 and 4 climbed back to altitude (about 8000 feet) and on checking the fuel state, determined that they were close to BINGO, so they started to egress.

BLUE 3 then saw a lone MIG-17 (MIG D) low and to the right. The MIG was at a very low altitude and appeared to be heading for Kep.

BLUE 3 and 4 had enough fuel for one more pass, so they went to afterburner and turned right and down. When he saw the MIG, BLUE 3 was between 8000 and 10,000 feet altitude and climbing. The MIG was below 1000 feet.

BLUE 3 achieved a radar lock, and went to full system. With the in-range light on and the steering dot centered, he fired his last SPARROW. The SPARROW did not track at all and dived into the ground. [See firing 6 of Table 1.]

Since BLUE 3 had a good rate of closure, and the MIG had apparently not detected BLUE 3, he closed slightly and descended to 200-300 feet AGL in an attempt to get a good tone. BLUE 3 was unsuccessful, and fired a SIDEWINDER against a green hill background with a weak tone. The missile appeared to track and was headed for the tailpipe but fell short. [See firing 7 of Table 1.] BLUE 3 felt he was in range although he does not remember if the backseater called it out. It was indicated in the OPREP source that BLUE 3 had a radar lock during the last two firings.

BLUE 1 then fired his last SIDEWINDER and the SIDEWINDER detonated to the right of the MIG, just outside of the wing. As the missile detonated, MIG D went into a sharp left turn and when the fire ball subsided the MIG was still flying. Since BLUE 3 was out of ordnance and fuel, BLUE 3 and 4 started a climbing turn and disengaged. [See firing 8 of Table 1.]

Although BLUE 4 had stayed with BLUE 3 throughout the encounters, and was calling to clear BLUE 3, BLUE 3 had difficulty hearing BLUE 4. BLUE 3 retained his outboard fuel tank until egress, and did not notice any performance degradation due to it. The lowest speed that BLUE 3 achieved was 450 knots.

GREEN 1 and 2

GREEN Flight turned right to engage the MIGs that were seen coming in from the north. GREEN 1 and 2 made several turns with the MIGs. During these turns, GREEN 1 and 2 had to maneuver to avoid collisions with friendly aircraft. Due to the confusion GREEN 1 and 2 were unable to fire any ordnance.

Early in the engagement, GREEN 1 had to break off a hard turn in order to avoid a collision. GREEN 1 pulled up and reversed and the next time he saw GREEN 2, GREEN 2 was on fire, stalled out, and above GREEN 2 were two parachutes. During this time, GREEN 1 Back was checking the 7 o'clock, and as GREEN 1 was in a left bank, GREEN 1 Back saw an F-4 (GREEN 2) slide to the inside, slow, in a nose high attitude, on fire. He also saw the crew eject.

GREEN 2 was lost at about 1634H in the vicinity of 21°25'N/106°25'E. When first seen, the aircraft was nose low, with fire coming from both wing roots and was at an altitude of 7000 feet. When next seen, the aircraft was in a nose high attitude at 4000 feet. The aircraft was engulfed in flame and debris was falling away. Shortly thereafter two seats and two good chutes were seen, but no beepers were heard. The aircraft was seen to impact in the vicinity of 21°25'N/106°25'E. The cause of loss was a MIG-17.

After GREEN 2 had been lost, GREEN 1 re-entered the fight and attacked a MIG-17 (MIG E) which was out in front. From a boresight acquisition and lock on, GREEN 1 went to full

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Table 1. BLUE 3 FIRING ATTEMPTS

Firing Attempt	1	2	3	4	5	6	7	8
Ordnance Target	AIM-7E MIG-17 MIG A	AIM-7E MIG-17 MIG A	AIM-7E MIG-17 MIG A	AIM-9B MIG-17 MIG C	AIM-9B MIG-17 MIG C	AIM-7E MIG-17 MIG D	AIM-9B MIG-17 MIG D	AIM-9B MIG-17 MIG D
BLUE 3 Flight Conditions	5000 0.9 M 2 Slight Diving Turn	4000 0.9 M 3 Diving Turn	4000 0.9 M 4 Diving Turn to Left	1000 0.9 M 1 Level	1000 0.9 M 1 Level	1000 0.9 M 4 Level Turn	200-300 AGL 0.9 M 1 Level	200-300 AGL 0.9 M 1 Level
Target Flight Conditions	4000 Below 0.8 M Turn	3000 Below 0.8 M Turn	3000 Below 0.8 M Turn	1000 Same 0.8 M Break	1000 Same 0.8 M Break	1000 Same 0.8 M	500-1000 AGL Same 0.8 M	Same 0.8 M
Geometry	10°	40°	40°	0°	0°	30°	0°	0°
Track Crossing Angle	200 1-1/2 mi	200 Between 1-1/2 & 1 mi	200 1 n mi	100	100	200 About 1 n mi	100	100
AIM-7E Firing Mode	Boresight Normal Narrow Satisfactory Linear 1-1/2 mi	Full System Normal Narrow Satisfactory Linear 1-1/2 1-1/2	Full System Normal Narrow Satisfactory Linear 1-1/2 1-1/2	Weak Ordnance hung.	Weak Hill back-ground, the missile missed by 100 ft short of the MIG.	Full System Normal Narrow Satisfactory Linear 1-1/2 1	Full System Lock Retained	Weak Hill back-ground, missile fell short by 20 ft.
Select Light ^a Polarization								
Detection Range								
Lock-On Range								
AIM-9B Firing Tone								
Results and Remarks	Missile did not guide, missed 500 ft.	Steering dot in ASE circle, missile guided initially but missed by 300 ft.	Interlocks out dulling lead.	Weak Ordnance hung.	Weak Hill back-ground, the missile missed by 100 ft short of the MIG.	Low Alt, missile hit ground in back of MIG, interlocks out, missed 500 ft.	Weak Hill back-ground, missile fell short by 20 ft.	Weak Hill back-ground, missile detonated 20 ft away but no kill.

^aThe AIM-7 missile select light had been on 60 seconds prior to arming.
^bOn firing the tone became a low background chopping noise.

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system and ripple-fired two SPARROWS. [See firing 1 and 2 of Table 2.] One of the missiles was not observed, the second tracked well and detonated in the vicinity of MIG E. The MIG caught fire and went down to the left, resulting in a kill for GREEN 1. The impact was observed by a member of BLUE Flight.

GREEN 1 did not see the missile detonate since he was under attack by two other MIG-17s. Just before GREEN 1 had fired, GREEN 1 Back had seen the MIGs coming in from 8 o'clock high going to 6 o'clock. The MIGs were 1-1/2 to 2 miles away and GREEN 1 Back called them out. These MIGs started firing at GREEN 1. By the time GREEN 1 had fired his SPARROWS, these MIGs were in good position and GREEN 1 Front could see the underside of the MIGs. GREEN 1 then made a level left break (about 7-8 g's) but the MIGs stayed with him during the turn shooting. GREEN 1 then started to climb and the MIGs broke off to the right when BLUE 1 attacked them. When GREEN 1 came around again, MIG E was burning on the ground.

GREEN 1 continued to try to attack other MIGs in the area. As GREEN 1 would come across the wagon wheel to attack a MIG who had his tail pointed toward GREEN 1, he in turn would be attacked by other MIGs. This happened three separate times.

During these attacks, disengagements, separations, and reattacks, GREEN 1 fired two SIDEWINDERS and one SPARROW, without success, at three different MIGs.

The first SIDEWINDER was fired out of parameters, and passed behind the target [see firing 3 of Table 2]. The second SIDEWINDER was fired under conditions like the first [see firing 4 of Table 2]. The SPARROW firing was from inside minimum range, and as the MIG broke, the missile passed behind [see firing 5 of Table 2].

GREEN 1 reached bingo fuel and after calling the other flights, started to egress. As the friendly forces left, most of the MIGs had left except for a single MIG-17 (MIG I), circling in the area. At this time GREEN 1 decided to attack this MIG so he descended to low altitude, and from 10 miles away started to approach the MIG. Before he reached firing range the MIG saw GREEN 1 and started to take evasive action.

The MIG stayed low, turning, and GREEN 1 followed, attempting to stay below the MIG. GREEN 1 throttled back and stayed behind the MIG, 3000 to 4000 feet away. The MIG turned up a valley and as he came to the end he flew over a ridge, and was outlined against the sky.

The MIG popped over the ridge in a right turn and immediately reversed to the left. GREEN 1 got a good tone and launched two SIDEWINDERS. The first was unobserved and the other exploded under the MIG's tail [see firing 6 and 7 of Table 2]. The SIDEWINDER exploded 5-10 feet on the right side of the MIG and pieces were seen to come from the MIG as the MIG turned left and down from 200 feet altitude. GREEN 1 is credited with a kill.

GREEN 1 then broke over the MIG to clear his 6 o'clock and lost sight of the MIG. GREEN 1 then egressed with a 2000 pound fuel state.

GREEN 3 and 4

After GREEN 1 fired his first missile, GREEN 3 and 4 were instructed to attack other MIGs. As GREEN 3 and 4 attacked from a vertical maneuver, MIGs would cut across the circle to counter their attack. GREEN 3 fired six missiles in separate attacks on different MIGs [see Table 3 for the firing order].

At the time that GREEN 3 fired his first SIDEWINDER, GREEN 4 fired a SPARROW at a MIG. GREEN 4 fired interlocks out, with a full system lock on. The SPARROW was observed tracking but GREEN 4 was unable to keep track of it as he had to maneuver to stay with GREEN 3. However, the radar stayed locked on for about 5 seconds after he lost visual contact with the MIG. At firing, GREEN 4 had 5 degree angle off and was at 8500 feet altitude and 2 g's. The speed was Mach 0.9. He was firing down on a MIG-17 who was at 3000 feet altitude and 0.8 Mach. The overtake was about 300 knots. The firing range was about a mile, with lock-on also occurring at one mile. The switch settings were: polarization, linear; clutter, normal; and gate, narrow. The select light had been on 5 minutes before arming.

About the second or third time around the circle, GREEN 3 and 4 were in a left vertical turn reversal, heading back down when GREEN 4 saw GREEN 2 pass in a 30 degree dive with fire coming from the wing roots. (GREEN 4 thought he was firing his missiles.) Previous to this GREEN 4 thought he heard a call of "GREEN 2, MIG at 7". As GREEN 3 and 4 headed down, they selected some MIGs which had broken off, and after GREEN 3 and 4 fired at them, GREEN 3 and 4 then went back up and as they did, they saw GREEN 2 in a stall, on fire, and two parachutes.

On the previously described descent, GREEN 4 fired his second SPARROW, under conditions identical to the first firing except the track crossing angle and angle off were 20 degrees, and he had 3 g's on the aircraft. Again, a maneuver prevented GREEN 4 from observing the missile flight.

GREEN 4 subsequently attempted to fire two more SPARROWS but they (the two aft missiles) would not fire and did not leave the aircraft.

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Table 2. GREEN 1 FIRING ATTEMPTS^a

Firing Attempt	1	2	3	4	5	6	7
Ordnance Target	AIM-7E MIG-17 MIG E	AIM-7E MIG-17 MIG E	AIM-9B MIG-17 MIG F	AIM-9B MIG-17 MIG G	AIM-7E MIG-17 MIG H	AIM-9B MIG-17 MIG I	AIM-9B MIG-17 MIG I
GREEN 1 Flight Conditions	3000 0.9 M 2 Level Turn	3000 0.9 M 2 Level Turn	2000 0.9 M 3	1500 0.9 M 2-1/2	100 0.9 M 1 Level Turn	250 0.9 M 1-1/2 Turn	250 0.9 M 1-1/2 Turn
Target Flight Conditions	3000 Same Left Turn	3000 Same Left Turn	Low Turning	Level Turning	500 Low 0.9 M Hard Turn	200 Above 0.8 M Turning Left	200 Above 0.8 M Turning Left
Geometry	0-20°	0-20°	0-10°	0-10°	0-10°	0-10°	0-10°
Track Crossing Angle	200 0.8-1.0 n mi	200 0.8-1.0 n mi	200	200	200 About 1 mi	200 2-1/2 mi	200 2-1/2 mi
Relative Velocity (KM)	Full System	Full System			No lock boresight Override Narrow Satisfactory Linear 1-1/2		
Firing Range	Full System Override Narrow Satisfactory Linear 7000 ft In	Full System Override Narrow Satisfactory Linear					
AIM-7E Firing Mode	Full System	Full System					
Clutter Gate	Full System	Full System					
Select Light	Full System	Full System					
Polarization	Full System	Full System					
Detection Range	Full System	Full System					
Lock-On Range	Full System	Full System					
Interlocks	Full System	Full System					
AIM-9B Firing Tone	Not observed	Missile detonated about 10 ft away, MIG was destroyed	Yes	Yes		Yes	Yes
Results and Remarks	Not observed	Missile detonated about 10 ft away, MIG was destroyed	Missile fired out of parameters, missed	Missile fired out of parameters, missed	MIG broke, missile fired too close and missed	Unobserved	Detonated near the MIG. A kill

^aNo source reports that GREEN 1 attempted to fire the other SPARROW. Due to the nature of the battle, an attempt may have been made, however.

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Table 3. GREEN 3 FIRING ATTEMPTS^a

Firing Attempt	1	2	3	4	5	6
Ordnance Target	AIM-7E MIG-17 MIG J	AIM-9B MIG-17 MIG K	AIM-7E MIG-17 MIG L	AIM-9B MIG-17 MIG M	AIM-9B MIG-17 MIG O	AIM-9B MIG-17 MIG P
GREEN 3 Flight Conditions	2000 500 1 Slight Dive	2000 500 1 Slight Climb	2000 500 4	2000 500 3	2000 500 4	2000 500 2
Target Flight Conditions	2000 Same 0.8 M Turn	2000 Same	2000 Same 0.8 M Turn	2000 Same	2000 Same	2000 Same
Geometry	0	0	0	0	0	0
Track Crossing Angle	150 rel ml	150	150 rel ml	150	150	150
Velocity (KN)	Boresight Override Narrow Satisfactory Linear	Yes	Boresight Override Narrow Satisfactory Linear 1-1/2 Out	No	No	No
AIM-7E Firing Mode	No guide miss	Missile hit, target kill	System broke lock, missile went on and to the right	Not observed	Did not guide, went into ground	Not observed
AIM-9B Firing Tone	- - -					
Results and Remarks						

^aGREEN 4 reports that GREEN 3 called, "1 am out of missiles", but is not known if GREEN 3 attempted to fire the other SPARROWS.
^bClosing.

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Event III-252

The F-4s' altitudes during the engagement varied from 100 to 8500 feet. The tactics used by both groups of MIG-17s were to stay in a "wagon wheel" orbit, turning to the left. Both groups of MIGs orbited low (one near 1000 feet and another near 5000 feet) and in the same location. They operated in pairs or in threes, and when an F-4 element rolled in for a pass, at least one MIG would be at their 6-7 o'clock. The MIG-17s would disengage by executing a split-S in the vertical and diving for the deck. The enemy aircraft were extremely aggressive. There was also a couple of MIG-17s orbiting very low (100-200 feet altitude) near the center of the orbit and it was surmised that these were director aircraft. The MIG-17s used afterburner intermittently throughout the engagement.

The friendly tactics were to pick an element of MIGs in the orbit and make a high-speed pass, breaking of a minimum range to go high to position for another pass. The speed was kept high.

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Event III-253

Aircraft Involved: Three F-4Cs and two EB-66s
vs one unident

Results: Sighting

Vicinity of Encounter: 20°01'N/104°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967, 1610H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ECM escorts sighted a large, high swept wing A/C approaching head-on from the north; the A/C made a wide sweeping left turn at approx speed of EB-66 at altitude of 30,000'; numerous MIG calls were heard.

Event III-254

Aircraft Involved: Three F-105s vs seven
MIG-17s

Results: No damage

Vicinity of Encounter: 21°18'N/106°43'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967, 1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight ingressing at 5000'; four MIGs came from the south at flight's altitude, gently dropping below flight altitude to a 6 o'clock position; MIGs were unable to engage due to flight speed; as flight egressed from target, three MIG-17s at 3000' were observed closing on flight; MIGs could not execute turn to engage flight.

Event III-255

Aircraft Involved: Four F-4Cs vs one MIG-?
and one unident

Results: Sighting

Vicinity of Encounter: 21°09'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967, 1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIGCAP flight, when approx 40 miles short of target, heard MIG call from flight of Event 170; flight continued cover for F-105s on into and out of target area; one MIG sighted by #3 going away from the strike force; one unknown type A/C was observed, silver in color, markings could not be observed due to distance.

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Event III-256

Aircraft Involved: Four F-105Ds vs two MIG-17s
Result: No damage
Vicinity of Encounter: 21°31'N/106°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/about 1630H

BLUE flight (four F-105Ds) was the lead flight of a force of F-105s striking the Bac Le railroad yards at 21°31'N/106°26'E. The MIOCAP was provided by the aircraft of Event III-252. The other strike flights which saw MIGs are described in Events III-260 and -257.

2. MISSION ROUTE

Takhli to target and return via the Gulf of Tonkin.

3. AIRCRAFT CONFIGURATIONS

<u>F-105D</u>	<u>BLUE 1</u>	<u>BLUE 2</u>	<u>BLUE 3</u>	<u>BLUE 4</u>
	4 - CBU-24a	4 - CBU-24s on centerline	6 760 lb bombs	6 - 750 lb bombs on centerline
	1 - AIM9B	2 QRC-160	1 - AIM9B	2 - QRC-160
	1 - QRC-160		1 - QRC 160	

All aircraft carried 2 - 450 gal external fuel tanks and 20 mm guns. All camouflaged.

MIG-17, MIG 1, 2

Clean

Dull silver color, red stars on wings

Cannon

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Some low, fair weather cumulus in the area; good visibility.

BLUE 1, 2, 3, 4

Altitude: 6,000 feet

Heading: 310°

Fuel State: 7,000 lbs

Flight Formation: Line abreast, with 1 and 2 on the right and 3 and 4 on the left.

5. INITIAL DETECTION

Two aircraft, subsequently identified as MIG-17s, were detected by BLUE flight during ingress, when they were about 1 1/2 minutes out from the target. Bogeys were at 10:30 o'clock, slightly high, about 4-5 miles distance, in a left turn toward BLUE flight. MIG warnings had been heard, but none had been directed at this flight. The bogeys were initially thought to be MIGs due to their shape and the direction from which they came.

6. ACTION INITIATED

BLUE flight lit afterburners and continued their run on the target. The MIGs fell behind as BLUE flight accelerated for the pop up, even though they attempted to position for firing.

7. SITUATION DEVELOPMENT

BLUE flight popped up to about 13,000 or 14,000 ft, making a right hand roll-in for an attack heading of about 020°, then jinking out in a generally south to east direction. BLUE flight lost sight of the MIGs in their maneuvers to strike the target.

Shortly after coming off target, BLUE 4 called that he was being fired upon by a MIG as he observed tracers high over his left wing. BLUE 4 applied negative g's, went afterburner and successfully disengaged.

When BLUE flight had egressed about five miles further from the target and had rejoined in a line abreast formation with BLUE 3 and 4 on the left, BLUE 1 saw a MIG-17 closing and passing behind him in a right turn. The MIG was unable to attack BLUE lead and continued over to attack BLUE 4. The MIG approached 1500 feet range at BLUE 4's

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Event III-256

5 o'clock position as BLUE lead called the MIG's position and for the flight to go after-burner, unload and break right. The F-105s accelerated away from the MIG and the range had increased to 2000 feet before the MIG achieved a firing position. However, the MIG was not observed to fire and it is doubtful whether the MIG actually achieved firing position. The MIG fell behind as BLUE flight egressed toward the coast.

Although not definitely ascertained, it was suspected that the latter two MIG-17s attacking BLUE flight were the same ones as those making the pass on BLUE flight prior to striking the target.

8. ORDNANCE

BLUE - none.

MIGs - One enemy fired unknown number of rounds of cannon at BLUE 4. No hits.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3100	250	Unknown	None

Comments

Knew that they could outrun the MIG-17s.

11. DATA SOURCES

Project Interviews: BLUE 1, 31 May 1967.

Messages: 355 TFW Takhl1 OPREP-3 201320Z May 67, DOTO-O 11808 May 67.

12. NARRATIVE

See 5, 6, and 7.

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Event III-257

Aircraft Involved: Four F-105Ds vs eight MIG-17s

Result: No damage

Vicinity of Encounter: 21°26'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/about 1630H

Four F-105s (BLUE flight) were part of a strike force from Takhli attacking the Bao Le railroad yard. The other strike flights which encountered MIGs were those of Events III-256 and III-260. The MIGCAP aircraft were those of Event III-252.

8. ORDNANCE

BLUE 1	20mm Cannon	3/0	200 rounds
BLUE 2	3/0		fired 570 rounds

10. AIRCREW COMMENTS

	Total Hours	F-105 Hours	Combat Missions
<u>Experience</u>			
BLUE 1	3300	700	90 Two previous air-to-air engagements.
BLUE 2	5100	260	65 Two prior air-to-air engagements.

Comments

BLUE 1 - the MIG-17's rate of turn is almost unbelievable.

11. DATA SOURCES

Project Interviews: BLUE 1, June 1967

Messages:

355 TFW Takhli OPREP-3 201400Z, May 67, DOTO-0 11812

12. NARRATIVE

On ingress, as BLUE flight approached the "pop-up", eight silver MIG-17s in fingertip trail formation were encountered. BLUE flight was headed west and the MIGs were turning to come in on BLUE at 6 o'clock. BLUE called the F-4 CAP flight and proceeded into the pop-up, bombed and recovered. At this time MIGs were sighted in all quadrants. As the flight started to egress, BLUE 1 and 2 in succession passed three MIGs at three separate times. Each time BLUE 1 and 2 would fire a burst of 20mm and pass on (vicinity of 21°26'N/106°20'E). BLUE 2 fired a total of 570 rounds. The last of these passes by BLUE 2 was at 100 feet altitude. There was no known damage done to the MIGs. BLUE flight accelerated to 600 kts and continued egress.

During the engagement, BLUE 1 saw a single MIG-17 at low altitude and went down after him. Just as he was pulling lead to fire on the MIG, the MIG broke very sharp and BLUE 1, being unable to follow accelerated away.

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Event III-258

Aircraft Involved: Four F-4Cs vs four or five
MIG-21s¹

Results: Two MIG-21s destroyed

Vicinity of Encounter: 21°53'N/105°21'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/1625H

Four F-4Cs (BLUE Flight) were one of two F-4 flights providing MIGCAP escort for a strike force attacking the Vinh No motor vehicle repair yards. Although none of the strike flights or the other F-4 flight saw MIGs, the IRON HAND flight (Event III-257) was attacked by MIG-21s.

2. MISSION ROUTE

BLUE Flight departed Danang, then proceeded direct to WHITE ANCHOR for refueling. From WHITE ANCHOR, the flight proceeded direct to Channel 97, then direct to 21°55'N/104°38'E, then direct to 21°55'N/105°06'E, then direct to the target. Egress was the reverse route.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 - AIM-7E SPARROW
4 - AIM-9B SIDEWINDER
1 - QRC-160 pod
1 - 600 gal centerline tank
1 - 370 gal outboard tank
IFF-on-TACAN-on

MIG-21 C and D (at least two were "D")

Silver
One MIG-21D had CHICOM markings
No external stores

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Two-eighths scattered clouds with tops at 5000 ft. Visibility 20 mi.

	BLUE			
	1	2	3	4
Altitude:	12,000 ft AGL (approx. 15,000 ft MSL)			
Heading:	137°			
Speed:	540 kts			
Fuel State:	9000 lb			
Flight Formation:	Pod			

5. INITIAL DETECTION

During ingress, BLUE 4 back saw two MIG-21s attacking the last flight of the strike force. The MIGs were heading 010° at 8000 ft altitude.

6. ACTION INITIATED

BLUE Flight immediately broke off to attack the MIGs.

7. SITUATION DEVELOPMENT

BLUE 3 and 4 attacked the MIGs with BLUE 3 obtaining a radar lock-on. Before BLUE 3 could fire, a call of "break" was heard and the flight broke off. When reacquired, the MIGs were no longer a threat, so BLUE Flight started to rejoin the strike force.

As BLUE Flight again started down Thud Ridge, BLUE 3 saw another MIG-21 and began an attack. BLUE 3 subsequently fired three SPARROWS at the MIG, the last of which hit, resulting in a kill. Shortly thereafter, BLUE 3 saw a MIG-21D while obtaining a lock on another MIG-21. Before an attack could be initiated, BLUE 4 called BINGO fuel due to a mechanical difficulty, and BLUE 3 and 4 egressed.

BLUE 1 and 2 then picked up a MIG-21D and turned hard into him. BLUE 1 was successful in achieving an attack position and fired a SIDEWINDER which destroyed the MIG-21D. BLUE 1 and 2 then egressed. During egress, BLUE 1 and 2 saw another MIG-21 at 6 o'clock 5 to 6 mi away but the MIG turned away when BLUE 1 and 2 turned into him.

¹Five MIG-21s were seen and four were engaged. Two crew members validate five, one crew member validates four, and four crew members validate three aircraft.

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Event III-258

8. ORDNANCE

(No. fired/No. hit)

	<u>SPARROW</u> <u>AIM-7E</u>	<u>SIDEWINDER</u> <u>AIM-9B</u>
BLUE 1		1/1
BLUE 3	3/1	

9. EQUIPMENT PROBLEMS

BLUE 4 had a fuel system malfunction which caused the engine to burn more fuel than normal.

BLUE 1's radar display in the backseat had very dim presentation. It was difficult to see the radar return and the presentation had to be held for several seconds before the symbols could be seen. In boresight mode, the scope was so bright no data could be seen so that lock-ons could not be achieved in boresight.

10. AIRCREW COMMENTS

Experience

	<u>TOTAL</u> <u>HOURS</u>	<u>F-4</u> <u>HOURS</u>	<u>COMBAT</u> <u>MISSIONS</u>	<u>REMARKS</u>
BLUE 1				
Front	3600	230	70	Flew in Thunderbirds - F-86 pilot
Back	500	260	45	
BLUE 3				
Front	5000	200	54	Had fired missiles in flight test
Back	610	350		

Comments

BLUE 1 Front - The MIGs were trying to hit the F-105s from low with a missile pop-up attack. The MIGs were coming in from a beam position to attempt a hit and run attack.

The MIG solved BLUE 1's problems by his maneuver.

The wingman did a good job.

BLUE 1 Back - The wingman (BLUE 2 and 4) did an excellent job of staying with their element leads. The wingman were briefed to call the 6 o'clock situation every 15 to 20 sec. BLUE 1 never worried about the 6 o'clock.

Although some of the flights had started to carry guns, BLUE Flight had not yet been so configured.

BLUE 1 Front said that due to his experience in firing SIDEWINDERS, he knew exactly what he wanted to see for a firing situation. The one he had this time fitted it exactly - no clouds, clear blue sky, and target going straight away in afterburner.

Due to the failure of the radar set, it was planned to use the SIDEWINDER.

The wingman really made the formation since he was checking the 6 o'clock while BLUE 1 was attacking. The frequent calls kept BLUE 1 from having to look around.

If fuel was left at the end of a mission, the flights would practice ACT, with emphasis on the wingman's functions. In the element lead, the aircraft commander was flying for an attack. The backseat on the lead aircraft was looking at the radar to lock on the target. The front seat of the wingman was following lead and watching to stay with him. The backseat in the wingman's aircraft was really performing the visual search. They were the ones which spotted the MIGs that led to the kills.

BLUE 3 Front - Felt he could have gotten the last MIG on which he had achieved a lock, but he had to leave due to BLUE 4.

If you want MIGs you must go after them and initiate a radar search if you lose visual contact.

The squadron has a lot of people with long experience and they recognize the value of the wingman working closely with the leader.

11. DATA SOURCE

Project Interviews: BLUE 1 Front, 23 June 1967
BLUE 1 Back, 23 June 1967
BLUE 3 Front, 23 June 1967

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Event III-258

Messages, Reports:

366TFW 201330Z May 1967 CPREP-3 PASTEL 670
366TFW 201300Z May 1967 OPREP-3 PASTEL 672
366TFW 240300Z May 1967 OPREP-3 DCO 00162
Raytheon letter OLD 0438 22 May 1967

12. NARRATIVE DESCRIPTION

BLUE Flight was one of two MIGCAP escort flights escorting the strike force from Korat. The strike force was in a gaggle formation and the other MIGCAP escort flight was about 1000 ft higher than and about in the middle of the strike force. BLUE Flight was behind the last flight of the force, about 2000 ft higher than the rest of the formation and trailing a bit.

During ingress to the target at 1620H, when in the vicinity of 21°35'N/104°35'E, BLUE Flight heard the flight of Event III-257 call launch lights from Lead 12 (a SAM site). Lead 2 (another SAM site) was also reported but no SAMs were observed. MOTEL was active, giving two warnings during ingress and three while the strike force was in the target area.

When the centerline tank became empty, it was jettisoned and shortly after turning down Thud Ridge, BLUE Flight heard the IRON HAND Flight (Event III-257) call MIGs and flight instructions called by the F-105s. The first call heard from the IRON HAND put the MIGs at the F-105's 9 o'clock but BLUE Flight was unable to gain contact with the MIGs. Another call indicated the MIGs were going from right to left, under BLUE Flight, so BLUE 3 and 4 banked in an attempt to see under them.

Finally, BLUE 4 backseat saw two MIG-21s (MIG 1 and 2) under the flight, and BLUE 3 picked up a MIG off to his left (which was to the east). At this time BLUE Flight was at 21°40'N/105°22'E heading 137° at 540 KTAS and 12,000 ft AGL. The time was 1625H. MIG 1 and 2 were heading 010° at 8000 ft AGL and 450 KTAS and were attacking the last flight of F-105s.

When BLUE 3 picked up the MIG (it was felt that this was one of the first two seen), he called it and turned left to start an attack. BLUE 1, who did not see the MIGs at that time, then indicated that BLUE 1 and 2 would provide cover. The MIG seen by BLUE 3 was identified as a MIG-21 due in part to its flashing silver color. BLUE 3 started to close in on the MIG as it turned north and then west. Although there had been two radar contacts, BLUE 3 went boresight and the backseat locked on to one of them. At this time, BLUE 3 lost visual contact with the MIG but followed him by using the steering dot on the radar.

BLUE 3 followed the contact through about 135° of turn and as the ASE circle started to expand and he was ready to fire interlocks in, BLUE 4 called for a break and indicated that there were MIGs at 7 o'clock. At this time, 1626H, BLUE flight was at 21°53'N/105°21'E with BLUE 1 and 2 following BLUE 3 and 4 by about 5000 ft at their 6-7 o'clock high.

BLUE Flight, after BLUE 3 requested and received confirmation of the break call, broke left. BLUE 3 broke radar contact during the break. No MIGs were seen, and the aircraft observed by BLUE 4 were really BLUE 1 and 2. BLUE 1 attempted to call off the break but, due to the crowded communications channels, the message was not heard.

When seen again, the MIGs posed no threat to the strike force so BLUE Flight turned to the southeast to continue to follow the strike force.

The subsequent actions take place within a 10 mi radius of 21°53'N/105°24'E.

Shortly after rolling out with BLUE 1 and 2 still behind, BLUE 3 saw another MIG-21 (MIG 3) off to the east, going rather fast. BLUE 3 went to boresight and locked on MIG 3. The sun glints from MIG 3's silver surface had alerted BLUE 3 to the presence of MIG 3 who was attempting to attack the strike force. When seen, BLUE 3 and MIG 3 were both at 10,000 ft altitude, with BLUE 3 heading 137° at 540 kts. When initially detected, MIG 3 was at 6 mi range and lock-on was immediate.

After lock-on, BLUE 3 continued to track MIG 3 visually with only an occasional reference to the steering dot.

BLUE 3 closed slightly on the MIG, and both BLUE 3 and MIG 3 started a left descending turn. When at about 5-6 mi range, BLUE 3 fired his first SPARROW with full system lock, interlocks in. BLUE 3 was at 10,000 ft altitude and about 0.9 Mach. BLUE 3 was about 20-30° angle off from MIG 3, pulling about 2 "g's". The closing velocity was small.

The missile came off the aircraft and tucked down and to the left and went ballistic, passing out of sight.¹

¹OPREP 240330Z May 1967 reports a 200 ft miss distance at the MIG's 6 o'clock.

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Event III-258

BLUE 3 continued to turn left with MIG 3, closing slowly, and at a range of 4 mi with BLUE 3 at 8000 ft and about .95 Mach, BLUE 3 fired his second SPARROW. The MIG was at about 8000 ft also with the other conditions of firing about the same as the first except the interlocks were out. The second SPARROW also went ballistic.¹

BLUE 3 maintained position and fired his third SPARROW at 2-3 mi range. In the last firing, BLUE 3 and MIG 3 were at about 6000 ft altitude with BLUE 3 at 1.1 Mach. The other firing parameters were about the same as the previous two firings with interlocks out. The SPARROW tracked into MIG 3 and impacted directly on the left wing root while MIG 3 was presenting a plain view to BLUE 3. On impact, the MIG exploded and the left wing separated from the aircraft. As MIG 3 was engulfed in an orange ball of fire and trailing a plume of black smoke, the MIG pilot ejected. The pilot's seat had drag chute action similar to the Martin-Baker seat, and the main chute had orange and white panels, as seen by four members of BLUE Flight. BLUE 3 backseat saw MIG 3 impact at about 21°53'N/105°27'30"E. MIG 3 was a MIG-21C.

Throughout the encounter BLUE 3 had been in afterburner but had retained his outboard tank. The lock-on to the MIG had been made against a clear sky and although the turns put mountains in the background, the radar did not break lock. For all firings, the polarity switch was on linear and the gate was narrow. For the first firings, the dot was near centered or centered and for the last firing the dot was centered. The first two missiles were not fired out of parameters and the reason for the lack of guidance is not known.

After destroying MIG 3, BLUE 3 and 4, with BLUE 1 and 2 still providing cover, turned south again and BLUE 3 front saw another MIG-21 (MIG 4). This MIG was a MIG-21D. MIG-4 was seen off to the left and BLUE 3 started to turn to the left. Simultaneously BLUE 3 backseat achieved a full system lock on a MIG contact (MIG 5) that was a 1 o'clock, 5° low, and 6 mi range. As BLUE 3 turned left, his wingman, BLUE 4, called absolute BINGO (minus).² Despite BLUE 3's use of afterburner, he still had plenty of fuel but BLUE 4 had a mechanical difficulty and was using more fuel than normal. Although BLUE 4 called BINGO at 6200 lb and 4000 lb should have been used to get to the tanker, BLUE 4 arrived with only 300.

At this time, the MIG under visual contact, MIG 5, reversed back to the right in a nose high altitude, about 500-1000 ft above BLUE 3. BLUE 3 was in danger of overshooting and he called BLUE 4 to break off and egress to the west. BLUE 3 stayed with MIG 5 in his right turn as MIG 5 attempted to disengage by using speed. [BLUE 3 felt that he could have fired on this MIG if he could have stayed.] When MIG 5 was no longer a threat, BLUE 3 broke off and headed west with BLUE 4 to post strike refueling.

Although BLUE 1 and 2 had followed the action and covered BLUE 3 and 4, BLUE 1 and 2 broke off from BLUE 3 and 4 as the latter two egressed for the tanker.

At this time BLUE 2, heading southeast toward Thud Ridge, saw a single MIG-21D at his 10 o'clock [thought to be MIG 5] and BLUE 1 and 2 turned into the MIG. This MIG was starting to descend and turn left into BLUE 1 and 2. BLUE 1 and 2 turned hard left into MIG 5 and started to descend to gain speed. In the left turn, BLUE 1 and 2 lost visual contact with MIG 5 but regained it within 5 sec.

As soon as BLUE 1 and 2 started to turn into MIG 5, the MIG reversed his turn to the right and lit his afterburner and started a climb, going away. BLUE 1 and 2, in afterburner, kept the nose down and gained airspeed. BLUE 1 and 2 then pulled the nose up and fired one SIDEWINDER at MIG 5 who was still climbing away against a clear blue sky.

BLUE 1 had selected the SIDEWINDER due to a malfunction of the radar display in the backseat which made it difficult for the backseater to find the target for a radar lock. Nevertheless, immediately previous to firing, the backseat had obtained a radar lock and, at firing, had a full system lock-on.

The MIG had started to climb from about 8000 ft altitude and at firing was at about 9000 ft altitude. BLUE 1 was about 6000 ft MSL (4000 ft AGL) at 475-500 KIAS and at 1 "g". MIG 5 was dead ahead at zero angle off. At firing, the range was about 3500-4000 ft with BLUE 1 closing at about 100 kts. He had a good tone for about 5 sec prior to launch.

The SIDEWINDER went straight out not making large corrections and exploded aft to the right of the MIG's tail by about 10-15 ft.

Just after the missile detonated, BLUE 1 saw pieces start to come off of the MIG which appeared to be part of the stabilator. BLUE 1 had a good overtake and pulled up in a sort of high speed yoyo to 10,000 ft altitude and ended up high behind the MIG, which looked as if it was still flying.

¹Note on previous page.

²Normal BINGO that day was 8500 lb. Absolute BINGO that day was 6500 lb.

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At this time the nose of MIG 5 pitched up and the MIG snapped over to the right and went into a flat lazy spin. BLUE 2 backseat saw the MIG pilot eject as the MIG rolled over the first time. The pilot had chute with orange panels. BLUE 1 front lost sight of the MIG as it continued in the lazy spiral at about 1000 ft AGL. BLUE 1 was about 3000 ft at this time. However, BLUE 1 backseat kept contact with the MIG and saw it impact on the ground at about 22°00'30"N/105°22'E.

The strike force was now well clear of the threat area so BLUE 1 and 2, who were at BINGO fuel level, started to egress. BLUE 1 dropped his outboard tank on the way out to improve his fuel consumption.

While egressing at 21°56'N/105°05'E at about 1645H heading 270° at 550 KTAS and 12,000 ft AGL, BLUE 2 backseat saw a single bright silver MIG-21 at his 6 o'clock, 5-6 mi distant and 5000 ft below. The MIG-21 was attempting a stern chase but as soon as BLUE 1 and 2 maneuvered to get a better view, the MIG broke off with a hard right turn and was not seen again.

BLUE 1 and 2 continued their egress when at 1647 H at 20°57'N/104°48'E, heading 265° at 14,000 ft AGL and 550 KTAS, they observed from Lead 12 a large white column of smoke rise to about 500 ft and then appeared to hang motionless and slowly dissipate. No flame, projectiles, or detonations were observed.

Later at 1651H while at 21°28'N/104°20'E, heading 210°, climbing through 20,000 ft MSL at 450 kts, BLUE 1 and 2 saw another column of smoke from Lead 12. It had the same characteristics as the previous smoke sighting. The elements continued to egress without further incident.

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Event III-259

Aircraft Involved: Two F-105s and two F-105Ds
vs three MIG-21s

Results: No damage

Vicinity of Encounter: 21°40'N/105°30'E and
21°35'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/1628H

Two F-105s and two F-105Ds (BLUE flight) were operating as the IRON HAND flight for a fourteen F-105 strike force from Korat attacking the Kinh No motor vehicle repair yards (JCS Target No. 5286) BLUE flight was from Korat and a flight of F-4s from Danang were providing MIGCAP (Event III-258). Flights from the strike force hit the target from 1630H to 1635H and encountered SAMs and AAA but no MIGs.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1, 3

1 AGM-45
2 CBU-24
20mm cannon

F-105D BLUE 2 BLUE 4

1 AGM-45 6 500 lb bombs
2 CBU-24 20mm cannon
20mm cannon

Tank configuration unknown, but probably two 450 gallon external tanks were carried as well as a QRC-160 ECM pod.

8. ORDNANCE

(No. fired/No. hits)

BLUE 1 20mm cannon
1/0

9. EQUIPMENT PROBLEMS

BLUE 1 - CBU-24 would not release.

11. DATA SOURCES

Messages:

388 TFW Korat OPREP-3 201225Z May, 1967 DOI 1779
388 TFW Korat OPREP-3 201250Z May, 1967 DOI 1780

12. NARRATIVE DESCRIPTION

BLUE flight was at 21°40'N/105°30'E, heading 133°, 550 kts 5000 ft altitude at 1628H when two silver MIG-21s were observed approaching the flight from the 4 o'clock position. When BLUE flight lost them at 6 o'clock, BLUE flight turned to the right and the MIGs then passed the flight and turned left. No firing from the MIGs was observed. BLUE flight continued their turn to the right and then to the left, making a complete figure eight over Thud Ridge. They again started in on a heading of 130° at 550 kts, and 4000 ft altitude. When at 21°35'N/105°35'E at 1634H, BLUE flight observed a silver MIG-21 attacking them from the 2 o'clock high position. At this time BLUE lead jettisoned 1 CBU-24 (the other would not release) and BLUE 2 and 4 jettisoned 6 MK82 bombs each. The MIG overshot the flight, and as he passed in front BLUE lead noticed that the MIG was clean of external ordnance. BLUE lead turned to the left to follow the MIG and fired 68 rounds of 20mm with undetermined results. The MIG turned right and climbed, and BLUE flight turned left to heading 310° up Thud Ridge.

SECRET

SECRET

Event III-260

Aircraft Involved: Four F-105s vs one MIG-17

Results: No damage

Vicinity of Encounter: 21°13'N/106°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 May 1967/Approximately 1630H

Four F-105s (BLUE Flight) were part of a strike force from Takhli attacking the Bac Le railroad yard. The flight of Event III-256 and -257 was part of this strike force, and the flights of Event III-252 were providing MIGCAP.

8. ORDNANCE

(No. fired/No. hit)

Cannon

MIG-17 1/0

11. DATA SOURCES

Messages, Reports:

355TFW Takhli 201320Z May 67, OPREP-3, DOTO-O-11808

12. NARRATIVE DESCRIPTION

When at 21°13'N/106°46'E, BLUE Flight (four F-105s) observed MIG-17s engaging a flight of two F-105s at approximately 7000 ft. The flight then noticed a single MIG-17 at BLUE 4's 6 o'clock, low position 3000 ft range, closing and firing on BLUE 4. The flight engaged afterburner and BLUE 3 and 4 made a hard right turn, losing the MIG. BLUE Flight returned to base with no further incident. MIG warnings were heard throughout the mission but there were none directed at this flight.

SECRET

325

SECRET

Event III-261

Aircraft Involved: Four F-4Cs vs one unident

Results: Sighting

Vicinity of Encounter: 20°25'N/107°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 0853H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Number 3 of escort flight over Gulf of Tonkin observed a light colored A/C of unknown type; bogey was heading south at approx altitude 5000'; bogey turned to a westerly heading and proceeded inland, posing no threat to flight.

Event III-262

Aircraft Involved: Eight F-105s vs one MIG-17
and two unidents

Results: Sighting

Vicinity of Encounter: 21°07'N/107°30'E
21°15'N/107°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 0856H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike/flak supp flight at altitude 16,000' observed 1 MIG-17 at 13,000' heading southwest; MIG passed in front of flight from left to right; second F-105 flight, on strike mission at 6000', observed two unidentified dark colored A/C at same altitude at second position shown; unident flight was in a diving turn toward 6 o'clock; bogeys were 3-5 miles away; no attack attempted.

Event III-263

Aircraft Involved: Four F-4Cs vs two unidents

Results: Sighting

Vicinity of Encounter: 21°05'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 0900H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

F-4C escort flight was at 29,000' when, starting a left turn, they spotted two silver, delta wing A/C; bogeys at 10,000' altitude turned away.

SECRET

SECRET

Event III-264

Aircraft Involved: Four F-105s vs two unidentified

Results: No damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 0905H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight at 7000' sighted two unknown A/C at 6:30 o'clock low, approx two miles away; bogeys attempting to get into position for a tail chase; flight lit afterburners and exited; visibility difficult as flight was in and out of clouds.

Event III-265

Aircraft Involved: Two RF-4Cs vs unidentified

Results: No damage

Vicinity of Encounter: 20°56'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 1420H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight aborted mission due MIGs and SAMs; flight received two ring X-band steady signals at 12 o'clock position, and subsequently made sighting; flight broke right and down; during break, PIRAZ issued a MIG warning which placed MIGs in flight's immediate vicinity; no prior MIG calls received.

Event III-266

Aircraft Involved: Three F-105s vs two MIG-17s

Results: Sighting

Vicinity of Encounter: 21°45'N/105°43'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967, 1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight saw MIGs at 16,000'.

SECRET

SECRET

Event III-267

Aircraft Involved: Two F-4Cs vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°10'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967/1620H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

ECM escort flight observed two silver-grey MIGs. MIGs were at flight's 10 o'clock low position, 2 miles away. After passing flight, MIGs made a gentle left turn and rolled out and moved away from flight. Flight did not attempt to engage due to No. 3 and No. 4 having departed 10 minutes before due to engine problems. This left only two aircraft covering three EB-66 and Lead felt there might have been a trap to draw protection away.

Event III-268

Aircraft Involved: Three EB-66s vs one Mig-?

Results: Sighting only

Vicinity of Encounter: 20°30'N/104°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967/1034H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flight, for which the flight of Event III-267 was providing escort, reported seeing a possible MIG 14 minutes later than the sighting by that flight. No hostile intent was evident.

Event III-269

Aircraft Involved: Four A-4s vs three unidentified

Results: Sighting only

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967/Unknown

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Three bogeys were briefly observed by IRON HAND Flight.

SECRET

SECRET

Event III-270

Aircraft Involved: Four F-4Cs vs three MIG-17s

Result: No damage

Vicinity of Encounter: 20°30'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/0903H

BLUE Flight (four F-4Cs) was assigned MIGCAP for a strike against JCS Target 31.00, the Ha Dang Army barracks and Supply Depot.

2. MISSION ROUTE

Departed Da Nang, direct to pre-strike refueling over Thailand, direct to target at 20°58'51"N/105°47'42"E, outbound heading 257° until clear of SAM rings, direct Channel 97, direct post-strike refueling, direct Channel 37.

11. DATA SOURCES

Messages, Reports:

366 TFW, OPREP-3/PINNACLE #17, 220455Z May 67, SECRET.

12. NARRATIVE DESCRIPTION

BLUE Flight was outbound on a heading of 257° at 8000 ft altitude in the vicinity of 20°30'N/105°20'E when three MIG-17s were sighted at 0103Z. "The MIGs were approximately 10-15 n mi distance and at very low altitude and appeared to be attempting to keep from being sighted." BLUE Flight had heard seven MIG calls for BULLSEYE and southeast of BULLSEYE. No additional information provided.

SECRET

SECRET

Event III-271

Aircraft Involved: Two RF-101s vs two probable
MIG-17s

Result: Sighting only

Vicinity of Encounter: 20°51'N/105°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1351H

11. DATA SOURCE

Messages, Reports: 432TRW 221226Z May 1967 OPREP-3 TUOC 04252

12. NARRATIVE DESCRIPTION

Two RF-101s (BLUE Flight) were on a mission against the XAC MAI motor pool. The weather was clear with four miles visibility. The flight departed Udorn and proceeded to 20°35'N/104°25'E, then to 21°19'N/105°23'E, and returned to Udorn at 27,000 feet altitude. The altitude over the target was 12,000-14,000 feet.

At 1347H, while en route to the target at 20°57'N/105°32'E, the flight got a SAM activity light and Lead saw a single SAM. A second SAM was seen at 1348 as the flight was heading 090, at a position of 21°00'N/105°39'E.

As the missile passed, the flight also received some 85mm fire. The flight changed altitude to 18,000 feet and were again fired on by flak. At 1350, when over the target, heading 180 degrees, a SAM was seen to come from 6 o'clock and detonate at 1 o'clock, 500 feet away.

Two more SAMs were fired when the flight was over the target.

Over the target the flight heard a MIG alert call on guard at BULLSEYE. At 1351H, while egressing the target area, heading 220 degrees, two probably MIG-17s were seen at 8 o'clock. The MIGs were heading south.

At 1352H, when at 20°51'N/105°42'E heading 230, BLUE 2, who was ahead of BLUE 1 by one mile, saw a SAM. This was followed by another about two minutes later when the flight was at 20°42'N/105°35'E.

At 1353H BLUE Flight heard a MIG call on guard and then guard channel was jammed. BLUE Flight was heading 220-230 degrees and went into afterburner for three minutes to clear the mountains and then descended to low level to a point southeast of Channel 97.

The flight then returned to Udorn.

SECRET

SECRET

Event III-272

Aircraft Involved: Four A-4Es vs two MIG-7
and one MIG-17

Results: No damage

Vicinity of Encounter: 20°48'N/105°38'E and
21°58'N/105°43'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 May 1967/Before 1500H

8. ORDNANCE

(No. fired/No. hit)

AAM or Rockets

MIG-17 1/0

11. DATA SOURCES

CINCPACFLT Staff Study 6-68

12. NARRATIVE DESCRIPTION

As a flight of four A-4Es left the mountains on ingress to the target at 20°48'N/105°38'E, two MIGs (unidentified type) were seen at 9 o'clock high at a range of 6 mi. These MIGs made no run on the strike aircraft.

Later, when the flight was at 21°58'N/105°43'E, a MIG-17 was seen at 11 o'clock high passing left to right and was observed to fire an AAM or rockets. The MIGs target was apparently a strike aircraft on another target.

SECRET

SECRET

Event III-273

Aircraft Involved: Two RF-4Cs vs three
unidentified

Result: Sighting

Vicinity of Encounter: 20°55'N/104°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1445H

11. DATA SOURCE

432 TRW 221228Z May 1967 OPREP-3 TUOC 04254

12. NARRATIVE

Two RF-4Cs (BLUE Flight) on a mission to JCS 21.11 left Udorn and proceeded to 20°30'N/103°40'E at 18,000 feet MSL. From there they proceeded to 21°20'N/104°53'E at 500 feet MSL and from there returned to Udorn at 20,000 feet. There were thunderstorms covering the area with tops at 35,000 feet.

En route to the target at 1445H, when at a position of 20°55'N/104°20'E, and an altitude of 18,000 feet, heading 050 degrees, BLUE Flight observed an unidentified aircraft. The aircraft was at 9 o'clock position, 8-10 miles away and was on a heading of 230 degrees.

As the bogey aircraft passed BLUE Flight's 8 o'clock position it was observed to turn into BLUE Flight and head for the cloud deck at 12,000 feet. No signals were received on the APR 25/26 nor were any MIG warnings heard at this time.

At 1446H, BLUE Flight received x-band at 2 rings and audio indications from the 7 o'clock position. BLUE Flight continued to receive x-band for three minutes from 6-7 o'clock at two rings strength. The time now was 1450H and the flight was at 21°18'N/105°53'E.

BLUE Flight then aborted, due to weather, and turned to a heading of 240 degrees and went afterburner at 15,000 feet MSL, when two unidentified aircraft were observed five miles away at 9 o'clock and closing. A check with Ethan Charlie indicated no bandits were being painted in the area of BLUE flight. Blue Flight again went afterburner and egressed the area.

SECRET

Event III-274

Aircraft Involved: Four F-105s vs two MIG-17s

Results: No damage

Vicinity of Encounter: 21°18'N/105°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1527H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight sighted two MIG-17s, 1/2 mile away at their 7 o'clock position in orbit at 6000 ft. MIGs appeared to set up orbit for tail chase but flight lit after-burners and departed.

Event III-275

Aircraft Involved: Four F-4Cs vs two MIG-17s

Results: No damage

Vicinity of Encounter: 21°17'N/105°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1527H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG CAP on ingress observed two silver MIGs at a high speed 1 mile to left. Flight broke hard to intercept but MIGs disappeared into haze.

Event III-276

Aircraft Involved: Four F-105s vs one MIG-21
and one MIG-?

Results: Sighting only

Vicinity of Encounter: Ha Dong

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1605H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

One of flights escorted by the aircraft of Event III-276 observed one MIG-21 and one MIG of unknown type in vicinity of target, Ha Dong Army Barracks. Flight was not engaged by either.

SECRET

SECRET

Event III-277

Aircraft Involved: Four F-4Cs vs four MIG-21Ds

Result: Two MIGs destroyed

Vicinity of Encounter: 20°54'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1605H

BLUE flight (four F-4Cs) was one of two MIGCAP flights assigned to escort an F-105 strike force against JCS 31.00 (the Ha Dong Army Barracks and Supply Depot) on the southwestern outskirts of Hanoi.

2. MISSION ROUTE

Departed Danang, direct to White Anchor extended refueling track, direct Channel 97, direct to target at 20°59'N/105°48'E, direct 20°50'N/105°03'E, direct White Anchor post-strike refueling track, direct Danang.

3. AIRCRAFT CONFIGURATION

F-4C BLUE 1, 3

4 - SPARROW (AIM-7E)
2 - SIDEWINDER (AIM-9B)
1 - 20mm cannon pod
2 - 370 gallon wing tanks
1 - QRC-160 ECM pod
Camouflage paint.

F-4C BLUE 2, 4

4 - SPARROW (AIM-7E)
4 - SIDEWINDER (AIM-9B)
1 - 600 gallon centerline tank
1 - 370 gallon wing tank
1 - QRC-160 ECM pod
Camouflage paint.

MIG-21 MIG 1, 2, 3, 4

Silver with red stars and bars outlined in yellow on both wings.

AAMs

No external stores observed.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Cirrus clouds at 22,000 ft AGL, 1/8 coverage. Visibility at flight level, 25 n mi.

	<u>BLUE</u>
	<u>1 2 3 4</u>
<u>Altitude:</u>	16,000 ft AGL
<u>Heading:</u>	090°
<u>Speed:</u>	500 kts
<u>Fuel State:</u>	10-11,000 lbs
<u>Flight Formation:</u>	

Standard four-ship ECM pod formation.

5. INITIAL DETECTION

Encounter 1 - BLUE flight had heard seven MIG calls while inbound to the target. BLUE lead was searching at 12 o'clock in response to a "Bullseye" (vicinity of Hanoi) call when the Aircraft Commander visually sighted an unidentified aircraft ahead of the strike force. The pilot subsequently identified two separate aircraft on radar.

Encounter 2 - As BLUE flight was rejoining on the tail end of the strike force after terminating Encounter 1 above, BLUE lead looked over his left shoulder to check his formation and sighted a MIG-21 closing at a high rate of speed "a slight back from 6 o'clock to the formation."

6. ACTION INITIATED

Encounter 1 - BLUE lead locked on to one of the suspected MIGs and the flight accelerated ahead of the strike force in AB. BLUE lead lost sight of the aircraft after it started a left turn and then reversed to the right. BLUE lead continued a radar steering dot pursuit in a hard right turn through a climb, descent, and level flight. After approximately 100° to 120° of turn, BLUE lead could not establish a lead or cutoff on the radar target (steering dot in far righthand side of scope) and elected to break off and return to the strike force. This terminated Encounter 1.

SECRET

Event III-277

Encounter 2 - BLUE lead immediately initiated a left turn into the MIG-21. As BLUE lead entered the turn the MIG fired an AAM at the strike force and pulled up into a steep climb in a slight left turn. BLUE Lead followed the MIG and fired a SIDEWINDER as the MIG was entering a thick cirrus cloud layer. MIG climb angle approximately 50°.

7. SITUATION DEVELOPMENT

The MIG disappeared into the clouds with the SIDEWINDER tracking towards its tail-pipe. BLUE lead rolled off slightly to the right and continued through the cirrus clouds to break out on top and found nothing but smoke and debris floating above the cloud on the left. (This kill was later confirmed by an F-105 in the strike force who saw two pieces of debris, one about the size of a wing or half a fuselage falling from about 20,000 ft in this area.) Almost immediately BLUE lead sighted another MIG-21 at 1 o'clock about one mile away. BLUE lead turned into this MIG and fired the second SIDEWINDER, which failed to guide, passing off to the right and behind the MIG. The MIG entered a hard left diving turn followed by violent evasive maneuvering from 25,000 ft to 2000 ft. BLUE lead closed on the MIG in the descent and began firing a single 253 round burst of 20mm cannon during the pullout with no apparent results. BLUE lead did a pull-up and "wing over" to prevent an overshoot and lined up behind the MIG with good overtake for another attack. The MIG had leveled out "in a shallow gliding flight slowly moving his wings, turning left and then right." BLUE lead pulled the trigger as the MIG was passing through 1000 ft; however, the gun jammed. BLUE Lead slid off to the left and directed BLUE 2 to take the MIG. However, BLUE 2 did not have a gun and was not in position to initiate an immediate missile attack. Although no additional action was taken, the MIG continued down in a gliding turn to impact the ground and erupted in a big ball of fire. The flight, having reached BINGO fuel, egressed the area without further incident.

8. ORDNANCE

(No. fired/No. hits)

	<u>SIDEWINDER</u> <u>AIM-9B</u>	<u>20mm</u> <u>Cannon</u>	<u>Soviet AAM</u>	<u>Remarks</u>
BLUE 1	2/1	1/1		253 Rounds 20mm (Tracer every 7th Round).
MIG 1			1/0	

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total</u> <u>Hours</u>	<u>F-4</u> <u>Hours</u>	<u>Combat</u> <u>Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	5035	139	254	Had previously flown F-5s in SEA combat prior to F-4s.
Back	611	351	115	

Comments

Blue 1 - A lesson learned is to keep the pressure on the MIGs and do not give up. It's quite obvious their pilots do not have the quality training and experience our pilots have and they make fatal mistakes and often fail to exploit their advantages or capabilities. It has taken a long time to convince people that a gun is needed. This configuration compensates for those situations where you are too close to use missiles or the environment is not compatible for radar missiles or the SIDEWINDER. The noncomputing gun sight is not very good at best. With the fixed sight and boresight problems of an external gun, it is a last ditch effort that relies on a tremendous volume of fire to spray the target. Ideally, we need an internal gun in the F-4.

11. DATA SOURCES

Project Interviews: BLUE 1 (Front) - 23 June 67; telecon with BLUE 1 (Front) - 10 July 68.
Messages, Reports:

366TFW, DCOI FASTEL 724, OPREP-3 Serial Number 019, 221030Z, May 67, SECRET.
366TFW, JPCCO FASTEL 749, OPREP-3, Serial Number 021, 221300Z, May 67, SECRET/NOFORN.
366TFW, DCO 00163, 250645Z, May 67, SECRET.

SECRET

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12. NARRATIVE DESCRIPTION

BLUE flight was positioned forward and to the right of the leading group of F-105s in the strike force. As the force "passed in the vicinity of Hoa Lac heading east," at approximately 16,000 ft AGL (500 kts, 10-11,000 lbs fuel), BLUE 1 (Front) "spotted MIGs out in front of the formation; - just an airplane way out that was not supposed to be there." The pilot (BLUE 1-Rear) subsequently identified two aircraft on radar. BLUE lead made a boresight lock-on one of the suspected MIGs and the flight accelerated ahead of the strike force in AB (All external tanks had been previously jettisoned when empty because of numerous MIG calls). BLUE lead lost sight of the aircraft after it started a left turn and then reversed to the right. BLUE lead continued a radar steering dot pursuit in a hard right turn through a climb, descent, and level flight. After approximately 100° to 120° of turn, BLUE lead could not establish a lead or cutoff on the radar target (steering dot in far righthand side of scope) and elected to break off and return to the strike force.

As BLUE flight, still in AB, was rejoining on the tail end of the strike force, BLUE lead looked over his left shoulder to check his formation and sighted a MIG-21D closing at a high rate of speed "a slight back from 6 o'clock to the formation." BLUE lead immediately initiated a left turn into the MIG-21. As BLUE lead entered the turn the MIG fired an AAM at the strike force and pulled up into a steep climb in a slight left turn. BLUE Lead followed the MIG firing a SIDEWINDER just as the MIG was entering a thick cirrus cloud layer. The MIG had at least a 50° climb angle. (The missile was visually launched at approximately 1 "g" after a good 10 second loud growl tone. BLUE 1 was at 18,000 ft AGL, Mach 0.92; the MIG was at 21,000 ft AGL, 12 o'clock high in steep climb, range 2-3 mi.)¹ The MIG disappeared into the cirrus with the SIDEWINDER in pursuit. BLUE Lead rolled off slightly to the right and continued through the cirrus clouds to break out on top and found nothing but smoke and debris floating above the cloud to his left. (This kill was later confirmed by an F-105 in the strike force who saw two pieces of debris, one about the size of a wing or half a fuselage falling from about 20,000 ft in this area.)

Almost immediately BLUE lead sighted another MIG-21 at 1 o'clock about 1 mile away. BLUE lead turned into this MIG and fired the second SIDEWINDER, which failed to guide, passing off to the right and behind the MIG. (The missile was visually launched with the pipper on the MIG after a "medium" growl, 5 second tone. BLUE 1 was at 21,000 ft AGL in a 3 "g" turn. The MIG was at 2 o'clock, range approximately 1 mile.) The MIG entered a hard left diving turn followed by evasive maneuvering including "rapid reversals, snapping, turning, and twisting". During this descent over Hoa Lac Airfield, the "ground erupted with anti-aircraft fire and five SAMs passed through the formation." Since BLUE lead was unable to get a radar lock-on to the maneuvering MIG, he selected the gun and closed on him in AB at high speed. As the MIG began a pull out at about 2000 ft AGL, BLUE lead "pulled approximately 7 "g's" and hosed him down good with the gun" firing a single 253 round burst of 20mm cannon with no apparent results. BLUE lead did a pull-up and "wing over" to prevent an overshoot and lined up behind the MIG with good overtake for another attack. The MIG had leveled out "in a shallow gliding flight slowly moving his wings, turning left and then right." BLUE lead pulled the trigger as the MIG was passing through 1000 ft; however, the gun jammed. BLUE Lead slid off to the left and directed BLUE 2 to take the MIG. However, BLUE 2 did not have a gun and was not in position to initiate an immediate missile attack. BLUE 2 overshoot to the right. BLUE Lead started a climbing left turn in response to several BINGO fuel calls from the flight. The flight was still drawing heavy flak at this time. The MIG "continued in his gliding turn and finally impacted with the ground just north of the Red River and erupted in a big ball of fire." The flight egressed the area without further incident.

¹This range figure is quoted from the OPREP-3. BLUE 1 (Front) stated that the range was possibly 3000 ft but no greater than one mile - well within launch parameters.

SECRET

Event III-278

Aircraft Involved: Four F-105s vs Two MIG-21s
Result: No damage
Vicinity of Encounter: 20°15'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1606H.

BLUE Flight (two F-105s and two F-105Ds) was assigned to provide IRON HAND support for a sixteen-ship strike against JCS Target 31.00, the Ha Dong Army Barracks and Supply Area.

2. MISSION ROUTE

Departed Korat AB, Thailand, direct to RED ANCHOR pre-strike refueling, direct Channel 97, direct Hoa Binh for IRON HAND Patrol, direct Channel 97, direct RED ANCHOR post-strike refueling.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1, 3

1 - 650-gal centerline tank
2 - CBU-24s
1 - AGM-45
1 - ECM Pod
1 - M61 20mm cannon

F-105D BLUE 2, 4

2 - 450-gal wing tanks
6 - MK 82 bombs
1 - M61 20mm cannon
1 - AIM-9D (BLUE 2 only)
1 - AGM-45 (BLUE 4 only)
1 - ECM Pod

MIG-21 MIG 1, 2

Large nose cone (D or F Model)
Silver color
AAMs (suspected ALKALI)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 9000 ft scattered to broken with cumulus buildups in the encounter, visibility 5-7 miles.

	1	2	3	4
<u>Altitude:</u>	6,500-8,000 ft			
<u>Heading:</u>	260°			
<u>Speed:</u>	480-520 KTAS			
<u>Fuel State:</u>	10,000-11,000 lbs			

Flight Formation

Unknown four ship, trolling for SAM sites.

5. INITIAL DETECTION

Encounter 1. BLUE Flight was on a heading of 260° at 6,500-8,000 ft AGL, 480-520 KTAS, investigating an active SAM site in the vicinity of Hoa Binh when BLUE 4 sighted a MIG-21 at 6 o'clock to BLUE lead and 2. This MIG was within gun range when first sighted and had a high rate of overtake.

Encounter 2. BLUE Flight was heading 220°, altitude 4,000 ft and was closing on the flight after a SAM break when another MIG-21 attacked the flight from a diving 6 o'clock position. Initial detection was outside of 5,000 ft range.

6. ACTION INITIATED

Encounter 1. BLUE Flight initiated a left break just as the MIG overshot and passed in front of the flight in a left climbing turn.

Encounter 2. BLUE Flight broke down and to the left as the MIG fired at least two AAMs at the flight.

¹OPREP 3 states WX 4000 ft scattered; however, this pilot report agrees with flight conditions described in the OPREP and the interview.

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Event III-278

7. SITUATION DEVELOPMENT

Encounter 1. BLUE 2 took the lead and fired an AIM-9B at the MIG-21. The missile failed to guide and missed (500 ft low and to the right). BLUE 2 followed up with a 20mm cannon attack which was unsuccessful because the MIG was beyond effective firing range for all three firing bursts. BLUE Flight disengaged with this MIG to evade three SAMs.

Encounter 2. Both AAMs missed BLUE Flight and the MIG-21 apparently disengaged since none of the flight saw this MIG after the initial attack.

8. ORDNANCE

(No. fired/No. hits)

	<u>SIDEWINDER AIM-9B</u>	<u>Cannon 20mm</u>	<u>Soviet AAM</u>	<u>Remarks</u>
BLUE 2	1/0	480 rds/0		
MIG 2			2 or 3	BLUE 2 stated that these were ALKALI missiles.

9. EQUIPMENT PROBLEMS

BLUE 2 - The M61 20mm cannon was apparently "overgreased or something" and large flames would come out when fired causing an engine compressor stall.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	750	500	42	Went directly from pilot training to F-105s - USAFE to SEA.

BLUE 1, 3, 4 -----Unknown-----

Comments

BLUE 2 - The MIG-21 "apparently dove in through the cumulus buildups, or a hole in the cumulus buildups so he knew where we were and to us it was obvious that it was GCI control."

11. DATA SOURCES

Project Interviews: BLUE 2, mid-June 1967.

Messages, Reports:

388 TFW, JPCCO FASTEL DOI 1816, 221237Z May 67, OPREP-3 PINNACLE 022, SECRET.
388 TFW, JPCCO FASTEL DOI 1817, 221248Z May 67, OPREP-3 PINNACLE 023, SECRET.

12. NARRATIVE DESCRIPTION

BLUE Flight had preceded the strike force by approximately 10 miles to troll for SAM Sites along the ingress route in the vicinity of Hoa Binh which is about 30 miles ESE of the target area near Hanoi. The flight had reversed course over Hoa Binh to investigate an active SAM Site when BLUE 4 called out a MIG-21 at 6 o'clock to BLUE lead and 2. (BLUE Flight was heading approximately 260° at 6500-8000 ft AGL, 480-520 KTAS.) This MIG was within gun range when first sighted and had a high rate of overtake which caused him to overshoot and pass in front of BLUE Flight on their initial left break.¹ There was no indication that the MIG fired any ordnance on this pass. BLUE Flight eased the left turn as the MIG pulled up in front of the flight "30° up to us--top up angled off and I could see a large nose cone which is a D or F Model".

BLUE 1 gave the lead to BLUE 2 who jettisoned wing tanks and bombs, went AB, switched from conventional bombs to missiles air, single sequence, selected 0 mils on the sight, and confirmed a green ready light. (BLUE 2 did not turn up the missile tone volume and subsequently fired a SIDEWINDER without confirming a missile ton or growl.) This MIG-21 continued a climbing left turn in AB, pulling an estimated 1 1/2 g's. BLUE 2 placed the sight reticle on the MIG, relaxed g's and fired an AIM-9B. At launch the MIG was 20 to 30 degrees above the horizon, approximately 4500 ft to one mile range, 10 to 12,000 ft AGL. BLUE 2 launched in a 30° climb, 330 KCAS, at 8-10,000 ft AGL. The SIDEWINDER failed to guide and missed 500 to 1000 ft low and to the right. (A satisfactory airborne tone check had been accomplished. "When I preflighted it, like most of our missiles here, it was well pitted.")

¹The OPREP states that BLUE Flight broke hard left and down reversing to the right causing the MIG to overshoot; however, BLUE 2 stated that the MIG was cut in front of them by the time they reacted for a left break.

SECRET

Event III-278

The MIG started a dive to the left and BLUE 2 "put the piper way out in front of him and hosed until he flew through it. As I did this I got large flames out of the gun and the compressor stalled. It was just like putting my speed brakes on". This action was repeated for two additional firing bursts for a total of 480 rounds of 20mm cannon fire. (BLUE 2 stated that the cannon attack was ineffective since he had fired at an estimated range of 4500 ft, "well out of gun range").

At this point, three SAMs were spotted by the flight which broke "hard down and to the left" disengaging from the MIG.¹ As BLUE Lead was joining on BLUE 2, another MIG-21 "came in behind us and fired either 2 or 3 of those ALKALI missiles. He fired in about a 30° dive on us the first time and, of course, the missile had very little effect, it just went down into the ground. As he pulled up the next one went past us We were in a hard left turn". This MIG-21 was not seen again after this brief encounter. BLUE Flight, now at 500 ft AGL, started a climb out on a westerly heading. The flight made one last 360° sweep of the area and egressed without further incident.

¹The OPREP states that this MIG started a climbing left turn and fled on a heading of 020° after the AIM-9B missile launch. It further stated that BLUE Flight terminated this initial engagement by breaking down and to the left at 0809Z and then headed west. It reports a second MIG engagement at approximately 0811Z, vicinity of 20°50'N/105°05'E with BLUE Flight "heading 220°, altitude 4000 ft. Another Mig-21 came on from 6 o'clock high. MIG closed to approximately 5000 ft and launched two AAMs. BLUE (sic) Flight broke down to the left, back to the right, and back to the left. Both AAMs passed behind the flight as they made their first break to the left. (Since it was not possible to correlate the interview data with the OPREP, both data are provided for this portion of the encounter.)

SECRET

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Event III-279

Aircraft Involved: Four F-105s vs two MIG-21s

Results: Sighting only

Vicinity of Encounter: Ha Dong

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/1611H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Ha Dong strike flight sighted two MIGs in target area but no attempt was made to engage.

Event III-280

Aircraft Involved: Four F-105s vs one MIG-21

Results: No damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 May 1967/Unknown

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight sighted one silver MIG approach at 6 o'clock position within 1-1/2 miles of flight in a harrassment type pass, then pull away.

Event III-281

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting only

Vicinity of Encounter:

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 24 May 1967/after 1715H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Outbound strike flight observed one MIG at low level but no attempt was made to engage.

SECRET

SECRET

Event III-282

Aircraft Involved: Three F-4Cs vs one
unidentified

Results: Sighting only

Vicinity of Encounter: 21°55'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 May 1967/0858H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG CAP sighted an unidentified aircraft, turning from 3-4 o'clock low, 6 miles distant. Flight turned to investigate but bogey turned north and departed. It was no threat to strike force.

Event III-283

Aircraft Involved: Six F-4Cs vs two unidenti-
fied

Results: Sighting only

Vicinity of Encounter: 21°15'N/106°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1610H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike escort flights sighted two bogeys at 10 o'clock high but unidentified aircraft were too far away to make positive identification.

SECRET

SECRET

Event III-284

Aircraft Involved: Four F-105s vs four MIG-17s
Result: No damage
Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1516H

Four F-105s (BLUE Flight) were approaching the roll-in point for an attack against a SAM site (Lead 52) when they were attacked by four MIG-17s.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	BLUE			
	1	2	3	4
Altitude:		4500 ft		
Heading:	Turning through a southerly heading, in a turn to the right			
Speed:		540 kts		

8. ORDNANCE

A section of MIGs fired at BLUE 1 and 2 in a head-on pass. No hits were scored.

11. DATA SOURCES

Message: 355TFW/OPREP-3/301505Z May 1967

12. NARRATIVE DESCRIPTION

During an attack on a SAM site, Lead 52, BLUE Flight was attacked by four MIG-17s. The MIGs attacked from the northwest, four o'clock to BLUE Flight which was turning right at an altitude of 4500 ft and a speed of 450 kts. BLUE 1 (Lead) and 2 continued the attack on the SAM site while BLUE 3 and 4 turned into the attacking MIGs. BLUE 3 and 4 went through the MIG formation which was spread line abreast with the elements approximately 1500 ft apart, 1000 ft AGL. As the MIG elements split, one element of two MIGs broke to the right, headed south and was not seen again. The other element (MIG 3 and 4) broke left. BLUE 3 and 4 jinked left-right then headed back to join BLUE 1 and 2. MIG 3 and 4 engaged BLUE 1 and 2 in a head-on pass and fired at a range of approximately 2500 ft while climbing into BLUE 1 as BLUE 1 and 2 were descending toward the MIGs. No hits resulted. MIG 3 and 4 passed approximately 1200 ft below BLUE 1 and 100 ft below BLUE 2. As the MIG turned for another attack, BLUE 1 and 2 engaged afterburner and egressed the area, in company with BLUE 3 and 4, without further incident.

SECRET

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Event III-285

Aircraft Involved: Three F-105s vs four MIG-17s

Results: No damage

Vicinity of Encounter: 21°10'N/106°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1612H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Ingressing strike flight observed four MIGs in right turn toward flight but flight continued, losing sight of MIGs. No ordnance was exchanged.

Event III-286

Aircraft Involved: Four F-105s vs four MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°24'N/106°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight was rolling on target when No. 2 observed flight of four MIGs approximately 4 miles east of Kep, headed west at 2-3000 ft and climbing.

Event III-287

Aircraft Involved: Two F-105s vs four MIG-17s

Results: No damage

Vicinity of Encounter: 21°16'N/106°11'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Numbers 3 and 4 of strike flight pulled off target. Passing through 3000 ft they observed four MIGs approaching from 5 o'clock in a left sweeping turn but MIGs overshoot flight and Numbers 3 and 4 continued to egress with no further contact.

SECRET

SECRET

Event III-288

Aircraft Involved: Four F-105s vs one MIG-17

Results: No damage

Vicinity of Encounter: 21°14'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1616H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Egressing strike flight was a MIG attempting to make a head-on pass but flight went into afterburner and MIG could not maneuver to intercept.

Event III-289

Aircraft Involved: Four F-4Cs vs unidentified

Results: Sighting only

Vicinity of Encounter: 20°45'N/107°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1635H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

While orbiting with escorted aircraft, flight observed two silver delta wing aircraft over water. Aircraft appeared to be going from Hainan to NVN mainland.

Event III-290

Aircraft Involved: Four F-4Cs vs six MIG-17s
and three MIG-21s

Results: No damage

Vicinity of Encounter: Kep Airfield

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 30 May 1967/1656H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

While escorting flight of two RF-4Cs, flight encountered four MIG-17s and three MIG-21s on target run. Flight also observed two MIG-17s take off from Kep Airfield. PIRAZ alerted flight to MIGs on two occasions.

SECRET

SECRET

Event III-291

Aircraft Involved: Four F-4Cs vs four MIG-17s

Results: One F-4C lost

Vicinity of Encounter: 21°17'N/106°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1551H

Four F-4Cs (BLUE Flight) were on a MIGCAP mission. While covering the egress of the strike group, four MIG-17 fighters were engaged.

2. MISSION ROUTE

Departed Danang and proceeded directly to TAN ANCHOR refueling, thence to points located at 20°07'N/107°43'E, 21°05'N/107°28'E, 21°22'N/106°16'E (target), 21°05'N/107°28'E, 20°07'N/107°43'E, TAN ANCHOR, Danang.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

4 SPARROW (AIM-7E)
2 SIDEWINDER (AIM-9B)
1 SUU-16 20mm gun pod
(QRC-160 pods and external fuel tanks indicated)

MIG-17

Silver color with red stars on the wings

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds, good visibility

	BLUE			
	1	2	3	4
<u>Altitude:</u>	10,000-12,000 ft			
<u>Heading:</u>	090°			
<u>Speed:</u>	500 kt			
<u>Fuel State:</u>	11,000 lb			

Flight Formation: Pod formation, echelon left

5. INITIAL DETECTION

A "MIGs in the area" warning was received approximately two minutes before they were sighted. BLUE 1 (Lead) sighted the MIGs at 3 o'clock low at 2 miles heading 270° in a right turn. The MIGs were in a trail formation.

6. ACTION INITIATED

As the MIGs appeared to be turning to engage the strike force, BLUE 1 announced to his flight that he was engaging the MIGs and made an immediate descending right turn into the MIGs.

7. SITUATION DEVELOPMENT

When the MIGs were sighted by the F-4s, they broke off their attack against the strike group. As a defensive maneuver the MIGs established a wagon-wheel pattern to the right, 350 kt at 2,000-3,000 ft. BLUE 1 closed on the closest MIG and fired from the 10 o'clock position, slightly above the MIG at a range of 2,000 ft. No hits resulted. After yo-yoing off, BLUE 1 repeated three similar passes on three MIGs and missed each time. BLUE 3 closed on another MIG at the 4 o'clock position and fired from a range of 2,500 ft in to 100 ft without scoring a hit. As BLUE 3 climbed for separation, he saw BLUE 4 at his 3 o'clock position, slightly high. This is the last time BLUE 4 was observed by any member of BLUE Flight. Before BLUE 3 completed another firing run, BLUE 1 called BINGO for the flight. The F-4s disengaged from the MIGs and departed.

8. ORDNANCE

	(No. fired/No. hits)			<u>Remarks</u>
	<u>SPARROW AIM-7E</u>	<u>SIDEWINDER AIM-9B</u>	<u>SUU-16 20mm</u>	
BLUE 1	0/0	0/0	900/0	Unable to position for a missile shot.
BLUE 3	0/0	0/0	300/0	

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9. EQUIPMENT PROBLEMS

BLUE 4 missed a call from BLUE 1 to changed radio frequency and therefore was unable to communicate with the flight.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>
BLUE 3	3500	200	50

Comments on this Encounter: BLUE 3 - "One thing we learned is that we want to try to keep more guns on the MIGs. Since then we've worked out a procedure where the lead fires and while he's doing it the number three positions himself for a firing pass. When the lead pulls off, number three starts firing. This way they can provide each other top cover and at the same time get more fire power against the enemy."

11. DATA SOURCES

Project Interviews: BLUE 3, 22 June 1967

Messages, Reports: 366TFW/OPREP-3/311400Z May 1967
366TFW/OPREP-3/011130Z June 1967

12. NARRATIVE DESCRIPTION

BLUE Flight was providing MIGCAP for a strike against target JCS 39.43. As the F-4Cs commenced an attack against the enemy, the MIGs went into a tight, in-trail circle identified as a wagon wheel. BLUE 1 and 2 made four firing passes from approximately the 10 o'clock position from the MIGs. BLUE 3 and 4 made one firing pass from the 4:30 o'clock position from the MIGs. The MIGs continued in a tight circle and increased their turn rate as the F-4Cs fired. BLUE 4 reached BINGO fuel and attempted to notify BLUE 1, but because he had missed a frequency change BLUE 1 never heard the call from BLUE 4. Eventually BLUE 4 broke away from the flight and commenced egress with 3500 lb of fuel which was more than adequate to reach the tankers. After being vectored to tankers equipped only with unusable drogue type refueling, BLUE 4 finally turned toward the aircraft carriers on YANKEE STATION, and with only 200 lb of fuel remaining, made preparations to eject. Both crewmembers ejected safely and were quickly recovered.

During the MIG encounter accurate 85mm AA fire was observed. BLUE 4 also experienced control difficulties just prior to losing sight of BLUE 3. Because of the high fuel consumption and flight control difficulties, battle damage was considered a contributing factor to the loss of BLUE 4.

SECRET

Event III-292

Aircraft Involved: Four F-4Cs vs one MIG-17

Result: No damage

Vicinity of Encounter: 21°20'N/106°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1610H

BLUE Flight, four F-4Cs, was providing MIGCAP for JCS target 39.43. At the time of the encounter the flight was outbound from the target area.

2. MISSION ROUTE

BLUE Flight departed Danang and proceeded to the TAN ANCHOR aerial refueling area then via direct routes through the following points: 20°07'N/107°43'E; 21°05'N/107°28'E; target 21°22'N/106°16'E. The return route was the reverse track.

3. AIRCRAFT CONFIGURATIONS

P-4C BLUE 1, 2, 3, 4

4 SPARROW (AIM-7E) One F-4C loaded with 3 AIM-7

BLUE 1, 3

2 SIDEWINDER (AIM-9B)

1 SUU-16 gun (1200 rd 20mm)

BLUE 2, 4

4 SIDEWINDER (AIM-9B)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear sky, visibility greater than 15 miles

	BLUE			
	1	2	3	4
<u>Altitude:</u>	10,000-14,000 ft			
<u>Heading:</u>	120°			
<u>Speed:</u>	500 kt			

Flight Formation: Fighting wing

5. INITIAL DETECTION

MIG warnings relative to BULLS EYE had been received between 1540H and 1553H. One MIG-17 was sighted at 1710H in the 5 o'clock position to BLUE Flight.

6. ACTION INITIATED

BLUE Flight broke to the right and observed the MIG to follow the turn.

7. SITUATION DEVELOPMENT

BLUE Flight rolled wings level, zoom climbed for altitude and reversed their turn. The MIG disengaged, descended and was lost from view.

11. DATA SOURCE

Messages: 366TFW/OPREP-3/311115Z May 1967

12. NARRATIVE DESCRIPTION

While providing MIGCAP for a strike flight, BLUE Flight sighted a single MIG-17 at their 5 o'clock position. From their fighting wing formation BLUE Flight broke right. Observing the MIG to follow the turn, BLUE Flight rolled wings level, zoom climbed and reversed the turn. As BLUE Flight was maneuvering to attack, the MIG turned to the west and disappeared from sight as he descended. BLUE Flight turned outbound and continued egress from the area.

SECRET

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Event III-293

Aircraft Involved: Three F-105s vs two MIG-21s

Results: No damage

Vicinity of Encounter: 21°25'N/106°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1648H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flak suppression flight on egress observed two silver MIGs in right turn, 3000 ft below Lead and No. 2. Lead broke down to engage but MIGs went into an even tighter right turn and passed head-on below Lead. No ordnance was exchanged.

Event III-294

Aircraft Involved: Four F-105s vs four MIG-17s

Results: Sighting only

Vicinity of Encounter: Kep Airfield

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1650H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Pulling off target, strike flight observed two elements of two MIGs each orbiting Kep Airfield. MIGs were in right hand turn at 2000 ft.

Event III-295

Aircraft Involved: Four F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: Kep Airfield

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1650H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

As they were rolling on target, strike flight observed two MIGs on easterly heading and approximately 1 mile east of target at 2-3000 ft. MIGs were probably one of the elements sighted by flight of Event III-294.

SECRET

Event III-296

Aircraft Involved: Four F-105s vs six MIG-7

Results: Sighting only

Vicinity of Encounter: 21°14'N/107°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1650H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight on egress noted four unidentified MIGs at 21°20'N/107°16'E and two unidentified MIGs at 21°10'N/106°59'E. The flight was at 12,000 ft and climbing and the MIGs were at 2000 to 3000 ft. Flight was unable to observe markings. MIGs appeared to be camouflaged. The sun angle and clouds precluded positive identification and the MIGs did not maneuver.

Event III-297

Aircraft Involved: Four F-4Cs vs one MIG-17
(possible)

Results: Sighting only

Vicinity of Encounter: 21°18'N/106°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 31 May 1967/1700H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Escort flight sighted a possible MIG-17 directly below. The MIG was silver and at 1000 ft. The flight was at 2000 ft. No attempt was made to engage. PIRAZ called on egress that bandit was 5 miles south and trailing, but flight was unable to sight bandit.

Event III-298

Aircraft Involved: Four F-105s vs two MIG-21s

Results: No damage

Vicinity of Encounter: 21°20'N/106°28'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 1967/0930H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

The strike flight was approached by two silver MIGs from 7 o'clock position. The flight was at 16,000 ft and the MIGs came up from 7-8000 ft. The flight jettisoned all ordnance, turned hard left and then right. The MIGs were not observed again.

SECRET

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Event III-299

Aircraft Involved: Four F-4s vs Eight to Ten MIG-17s

Result: Three MIG kill "probables"

Vicinity of Encounter: 21°20'N/106°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 1967/1528H.

BLUE Flight was one of two flights of F-4 aircraft assigned MIGCAP for the 355 TFW F-105 force. The F-4 flights rendezvoused with the F-105 force after refueling and accompanied the last F-105 flight into the target area. The other F-4 flight accompanied the first F-105 flight.

2. MISSION ROUTE

BLUE flight departed Ubon RTAFB, Thailand, direct to the Brown refueling track over the Gulf of Tonkin with drop-off at 19°00'N/107°25'E, then north to 21°05'N/107°28'E, and direct to 21°20'N/106°22'E. The flight then engaged MIGs and subsequently egressed over the reverse route.

3. AIRCRAFT CONFIGURATIONS

F-4D BLUE 1

4 - SPARROW (AIM-7E)
4 - FALCON (AIM-4D)
1 - ALQ-71 pod
1 - 370 gallon wingtank
1 - 600 gallon centerline tank

F-4C BLUE 2, 3, 4

4 - SPARROW (AIM-7E)
4 - SIDEWINDER (AIM-9B)
1 - ALQ-71 pod
1 - 370 gallon wingtank
1 - 600 gallon centerline tank

MIG-17 MIG 1-10

Unknown.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 7/8 broken overcast with base at 14,000 ft. About 7 miles visibility below clouds.

	BLUE				MIG	
	1	2	3	4	1	10
<u>Altitude:</u>			8,000 ft			1,000 ft
<u>Heading:</u>			282°			Left orbit
<u>Speed:</u>			550 KTAS			Unknown
<u>Fuel State:</u>			Unknown, probably 10-11,000 lb			Unknown

Flight Formation

Pod formation.

5. INITIAL DETECTION

No MIG warning calls were received. BLUE Flight was escorting the F-105 force inbound to the target area, when five or six MIG-17s passed under BLUE Flight in a hard left turn at about 1000 ft AGL. The MIGs were called out by an F-105 flight and BLUE 3 (Back) at about the same time. Apparently the MIGs were headed north, passing from left to right. Time was approximately 1529H.

6. ACTION INITIATED

BLUE Flight pulled up and to the left to gain separation and then dove hard right to achieve firing position.

7. SITUATION DEVELOPMENT

The MIGs reversed right and a melee ensued in which BLUE Flight fired three SPARROWS (AIM-7E), three SIDEWINDERS (AIM-9B) and two FALCONS (AIM-4D). At least two MIG-17s fired their cannons at BLUE Flight. Three MIG-17s were possibly destroyed with no damage to BLUE Flight.

8. ORDNANCE

Event III-299

	(No. fired/No. hits)			Remarks
	SPARROW AIM-7E	FALCON AIM-4D	SIDEWINDER AIM-9B	
BLUE 1	3/?	2/?		Two AIM-7Es observed guiding. One AIM-7E went high. Both AIM-4Ds appeared to track, one 15 ft miss observed.
BLUE 2		-	3/?	Two appeared to track. One not observed.
BLUE 3	1/?	-		Observed for 3-5 seconds and was guiding.
BLUE 4		-		
MIG 1-10	Two of the MIG-17s were observed firing their cannons with no hits.			

9. EQUIPMENT PROBLEMS

BLUE 1 - Two AIM-4Ds cooled off (ran out of time) and could not be used. UHF radio receiver trouble.

BLUE 4 - Utility hydraulic failure shortly after engagement began.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	4900	268	99	Previous TAC tours in WWII and Korea. Five previous air-to-air engagements, four confirmed MIG kills in SEA.
Back	519	260	105	First tour out of pilot training. 1000 hrs previous RO time in ADC (F-101). Seven months in theatre. Two SPARROWS previously fired in training.
<u>BLUE 2</u>				
Front	850	480	82	No previous live firings - many simulator runs. 2.5 yrs rated, no previous MIG encounters.
Back	474	187	38	No previous live firings - many simulator runs. Two years rated, no previous MIG encounters.
<u>BLUE 3</u>				
Front	2700	250	84	Air Training Command Instructor. No previous MIG encounters.

Comments from Overall Experience

BLUE 1 - Charging SPARROW-type training is not satisfactory for combat.

11. DATA SOURCES

Project Interviews: Aircrew letter - BLUE 3 (Front), 5 July 1968.

Messages, Reports:

OPREP-3 8TFW 0021330Z June 67, DOI 06018, June 67.

OPREP-3 366TFW P021355Z June 67, DCOI 005 June 67.

Supplement 8TFW P0307052 June 67, DI 06036 June 67.

Aircrew's AIM-7D-E missile performance reports.

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12. NARRATIVE DESCRIPTION

Event III-299

BLUE Flight was one of two F-4 flights from Ubon RTAFB assigned to fly MIGCAP for an F-105 strike force from Takhli RTAFB. Refueling, strike force rendezvous, and ingress was without incident until the force arrived in the vicinity of 21°20'N/106°22'E. At this time BLUE Flight was at 8000 ft, 550 KTAS, on a heading of 282°, in Pod formation when 5 or 6 MIG-17s were sighted by BLUE 3 (Back) at 10 o'clock low (1000 ft AGL) passing under BLUE Flight in a hard left turn. The OPREPs do not state definitely, but apparently the MIGs were headed toward the north and passing from BLUE Flight's left to right. BLUE 3 (Back) called out the MIGs to BLUE Flight.

BLUE Flight, reacting in elements of two aircraft each, pulled up and left to gain separation and then dove hard right to achieve firing position. Both element leaders (BLUE 1 and BLUE 3) were unable to fire due to the high angle off that the MIGs generated as they reversed turn to the right and into BLUE Flight. Both BLUE elements broke up and hard right. The MIGs did not follow the F-4s as they zoomed, but a MIG-17 was observed firing as he passed between BLUE 1 and 2 at the top of the zoom. The flight thought that this MIG was holding high and "pounced" after their first attack. BLUE lead then saw the MIGs in a left turn near Kep and dove to attack. BLUE 1 closed on one of six MIG-17s, pulled lead and fired one AIM-4D, with 50°-60° angle off. BLUE 1 was at 0.95 Mach (620 KTAS), 1000-1500 ft AGL, about 3 g's, 150 kts overtake, close range (exact range unknown), with a high growl for a tone. The MIG was in a hard left turn. The missile appeared to track but BLUE 1 was forced to break hard left to avoid a head-on collision with four MIGs and to avoid heavy automatic weapon and 37mm antiaircraft fire from Kep Airfield. BLUE 1 separated from the MIGs and as he turned to reengage, he observed an aircraft crash into the ground in a huge fireball about one mile north of Kep.

BLUE 3 and 4 zoomed to 12,000 ft after the first pass and observed the lead element start in on their second pass. BLUE 3 then dived down on a second pass but again could not fire because of "too much angle off, dive angle, airspeed," and pulled off to the right. BLUE 3 ran into a "blanket" of 85mm AAA fire and broke hard left losing sight of the MIG-17s. As BLUE 3 rolled back to the right he observed three MIG-17s apparently trying to land at Kep Airfield. The MIGs were in trail about 1/2 to 1 mile apart. BLUE 3 rolled into a shallow dive about 2-3 miles south of Kep Airfield and headed for the number two MIG. The MIGs were 1/2 to 1 mile off the end of the southwest runway (northeast of Kep) and BLUE 3 was 1 to 2 miles south of Kep nearly parallel to the Northeast Railroad at about 2000 ft and 500 kts when BLUE 3 (Back) called, "lock-on," and BLUE 3 fired one AIM-7E missile.* BLUE 3 was flying an aircraft modified to provide an automatic switch to full system lock on after a boresight lock on. BLUE 3 observed the SPARROW launch, "roll and guide," for 3-5 seconds. BLUE 3 was getting heavy ground fire and BLUE 4 called that he was experiencing utility hydraulic failure so BLUE 3 broke right without observing the missile results. (Heavy 85mm fire with bursts at 8000 ft was reported in the Kep area.) BLUE 3 and 4 egressed the area for an emergency recovery at Danang.

Meanwhile, BLUE 1 and 2 turned to reengage the MIGs still in a left turn over Kep. BLUE 1 at 1000 ft AGL, 0.95 Mach (620 KTAS) locked on to a MIG-17 at an estimated 5000 ft range, auto-track, inter-locks out, full system, narrow gate and fired three AIM-7E missiles in ripple at 3500 ft range 45° angle off of the MIG's tail while pulling in 2.5 g's. The target was at 1000 ft AGL in a hard left turn, at 0.9 Mach. Again BLUE 1 was forced to break left by additional MIG-17s in a head-on pass and intense antiaircraft fire from the Kep area. He did not observe the missile results but did observe that the first and third missile "tracked beautifully" and the second missile "headed high and for parts unknown."

BLUE 2 went high on this break and saw a single MIG-17 above him in a left turn. BLUE 2 fired three AIM-9B missiles in rapid succession at 20° angle off, 3500 ft range, with a good growl. The target aircraft was in an easy left climbing turn at missile launch. BLUE 2 was at 0.85 to 0.9 Mach (540 to 570 KTAS), 4000 ft altitude pulling about 2 g's at launch. Two of the missiles appeared to track. The third missile was not observed. BLUE 2 did not see the missiles hit because he broke hard left and down to rejoin BLUE 1.

*The OPREP-3 reports BLUE 3 fired at 0.9 Mach (500 KTAS), 6000 ft altitude at 1.5 miles range in a dive, 70° head-on to the MIG-17 which was headed 240° at 800 ft AGL and 0.9 Mach.

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Event III-299

BLUE 1 saw BLUE 2 in a left turn and called him to break right for rejoin. BLUE 1 then saw a MIG-17 in firing position on BLUE 2 with cannons blazing. BLUE 2 responded to a "break" call and evaded the MIG. BLUE 1 turned to engage the MIG-17, and encountered an additional flight of four MIG-17s near Kep. One MIG-17 made a head-on pass and BLUE 1 fired an AIM-4D. The pipper was on the target. BLUE 1 was at 0.95-1.0 Mach (620-660 KTAS), 1000-1500 ft altitude, pulling about 3 g's with no recollection of tone. The missile passed about 15 feet under the MIG, but since the missile does not have a proximity fuze it did not detonate. BLUE Flight observed a second huge fireball at 21°30'N/106°19'E about this time.

BLUE Flight, at BINGO fuel, egressed and called the other F-4 flight into the area. However, BLUE Flight's MIG encounter is the only one reported on this date. A third huge fireball was observed at 21°22'N/106°38'E at 1640H during egress. Official sources do not list any kills or probables on this date.

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Event III-300

Aircraft Involved: Eight F-105s vs two MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°19'N/106°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 1967/1015H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound strike flight of four F-105s observed two MIGs at 10,000 ft. The MIGs came from 10 o'clock and passed behind flight's 6 o'clock position and were not observed further. As the flight came off target, a single MIG-21 was seen to dive through a second strike flight which was just diving on target.

Event III-301

Aircraft Involved: Four F-4Cs vs one MIG-17

Results: Sighting only

Vicinity of Encounter: Kep Airfield

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 1967/1630H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

MIG CAP flight sighted one MIG, 7-8 miles due east of target, Kep RR yards. Flight also saw F-4s and silver aircraft engaged in aerial battle near 21°27'N/106°30'E between 4000 and 8000 ft (see Event III-302). BLUE lead observed an orange fireball at 0840Z at 21°31'N/106°26'E which appeared to be a large POL explosion or an aircraft striking the ground.

Event III-302

Aircraft Involved: Two F-105s vs four MIG-17s

Results: No damage

Vicinity of Encounter: 21°16'N/106°11'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 1967/1633H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Kep strike flight was proceeding into target area when Lead and No. 2 noted four silver MIGs at their 6 o'clock position, and the MIGs were 1-1/2 miles from flight on same heading. The flight started climb to target and the MIGs could not keep up.

SECRET

Event III-303

Aircraft Involved: Four F-4s vs Eight to Ten
MIG-17s

Results: No damage

Vicinity of Encounter: 21°20'N/106°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 June 67/1628H

BLUE flight was one of two flights of F-4 aircraft (see Event III-301) assigned MIGCAP for the 355TFW F-105 force. The F-4 flights rendezvoused with the F-105 force after refueling and accompanied the last F-105 flight into the target area. The other F-4 flight accompanied the first F-105 flight.

2. MISSION ROUTE

BLUE flight departed Ubon RTAFB, Thailand, direct to the Brown refueling track over the Gulf of Tonkin with drop-off at 19°20'N/106°22'E. The flight then engaged MIGs and subsequently egressed over the reverse route.

3. AIRCRAFT CONFIGURATION

F-4D BLUE 1

4 - SPARROW (AIM-7E)
4 - FALCON (AIM-4D)
1 - ALQ-71 pod
1 - 370 gallon wingtank
1 - 600 gallon centerline tank

F-4C BLUE 2,3,4

4 - SPARROW (AIM-7E)
4 - SIDEWINDER (AIM-9B)
1 - ALQ-71 pod
1 - 370 gallon wingtank
1 - 600 gallon centerline tank

MIG-17 MIG 1-10

Unknown.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 7/8 broken overcast with base at 14,000 ft. About 7 miles visibility below clouds.

	BLUE				MIG	
	1	2	3	4	1	10
<u>Altitude:</u>				8,000 ft		1,000 ft
<u>Heading:</u>				282°		Left orbit
<u>Speed:</u>				550 KTAS		Unknown
<u>Fuel State:</u>				Unknown, probably 10-11,000 lb		Unknown

Flight Formation

Pod formation.

5. INITIAL DETECTION

No MIG warning calls were received. BLUE flight was escorting the F-105 force inbound to the target area, when five or six MIG-17s passed under BLUE flight in a hard left turn at about 1000 ft AGL. The MIGs were called out by an F-105 flight and BLUE 3 (Back) at about the same time. Apparently the MIGs were headed North, passing from left to right. Time was approximately 1528H.

6. ACTION INITIATED

BLUE flight pulled up and to the left to gain separation and then dove hard right to achieve firing position.

7. SITUATION DEVELOPMENT

The MIGs reversed right and a melee ensued in which BLUE flight fired three SPARROWS (AIM-7E), three SIDEWINDERS (AIM-9B) and two FALCONS (AIM-4D). At least two MIG-17s fired their cannons at BLUE flight.

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Event III-303

8. ORDNANCE

	(No. fired/No. hits)			<u>Remarks</u>
	<u>SPARROW AIM-7E</u>	<u>FALCON AIM-4D</u>	<u>SIDEWINDER AIM-9B</u>	
BLUE 1	3/?	2/?		Two AIM-7Es observed guiding. One AIM-7E went high. Both AIM-4Ds appeared to track, one 15 ft miss observed.
BLUE 2		-	3/?	Two appeared to track. One not observed.
BLUE 3	1/?	-		Observed for 3-5 seconds and was guiding.
BLUE 4				

MIG 1-10 Two of the MIG-17s were observed firing their cannons with no hits.

9. EQUIPMENT PROBLEMS

BLUE 1 - Two AIM-4Ds cooled off (ran out of time) and could not be used. UHF radio receiver trouble.

BLUE 4 - Utility hydraulic failure shortly after engagement began.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	4900	268	99	Previous TAC tours in WWII and Korea. Five previous air-to-air engagements, four confirmed MIG kills in SEA.
Back	519	260	105	First tour out of pilot training. 1000 hrs previous RO time in ADC (F-101). Seven months in theatre. Two SPARROWS previously fired in training.
<u>BLUE 2</u>				
Front	850	480	82	No previous live firings - many simulator runs. 2 1/2 years rated, no previous MIG encounters.
Back	474	187	38	No previous live firings - many simulator runs. Two years rated, no previous MIG encounters.
<u>BLUE 3</u>				
Front	2700	250	84	Air Training Command Instructor. No previous MIG encounters.

Comments from Overall Experience

BLUE 1 - Charging SPARROW-type training is not satisfactory for combat.

11. DATA SOURCES

Project Interviews: BLUE 1 (Front) 4 June 1967, Aircrew letter - BLUE 3 (Front), 5 July 1968.

Messages, Reports:

OPREP - 3 8TFW 0021330Z June 67, DOI 06018, June 67.

OPREP-3 366TFW PO21355Z June 67, DCOI 005 June 67.

Supplement 8TFW PO30705Z June 67, DI 06036 June 67.

Aircrew's AIM-7D/E missile performance reports.

12. NARRATIVE DESCRIPTION

BLUE flight was one of two F-4 flights from Ubon RTAFB assigned to fly MIGCAP for an F-105 strike force from Takhli RTAFB. Refueling, strike force rendezvous, and ingress was without incident until the force arrived in the vicinity of 21°20'N/106°22'E. At this time BLUE flight was at 8000 ft, 550 KTAS, on a heading of 282°, in Pod formation when 5 or 6 MIG-17s were sighted by BLUE 3 (Back) at 10 o'clock low (1000 ft AGL) passing under BLUE flight in a hard left turn. The OPREPs do not state definitely, but apparently the MIGs were headed toward the North and passing from BLUE flight's left to right. BLUE 3 (Back) called out the MIGs to BLUE flight.

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Event III-303

BLUE flight, reacting in elements of two aircraft each, pulled up and left to gain separation and then dove hard right to achieve firing position. Both element leaders (BLUE 1 and BLUE 3) were unable to fire due to the high angle off that the MIGs generated as they reversed turn to the right and into BLUE flight. Both BLUE elements broke up and hard right. The MIGs did not follow the F-4s as they zoomed, but a MIG-17 was observed firing as he passed between BLUE 1 and 2 at the top of the zoom. The flight thought that this MIG was holding high and "pounced" after their first attack. BLUE lead then saw the MIGs in a left turn near Kep and dove to attack. BLUE closed on one of six MIG-17s, pulled lead and fired one AIM-4D, with 50°-60° angle off. BLUE 1 was at 0.95 Mach (620 KTAS), 1000-1500 ft AGL, about 3 gs 150 kts overtake, close range (exact range unknown), with a high growl for a tone. The MIG was in a hard left turn. The missile appeared to track but BLUE 1 was forced to break hard left to avoid a head-on collision with four MIGs and to avoid heavy automatic weapon and 37mm antiaircraft fire from Kep Airfield. BLUE 1 separated from the MIGs and as he turned to reengage, he observed an aircraft crash into the ground in a huge fireball about one mile North of Kep.

BLUE 3 and 4 zoomed to 12,000 ft after the first pass and observed the lead element start in on their second pass. BLUE 3 then dived down on a second pass but again could not fire because of "too much angle off, dive angle, airspeed", and pulled off to the right. BLUE 3 ran into a "blanket" of 85mm AAA fire and broke hard left losing sight of the MIG-17s. As BLUE 3 rolled back to the right he observed three MIG-17s apparently trying to land at Kep Airfield. The MIGs were in trail about 1/2 to 1 mile apart. BLUE 3 rolled into a shallow dive about 2-3 miles south of Kep Airfield and headed for the number two MIG. The MIGs were 1/2 to 1 mile off the end of the Southwest runway (Northeast of Kep) and BLUE 3 was 1 to 2 miles South of Kep nearly parallel to the Northeast Railroad at about 2000 ft and 500 kts when BLUE 3 (Back) called, "lock-on", and BLUE 3 fired one AIM-7E missile.* BLUE 3 was flying an aircraft modified to provide an automatic switch to full system lock on after a boresight lock on. BLUE 3 observed the SPARROW launch, "roll and guide", for 3-5 seconds. BLUE 3 was getting heavy ground fire and BLUE 4 called that he was experiencing utility hydraulic failure so BLUE 3 broke right without observing the missile results. (Heavy 85mm fire with bursts at 8000 ft was reported in the Kep area.) BLUE 3 and 4 egressed the area for an emergency recovery at Danang.

Meanwhile, BLUE 1 and 2 turned to reengage the MIGs still in a left turn over Kep. BLUE 1 at 1000 ft AGL, 0.95 Mach (620 KTAS) locked on to a MIG-17 at an estimated 5000 ft range, auto-track, interlocks out, full system, narrow gate and fired three AIM-7E missiles in ripple at 3500 ft range 45° angle off of the MIG's tail while pulling 2.5 gs. The target was at 1000 ft AGL in a hard left turn, at 0.9 Mach. Again BLUE lead was forced to break left by additional MIG-17s in a head-on pass and intense antiaircraft fire from the Kep area. He did not observe the missile results but did observe that the first and third missile "tracked beautifully" and the second missile "headed high and for parts unknown".

BLUE 2 went high on this break and saw a single MIG-17 above him in a left turn. BLUE 2 fired three AIM-9B missiles in rapid succession at 20° angle off, 3500 ft range, with a good growl. The target aircraft was in an easy left climbing turn at missiles launch. BLUE 2 was at 0.85 to 0.9 Mach (540 to 570 KTAS), 4000 ft altitude pulling about 2 gs at launch. Two of the missiles appeared to track. The third missile was not observed. BLUE 2 did not see the missiles hit because he broke hard left and down to rejoin BLUE lead.

BLUE 1 saw BLUE 2 in a left turn and called him to break right for rejoin. BLUE 1 then saw a MIG-17 in firing position of BLUE 2 with cannons blazing. BLUE 2 responded to a "break" call and evaded the MIG. BLUE 1 turned to engage the MIG-17, and encountered an additional flight of four MIG-17s near Kep. One MIG-17 made a head-on pass and BLUE lead fired an AIM-4D. The pipper was on the target. BLUE 1 was at 0.95-1.0 Mach (620-660 KTAS), 1000-1500 ft altitude, pulling about 3 gs with no recollection of tone. The missile passed about 15 ft under the MIG, but since the missile does not have a proximity fuze it did not detonate. BLUE flight observed a second huge fireball at 21°30'N/106°19'E about this time.

BLUE flight, at BINGO fuel, egressed and called the other F-4 flight into the area. However, BLUE flight's MIG encounter is the only one reported on this date. A third huge fireball was observed at 21°22'N/106°38'E at 1640H during egress. Official sources do not list any kills or probables on this date.

*The OPREP-3 reports BLUE 3 fired at 0.9 Mach (500 KTAS), 6000 ft altitude at 1.5 miles range in a dive, 70° head-on to the MIG-17 which was headed 240° at 800 ft AGL and 0.9 Mach.

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Event III-304

Aircraft Involved: Two F-4Ds, two F-4Cs vs
five MIG-17s

Result: No damage

Vicinity of Encounter: 21°15'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time 3 June 1967/1640H

BLUE Flight (two F-4Ds and two F-4Cs) were assigned MIGCAP for a Takhli force of F-105s. They accompanied one part of the force into the target area and then engaged five MIG-17s near Kep airfield. Three AIM-7E missiles and one AIM-9B missile were fired with no results.

2. MISSION ROUTE

BLUE Flight departed Ubon RTAFB and proceeded directly to the refueling track over the Gulf of Tonkin. Dropoff was at 19°00'N/107°25'E. The flight then proceeded north to 21°07'N/107°38'E, and 21°12'N/107°33'E for coast in, west along the north side of the ridge to 21°14'N/106°21'E, and then to the target area at 21°16'N/106°08'E. The MIG engagement occurred about 8 miles east of Bac Giang. The flight then egressed east to 21°07'N/107°38'E, direct to poststrike refueling and return to Ubon RTAFB.

3. AIRCRAFT CONFIGURATIONS

F-4D BLUE 1, 3

4 SPARROWS (AIM-7E)
4 FALCONS (AIM-4D)
1 ALQ-71
1 370-gal. wing tank
1 600-gal. centerline tank
Camouflaged
Avionics - unknown

F-4C BLUE 2, 4

4 SPARROWS (AIM-7E)
4 SIDEWINDERS (AIM-9B)
1 ALQ-71
1 370-gal. wing tank
1 600-gal. centerline tank
Camouflaged
Avionics - unknown

MIG-17s

Unknown armament
All aircraft silver with red stars on wing and red stabilizer.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Cumulus clouds with bases at 8,000-10,000 ft and tops above 25,000 ft over the mountains. The valley or flatland area was clear with a slight haze, about 10 miles visibility.

	<u>BLUE</u>	<u>MIGs</u>
<u>Altitude:</u>	7,000 ft	1,000 ft
<u>Heading:</u>	300°	Left turn

5. INITIAL DETECTION

MIG warnings were not received prior to the encounter. As BLUE Flight turned away from the target area at 7,000 ft altitude, BLUE 1 saw five MIG-17s and one MIG-21 in a flat left turn at 1,000 ft AGL flying in trail formation about 5 miles south of Kep airfield. The MIG-21 was not part of the formation and was not seen again. Time of the sighting was about 1640 local (Hanoi).

6. ACTION INITIATED

BLUE 1 and 2 broke into the MIGs setting up a moderately tight left hand turn around the MIGs. BLUE 3 and 4 climbed above BLUE 1 and 2 and waited for an opportunity to engage. It appeared that the MIG strategy was to continue their turn, but always working closer to Kep airfield where BLUE Flight would be vulnerable to the heavy enemy ground fire in that area.

7. SITUATION DEVELOPMENT

The MIGs maintained their left orbit near Kep. BLUE Flight remained above them and started a yo-yo action in a vertical plane pulling up on one side of the circle to attack a MIG on the other side of the circle. BLUE Flight stayed below 6,000-7,000 ft in their vertical maneuvering.

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Event III-304

8. ORDNANCE

	(No. fired/No. hits)		
	SPARROW AIM-7E	SIDEWINDER AIM-9B	FALCON AIM-4D
BLUE 1	2/0		0/0
BLUE 2	1/0	1/0	

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-4 Hours	Combat Missions	Remarks
BLUE 1 (front)	2892	210	79	No previous MIG encounters
(back)	472	175	86	No previous MIG encounters
BLUE 2 (front)	2476	190	77	No previous MIG encounters
(back)	431	175	80	No previous MIG encounters

11. DATA SOURCES

Messages: OPREP-3, 0031305Z, June 1967
8TFW DOL 06041, June 1967
DO40100, 2 June 1967
8TFW, D106048, June 1967
Aircrew's AIM-7D/E Missile Performance Reports

12. NARRATIVE DESCRIPTION

BLUE Flight (two F-4Ds and two F-4Cs) was assigned to fly MIGCAP for a force of F-105 aircraft from Takhli RTAFB. BLUE Flight departed Ubon RTAFB, refueled over the Gulf of Tonkin and accompanied one of the F-105 flights into the target area. The current Takhli tactics included attacking Route Package IVA targets by individual flights with TOTs separated 2 to 5 minutes.

The flight flew north after refueling and coasted in about 10 miles northeast of Cam Pha. The route, selected to minimize flight time in areas defended by surface-to-air missiles, then continued west to Northeast Railroad in the vicinity of Kep airfield.

No MIGs were sighted inbound to the target. But, as BLUE Flight started turning away from the target to CAP the IRON HAND flight, BLUE 1 saw five MIG-17s flying in trail formation, at about 1000 ft AGL, in a flat left hand turn 5 miles south of Kep airfield. One MIG-21, also seen with the MIG-17s but not in formation with them, was not seen again during the encounter. BLUE Flight was turning through 300° (the direction of turn was not stated, but probably to the right or toward the north) at 7000 ft altitude in the vicinity of 21°15'N/106°20'E at 1640H at the time of the sighting. This would place the MIGs at 12 o'clock low about 5 miles range. All of the MIGs were silver with red stars on the wings and a red vertical stabilizer.

BLUE 1 and 2 "broke into the MIGs setting up a moderately tight left hand turn around the MIGs." BLUE 3 and 4 went high above BLUE 1 and 2 and waited for an opportunity to engage. The MIGs appeared to continue their turn drawing closer to Kep airfield where there was heavy ground fire.

At the completion of the first shallow diving turn, BLUE Lead obtained a lock-on (at about 3 miles) on the lead MIG, turning through north-northwest at 1000 ft AGL, 0.7 Mach (460 KTAS). BLUE 1 fired one AIM-7E missile at 5000-6000 ft range from the MIG's 9 o'clock position. BLUE Lead's report indicates he was at 500 KTAS, 3000 ft altitude, in a 1.5 g diving turn with 2000 kts overtake, full system launch with clutter in override and system in auto track. The missile came off, turned left, "then direct", but passed about 500 ft behind the MIG as the MIG pulled into a hard left turn. The missile was fired at near minimum parameters and the "dot in the circle broke X before the missile passed the MIG."

A second AIM-7E missile was fired at the same MIG, when BLUE Lead was at 2500 ft about 550 KTAS, still in the 1.5 g descending turn at 5000-6000 ft range. BLUE Lead was at the MIG's 8 o'clock position. This missile also turned left, "then direct", but passed an estimated 800 ft behind the MIG. No detonation was observed on either missile. Apparently, both missiles were fired before the "break X" occurred.

BLUE 2, still in the original orbit, moved laterally in a left turning dive and fired one AIM-7E and one AIM-9B at a group of four MIG-17s attempting to evade BLUE Lead's missiles. The MIGs were at 3000-4000 ft, 500 KTAS, pulling about 1.5 g. BLUE 2 was 40° off of the MIG's tail at the time of launch. The firing range is unknown. The pilot's report states "The missile (AIM-7E) was fired in a bad condition for a SPARROW, it failed to guide, but conditions were not right in the cockpit, no lock-on and a bad

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Event III-304

look angle." The report also states "there was not enough lead when the missile was fired with interlocks out." The SPARROW missed.

BLUE 2 then fired a SIDEWINDER (AIM-9B) at 40° angle-off with the same parameters. The SIDEWINDER did not guide but it was heading toward the MIGs as BLUE 2 pulled up to rejoin with BLUE Lead.

BINGO fuel was called and BLUE Flight departed the area, returning to Ubon.

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Event III-305

Aircraft Involved: Two F-4Cs vs two MIG-17s
Two F-4Ds vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 21°15'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 June 1967/1640H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

CAP flight sighted two MIG-17s and one MIG-21 orbiting 5 miles south of Kep Airfield.

Event III-306

Aircraft Involved: Two F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 17°49'N/106°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 June 1967/1651H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Armed reconnaissance flight in NVN panhandle delivered ordnance on Lo Cang truck park. Coming off target, No. 2 observed two MIGs approximately 7 miles NE of target. One MIG was heading south, turning toward southeast and the other was heading south. The MIGs' altitude was 2-3000 ft.

Event III-307

Aircraft Involved: Four F-105s vs two MIG-21s
and 1 MIG-17

Results: Sighting only

Vicinity of Encounter: 21°19'N/106°16'E and
21°19'N/106°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 June 1967/1653H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight at 10,000 ft observed two MIG-21s at 9 o'clock; 5000 ft altitude MIGs were in pursuit of an F-105; two minutes later at second position, same strike flight observed one MIG-17 at 7 o'clock, approximately 2-3 miles away.

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Event III-308

Aircraft Involved: Three F-105s vs three MIG-17s

Results: Two MIG-17s destroyed

Vicinity of Encounter: 21°17'N/106°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 June 1967/1652H.

BLUE Flight was the lead flight of the Korat F-105 force attacking JCS 18.23 (the Bac Giang RR/Highway bridge) at 21°16'N/106°11'E and the adjacent RR yard to the south. The force consisted of 16 F-105Ds in ECM pod formation and four IRON HAND aircraft. Eight F-4s from Da Nang Airbase accompanied the force into the target area.

2. MISSION ROUTE

BLUE Flight departed Korat RTAFB in Thailand, flew directly to the Tan Track refueling over the Gulf of Tonkin for rendezvous with the tankers and F-4Cs from Da Nang, then proceeded north to 20°08'N/107°43'E, north to 21°05'N/107°28'E; each to 21°13'N/106°46'E; and then direct to the roll in point at 21°13'N/106°12'E (with the target at 21°16'N/106°13'E). Roll in for attack was to the right with a right pullout and planned egress by individual flights over the reverse course.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 3

2 - M118, 3000-lb bombs
1 - 650-gal centerline fuel tank
1 - ALQ-71 ECM pod
1 - AIM-9B SIDEWINDER missile
1029 rds HEI 20mm ammunition.

F-105D BLUE 2, 4

2 - M118, 3000-lb bombs
1 - 650-gal centerline fuel tank
2 - ALQ-71 ECM pods (1 on each outboard station)
1029 rds HEI 20mm ammunition.
All F-105s were camouflaged.

MIG-17 MIG 1

Armament unknown - 2 underwing fuel tanks.

MIG-17 MIG 2, 3

Unknown.

All MIGs were silver with red stars.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear over the flatlands with about ten miles visibility. Cumulous clouds over the mountains between the NE Railroad and the Gulf.

	BLUE				MIG		
	1	2	3	4	1	2	3
<u>Altitude:</u>	5000-6000 ft				500-1000 ft		
<u>Heading:</u>	095°				Approx. 300°		
<u>Airspeed:</u>	600 KTAS				Unknown		
<u>Fuel State:</u>	7000-8000 lbs				Unknown		

Flight Formation

In trail attempting to rejoin. BLUE 2 was about 1000 ft behind BLUE 1. BLUE 3 was about 5000 ft behind lead and BLUE 4 was in trail with BLUE 3.

5. INITIAL DETECTION

MIG warnings were called on guard channel as BLUE Flight was pulling off the target. The call was "BULLSEYE-northeast-30-low-330" which placed the MIGs almost under BLUE Flight flying 330°. BLUE lead was at 6000 ft headed 095°, 600 KTAS, about seven miles away at 10 o'clock about 500 ft AGL. The MIGs were going from a climb to a descent in a shallow left turn through 300°. They were in trail formation with about 3000 ft spacing. The last MIG in trail was almost at BLUE Flight's 12 o'clock position.

6. ACTION INITIATED

BLUE Lead called the MIGs and said he was reversing 180° left. He then entered a hard left 10° nose down turn (still in afterburner) followed by BLUE 2 and 3. BLUE 4 was looking away from BLUE 3 at the break and could not relocate the flight. He egressed with the second flight off of the target.

7. SITUATION DEVELOPMENT

BLUE Flight rolled out behind the MIG-17s. The MIG-17s went into a tight left hand orbit at about 500 ft AGL. The flights completed one and a half circles when BLUE 3 fired a SIDEWINDER (AIM-9B) at MIG 3. The MIG attempted unsuccessfully to evade the SIDEWINDER. After the SIDEWINDER damaged the MIG, BLUE 3 closed in firing 20mm HEI. The MIG was trailing smoke from the SIDEWINDER but exploded in flame apparently from the 20mm hits. BLUE Lead then cleared BLUE 2 to go after MIG 1. In the ensuing twisting, scissoring engagement, BLUE 2 fired three bursts before MIG 1 was hit. MIG 1's left wing blew up and MIG 1 crashed in flames with no chute observed. BLUE Lead obtained lead on MIG 2 and fired a SIDEWINDER (AIM-9B) which flew into the ground. BLUE Lead made one more 360° turn and fired a high angle off burst of 20mm at MIG 2, and apparently missed. BLUE 2 and 3 exited the area ahead of BLUE Lead, but the three aircraft rejoined after refueling and returned to Korat. The only damage to the U.S. aircraft was a small hole in BLUE 2's left intake duct possibly caused by a particle from MIG 1.

8. ORDNANCE

	(No. fired/No. hits)		<u>Remarks</u>
	<u>SIDEWINDER AIM-9B</u>	<u>20mm</u>	
BLUE 1	1/0	Short burst/0	
BLUE 2	-	450/1	MIG 1 left wing blown up.
BLUE 3	1/1	376/1	AIM-9B hit first, follow-up gun attack blew up MIG 3.
MIGs	-----No known ordnance expended-----		

9. EQUIPMENT PROBLEMS

BLUE 1 - No reticle (no sight) on combining glass.
 BLUE 2 - Radar would not lock on in air-to-air mode.
 BLUE 3 - None.

10. AIRCREW COMMENTS

BLUE 2 and 3

Jettison speed for the 650 gal centerline tank is not compatible with combat speed and maneuvering, "it is dangerous to drop the 650 (centerline fuel tank) unless you unload the aircraft (aerodynamically) first".

BLUE 2

Cockpit fog and canopy vapor restricted visibility. I could only see through the forward windshield.

For air-to-ground attack, we need an auto bomb release system with a positive indication to the pilot that the computer has a solution and will release the bombs.

For air-to-air, suggest a series of fixed ranges on the combining glass, i.e., 500, 1000, 1500, 3000, and about 6000 ft (for hi-alt strafing). These ranges would of course be lead or g computing constantly.

Need an additional radio for communication between flight members. The primary strike channel is saturated during periods of action when it is needed most. A direction finding vector strobe coupled to the flight frequency would aid flight members in maintaining mutual support position.

The ease with which the F-105 will go supersonic and maintain near supersonic speed in military power has been a terrific asset against MIGs and reduces time in the hostile environment.

BLUE 3

Would like to have a simpler method of switching from bomb ordnance to missile and gun firing capability with a computing sight. Five switches are currently required.

The capability of firing the IR missile by placing the pipper on the enemy aircraft should be retained.

11. DATA SOURCES

Project Interviews:

BLUE 2¹ - 6 June 1967
 BLUE 3 - 7 June 1967

Messages, Reports:

388 TFW OPREP-3 JPCCO FASTEL DOI 2024 June 67 031420Z.

¹This event was reconstructed by BLUE 2.

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Event III-308

12. NARRATIVE DESCRIPTION

BLUE Flight was the lead flight of a force of four strike and one IRON HAND flights of F-105s launched from Korat RTAFB, Thailand. The mission was to destroy JCS 18.23, the Bac Giang RR/Highway Bridge at 21°16'N/106°11'E and the adjacent railroad yard on the south side of the bridge. The four strike flights penetrated the SAM defenses while inbound to the target in a standard "pod" formation, i.e., a diamond of four flights with four aircraft per flight.

The force departed Korat and flew directly to the Gulf of Tonkin for rendezvous with the tankers and F-4 MIGCAP. The force then flew north to 20°08'N/107°43'E and coasted in at 21°08'N/107°33'E. The force then flew about 270° to the roll-in point selected about three miles south of the target, made a right roll-in to bomb release and subsequent right recovery to a heading of 095°. BLUE Flight was the first flight on and off target.

The 85 and 100mm antiaircraft guns opened fire when the F-105 force was about fifteen miles short of the roll-in point. The force was staggered between 16,000 and 18,000 ft at that time. During the dive bomb run, BLUE 2 fired a short burst for flak suppression and in an effort to obtain photography of the active AAA gun emplacements adjacent to the target the overrun on the gun camera film was set at three seconds.

BLUE Flight recovered from the dive bomb pass with BLUE 2 about 1500 ft behind BLUE Lead and BLUE 3 about a mile behind BLUE Lead. All BLUE Flight members were attempting to close to pod formation in afterburner for egress with BLUE 2 reporting a speed of Mach 1.01 at 5000-6000 ft heading 095°.

Roughly six miles from the target, BLUE Lead saw three MIG-17s at 10 o'clock low (less than 1000 ft altitude) about two miles range. The MIGs were in a shallow left climbing turn through 315° and the lead MIG was reversing from a climb to a dive. The MIGs were spaced about 3000 ft in trail so that the third MIG was almost at BLUE Lead's 12 o'clock position.

BLUE Lead called the MIG's position and began making a 180° left turn. BLUE 2 and 3 saw the MIGs immediately after Lead's call and followed BLUE Lead through a 10° nose-down, 5 to 6 g turn. BLUE 4 almost collided with the second flight off the target and lost the rest of BLUE Flight in the turn. He then elected to stay with the second flight and egressed with them.

The MIGs entered a tight left orbit at less than 1000 ft altitude and BLUE Flight was not able to obtain a firing position on the first turn. As BLUE Lead overshot the MIGs and pulled high, BLUE 3 attempted to achieve a firing pass and as BLUE 3 overshot, BLUE Lead turned back into the MIGs attempting to fire. BLUE 2 remained about 500 to 600 ft behind BLUE Lead looking for other MIGs attacking from the rear. During the high g turns at low altitude, the BLUE Flight members had considerable trouble with cockpit fog and canopy vapor interfering with their vision.

BLUE Lead and BLUE 2 jettisoned the 650 gal external fuel tank after the first 360° of turn. This was accomplished at 550 kts CAS, by obtaining almost zero g prior to pickling the tanks. BLUE 3 did not jettison the 650 gal centerline until he was outbound after the air battle because "It is dangerous to drop the 650 unless you unload the aircraft." BLUE 3 felt that he had more speed than the MIG-17s even with the centerline tank.

After the first 360° turn, the MIGs loosened their orbit with MIG 1 in front, MIG 2 to left (inside the turn) and MIG 3 drifting to the outside of the turn (down very low and falling back). As a result of reducing g to jettison the centerline fuel tank, BLUE 1 and 2 were outside the radius of all of the MIGs but with considerably more airspeed. BLUE Flight was about 2000 ft altitude with 600 KCAS between minimum-to-full afterburner power. BLUE 2 was able to solve the cockpit fog problem at this time by turning the cockpit ventilation system completely off. BLUE 2 cleared the area to the rear noting BLUE 3's position and no MIGs at 6 o'clock.

Halfway around the second orbit (headed 270°) BLUE Lead with BLUE 2 in fighting wing position, turned into the MIGs and again attempted to obtain firing position. But the MIGs were now spread in a wide V and MIG 3 had crossed from the outside of the turn to the inside of the turn at very low altitude (about 200 ft) and at a slower airspeed than the other MIGs. Thus as BLUE 1 came through a southwest heading, MIG 3 was at BLUE 2's 10 o'clock low position about 300 ft out slowly rocking his wings. MIG 1 was at BLUE 1's 12 o'clock low and MIG 2 was in the process of crossing from left to right, very low between MIG 1 and BLUE 1. BLUE 2 was at BLUE 1's 7 o'clock position about 500 ft back.

During the same period of time (from a heading of 270° to about 200°) BLUE 3, who was flying the element position unaware that BLUE 4 was not with him, observed MIG 3 cross to the inside and waver momentarily. BLUE 3 had set switches to fire his single AIM-9B during the previous 360° orbit and now decided to fire at MIG 3 during MIG 3's moment of hesitancy. BLUE 3 dived down on MIG 3, put the pipper on the MIG's tailpipe and as MIG 3 "graciously lit his afterburner", fired the SIDEWINDER. BLUE 3 assumed that the AIM-9B IR seeker was aligned with the pipper and did not attempt to obtain a missile tone prior to firing. BLUE 3 estimated 2500 ft range, closure speed of 100 kts at an altitude of 1000 ft in a 15° 59 20° dive, in full afterburner and with the 650 gal centerline tank still on the centerline position.

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Event III-308

The missile went straight for the MIG-17, which entered a shallow left turn. When the missile was about 400 ft from MIG 3, MIG 3 broke into a hard left climbing wingover maneuver as though he suddenly became aware that the missile was tracking him. The MIG turned almost 90° to a heading of east, and had 90° of bank with his nose about 20° above the horizon when the SIDEWINDER exploded. Examination of BLUE 3's film indicates the missile went alongside of the tailpipe and from BLUE 2's description "exploded about a foot or two away from the tailpipe at the 4 o'clock position (from the rear) and about 2-3 ft forward from the end of the tailpipe." The MIG immediately started to trail a heavy white "vapor" looking smoke that appeared to come from the bottom of the tailpipe. BLUE 3 continued closing on the MIG as the MIG rolled over and started down, and with the sight set on missiles air (g computing for a fixed range of 1100-1500 ft) put the pipper "up and right in front of him and worked it right down through him", firing 376 rounds at a high angle off.

BLUE 3 did not observe any cannon hits and last saw the MIG as he rapidly overshot him and turned to 090° calling "BLUE 3, I got one.". However, both BLUE 1 and 2 observed the missile hit, the trailing smoke and the MIG blow up in a ball of fire. BLUE 1 observed the MIG impact at 21°18'N/106°21'E at 1653H.

Meanwhile, MIG 1 was at BLUE Lead's 11 o'clock position about a mile range and MIG 2 had crossed to BLUE Lead's 1:30 o'clock position at about 1/2 mile range. MIG 2 appeared to have slowed down and was at a very low altitude. BLUE 2 called both MIGs to BLUE Lead and BLUE Lead replied, "If you can get one, go get him". BLUE 2 was in position to attack MIG 1 and as he tightened up the left turn to attack MIG 1, MIG 2 turned left toward BLUE 2. BLUE Lead subsequently attacked MIG 2.

BLUE 2 immediately obtained a 45° angle off shot at MIG 1 and at about 2000 ft range, while pulling 5 to 6 g's, placed the pipper in front of MIG 1 and fired a short burst. BLUE 2's air-to-air radar mode was inoperative (previously checked while inbound to the target) and he had selected 18 mils fixed bombing depression as a compromise for air-to-air. However, BLUE 2 did not have enough lead and was unable to track the MIG through the turn. As BLUE 2 started a hi-speed yo-yo to reduce his overshoot, MIG 1 reversed into a hard right turn partially solving BLUE 2's tracking problem.

After a few maneuvers, BLUE 2 and MIG 1 were on parallel flight paths several hundred feet apart with BLUE 2 about 500 ft behind MIG 1's orthogonal position. As the flight paths started to converge, MIG 1 again reversed into a left 60° banked turn with his nose about 20° above the horizon. This allowed BLUE 2 (still in a high g left turn) to momentarily pull lead and again run the pipper through MIG 1. BLUE 2 fired a fairly long burst at about 1200 ft range, 5 to 6 g's, and 590 KCAS with no observed hits. It now became apparent to BLUE 2 that 18 mils was not enough lead under these g conditions.

MIG 1 rolled further left and entered a 120° banked dive with his nose about 20° below the horizon. BLUE 2 was now closing rapidly at about 200 kts overtake speed when MIG 1 established a smooth tight descending turn to the left possibly reducing power to force an overshoot. BLUE 2, pulling maximum g (just short of complete loss of vision) was able to align the F-105 fuselage with the MIG but unable to pull lead. As a last resort BLUE 2, by rapid aft stick movement, was able to rotate the F-105 fuselage enough to put the sight well in front of the MIG and opened fire at a little over 200 ft range forcing the MIG to fly through the stream of 20mm cannon fire. The underside of the MIG's left wing exploded at a point two thirds of the way between the fuselage and the external underslung fuel tank. BLUE 2 relaxed back stick pressure as the fire and debris from the MIG engulfed the cockpit, and passed about 25 ft below the MIG as the MIG rolled inverted and crashed. The MIG was hit at a range of 210 ft with 55 mils lead at about 400-700 ft of altitude. Time from hit to impact was 4 to 5 seconds during which no chute was observed and the MIG did not roll from the inverted position with impact at 21°16'N/106°25'E.

Meanwhile, after BLUE 2 passed BLUE Lead, MIG 2 (at BLUE Lead's 2 o'clock) crossed back from right to left under BLUE Lead and behind BLUE 2. BLUE Lead pulled lead on MIG 2, and as MIG 2 crossed the "field of view" of BLUE Lead's SIDEWINDER (AIM-9B), BLUE Lead observed good tone and fired. The missile launched out ahead of BLUE Lead and then turned and headed straight for the ground. BLUE Lead overshot MIG 2 and turned wide. After about 360° of turn, BLUE Lead was again able to cut off MIG 2 and fired a short burst from a high angle off with no sight display and no apparent damage to the MIG.

BLUE 2 experienced a surging engine and rapid deceleration as a result of passing through the fire from MIG 1. BLUE 3 joined up with BLUE and accompanied him toward the coast but about 30 miles from the coast, BLUE 2's engine began to function normally. BLUE Lead egressed alone and rejoined 2 and 3 after refueling on separate tankers. The BLUE Flight aircraft broke off the engagement with about 4000 lbs of fuel, bingo fuel for unrefueled recovery at Da Nang AB, South Vietnam. The only damage to the F-105s was that absorbed by BLUE 2, a windshield partly coated with molten aluminum, some grease blobs on the fuselage and a one-inch hole inside the left intake duct.

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Event III-309

Aircraft Involved: Four F-105s vs five MIG-17s
and two MIG-21s

Results: No damage

Vicinity of Encounter: 21°25'N/105°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 June 1967/1638H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

IRON HAND flight (BLUE Flight) between 8-9000 ft had just fired SHRIKES at target and made a left turn when they observed two MIG-17s at 5:30 o'clock high (10,000 ft). MIGs were in trail with Lead MIG approximately 2000 ft behind IRON HAND flight and second MIG 1000 ft behind Lead MIG. The flight lit burner and completed turn and left MIGs. The flight then observed an F-4C flight (probably those of Event III-308) engaging three MIG-17s and two MIG-21s. BLUE 4 observed a smoke streak go up toward a MIG-17 and the MIG exploded.

Event III-310

Aircraft Involved: Four F-105s vs six MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°40'N/105°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 June 1967/1643H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Ingressing strike flight observed one MIG followed shortly by the sighting of five additional MIGs. The MIGs were at approximately 1000 ft and heading west.

Event III-311

Aircraft Involved: Four F-105s vs three MIG-21
and six MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°52'N/105°14'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 June 1967/1646H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

During ingress dive down Thud Ridge, strike flight observed three MIG-21s and six MIG-17s. First sighting was two silver MIG-21s at 9 o'clock and the MIG altitude was approximately 14,000 ft when first sighted. Three minutes later, a single MIG-21 was observed at 7 o'clock at 2-3000 ft in a gentle left turn. Sighting was quickly followed by sighting of two flights of two camouflaged MIG-17s. These last MIGs were at approximately 2-3000 ft.

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Event III-312

Aircraft Involved: Two F-4Cs and two F-4Ds vs
seven or eight MIG-17s
Result: One MIG destroyed
Vicinity of Encounter: 21°27'N/105°49'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 June 1967/1742H

BLUE Flight, four F-4s, were providing MIGCAP for a strike against JCS target 21.11. The encounter occurred during the egress of the strike force.

2. MISSION ROUTE

Departed Ubon RTAFB and air refueled at ORANGE ANCHOR before proceeding to TACAN Channel 97. Route to the target and back to Channel 97 was via the following points: 21°55'N/104°38'E; 21°53'N/105°47'E/target JCS 21.11; 21°54'N/105°12'E; 21°55'N/104°38'E; Channel 97, and return to base.

3. AIRCRAFT CONFIGURATIONS

F-4D BLUE 1 and 3

4 FALCON (AIM-4)
4 SPARROW (AIM-7E)

F-4C BLUE 2 and 4

4 SIDEWINDER (AIM-9B)
4 SPARROW (AIM-7E)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear in the area of the encounter. BLUE Flight split into two elements, as prebriefed, just prior to attacking the MIGs.

5. INITIAL DETECTION

While covering the egress of the strike force, BLUE Flight heard a following flight engage MIGs and reversed course to join the flight. As the flight was proceeding south along Thud Ridge, four MIG-17s were observed engaged with two F-4Cs. Single MIG-17s were observed high at 9 o'clock and at 3 o'clock.

6. ACTION INITIATED

BLUE 1 (Lead) and 2 went after the MIG at 9 o'clock and BLUE 3 and 4 attacked the MIG at 3 o'clock.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 gained a firing position on the MIG and launched two AIM-4 missiles. The first missile did not guide and the second was not observed. After repositioning, BLUE 1 launched four AIM-7E missiles at an altitude of 500 ft AGC, none of which was observed to guide. Again the element maneuvered for separation and the lead was passed to BLUE 2. BLUE 2 acquired a firing position on a single MIG-17 which was about 900 ft AGL and launched two AIM-9B missiles with approximately 15 degrees angle off with the MIG in a left turn. Both SIDEWINDERS guided and impacted in tail section of the MIG. The MIG continued in a steep left turn until impact with the ground. Just prior to impact the canopy separated from the airplane and the pilot ejected. BLUE 1 and 2 departed the area and returned to base.

In attacking the MIG at 3 o'clock BLUE 3 and 4 maneuvered into a firing position at approximately 5000 ft in a level left turn. At approximately 3500 ft range with 35° angle off BLUE 3 launched one AIM-4 which was observed to guide to a 20 ft miss behind the MIG. As BLUE 3 and 4 maneuvered for separation, two more MIGs were sighted at 9 o'clock low in a shallow left turn. BLUE 3 maneuvered to a position 3000 ft at the MIG 6 o'clock with less than 15° angle off and launched an AIM-4. The missile was observed to pass within 10 ft behind the MIG. A second AIM-4 was cooled and with a high pitched tone BLUE 3 fired the missile which aborted on the launcher. At this time BLUE 3 overran the MIG and pulled up to gain separation and altitude. A lone MIG was sighted very low (500 ft) and appeared to be returning to base. BLUE 3 and 5 moved below the MIG at his 6 o'clock and when the MIG pulled up to clear a hill, he was silhouetted against the sky. With a high pitched tone from an AIM-4, BLUE 3 launched the missile which was observed to guide to within 10 ft of the MIG's tail pipe.

BLUE 3 and 4 were at BINGO fuel so departed the area and returned to base.

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Event III-312

8. ORDNANCE

	(No. fired/No. hits)			<u>Remarks</u>
	<u>SPARROW AIM-7E</u>	<u>FALCON AIM-4</u>	<u>SIDEWINDER AIM-9B</u>	
BLUE 1	4/0	2/0		Launched all AIM-7Es in boresight mode with range lock, narrow gate.
BLUE 2			2/2	One MIG-17 kill.
BLUE 3		4/0		Near misses.

11. DATA SOURCES

Messages, Reports: 8TFW/OPREP-3/05132Z June 1967, Raytheon Missile Firing Memo of 6 June 1967.

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Event III-313

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-4 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	3405	247	105	Previous combat firing on 14 May 1967, two AIM-7E and one AIM-9B. No hits. In previous training in RTU and charging SPARROW fired two AIM-7, 9 AIM-9 and 20 simulator firings.
Back	618	397	103	Training firings of one AJM-7 and 4D simulator firings.

11. DATA SOURCES

Messages: 366TFW/OPREP-3/051530Z June 1967
366TFW/supplement OPREP-3/080800Z June 1967/DCCO 00186

12. NARRATIVE DESCRIPTION

Upon sighting the MIGs, BLUE 1 (Lead) rolled into his attack from the 12 o'clock high position on the MIGs. When the MIGs sighted the attacking F-4s they turned hard to the right and then executed a vertical turn reversal to the left. BLUE 1, after launching a SPARROW missile, maneuvered with the MIG and attained a 6 o'clock position from which fatal hits were scored with the SUU-16 gun. The following data were reported for the conditions at the time of launching the missile. At missile launch BLUE 1 was in a 60° dive at 6500 ft AGL in a four-g right turn with 475 KCAS and a range of 4500 ft from the target. Track crossing angle (TCA) at launch was 80° with an overtake of 150 kt. The missile passed 2500 ft at 6 o'clock to the MIG and was observed to self-destruct. The weapon system launch mode was boresight, interlocks out and no range lock-on. Evaluation of the results stated "the missile was launched out of envelope and although the system functioned properly guidance was hopeless." (Ref. 080800Z)

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Event III-314

Aircraft Involved: Two F-4Ds and two F-4Cs vs
eight to twelve MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°30'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 June 1967/1535H

BLUE Flight (four F-4s) was providing MIGCAP for an IRON HAND flight in the vicinity of Thud Ridge.

2. MISSION ROUTE

BLUE Flight departed Ubon and proceeded to ORANGE ANCHOR for refueling. The route to the target was via the following points: TACAN 97; 21°55'N/104°38'E; 25°14'N/105°12'E; 21°45'N/105°42'E; 21°26'N/105°52'E, ALFA day frag NR 125.

3. AIRCRAFT CONFIGURATIONS

F-4D BLUE 1, 3

4 SPARROW (AIM-7E)
4 FALCON (AIM-4)

F-4C BLUE 2, 4

4 SPARROW (AIM-7E)
4 SIDEWINDER (AIM-9B)

MIG-17

Silver with red stars on the wings

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clouds, scattered to clear with visibility greater than seven miles.

	BLUE			
	1	2	3	4
<u>Heading:</u>	330°			

5. INITIAL DETECTION

BLUE 3 and 4 first sighted the MIGs in their 5 o'clock position making a firing pass.

6. ACTION INITIATED

During the maneuvering of BLUE 3 and 4 to defend against the attacking MIGs, BLUE 3 and 4 became separated. BLUE 1 (Lead) and 2 attacked several MIGs that were in a wagon wheel formation.

7. SITUATION DEVELOPMENT

While maneuvering independently, BLUE 4 launched one SPARROW as BLUE 3 fired one FALCON and one SPARROW. No results were observed. In other engagements BLUE 1 fired a FALCON, which did not guide, and two SPARROW missiles. The first SPARROW was launched inside minimum range whereas the second SPARROW, launched with full system lock-on against a third MIG, was credited with a kill.

8. ORDNANCE

	(No. fired/No. hits)		<u>Remarks</u>
	<u>SPARROW AIM-7E</u>	<u>FALCON AIM-4</u>	
BLUE 1	2/1	1/0	One MIG-17 kill.
BLUE 3	1/0	1/0	
BLUE 4	1/0		
MIGs			Fired guns at BLUE Flight. No hits.

11. DATA SOURCES

Messages, Reports: 8TFW/OPREP-3/051430Z June 1967
Raytheon Missile Performance Report AIM-7D/E

12. NARRATIVE DESCRIPTION

After completing a second troll along Thud Ridge, BLUE 3 and 4 were jumped by MIG-17s as the flight rolled out on a northwesterly heading. The MIGs were visually detected while making a gun-firing pass from the 5 o'clock position of BLUE 3 and 4. BLUE 4 had moved to

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the outside of BLUE 3 and had started to pull back to the inside when the firing pass was made by the MIGs. BLUE 1 called a break and after considerable maneuvering BLUE 3 and 4 became separated. BLUE 4 launched a SPARROW in the boresight mode with interlocks in and range track. At time of missile launch the MIG was moving from the 10 to 12 o'clock position, TCA 30°, range 3 miles, altitude 7,000 ft, speed approximately 0.9 Mach. BLUE 4 also was at 7,000 ft, speed 0.9 Mach. Immediately after launching the missile BLUE 4 broke right as another MIG was making a firing pass from his 5 o'clock position. Upon reaching BINGO fuel state, BLUE 4 egressed the area.

In the meantime, BLUE 3 rolled in on a single MIG-17 that was in a level right turn. From a 30° dive and 15° right bank BLUE 3 fired a FALCON. At launch, angle-off was good but the MIG increased his rate of turn and BLUE 3 passed over the MIG without observing the performance of the missile. After climbing to gain separation, BLUE 3 rolled in behind a single MIG at a range of 5 miles but due to the dive angle and sun, the identification was delayed. A SPARROW was launched at a range of 2 miles at which time the MIG broke right. Both airplanes were at 2000 ft with the F-4 indicating 0.9 Mach and the MIG estimated at 0.8 Mach. TCA was 60°. The flight of the missile was not observed as both the MIG and the SPARROW were lost from view. BLUE 3 then egressed the area and rejoined BLUE 4 on the way out.

BLUE 1 and 2 sighted seven or eight MIG-17s in a wagon wheel pattern and attempted to break up the formation. During the air battle BLUE 1 fired a FALCON which did not guide. Angle off was 10° with the target head-on and level. On a second pass a SPARROW was launched with angle off and target aspect almost identical to the first pass but was inside minimum range. BLUE 1 observed one MIG high and two others slightly to his left and acquired a full system lock-on on one of the MIGs. With the steering dot centered BLUE 1 launched a SPARROW head-on. Target altitude was 6000 ft. Detection range was 2-1/2 miles, lock-on at 2 miles, launch at 2 miles, fighter altitude 6000 ft, speed 0.9 Mach. BLUE 1 heard a call to break right and did not observe the flight of the missile. However, BLUE 2 observed the missile guiding down toward the MIG. BLUE 2 was at 500-1000 ft. Within seconds BLUE 2 observed a large fireball on the northeast side of Thud Ridge in the vicinity of 21°30'N/105°45'E. The fireball extended along the flight path of the missile that BLUE 1 had launched and was identified as the fireball of an aircraft that had impacted with the ground. The engagement continued until broken off by the MIGs. BLUE 1 and 2 then egressed the area and while outbound the backseater in BLUE 2 saw a smoking MIG-17 heading southeast with another MIG flying escort.

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Event III-315

Aircraft Involved: One RF-4C vs Possible MIG

Result: Radar Contact

Vicinity of Encounter: 21°55'N/104°28'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time 6 June 1967/0412H

11. DATA SOURCES

432 TRW 052225Z June 67 OPREP-3 TUOC 04954

12. NARRATIVE

One RF-4C (BLUE Flight) on a weather reconnaissance mission left Udorn and proceeded direct to 20°27'N/103°42'E at 20,000 feet altitude. From there, BLUE Flight proceeded to 22°00'N/104°32'E dropping from 20,000 feet to 12,000 feet. From this point BLUE Flight proceeded to 22°10'N/105°00'E descending from 6000 feet to 500 feet altitude. From there BLUE Flight proceeded to weather point Alfa at 21°42'N/105°40'E at 500 feet altitude.

After leaving the weather reconnaissance point, and on egress, BLUE Flight was at 21°55'N/105°28'E, heading 219 degrees, at 19,000 feet altitude and a speed of 525 knots. At this point he received a one ring x-band TWS rapidly increasing to 3-1/2 rings and traveling from 8 o'clock to 6 o'clock position. This swing took one minute to complete.

BLUE Flight went to 500 feet AGL in less than one minute, and dropped 3 bursts of 4 chaff bundles. Burst one broke the lock but it came back on 4 seconds later. After bursts 2 and 3, lock-on was never reestablished.

BLUE Flight accelerated to 660 knots on the deck and continued on until he reached 20°27'N/103°42'E.

As BLUE Flight was ingressing to the weather point indications were received of a GCI paint.

The weather was a solid undercast with tops at 10,000 feet, with visibility 10 miles. No MIG warnings were received.

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Event III-316

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting only

Vicinity of Encounter: Bac Giang

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 6 June 1967/1540H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Part of the force which hit the Bac Giang RR and highway bridge sighted one silver MIG heading west away from the target but the MIG posed no threat to the mission.

Event III-317

Aircraft Involved: One F-105F vs Unidentified

Results: No damage

Vicinity of Encounter: 20°10'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 7 June 1967/2137H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Member of IRON HAND flight saw a red flowing light which appeared to be a MIG afterburner at 8 o'clock low, approaching and skimming in and out of the tops of a cloud layer. The light came within 5 miles of the F-105 who turned left toward light and it appeared to pitch up and disappear. Thirty seconds later a strange ELINT signal with the characteristics of a SCAN FIX was intercepted for 3 to 4 seconds. No MIG calls were received.

Event III-318

Aircraft Involved: Four F-105s vs one MIG-21

Results: No damage

Vicinity of Encounter: 20°50'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/0900H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight was approached by one silver MIG from 12 o'clock high. MIG turned and tried closing in on flight from 4 o'clock position and the flight executed scissors maneuver. Before Lead and No. 2 could get into firing position, MIG fled to north. No fire was exchanged.

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Event III-319

Aircraft Involved: Two RF-4Cs vs one MIG-21

Result: No damage

Vicinity of Encounter: 21°22'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 June 1967/1312H

Two RF-4Cs (BLUE Flight) were on a mission to Phu Tho railroad yard.

2. MISSION ROUTE

BLUE Flight departed Udorn and proceeded to 18°15'N/103°15'E at 25,000 feet altitude; then direct to Channel 97 (20°28'N/103°43'E) at 30,000 feet; direct to target at 21°24'N/105°13'E descending to 500 feet AGL.

8. ORDNANCE

No. fired/No. hits

AAM

MIG-21 1/0

11. DATA SOURCE

Messages, Reports: 432TRW 100950Z June 67 OPREP-3 TUOC 0516Z

12. NARRATIVE DESCRIPTION

As BLUE Flight was enroute to the target at 21°00'N/105°25'E, at 1304H, a MIG warning was issued by Red Crown "Bandits, bandits BULLSEYE orbiting north."

DEEP SEA 22 (AEW aircraft) issued a warning to BLUE Flight call sign when the flight was at 21°13'N/104°57'E at 1308H "Bandits at BULLSEYE plus 20 miles west, medium altitude."

At 1309.5H when BLUE Flight was at 21°20'N/105°08'E, DEEP SEA 22 again warned BLUE Flight by call sign that bandits were 5 miles south of their position and closing.

When at 21°22'N/105°10'E, and 1312H BLUE Flight observed a MIG-21 approximately 4 miles distant at their 3-3:30 o'clock position. An air-to-air missile of unknown type was fired at BLUE 1 and at that point X-band strobing was received of three plus rings covering a 30 degree sector of the scope with an uncharacteristic dotted line video pattern of multiple strobes. The missile left a visible black trail and appeared to guide accurately toward BLUE 1.

BLUE 1 called a hard left break and descended. What appeared to be the missile detonation was observed below BLUE 1 (the flight was at 21°18'N/105°10'E). BLUE Flight pulled out at 1000 feet AGL heading 230 degrees, and muzzle flashes were seen at 21°20'N/105°05'E but no air bursts or tracers were seen.

The MIG was not observed again nor were X-band strobing received again, but warning calls continued from DEEP SEA 22, "Bandits, bandits 20 miles west." The last call heard was "Bandits, bandits BULLSEYE plus 50 miles west."

The flight continued outbound at 1000 feet AGL until reaching 21°05'N/104°10'E when a climb to 30,000 feet altitude was initiated.

The weather was clear with visibility unlimited.

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Event III-320

Aircraft Involved: One F-105 vs two MIGs

Results: Sighting only

Vicinity of Encounter: 21°31'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/0909H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight was at 17,000 ft when two MIG contrails were observed at 25,000 ft by No. 2 due east of Phuc Yen. MIGs headed toward flight but then turned away.

Event III-321

Aircraft Involved: Four F-105s vs two MIG-17s
and two MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°40'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/0915H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Inbound strike flight observed two silver MIG-17s proceeding NNW along Thud Ridge at 1000 ft. The flight also observed two shiny MIGs, probably MIG-21s, at 21°30'N/105°35'E.

Event III-322

Aircraft Involved: One RF-101 vs one MIG-21

Results: No damage

Vicinity of Encounter: 21°05'N/104°06'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/0930H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

BLUE TREE aircraft at 25,000 ft sighted a MIG with contrails at 30,000 ft approximately 5 miles distant. The MIG executed a right descending turn toward the reconnaissance aircraft. The reconnaissance aircraft jettisoned external fuel tanks, executed a left diving turn to 100 ft, went afterburner and exited the area at 620 knots. X-band strobing was received. The MIG appeared to parallel the photo aircraft course in descent but was not observed again after 20°45'N/103°50'E. Numerous MIG warnings were being received for 60 miles west to 80 miles northwest of Hanoi.

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Event III-323

Aircraft Involved: Four F-105s vs three unidentified

Results: No damage

Vicinity of Encounter: 21°15'N/107°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/1645H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight at 18,000 ft observed three silver aircraft in an element of two with third aircraft following in trail; aircraft approached flight at 7 o'clock low; aircraft overshoot and flight continued on to target area.

Event III-324

Aircraft Involved: Three F-105s vs two MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°10'N/106°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/1634H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight observed two MIGs. The MIGs were low at 1-2000 ft and performing S-turns.

Event III-325

Aircraft Involved: Two F-105s vs two unidentified

Results: Sighting only

Vicinity of Encounter: 21°00'N/107°28'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 June 1967/1658H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Two shiny aircraft were sighted by egressing IRON HAND flight. The bogeys appeared to be at 1000 ft and to be doing victory rolls. The aircraft could have been rocking and the reflection of the sun could have given rolling effect. The type of aircraft was unknown due to distance.

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Event III-326

Aircraft Involved: Four F-105s vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 21°00'N/104°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 June 1967/1604H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight sighted silver MIG; MIG was heading NW and made a left turn into clouds and was not further observed.

Event III-327

Aircraft Involved: Four F-105s vs seven
MIGs

Results: Sighting only

Vicinity of Encounter: 21°05'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 June 1967/1636H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight sighted seven possible MIGs heading west at approximately 8000 ft.

Event III-328

Aircraft Involved: Eight F-105s vs ten-
eleven MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°10'N/106°50'E
21°12'N/106°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 June 1967/1639H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Strike flight sighted two silver MIGs at an altitude of 2000 ft; flight also observed flight of five-six silver MIGs at an estimated altitude of 2-3000 ft; this MIG flight was trailed by another flight of three MIGs at the same altitude and on the same heading, approximately 1 mile behind the first; second F-105 flight also saw second group of MIGs.

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Event III-329

Aircraft Involved: Two RF-4Cs vs one MIG-17

Results: Sighting only

Vicinity of Encounter: 20°00'N/106°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 June 1967/1615H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Photo flight observed MIG heading 330°; no engagement.

Event III-330

Aircraft Involved: Four F-105s vs one MIG-21

Results: Sighting only

Vicinity of Encounter: 21°50'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 June 1967/0902H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Ingressing strike flight at 11,000 ft noted MIG circling underneath; MIG was observed at a slant range of 5 to 6 miles; MIG was silver and appeared to be flying at tree-top level; MIG turned and headed northwest.

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Event III-331

Aircraft Involved: Four F-105s vs two MIG-21s

Results: Sighting only

Vicinity of Encounter: 21°34'N/105°36'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 June 1967/0931H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

No. 2 of strike flight at 9000 ft observed two silver MIGs parallel to flight flying down Thud Ridge; MIGs were 5 miles south at an estimated altitude of 500 ft; MIGs did not engage and flight lost sight.

Event III-332

Aircraft Involved: Four F-4Cs vs two unident
(possible EB-66)

Results: Sighting only

Vicinity of Encounter: Gulf of Tonkin

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 June 1967/1635H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Flak suppression flight ingressing when No. 2 observed two silver strangers approximately 8 miles distant at 3 o'clock; strangers were at altitude 25,000 ft; initial heading 210°, then turned north; possibly EB-66s.

Event III-333

Aircraft Involved: Four F-105s vs two MIG-?

Results: Sighting only

Vicinity of Encounter: 21°25'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 June 1967/0900H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

6000 ft flak suppression flight saw MIGs at 2-3 o'clock; MIGs of unknown type heading down the Song Choy river valley at no closer than 10 miles; flight then lost sight of MIGs.

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Event III-334

Aircraft Involved: One F-105 vs one MIG-7

Results: Sighting only

Vicinity of Encounter: 21°25'N/104°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 June 1967/0050H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Member of strike flight at 3000 ft when aircraft believed to be MIG was sighted heading southwest at altitude 12-13,000 ft; suspected MIG lit afterburner and F-105 lost sight of aircraft.

Event III-335

Aircraft Involved: Four F-105s vs one unident

Results: No Damage

Vicinity of Encounter: 21°05'N/104°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 June 1967/0050H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

IRON HAND flight received momentary x-band signal; F-105s broke left and signal went off; at 1650Z, (22 June), 45 miles south of Yen Bay, flight saw an afterburner light at their 12 o'clock position, approximately 2 miles ahead in a slight climb; light went off and then came back on, enabling pursuing F-105s to identify swept-back wing features and to see that the fuselage was silver-grey in the moonlight; suspect MIG was now heading NW in slight climb approximately 1 mile in front of flight, which turned into suspect MIG and his afterburner light went out; shortly thereafter the afterburner was relit, showing unidentified to be in slight right dive; once again afterburner light went out and flight lost track of the unidentified.

Event III-336

Aircraft Involved: Three F-4Cs vs one MIG-21,
one unidentified

Results: Sighting only

Vicinity of Encounter: 21°40'N/104°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 June 1967/0915H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Escort flight heard continuous MIG calls from 0056Z until 0133Z; ECM aircraft was at 30,000 ft when MIG was sighted at 7 o'clock position by escorts; MIG was at 30,000 ft approximately 1 mile distant; MIG made no attempt to engage and was not further observed; at approximately 0117Z, flight starting a left turn observed an unidentified silver, fighter type aircraft at flight's 12 o'clock position; bogey was heading NW up the Red River; bogey appeared to be in a gentle climb and dive maneuver, was approximately 7-8 miles distant and posed no threat to flight.

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Event III-337

Aircraft Involved: One F-4C vs two MIG-17s

Result: One F-4C destroyed

Vicinity of Encounter: Hainan Island

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 26 June 1967/1732H

One F-4C Ferry Flight from Clark APB to Da Nang

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1

600-gal centerline tank

MERS outboard

TERS inboard

BLU/1B baggage rack on left inboard TER.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Winds aloft forecast 25 kts from 100° at 39,000 MSL.

BLUE 1

Altitude: 26,000 ft
Heading: 210°
Speed: Unknown
Fuel State: Low on fuel

Flight Formation:

N/A

5. INITIAL DETECTION

BLUE 1 was subjected to surprise attack by two MIG-17s from his 6 o'clock position.

6. ACTION INITIATED

See Item 12

7. SITUATION DEVELOPMENT

See Item 12

8. ORDNANCE

BLUE 1 - None

MIG-17s - Unknown

9. EQUIPMENT PROBLEMS

Heading Indicators, Primary and Standby in both cockpits were in error and had BLUE 1 north of course.

10. AIRCREW COMMENTS

None

11. DATA SOURCES

Messages, Reports:

366 TFW OPREP-3 DNG AB RVN DCO1 809 June 67 261620Z

366 TFW OPREP-3 DNG AB RVN DCO1 812 June 67 261845Z

CTF-77 SITREP-1 June 67 270902Z

12. NARRATIVE

BLUE 1, a ferry flight, departed Clark AB and planned to arrive at Da Nang with 3200 lb fuel reserve. Winds enroute at planned altitude of 39,000 ft MSL were forecast to be approximately 100° at 25 kts. The heading indicators (both Primary and Standby) in both cockpits were in error which caused the pilot to proceed north of course. BLUE 1 was in or above weather from the Philippine ADIZ¹ until letdown into what was thought to be the Da Nang area. Radar breakout of this area is very similar to Da Nang. Radio frequencies were very cluttered, emergency squawk initiated at this time, 0900Z. Pilot requested position from Panama radar who twice confirmed it as 25 n mi from Da Nang. Pilot still did not see familiar terrain or surroundings, so he turned to 180° and climbed to 26,000 ft.

¹Air Defense Identification Zone

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Event III-337

GREEN Flight, returning from RP VI strike, got ADF bearing on BLUE 1 transmissions and gave pilot a steer of 210° for 140 n mi, which proved to be correct. BLUE 1 followed this steer at 26,000 ft MSL until subjected to a surprise attack by two MIG-17s from his 6 o'clock position. Aircraft was hit, fire warning lights were illuminated, pilot pulled throttles to idle and both engines failed. Pilot extended RAT¹, jettisoned external stores, and continued on course by controlling aircraft with rudder through a series of dives and zooms. At 8000 ft both pilots ejected and were picked up 1 1/2 hours later by a navy helicopter. Position of bailout approximately 10 n mi south of Hainan Island. Pilots did not sustain any injuries.

¹Ram Air Turbine

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Event III-338

Aircraft Involved: ? F-105 vs two MIG-17s
? F-4C/D

Results: Sighting only

Vicinity of Encounter: 21°50'N/104°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 June 1967/0920H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Huong VI strike aircraft sighted two MIGs; no hostile intent.

Event III-339

Aircraft Involved: Two EA-1F vs two unidentified

Results: No damage

Vicinity of Encounter: 20°40'N/107°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 June 1967/1710H

11. DATA SOURCE

CINCPACFLT Staff Study 6-68.

12. NARRATIVE DESCRIPTION

Jammer flight spotted two unidentified jet aircraft flying east at 15,000 ft; one aircraft definitely delta wing; no friendly aircraft in area at the time; HIGH FIX radar detected at same time; unidentified jets turned toward the EA-1Fs, which dived for deck and headed for PIRAZ.

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Event III-340

Aircraft Involved: Four A-4s vs five MIG-21s
Results: No damage
Vicinity of Encounter: 20°55'N/106°21'N

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 July 1967/0838H

Two elements of A-4s part of a strike force from the Consellation were attacking a target in the Hai Duong area. The strike group consisted of A-6s and an F-4 flak suppression flight.

8. ORDNANCE

(No. fired/No. hit)

	<u>AAM or Rocket</u>	<u>Remarks</u>
MIG-21	1/0	Fired at A-4s

11. DATA SOURCES

Messages, Reports:

CTG 77.4 110100 July 67 OPREP-3 PINN 003
CTG 77.4 110410 July 67 OPREP-3

12. NARRATIVE DESCRIPTION

At 0838H, as the Consellation strike group approached the target at position 20°55'35"N/106°20'10"E and an altitude of 12,000 ft on a heading of 358°, the F-4 TARCAP/flak suppression and strike aircraft commenced their attack followed by elements of A-6s and A-4s.

Two elements of A-4s sighted a total of five MIG-21s. The MIGs were on a heading of 090° at 17,000 ft altitude and 3-5 mi from the strike group. The MIGs were called, but at this time the F-4s and the rest of the strike group were committed to their attacks.

The MIGs approached over the strike group at the same time the group entered into the immediate target area. As flak started from the target area, three of the MIG-21s engaged afterburner, gained altitude, and were not observed thereafter. Two of the MIG-21s were observed to commence a shallow dive toward the strike group and one fired a missile or rocket. The exact type was undetermined due to the strike group's concentration on the target. The smoke or vapor trail from the weapon was seen momentarily as the only indication that a weapon had been fired. No strike aircraft were damaged, and the target of the MIG attack was unknown.

Immediately after completion of their ordnance delivery runs the F-4s pulled up, climbing northwest, to engage the MIGs. Although the F-4s remained in the vicinity of the target to cover the egress of the A-4 and A-6 aircraft and continued to search for MIGs, they were unable to make either radar or visual contact with the MIGs.

The weather was scattered clouds at 16,000 ft with visibility unlimited.

The best estimate of the flight crews is that the MIGs approached from the west at about 18,000 ft and flew over the strike group. The ones that attacked the group egressed on a right climbing turn to the west.

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Event III-341

Aircraft Involved: Four F-8s/one A-4E vs two MIG-21s

Result: No damage

Vicinity of Encounter: 19°47'N/105°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 July 1967/0900H

BLUE Flight (four F8s) on a TARCAP mission and GREEN Flight (one A4E) on RESCAP mission were involved in this event.

3. AIRCRAFT CONFIGURATIONS

F-8 BLUE 1, 2, 3, 4

Unknown

A4E GREEN 1

ZUNI rockets and 20 n mi

MIG-21s 1, 2

AAM - quantity unknown

8. ORDNANCE

	<u>ZUNI Rockets</u>	<u>20 n mi</u>	<u>Soviet AAM</u>	<u>Remarks</u>
BLUE 1, 2, 3, 4	----	----		
GREEN 1	8/0	30/0		
MIG-21s			1/0	

11. DATA SOURCES

Messages, Reports:

CTG 77.8 OPREP-4 July 1967 170820Z

12. NARRATIVE DESCRIPTION

At 0900H, BLUE Flight sighted two MIG-21 aircraft while on a TARCAP mission. MIGs were approaching BLUE Flight and flak suppression aircraft from the south at approximately 6000 ft when BLUE Flight assumed chase. MIGs made a hard left nose low turn to north. BLUE Flight could not close and dropped off MIGs. MIGs then turned back and headed toward strike group. BLUE Flight resumed chase and MIGs again turned north and disappeared. GREEN Flight (one A4E) flying RESCAP flak suppression for SAR effort sighted MIG-21 crossing in front of aircraft vicinity 19°47'N/105°25'E at 170059Z. Saw MIG fire air-to-air type missile at BLUE Flight in front of him. GREEN one maneuvered to the MIG's 6 o'clock position, 8000 ft altitude, 3/4 mile behind and fired 8 ZUNI rockets and 30 rounds of 20mm. MIG-21 pulled away from engagement and departed to the north.

SECRET

Event III-342

Aircraft Involved: Four A-4Es vs four MIG-21s

Result: No damage

Vicinity of Encounter: 20°30'N/105°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 July 1957/1402H

The A-4E were part of a force of 14 A-4Es and F-8s attacking the Dien Ka storage area.

8. ORDNANCE

	<u>No. fired/No. hits</u>
	AAM
MIG-21	1/0

11. DATA SOURCES

Messages, Reports: CTG 77.8 181800Z July 67 OPREP-5/005
CTG 77.8 181202Z July 67 OPREP-4

12. NARRATIVE DESCRIPTION

Two elements of the strike force encountered MIGs as follows:

a) Two A-4E flak suppression aircraft, with a TOT of 1403, were at that time in the vicinity of 20°31'10"N/105°55'01"E when one of the pilots saw three MIG-21s 3000 feet above the flight. The MIGs were at 14,000 feet altitude heading 220 degrees. The MIGs were quickly lost from view.

b) Two A-4E IRON HAND aircraft in the vicinity of 20°29'N/105°55'E, heading 041 degrees, at 5000 feet altitude observed one MIG-21 at 1402H. The MIG approached the strike group, low from the northeast, at 8 o'clock and 4000 feet altitude. The MIG started a straight climb and released a rocket or AAM from 10,000 feet altitude, 7000 feet range. The MIG continued to climb to 13,000 feet and heading north.

SECRET

387

SECRET

Event III-343

Aircraft Involved: Four F-4Ds vs eight MIG-17s
Result: No damage
Vicinity of Encounter: 21°19'N/105°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 July 1967/1650Z

Four F-4Ds (BLUE flight) were on an armed reconnaissance mission against the Ha Gia transshipment point at 29°19'25"N/105°53'00"E in Route Package Via.

2. MISSION ROUTE

BLUE flight was from Ubon and probably ingressed and egressed overland.

3. AIRCRAFT CONFIGURATION

F-4D BLUE 1, 2, 3, 4

4 - SPARROW AIM-7E

6 - M-117 bombs (probably carried on tank configuration inboard pylons QRC-160 Pod)
(no AIM-4D carried)

MIG-17

Markings unobserved
Cannon

5. INITIAL DETECTION:

BLUE flight observed MIGs near Phuc Yen while inbound to target.

6. ACTION INITIATED

BLUE flight continued on to the target arriving at 1645H.

While egressing the target area, the BLUE flight was aggressively attacked by the MIGs. BLUE 1 and 2 broke left to avoid flak. They then went back up the east side of Thud Ridge with two MIG-17s in pursuit. After evading the MIGs, they broke left and then reengaged the MIGs, this time with interlocks out.

BLUE 1 achieved a lock and fired two SPARROWS at a range of 6 to 7 mi lock-on. One missile did not guide, probably due to motor malfunction. The other missile "guided beautifully." Some MIGs turned and started a head-on pass; and BLUE Flight was reentering Phuc Yen flak defenses. For these reasons, the flight broke off.

BLUE 2 fired one AIM-7 after a bore-sight acquisition with lock-on at a range of 3 n mi. BLUE lead broke left to avoid flak and head-on pass of MIG-17s.

BLUE 1 and 2 egressed up Thud Ridge and out. Action took place between 1650 and 1658. MIG markings not visible.

8. ORDNANCE

(No. fired/No. hits)

	<u>SPARROW</u> <u>AIM-7E</u>	<u>CANNON</u>	<u>Remarks</u>
BLUE 1	2/0		One missile failed to guide, probably due to motor malfunction.
BLUE 2	1/0		
MIGs		Yes	Fired unknown number of times

9. EQUIPMENT PROBLEMS

Motor malfunction on first missile fired. Motor apparently ignited but crew observed that it was burning out of the side rather than out of the back.

10. AIRCREW COMMENTS

BLUE lead commented that MIGs demonstrated a high measure of aggressiveness. If they could have held lock for a few more seconds on the last firing, they would have been credited with two more kills.

11. DATA SOURCES

Messages, Reports:

432 TRW OPREP-4 191200Z, 19 July 67, DUOC 07057

MEMO OLD 0600 - Raytheon - Missile Systems Div., Oxnard, Calif. 24 July 67

OP-OSW BOX SCORE

12. NARRATIVE DESCRIPTION

The narrative is contained in items 5, 6, and 7 above. The table below gives the firing parameters for the three AIM-7E attempts.

	BLUE 2 Left Front	BLUE 1 Right Front	BLUE 1 Left Front
Firing No.	1	2	1
Radar Mode	Boresight Then Radar	Radar	Radar
Track Mode	Auto	Auto	Auto
Polarization	Lin	Cir 1	Cir 1
Missile Mode	Nar	Nar	Nar
Interceptor Altitude Airspeed	2000' .95	50' Mack 1	50' Mack 1
TGT Altitude Airspeed	6000'	3000'	3000'
Aspect	90 Dog and turning	10 degrees off tail	
Detection Range	4 n mi	18 n mi	18 n mi
Lock-on Range	4 n mi	18 n mi	18 n mi
Judy			
Fox			
Firing Range	3 n mi	6 n mi	6 n mi
Miss Distance	Miss	Miss	Miss
Fuze			
Comments	Had to break off due to other MIGs	Had to break off due to other MIGs	Motor Malfunction

SECRET

Event III-344

Aircraft Involved: Four F-4Cs vs one MIG-21

Result: No damage

Vicinity of Encounter 21°12'N/107°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 July 1967/1652H

Four F-4Cs on an armed reconnaissance mission against the Hung railroad yard at 21°33'20"N/106°29'40"E.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 1, 2, 3, 4

SPARROW AIM-7 - quantity for flight unknown
BLUE flight had a total of 13 M-117 bombs at 8 CBU-24s.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	BLUE			
	1	2	3	4
<u>Altitude:</u>	15,000 ft			
<u>Heading:</u>	120°			
<u>Speed:</u>	Unknown			
<u>Fuel State:</u>	Unknown			
<u>Flight Formation:</u>	Strike formation			

5. INITIAL DETECTION

After hitting the target, and while egressing, received warnings from HOTEL¹ about MIGs in the area. BLUE flight sighted a single long-nosed, delta wing, silver aircraft at altitude 2000 ft, heading 050°, 500 kts, approximately 1652 local time.

6. ACTION INITIATED

BLUE flight pursued the MIG to 21°21'N/107°48'E

7. SITUATION DEVELOPMENT

BLUE 1 (lead) fired an AIM-7 at the MIG from 2 n mi out, 10° dive, altitude 8000 ft, heading 05°, lock-on indicated (full system) at time of firing, but missile did not appear to guide. BLUE flight broke off attack due to proximity to CHICOM border. MIG believed to have proceeded across into CHICOM airspace. BLUE lead carried a blister camera on board and expended 200 feet of film.

8. ORDNANCE

(No. fired/No. hits)

	SPARROW AIM-7	Remarks
BLUE 1	1/0	Missile failed to guide
MIG ²		

9. EQUIPMENT PROBLEMS

BLUE 1 - SPARROW missile failed to guide.

10. AIRCREW COMMENTS

None

11. DATA SOURCES

Messages, Reports: OPREP 201150Z Jul 67 from 366 TFW
Danang AB RVN

¹See item 12.

²DIA intelligence summary lists the MIG as firing one AAM. No other source indicates this firing.

SECRET

Event III-344

12. NARRATIVE DESCRIPTION

See items 5, 6, 7.

FLIGHT reports the following calls from HOTEL.

Red for CG4 at 0840Z (flt PSN at 21°16'N/107°01'E)
Yellow for CG4 at 0849Z (flt PSN at 21°17'N/107°04'E)
Bandits NW at 0825Z
SW 25 Med at 0833Z
NW 25 at 0835Z
South at 0832a
S 40 heading 090° at 0838Z
MOTEL radio sounded garbled

SECRET

SECRET

Event III-345

Aircraft Involved: One A-4C and four F-8Cs vs
eight MIG-17Ds

Result: Three MIGs destroyed, two MIGs damaged
and one probable kill. Two F-8Cs
damaged.

Vicinity of Encounter: 20 miles northwest of
Hanoi

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 July 1967/1519H to 1646H

Strike mission on the Ta Xa fuel storage depot 30 miles northwest of Hanoi. Four
F-8Cs were on TARCAP and one F-8E was escorting the A-4C IRON HAND mission.

8. ORDNANCE

	(No. fired/No. hits)			Remarks
	AIM-9D	20mm	ZUNI	
BLUE 1				Carried AIM-9D. No data. Unobserved.
BLUE 2	Unk/1			Hit. Probable kill.
BLUE 3	Unk/1			Kill.
BLUE 4		Unk/1		Kill.
F-8E	Unk/0	Unk/3	6/unk	Three hits. One kill.

11. DATA SOURCES

Messages: OPREP-5/021 211647Z, July 1967 from CTG

12. NARRATIVE DESCRIPTION

While en route to the target, a force of at least eight, possibly ten, MIG-17s
attacked the TARCAP and IRON HAND by popping up out of the clouds. BLUE Flight engaged
the MIG-17s in a dog fight and shot down three. One MIG-17 was destroyed with a direct
hit from a SIDEWINDER missile. One MIG-17 was downed by 20mm cannon fire and another
was destroyed by ZUNI rockets and 20mm fire. One other MIG was attacked with a SIDE-
WINDER. The missile appeared to guide but was not seen to detonate. Later a parachute
was sighted. The MIG was listed as a probable kill. Two other MIGs were damaged in the
aerial engagement.

Two F-8Cs on TARCAP were damaged by cannon fire. One F-8 was hit in the right
aileron and the other was damaged heavily in the tail section. It was reported that the
F-8 was able to outturn the MIG-17 in this engagement. The MIGs fired rockets and cannon.

SECRET

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Event III-346

Aircraft Involved: Two F-4Cs vs two MIG-21s

Result: One MIG killed (probable)

Vicinity of Encounter: 21°07'N/105°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 July 1967/1600H

Two F-4C aircraft (BLUE Flight) on an escort mission approximately 35 miles west of Hanoi. BLUE 1 and 2 had air aborts. BLUE 3 and 4 were involved in this encounter.

3. AIRCRAFT CONFIGURATIONS

F-4C BLUE 3, 4

AIM-7
AIM-9

MIG-21s

Dark silver color with no visible markings.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	<u>BLUE 3, 4</u>
<u>Altitude:</u>	17,000 ft
<u>Heading:</u>	325°
<u>Speed:</u>	480 KTAS
<u>Fuel State:</u>	Unknown

5. INITIAL DETECTION

The two MIG-21s were first called as bogeys at 10 o'clock by the flight that was being escorted.

6. ACTION INITIATED

BLUE Flight engaged the two MIG-21s almost immediately.

7. SITUATION DEVELOPMENT

BLUE Flight first sighted the two MIG-21s (dark silver with no visible markings) pass from left to right across nose of BLUE Flight approximately 3/4 miles distant in a descending right turn. BLUE Flight followed in pursuit. BLUE 3 had one MIG centered at 3000 ft distance. The MIG lit afterburner just prior to missile launch. The SIDEWINDER tracked straight ahead until motor burnout, then turned right directly after the MIG-21. The SIDEWINDER was last seen in full guided flight approximately 200 ft directly aft of the MIG-21, but no detonation was observed. One MIG-21 started into a left descending turn. (At this time the second MIG continued straight ahead and was not pursued.) BLUE 3 and 4 continued a left turn in pursuit of first MIG, and at altitude 9000 ft, heading 090°, 25 degree dive, 150 kts overtake with interlocks in and full systems lock-on, BLUE 3 fired one AIM-7 from 1-1/4 mi out, 10 degree aspect angle 20 degree angle-off. The missile left the launcher with bias, and appeared to track immediately. The MIG-21 was in a moderate descending left turn, headed for the undercast at altitude 6000 ft. The missile was last seen tracking 2000 ft behind the MIG-21 in a lazy pursuit curve. This was classed as a probable kill.

BLUE 3 initially tried to fire but the dot was out of the ASE circle; when the dot was brought into the circle the missile launched.

8. ORDNANCE

	(No. fired/No. hits)		<u>Remarks</u>
	<u>SPARROW</u>	<u>SIDEWINDER</u>	
BLUE 3	1/1(prob)	1/0	Probable kill with SPARROW
BLUE 4	0/0	0/0	

9. EQUIPMENT PROBLEMS

None stated for BLUE 3 and 4.
BLUE 1 and 2 aborted early in mission.

11. DATA SOURCES

Messages, Reports: OPREP-4368
271250Z from 366TFW Danang AB RVN

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SECRET

Event III-346

12. NARRATIVE DESCRIPTION
See Items 5, 6 and 7.

SECRET



DEPARTMENT OF THE AIR FORCE
11TH WING



28 June 2001

MEMORANDUM FOR: DEFENSE TECHNICAL INFORMATION CENTER

FROM: 11 CS/SCS (MDR)
1000 Air Force Pentagon
Washington, DC 20330-1000

SUBJECT: Mandatory Declassification Review Request, Air Force Case Number
01-MDR-023

Reference W. Howard Plunkett (Lt Col, USAF Retired) letter, dated 16 April 2001 (attachment 1) requesting a mandatory declassification review of the following documents:

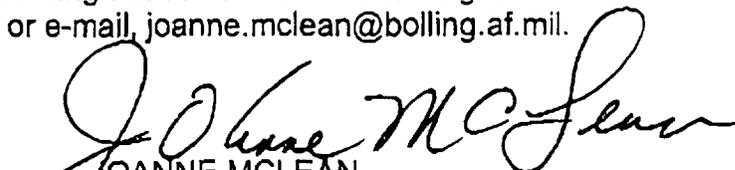
WSEG-116-VOL 1. "Air-to-Air Encounters in South East Asia, Vol. I. F-4 Events Prior to 1 March 1967." DTIC number AD-C003 627

WSEG-116-VOL 2. "Air-to-Air Encounters in South East Asia Vol. II, F-105, Events Prior to 1 March 1967." DTIC number AD-C003 628

WSEG-116-VOL 3. "Air-to-Air Encounters in South East Asia Vol. III. "Events from 1 March 1967 to 1 August 1967 and Miscellaneous Events." DTIC number AD-C003 629

The following documents was reviewed by the appropriate Air Force agencies and document numbers AD-C003 627, AD-C003 628, and AD-C003 629 have been downgraded to UNCLASSIFIED.

Address any questions concerning this review to the undersigned at DSN 426-7265, COMM (703) 696-7265 or e-mail, joanne.mclean@bolling.af.mil.


JOANNE MCLEAN
Mandatory Declassification Review
Manager

1 Attachment
W.H. Plunkett's Letter, 16 Apr 01

cc: W. Howard Plunkett

**REFERRAL from: 11 CS/SCS(MD
R)**

INTERNAL ID: 0503101001	RECEIVED: 03-May-01	REVIEWER: 27
AGENCY ID: 00-MDR-023	SUSPENSE: 17-May-01	RETURNED:

AGENCY: 11 CS/SCS(MDR)

POC: JOANNE MCLEAN

PHONE: () 696-7265

**TITLE: 3 DTIC VOLUMES TITLES AIR TO AIR ENCOUNTERS IN
SOUTHEAST ASIA**

ISSUE:

CLASSIFICATION: SECRET

DOWNGRADE?: No

ACTION: DECLASSIFY

DOWNGRADE CLASS:

EXEMPTION CATEGORY:

RD: No

OPR / EQUITY HOLDER: AIR FORCE

FRD: No

OTHER EQUITIES:

SIOP DATA: No

**COMMENTS: AIR FORCE HAS REVIEWED THE DOCUMENTS AND FIND NO
MATERIAL THAT NEEDS TO REMAIN CLASSIFIED.**

Material is releasable to the public.

*Jean B. Hardin, SMSgt,
USAF*

OPTIONAL FORM 88 (7-90)

FAX TRANSMITTAL

of pages

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GENERAL SERVICES ADMINISTRATION