THE CAMBODIAN CAMPAIGN (U)
1 JUL-31 OCT 1970
31 DEC 1970

HQ PACAF
Directorate, Tactical Evaluation
CHECO Division

Prepared by:
LT COL J.F. LOYE JR.
MAJ P.D. CAINE
Project CHECO 7th AF, DOAC
**Report Documentation Page**

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

<table>
<thead>
<tr>
<th>1. REPORT DATE</th>
<th>2. REPORT TYPE</th>
<th>3. DATES COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEC 1970</td>
<td>N/A</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. TITLE AND SUBTITLE</th>
<th>5a. CONTRACT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cambodian Campaign 1 Jul - 31 Oct 1970</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. AUTHOR(S)</th>
<th>5b. GRANT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</th>
<th>5c. PROGRAM ELEMENT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ PACAF Directorate, Tactical Evaluation CHECO Division</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. PERFORMING ORGANIZATION REPORT NUMBER</th>
<th>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. SPONSOR/MONITOR’S ACRONYM(S)</th>
<th>11. SPONSOR/MONITOR’S REPORT NUMBER(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. DISTRIBUTION/AVAILABILITY STATEMENT</th>
<th>13. SUPPLEMENTARY NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved for public release, distribution unlimited</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. ABSTRACT</th>
<th>15. SUBJECT TERMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. SECURITY CLASSIFICATION OF:</th>
<th>17. LIMITATION OF ABSTRACT</th>
<th>18. NUMBER OF PAGES</th>
<th>19a. NAME OF RESPONSIBLE PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. REPORT unclassified</td>
<td>SAR</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>b. ABSTRACT unclassified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. THIS PAGE unclassified</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7AF/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. Along with the other CHECO publications, this is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM.

RICHARD F. CAMERON, Major General, USAF
Chief of Staff
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
APO SAN FRANCISCO 96553

DOAD

31 December 1970

ATTN OF:

DOAD

SUBJECT:
Project CHECO Report, "The Cambodian Campaign, 1 Jul - 31 Oct 1970" (U)

TO:
SEE DISTRIBUTION PAGE

1. Attached is a TOP SECRET AFEO document. It shall be transported, stored, safeguarded, and accounted for in accordance with applicable security directives. Each page is marked according to its contents. The information contained in this document will not be disclosed to foreign nationals or their representatives. Retain or destroy in accordance with AFR 205-1. Do not return.

2. Reproduction of this document in whole or in part is prohibited except with the permission of the office of origin.

3. This letter does not contain classified information and may be declassified if attachment is removed from it.

FOR THE COMMANDER IN CHIEF

MAURICE L. GRIFFITH, Colonel, USAF
Chief, CHECO Division
Directorate of Operations Analysis
DCS/Operations

Proj CHECO Rprt (TS/AFEO/LIMDIS), 31 Dec 70

1 Atch

iii
### DISTRIBUTION LIST

#### 1. SECRETARY OF THE AIR FORCE

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>SAFAA 1(1)</td>
</tr>
<tr>
<td>b.</td>
<td>SAFLL 1(2)</td>
</tr>
<tr>
<td>c.</td>
<td>SAFOI 1(3)</td>
</tr>
<tr>
<td>d.</td>
<td>SAFUS 1(4)</td>
</tr>
</tbody>
</table>

#### 2. HEADQUARTERS USAF

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>AFNB 1(5)</td>
</tr>
<tr>
<td>b.</td>
<td>AFCCS 1(6)</td>
</tr>
<tr>
<td>c.</td>
<td>AFCSA 1(12)</td>
</tr>
<tr>
<td>d.</td>
<td>AFOA 2(14,15)</td>
</tr>
<tr>
<td>e.</td>
<td>AFIGO 3(16-18)</td>
</tr>
<tr>
<td>f.</td>
<td>AFSG 1(21)</td>
</tr>
<tr>
<td>g.</td>
<td>AFNIATC 5(22-26)</td>
</tr>
<tr>
<td>h.</td>
<td>AFAAC 1(27)</td>
</tr>
<tr>
<td>i.</td>
<td>AFODC 1(30)</td>
</tr>
</tbody>
</table>

#### j. AFPDC

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>AFDPXPS 1(34)</td>
</tr>
<tr>
<td>(2)</td>
<td>AFDPMD 1(35)</td>
</tr>
<tr>
<td>(3)</td>
<td>AFDPW 1(36)</td>
</tr>
</tbody>
</table>

#### k. AF/RD

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>AFRDP 1(37)</td>
</tr>
<tr>
<td>(2)</td>
<td>AFRQD 1(38)</td>
</tr>
<tr>
<td>(3)</td>
<td>AFRQDL 1(40)</td>
</tr>
<tr>
<td>(4)</td>
<td>AFRQDRC 1(41)</td>
</tr>
<tr>
<td>(5)</td>
<td>AFRDR 1(42)</td>
</tr>
</tbody>
</table>

#### l. AFSDC

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>AFSLP 1(43)</td>
</tr>
<tr>
<td>(2)</td>
<td>AFSSM 1(44)</td>
</tr>
<tr>
<td>(3)</td>
<td>AFSSS 1(45)</td>
</tr>
<tr>
<td>(4)</td>
<td>AFSTP 1(47)</td>
</tr>
</tbody>
</table>

#### m. AFTAC

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>AFXO 1(48)</td>
</tr>
</tbody>
</table>

#### n. AFXO

<table>
<thead>
<tr>
<th>Code</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>AFXOD 1(49)</td>
</tr>
<tr>
<td>(2)</td>
<td>AFXODC 1(50)</td>
</tr>
<tr>
<td>(3)</td>
<td>AFXODD 1(51)</td>
</tr>
<tr>
<td>(4)</td>
<td>AFXOBL 1(52)</td>
</tr>
<tr>
<td>(5)</td>
<td>AFXOAB 1(53)</td>
</tr>
<tr>
<td>(6)</td>
<td>AFXOSL 1(54)</td>
</tr>
<tr>
<td>(7)</td>
<td>AFXOON 1(55)</td>
</tr>
<tr>
<td>(8)</td>
<td>AFXOOS 1(56)</td>
</tr>
<tr>
<td>(9)</td>
<td>AFXOSS 1(57)</td>
</tr>
<tr>
<td>(10)</td>
<td>AFXOOSV 1(58)</td>
</tr>
<tr>
<td>(11)</td>
<td>AFXOOTR 1(59)</td>
</tr>
<tr>
<td>(12)</td>
<td>AFXOOTW 1(60)</td>
</tr>
<tr>
<td>(13)</td>
<td>AFXOOTZ 1(61)</td>
</tr>
<tr>
<td>(14)</td>
<td>AFXOOCY 1(62)</td>
</tr>
<tr>
<td>(15)</td>
<td>AF/XOX 1(63)</td>
</tr>
<tr>
<td>(16)</td>
<td>AFXOOG 1(64-68)</td>
</tr>
</tbody>
</table>

#### iv
### 3. MAJOR COMMAND

**a. TAC**
- Headquarters
  - (a) DO: 1(72)
  - (b) XP: 2(73, 74)
  - (c) DOC: 1(75)
  - (d) DREA: 1(76)
  - (e) IN: 1(77)

**b. SAC**
- Headquarters
  - (a) DOPL: 1(78)
  - (b) XPX: 1(79)
  - (c) DM: 1(80)
  - (d) IN: 1(81)
  - (e) OA: 1(82)
  - (f) HO: 1(83)

**c. MAC**
- Headquarters
  - (a) DOI: 1(84)
  - (b) DOO: 1(85)
  - (c) CSEG: 1(86)
  - (d) MACOA: 1(87)

**d. ADC**
- Headquarters
  - (a) DO: 1(88)
  - (b) DOT: 1(89)
  - (c) XPC: 1(90)

**e. ATC**
- Headquarters
  - (a) ATXPP-X: 1(91)

**f. AFLC**
- Headquarters
  - (a) XOX: 1(92)

**g. AFSC**
- Headquarters
  - (a) XRP: 1(93)
  - (b) XRLW: 1(94)

**h. USAFSS**
- Headquarters
  - (a) SCSF: 1(107)
  - (b) CHO: 1(108)

**i. AAC**
- Headquarters
  - (a) ALDOC-A: 1(109)

**j. USAFSO**
- Headquarters
  - (a) CSH: 1(110)

**k. PACAF**
- Headquarters
  - (a) DP: 1(111)
  - (b) IN: 1(112)
  - (c) XP: 2(113, 114)
  - (d) CSH: 1(115)
  - (e) DOAD: 5(116-120)
  - (f) DC: 1(121)
  - (g) DM: 1(122)

- *2. AIR FORCES*
  - (a) TAF(DOAC): 2(123, 124)

**l. USAFE**
- Headquarters
  - (a) DOA: 1(125)
  - (b) DOLO: 1(126)
  - (c) DOO: 1(127)
  - (d) XDC: 1(128)
4. SEPARATE OPERATING AGENCIES

a. ACIC(DOP) .......... 2(129,130)
b. AFRES(XP) .......... 2(131,132)
c. AU
   (1) ACSC-SA .......... 1(133)
   (2) AUL(SE)-69-108 ... 2(134,135)
   (3) ASI(ASD-1) ...... 1(136)
   (4) ASI(HOA) ....... 2(137,138)
d. AFAFC(CEH) ....... 1(139)
e. ANALYTIC SERVICES, INC ... 1(140)
## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOREWORD</strong></td>
<td>ix</td>
</tr>
<tr>
<td><strong>CHAPTER I - INTRODUCTION</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>CHAPTER II - BACKGROUND</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>CHAPTER III - CAMBODIAN, VIETNAMESE AND THAI AIR OPERATIONS</strong></td>
<td>12</td>
</tr>
<tr>
<td>THE CAMBODIAN AIR OPERATIONS</td>
<td>12</td>
</tr>
<tr>
<td>THE VIETNAMESE AIR OPERATIONS</td>
<td>12</td>
</tr>
<tr>
<td>THE THAI AIR OPERATIONS</td>
<td>14</td>
</tr>
<tr>
<td>CAMBODIAN-VIETNAMESE-THAI RELATIONS</td>
<td>17</td>
</tr>
<tr>
<td><strong>CHAPTER IV - U.S. AIR OPERATIONS</strong></td>
<td>19</td>
</tr>
<tr>
<td><strong>CHAPTER V - COMMUNICATIONS AND CONTROL</strong></td>
<td>33</td>
</tr>
<tr>
<td>THE AIRBORNE BATTLEFIELD COMMAND AND CONTROL</td>
<td>33</td>
</tr>
<tr>
<td>AIR OPERATIONS COORDINATION CENTER</td>
<td>35</td>
</tr>
<tr>
<td>COMMUNICATIONS WITH PHNOM PENH</td>
<td>38</td>
</tr>
<tr>
<td>RULES OF ENGAGEMENT</td>
<td>40</td>
</tr>
<tr>
<td>THE USE OF INTERPRETERS</td>
<td>41</td>
</tr>
<tr>
<td>THE USE OF FORWARD AIR GUIDES</td>
<td>42</td>
</tr>
<tr>
<td>TRN-6 TACAN SUPPORT (COMMANDO PATCH CHANNEL 85)</td>
<td>44</td>
</tr>
<tr>
<td><strong>CHAPTER VI - MAINTENANCE AND MUNITIONS FOR THE CAMBODIAN AIR FORCE.</strong></td>
<td>46</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>46</td>
</tr>
<tr>
<td>MUNITIONS</td>
<td>47</td>
</tr>
<tr>
<td><strong>CHAPTER VII - CONCLUSION</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>FOOTNOTES</strong></td>
<td></td>
</tr>
<tr>
<td>Chapter I</td>
<td>52</td>
</tr>
<tr>
<td>Chapter II</td>
<td>52</td>
</tr>
<tr>
<td>Chapter III</td>
<td>53</td>
</tr>
<tr>
<td>Chapter IV</td>
<td>54</td>
</tr>
<tr>
<td>Chapter V</td>
<td>57</td>
</tr>
<tr>
<td>Chapter VI</td>
<td>60</td>
</tr>
<tr>
<td>Chapter VII</td>
<td>60</td>
</tr>
<tr>
<td><strong>GLOSSARY</strong></td>
<td>61</td>
</tr>
</tbody>
</table>
UNCLASSIFIED

FIGURES

1. RTAF Operating Areas .................................................. 14
2. Lon Nol's Strategy .......................................................... 20
3. Route 12 Interdiction ...................................................... 22
4. Requested Interdiction Area, 21 July ................................. 26
5. FREEDOM DEAL Extension Number Two ............................. 26
6. Strike Area, 20 August .................................................... 28
7. FREEDOM DEAL ALPHA .................................................. 30
8. The McNiff Sleeve ......................................................... 48
FOREWORD

This special CHECO Report, "The Cambodian Campaign, 1 July - 31 October 1970," is the second one devoted to operations in that country. The first one, dated 1 September 1970 and entitled, "The Cambodian Campaign, 29 April - 30 June 1970," furnishes important background for reading the present report.

Following this Foreword, Chapter I is a broad introduction to the campaign and focuses on the general use of tactical air power in Cambodia. Chapter II continues in the same vein but gives more details to broaden the reader's background. Chapter III briefly analyzes the contributions of the Cambodian, Vietnamese, and Thai Air Forces. Chapter IV explores some of the more significant applications of U.S. tactical air. Chapter V then examines some of the problems encountered in the communications and control areas. Chapter VI highlights two particular problem areas of the Cambodian Air Force--maintenance and munitions. Lastly, Chapter VII presents some brief concluding remarks. The reader is advised that there are some extremely sensitive areas that are not discussed anywhere in this report.
CHAPTER I
INTRODUCTION

As Air Force Manual (AFM) 3-2 points out, tactical air, if it is to be used with optimum effectiveness, should be employed early in an operation and with as few basic restraints as possible. Such an approach allows flexibility and timeliness in the application of force. However, in Cambodia during the period of this report (1 July - 31 October 1970), tactical air power could not be used against the enemy in a truly flexible fashion. Precise, geographically limited interdiction areas were established, and outside these areas the enemy could be struck only when he actually attacked a city or military complex, or when hard intelligence jointly developed by the Military Assistance Command, Vietnam (MACV), and Seventh Air Force (7AF) confirmed that an imminent threat of such an attack existed.

Restrictions like these were, it is true, the inevitable result of a low-profile U.S. posture for Cambodia. Yet, even sound, sufficient political reasons could not alter the fact that, under such restraints, a battle for a particular position was sometimes joined prior to the involvement of tactical air. Consequently, the employment of air power in such battles occasionally inflicted severe damage on the position. Indeed, when the position was located in a city or a town, large-scale, but unavoidable, destruction to the area seemed quite possible and, in fact, did occur on more than one occasion. Consequently, it seemed at times as
though United States policy were working against itself. Concern for an 
inconspicuous image, with as little overt involvement in Cambodia as 
possible, the protection of shrines, points of cultural interest, and 
similar considerations seemed to result in undesired destruction of cities 
and towns—the very things the policy was designed to avoid. Thus, when 
the story of U.S. air operations in Cambodia is finally made public,
tactical air may find itself subjected to severe criticism because of the 
destruction it caused.

Another factor relative to the employment of tactical air in Cambodia 
should also be considered. Tactical air, per se, cannot prevent a ground 
position from being taken by an enemy, but it can be the decisive element 
in the support provided to effective ground forces which can save a posi­
tion. One may cite, for example, the case of Khe Sanh and other similar 
operations where tactical air was undoubtedly a decisive factor in the 
defense of the position*, but there the enemy was also faced by an effec­
tive ground force and tremendous firepower applied in a small area. On 
the other hand, similar conditions did not exist in Northern Laos, and 
the fate of General Vang Pao's forces in late 1969 and early 1970 supports 
the argument that tactical air can only assist in saving positions. In 
addition, conditions found in Vietnam did not exist in Cambodia.

*It is true that B-52s were also used in strength at Khe Sanh. However, 
they were used there for the first time in a close air support or tactical 
role.
The Cambodian ground forces (Force Armee Nationale Khmer or FANK) were not well-equipped or well-trained when compared with United States Army or Army of the Republic of Vietnam (ARVN) standards. Initially, during the early stages of the period of this report, the FANK had a poor-to-nonexistent resupply capability and a marginal reinforcement capability at best. While conditions did improve, at the end of the period the FANK was still not capable of any in-depth, sustained defensive activity over a wide area, much less any far-reaching offensive action. In late October the FANK had over 140,000 men under arms facing a total enemy force estimated at 50,000 to 60,000, less than 25,000 of whom were in combat elements. However, FANK troops were so ill equipped and poorly trained that they were unable to cope effectively with even this relatively low threat. This weakness of the FANK was compounded by the situation that existed in Cambodia from July through October, wherein the enemy was frequently allowed to resupply, mobilize, mass, and move almost with impunity, with no extensive air operations being conducted against him until he actually attacked.

U.S. experience in Vietnam also seemed to indicate in other ways that tactical air was not used as effectively in Cambodia as it might have been. U.S. tac air flew many sorties each day in the Republic of Vietnam (RVN) in support of the Army against suspected enemy locations, supply concentrations, and fighting positions. The arguments supporting this role for tac air were that such employment kept the enemy moving, prevented him
from concentrating his forces, made his resupply very difficult, forced
him to move at night, and generally harassed him. These contributions of
tac air were deemed essential, even though the enemy was opposed by
efficient and effective ground forces which were well equipped and could
call on ample reinforcements. This employment of tactical air was
certainly successful, and it deserves considerable credit for the suc-
6/

The contrast with the role of tac air in Cambodia is obvious. The
U.S. originally established an interdiction area and a limited interdici-
tion campaign against the enemy, based on the initial assumption of the
Joint Chiefs of Staff (JCS) that the operation would be similar to, and
almost an extension of, the campaign in southern Laos (STEEL TIGER).
The limited interdiction, however, only partially curtailed enemy resupply
activity, and it soon became obvious that there were no Lao-
tian-style,
established lines of communication (LOCs) to cut. The interdiction area
was, therefore, expanded on 8 July to include such major arteries as
Route 12, down which USAF forward air controllers (FACs)
Route 12, and even then USAF forward air controllers (FACs) had to stand
and watch enemy movement flow for almost 3 months
before it could be effectively interdicted. Strike aircraft were also
belatedly employed west of the Mekong River in areas which were hotly
contested by FANK and enemy forces. Thus, much land area was lost to
the enemy before tactical air could be effectively brought to bear against
him. This delayed employment of tac air applied to almost all the area
encompassed by FREEDOM DEAL and its extensions, as the interdiction areas
were called.
The option to use air power to maximum advantage was open to USAF forces for one short period of time, from 20 to 30 June. At that time the Commander of the U.S. Military Assistance Command, Vietnam (COMUSMACV), delegated authority to the Commander, Seventh Air Force (7AF), to launch strikes as required to defend major Cambodian positions. This procedure permitted rapid reaction to FANK requests for support and also allowed night gunship and FAC coverage of threatened areas, as well as areas of actual enemy activity. In short, FREEDOM ACTION, which was the code name for the ten-day operation, allowed air power to be applied before the enemy was in direct contact with the FANK. The Government of Cambodia (GOC) was highly pleased with the USAF effort, and General Lon Nol credited U.S. air power with saving Kompong Thom.

As has already been noted, after 1 July 1970 tac air was for the most part used in Cambodia under debilitating restrictions. Even so, the message traffic in the 7AF Cambodian file provided unmistakable evidence that 7AF had sought to employ tactical air in its most effective manner. Proof of this 7AF position can be found in the numerous requests to expand the interdiction areas, to interdict over a long period of time rather than on a case-by-case basis, to utilize air power in areas threatened by troop movements without waiting for them to be attacked, to interdict major supply routes, to use the Vietnamese Air Force (VNAF) and the Royal Thai Air Force (RTAF) assets more effectively, and to upgrade the quality of the Tactical Air Control System (TACS) in Cambodia.
MACV agreed in part to many of these requests, but, overall, 7AF was never given the latitude it desired in the use of tactical air power in Cambodia.
Though this report is concerned primarily with Cambodian activities from 1 July through 31 October, a brief review of some pertinent events prior to that time may be helpful in establishing a proper perspective.

In early May, the JCS sent MACV a copy of an outline plan for air interdiction operations in eastern Cambodia. In response to a JCS request for further planning, MACV, assisted by 7AF representatives, replied that tactical air should be employed in close air support for the FANK and ARVN. However, this proposal was not in keeping with the JCS position that the interdiction campaign should be similar to the one employed in Laos. The execute message for the campaign to be conducted in northeastern Cambodia, east of the Mekong River, in an area called FREEDOM DEAL, was received on 24 May; and the first strikes were flown on 30 May.

On 15 June, 7AF asked COMUSMACV to authorize intensified air operations and to interpret "interdiction" in a broad enough sense for tactical air power to be used to support FANK and ARVN ground forces. COMUSMACV agreed that there were areas of Cambodia, not included in the FREEDOM DEAL area, in which enemy buildups were to be expected. He stressed that these areas, including Kompong Thom, could require rapid air operations, and, on 18 June, he requested authority from CINCPAC to employ tac air and B-52 strikes as he determined necessary. Meanwhile, on 17 June, the JCS had
broadened the entire interdiction campaign with a message that stated:

... you are authorized to employ U.S. tactical air interdiction in any situation which involves a serious threat to major Cambodian positions such as a provincial capital whose loss would constitute a serious military or psychological blow to the country. 14/

On 19 June, CINCPAC approved the 18 June COMUSMACV request and interpreted the 17 June JCS message as authority for an expanded interdiction campaign throughout Cambodia, called FREEDOM ACTION. 15/

Under the rules of this campaign of 20-30 June 1970, the Commander 7AF, as DEPUSMACV for Air, was delegated the authority to employ air strikes, as required, in the defense of major FANK positions. This authority allowed rapid reaction to FANK requests for air support, usually within an hour, making it possible to employ air before the enemy was in direct contact with FANK forces. The authority also facilitated planning of night gunship and FAC coverage missions, and it permitted improved coordination with the VNAF to assure that available air assets were employed effectively. It was FREEDOM ACTION that was credited with, among other things, saving the city of Kompong Thom through the timely intervention of air power. General Lon Nol, in expressing the appreciation of Cambodians and himself for the 7AF effort at Kompong Thom, said:
The image of the aircraft of your 7th Air Force has been solidly anchored since the 20th of June, historical date of the city of Kompong Thom, in the spirits of all the fighters of this city, who owe their survival and their being to the action of these aircraft which allowed the solid rise of their morale and stopped any more deaths. 16/

The FREEDOM ACTION operation was suspended by a message from COMUSMACV to the Commander 7AF on 29 June. COMUSMACV pointed out that the JCS 17 June message was not to be construed as sanctioning the establishment of a major interdiction campaign throughout Cambodia and that all strikes outside the FREEDOM DEAL area had to be approved by COMUSMACV on a case-by-case basis. 17/ On 30 June, accordingly, operations were restricted, as of the following day, to the FREEDOM DEAL area and its extension, a small area south of the original FREEDOM DEAL area. This restriction contained the above-mentioned stipulation imposed by the U.S. headquarters in Saigon that interdiction sorties could be flown outside the area only on a case-by-case basis and when approved by COMUSMACV. 18/

Seventh Air Force promptly requested that it be allowed to employ tactical air strikes for fixed periods of time, rather than on an individual basis, in several key areas of Western Cambodia, in order to deter enemy buildups more effectively. Those areas cited were several cities which had been severely threatened in June: Kompong Thom, Kompong Cham, and Siem Reap. It was understood that these strikes, if approved, would be conducted only when requested by the FANK and all strikes would be controlled by USAF FACs in contact with ground units. 19/ Such authorization
would have allowed coverage by FACs and gunships and immediate response by gunships and scramble of tactical air for targets in the area.

On 2 July MACV granted authority for air strikes against the enemy threat in the Kompong Thom and Kompong Cham areas, provided this threat were confirmed by hard intelligence jointly developed by MACV and 7AF. The other areas requested (Siem Reap and several other specific points in Western Cambodia) were not approved for strikes pending further intelligence. Even this authorization was qualified by a repetition of the admonition given on 29 June that the JCS message of 17 June was not to be construed as carte blanche to conduct a general interdiction campaign outside the FREEDOM DEAL area. Other strikes were still to be approved on a case-by-case basis, rather than for a period of time as previously requested by 7AF.

As noted, the air strikes approved by the MACV 2 July message covered only the immediate areas of Kompong Thom and Kompong Cham. Thus, the enemy was still able to move and resupply outside of FREEDOM DEAL with impunity. As later experiences would prove, he had only to fear applications of U.S. tactical air when he massed for an attack. The number and placement of VNAF, RTAF, and CAF strikes were such that they did not seriously deter his operations.

Seventh Air Force viewed the new requirement for jointly developed hard intelligence with concern, for much of the 7AF intelligence on enemy
movements and associated activities in Western Cambodia was obtained by
FAC visual reconnaissance (VR) activity. (The authority to fly VR and
photo reconnaissance over all of Cambodia had been retained after the
termination of the FREEDOM ACTION operation.) MACV hard intelligence, on
the other hand, appeared to be such that an attack had to be imminent,
and generally in progress, before tactical air power could be called in.
The result was delay and significantly decreased effectiveness. FACs
reported enemy movements throughout that area of Cambodia beyond FREEDOM
DEAL day after day, but could do nothing but watch the movements, because
strikes were not authorized.

A meeting was held between 7AF and MACV J-3 on 3 July to clarify the
hard-intelligence statement. The meeting resulted in no real change in
the conditions but did produce a MACV affirmation, reflected in a 4 July
message, that both Kompong Thom and Kompong Cham were considered danger-
ously threatened and air strikes should be made as the threat increased.
Siem Reap was specifically excluded from the authorization. 22/

Despite the restrictions placed on USAF air operations, some counter-
poise to the general enemy movement and buildup seemed possible through
the more extensive employment of Vietnamese and Cambodian Air Force units
and, as time passed, Royal Thai Air Force resources. The next chapter
examines the activities of these three air forces during the period July
through October.
CHAPTER III
CAMBODIAN, VIETNAMESE, AND THAI AIR OPERATIONS

THE CAMBODIAN AIR OPERATIONS

The capabilities and resources of the small Cambodian Air Force (CAF) were extremely limited. In September, for example, its total inventory of aircraft of all types was 98, including five T-28s which had been loaned to it by the RTAF. Of these 98 aircraft, 21 were operational strike aircraft consisting of nine T-28s and 12 MIG-17s. However, the MIG-17s, because of armament and munitions problems, could not be used during much of the time from July through October (these problems and their solutions are discussed in a later section of this report). With its nine T-28s, the CAF could mount about 18 sorties per day, and later, as the MIG problems began to be resolved, its total fighter sortie rate rose to approximately 30 per day.

As one might expect, the CAF was also limited by its personnel who, though capable and dedicated, were also few in number. For example, there were approximately 100 pilots in the CAF, and 48 of these were qualified in strike aircraft. Of course, with its limited hardware, the CAF did have a favorable crew-to-aircraft ratio, but it was obvious to even the most casual observer that the CAF needed assistance.

THE VIETNAMESE AIR OPERATIONS

The VNAF had been operating in Cambodia, in both a close air support
and a logistics role, since the beginning of the Cambodian operation in late April. Its efforts, then, were mainly in support of FANK and ARVN ground operations, although it did undertake some interdiction activity. From July through October, the VNAF flew 3,668 strike sorties and 1,304 transport sorties in Cambodia. In addition, the VNAF conducted a large amount of helicopter activity, with approximately 3,000 hours of helicopter combat assault time,\(^2\), 740 hours of command and control time, 1,000 hours of gunship time, 180 hours of search and rescue time, and about 1,900 hours devoted to helicopter combat support liaison activities.

While the VNAF was obviously making an important contribution to the Cambodian campaign, there was some doubt as to whether it was supporting the FANK to the greatest extent of which it was capable. On 18 September, CINCPAC, responding to a query from the JCS, addressed this situation in a message to COMUSMACV.\(^2\) Citing the drop in the overall daily sortie rate of the VNAF from 50 per day to 33, CINCPAC inquired whether this decline might have been caused by a reluctance on the part of the VNAF to support the FANK.

Seventh Air Force was asked for its comments on this question and, though there were those within that headquarters who felt that the VNAF was reluctant to support any forces other than the ARVN,\(^2\) the final position which CINCPAC reported to the JCS was that the drop in sortie

\(^*\)Helicopter activity is not reported by sorties but rather by time, as is indicated here.
rate could not be attributed to recalcitrance on the part of the VNAF. The reply pointed out that weather and maintenance aborts had caused some problems. It was also noted that the VNAF daily sortie rate in Cambodia had risen to as high as 66 per day on one occasion and, for the period 21-24 September, it was at a 46-per-day level. In addition, CINCPAC pointed out that the VNAF was putting over one-third of its total air effort into Cambodia. During late October, the VNAF effort showed a steady increase, while USAF sorties in Cambodia underwent a marked decline.

THE THAI AIR OPERATIONS

Prior to any U.S. overtures for possible Thai air support for the Cambodians, the RTAF drafted a detailed plan for operations in Cambodia which covered the entire spectrum of air support--reconnaissance, supply, attack, and search and rescue. The plan envisioned the deployment of a Direct Air Support Team (DAST) to Siem Reap to coordinate RTAF activities. On 23 June, Air Chief Marshal Boon Choo of the RTAF signed the plan.

Following the adoption of this plan, such subjects as the rules of engagement (ROE) agreed upon by the USAF, the VNAF, and the FANK were discussed with the RTAF. A meeting was held in Phnom Penh on 17 July between the Thais and the Cambodians to formalize the use of RTAF aircraft over Cambodia. At this meeting the Cambodians surprised the Thais by requesting air cover over Preah Vihear and Koh Kong Provinces only (Figure 1). The large area of west-central Cambodia where much of the enemy activity was taking place was not included, although RTAF aircraft
flew in the area when requested. Because of these restrictions imposed by the GOC, an agreement was not signed at the July meeting, and almost two months elapsed before one was finally reached in September. Under this latter agreement, the RTAF was authorized to conduct strike and reconnaissance missions, not only in the Preah Vihear and Koh Kong Provinces, but also in an area 30 kilometers deep along the Thai-Cambodian border.

The earlier lack of a formal agreement had not, however, deterred the employment of Thai resources. On 3 July, the RTAF deployed a 12 man DAST to Siem Reap in northwestern Cambodia. This DAST, which was later moved to Battambang after an enemy attack on Siem Reap on 15 July, was the key to RTAF operations, since FANK representatives were initially collocated at the DAST to validate any targets which the Thais were requested to strike. The DAST was equipped with single-sideband radio to contact the RTAF Air Operations Center at Don Muang Airport in Bangkok, the agency which actually authorized the dispatch of air strikes. For purposes of coordination, the Air Operations Center also notified the 7AF Tactical Air Control Center (TACC) at Tan Son Nhut of the strike, although 7AF had no control over the employment of Thai aircraft. All strikes had to be coordinated through Vampire (the call sign for the DAST) and no RTAF strikes could originate with the Air Operations Center, RTAF Headquarters, or Headquarters 7AF. Furthermore, when the eventual Thai-Cambodian agreement was reached in September, there was no longer any need for FANK
validation of targets in those areas approved for RTAF operations. Outside those areas, though, targets had to be specifically requested and validated by FANK ground commanders.

In view of this functioning system for the employment of Thai air, one might have expected the RTAF involvement to be greater than it was. From 4 July through 20 October, the total number of Thai combat sorties of all types was only 146. Of these, 100 were strike sorties (92 T-28 and eight F-5), 18 were gunship, and the remaining 28 consisted of various types of combat support. With regard to the strike sorties, the RTAF did not employ Thai FACs, and the strikes were made either under the control of USAF FACs or without FAC guidance at all—the latter being the case more often than not.

The RTAF claimed that their low level of activity was simply the result of limited resources. They pointed out that they could not expend their munitions to any great extent, unless they obtained assurance from the United States that the munitions would be replaced. They had only a three-month war reserve of supplies and munitions, so they were understandably reluctant to delve into this stock without some guarantee that it would be replenished. If the RTAF had been able to obtain greater American support, they estimated they could have flown a sustained rate of 900 sorties per month in Cambodia.

An example of the kind of problem which the Thais had to face is to be found in their request for U.S. assistance in a plan to improve one of
their forward airfields. Arguing that they could better support Cambodian operations if their base at Chanthaburi were modernized, the RTAF, on 11 August, requested airfield matting from the U.S. to extend the sod runway and construct ramp space. Further information on the site was requested by U.S. authorities on 14 August and forwarded to CINCPAC on 18 August. Through the remaining days of August and on into September and October, many messages were exchanged by various U.S. agencies regarding the matting for the Thais, but, as of early November, no firm decision had been made one way or another. The Thais were without the matting, and Chanthaburi had not been improved.

CAMBODIAN-VIETNAMESE-THAI RELATIONS

One factor that hampered the prosecution of the war by the CAF, VNAF, and RTAF was the ineradicable mutual distrust which seemed to exist among the three nations. The Cambodians, for example, tended to look upon all Vietnamese as actual or potential Viet Cong (VC) or North Vietnamese Army (NVA) personnel. Although there had been a significant minority of some 400,000 or more Vietnamese in Cambodia for many years, the latent mistrust manifested itself in the harsh treatment dealt this minority shortly after the overthrow of Sihanouk. Inspired by the same prejudices, many FANK officers voiced their concern over reports---some factual, some fabricated---of looting and raping by the ARVN troops. Indeed, anti-Vietnamese sentiments were apparent in Cambodian officers at all levels. As reported by the U.S. Defense Attaché, Cambodian officers stated that Vietnamese assistance to the GOC generated animosity rather than a feeling of
The Cambodians remembered from their ancient history the times when the Vietnamese had entered the country as conquerors; therefore, they still feared these people from the south who were now their allies. The South Vietnamese, on the other hand, accused the GOC and the FANK of committing atrocities against the Vietnamese people and of even conducting strikes against ARVN units.

In a similar vein, the Cambodians accused the Thais of refusing aid which the latter could have readily supplied, while the Thais, in turn, insisted that the Cambodians had been unwilling to cooperate. General Lon Nol, himself, revealed a reluctance to give the Thais too much freedom of movement, lest they take advantage of his beleaguered country.

Obviously this climate of distrust and recrimination could have only deleterious effects upon the operations of the CAF, the VNAF, and the RTAF. In short, the three Air Forces involved continually demonstrated a reluctance to work with one another. However, they did demonstrate a willingness to assist one another in the efforts which were expended through U.S. intermediaries.
CHAPTER IV
U.S. AIR OPERATIONS

Operations by U.S. and other friendly forces in Cambodia must be considered in the light of Gen Lon Nol's strategy for his nation: to buy time by giving up territory. His basic objectives were (1) to defend the line from the Thai border along Route 6 to Kompong Thmar-Prek Kak-Chhlong-Snoul, (2) to keep Route 5 open from the Thai border to Phnom Penh, Route 4 open from Kompong Som to Phnom Penh, and Route 1 open from the RVN border to Phnom Penh, (3) to insure free navigation of the Mekong waterways from the RVN border to Chhlong, and (4) to insure control of the great lakes and the Tonle Sap (Figure 2). From this basic position, Cambodian operations could be launched to gain freedom of movement on increasing numbers of highways and secure more areas of the country.

Contrasting with this general objective, and forming the framework within which any aid for Lon Nol had to be considered, was the basic MACV position which stated: (1) that any U.S. support provided had to be within current operating authorizations; (2) that the nations of Southeast Asia (SEA) should be encouraged to cooperate in their efforts against the common enemy; (3) that any U.S. participation in this regional cooperative effort should be in a low key; (4) that VNAF participation should not detract seriously from operations within RVN, since South Vietnam continued to have the number one priority, and that an appropriate
balance had to be maintained to insure the continued pacification of South Vietnam, whatever the requirements for the support of Cambodia might be; and (5) the Government of Cambodia must be encouraged to seek early realization of the Lon Nol strategy goals, in order that operations to regain control over all of Cambodia would be conducted at an early date. These five subsidiary goals were considered necessary to preclude further VC-NVA consolidation or firm establishment of their positions.

During the expanded interdiction campaign (FREEDOM ACTION) of 20-30 June, a majority of the strikes beyond the Mekong by U.S. aircraft had been against enemy locations in the vicinity of Kompong Thom. Although the activity around that city had decreased near the end of June, it was still one area in which a continued enemy presence could be expected to attempt isolation of the rice-rich Tonle Sap region from the capital area of Phnom Penh and to cut Route 6 to northwestern Cambodia. A FANK reinforcement convoy escorted by both USAF FACs and tactical aircraft was unsuccessful in its efforts to reach the city in late June and returned to Phnom Penh the first week in July under the cover of 22 sorties flown in support of the column during the first six days of July.

The relatively quiet ground situation in central Cambodia was interrupted on 4 July by an enemy mortar attack on Kompong Thom. Similar activity followed almost nightly thereafter. Enemy attacks also occurred on Saang, the Chup Rubber Plantation, and Kompong Cham in the next few days. Aside from the support of the Kompong Thom relief column, the first
employment of USAF tactical aircraft in July outside the FREEDOM DEAL area came in support of operations in the vicinity of Kompong Thom on 7 July. On that date 26 sorties were flown in support of these operations. The vulnerability of Kompong Thom was heightened by the enemy's ability to move supplies down Route 12 from the Laos border to the Kompong Thom area. Continual enemy movement on that LOC was reported by FACs flying over it, but 7AF had no authority to strike targets there.

On 7 July, 7AF requested permission from MACV to interdict Route 12 from Kompong Thom to the border, covering a belt extending 500 meters on both sides of the road, but remaining 500 meters from any populated areas. The reply from MACV on 8 July granted approval for interdiction on Route 12, but only from Kompong Thom to the intersection with Route 6932, about one-third the distance to the border (see Figure 3). Most of this area authorized for interdiction was flat (unlike the more northern area of the route), and any interdiction point could be easily bypassed. Thus, the interdiction of Route 12 was not significantly improved at all. The enemy could still move supplies and traverse the countryside with ease.

There were also other areas of Cambodia where large-scale fighting took place in early July. In the Kirirom Plateau area in the southwestern part of the country, enemy pressure eventually routed the FANK defenders. Nevertheless, no U.S. tac air was employed, because strikes were not authorized in that area. Seventh Air Force was also denied permission to strike targets in the Battambang area of northwestern Cambodia, as requested
on 14 July, when MACV determined that no imminent threat to the city existed. The enemy, in effect, was on the offensive throughout the country, but it appeared that tactical air was to be employed only in last ditch efforts at the very gates of the cities.

Throughout the period of this report there were many examples of the disadvantages involved in requesting clearance on a case-by-case basis. One such instance occurred on the night of 14 July when, at 1730 and again at 2145 hours, Siem Reap came under attack. Air support was requested at the time of the early evening attack, but it was not until five hours and 15 minutes after the second attack that clearance for gunship activity was granted. Another illustration, this one in early October, is to be found in the report of three Cambodian secret agents who had worked with the VC. They stated that the enemy was well aware how long it took to get clearances and that clearances were seldom granted except for "troops in contact" (TIC) situations. Thus, the enemy frequently knew he was in no danger, even when FACs were in the area. Experiences like these emphasized the impracticality of having to obtain authority for strikes on a case-by-case basis and waiting until jointly developed MACV-7AF hard intelligence indicated that an attack was imminent.

Ground action in Cambodia during the last half of July was sporadic but widespread. The enemy continued to make frequent attacks on Kompong Thom, and intermittent assaults on FANK defenses around that city were reported. Far to the south, Kirirom continued to be contested, and the
city changed hands twice during the month, winding up in enemy hands at the end of July. During the exchanges of control, the enemy put the torch to the area, destroying most of the buildings.

This deliberate destruction of towns and buildings, prior to being driven out, was repeated frequently by the enemy during the period of this report. Such actions seemed to mark a departure from his earlier policies, which had been designed to win the support of the populace. As the news media pointed out, the enemy originally followed a rigid set of "Do's" and Don'ts" which said:

*Do greet monks, behave properly to women, compensate for damages, respect old people, love children, don't steal, don't violate pagodas or frighten people. . . . It is strictly forbidden to take even a needle and thread from locales.*

A Department of Defense message in late September also commented on the change in enemy tactics. Quoting a Controlled American Source Field Information Report, the message noted evidence of the harsh treatment villagers received from the enemy. In Stoeng Trang in northeastern Cambodia, many villagers were shot for disobeying orders.

The enemy's complete disregard for property and apparent contempt for the natives contrasted sharply with the continual U.S. efforts to prevent any unnecessary damage. In June, a book containing pictures and maps of all the historical, cultural, and religious sites had been sent to every unit throughout SEA which was concerned with operations in Cambodia.
These cultural areas were protected from possible damage by our tac air through the prohibition of any strikes within 1,000 meters of any of the sites. This restriction was adhered to even when it was known that the enemy was seeking cover within the sites. New places were added to the protected lists from time to time, and any violations of the restrictions were promptly investigated. In late July, for example, reports that air strikes under the direction of U.S. FACs had been conducted near the Angkor Wat ruins brought an immediate investigation, which involved both the USAF and the RTAF, because of the alleged involvement of elements of each in the attack. The results of the investigation were inconclusive, but additional emphasis was thereafter placed upon limiting strikes in cultural areas.

Enemy attacks were launched repeatedly throughout the latter part of July against Siem Reap, various sections of Routes 1, 2, 4, 5 and 6, the Romeas Infantry Training Center, Srang, Prey Veng, the Chamkar Loeu Rubber Plantation, Sre Krong, and Tonle Bet. The towns of Thmar Keo and Phum Bat Rokar were occupied by the enemy, and, on 28 July, the FANK abandoned Kirirom once again.

U.S. tactical air responded to the July enemy activity in the few areas where its use was authorized. Gunships and fighters supported Kompong Thom and Siem Reap, and gunship support was also flown at Kompong Cham. In an attempt to improve the air support available for FANK forces, 7AF, on 20 July, requested authority to use USAF FACs to control VNAF and CAF strikes. This request was forwarded to CINCPAC and the JCS on 25 July,
and in August approval was granted for USAF FACs to control third country air strikes in those areas where USAF strikes were authorized. Permission to employ USAF search and rescue (SAR) for CAF crews was given on 22 July, with the proviso that U.S. resources would be used only when VNAF SAR was not available. On 26 July specific rules for search and rescue activities were set forth, and the coverage was expanded to include the RTAF.

The high level of activity in the Kirirom area, and its proximity to the strategic Route 4 to the sea, prompted 7AF to request authority, on 29 July, to employ tactical air in that area. The authority for interdiction strikes was granted for a seven day period on 30 July and renewed for seven day intervals on 5, 14, and 23 August. Of course, such strikes had to be requested by the FANK ground commander, and ground-to-air communications had to be established before the strikes were made. Despite the additional air effort, however, Kirirom changed hands two more times in August and September, with the enemy finally retaining possession in late October.

As soon as the U.S. and ARVN forces withdrew from those regions of Cambodia bordering the RVN, it became obvious that the enemy was moving back into his old sanctuaries. This enemy activity led 7AF to request, on 21 July, that the FREEDOM DEAL extension be enlarged.* The requested

*For a discussion of the original FREEDOM DEAL area and its first extension, see Project CHECO Report, "The Cambodian Campaign, 29 April - 30 June 1970."
area included almost all of the remaining part of Cambodia outside the FREEDOM DEAL area, and east of the Mekong River (see Figure 4). The matter hung fire for over a week, while enemy forces continued to move back into their previous strongholds. On 30 July, CINCPAC asked the JCS to grant an additional extension of the FREEDOM DEAL area, to encompass an area bounded by Route 7 on the north, Routes 76, 155, and 1543 on the west, the Prek Kompong Spean River on the south, and the RVN border on the east (see Figure 5). The area, designated FREEDOM DEAL Extension Number Two, was only a fraction of the area requested by 7AF on 21 July. The extension, approved on 1 August, was to be valid until 1 November, with the ROE for FREEDOM DEAL Extension Number One being applied to the new area. These two extensions were eventually combined into one area which was simply called the FREEDOM DEAL Extension.

The city of Kompong Thom came under siege again in late July. As the fighting progressed, fighters and gunships were called in to save the city, though the summons did not come until the enemy was already engaged with the defenders at close quarters. Prior to that time there had been reports of enemy buildups in the vicinity, but little or no action was taken against many of these targets because they posed no imminent threat. It was not until the first week of August that air was applied in strength. From 31 July through 9 August the USAF flew 182 fighter and 37 gunship sorties in support of the city. As had been the case in the first siege of Kompong Thom in June, tactical air was credited with saving the city.
FIGURE 4
Requested Interdiction Area, 21 July
FIGURE 5
FREEDOM DEAL Extension Number Two
Unfortunately, the belated employment of air resulted in severe destruction to the city. On 3 August, for example, it was reported that 75 percent of the northern part of the city and 50 percent of the southern part had been destroyed.\footnote{72}

The action at Kompong Thom was not the only high point of enemy efforts to occupy important cities. Skon, at the critical Route 6 and 7 junction, was attacked and occupied by the enemy on 2 August, and the FANK did not retake it until a week later. In the effort to retake the city, USAF air again played a critical role. From 2 to 9 August, the USAF flew 60 fighter and 14 gunship sorties against enemy positions in the area. As might be expected this city also sustained large-scale destruction, but here there was not much question about the timely employment of air because the city was already in enemy hands.\footnote{73}

The second week in August, following the expansion of the FREEDOM DEAL area, was a period of great activity for U.S. tactical air operations in Cambodia. This period also marked a high point in enemy efforts to capture critical cities and isolate portions of the countryside from government control. However, the period of greatest activity for U.S. tactical air occurred in late August and early September, following still another expansion of the interdiction area.\footnote{74}

On 12 August, in a message to MACV J-3, 7AF requested authority to strike lucrative, FANK-validated interdiction targets within 40 kilometers of seriously threatened Cambodian positions and cities. It also suggested that Kompong Speu, Kompong Chhnang, and Kompot be added to the
list of seriously threatened locations. In addition, it asked that the FREEDOM DEAL area be significantly expanded to include an area bounded on the east by the Mekong River, on the west by 104 E. Longitude, and on the south by Routes 6, 21, and 7. The addition of an area along the RVN-Cambodian border from Route 7 to the Gulf of Thailand and extending for a depth of 50 km into Cambodia was also requested.

The reply to the request came on 20 August, when COMUSMACV authorized 7AF to operate in the expanded interdiction area shown in Figure 6, as the need developed and was confirmed by hard intelligence jointly developed by MACV and 7AF. It also stipulated that the strikes be requested by the FANK and controlled by U.S. FACs in radio contact with the ground. In other words, the same restrictions that had limited the ability of U.S. tactical air to disrupt the movement of the enemy in early July remained in force, but the area where air strikes were permitted was expanded. The additional authorization was not intended to solve the problem of curtailing enemy movement. Rather, its main purpose appeared to be to increase the capability of air to deal with the critical situations in the areas of Kompong Thom, Kompong Chhnang, Kompong Cham, and Routes 5 and 6.

The problem of enemy supply activities had to be considered, however, because of the continued enemy activity north and west of the Mekong River, where FACs had long been reporting considerable enemy activity. On 21 August, General Abrams cited increasing enemy activity west of the Mekong and north of Phnom Penh and again asked CINCPAC for a significant expansion in the
Responding to this appeal, Admiral McCain, in a message of 23 August to the JCS outlined the enemy activity in the area and recommended that the FREEDOM DEAL area be expanded to include north-central Cambodia as indicated in Figure 7. Dubbed FREEDOM DEAL ALPHA, this new area would be governed by the basic ROE as prescribed for FREEDOM DEAL* and its establishment would go far in permitting USAF tactical air to interdict enemy activity and limit his ability to move freely throughout the area. Permission to inaugurate interdiction operations in this area was dispatched on 25 August and it was to remain valid until 1 October 1970. A notification in September subsequently extended the effective period to 1 November.

As already noted, USAF air operations reached their highest point (for the period July - October) immediately after operations in FREEDOM DEAL ALPHA began. During the seven-day period from 26 August to 2 September, for example, over 500 U.S. strike sorties were flown in Cambodia. Activity was also high during the next seven days from 3-9 September when about 450 sorties were flown. From that point to the end of October, however, activity gradually declined, and during the last week of October only about 70 U.S. sorties were flown. On the other hand, as noted in Chapter III, the VNAF effort rose as U.S. efforts were tapering off.

*Under these ROE it would not be necessary to wait for a need to develop, since one already existed in the form of enemy movement on LOCs which could now be interdicted.
An operation which could be considered the first major offensive action of the FANK opened on 19 September under the code name, Operation Chenla. It was described in the press as a relief column for the city of Kompong Thom, and many people got the impression that Chenla was a convoy which would move rapidly from one place to another. Such was not the case, however. Chenla was a long-range operation designed to retake some of the rich lands that the enemy had captured and bring the local populace under the control of the GOC. It was true that Chenla was planned to reach Kompong Thom, so as to assist the FANK there, and intermediate points to be reached were also established. However, no dates for reaching any of these points had been set when the operation started on 19 September with the departure of three battalions from Skon. U.S. air power was scheduled to support Chenla, and FACs were to provide 24-hour coverage. Originally it had been proposed that the FACs would determine the type and amount of air power to use, such as gunships or fighters. The same mature FACs were to be used each day, and they were to be granted authority to expend gunships' ordnance at the request of ground commanders. Also, the FACs were to be armed, but were to expend their own ordnance only in emergencies.

Progress of the Chenla column was slow, and it eventually was stalled completely by the enemy in the vicinity of Tang Kauk on Route 6. While the Communists' success revealed a considerable logistical effort on their part, it was also true that they enjoyed certain intrinsic advantages. Perhaps of foremost importance, the Chamkar Andong and Chamkar Loeu rubber plantations provided near-perfect cover for supply and bivouac areas, since
U.S. tac air was not allowed to hit them. Then, too, there were reports that 7AF filled many requests for tac fighters with gunships, instead, in order to hold damage down. In addition, because of the rules concerning cultural sites that were in effect, many gunship sorties were forbidden to hit buildings, even though the enemy was known to be using them. Seventh Air Force suggested that there was a need for increased application of tac air to interdict supplies, and also pointed out that the use of harassment mines and armed reconnaissance along the LOCs could contribute to the success of the operation. As of late October, however, the column was still stalled. Nevertheless, there was evidence that the operation was in part succeeding, as villagers returned to their homes and seemed to have a favorable attitude toward the FANK.

Another facet of the overall interdiction program of July - October was the effort expended in the interdiction of various waterways. In early June mining operations had been started, and from June to September over 1,700 mines were seeded in the Tonle Kong and Tonle Son Rivers. In August it was suggested that mining of the Mekong also be undertaken, particularly in the area of its confluence with the Tonle Kong at Stoeng Treng. However, the size of the Mekong, its depth at flood stage, and the unknown effectiveness of the mines under conditions peculiar to this river raised considerable doubt as to the feasibility of using MK36 mines (the type used previously) on this waterway. The problems were discussed in a message from Admiral Moorer, the Chairman of the Joint Chiefs of Staff, to Admiral McCain on 25 August. Three days later, CINCPAC asked MACV for an assessment of a plan to seed the Mekong-Tonle Kong confluence. In the ensuing discussion of the issue, the problem of premature arming
and resultant degradation of effectiveness was presented. Seventh Air Force, learning that a Navy fuse would provide a 12-hour arming delay, recommended that the mines be placed in the rivers. Also at issue was the large number of mines it would take to block the Mekong effectively. FANK representatives were reluctant to authorize the move, because they feared that the mines might not destroy themselves in the programmed six months and that they would hamper navigation of the river by civilian traffic for a long period of time. On 31 August, General Abrams replied to Admiral McCain with a discussion of the various problems involved and a suggestion that, if approval could be obtained, the Mekong-Tonle Kong confluence be mined on a trial basis. The project was undertaken, with 320 mines being sowed in four locations in the Mekong River, north and south of the Stoeng Treng. Finally, it was concluded in October that mining operations of this type had had minimal impact on the interdiction program. The operations were then discontinued, with a recommendation that they not be resumed unless and until the enemy elected to use the Mekong as a major LOC.
CHAPTER V

COMMUNICATIONS AND CONTROL

Communications and control problems exist in any military operation, and the Cambodian campaign was no exception. Indeed, Cambodian activities at times seemed to have more than their share of such problems, perhaps because of the four allied nations involved in the prosecution of the war.

THE AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER (ABCCC)

That aircraft communication with control agencies, such as the Direct Air Support Centers (DASCs) and the Tactical Air Control Center, was a problem area was clearly recognized early in the initial interdiction campaign in Cambodia, and an ABCCC for the area was considered at that time. On 6 July, a message was sent to all the units in Southeast Asia that were involved in flights over Cambodia, advising them that an EC-47 flying an orbit along the northern portion of the Mekong could be used as a radio relay, in the event that it was impossible to reach a desired ground agency.

Nothing further was done in July about the question of an ABCCC. The significant increase in air activity in early August, however, prompted 7AF to send a message to CINCPACAF on the 18th, citing the continuing problems with communications and the lack of secure voice capability in Cambodia. It requested that EC-121 College Eye aircraft, with their numerous radios, be deployed from Itazuke AB in Japan to Korat RTAFB in
Thailand to function as an interim ABCCC until a decision could be made on a permanent Cambodian communications system. 91/ CINCPACAF agreed with the basic position of 7AF and, after consultation with COMUSMACV, CINCPAC recommended to the JCS that four EC-121D aircraft be deployed. The deployment was approved by the JCS on 5 September, but it was not until 16 September that the Airborne Tactical Air Control Center (TACC-A, 92/ another name for the ABCCC) became operational.

It was shortly thereafter, in late September, that PACAF requested 7AF to determine the feasibility of using EC-121R aircraft to replace the EC-121Ds as a means of extending the available communications capability for Cambodian air operations. 93/ Feasibility tests were conducted and, though the TACC-A personnel themselves at one point indicated their preference for D model 121s, 7AF recommended in early October that the EC-121Rs be used, because of certain inherent advantages. These advantages included an extended range, an automatic radio relay feature, additional secure voice capability, a sensor readout capability, and lower operating costs. 94/ On 10 October, 7AF released the four EC-121Ds for redeployment and at the same time requested six R models as replacements. 95/

The original concept for the ABCCC had envisioned that the aircraft, in addition to its normal crew, would be manned by a Senior Duty Officer, an Intelligence Officer, and a representative from each of the three other allied nations involved. As of late October, only the FANK had a representative on board. To this extent, then, the ABCCC was not living up to
expectations. The VNAF Joint General Staff (JGS) did not seem too interested in the concept (perhaps because they had their own DASC Zulu at Phnom Penh), and the Thais were fairly noncommittal.

When the ABCCC started its operations, there were numerous complaints that it was nothing more than an elaborate radio relay station which exercised little command and control. Reports indicated that the airborne center failed to take action and make decisions which, according to the ROE, it could do. However, with the passage of time it was generally agreed that the ABCCC constituted a tremendous improvement in the command and control structure. Of course, the whole idea of an ABCCC was really a stopgap measure which, it was hoped, could soon be replaced by an Air Operations Coordination Center (AOCC).

AIR OPERATIONS COORDINATION CENTER

With four nations (using five languages*) fighting the air war in Cambodia, it was obvious that a centralized planning and coordination facility was needed. An examination of the various air support request nets made this fact crystal clear. There were, in effect, the following eight separate request nets: (1) FANK intelligence developed targets which were passed to the Cambodian Air Force for strikes by the CAF; (2) FANK intelligence developed targets which were passed to the Vietnamese Direct Air

*English, Cambodian (Khmer), Thai, Vietnamese, and French—the common second language of all the countries carved out of the former French Indo-China.
Support Center at Phnom Penh for VNAF strikes; (3) FANK ground units developed targets which were passed to the Thai DASC at Battambang, validated there by FANK liaison officers, and then executed by the RTAF; (4) FANK intelligence developed targets which were passed to the VNAF-USAF Tactical Air Control Center at Tan Son Nhut for execution either by the VNAF or the USAF; (5) the USAF developed interdiction targets which were validated by FANK liaison officers at the TACC, and then the targets were struck by either the VNAF or USAF; (6) Vietnamese FACs and DASCs received requests for close air support from ARVN forces operating in Cambodia, and these requests were filled by the VNAF; (7) Cambodian FACs received requests for support from FANK ground forces, and the CAF, resources permitting, executed the strikes; and (8) USAF FACs received requests for strikes from FANK ground commanders, and the TACC scheduled either VNAF or USAF strikes to fill the requests. To repeat, a centralized planning and coordination center was needed to pull together the various requests, evaluate the total Allied air capability, and divide the effort on the basis of the individual capability of the various air forces and the location of the targets.

After Pochentong AB at Phnom Penh was selected as the proposed site of the AOCC, action was undertaken to improve the substandard communication facilities there, so that they could eventually support the center. However, because of the U.S. "low-profile" policy for Cambodia, it was by no means certain that the USAF would be allowed to participate in any AOCC that might be established at Pochentong. With this thought in
mind, a meeting of CAF and 7AF officials was held on 27 September to explore the possibility of establishing an integrated AOCC outside of Cambodian territory. There it was decided that there was only one advantage to such a proposal--namely, U.S. expertise would be assured for control and management of the AOCC. On the other hand, there were several distinct disadvantages to establishing the center outside Cambodia. In the first place, facilities and communications were limited and would require additional time and expense to prepare and operate. Secondly, an AOCC outside Cambodia would be far removed from the FANK JGS at Phnom Penh and would in effect constitute a duplication of effort. Third, agreement on a specific location might be difficult to obtain with four nations involved. Fourth, without secure communications, intelligence information would be difficult to obtain--a circumstance which would seriously limit effective, timely mission planning. Finally, the Cambodian Air Force was facing a severe manning problem, and only a limited number of multilingual staff officers were available. To man an AOCC far removed from Phnom Penh would risk a compromise of CAF talent. In short, the establishment of an AOCC outside of Cambodia was considered impractical as a solution to the coordination problem.

This same group also addressed the question of U.S. participation in any AOCC and concluded that such participation was absolutely imperative. It was pointed out that the USAF was recognized by the other nations as the only organization with the broad skills required to organize, construct,
and initially operate the AOCC. Furthermore, the fact that the other three nations looked to the U.S. for guidance and leadership could, perhaps, cause them to overlook their differences and get them to work together against the common enemy. Also, it was noted, each of the other nations had expressed a desire for U.S. participation.

As of late October, the Cambodians had actually started work on modifying a building at Phnom Penh to house the proposed AOCC; however, the issue of American participation and the level of that participation, were still unresolved.

COMMUNICATIONS WITH PHNOM PENH

The dearth of communications facilities within Cambodia has already been referred to, but the problem was of such magnitude at Phnom Penh that it would be well to review the situation. Such communications facilities as existed between Phnom Penh and 7AF, for example, were crude, insufficient, and insecure. With the problem becoming one of swiftly mounting concern, on 22 July, the Secretary of State asked for a communications status report from the embassy in Phnom Penh. As a result, he learned that the teletype and telephone communications systems were old and unreliable, the secure voice equipment could be operated only by American personnel, and the embassy had no one qualified to operate it.

On 25 July, Admiral McCain sent a detailed message to Admiral Moorer discussing the entire communications situation and setting forth the
possible actions that could be taken to rectify it, such as the installation of secure radio and teletype, and the addition of more circuits to the TACC at 7AF.

The issue was resolved on 7 August, when the JCS authorized the installation of needed long-haul communications facilities at Phnom Penh, including new secure voice equipment to the American Embassy. Seventh Air Force suggested that among those items necessary was one secure voice circuit between the TACC and Phnom Penh, a telephone circuit between FANK Headquarters and their liaison office at 7AF, and a secure teletype between the 7AF communications center and Phnom Penh. On 8 August this requirement was upgraded to three sole user voice circuits—one from 7AF TACC to the proposed Air Operations Coordination Center, one from the TACC to the VNAF's DASC Zulu at Phnom Penh, and one from the 7/13AF facilities at Don Muang to the TACC to facilitate coordination with the RTAF. These requirements were forwarded to MACV on 11 August, and the work of upgrading the communications facilities progressed throughout September and October. The telephone line from FANK Headquarters to the FANK liaison office at 7AF became operational on 10 September. A voice circuit from Phnom Penh to VNAF Headquarters at Tan Son Nhut was ready on 18 September, and an additional voice circuit from the TACC to the AOCC was operational on 7 October.
RULES OF ENGAGEMENT

U.S. air operations in Cambodia were politically sensitive, and as such were closely controlled and monitored after they were initiated about the first of May. The Rules of Engagement were necessarily lengthy and detailed, but, rather than reviewing the ROE, this section highlights some of the control problems associated with them.

When asked whether he thought the ROE were realistic, the Director of III DASC facetiously replied, "Hell, if I understood them, I could answer that question." Now, while it is true that the Director was joking, he was also voicing in graphic language his opinion that the ROE were too complex. He also went on to point out that the rules were subject to so many changes that they tended to confuse the operating units in the field.

Evidence of similar dissatisfaction with the ROE was apparent in other ways. A 7AF TACC memorandum on the subject stated that the operating instructions were confusing and needed to be rewritten. Another 7AF document stated:

ROE for the Cambodian situation have been complicated to the point where confusion exists among TACC personnel who are responsible for implementation. This confusion is magnified by the time it reaches the field. A large portion of the blame for this confusion must be placed on the political, as opposed to military, aspects of the conflict. However, there have been excessive and unnecessary daily changes to the ROE which seem based on personal whims rather than thought out policy.
Some FACs in the field also reported that at times they were unsure as to how the ROE were to be interpreted, and that at other times they felt the rules were self-contradictory. For example, the ROE stated that observed ground fire (not coming from a village or hamlet) could be returned in the FREEDOM DEAL and FREEDOM DEAL ALPHA areas, but the FACs were unsure if they could return the fire themselves. Also, the ROE stated that any military target within 1,000 meters of a Category A LOC could be struck, but additional 7AF written instructions said that structures would not be attacked. The FACs also noted that the ROE for Category B LOCs stated that, during the day, any truck within 500 meters of the route, and not within 500 meters of a village, could be struck. However, the FACs claimed that they frequently requested tac air to strike targets that came within these parameters, only to have the requests denied by 7AF.

Such, then, were some of the problems inherent within the ROE for Cambodia. It would only be fair to emphasize again that the complex and changing nature of the ROE was unavoidable, by reason of the political sensitivity of the whole operation. Besides, while such restrictions would have been intolerable in an all-out air war, they were perhaps reasonable for a war of minimum involvement.

THE USE OF INTERPRETERS

Adding to the normal communications problems was the language barrier that existed in Cambodia. For strike purposes it was necessary that contact be established between the USAF FAC and the FANK unit on the
ground--contact that would be understandable to each. The solution seemed to lie in the use of French as the language for such contact, and so it was on 20 June that the original call went out for USAF volunteers, proficient in French, to fly with and serve as interpreters for the FACs. The response was such that by 23 June some were already flying in the FREEDOM ACTION campaign. The original number of volunteers requested was 22, but this number was lowered to 17 on 2 July. Although there were enough officers and airmen volunteers to fill the initial need, on 5 July 7AF requested its subordinate organizations to identify possible additional resources. Provision was also made to identify FACs, either in the theater or in training, who were sufficiently fluent in French that they could be sent to a unit assigned a mission over Cambodia. In addition, a pipeline was established and procedures started for sending FACs to school for French language training prior to their assignment to SEA. The use of the non-pilot interpreters was to be only a stopgap measure in lieu of sufficient French speaking FACs. These interpreters, however, were still being used extensively as of the end of October, and their contributions came to be regarded as one of the truly great success stories of the Cambodian venture. With little or no flying experience of any kind, the interpreters quickly learned their tasks and became invaluable members of the strike teams.

THE USE OF FORWARD AIR GUIDES (FAGs)

Another attempt to solve the language problem involved the use of English speaking FANK officers who served as forward air guides. However,
having some command of English was not enough. In addition, the FAGs needed to be familiar with the tactical air control system and the basic techniques of employing tactical air in support of ground units. To this end, an initial group of ten FANK officers was sent to Tan Son Nhut in early July to train at the TACC. Ten more officers were added on 12 July and 30 the week of 20 July. The two-day training program for the Cambodians included familiarization with the operation of the TACC, increasing their familiarity with necessary English words and phrases, and enhancing their ability to handle air/ground communications and air strikes. With this training the FANK became more proficient in using tactical air power effectively. The most effective employment system, according to 7AF, was the use of these trained forward air guides in combination with French speaking FAC aircraft.

Another part of the initial FAG training program given tentative consideration by the JCS was the eventual loan of air/ground radio control jeeps for use with the Cambodian forces. This idea was not adopted, however, because the maintenance of the communications equipment was well beyond FANK capabilities. On 31 August, the FANK proposed that 48 English speaking civilians who had been undergoing basic military training in Cambodia be sent through a tactical air control system training course at 7AF prior to their placement in the field as forward air guides. By late September, ten groups, each consisting of ten people, had completed FAG training at Tan Son Nhut and Bien Hoa. Plans were in the mill to expand the course from two days to five days, and four groups of twelve were
programmed to start the training on 19 October. As of the end of October, the program was still functioning smoothly.

TRN-6 TACAN SUPPORT (COMMANDO PATCH CHANNEL 85)

On 22 June 1970, 7AF had requested that a TACAN be deployed to the airfield at Phnom Penh, the Cambodian capital, to provide navigational aids support for Allied air operations in that country. Commando Patch, as the proposed deployment was dubbed, had heretofore encompassed the siting of TACANs in Laos, but the term was now stretched to include this specific application to the Cambodian operation. The 7AF message described the proposed deployment as an "immediate combat essential operation," with the equipment necessarily becoming fully operational prior to 30 June, in view of President Nixon's insistence that all U.S. forces be out of Cambodia not later than that date.

The following day, 23 June, CINCPACAF directed the 1st Mobile Communications Group to dispatch a TRN-6 TACAN, with the generators and necessary ancillary equipment, to Tan Son Nhut AB, Vietnam, for further relocation to Phnom Penh Airfield for 90 days. Along with the equipment were to go the minimum number of personnel required to install the set and provide operations and maintenance (O&M) services until 30 June. In the same message CINCPACAF advised 7AF that "In concurring with this request, we assume that clearance for equipment/personnel in country and the requirement have been approved by [the] chargé d'affaires in Cambodia." As an
added precaution, the Hickam headquarters asked that the 1st Mobile Communications Group be informed if the equipment had to be "sanitized" (i.e., any incriminating words, marks, or signs that might identify it as U.S. property carefully removed) and the personnel instructed to wear civilian clothing during the installation and O&M phases.

The 1MCGp staged the equipment, requested airlift, and had the unit ready to go on 23 June. Two days later, on 25 June, the 1MCGp deployed the TRN-6 to the airfield at Phnom Penh, where it was emplaced on the east side of the runway, approximately midfield, without any problems worth mentioning. It was then flight checked and became operational on the 27th. According to instructions, the 1st Mobile Communications Group detachment provided O&M services for the next three days; then, on 30 June, Vietnamese Air Force (VNAF) personnel arrived and assumed these responsibilities.

On 14 July 1970, CINCPACAF informed Detachment 16, AFCS (Air Force Communications Service), at Richards-Gebaur AFB, Missouri, that it was still "investigating the possibility of using contractor personnel to maintain this facility." However, as time demonstrated that the VNAF people were fully capable of operating and maintaining the borrowed TACAN equipment, the idea of having a contractor take over the job was quietly dropped.
CHAPTER VI
MAINTENANCE AND MUNITIONS FOR THE CAMBODIAN AIR FORCE

The limited capability and resources of the Cambodian Air Force have already been discussed in Chapter III of this report. Nevertheless, two aspects of this overall problem will be examined separately in this chapter, because they illustrate its severity with particular graphicness. Also, the interim solutions arrived at were somewhat unique and worthy of individual consideration.

MAINTENANCE

When the Thaiis arranged in June to loan five T-28s to the Cambodians, the agreement included a stipulation that the RTAF, utilizing its C-123s, would first transport the Cambodian T-28s to Udorn and Don Muang for major maintenance. Initially, three aircraft were taken to Udorn and two to Don Muang, and by the end of August at least one of these aircraft had been returned and was flying missions in Cambodia.

This Thai agreement to repair the Cambodian T-28s did not completely alleviate the problem of maintenance. The lack of proper phase inspections and a shortage of spare parts were responsible for the non-flyable condition of the aircraft to begin with. In order to alleviate this condition, maintenance help was needed at Pochentong AB, Phnom Penh. At the outset, some thought was given to using U.S. maintenance teams, but this easy solution was quickly scotched by the now-familiar bogeyman of
"political considerations." The problem of limiting American visibility in Cambodia was critical, especially in view of the stories in the press which insisted that U.S. personnel were still in Cambodia long after the deadline for pullout. In view of the desired "low-profile" image, COMUSMACV placed strict limits on the movement of both American aircraft and personnel into Cambodia. To circumvent this prohibition, it was decided to contract the maintenance to a civilian firm—which, in effect, meant Air America, since it was the only one able to do the job adequately. On 6 August, accordingly, the Secretary of Defense authorized the use of a nine-man team from Air America in Phnom Penh to aid in the maintenance of Cambodian aircraft. On 14 August permission was granted for this team to be selected by Air America and to include an American as its head.

MUNITIONS

Lack of proper maintenance curtailed the ability of the Cambodian Air Force to operate effectively, and the munitions situation compounded the problem. There was no shortage of munitions for the T-28s, as was evident in the August suggestion of the Military Assistance Command, Thailand, that four RTAF T-28s be moved to Phnom Penh, in order to make better use of the munitions available for those aircraft. Rather, the problem lay in munitions for the Cambodian Air Force MIG-17s.

Most of the Russian-built MIG-17s were flyable, and the Cambodians had a good supply of spare parts for these aircraft. They had practically no Russian-made bombs, however, to fit the unique suspension system. The
U.S. was willing to supply the Cambodians with bombs, but the MIG had a single lug bomb suspension system, while the standard U.S. Mk 82 bombs had two suspension lugs. As the shortage of Russian bombs for the MIGs grew more acute, the question of adapting U.S. bombs for MIG use became a problem that demanded solution.

On 6 August 7AF received a formal inquiry from the Foreign Technology Division (FTD) at Wright-Patterson AFB about adapting Mk 82s for use with the MIG. In this inquiry, the installation system of a Soviet bomb was explained, and the suggestion was made that any adaptation of the U.S. bombs should be as close to the Soviet system as possible. On 9 August the job of providing a satisfactory suspension system was given to the Weapons Force Plans Branch of 7AF. The solution arrived at during the period 9-12 August involved the building of an adaptor called the McNiff Sleeve, named for its inventor, Captain Tom McNiff. This solution called for placing an adapting sleeve in the bomb's hoisting/charging well, and screwing a standard bomb mounting lug into the sleeve (see Figure 8). The normal MIG sway braces were used to stabilize the bomb. On 19 August, static tests were conducted on the McNiff Sleeve at Bien Hoa Air Base, with excellent results. On 19 September the system was successfully used in combat for the first time, with results that were most encouraging. Unfortunately, by mid-October the Cambodians were short of stock from which to make the sleeves; however, this situation could be easily remedied.
NOTE: INSIDE DIAMETER 1.750" X 12 THREADS PER INCH

HOISTING / CHARGING RECEPTACLE

SUSPENSION RECEPTACLE

SUSPENSION RECEPTACLE

BOMB

FIGURE 8
The McNiff Sleeve
Besides the bomb problem the Cambodians were faced with a shortage of ammunition for the Russian guns on the MIGs. Indonesia seemed to be the only source of the required ammunition, but had little to spare. India had a good supply of the ammunition but was reluctant to sell any. Once again, then, the solution lay in adapting the MIG to U.S. ordnance. In mid-August, the Weapons Force Plans Branch at 7AF investigated the feasibility of replacing the MIG's guns with either two 50-cal. machine guns or one 20 mm. cannon and one 50-cal. gun. Because of space limitations on the MIG, and in view of the Cambodians' greater familiarity with machine guns, it was decided on 21 August to modify the MIGs to accept two 50-cal. guns. The modification was successfully tested on 12 October, and by the end of the month work was in progress to modify most of the Cambodian MIGs.* Unfortunately, the modification program could not proceed as quickly as was hoped, since structural differences between MIGs made it necessary to perform the fabrication for each aircraft individually.

*The Cambodians had decided to hold at least one MIG out of the modification program, as they did have some Russian ammunition which they could use in a last ditch effort.
CHAPTER VII
CONCLUSION

The overall results of USAF efforts in Cambodia during the period July through October can perhaps be best described as inconclusive. Clearly, the use of air power significantly influenced the outcome of several battles, such as those in the vicinity of Kompong Thom and Skon. On the other hand, whether or not air power was applied on a timely basis seems open to question. It has also been shown that 7AF frequently sought relief from restrictions which limited the use of air power. However, the political sensitivity of the campaign and a concern for a "low-profile" posture often meant that military considerations had to yield to the frustrating circumscriptions imposed by Washington. Nevertheless, it was true that several restraints which had impeded the use of tactical air early in July were later relaxed.

Regarding the efforts of the three Southeast Asian air forces, it appears that mutual mistrust hindered their cooperation to some degree. Furthermore, the Cambodian Air Force was so small that its efforts could have only minimum impact. The Thais seemed to be capable of providing significant support, but they did little and would not do more until the U.S. agreed to replenish Thai resources. The Vietnamese provided significant support, in keeping with their abilities and commitments in their own country. Additionally, the VNAF efforts in Cambodia increased as USAF efforts decreased.
Significant advancements were made in the area of communications and control. The use of the Airborne Battlefield Command and Control Center, the proposed Air Operations Coordination Center, the improvement of communications facilities at Phnom Penh, the use of interpreters on aircraft, and the training of Cambodian Forward Air Guides—all were encouraging signs. Unfortunately, the rules of engagement for the Cambodian conflict still seemed to be in need of clarification at the end of the period of this report. Though the necessity for the rules was obvious, in view of the political nature of the conflict, it was apparent that their complexity created difficulties for the personnel in the field.

The Cambodian campaign from July through October emphasized one important fact: Cambodia, to paraphrase one source, could not possibly go it alone or even remain a viable entity without significant American aid for a long time to come. Or, as another put it, the future of Cambodia seemed dim without substantial American assistance. In fact, President Nixon, himself, indicated that, without massive aid from the United States, the Government of Cambodia probably could not survive.
FOOTNOTES

CHAPTER I


2. (TS) Msg, 041029Z Jul 70, Gen Rosson, DEPCOMUSMACV, to Gen Brown, CMDR 7AF.

3. (U) A statement of the general guidelines for our policy in Cambodia was contained in President Nixon's report on the Cambodian operation delivered on 30 Jun 70.


   (TS) Interview, Lt Col Robert H. Riemensnider, Air Attache, U.S. Embassy, Phnom Penh, 3 Nov 70. Hereinafter referred to as Riemensnider Interview.

5. (S) Project CHECO Report, "Air Operations in Northern Laos, 1 Nov 69 - 1 Apr 70", 5 May 70.


CHAPTER II


10. (TS) Ibid.

11. (TS) Ibid., p. xv.

12. (TS) Ibid., p. 52.

13. (TS) Msg, 181005Z Jun 70, COMUSMACV to CINCPAC.

52

(This page is UNCLASSIFIED.)
14. (TS) Msg, 172344Z Jun 70, JCS to CINCPAC.

15. (TS) Msg, 190438Z Jun 70, CINCPAC to CJCS.
   (TS) Msg, 190213Z Jun 70, Adm McCain to Gen Abrams.


17. (TS) Msg, 290959Z Jun 70, COMUSMACV to CMDR 7AF.

18. (TS) Ibid.

19. (TS) Msg, 010935Z Jul 70, 7AF to COMUSMACV.

20. (TS) Msg, 021009Z Jul 70, COMUSMACV to 7AF.

21. (TS) Msg, 021050Z Jul 70, Gen Rosson, DEPCOMUSMACV, to Gen Brown, CMDR 7AF.

22. (TS) Memo for the Record, Subject: Air Strikes in Cambodia, 7AF, 3 Jul 70.

CHAPTER III

23. (C) Msg, 170500Z Aug 70, USDAO, Phnom Penh to DIA.
   (S) Msg, 191352Z Sep 70, USDAO, Phnom Penh to DIA.


26. (S) Weekly Air Intelligence Summaries, 7AF, DIP, Jul-Oct 70.
   (C) Combat Mission Report Logs, 7AF, 1 Jul - 30 Oct 70.
   (C) Summaries of Transport and Helicopter Missions, AFAG, Jul - Oct 70.

27. (TS) Msg, 181043Z Sep 70, CINCPAC to COMUSMACV.


29. (TS) Msg, 280822Z Sep 70, CINCPAC to CJCS.

30. (S) RTAF OPLAN for Employment in Cambodia, 23 Jun 70.


53
33. (S) Memorandum of Agreement on Tactical Air Operations in Cambodia. (Copy at AFAG, Thailand)

34. (S) Interview, Lt Col Herlihy, AFAG, Thailand, Bangkok, 2 Sep 70. Hereinafter referred to as Herlihy Interview. (S) Miller Talking Paper.


37. (S) Interview, Col Henry Aderholt, Chief, USAFAG, Thailand, 3 Sep 70. (S) Ltr, Chief of Staff, RTAF, to Chief, AFGP, Subj: Military Assistance to Cambodia, 18 Jun 70. (S) Ltr, TAFAGOP to Air Chief Marshal Thejotungo, Subj: Military Assistance to Cambodia, 25 Jun 70.

38. (TS) Msg, 111000Z Aug 70, COMUSMACTHAI to CINCPAC. (TS) Msg, 140408Z Aug 70, CINCPAC to COMUSMACTHAI. (TS) Msg, 180630Z Aug 70, COMUSMACTHAI to CINCPAC.

39. (S) Msg, 260447 Aug 70, CINCPACAF to CINCPACAF. (C) Msg, 241840 Sep 70, CINCPAC to CINCPACAF. (S) Msg, 032136 Oct 70, CINCPACAF to several addressees. (S) Msg, 081506 Oct 70, CIVILENGRCG WPAFB to CINCPACAF. (C) Msg, 200755 Oct 70, COMUSMACTHAI to CINCPAC. (C) Msg, 030335 Nov 70, COMUSMACTHAI to CINCPACAF. (C) Msg, 051540 Nov 70, DIR MAT MGT ROBINS AFB to CINCPACAF.

40. (S) SITREP, 230746 Aug 70, USDAO Phnom Penh to DIA.


42. (TS) Galligan Interview.


44. (TS) Msg, unknown date/time group, Gen Abrams to Adm McCain.

CHAPTER IV

45. (U) RAND Report, pp. 2 and 3.

46. (TS) Working Papers, 7AF, undated; Synopsis, Lon Nol Strategy and MACV Position.

47. (TS) Ibid.
48. (TS) 7AF Cambodian Intelligence Briefings, published daily.
(TS) 7AF Cambodian Air Operations Report, published daily.

49. (TS) Ibid.

50. (TS) Msg, 070155Z Jul 70, 7AF to MACV J-2, J-3.

51. (TS) Msg, 081208Z Jul 70, Gen Rosson to Gen Brown.

52. (TS) Working Papers, 7AF, undated.

53. (TS) Msg, 141030Z Jul 70, DEPCOMUSMACV to CMDR 7AF.

54. (TS) Ltr, 7AF to COMUSMACV, 25 Jul 70.

55. (TS) Msg, 071853Z Oct 70, 7AF TACC.

56. (S) Rustic DISUMS for the month of July.

57. (TS) Cambodian Intelligence Briefings, 7AF, published daily.


59. (S) Msg, 251831Z Sep 70, DOD/PRO to CINCPAC.


61. (TS) Msg, 260020Z Jul 70, SECSTATE to AMEMB, Bangkok.
(TS) Msg, 281023Z Jul 70, AMEMB, Bangkok to SECSTATE.
(TS) Msg, 291033Z Jul 70, Gen Rosson to Adm McCain.
(TS) Msg, 010350Z Jul 70, Adm McCain to Gen Rosson.
(TS) Msg, 021020Z Aug 70, Gen Rosson to Adm McCain.

62. (TS) Cambodian intelligence Briefings, 7AF, published daily.

63. (TS) Ibid.

64. (TS) Msg, 150254Z Jul 70, CINCPAC to CJCS.
(TS) Msg, 202315Z Jul 70, 7AF to MACV.
(TS) Msg, 223122Z Jul 70, MACV to 7AF.
(TS) Msg, 240125Z Jul 70, Gen Rosson to Gen Hardin.
(TS) Msg, 250936Z Jul 70, Gen Rosson to Adm McCain.
(TS) Msg, 252254Z Jul 70, Adm McCain to Adm Moorer.
(TS) Msg, 261011Z Jul 70, COMUSMACV to CMDR 7AF.

65. (TS) Msg, 290740Z Jul 70, 7AF to MACV.
(TS) Msg, 300438Z Jul 70, Gen Rosson to Gen Hardin.
(TS) Msg, 041130Z Aug 70, 7AF to DEPCOMUSMACV.
(TS) Msg, 051141Z Aug 70, Gen Rosson to Gen Hardin.
(TS) Msg, 140227Z Aug 70, 7AF to MACV.
(TS) Msg, 141115Z Aug 70, MACV to 7AF.
(TS) Msg, 220430Z Aug 70, 7AF to MACV.
(TS) Msg, 230332Z Aug 70, Gen Abrams to Gen Brown.

66. (TS) Cambodian Intelligence Briefings, 7AF, Aug - Sep 70.

67. (TS) Msg, 211010Z Jul 70, 7AF to MACV.

68. (TS) Msg, 3G2207Z Jul 70, CINCPAC to JCS.
(TS) Msg, 011527Z Aug 70, ACJCS to CINCPAC.

69. (TS) Msg, 211115Z Sep 70, COMUSMACV to CMDR 7AF.

70. (S) Rusty DISUMS; 11, 13, 14, 15, 25, and 29 July 1970.

71. (TS) Cambodian Intelligence Briefings, 7AF, published daily.
(TS) Msg, 061002Z Aug 70, AMEMB Phnom Penh to COMUSMACV.
(TS) Memorandum for the Record from Lt Col Abmann, Subj: Meeting with Mr. Jonathan Ladd, 27 August 1970.

72. (TS) Cambodian Intelligence Briefing, 7AF, 3 Aug 70.

73. (TS) Cambodian Intelligence Briefings, 7AF, 1-10 Aug 70.
(TS) Cambodian Air Operations Reports, 7AF, 1-10 Aug 70.
(TS) Galligan interview.

74. (S) Weekly Air Intelligence Summaries, 7AF, DIP, Jul-Oct 70.

75. (TS) Msg, 121030Z Aug 70, 7AF to MACV J-3.

76. (TS) Msg, 200321Z Aug 70, Gen Abrams to Gen Brown.

77. (TS) Msg, 211100Z Aug 70, Gen Abrams to Adm McCain.

78. (TS) Msg, 230319Z Aug 70, Adm McCain to Gen Ryan.

79. (S) Weekly Air Intelligence Summaries, 7AD, DIP, Jul-Oct 70.

80. (S) Ibid.

(TS) Interview, Lt Col Paul Wagoner, TACC, 12 Oct 70.
82. (TS) Msg, 090344Z Oct 70, Gen Dolvin to Gen Clay.
   (TS) Ltr, 7AF, undated, Subj: Operational Evaluation of Enemy Activity Affecting Operation Chenla.

83. (S) Msg, 010339Z Oct 70, DIA to AIG 7011.

84. (S) Memorandum, 7AF, TACP to TACD, 18 Sep 70.

85. (TS) Msg, 251400Z Aug 70, Adm Moorer to Adm McCain.

86. (TS) Msg, 280341Z Aug 70, CINCPAC to MACV.

87. (TS) Memorandum, 7AF, Lt Col Ahmann to Gen Buckner, 30 Aug 70.
   (TS) Msg, 311142Z Aug 70, Gen Abrams to Adm McCain.


CHAPTER V


90. (TS) Msg, 060255Z Jul 70, 7AF TACC to 3TFW.

91. (TS) Msg, 180320Z Aug 70, 7AF to CINCPACAF.

92. (TS) Msg, 210308Z Aug 70, CINCPACAF to CINCPAC.
   (TS) Msg, 230312Z Aug 70, CINCPAC to COMUSMACV.
   (TS) Msg, 250411Z Aug 70, CINCPAC to JCS.
   (TS) Msg, 271942Z Aug 70, CINCPACAF to 7AF.
   (TS) Msg, 300734Z Aug 70, COMUSMACV to CINCPAC.
   (TS) Msg, 050025Z Sep 70, CINCPAC to COMUSMACV.
   (TS) Msg, 052012Z Sep 70, CJCS to CINCPAC.
   (TS) Interview, Maj James D. Terry, TACP, 6 Oct 70. Hereinafter referred to as Terry Interview.

93. (TS) Msg, 280835Z Sep 70, 7AF TACC to 553 RECONWG.

94. (TS) Msg, 010325Z Oct 70, TACC-A to 7AF TACC.

95. (TS) Msg, 100923Z Oct 70, 7AF to CINCPACAF.

96. (TS) Galligan Interview and Terry Interview.
Galligan Interview.

Interview, Colonel Perry J. Dahl, Director III DASC, 29 Oct 70. Hereinafter referred to as Dahl Interview.

Interview, Lt Col John E. Ryan, Commander of OL-1, Ubon RTAFB, Thailand, 14 Oct 70. Hereinafter referred to as Ryan Interview.

Interview, Lt Col James W. Lester, III DASC Task Force Air Liaison Officer, Bien Hoa AB, 27 Oct 70. Hereinafter referred to as Lester Interview.

Interview with the following FACs at OL-1, 15 Oct 70: Capt Kenneth E. Loar, Capt Paul M. Schlichter.

Interview with Lt Col Tapscott to Gen Clay, 23 Oct 70.

Interview with the following FACs at Bien Hoa AB, 27 Oct 70: Capt Gregory D. Freix, Capt Paul A. Riehl, Capt George Brower, Lt Johnny Engleman, Lt David C. Vandyke. Hereinafter referred to as Rustic FACs Interview.

Working Paper, 7AF, TACC, 2 Oct 70.

Working Paper, 7AF, TACC, undated.

Herlihy Interview.

Msg, 071047Z Sep, COMUSMACV to CINCPAC.

Memo for the Record, Subject: Meeting between Mr. Jonathan Ladd and Lt Col James H. Ahmann, 27 Aug 70.

Msg, 071047Z Sep, COMUSMACV to CINCPAC.

Memorandum, General Galligan to General Buckner, 29 Sep 70.

Ibid.

Form 4, TACC, Subj: Problems Inherent in Finalizing Plans for the Multinational AOCC, 17 Oct 70.

Riemensnider Interview.

Msg, 220056Z Jul 70, SECSTATE to AMEMB, Phnom Penh.

Msg, 221639Z Jul 70, SECSTATE to CINCPAC (Relay of answer from Phnom Penh to 220056Z Jul 70).

Msg, 252256Z Jul 70, Adm McCain to Adm Moorer.

Msg, 070202Z Aug 70, CINCPAC to COMUSMACV.

Ltr, 7AF, DE to DO, Subj: Communications to Cambodia, 8 Aug 70.

Ltr, 7AF, DO to DE, Subj: Communications in Cambodia, 9 Aug 70.

Ltr, 7AF DE to MACV J-6, Subj: Communications in Cambodia, 11 Aug 70.
109. (S) Interview, Maj Donald A. Wiles, 7AF DCOS, Communications Requirements Branch, 13 Nov 70.

110. (TS) Working Paper, 7AF, TACSA, 10 Sep 70.

111. (TS) Dahl Interview.

112. (TS) Memorandum, Lt Col Ahmann to Gen Galligan, undated.


114. (TS) Ryan Interview.
(TS) Lester Interview.
(TS) Rustic FACs Interview.
(TS) Interview with the following FACs at OL-1, 15 and 16 Oct 70: Capt Michael L. Taylor and Capt Paul M. Schlichter.


116. (TS) Galligan Interview.
(TS) Dahl Interview.
(TS) Riemensnyder Interview.

117. (TS) Msg, 200445Z Jun 70, 7AF to All USAF Units in Vietnam and Thailand.
(TS) Memorandum to Gen Galligan, Subj: Urgent Requirement for Personnel, 2 Jul 70.
(TS) Ltr, 7AF, CS to DP, Subj: Urgent Requirement for Personnel, 5 Jul 70.
(TS) Ltr, 7AF, CS to DP, Subj: French Speaking Personnel, 6 Jul 70.
(TS) Ltr, 7AF, TACWFP to DPR, Subj: Additional Personnel, 8 Aug 70.
(TS) Msg, 100700Z Aug 70, 504TASG to 19TASS.
(TS) Msg, 140930Z Aug 70, 7AF to CINCPACAF.
(TS) Interview, Maj Ivan O. Brown, DOPT-C, 5 Nov 70.

118. (TS) Dahl Interview.
(TS) Lester Interview.

119. (TS) Msg, 101919Z Jul 70, Adm Moorer to Adm McCain.
(TS) Msg, 131220Z Jul 70, 7AF to COMUSMACV.
(TS) Msg, 150818Z Jul 70, Gen Rosson to Adm McCain.
(TS) Ryan Interview.
(TS) Galligan Interview.

120. (TS) Minutes of 31 Aug 70 Meeting between Members of the Cambodian Staff and the TACC.

121. (S) Msg, 291130Z Sep 70, 7AF to USDAO, Phnom Penh.

59


CHAPTER VI

125. (S) Herlihy Interview.
   (S) Interview, Col Adelbert L. Gionet, 7AF, DMM, 12 Nov 70.

126. (TS) Msg, 070406Z Jul 70, COMUSMACV to CMDR 7AF.
   (TS) Msg, 140246Z-Jul 70, 7AF to 834AD.
   (TS) Msg, 281141Z Jul 70, Gen Rosson to Gen Davison.
   (TS) Msg, 311000Z Jul 70, 7AF to I DASC.

127. (TS) Msg, 061036Z Aug 70, SECDEF to CINCPAC.


129. (TS) Msg, 010203Z Aug 70, Gen Seith to Gen Rosson.

130. (C) Msg, 061600Z Aug 70, Foreign Technology Division (FTD) WPAFB to DET 6 ASD Tan Son Nhut.
   (S) Interview, Capt Tom McNiff, 7AF, TACWFP, 27 Aug 70.

131. (S) Form 4, 7AF, DOBP to VC and DO, Subj: Adapting U.S. Bombs to MIG-17 Shackles, 18 Aug 70.
   (S) Form 4, 7AF, DOBP to VC and DO, same subject, 27 Aug 70.
   (S) Interview, Capt Tom McNiff Interview.
   (S) Interview, Capt Tom McNiff, 7AF, DOBP, 19 Oct 70. Hernanfer


133. (S) McNiff Interview.
   (TS) Riemensnider Interview.

CHAPTER VII

134. (TS) Dahl Interview.

135. (TS) Galligan Interview.

60
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCCC</td>
<td>Airborne Battlefield Command and Control Center</td>
</tr>
<tr>
<td>AFM</td>
<td>Air Force Manual</td>
</tr>
<tr>
<td>AOCC</td>
<td>Air Operations Coordination Center</td>
</tr>
<tr>
<td>ARVN</td>
<td>Army of the Republic of Vietnam</td>
</tr>
<tr>
<td>ASD</td>
<td>Aerospace Systems Division</td>
</tr>
<tr>
<td>CAF</td>
<td>Cambodian Air Force</td>
</tr>
<tr>
<td>COMUSMACV</td>
<td>Commander, U.S. Military Assistance Command, Vietnam</td>
</tr>
<tr>
<td>DASC</td>
<td>Direct Air Support Center</td>
</tr>
<tr>
<td>DAST</td>
<td>Direct Air Support Team</td>
</tr>
<tr>
<td>DISUM</td>
<td>Daily Intelligence Summary</td>
</tr>
<tr>
<td>FAC</td>
<td>Forward Air Controller</td>
</tr>
<tr>
<td>FANK</td>
<td>Force Armee National Khmer</td>
</tr>
<tr>
<td>FREEDOM ACTION</td>
<td>The 10-day expanded Cambodia-wide interdiction program of 20-30 June 1970.</td>
</tr>
<tr>
<td>FREEDOM DEAL</td>
<td>The area in northeastern Cambodia, east of the Mekong River.</td>
</tr>
<tr>
<td>FTD</td>
<td>Foreign Technology Division (located at Wright-Patterson AFB as a subordinate command of the Aerospace Systems Division).</td>
</tr>
<tr>
<td>GOC</td>
<td>Government of Cambodia</td>
</tr>
<tr>
<td>JCS</td>
<td>Joint Chiefs of Staff</td>
</tr>
<tr>
<td>JGS</td>
<td>Joint General Staff</td>
</tr>
<tr>
<td>LOC</td>
<td>Line of Communications</td>
</tr>
<tr>
<td>MACV</td>
<td>Military Assistance Command, Vietnam</td>
</tr>
<tr>
<td>NVA</td>
<td>North Vietnamese Army</td>
</tr>
<tr>
<td>ROE</td>
<td>Rules of Engagement</td>
</tr>
<tr>
<td>RTAF</td>
<td>Royal Thai Air Force</td>
</tr>
<tr>
<td>RTAFB</td>
<td>Royal Thai Air Force Base</td>
</tr>
<tr>
<td>RVN</td>
<td>Republic of Vietnam</td>
</tr>
<tr>
<td>SAR</td>
<td>Search and Rescue</td>
</tr>
<tr>
<td>SEA</td>
<td>Southeast Asia</td>
</tr>
<tr>
<td>STEEL TIGER</td>
<td>Southern Laos</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>TACC</td>
<td>Tactical Air Control Center</td>
</tr>
<tr>
<td>TACC-A</td>
<td>Tactical Air Control Center, Airborne</td>
</tr>
<tr>
<td>TACS</td>
<td>Tactical Air Control System</td>
</tr>
<tr>
<td>TIC</td>
<td>Troops in Contact</td>
</tr>
<tr>
<td>VC</td>
<td>Viet Cong</td>
</tr>
<tr>
<td>VNAF</td>
<td>Vietnamese Air Force</td>
</tr>
<tr>
<td>VR</td>
<td>Visual Reconnaissance</td>
</tr>
</tbody>
</table>