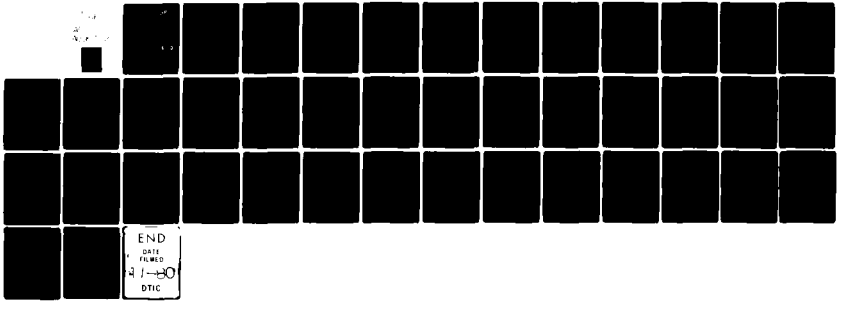
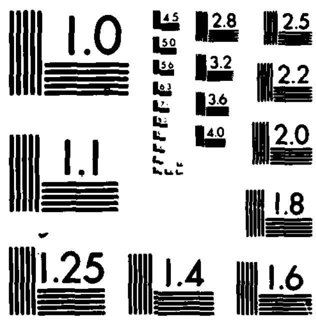
AD-A090 723 ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KS F/G 5/9
AN ANALYSIS OF THE LEAD-IN FIGHTER TRAINING PROGRAM. (U)
MAY 80 R J NEWBERRY

UNCLASSIFIED SBIE-AD-E750 022 NL



END
DATE FILMED
9 1-80
DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE

AN ANALYSIS OF THE LEAD-IN FIGHTER TRAINING PROGRAM

By

Robert J. Newberry, Major, USAF

A RESEARCH STUDY SUBMITTED TO THE FACULTY

May 1980

Barry B. Bridger
Lieutenant Colonel, USAF
Research Advisor

U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE
FORT LEAVENWORTH, KANSAS 66027

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A090 723	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) An Analysis of the Lead-In Fighter Training Program		5. TYPE OF REPORT & PERIOD COVERED FINAL REPORT, MAY 1980
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Newberry, Robert J., MAJ, USAF		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Student at the US Army Command and General Staff College, Fort Leavenworth, Kansas 66027		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Command and General Staff College ATTN: ATZLSW-AF		12. REPORT DATE MAY 1980
		13. NUMBER OF PAGES 34
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; Distriution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

Approved for public release; distribution unlimited.

18. SUPPLEMENTARY NOTES

Air Force Research Report prepared at CGSC in partial fulfillment of course requirements, U.S. Army Command and General Staff College, Fort Leavenworth, KS 66027.

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Fighter, training, instructor, jet fighters, aircrew, T-38

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Lead-In Fighter Training is the vital link for fighter pilots between basic flight school and primary weapon system training. This paper traces the recent expansion of Lead-In Flight Training from a squadron to a wing, discusses the objectives and dilemmas in the program, and lists a series of proposals to rectify the problems. The material is based on the writer's personal experience as an instructor in the Lead-In Fighter Training program.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

ABSTRACT

Lead-In Fighter Training is the vital link for fighter pilots between basic flight school and primary weapon system training. This paper traces the recent expansion of Lead-In Fighter Training from a squadron to a wing, discusses the objectives and dilemmas in the program, and lists a series of proposals to rectify the problems. The material is based on the writer's personal experience as an instructor in the Lead-In Fighter Training program.

TABLE OF CONTENTS

		Page
ABSTRACT		ii
LIST OF TABLES		iii
Chapter		
I.	INTRODUCTION	1
II.	EXPANSION OF THE LIFT PROGRAM	3
III.	THE BEST OF THE LIFT PROGRAM	16
IV.	THE DILEMMAS OF LIFT	25
V.	MY PROPOSALS	33

LIST OF TABLES

		Page
I.	Phases of Training; February, 1976	4
II.	Academic Training; February, 1976	4
III.	Phases of Training; April, 1977.	10
IV.	Academic Training; April, 1977	10
V.	Basic Core Sorties; September, 1979	13
VI.	Specialized Module; September, 1979	14
VII.	Academic Training; September, 1979	14

EXECUTIVE SUMMARY

Qualifier: Part of the mission of the Army Command and General Staff College is distribution of student research products to interested DoD agencies to enhance the potential for new insights into Defense related problems/issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not b construed as carrying official sanction.

TITLE: AN ANALYSIS OF THE LEAD-IN FIGHTER TRAINING PROGRAM

AUTHOR: MAJ ROBERT J. NEWBERRY

ADVISOR: LT COL BARRY B. BRIDGER

I. Purpose: To discuss the objectives and dilemmas of the Lead-In Fighter Training (LIFT) program from an operations viewpoint, and list a series of proposals to rectify the problems that are identified.

II. Method: The author first acquaints the reader with the Lead-In Fighter Training program by giving an account of the unit's history as it expanded from one squadron to a wing of four squadrons. He specifically keys in on the problems resulting from this expansion phase, as well as problems generated by local and external leadership or management. The author then presents the advantages of the LIFT program for TAC, as well as the dilemmas created by the program. The opinions expressed by the author are based on his association with the LIFT program as an instructor and as the assistant to the 479 TTW Chief of Standardization and Evaluation.

III. Conclusion: The LIFT program is a valuable asset to TAC and the Air Force as a whole. However, few programs have created more dispair. Problems associated with the program must be acknowledged

by HQ TAC and rectified. These include a low aircrew retention rate among the instructors, a lack of understanding of the purpose of LIFT throughout other TAC units, and a lack of continuity in the training of our new fighter pilots beginning with LIFT and ending with a combat ready status.

IV. Recommendations: The following list of proposals are the minimum necessary to insure the LIFT program remains a viable TAC asset and not a "sore spot" that fighter pilots wish would go away.

1. Publicize articles that expound on the importance of LIFT. The "basics" must be taught by competent and motivated instructors. Then we can be confident when advancing our pilots into the flexible and demanding scenario of realistic training.

2. Assign instructors to LIFT from the cadre of pilots in our new weapon systems and TAC staff. If the program is to be credible to the instructors and students, it must be credible throughout TAC.

3. A projected follow-on assignment must be made for each pilot sent to the 479 TTW as an instructor. TAC cannot please everyone, but overall acceptance and retention should improve.

4. The staff officers in TAC that are directly related to the LIFT program or its personnel must be recent LIFT instructors or personnel. They must have a legitimate knowledge and background for their positions.

5. TAC must work towards the development of a single source syllabus for each weapon system to insure continuity in training, an optimum structure in the program, and an understanding of the training objectives by all instructors.

CHAPTER I

INTRODUCTION

Lead-In Fighter Training (LIFT) is the vital link between basic flight school and primary weapon system training. LIFT provides a natural transition from the learning of basic skills necessary for a universally assigned pilot to the learning of basic fighter pilot skills because the student remains in the familiar environment of a T-38, his last training aircraft. In this paper I will present the advantages and dilemmas in the LIFT program; the merits of which are notably debated today.

An objective analysis of the LIFT program, and specifically the 479th TTW conducting the training, is necessary because of extensive debates on the program's true contribution to the tactical fighter force. Most of the arguments are on the negative aspects of the LIFT program. When I address these objections to the training program, I will propose various positive actions that can reduce the extensive amount of animosity directed towards LIFT. I will not address the multiple opinions of why the LIFT program was originally conceived; it will suffice to merely accept its existence.

First, I will recount how the LIFT program expanded from one squadron to a wing of four squadrons. The problems and obstacles generated during the expansion are an important part of the perceptions that developed within and external to the 479 TTW. Throughout the recap and entire discussion, this paper will address only the operations' viewpoint, not the maintenance perspectives. The

chapter has a negative connotation, but the mood exists only because of the rapid expansion desired by Tactical Air Command (TAC) which in turn generated an unexpected amount of disorder.

In Chapter Three I will present the advantages of the LIFT program conducted by the 479 TTW. The discussion will not be limited to the theoretical advantages of a fighter lead-in program; it will instead contain the positive results generated by the 479 TTW. It is only from a pragmatic approach that we can adequately discuss the success of the training program. The LIFT program gives us an ideal platform for an analysis because it is conducted by a single unit in a single location.

The dilemmas created by the LIFT program and 479 TTW will be discussed in Chapter Four. The reader will discover that some items presented as advantages can also have a disadvantage. Some cannot be changed and can only be weighed against their gains. The strength of these drawbacks are what continues to place the program under attack. Reducing the effect of these turbulent areas will result in a significant gain for our tactical fighter forces. The solutions I propose to solve these problems are listed in Appendix A.

CHAPTER II

EXPANSION OF THE LIFT PROGRAM

On August 1973 the 465 TTS was given the responsibility for the development and execution of a fighter lead-in training program at Holloman AFB, New Mexico. T-38 aircraft were allocated from Air Training Command (ATC) and the Tactical Air Command (TAC) Aggressor squadrons. The aircraft were trainer models with no modifications, although several had a camouflage paint scheme. The squadrons initial cadre of instructors had a broad diveristy of weapon system backgrounds. Some had Wild Weasel experience, some had flown the A-1 or F-100. However, the majority were previous F-4 or A-7 pilots. They received their LIFT instructor upgrade training in the F-5s at Williams AFB, a unit under TAC control which trains some of our Allies. The exposure with this unit had a large influence in the initial structure of the LIFT syllabus.

The LIFT program was then oriented towards introducing new pilots to basic fighter techniques and procedures.[1] The syllabus had requirements for 44 hours of academics and 19 training sorties for pilots. An outline of the requirements are shown in Table 1 and Table 2.

TABLE 1. PHASES OF TRAINING

Flying	Sorties		Hours	
	Pilot	WSO	Pilot	WSO
Transition	1		1.1	
Formation	7	2	8.1	2.3
Basic Fighter Maneuvers	8	3	7.2	2.7
Low Level Navigation	1	0	1.2	0.0
Ground Attack	2	2	2.0	2.0
	19	7	19.6	7.0

TABLE 2

ACADEMIC TRAINING	Hours	
	Pilot	WSO
Specialized Training	2	2
Life Support	5	5
Tactical Navigation		3
Aircraft System	5	5
Flight Characteristics		4
Formation	4	5
Basic Instruments		10
Basic Fighter Maneuvers	17	17
Mission Planning	2	2
Conventional Weapons Delivery	5	5
Radar		7
Inertial Navigation System		5
Air Attack	4	7
	44	77

Because LIFT was initially designed as an orientation program, the level of instruction and training standards were low. The aircraft were not yet modified with a sight or with an ordnance delivery capability; therefore, flight instruction in ground attack (GA) was limited to range pattern procedures. In the basic flight maneuvers (BFM) phase, there were no standard mission profiles that insured each student had been exposed to each of the basic air-to-air maneuvers in a logical and understandable manner. Therefore, a student's exposure into the fighter arena was highly dependent on the past experiences and capabilities of his instructor. In essence, the students were not well prepared for the follow-on training to be given by the primary weapon system units. While the students did have a working knowledge of the terminology they were to use, the development of their specialized flying skills was limited. This deficiency was compounded due to the time lag a student may incur between LIFT training and primary weapon system training.

In addition to the problem of developing the mission of LIFT, the 465 TTS had several internal difficulties. The squadron was assigned to the 49 TFW; which included three squadrons of F-4s. However, the 465 TTS was located on the opposite side of the base from the Wing Headquarters and three F-4 squadrons. So the Wing Commander had under his control a small training unit with non-tactical aircraft and three highly recognized squadrons of front line fighters. The two major operational problems generated by this command arrangement were in the area of direct control of inbound pilots and the officer effectiveness reports (OERs).

First, personnel actions in the 49 TFW came under direct

control of the commander. He took advantage of this control by redesignating the programmed use of inbound pilots. Pilots originally assigned to the LIFT program to be used as instructors were diverted to an F-4 squadron.[2] These actions pirated much of the experience base originally routed to the LIFT unit. In addition, the practice lent credibility to the perception that an assignment to LIFT was inferior to all others in TAC. This practice was finally controlled as a by-product of the expansion of LIFT from a squadron program to a Wing, the 479 TTW, on January 1977.

It is important to note the F-4 squadrons had deployed to Tahiland in 1972 and had yearly deployments to Europe. They were TAC's only "dual based wing." Those facts generate an additional perceived problem centered on the controlled OER. The Wing Commander's local reassignment policy lent credibility to this second problem. The perception was instructors in the 465 TTS received lower controlled OER ratings than that of their contemporaries in the F-4 squadrons. This perception was detrimental to the unit's morale.

In January 1977, the 465 TTS became an academic training unit. The 435 TFTS and 434 TFTS were formed to conduct the flight instruction. On the same day, the 479 TTW became the headquarters unit for these three squadrons. Expansion continued rapidly with the development of a fourth squadron, the 436 TFTS, in April of 1977. In a period of less than six months, the LIFT program expanded from a squadron size unit to a Wing with four squadrons.

The initial development was characterized by both a rapid influx of pilots to be trained as instructors and a simultaneous increase in the number of LIFT students. This rapid growth had both a disadvantage and an advantage.

The disadvantage was that instructor training had difficulty in keeping up with the increased student loading. While the 435 TFTS had the responsibility to train instructors, it also had to aid in LIFT instruction. In reality, the 435 TFTS and 434 TFTS worked in the same facility and the instructors were pooled into a single scheduling resource. Pilots were designated as "limited" instructors; able to instruct in only certain phases because their upgrade training was ended prematurely. They were needed to instruct the increasing number of LIFT students. But because the instructors were pooled as a single scheduling resource, new instructors who had never instructed LIFT students were used to upgrade other upgrading instructors. So, instructor training was degraded.

But the rapid influx of new instructors did have its advantage; the LIFT program was subject to scrutiny. A small number of new instructors over extended periods of time might have been more easily absorbed by the existing system and the LIFT program may have stagnated. Unfortunately, the 465 TTS developed a reputation of generating hostile attitudes in the students for the program. The new instructors were able to observe this hostility and take action

to correct the situation.

The commander of the 479 TTW took a major stride that aided in the solving of this problem by allowing the 436 TFTS to be formed from a cadre of one experienced instructor and twelve newly trained instructors. The end result was a professional training wing.

The new squadron set as a primary goal the improvement of instructor to student relations. Actions taken included making available to the students squadron scarfs and patches, initiating top gun awards, and participating in class graduation parties. In addition, the instructors placed additional emphasis on professional flight briefings with expanded student participation and responsibilities. The instructors and students were provided with standard mission profiles so each would be aware of mission objectives. In time, the entire wing developed a better internal relationship with the students. This resulted in a corresponding increase in the knowledge and capabilities of LIFT students by graduation.

However, the quality of the instructor upgrade training lagged. Even after the three squadrons moved to separate facilities, the practice of assigning new instructors to the 435 TFTS to train other upgrading instructors continued. While a new instructor could teach most of the mission requirements needed to increase the upgrading instructor's flight proficiency, he was unable to relate any techniques and experiences necessary to realistically perform his mission because he had never instructed a LIFT student himself.

The Standardization and Evaluation (DOV) section in the 479 TTW Hq had continually submitted recommendations to establish a cadre of experienced instructors for use in the instructor upgrade

program. The cadre would remain in the 435 TFTS and would include experienced instructors transferred from the other squadrons. The major obstacle was the refusal of the other squadron commanders to release their experienced instructors. It was not until the end of 1978 that the debate was resolved and instructors were periodically transferred to the 435 TTS to maintain an instructor upgrade cadre. New instructors were no longer allowed to perform this mission.

Another problem in the 479 TTW developed due to the past experience of the upgrading instructors. Many of the LIFT instructors had only one year in fighters, normally a Southeast Asian tour in the A-1, F-100, or F-4. The tour was then followed by an extended tour in Air Training Command (ATC), which was then followed by a rated supplement assignment. While this group of instructors were able to redevelop their skills in bombing with a moderate effort, they had minimum background in air-to-air training to draw from. A quick reference to Table 3 and Table 4, the first extended LIFT program introduced in April 1977, shows that air-to-air training was the mainstay of the new LIFT syllabus. A total of 43 percent of the training sorties and 40 percent of the academic hours were in air-to-air combat.

In addition, even those instructors with recent tactical fighter experience were from F-4 or A-7 units that did very little training in air-to-air combat. So, the instructors in most cases had as much to learn as the students they would be teaching.

TABLE 3. PHASES OF TRAINING

FLYING	SORTIES		HOURS	
	PILOT	WSO	PILOT	WSO
Transition	2		2.2	2.0
Formation	7	2	7.3	2.0
Basic Fighter Maneuvers	17	7	15.3	6.3
Air Combat Maneuvers	4	2	3.6	1.8
Ground Attack	13	9	11.7	8.1
Navigation	3	2	3.0	2.0
Ground Attack Tactical	3	2	2.7	1.8
	49	24	45.8	22.0

TABLE 4

ACADEMIC TRAINING	HOURS	
	PILOT	WSO
Life Support	5.0	5.0
Specialized Training	2.0	2.0
Aircraft Systems	5.0	4.0
WSO Orientation		4.0
Flight Characteristics		4.0
Formation	5.0	5.0
Basic Instruments		10.0
Radar	7.0	17.0
Air Combat Maneuvers	17.0	17.0
Combat Mission Planning	4.0	4.0
Conventional Weapon Delivery	18.0	18.0
Inertial Navigation System		6.0

TABLE 4. (CONTINUED)

ACADEMIC TRAINING	PILOT	WSO
Air Combat Fundamentals	19.0	19.0
Intelligence	8.0	8.0
	90.0	124.0

The deficiency in air-to-air experience was handled in several ways. Primarily, the wing requested additional instructor training sorties from TAC for the instructor upgrade syllabus. The initial request was granted; however, follow on requests have not been. To overcome the syllabus shortage of sorties, the Wing has a high refly rate on the instructor upgrade missions because of the upgrading instructors' inability to meet training standards within the allocated sorties.[3] But the need for more training sorties is continually reflected by the 50 percent "additional training" rate for initial instructor flight evaluations. [4]

Additional internal measures were taken by the 479 TTW to insure the quality, standardization, safety, and credibility in the LIFT air-to-air training and the LIFT program in its entirety.

The adjustments included:

1. No new instructor would participate in the instructor upgrade program prior to meeting minimum standards of exposure with LIFT students. This exposure included both the number of months as a LIFT instructor and the number of hours flown as a LIFT instructor.[5]

2. Future instructors for the instructor upgrade program in the 435 TFTS would be drawn from the other training squadrons as well as the 435 TFTS.

3. Each squadron would have only a limited number of Air Combat Maneuvering (ACM) instructors; to insure maximum proficiency of the cadre.

4. All upgrading instructors would be successfully evaluated in a BFM and a GA mission from the LIFT syllabus prior to completing the upgrade program. They would also complete a successful ACM flight evaluation prior to instructing in that phase.

5. A text on the techniques in high aspect BFM engagements and ACM scenarios was written to generate thoughts among the new instructors, as well as LIFT students. [6]

6. Annual instructor flight evaluations could be in any phase of training. However, emphasis would be in the air-to-air phase if the instructor has demonstrated a past weakness.

7. A text on Instructor Techniques discussed training techniques for all tasks in each phase of training. The text was designed for new instructors. [7]

8. DOV designed a student assessment program whereby they flew with a cross section of students in each phase of training from each class. Immediate feedback went directly to the squadron commanders and discussed the students actual performance compared to the expected performance generated from past grade slips. A periodic summary of trends noted by DOV was sent to the Director of Operations (DO).

These adjustments aided the 479 TTW in developing into the mature and professional training organization it is today. The wing has been able to perform its demanding mission, accident free.

The LIFT syllabus has been subjected to major changes due to the large student loading. The syllabus is now based on a "core" and "track" system. The student flies only the training sorties authorized; based on his gaining weapon system. The most recent syllabus breakout is shown in Table 5, Table 6, and Table 7.

The basic core flying sorties are flown by all LIFT students based on their previous background. The specialized module of sorties are based on the students gaining weapon system, as is the academic instruction. The categories are as follows:

Category A F-15

Category B . . . . . .A-7, A-10, or F-111

Category C . . . . . .F-4, F-16, or F-105

Categorization of the LIFT student is a compromise - distributing the limited sortie capabilities of the 479 TTW, relative to the number of students and the number of training days available for each student.

TABLE 5. BASIC CORE SORTIES

MISSION	UPT INPUT	T-38(C) INPUT	T-38(NC) INPUT	OTHER INPUT	WSO INPUT
Transition	2	1	2	3	1
Formation	6	4	5	7	3
Basic Fighter Maneuvers	10	10	10	10	5
	18	15	17	20	9

TABLE 6. SPECIALIZED MODULE

	CATEGORY			
MISSION	A	B	C	WSO
Advanced Fighter Maneuvers	4			
Aerial Combat Maneuvers	2			
Defensive Combat Maneuvers	2	2		1
Basic Ground Attack		4	4	2
Ground Attack			5	2
Low Level Navigation	_	1	_	_
	8	7	9	5

NOTE: Air-to-air training for each student will range from 30 percent to 80 percent of the training sorties received, depending on the student's background and gaining weapon system. Therefore, an extensive and professional training program on the art of conducting and instructing air-to-air maneuvers is essential for the LIFT program.

TABLE 7. ACADEMIC TRAINING

	CATEGORY			
SUBJECT	A	B	C	WSO
Life Support	6	6	6	6
Specialized	5	6	6	7
Grading Criteria	1	1	1	1
Local Area	1	1	1	1
Crew Coordination	1	1	1	1
Aircraft Systems	8	8	8	7
Formation	5.5	5.5	5.5	7.5
Basic Fighter Maneuvers	11.5	11.5	11.5	13

TABLE 7. ACADEMIC TRAINING (CONTINUED)

	CATEGORY			
SUBJECT	A	B	C	WSO
Advanced Fighter Maneuvers	2	2	2	2
Aerial Combat Maneuvers	1	1		1
Defensive Combat Maneuvers	1	1		1
Basic Ground Attack		13.5	13.5	13.5
Ground Attack			5.5	5.5
Air Intercept Fundamentals	15		15	15
Air-to-ground Weapons	2	2	2	2
Intelligence	6	6	6	6
Inertial Navigation Systems				
INS Orientation	2	2	2	
Radar Orientation	4.5		4.5	
Low Level Navigation		2		
WSO Orientation				3
Flight Characteristics				5.5
Basic Instruments				11
Radar				6.5
Audiovisual	6	6	6	6
	78.5	75.5	96.5	128

CHAPTER III

THE BEST OF THE LIFT PROGRAM

In the first chapter I alluded to the existence of advantages in the LIFT program. In this chapter I will identify the reasons we need the LIFT program, and why the 479 TTW accomplishes the mission of LIFT so well. The opinions I express are based on my association with the 479 TTW as an instructor and as the assistant to the 479 TTW Chief of Standardization and Evaluation.

The Chapter is divided into two topic areas, the training conducted by the 479 TTW and the aircraft utilized for this training. Sub-topics are used to focus more specifically on Key areas.

TRAINING

The need for high quality training for our tactical fighter pilots can never be disputed by people with an insight for the complexity and demands of modern warfare. Indeed, technology continues to broaden the scope of air warfare. A tactical fighter pilot on a "ground attack" mission is more than a "dive bomber" pilot. High technology in air delivered munitions requires the pilot to be proficient in LASER guidance, television guidance, data link guidance, and radar assisted systems. The techniques for munitions delivery have progressed from high altitude approaches to pop-up deliveries.

If you accept the fact that maintaining the proficiency of the aircrew to perform these tasks is a challenge, then imagine the difficulty any instructor will have in teaching all of these tasks. The instructor must have a student that can accomplish the more

basic tactical maneuvers confidently. The basics must become second nature. The 479 TTW teaches these basic fighter skills.

The instructors in the 479 TTW are attuned to the finer points of tactical maneuvering. They are as familiar with the intricacies of any single basic fighter maneuver and its use as an F-15 instructor is of avoiding predictability during a multi-bogie engagement. They are as adamant about the need for precise parameters on a conventional range as an F-4 instructor is about minimum time on final during a weapons delivery. No instructor can be a master of all levels of training throughout the scope of tactical air employment.

TAC's fighter training program must be structured so that instructors can master a specific spectrum and level of training. Only then will our training program produce quality pilots at an acceptable cost. The LIFT program is TAC's tool for structuring the fighter training program. It delineates basic fighter training.

BASIC FIGHTER TRAINING: The purpose of the 479 TTW is to qualify a pilot, with no previous experience as a tactical fighter pilot, for attendance to Tactical Fighter Operational Courses. The 479 TTW accomplishes this mission well. An examination of the LIFT syllabus reveals a complete and comprehensive program that fully prepares each student for his transition into fighters.[8]

The flight portion of LIFT is divided into four basic areas; tactical formation, air-to-air, ground attack, and low level navigation. Although the line between basic training and advanced training has continually been a point of contention, the LIFT syllabus is the guide for basic training. However, an overlap between LIFT and

the follow-on weapon system training is necessary for one primary reason. It allows the student to apply the basic maneuvers into a more fluid environment and thus reinforce the importance of mastering the "basics".

I will illustrate this premise by examining air-to-air training in the 479 TTW. The teaching goal in basic air-to-air training in the 479 TTW is to produce a pilot able to recognize various geometric and movement relationships between two engaged aircraft. In addition, he will be able to maneuver his aircraft in order to control these relationships; aspect angle, angle off, range, and closure rate. Also, the student must develop a sense for G-awareness, altitude awareness, fuel awareness, energy awareness, and an overall situation awareness in the maneuvering environment.

These objective goals are transferred into specific elements through the teaching of classical BFM; such as a high yo-yo, lag roll, barrel roll, defensive turn, reversal, or scissors. There are a total of 15 BFM maneuvers used during this training.

But, a student could master the mechanics of each maneuver in a controlled environment without demonstrating situation awareness. Therefore, basic training must immediately overlap into the more fluid environment obtained during a one vs one engagement from a low aspect set-up. Only then can the instructor be assured the student has developed an ability to recognize various geometric and movement relationships between two engaged aircraft and react to them.

Certain categories of students continue further into air-to-air training than 10 BFM core sorties. They receive instruction in

one vs one from a neutral set-up and/or two vs one initial moves. The purpose of this training is to demonstrate the validity of the basics learned during a more demanding environment. However, the students are not required to achieve more than a limited proficiency in their judgment or situation awareness. These sorties are a tremendous tool to sum up LIFT air-to-air training and reinforce the need to master the basics of one vs one maneuvering. It is unfortunate, due to the limited time and assets, that all of the students do not receive these sorties.

The ground attack phase of LIFT is as equally well developed. Initial emphasis is on range procedures and situation awareness. Later, the instructor stresses proper and disciplined delivery parameters. Certain categories of students progress further into basic pop-up delivery techniques. It is again unfortunate that all the students do not receive this training because the ground attack mission is one that can conceivably be given to any aircraft. In addition, the training introduces the limitations and dangers involved when air-crew operate close to the ground.

So, a careful examination of the program reveals that LIFT is broad enough to justify its existence while narrow enough in scope to yield quality instruction. Follow-on training (i.e., dissimilar air combat maneuvering, multi-bogey engagements, ground attack on uncontrolled ranges) should continue to be taught by a different cadre of instructors that are associated with the gaining weapon system and its specific mission.

CENTRALIZED TRAINING: Centralization is characterized by high flexibility and rapid response to change. A centralized LIFT program benefited TAC because of this capability. The LIFT program was

able to transition from a 22 sortie syllabus to a 49 sortie syllabus, and then to a variable track syllabus with each student receiving 21 to 29 sorties. If a student was allowed to receive the maximum amount of training the 479 TTW could offer, he would fly 38 diferent training sorties.

And even though the LIFT syllabus is now relatively stable, centralized LIFT remains an asset. It remains the only COMMON link between all future fighter pilots in TAC. Therefore, it remains as a unique tool TAC can use to influence the initial attitude and concepts that all of its pilots will have in their divergent roles. But, the LIFT product will reflect the attitudes and motivations of the instructors. With pilot retention taking an increased importance to our force readiness, TAC must insure the outlook of their new pilots begins on a positive note. TAC can do this by reinforcing the need for LIFT, and recognize the importance of the instructors and their leadership.

STANDARDIZATION: Because LIFT is conducted by a single unit, the 479 TTW, it is easier to standardize the training there than in many of TAC's other programs. The squadrons are colocated, commanded by a common headquarters (479 TTW), have a common range environment, and are quality controlled by a single Standardization and Evaluation section. In addition, the ISD team is colocated with the training unit and is therefore available for "face to face" communications with the instructors and students on a daily basis. This colocation is not available for all of TAC's weapon system training units.

DOV is the focal point of standardization within any

tactical unit, and in the 479 TTW this responsibility is magnified. They provide the linkage between instructors who upgrade instructors and instructors who instruct LIFT students. Because LIFT is done by a single unit, they are not just responsible for training in the 479 TTW, but are responsible for the standardization of the LIFT program in its entirety. The job is extremely difficult when you consider the variety of backgrounds and weapon system exposures among the LIFT instructors. Add to this, the variety of inputs to the program generated by the various gaining training units for each weapon system. But, standardization is effective and is so primarily because of the single unit concept for LIFT.

ELIMINATIONS FROM TRAINING: It is naive for anyone to think all pilots can safely and adequately perform the tasks required of a fighter pilot. Some can never master these techniques and others cannot master them in the reasonable period of time allotted for training.

In most training units, the ultimate challenge is met during the transition phase into another weapon system. If a student can learn to take off and land the aircraft safely, he stands an excellent chance of graduating from the program.

However, all new pilots have learned to fly the T-38 during their initial flight training. Therefore, the challenge at LIFT is to learn the basic fighter maneuvers; not how to fly the aircraft. Thus, the majority of pilot eliminations from LIFT are mission oriented.

The primary phase during which pilots are eliminated is air-to-air training; the inability to perceive and react to

the various closure rates and geometry of another maneuvering aircraft. The second most difficult phase is tactical formation. The reasons remain the same.

But, the leadership necessary to establish an atmosphere amenable to pilot eliminations is multi-dimensional. It begins with squadron leadership that must reinforce the need for quality control. DOV must be resolute in their demand for standardized and accurate grading practices. The entire command structure must support the instructor's remarks and the evaluating judgments of the DOV flight examiners. Everyone must be motivated towards a quality fighter force.

The prime motivator for the increase in the entensity for quality control at LIFT came from accidents involving LIFT graduates. As a wing, we examined our personal techniques used during instruction. Previous F-4 pilots had to develop single seat mentalities; their students were going to single seat fighters. LIFT had to become more demanding in order to aid in the survivability of its graduates.

As a result, LIFT matured into a demanding training unit; not an indoctrination school. The growth of the quality control program is illustrated by the growth of student eliminations:

Year	No. of Eliminations
1977	1
1978	3
1979	10

To maintain these standards, the 479 TTW requires a quality instructor force. The quality of the instructor force is directly related to the personnel inputs from TAC and the strength of

the instructor upgrade program. Both of these criteria are based on knowledgeable leadership in the TAC staff.

BROAD EXPOSURE: The 479th TTW provides an opportunity for the future pilots of all our tactical fighters to gain experience in the total spectrum of basic fighter tasks. They can develop an appreciation of each mission performed by each weapon system. This exposure will aid in their visualization of task force type exercises involving a variety of mission aircraft.

But not everyone agrees on the need for equal proficiency standards for each pilot. Some question, "Does a future A-10 pilot have to meet the same training standards in BFM as a pilot bound for F-15 training?" I say "Yes, especially in the air-to-air arena." Not because the air-to-air arena is more demanding than the low altitude environment experienced by an A-10 pilot; but because in the LIFT environment, the air-to-air arena is the optimum phase in which we can observe situation awareness. LIFT instructors can train the pilot in the basics of being a fighter pilot; and ensure the pilot can recognize a situation and react to it rapidly, but sensibly. BFM generates the demanding arena, without being close to the ground.

TYPE AIRCRAFT

The aircraft used for LIFT should be a two-seat trainer model, modified or adapted for conventional weapons release of practice ordnance. The trainer should continue to be the same as used during the final stages of pilot training. Then, the LIFT program can continue to instruct basic fighter skills without the distraction enherent during aircraft transitions.

At present, the T-38B is the appropriate aircraft for the LIFT program. Any efforts towards the development of a new trainer to be used by Air Training Command should be joined by TAC representatives. TAC must insure that any new trainer incorporates modification possibilities for LIFT.

Not everyone in TAC agrees with this concept. Some say TAC cannot afford to buy aircraft not designed for combat use. But, can TAC afford to place all of its aircraft in combat with none left for training replacement aircrew? In addition, can we afford to use expensive, high technology aircraft for basic fighter training? A low cost trainer is a rational approach.

The T-38 is becoming an aged aircraft. Someday it will be replaced by Air Training Command. The LIFT program is an important part of training our tactical aircrew; therefore, TAC cannot let the program die with the aircraft.

CHAPTER IV

THE DILEMMAS OF LIFT

Very few programs have created more dispair than that of LIFT. Only the Forward Air Control (FAC) assignment and the rated supplement tour rank below the LIFT program as undesirable assignments by most fighter pilots. In this Chapter, I will identify some of the problems and formulate various solutions to these problems. A final listing of my proposals is located in Chapter V of this paper.

THE INSTRUCTOR

The instructors in the 479 TTW know the basics of flying fighters. Not necessarily because of their previous experience, but because of the high caliber of training they now receive during the instructor upgrade program. Therefore, they are an important asset to TAC.

However, retention of these aircrew is very low. Of the nine that left my squadron when I did, only myself and one other was not departing the Air Force. Assignment to the LIFT program has contributed to these departures, rather than pre-empted them. Why is this so, and where are the problem areas?

INITIAL NOTIFICATION: The initial notification to a fighter pilot that he is being assigned to the 479 TTW as an instructor is a shock. No one wants to leave a high performance fighter and its exciting role, only to revert to flying a T-38. If a pilot is completing a three year staff assignment, he has had visions of being trained in a new and modern weapon system; not a T-38. The initial notification seems almost criminal.

Some of this reaction can be contributed to a lack of exposure to the LIFT program and a lack of knowledge about the LIFT mission. The majority of fighter pilots have never had any exposure to LIFT, those that have were exposed to the initial six weeks program.

The result from this lack of knowledge is a low acceptance rate. Normally, there are only two alternates, a FAC/ALO assignment or the seven-day option to resign your commission. Hearsay is it takes a minimum of six resignations for every acceptance during the initial assignment phase of LIFT instructors. As you might suspect, the Wing has a lot of young pilots and senior pilots.

An action that can assist in alleviating the adverse effects of "initial notification" is publicity. While numerous articles are published about "realistic training" in TAC, few are published on the not so glamorous spectrum of training. Few are even written. The importance of the LIFT program has not been transmitted to the fighter pilots. TAC HQ must make the LIFT mission a credible mission. They have failed to do this. The molding of a Second Lieutenant into an aggressive fighter pilot can be a lure.

However, during the recruitment phase, the audience must be universal throughout TAC. As mentioned earlier, upgrading instructors for LIFT primarily came from the rated supplement and F-4 community. Obviously these were TAC's largest source of manpower. A new source developed as the A-7 began being phased out of the active inventory. But TAC refuses to release any of the pilots of its newer weapon systems. There is also an obvious vacancy of pilots from the MAJCOM level staffs. The lack of a homogeneous instructor force results in a perception of low priority in the

LIFT mission. Therefore, the "initial notification" exodus continues.

REASSIGNMENT AFTER LIFT: There have been some excellent follow-on assignments for LIFT instructors; however, most are a result of short notice positions because the instructors will accept them over other options available. While you would expect an operational mission to follow a training assignment, LIFT instructors are often offered an RTU assignment. Because the 479 TTW has never received a new instructor from an RTU squadron, the offer reinforces the low perception most outsiders have of instructing in the 479 TTW.

I propose follow-on assignments accompany the initial notification to pilots being assigned to the 479 TTW. This action will be a short term one; only until all of the new weapon systems have been incorporated throughout TAC. A change from this follow-on assignment is limited by the desires of the individual or a waiver by the Chief of the Military Personnel Center. The action will not please everyone, but the new instructors must believe the assignment to LIFT is transitory and does not further close the door for optimum future assignments.

A further expansion of the proposal would be to offer a "choice of base" follow-on assignment to pilots already in a new weapon system. Both of the proposed actions will reduce the non-acceptance rate on initial notifications.

While these proposals may appear to conflict with the needs of the Air Force, they do not. TAC must take action to increase pilot retention, and TAC needs a viable LIFT program. Assignment incentives can help in both areas.

LEADERSHIP: I will discuss the LIFT instructor's exposure to two

levels of leadership; the first is direct exposure from the wing level and the second is indirect exposure from the supporting TAC staff. Both plagued the morale of the unit.

A fighter pilot expects to be lead by Commanders who are fighter pilots. They expect to see the leadership exposed to the common problems and rewards that exist within the unit. The 479 TTW has lacked in some of these relationships.

During the first year I was assigned to the 479th TTW, 1977, the Wing Commander was prohibited from flying more than three sorties per month by Numbered Air Force. The restriction separated the Commander from his pilots.

A senior member of the staff made operational decisions that directly affected the instructors and how they accomplished their mission, yet was never qualified as an instructor nor participated in the unit's mission. As a result, his credibility with the instructor cadre was suspect.

The following Wing Commander was a superb manager, but he had no previous tactical fighter background in other than the reconnaissance role. However, he went through great efforts to learn the mission and become qualified as an instructor. His example made the subordinate staff also become proficient as instructors. The two extremes provided a vivid example of the difference in our leadership and their motivations.

The second level of leadership that becomes important to the instructors in the 479th TTW is that displayed by TAC HQ. In the 2½ years I was assigned to the 479th TTW, only one officer

was assigned to LIFT related jobs at TAC HQ that had prior LIFT experience. Unfortunately, his prior experience was limited to the old six weeks course. This limited exposure posed a problem when communicating about the longer LIFT syllabus with TAC's Department of Training. However, the relationship was the best between the 479th TTW and TAC HQ because no other department had assigned personnel with LIFT background.

When a position would become available with T-38/F-5 or T-38/F-4 responsibility, the job was filled with an F-5/F-4 nominee. The LIFT program should carry a greater priority than the F-5 program at Williams AFB. And because the LIFT instructor is definitely out of the fighter mainstream, the assignment resource manager for T-38s at TAC HQ would have a more realistic credibility if he had a LIFT background. In general, there is a background dissimilarity between the LIFT instructors and TAC staff personnel. Again, TAC fails to generate any legitimate support for the LIFT program or its instructors.

STUDENT BACKGROUND: Although the long range goals of our tactical forces and fiscal motivations may be optimum, a morale problem was generated because of the differences in the instructors and students' backgrounds. TAC assigns young pilots with one to three years in a fighter to the 479th TTW. There they train pilots more senior in grade and no previous fighter experience. Some with ten years in service and no fighter background. The students may be bound for a new weapon system while the instructors watch their contemporaries in the 479th TTW being reassigned to the F-4 and A-7. This creates problems. The psychological aspects in assignments must be considered if we are to retain our good pilots, not just fiscal aspects. The

low retention of pilots in the 479th TTW reflects a lack of human considerations.

THE SYLLABUS

The LIFT syllabus has been revised numerous times. The 479th TTW considers inputs from the various follow-on training units and restrictions from TAC HQ on sortie limitations. Due to the variety of requirements and fiscal restraints there will always be perceived drawbacks with one unit training the pilots for all weapon systems. I will discuss two of the problem areas in this section.

The first problem is generated by a lack of understanding by other weapon system instructors on the purpose of LIFT and the extent of training conducted by the 479th TTW. This lack of understanding may be solved in the long term when more pilots will have been exposed to the LIFT program; but memories are often vague.

An F-4 instructor approached me and stated the recent LIFT graduates arriving in Homestead AFB for training were no better in air-to-air than were the graduates of the old shorter LIFT course. I informed him that the new syllabus only gave the F-4 track students two additional BFM sorties. Although there are eight additional air-to-air training sorties available in LIFT, they are not in the F-4 track.

The students going to F-4s receive additional ground attack sorties to supplement their ground attack training in the RTU. However, the LIFT students going to the A-10 receive additional air-to-air training in order to complement their future training. The differences in philosophy within the same command is confusing.

When the 479th TTW requests a change in their syllabus due to internal inputs, it does not refer to the follow-on training syllabus to see the overall effect. Likewise in the other training units, ATC added a tactical formation phase to their basic student pilot program. However, the 479th TTW program did not reduce the number of tactical formation sorties in the LIFT syllabus to off set the additional ATC training. The F-4 community requested that the LIFT program increase their concentration on close formation proficiency for the students. Can you see the irony and the lack of coordination between the individual training units?

I propose that a "single source" syllabus be written for each weapon system. A student programmed for an A-10 should be able to refer to one syllabus that will outline his entire training program and all requirements from LIFT to becoming combat capable. The syllabus will also aid the training units.

With a single source syllabus TAC can avoid the unnecessary repetition of training sorties and academic hours that occur. All instructors are aware of past and future training requirements of the student. It is as important for the instructors to understand and visualize the entire training program as it is for the ISD units.

The second frustration between training units is often blamed on the syllabus or the quality of the previous instruction; the poor quality of the student when he starts training at LIFT or in an RTU. However, it is the time lapse between programs that is reflected in the poor performance of the students when they start training. This problem must be solved by optimum planning by the Military

Personnel Center for the Air Force. It cannot be ignored. A three month period with no flight proficiency for a young pilot is not acceptable.

In addition, there is a time lapse between certain proficiency events that must be studied further by TAC HQ. After graduating from pilot training, a new pilot can go for as long as six to nine months without a dedicated instrument or night sortie. These are demanding and critical phases of flight that receive minimum attention at LIFT. Again, this is not acceptable for a young pilot. All training must be complete in all areas and continues throughout an entire training program. These problems will be more evident with a single source syllabus.

APPENDIX A

The following list of proposals are the minimum necessary to insure the LIFT program remains a viable TAC asset and not a "sore spot" that fighter pilots wish would go away.

1. Publicize articles that expound on the importance of LIFT. The "basics" must be taught by competent and motivated instructors. Then we can be confident when advancing our pilots into the flexible and demanding scenario of realistic training.

2. Assign instructors to LIFT from the cadre of pilots in our new weapon systems and TAC staff. If the program is to be credible to the instructors and students, it must be credible throughout TAC.

3. A projected follow-on assignment must be made for each pilot sent to the 479 TTW as an instructor. TAC cannot please everyone, but overall acceptance and retention should improve.

4. The staff officers in TAC that are directly related to the LIFT program or its personnel must be recent LIFT instructors or personnel. They must have a legitimate knowledge and background for their positions.

5. TAC must work towards the development of a single source syllabus for each weapon system to insure continuity in training, an optimum structure in the program, and an understanding of the training objectives by all instructors.

BIBLIOGRAPHY

1. TAC Syllabus, Course No. T38OOA0OCA, USAF Fighter Lead-In Course, May 1976, page 1.

2. Based on a personal interview with three pilots who had orders to the LIFT unit, but were reassigned to an F-4 unit on base. Interviews were conducted on February, 1977.

3. In May 1979 the 479th TTW requested TAC HQ to authorize a new Instructor Upgrade Syllabus with an increase in air-to-air training and an increase in the number of training days. Personal communication with an officer in the 479th TTW Standardization and Evaluation Section on 3 January 1980, verifies TAC has yet to authorize the new syllabus.

4. 479th TTW Standardization and Evaluation Quarterly Reviews from March 1978 through June 1979.

5. Policy Letter published by the 479th TTW Director of Operations in January 1979.

6. AFM/ACM/DCM Reference Text, Course T38BOAXOAA/WA, November 1978.

7. LIFT Instructor Techniques Guide, Course T38B01OAA, May 1979.

8. TAC Syllabus, Course T38BOAXOAA/WA, USAF Lead-In Training Course, September 1979.


DA
FILM