

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
The public reporting burden for this 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 the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 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 any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Department of the Air Force Headquarters Pacific Air Forces, CHECO Division Hickam AFB, HI				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT A -- Approved for Public Release					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT Project CHECO was established in 1962 to document and analyze air operations in Southeast Asia. Over the years the meaning of the acronym changed several times to reflect the escalation of operations: Current Historical Evaluation of Counterinsurgency Operations, Contemporary Historical Evaluation of Combat Operations and Contemporary Historical Examination of Current Operations. Project CHECO and other U. S. Air Force Historical study programs provided the Air Force with timely and lasting corporate insights into operational, conceptual and doctrinal lessons from the war in SEA.					
15. SUBJECT TERMS CHECO reports, Vietnam War, War in Southeast Asia, Vietnam War- Aerial Operations, American					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (Include area code)

~~SECRET~~
~~AIR FORCE EYES ONLY~~

K717.0413-111
15 Aug 69 cy 1

DECLASSIFIED BY AF/HOH
IAW E.O. 12958 (AMENDED)
DATE: 20080718
APPROVED FOR
PUBLIC RELEASE

PROJECT CHECO SOUTHEAST ASIA REPORT

GROUP 1
Excluded from automatic downgrading
and declassification.

20080910348

K717.0413-19
1969 c. 2

~~AIR FORCE EYES ONLY~~

DOTEC-69-48
SHO-S-69-301(1)

SECRET
AIR FORCE EYES ONLY
PROJECT

Contemporary

Historical

Examination of

Current

Operations

REPORT

SHORT ROUNDS

JUNE 1968 - MAY 1969

15 AUGUST 1969

HQ PACAF

Directorate, Tactical Evaluation

CHECO Division

Prepared by:

MAJ J. D. SCHLATTER

Project CHECO 7th AF, DOAC

K717.0413-19
1969

SECRET
AIR FORCE EYES ONLY
DOTEC 69 48

UNCLASSIFIED

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.



MILTON B. ADAMS, Major General, USAF
Chief of Staff

UNCLASSIFIED

~~SECRET~~
~~AIR FORCE EYES ONLY~~
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
APO SAN FRANCISCO 96553



REPLY TO
ATTN OF:

DOTEC

15 August 1969

SUBJECT

Project CHECO Report, "Short Rounds, June 1968-May 1969" (U)

TO

SEE DISTRIBUTION PAGE

1. Attached is a SECRET document. It shall be transported, stored, safeguarded, and accounted for in accordance with applicable security directives. Each page is marked according to its contents. Retain or destroy in accordance with AFR 205-1. Do not return.

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

FOR THE COMMANDER IN CHIEF

Warren H. Peterson
WARREN H. PETERSON, Colonel, USAF
Chief, CHECO Division
Directorate, Tactical Evaluation
DCS/Operations

1 Atch
Proj CHECO Rprt (S/AFE0),
15 Aug 69

UNCLASSIFIED

DISTRIBUTION LIST

1. SECRETARY OF THE AIR FORCE

- a. SAFAA 1
- b. SAFLL 1
- c. SAFOI 2

2. HEADQUARTERS USAF

- a. AFBSA 1
- b. AFCCS
 - (1) AFCCSSA 1
 - (2) AFCVC 1
 - (3) AFCAV 1
 - (4) AFCHO 2
- c. AFCSA
 - (1) AFCSAG 1
 - (2) AFCSAMI 1
- d. AFGOA 2
- e. AFIGO
 - (1) AFISI 3
 - (2) AFISP 1
- f. AFMSG 1
- g. AFNIN
 - (1) AFNIE 1
 - (2) AFNINA 1
 - (3) AFNINCC 1
 - (4) AFNINED 4
- h. AFAAC 1
 - (1) AFAMAI 1
- i. AFODC 1
 - (1) AFOAP 1
 - (2) AFOAPS 1
 - (3) AFOCC 1

- (4) AFOCE 1
- (5) AFOMO 1

- j. AFPDC
 - (1) AFPDPSS 1
 - (2) AFPMDG 1
 - (3) AFPDW 1

- k. AFRDC 1
 - (1) AFRDD 1
 - (2) AFRDQ 1
 - (3) AFRDR 1
 - (4) AFRDF 1

- l. AFSDC
 - (1) AFSLP 1
 - (2) AFSME 1
 - (3) AFSMS 1
 - (4) AFSPD 1
 - (5) AFSSS 1
 - (6) AFSTP 1

- m. AFTAC 1

- n. AFXDC
 - (1) AFXDO 1
 - (2) AFXDOC 1
 - (3) AFXDOD 1
 - (4) AFXDOL 1
 - (5) AFXOP 1
 - (6) AFXOSL 1
 - (7) AFXOSN 1
 - (8) AFXOSO 1
 - (9) AFXOSS 1
 - (10) AFXOSV 1
 - (11) AFXOTR 1
 - (12) AFXOTW 1
 - (13) AFXOTZ 1
 - (14) AFXOXY 1
 - (15) AFXPDP 6
 - (a) AFXPPGS 3

UNCLASSIFIED

3. MAJOR COMMANDS

a. TAC

(1) HEADQUARTERS

(a) DO.	1
(b) DPL.	2
(c) DOCC.	1
(d) DORQ.	1
(e) DIO.	1

(2) AIR FORCES

(a) 12AF	
1. DORF.	1
2. DI.	1
(b) T9AF(DI).	1
(c) USAFSOF(DO).	1

(3) AIR DIVISIONS

(a) 831AD(DO).	1
(b) 832AD(DO).	2
(c) 833AD(DDO).	1
(d) 835AD(DO).	1
(e) 836AD(DO).	2
(f) 838AD	
1. DO.	1
(g) 839AD(DO).	2

(4) WINGS

(a) 1SOW(DO).	1
(b) 4TFW(DO).	1
(c) 23TFW(DOI).	1
(d) 27TFW(DOP).	1
(e) 33TFW(DOI).	1
(f) 64TFW(DO).	1
(g) 67TRW(C).	1
(h) 75TRW(DO).	1
(i) 316TAW(DOP).	1
(j) 317TAW(EX).	1
(k) 363TRW(DOC).	1
(l) 464TAW(DO).	1
(m) 474TFW(TFOX).	1
(n) 479TFW(DOF).	1
(o) 516TAW(DOPL).	1
(p) 441OCCTW(DOTR).	1
(q) 451OCCTW(DO16-I).	1
(r) 4554CCTW(DOI).	1

(5) TAC CENTERS, SCHOOLS

(a) USAFTAWC(DA).	2
(b) USAFTARC(DID).	2
(c) USAFTALC(DCRL).	1
(d) USAFTFWC(CRCD).	1
(e) USAFSOC(DO).	1
(f) USAFAGOS(DAB-C).	1

b. SAC

(1) HEADQUARTERS

(a) DOPL.	1
(b) DPLF.	1
(c) DM.	1
(d) DI.	1
(e) OA.	1
(f) HI.	1

(2) AIR FORCES

(a) 2AF(DICS).	1
(b) 8AF(C).	1
(c) 15AF(DOA).	1

(3) AIR DIVISIONS

(a) 3AD(DO).	3
--------------	---

c. MAC

(1) HEADQUARTERS

(a) MAOID.	1
(b) MAOCO.	1
(c) MAFOI.	1
(d) MACOA.	1

(2) AIR FORCES

(a) 21AF(OCXI).	1
(b) 22AF(OCXI).	1

(3) AIR DIVISIONS

(a) 322AD(DO).	1
----------------	---

(4) WINGS

(a) 61MAWg	
1. OIN.	1
(b) 62MAWg(OCXP).	1
(c) 436MAWg(OCXC).	1

UNCLASSIFIED

(d) 437MAWg(OCXI) 2
(e) 438MAWg(OCXC) 1
(f) 445MAWg
1. OC 1
2. WDO-PLI 1

(5) MAC SERVICES
(a) AWS(AWXW) 1
(b) ARRS(ARXLR) 1
(c) ACGS(AGOV) 1
(d) AAVS(AVODOD) 1

d. ADC

(1) HEADQUARTERS
(a) ADODC 1
(b) ADOOP 1
(c) ADLCC 1

(2) AIR FORCES
(a) 1AF(DO) 1
(b) 10AF
1. ODC 1
2. PDP-P 1
(c) AF ICELAND(FICAS) . . 2

(3) AIR DIVISIONS
(a) 25AD(ODC) 2
(b) 29AD(ODC) 1
(c) 31AD(CCR) 2
(d) 33AD(OIN) 1
(e) 34AD(OIN) 2
(f) 35AD(CCR) 1
(g) 37AD(ODC) 1

e. ATC

(1) HEADQUARTERS
(a) ATXDC 1

f. AFLC

(1) HEADQUARTERS
(a) MCVSS 1
(b) MCOO 1

g. AFSC

(1) HEADQUARTERS
(a) SCLAP 3
(b) SCS-6 1
(c) SCGCH 2
(d) SCTPL 1
(e) ASD/ASJT 1
(f) ESD/ESO 1
(g) RADC/EMOEL 2
(h) ADTC/ADGT 1

h. USAFSS

(1) HEADQUARTERS
(a) ODC 1
(b) CHO 1

(2) SUBORDINATE UNITS
(a) Eur Scty Rgn(OPD-P) . . 1
(b) 6940 Scty Wg(OOD) . . . 1

i. AAC

(1) HEADQUARTERS
(a) ALDOC-A 2

j. USAFSO

(1) HEADQUARTERS
(a) COH 1

k. PACAF

(1) HEADQUARTERS
(a) DP 1
(b) DI 1
(c) DPL 4
(d) CSH 1
(e) DOTECH 5
(f) DE 1
(g) DM 1
(h) DOTECH 1

UNCLASSIFIED

- (2) AIR FORCES
- (a) 5AF(DOPP) 1
 - 1. Det 8, ASD(DOASD) 1
 - (b) 7AF
 - 1. DO 1
 - 2. DIXA 1
 - 3. DPL 1
 - 4. TACC 1
 - 5. DOAC 2
 - (c) 13AF
 - 1. CSH 1
 - 2. DPL 1
 - (d) 7AF/13AF(CHECO) 1

- (3) AIR DIVISIONS
- (a) 313AD(DOI) 1
 - (b) 314AD(DOP) 2
 - (c) 327AD
 - 1. DO 1
 - 2. DI 1
 - (d) 834AD(DO) 2

- (4) WINGS
- (a) 8TFW(DCOA) 1
 - (b) 12TFW(DCOI) 1
 - (c) 35TFW(DCOI) 1
 - (d) 37TFW(DCOI) 1
 - (e) 56SOW(DXI) 1
 - (f) 347TFW(DCOOT) 1
 - (g) 355TFW(DCOC) 1
 - (h) 366TFW(DCO) 1
 - (i) 388TFW(DCO) 1
 - (j) 405FW(DCOA) 1
 - (k) 432TRW(DCOI) 1
 - (l) 460TRW(DCOI) 1
 - (m) 475TFW(DCO) 1
 - (n) 633SOW(DCOI) 1
 - (o) 6400 Test Sq(A) 1

- (5) OTHER UNITS
- (a) Task Force Alpha(DXI) 1
 - (b) 504TASG(DO) 1

- m. USAF
- (1) HEADQUARTERS
- (a) ODC/OA 1
 - (b) ODC/OTA 1
 - (c) OOT 1
 - (d) XDC 1

- (2) AIR FORCES
- (a) 3AF(ODC) 2
 - (b) 16AF(ODC) 2
 - (c) 17AF
 - 1. ODC 1
 - 2. OID 1

- (3) WINGS
- (a) 20TFW(CACC) 1
 - (b) 36TFW(DCOID) 1
 - (c) 50TFW(DCO) 1
 - (d) 66TRW(DCOIN-T) 1
 - (e) 81TFW(DCO) 1
 - (f) 401TFW(DCOI) 1
 - (g) 513TAW(OID) 1
 - (h) 7101ABW(DCO-CP) 1
 - (i) 7149TFW(DCOI) 1

4. SEPARATE OPERATING AGENCIES

- a. ACIC(ACOMC) 2
- b. ARPC(RPCAS-22) 2
- c. AFRES(AFRXPL) 2
- d. USAFA
 - (1) CMT 1
 - (2) DFH 1
- e. AU
 - (1) ACSC-SA 1
 - (2) AUL(SE)-69-108 2
 - (3) ASI(ASD-1) 1
 - (4) ASI(ASHAF-A) 2

SECRET

TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	ix
CHAPTER I - RATES AND TRENDS	1
CHAPTER II - CAUSES AND PROBLEMS	6
CHAPTER III - ATTEMPTS AT PREVENTION	12
CHAPTER IV - LESSONS LEARNED	22
Confusion Near A Shau Valley	22
Stores Release Systems	24
ARC LIGHT Incidents	26
Inexperience Near Song Be	28
False Alarm - Blame to Praise	29
Reluctance to Report	30
"Near" Short Rounds	31
CHAPTER V - REPORTING SHORT ROUNDS	33
In-Country Incidents	33
Out-Country Incidents	35
CHAPTER VI - SUMMATION	38
FOOTNOTES	
Foreword	40
Chapter I	40
Chapter II	41
Chapter III	42
Chapter IV	42
Chapter V	44
Chapter VI	45
APPENDIX I - Chronological List of Short Rounds, Jun 68-Jun 69	46
GLOSSARY	49
FIGURES	<u>Follows Page</u>
1. Short Round, Ha Nong Tay, 12 Jul 68	10
2. TIC Short Round - A Shau Valley, 10 Aug 68	22
3. Appearance of Target Area to Elect 51 on Firing	22
4. Tan Hiep Short Round, 5 Jul 68	24
5. ARC LIGHT Short Round, 30 Jan 69	26

SECRET

FOREWORD

In the parlance of artillerymen, a "Short Round" is a shell that falls short of the enemy and inflicts casualties on friendly troops. The expression is so starkly descriptive and brief that it has come to be used as a convenient label for most incidents wherein friendly ordnance causes friendly casualties. This report is concerned with air-delivered Short Rounds--specifically, those involving the fixed-wing aircraft under operational control of the Seventh Air Force Tactical Air Control Center (TACC).

This third CHECO report on "Short Rounds" covers occurrences from June 1968 through May 1969. It emphasizes rates and trends, interesting corollaries, lessons learned, and recent attempts to eliminate Short Rounds. This study also examines several Short Round incidents to illustrate some of the problems encountered by ground commanders, forward air controllers (FACs), and strike aircraft commanders in their joint efforts to conduct close air support.

Ground and air commanders at all levels are deeply concerned about the tragic results of Short Round incidents, and strenuous efforts have been made to reduce the probability of such occurrences. To have achieved absolute immunity from Short Rounds, the ground forces would have had to sacrifice the benefits of air support whenever they were closely engaged with the enemy. These were hard choices to make, but nearly all of the situations dictated accepting the risk of Short Rounds to diminish the certain lethality of hostile fire. As the Chief, Current Plans, 7AF TACC said: ^{1/}

SECRET

SECRET

"Previous communications between 7AF Comdr...and COMUSMACV (Commander, US Military Assistance Command, Vietnam) reveal that the seriousness of Short Rounds is well recognized, and that the goal is zero; however, the risk that it will not be zero is there, and is understood."

SECRET

SECRET

CHAPTER I

RATES AND TRENDS

Early in 1968, 7AF records showed that there had been an average of about two Short Rounds per month over the three preceding years: 27 Short Rounds in 1965, 23 in 1966, and 27 in 1967.^{1/} However, between 4 January 1968 and 3 February 1968, there had been seven Short Rounds--far above the normal monthly average.^{2/} "If this trend continues," noted a 7AF letter, "1968 will far exceed both 1966 and 1967 in both the number of Short Round incidents and the number of friendly casualties."^{3/} Unfortunately, the trend did continue. Nineteen incidents were recorded during the first six months of 1968,^{4/} and in the last six months, 22 more were added, for an average of 3.4 per month for the year.

This rising trend was reversed in the first half of 1969. By the end of June, USAF had experienced 11 Short Rounds for an average of 1.8 per month. How dramatic this reduction was can be seen by comparing the number of Short Rounds with the number of sorties flown:^{5/}

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969 (Jan-Jun)</u>
USAF STRIKE SORTIES	102,281	116,700	144,998	68,788
NUMBER OF SHORT ROUNDS	23	27	41	11
RATE PER 10,000 SORTIES	2.24	2.31	2.82	1.59

Between 1967 and early 1969, the percentage of incidents caused by fixed-wing aircraft controlled by COMUSMACV was the lowest of all types of fire. According to the COMUSMACV publication, "Friendly Casualties Resulting

SECRET

from Supporting Fires", in 1967 fixed-wing aircraft were responsible for 58 of 650 incidents (8.9%). These incidents accounted for 28.8 percent of the deaths and 24.4 percent of the injuries. Throughout 1968 and the first quarter of 1969, air-delivered ordnance continued to constitute the smallest share of the total number of Short Round incidents and a more pronounced percentage of friendly casualties: ^{6/}

<u>QTR/1968</u>	<u>INCIDENTS/%</u>	<u>DEATHS/%</u>	<u>INJURIES/%</u>
1	16/22.3	103/58.2	228/44.1
2	12/19.7	36/31.6	202/46.0
3	17/14.4	39/13.4	178/17.9
4	5/5.0	41/23.0	103/15.0

<u>QTR/1969</u>	<u>INCIDENTS/%</u>	<u>DEATHS/%</u>	<u>INJURIES/%</u>
1	7/10.0	30/22.0	34/7.0

These statistics include figures for all fixed-wing aircraft controlled by COMUSMACV. The USAF flew 61.4 percent of these missions, USN and USMC 31.8 percent, and the VNAF 6.8 percent. ^{7/} Thus all of these incidents listed under "Fixed-Wing" were not attributable to USAF.

When the Short Round rate per month is considered in light of the number of attack sorties flown in SEA per month, some rather well defined points emerge. Compiled by the Directorate of Tactical Evaluation, DCS/Operations, Hq PACAF, the following statistics indicate SEA Short Round incidents reported monthly as well as the number of attack aircraft sorties flown: ^{8/}

SECRET

SECRET

<u>MONTH/YEAR</u>	<u>SORTIES</u>	<u>SHORT ROUNDS</u>
June 1968	24,058	1
July 1968	22,195	4
Aug 1968	23,293	9
Sep 1968	21,684	5
Oct 1968	20,607	2
Nov 1968	29,322	1
Dec 1968	32,814	1
Jan 1969	30,593	2
Feb 1969	27,729	1
Mar 1969	30,963	3
Apr 1969	30,332	2
May 1969	30,351	3

The number of Short Rounds did not increase proportionately with an increase in the number of sorties. More significant is the variation in the number of incidents by month: the sudden surge from one in June to four in July, with the peak of nine reached in August, followed by the slide to five in September, and a drop to two in October. Then stability was realized through May. This seasonal trend had often been noted. Lt. Colonel Sneed, TACC, warned that July, August, and September have traditionally been busy months for Short Rounds, and that all aircrews should be aware of this important point.^{9/} In January 1969, a memorandum from Weapons Force Plans stated:^{10/}

"A breakout by quarter reveals that the third quarter of each year had consistently produced the greatest number of short rounds:

<u>YEAR</u>	<u>1st QTR</u>	<u>2d QTR</u>	<u>3d QTR</u>	<u>4th QTR</u>
1966	6	4	8	5
1967	5	7	9	6
1968	9	4	14	3

"This may indicate the need for increased command emphasis early in June to remind all concerned of the

SECRET

[REDACTED]

factors involved in Short Rounds and the need for extreme caution."

COMUSMACV noted an upward trend in the total number of friendly casualties at the end of the third quarter of 1968.^{11/} The number of incidents doubled from the second quarter of 1968 (61) to the third quarter of 1968 (118); deaths more than doubled (114-290); and the number of wounded doubled as well (439-979). Maj. Gen. Charles A. Corcoran, MACV Chief of Staff, dispatched a message which said:^{12/}

"Every category of incident showed a substantial increase. The most dramatic increase was in accidental discharge of weapons and friendly ambushes. Incidents in this category rose from 11 to 29. Commanders will take appropriate action to bring about an immediate trend reversal."

At the end of the fourth quarter of 1968, General Corcoran informed all units that total deaths were down 38 percent from the third quarter, but the total number of incidents was not reduced significantly, and that continued attention was still required.^{13/} As was seen earlier, the 7AF-caused incidents were reduced significantly from the third quarter (14) to the fourth quarter (3). This prompted Gen. George S. Brown, Commander, 7AF, to say:^{14/}

"I enjoin all concerned to maintain a high degree of vigilance for any factors that may cause or contribute to a Short Round incident. Through the continued efforts of commanders, supervisors, strike pilots, and FACs, I am looking forward to a further reduction of the Short Round rate in 1969."

The reason for this annual rise in Short Rounds had been the subject of much speculation. On the one hand, it was suggested that the large turnover

[REDACTED]

of personnel during the first months of the fiscal year resulted in a lack of experience on the part of aircrew members. But there was little evidence to support this suggestion. A representative sampling showed the following statistics for FACs and strike pilots who were involved in Short Rounds: ^{15/}

	<u>FACs</u>	<u>STRIKE PILOTS</u>
TOTAL FLYING TIME	1,731 hrs	2,000 hrs (approx)
FLYING TIME IN MISSION AIRCRAFT	206 hrs	390 hrs
NUMBER OF MISSIONS	74	70
TIME IN COUNTRY	3.8 months	7 months

It was also suggested that weather conditions could account for the third quarter rise. However, there is no indication that weather was more responsible than other factors. (Appendix I.) The real reasons remained unclear but, whatever the causes, General Brown had taken steps to insure that all personnel increased their vigilance in this area.

SECRET

CHAPTER II
CAUSES AND PROBLEMS

Irrespective of the amount of time, effort, and attention that was paid to the prevention of Short Rounds over the years, the general causes remained the same. To be sure, there were isolated instances wherein one specific piece of equipment malfunctioned, or one specific individual did something completely wrong, but by and large, the stage was set for a Short Round by a combination of actions which when taken separately were insignificant, but which collectively spelled tragedy.

The Short Round Project Officers for 7AF indicated that causes of incidents generally were multiple.^{1/} To be more specific and to come closer to isolating the causes, Lt. Col. Forrest E. Kissinger, the Project Officer, noted that any person, or all of four, could make a mistake; namely, the ground commander, the FAC, the strike pilot, and the communicator who passed along target coordinates.^{2/}

The ground commander had to know the precise location of all his elements and that of other friendlies. If one platoon or one squad moved at any time after the FAC marked the target, the ground commander had to know this and pass the specific information to the FAC. The ground commander had some real problems in keeping informed in the dense jungle. He had to remain in constant communication with the FAC.

The FAC was the master of ceremonies in a close air support (CAS) strike with troops in contact. If he mismarked the target, he had to correct it.

SECRET

If he were not certain of the precise location of all friendly forces--combatant and noncombatant--in the strike area, he could be responsible for a Short Round. The FAC had to be in constant communication with the strike pilot, so that he could judge the run-in and announce loud and clear either "Don't drop! Take it through dry", or "Nimrod 26, clear to fire!" He had constantly to evaluate all aspects of the situation from what he saw on the ground and in the air, what he heard from the ground and the air, and what he knew from his FAC training on the ground and in the air. If any part of this performance were less than perfect, he could contribute to a Short Round.

The strike pilot took his orders from the FAC and the two had to remain in voice contact at the critical times before, during, and after a strike. He had to be capable of making the aircraft respond instantly to the FAC's directions and of changing plans on a moment's notice. The strike pilot had to accommodate to a series of factors such as poor visibility, bingo fuel, concern for a Short Round, or enthusiasm to destroy the target. He had many chances to deliver a less than perfect round, yet one was all that was needed to produce a Short Round.

The communicators were the integral middlemen in any operation, but especially so in a Short Round prevention team. Clear, precise, meaningful communication between personnel in the tactical air control system on the ground and in the air was critical. Nonprofessionals could transmit grid coordinates incorrectly, mumble on the radio, say one word and mean another. The communicators had to insure that their equipment was in perfect condition,

SECRET

since they knew the friendly forces depended upon them and their team of Short Round preventers.

A review of the authenticated Short Rounds for the period June 1968 - May 1969 revealed the primary and contributory causes were not new. The most common cause during this period was the wrong target being hit as a result of pilot error--nine cases. Other primary and contributory causes were:

<u>CAUSE</u>	<u>FREQUENCY</u>
Troop location unknown	8
Weapons system malfunction	6
Wrong target hit due to ground personnel error	4
Poor communication	3
Change in the ground situation	2
Inaccurate marking	1

Categorizing of causes in this manner, however, does not tell the full story, since in virtually all Short Rounds, a combination of factors come in to play. Examination of some incidents in detail confirms this evidence.

On 25 March 1969, FAC Raven 51 was controlling a four-ship flight of F-100s, Call Sign Litter, carrying CBU-42 WAAPM.^{3/} The mission was to seed the defensive perimeter of Thateng garrison. It was 1715 hours local, the weather condition was scattered with some haze, the visibility was good in all directions, except the western edge of the target area where it was two-three miles, since the sun was setting over a mountain ridge. Each flight had a ground briefing on the target area and had been assigned one leg of the area to be seeded, and each pilot knew his run-in heading. Number 1 completed his leg perfectly. Number 2 had the south leg running east to west because of the mountain. This meant heading toward the sun, and a one-fourth to one-half

[REDACTED]

mile shadow from the mountain made it necessary for him to pull up after the drop. Raven 51 asked him to make a dry pass, but Number 2 said he made one while Number 1 was working. Raven warned him to be careful of the terrain to the west, and he marked the starting point for the run. Then he tried to position himself, so he could warn Number 2 to pull up to miss the mountain. As Number 2 rolled out on the final, he seemed in a good position, and Raven 51 cleared him in. After positioning himself, the FAC lost sight of the strike aircraft, because of its low altitude for delivery, and the fact that the aircraft blended with the ground. To get a better look, the FAC stuck his head out of the window of his O-1. The wind blew off his sunglasses. As he reached for his glasses his headset was knocked loose. At that moment, he saw Number 2 start his drop on an improper heading and, while grabbing for his mike, saw the drop cross the northeastern edge of the garrison. Four friendlies were killed, six wounded, and the water access route to the garrison was seeded. Several factors had combined to cause a Short Round.

On 12 July 1968, two F-100s (Elect 21 and 22) from the 416th Tactical Fighter Squadron (TFS) were supporting Army of Republic of Vietnam (ARVN) troops from the 51st Infantry Regiment near Ha Nong Tay (coordinates BT004594 - Fig. 1).^{4/} The two aircraft had expended their M-117 bombs at a preplanned target and were diverted to this target to use their 20-mm for the troops in contact (TIC). Upon arrival in the area, they contacted Lopez 54, a USAF FAC. The target was briefed as the Viet Cong (VC) in huts, and the friendlies' locations were given in distance and direction from the target. The target was marked with a white phosphorous marking rocket. Both aircraft made good

[REDACTED]

first passes, and the lead's second pass was also on target, which was on fire. About the same time, some ARVN troops set fire to another hut about one kilometer northwest of the target.

The weather condition was 5,000 feet scattered, the visibility was ten miles, but a small cloud hung over the target when the strike aircraft were on downwind. While on the base leg, Elect 22 announced, "Elect 22 in on the white smoke." The FAC replied, "That's the target." Afterward, it was not determined whether the FAC absolutely cleared Elect 22 for this final pass, but Elect 22 clearly and admittedly used the wrong burning hut as the target. The FAC did not realize that there was a second burning hut, but if he had seen Elect 22 line up for his last pass, he would have known something was wrong and would have called off the fighter. As a result of this incident, three ARVN were killed and eleven were wounded.

A similar Short Round occurred three weeks later at 1425 hours on 2 August 1968.^{5/} Two F-100s from the 355th TFS were on a preplanned mission carrying MK-82 low drag bombs and 20-mm ordnance. They had made visual contact with the FAC, received their briefing, and were assigned an attack heading of 360° with a left pattern. There were friendlies 2,500 meters east-northeast of the target and the pilots had been briefed of their existence. The FAC marked the target with two 2.75 WP rockets and these were seen and confirmed by both fighter pilots. Lead made three perfect passes with three bombs on target; Number 2 did likewise. After receiving clearance, lead strafed. At this moment, the ground situation changed significantly as the friendlies detonated some bangalore torpedoes and a trip flare about 1,700 meters south-

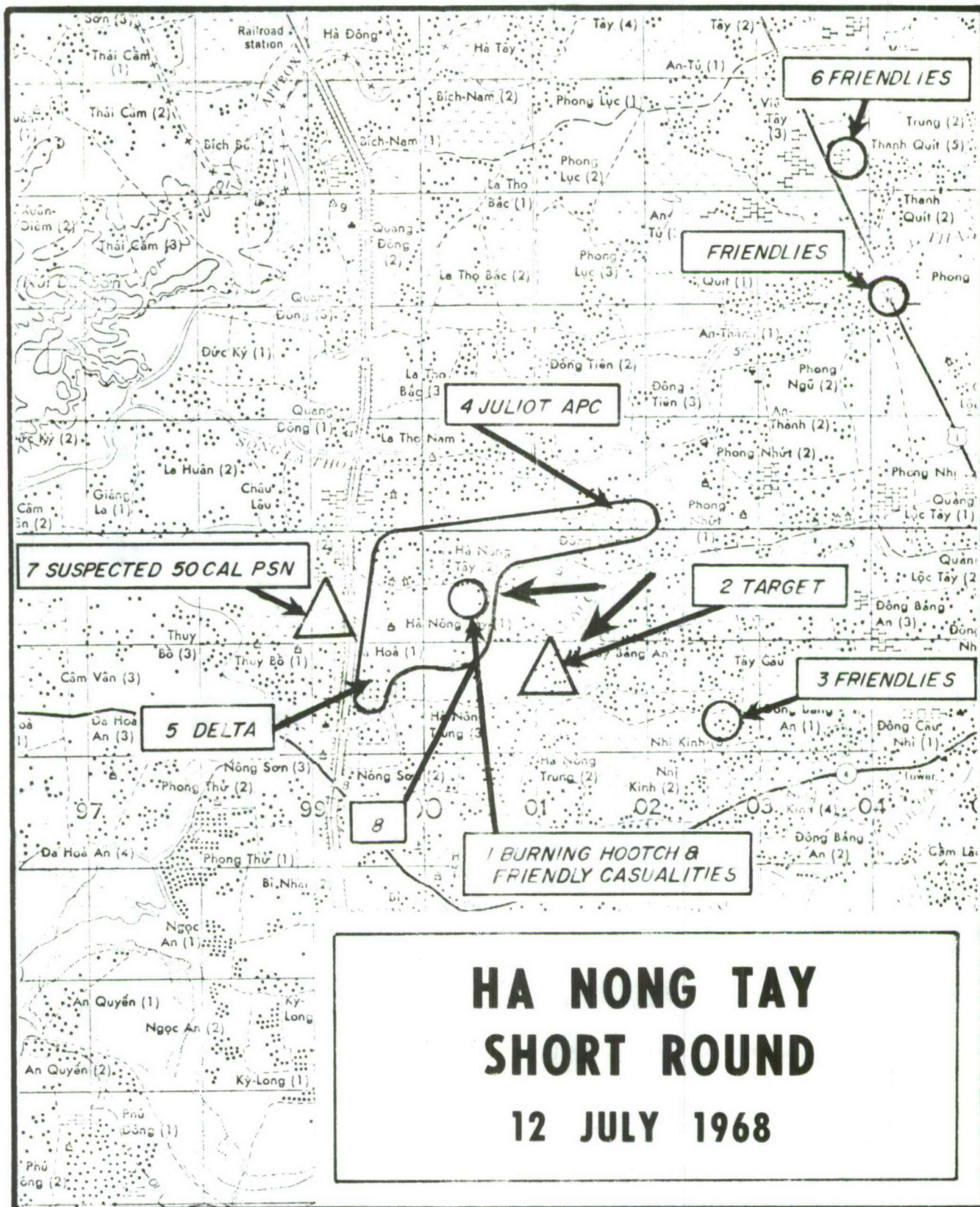


FIGURE I

[REDACTED]

southeast of the target. This created dust and smoke which resembled the dust and smoke from the target. As the lead rolled in, he was cleared by the FAC, and his 20-mm wounded ten U.S. Army troops. At the critical moment, there was also a break in communication between the FAC and fighter pilot. The strike pilot did not receive a positive clearance, and he should have gone through dry. Even though the FAC had just controlled six perfect passes minutes earlier, he should have had this strike aircraft in sight on final to be certain it was aligned on the target.

These three incidents have been explored in some detail to illustrate the complexity of the factors involved in the creation of a Short Round. For the purpose of study, analysis, and future prevention of Short Rounds, it is necessary to isolate causes. However, this brings with it a danger of oversimplification. An isolated cause appears to be an obvious mistake which no conscientious FAC, strike pilot, or ground commander would make. In the final analysis, lessons can be learned only from a reading of the details which surround each Short Round incident.

[REDACTED]

CHAPTER III

ATTEMPTS AT PREVENTION

Everyone having an official connection with Short Rounds and their prevention was keenly aware of the motto of USAF Chief of Staff, Gen. John P. McConnell: "When in doubt, don't deliver!"^{1/} In theory, this rule should have eliminated all Short Rounds. The key word in the rule was "doubt"; however, seldom was there any doubt in the minds of those involved in Short Rounds. Consequently, Short Rounds continued to occur. Each incident was investigated in accordance with 7AF regulations. Attempts were made to determine as accurately as possible the cause of each incident. In each case, the appropriate staff agency dispatched a message to each DASC, TASS, TFW, TRW, and SOW, explaining the incident and what action should be taken to prevent its reoccurrence.

In addition, COMUSMACV, the Commander 7AF, and subordinate unit commanders took independent actions to prevent Short Rounds. At a 7AF Director of Operations staff meeting on 11 April 1968, it was decided that the CHECO "Short Round" reports should be made available to all combat wings and squadrons in SEA. The first report, covering the period January 1965 - June 1967, was reprinted and distributed throughout the theater by PACAF.^{2/} Prior to publication of the second CHECO "Short Round" report, which covered the period June 1967 - June 1968, a letter was sent to all 7AF units with ordnance delivery missions directing that all pilots, navigators, FACs, ALOs, and Weapons Controllers read the report as soon as it appeared.^{3/} These reports were disseminated so widely that for some time personnel in the combat organizations

[REDACTED]

thought the terms CHECO and "Short Round" were synonymous. By requiring these reports to be read by all, 7AF showed its interest in the subject and helped to make operational people aware of the seriousness of Short Rounds.

Early in August 1968, Gen. Creighton Abrams, Jr., COMUSMACV, stated: ^{4/}

"We are having too many incidents resulting in casualties to our own troops and South Vietnamese civilians. Although some of these may be related to enemy-initiated action, the majority are caused by carelessness and a lack of professionalism in handling our weapons systems. I desire each addressee to give this serious situation his immediate personal attention and initiate measures to stop this useless killing of our own people."

At the same time, Gen. George S. Brown, Commander, 7AF, expressed his deep concern and displeasure with the high rate of Air Force Short Rounds. He directed TACC Weapons Force Plans to hold a special meeting on 17 August 1968, with representatives from the 37th TFW from Phu Cat and DASC Victor from Hue Phu Bai to discuss preventive measures. ^{5/}

Early in September 1968, General Abrams reviewed the statistics for August, and noted a large increase in friendly casualties from all types of friendly fire: ^{6/}

"This is an appalling situation....I believe these conditions reflect serious weaknesses in the chain of command which must be corrected at once. Any commander who permits such careless use of firepower casts serious doubt on his fitness for continued command....I will not condone this situation and I want immediate results."

It should be noted that the large increase in the number of incidents which prompted COMUSMACV to make such colorful statements was attributable

[REDACTED]

to all forces. During August, the combined air forces in the theater experienced eight incidents with a total of 16 KBA and 132 WBA, whereas USMACV totals from all forces were 50 incidents, 164 killed, and 604 wounded. Thus, air forces were responsible for 16 percent of the incidents, less than 10 percent of the deaths, and only 21 percent of the injuries. ^{7/}

But this was no reason to rejoice, and General Brown convened his staff to consider Air Force positive action. During September, the number of Short Rounds dropped to five. Each of these was analyzed and measures for prevention were sent to all units.

An incident on 26 September 1968 was the result partly of inaccurate bombing, partly of low fuel, and partly of troops failing to mark their position. Two F-100s from the 136th TFS wounded four U.S. soldiers. General Brown observed that this incident occurred under circumstances similar to those which had led to the incident of 11 August. ^{8/} He commented that the emphasis placed on Short Round prevention within 7AF apparently had not been totally effective. He said that efforts must not be relaxed, that flight leaders and FACs must abide by published directives, and must exercise sound judgment when conducting close air support missions. He stated that the 26 September Short Round could have been prevented, if the strike pilots had returned to base at the computed Bingo Fuel point, or had received an alternate target and a new Bingo. ^{9/} Further, he said:

"I expect my commanders and DASC Directors to place strong emphasis on the prevention of Short Rounds. Strike crews must be aware that if any aspect of the strike is in question, the doubt will be resolved before proceeding. Only under the most extreme circumstances is the risk of friendly

[REDACTED]

casualties warranted, and then the decision must be made by the ground commander based on his knowledge of the tactical situation."

Other subordinate units took strides in the fall of 1968 to prevent Short Rounds. The 504th Tactical Air Support Group at Bien Hoa AB, RVN, had a mission of providing well-qualified Forward Air Controllers and Strike Control and Reconnaissance (SCAR) personnel. This organization openly asked using agencies to critique the performance of FAC/SCAR personnel, and forward any criticisms or suggestions for improvement of operational procedures to the school.^{10/} The personnel at the FAC school then planned to modify or augment as necessary the training they offered.

In mid-August 1968, the Horn DASC Director conducted a conference on Short Round Prevention in conjunction with a Standardization and Review of Tactics. The most experienced personnel assigned as FACs and ALOs had a brainstorming session to determine what actions could be initiated to prevent Short Rounds. They indorsed and reiterated these nine policies:^{11/}

1. Run-in heading of strike aircraft must be given additional attention.
2. FAC must remain over friendly troops during the strike.
3. If ordnance carried by strike aircraft is not desirable for close air support with troops in contact, the desired impact point should be moved away from troops, or if this serves no purpose, strike aircraft should be diverted to another mission.
4. A poorly marked target must be re-marked by the FAC before fighters expend.

5. If mission requires ordnance delivery within 50 meters of friendlies, FAC should ask flight leader if he and his wingman are hesitant about dropping. If they are, ordnance should be released on another mission.

6. When strike aircraft are low on fuel, FAC should advise flight leader of nearest base where fuel is available and determine if recovery at a base closer than home base to refuel would increase on station time. If it does not, flight should be released without expending. Avoid haste.

7. Be certain ground commander has his troops well protected with heads down. They must not watch the air show. FAC must adhere to minimum safe distances.

8. Do not expend until ground commander confirms all friendlies have positively identified themselves by smoke, mirrors, flares or panels, or something else.

9. Bore sightings on all rocket pods on FAC aircraft would improve accuracy of marking.

The conferees agreed that if these nine cautions were strictly adhered to, the incidents of Short Rounds would be significantly reduced.^{12/} They also recommended that the FAC basic check-out program include one ride to simulate a mission with troops in contact in terrain where a definite run-in heading would be required. This, they believed, should be added to the three-day rides and one-night ride which FACs were already required to accomplish to the satisfaction of the Combat Tactical Instructor Pilot (CTIP). The brainstormers acknowledged one main item which could not be simulated, but was very important: the human pressure generated as a result of ordnance delivery with TIC.^{13/}

On 18 July 1968 at 0135 hours, a B-57 from the 8th TBS dropped ordnance which caused one death and the injury of five friendly forces. The investigating officer's report noted that the incident came about as a result of the FAC

[REDACTED]

and strike pilot misjudging ground distances in the target area. This occurrence could be understood when one visualized the differing altitudes from which the FAC and bomber pilot saw the target. In this case, the mark was inaccurate, and the FAC adjusted the target from his mark toward friendly troops rather than re-mark correctly. This procedure had been clearly forbidden by higher headquarters, but unfortunately the FAC was not aware of this prohibition. When the B-57 pilot expended his ordnance on what he interpreted the target to be--friendlies were hit. CINCPACAF dispatched a message which reiterated that the FAC is not authorized to adjust a target from his mark in the direction of friendly personnel.^{14/}

An example of the important role of ground controllers in the prevention of Short Rounds was seen in the second reported case on 11 August 1968. A U.S. Navy AP-2H from Cam Ranh Bay was working in IV CTZ in Project TRIM.^{15/} This modified Neptune had very sophisticated sensors designed to seek and destroy targets at night. Erroneous target coordinates were passed from the Tactical Air Control Party (TACP) to IV DASC, resulting in one civilian being wounded. The investigating officer recommended some excellent improvements in the control procedures for Project TRIM. There was an indication of confusion because of the large numbers of coordinates involved, and illegible air request forms had been prepared in the 21st ARVN Division. There were less than perfect radio communications, inadequate coordination, and the old standby--expending ordnance when there was some doubt. These recommendations were sent to all field units by Brig. Gen. George W. McLaughlin, Director of Tactical Air Control Center,^{16/} in the hope that future incidents might be avoided.

[REDACTED]

An incident on 24 October 1968 emphasized the necessity for strike pilots to prepare for the unpredictable. At 1145 hours, two F-100s from the 35th Tactical Fighter Wing (TFW) scrambled to support troops in contact. Loaded with napalm and MK-82 high drags, and under the control of a USAF FAC, they expended their napalm without incident.^{17/} The FAC then relocated the target and marked it with white phosphorous about a half kilometer from the friendly troops. During the first pass, a MK-82 HD was dropped 200 meters left and 550 meters short. The strike pilot had to alter his run-in heading to allow for the terrain and the lower release altitude. A northeast wind caused the smoke to drift from the previous location toward the friendlies. The overall view of the target area was changed and the stage was set for a Short Round. On the next pass, three Regional Forces soldiers were killed and six wounded. In a report on the incident by TACC, it was noted that 20 of the previous 29 Short Rounds had involved one or more of the following contributory causes: lowered visibility, friendly positions not clearly marked, a breakdown in communication, or "troops in such close and heavy contact that ground commanders were willing to accept the risk of a few possible casualties in order to avert many more".^{18/} The advice given to all units was to maintain continuous visual contact with the target and its relationship to the ground force position.

In seeking to investigate every factor that could reduce Short Rounds, Air Force commanders considered the qualifications of the ALO/FAC/SCAR in South-east Asia. On 6 September 1968, PACAF reaffirmed to the Tactical Air Command the prerequisites in grade, training, and experience for pilots operating in

[REDACTED]

these roles.^{19/} An ALO was an experienced tactical USAF pilot attached to a ground unit as an air advisor. A FAC was a USAF fighter pilot who was qualified to direct strikes for the U.S. and allied armies when troops were in contact. A SCAR was a Strike Control and Reconnaissance Pilot who did not need a fighter background and who could control strikes for allied armies and for interdiction, but not for the U.S. Army. Apparently, PACAF forecast a shortage of fighter pilots to act as FACs, and the U.S. Air Force Military Personnel Center (USAFMPC) sought comments from the air staff and from TAC. Relative to the criterion that only fighter pilots should be FACs, TAC^{20/} replied:

"There is no evidence to indicate a correlation between a pilot's background and his ability to control air-strikes. Both FACs and SCARs, with a variety of backgrounds, have performed this function with equal skill."

Several alternatives were considered, among which was the suggestion that second SEA tours might be required of experienced fighter pilots. USAFMPC studied two solutions to the problem. One was to provide PACAF with experienced tactical pilots further trained as FAC/ALOs. The other was to provide PACAF with fighter pilots from combat crew schools who would receive FAC/ALO training in-country after gaining combat experience. Both of these alternatives would have required additional aircraft and instruction in the combat crew schools. For this reason, USAFMPC decided "to make no substantive changes in manning procedures but rather to raise the experience levels gradually as^{21/} circumstances and resources permit".

At this same time, attention was directed to the problem of convincing

[REDACTED]

ground troops to take cover and stay covered when CAS was coming in. A number of Short Rounds had taken place because the troops wanted to watch the show.^{22/} The Commander, 7AF, recommended to COMUSMACV on 2 September 1968 that the possibilities for injury resulting from watching close-in airstrikes be pointed out to ground commanders.^{23/} This message also pointed out that the 7AF Conventional Munitions Guide listed minimum safe distances from friendly forces for the ordnance in use in SVN, but that these distances were valid only for protected troops.

CINCPACAF critiqued a Short Round which occurred on 21 May 1968 when a bomb fragment seriously wounded a U.S. Army troop.^{24/} This soldier and members of his platoon had retreated behind some bushes 250 meters from the target. Fighter aircraft then struck the target accurately with a 750-pound M-117 GP bomb. The soldier was about 50-60 meters farther away from the point of impact than the Guide prescribed for protected troops, but was hit nevertheless. He was not adequately protected. PACAF computed the frag distance for this ordnance at 1,300 meters under optimum conditions by figuring distance in feet equals 600 times the cube root of the TNT explosive equivalent of the munition.^{25/} 7AF relayed this information to all tactical units on 4 September 1968.

Fragments from the M-117 bomb had been found 2,000 meters from the point of impact in open terrain, yet those fragments would not provide a significant threat to protected troops or troops lying prone at much closer ranges.^{26/}

COMUSMACV dispatched this information to all ground commanders directing dissemination "at the lowest levels to assure that all personnel are cognizant of safety precautions".^{27/} It was thought that this action, plus an additional

SECRET

reminder for all troops to mark their locations accurately with smoke or voice radio contact with the FAC, would decrease the number of injuries from Short Rounds. The 7AF Conventional Munitions Guide came under critical review by the Directorate of Plans. During June 1969, a revision was being staffed. Essentially, the change would bring the Guide up to date and recommend more realistic safe distances considering the tactics used by friendly and enemy forces in South Vietnam.

CHAPTER IV

LESSONS LEARNED

The most valuable portion of any report should be the results of evaluation and the lessons learned. Throughout this report, some of the knowledge accumulated has been inserted where it was most meaningful. This chapter, however, focuses attention specifically on 14 cases which were representative of the types of problems encountered between June 1968 and June 1969.

Confusion Near A Shau Valley

The worst incident of the period from the damage point of view occurred on 10 August 1968 in the vicinity of the A Shau Valley (Fig. 2). A combination of factors contributed to this Short Round. In the late afternoon of 9 August, troops of Company D/2/237, 1st Bde, 101st Air Cavalry Division, had been in contact with enemy forces located along the top of a small bell-shaped hill, across a narrow valley west of the friendly position.^{1/} At first light on 10 August, the D Company commander requested tactical airstrikes against enemy positions to help in his maneuver toward the objective northwest of his position. One flight of Marine F-4Bs in six passes had just expended accurately under the control of a 1st Brigade FAC. The weather condition was 13,000 feet broken, visibility 10 miles, wind not a factor. The terrain was mountainous and covered with moderate vegetation, but with a noticeable lack of prominent identifiable features. The FAC briefed Elect 51/52, F-100s, from the 37th TFW, Phu Cat, on the target area according to standard procedures. Elect 51/52 had provided cover for a TRAILDUST mission earlier without expending ordnance and were sent to this target area armed with M-117 HD and 2.75 rockets. They then stood by for about eight minutes, while the Marine F-4Bs

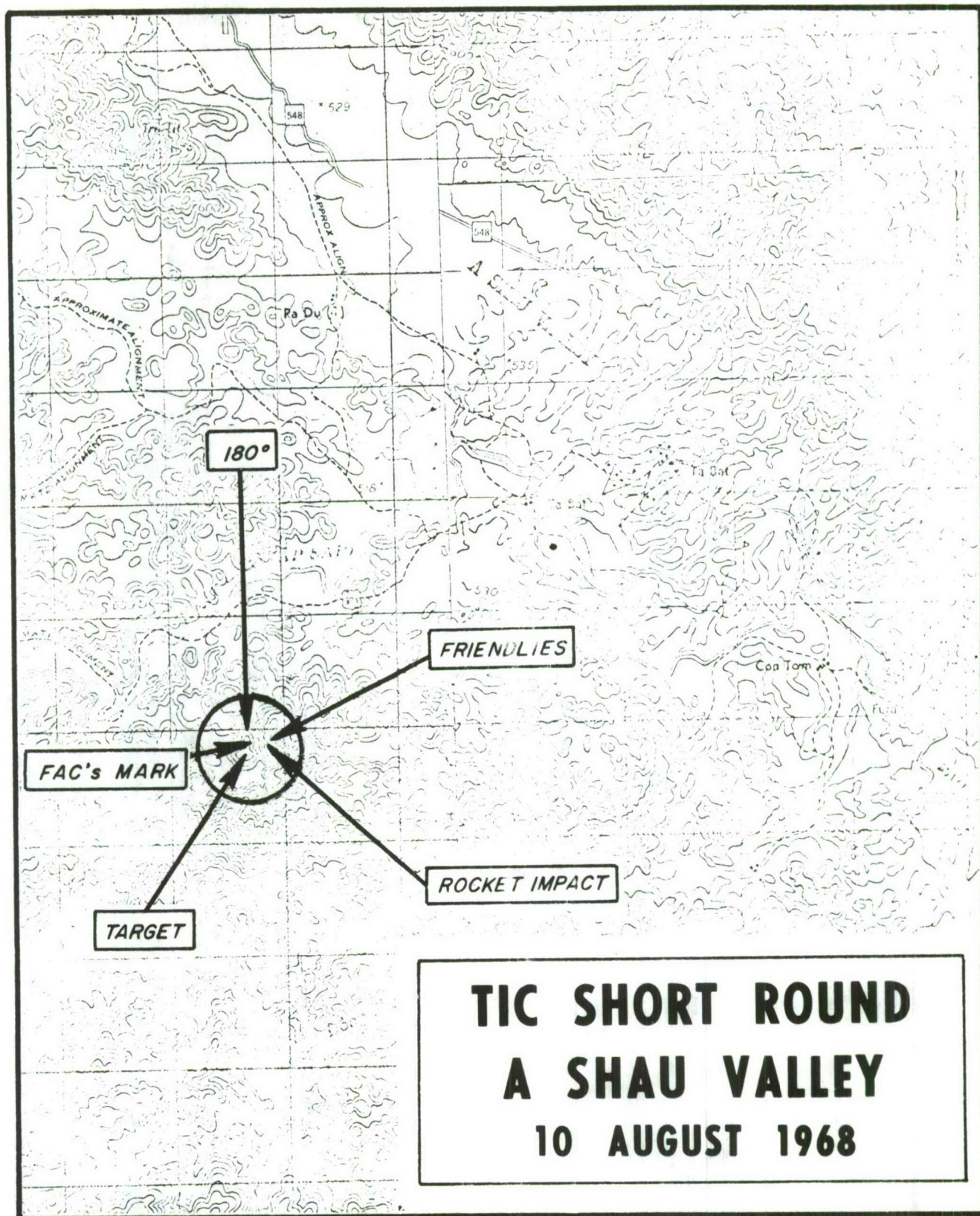


FIGURE 2

APPEARANCE OF TARGET AREA TO ELECT 51 ON FIRING

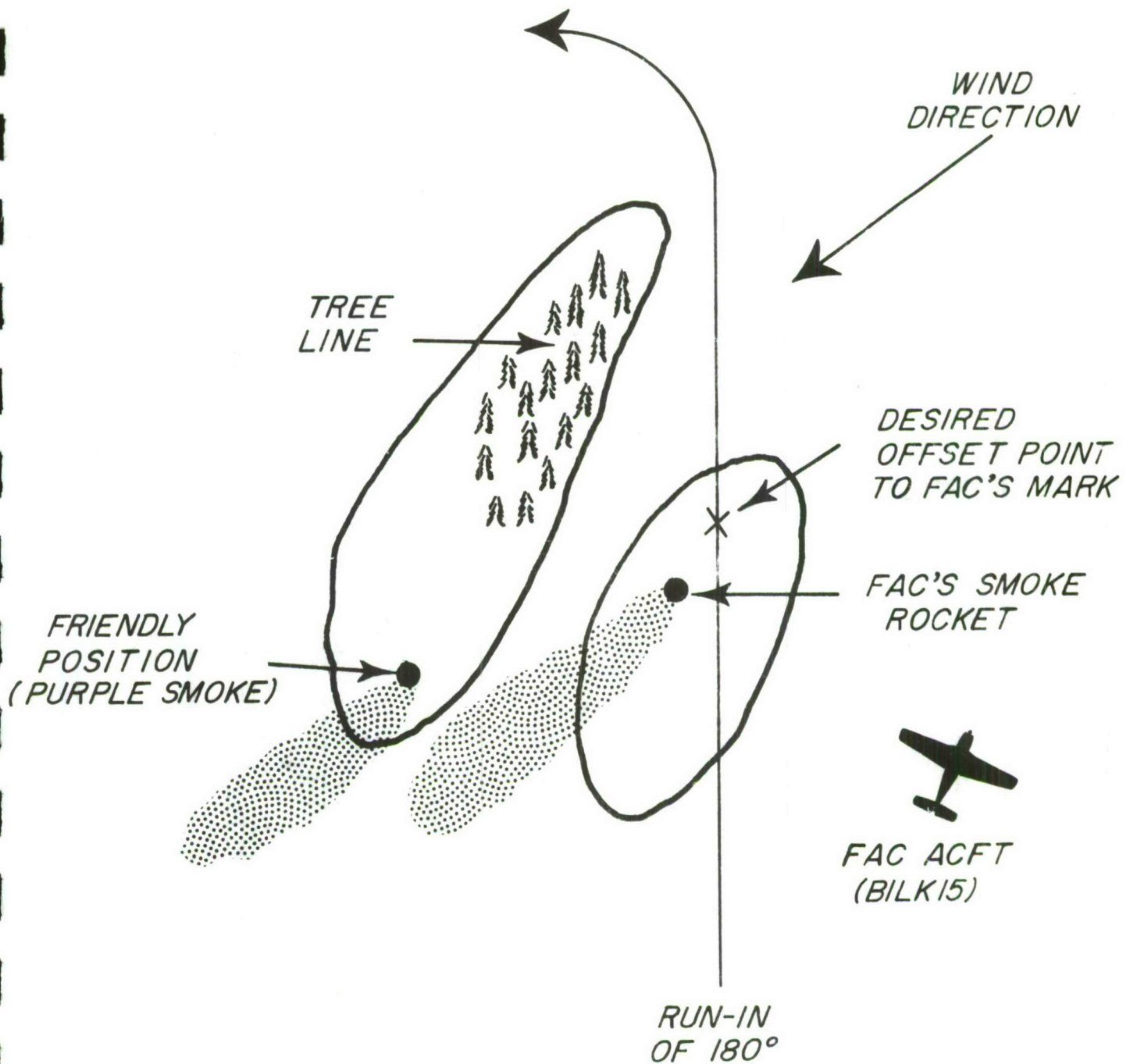


FIGURE 3

[REDACTED]

completed their mission. During this time, Elect 51 observed and prepared for his strikes. He assumed that the friendly troops were on a ridgeline running NE/SW, which was incorrect but not clarified. The FAC directed an attack heading of 180° which was correct, took three passes to mark the target, and identified the purple smoke of the friendly position. The FAC and strike pilot then discussed the sequence of ordnance delivery and the FAC asked for M-117 first. Elect 51 said they should expend the rockets first, so the FAC gave Elect 51 an offset of 40 meters at one o'clock from his mark. By this time, Elect 51 had fuel remaining for only five minutes on station. He came in on an attack heading that was slightly off (but which he thought was correct) and, thinking that the friendlies were at nine o'clock to the FAC's mark (Fig. 3), he aimed a "little long" for the sake of safety.^{2/} His rockets impacted among friendlies near the friendly smoke, killing seven and wounding 54. The FAC called off the strike immediately, but the company commander asked for more strikes. Bilk 15 brought in a flight without further incident. The investigating officer strongly recommended that no punitive action be taken against either the FAC or strike pilot. He stated:^{3/}

"I most certainly do not intend to 'white-wash' the incident for it is a serious one. However, it is explainable, understandable, and is not, in my opinion, due to dereliction or gross error on the part of either the FAC or the strike pilot. Based upon my discussion with U.S. Army personnel I do not believe the Army holds ill will against the Air Force as a result of this incident."

No punitive action was taken, but the following facts and lessons were learned:^{4/}

- Rocket attack heading was off.
- Rocket range error was long.
- Strike pilot was not aware of the extent of the friendly troop location.
- Lack of prominent terrain features made orientation more difficult.
- Low fuel added urgency.
- Ground commanders should consider marking two or more points along company boundaries.
- FAC might orbit over friendlies to give vertical dimension to their location.
- Communication among all three parties must be complete.
- FAC must complete all parts of the briefing, insure understanding, and then mark the target.

Stores Release Systems

Three separate incidents occurred as a result of deficiencies within the stores release system of the F-100. The first of these cases took place on 5 July 1968 at 1127 hours, when a MK-82 HD impacted near Route 4 approximately three kilometers south of the village of Tan Hiep, in Ding Tuong Province.^{5/}

An F-100 from the 120th TFS (ANG) at Phan Rang AB was the lead in a flight of two scrambled for an immediate air request by the ARVN S-3 of Dinh Tuong Sector. The target was a battalion of Viet Cong in a wooded area near Tan Hiep (Fig. 4). The aircraft carried six MK-82 HD bombs, 20-mm cannons, and two BLU-27 napalm bombs. After the briefing by the FAC, the passes started and appeared normal. After the second strafing pass, the pilot of the strike craft noticed he was still carrying the left outboard MK-82. He rechecked that the arm nose and tail switch were off, and obtained permission from the FAC to make another pass to release this bomb using his auxiliary release system. The pilot turned the ARM SELECT switch to "bomb single" on his base leg, and as he turned on final he moved the ARM NOSE TAIL switch to the "on" position. Five seconds later, the bomb released and impacted about four kilometers short of the target. The

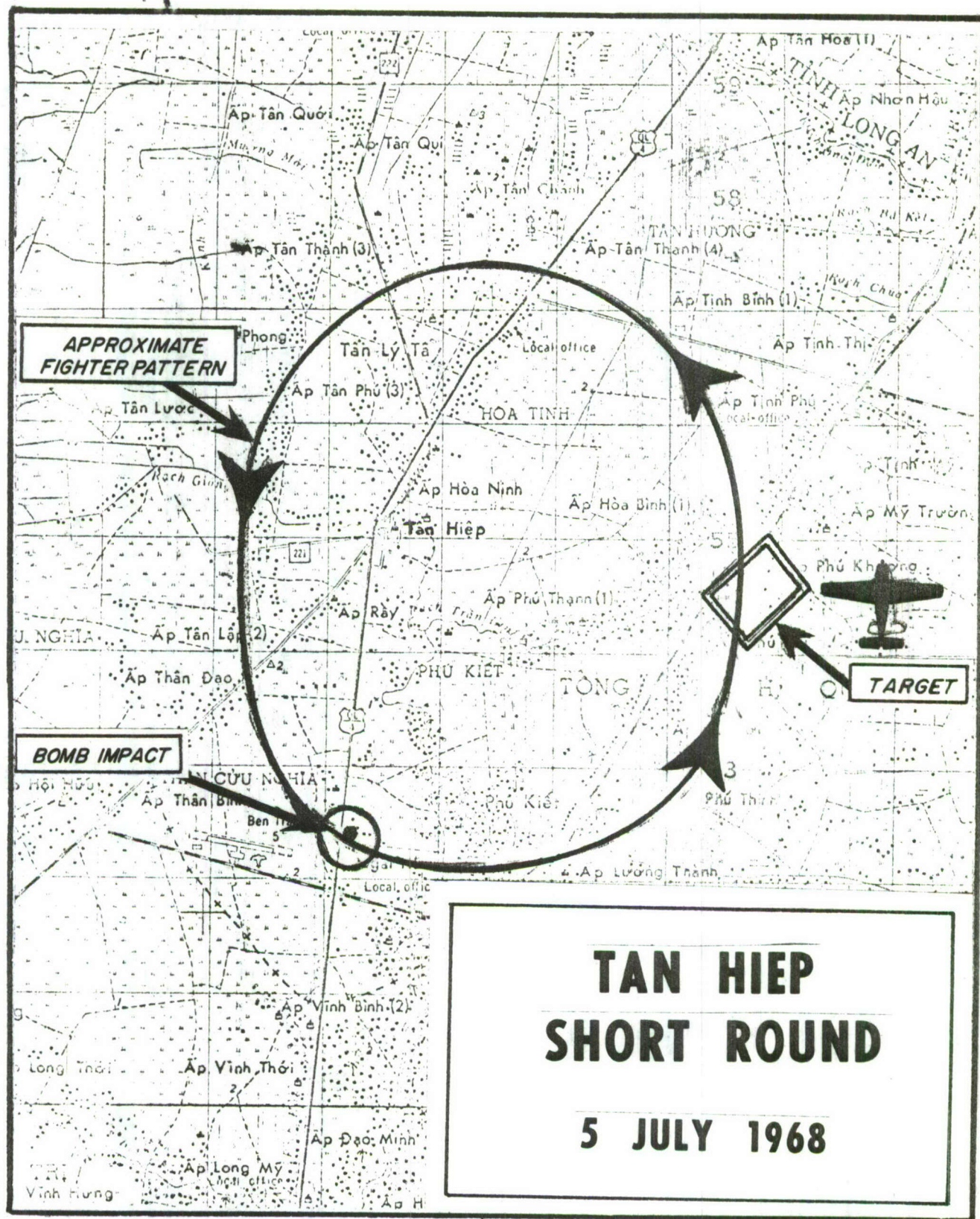


FIGURE 4

[REDACTED]

BDA was two friendly noncombatants killed, five wounded, two huts and a Lambretta destroyed, and two huts damaged. All actions and switch selections by the pilot were "by the book" in this emergency situation. ^{6/}

When the aircraft landed at Phan Rang, a post-flight inspection indicated that the primary cartridge holder was not fully seated, and that this was possible even though the cartridge holder was torqued according to the technical order (TO) (125-inch pounds). The proper torque value was reached and verified with approximately one and one-half turns remaining before full cartridge insertion, and this resulted in an improper firing pin contact. The lack of electrical contact through the primary cartridge explained why the weapon failed to release when the bomb button was depressed. This design deficiency in the release system and the improperly seated cartridge holder were responsible for the early-late release. The investigation concluded that the unused cartridge finally made contact with the energized firing pin because of vibration of G force, and the bomb was released. ^{7/} The deficiencies responsible for this incident were reported in an Emergency Unsatisfactory Report and the stores release portion of the difficulty was corrected. ^{8/}

The lessons that were learned from this incident included: ^{9/}

- . An awareness of the deficiency in the stores release circuit.
- . In all cases of hung ordnance, immediately SAFE the stores and proceed to the jettison area avoiding over-flight of friendlies.
- . If there are no friendlies in the area, make an auxiliary release.
- . Weapons load teams and pilots should check the pylon cartridge holders to see that the holders are completely seated.

[REDACTED]

Short Round incidents on 21 August and 3 September 1968 were thought to be due to a somewhat similar problem in the F-100 stores release system.^{10/} In one case, the trouble seemed to be unpredictable, since the aircraft involved in the Short Round of 21 August flew four subsequent missions with no malfunction.^{11/} The investigation report of this incident stated, "It is possible that the cartridge was held away from the firing pin by burred threads, sand, or insufficient torque." There was also the possibility that some post-flight weapons release system inspections were not being accomplished in accordance with technical orders. Once again, it was thought that a technical order change would remove holding power from the release system, except when the bomb release button was depressed. These two incidents tended to speed up modifications that had already been initiated.^{12/}

ARC LIGHT Incidents

As of 1 February 1969, approximately 45,000 B-52 sorties had delivered one million tons of bombs in SEA and had experienced only two Short Rounds.^{13/} The first of these occurred on 13 February 1968,^{14/} in which 65 percent of the bombs fell outside the target box, yet within the buffer zone established by MACV. According to the MACV Directive 95-14, ARC LIGHT targets had to be cleared by 3,000 meters of friendly combatants and by 1,000 meters of all non-combatants (including VC women and children).^{15/} This February incident resulted in the death of 44 Vietnamese, injury to 57 more, and the destruction or damage of 278 structures. The investigation of the incident revealed that all Air Force elements performed as requested with no personal or procedural errors; however, the Capital Military District Commander did not have the target buffer zone cleared of noncombatants as required.^{16/}

ARC LIGHT
SHORT ROUND
80 JANUARY 1909

~~SECRET~~

The second ARC LIGHT incident occurred on 30 January 1969 in a friendly village eight miles southwest of Can Tho (Fig. 5).^{17/} On this run, four bombs fell short of the target box and two civilians and one Popular Force soldier were killed, three civilians were wounded, and 14 houses were damaged. The report on this incident noted that the wayward bombs had bent or damaged fins (called "fliers") and predicted that approximately 38 percent of all subsequent ARC LIGHT missions would result in one or more bombs impacting outside the target box.^{18/} The report recommended that COMUSMACV recognize the 38 percent probability of bombs outside the box, and that CINCPACAF request SAC to review the quality control of bomb fins. 7AF also recommended that the buffer zone be reevaluated.^{19/}

The Strategic Air Command informed COMUSMACV on 25 March 1969 that SAC agencies and the Air Force Armament Laboratory (AFAL) at Eglin AFB, Fla., had been studying the problem of flier bombs. Bomb instability was believed to be related to the yaw/roll resonance which could be induced at any time during flight.^{20/} The AFAL said the "instability is unpredictable and is a consequence of small physical asymmetries or aerodynamic reasons". They had no solution to eliminate the possibility of fliers from high altitude releases. As a result of three separate analyses, SAC concluded:^{21/}

"We can continue to expect upwards of 90% of all sorties to have one or more bombs impacting short of the normal bomb train. Also we expect at least 5% of all sorties to have an impact that is 3,300 feet or more short of the target box, but only in very isolated cases will an impact approach the three km parameter. There is no evidence that the method of release (i.e. off-set aiming of MSQ) is a factor; however, the studies do show that the number of flyers increase as true air speed increases. In light of these realities, you may wish to reconsider the safety buffer zone clearance for non-combatants short of the target box."

SECRET

The decision regarding the enlargement of the buffer zones and target boxes was to leave them unchanged. Since the ARC LIGHT bomb release point was five-six miles short of the desired point of impact, and fliers could be misdirected any place along the flight path, there was no way of predicting where these fliers would impact. It was thought within 7AF that enlarging the target box (and, coincidentally, the clearance limits) would seriously restrict field commanders and COMUSMACV in selecting ARC LIGHT strikes. ^{22/}

Inexperience Near Song Be

A Short Round occurred on 3 April 1969 when Sharkbait 52, the wingman in a flight of 2 F-4s, inadvertently dropped two M-117 Low Drags on ARVN troops in contact west of Song Be. Five soldiers were wounded. Once again, a number of factors conspired to cause the incident. The weather condition in the area was 4,000 feet broken with haze limiting visibility to two-three miles. Because of the poor visibility, both lead and wingman made a dry pass, and lead made two additional dry passes, since he had been unable to acquire the target in sufficient time to satisfy delivery parameters. ^{23/} On his second pass, the wingman dropped two M-117 LDs about 25 meters long. The USAF FAC requested the next bombs on the right edge of the first bomb's smoke. The wingman's next pass was on the wrong target and resulted in the Short Round. An investigation of the incident by the 1st Infantry Division showed that ARVN troops had moved between strikes and exposed themselves. ^{24/} The Army report found no fault with the FAC's control of the strike pilot's attack, except that "he seemed close to the friendly smoke" (which was violet and presented a poor contrast). ^{25/}

The Deputy Director of III DASC and a member of the 12th TFW then conducted

[REDACTED]

independent investigations and arrived at the same conclusions: ^{26/} the flight leader and the wingman were reprimanded. ^{27/} The wingman had flown six combat missions but this was his first TIC strike. After the incident, he received additional training from an instructor pilot and his squadron commander before taking a proficiency evaluation recheck. The flight leader was "removed from flight lead status for permitting an inexperienced pilot to deliver ordnance under marginal operational conditions". ^{28/} The lessons learned were:

- . Marginal weather calls for extra caution.
- . The flight leader is in command and is responsible for his flight.
- . Violet smoke provides poor contrast.
- . Inexperienced strike pilots should not attack when there are troops in contact.

False Alarm - Blame to Praise

On 9 December 1968, an incident occurred which was at first thought to be a Short Round. When it was later discovered that the victims were Viet Cong, the blame changed to praise. Tamale 34, an O-1 FAC from the 3d Brigade, 9th Inf Div, Tan An, was conducting a strike of three F-100s from the 352d TFS, Phan Rang, RVN. ^{29/} The strikes proceeded smoothly for six passes when the FAC was notified that the ARVN clearance had been canceled. He immediately stopped the strikes. At first, it was thought that friendlies had been struck. It was later determined that it was an ARVN coordination problem which had led to the cancellation. The District Chief had failed to notify the Sector of the clearance, "and when Sector learned of the strikes it ordered them canceled, not because of anything in the target area but because it had not been

[REDACTED]

cleared through the Sector Office".^{30/}

Later that evening, a woman brought three children to the Rach Vien Aid Station claiming injury from bombs that afternoon. She said that about five civilians had been killed, and that the injured had been treated or taken to a Saigon hospital. The woman was paid a solatium (condolence award) in accordance with USARV Regulation 27-4 and dismissed.^{31/} When the District Chief was informed of this incident on the following day, he said the woman was on his VC list. A lesson learned from this incident was that aid stations should continue to aid, pay, and ask questions, but should immediately notify the District Chief who could determine the identity of the casualties.

Reluctance to Report

U.S. Army, U.S. Marine, and ARVN unit commanders developed a reluctance to report Short Round incidents.^{32/} On 10 August 1968, a USMC A-6 inadvertently injured four soldiers of the 1st ARVN Division in I Corps. The ALO with the Division telephoned and later confirmed by telegram that "the ground forces involved in the incident will not, repeat not, declare a Short Round".^{33/} A review of all cases from June 1968 through June 1969 revealed that there were 14 additional instances in which ground commanders did not declare an incident a Short Round. The primary reason was best stated by Lt. Col. John D. Ward, the Assistant Deputy Director of III DASC, in his report of an incident of 11 October 1968, which had caused five ARVN casualties:^{34/}

"Another significant discussion arose that was generated by U.S. Ranger Advisory Officers. They expressed deep concern that Air Force efforts to pinpoint responsibility for human error may in some

[REDACTED]

manner affect timely and vitally needed TAC-AIR support response to them. A FAC's delay in order to eliminate every doubt, or a 'decision-fear' that may be generated over possible consequences, may cost more lives due to enemy actions in a combat situation than are lost to a Short Round. This same logic was expressed by a Brigade Commander in the 9th U.S. Division when he took an extremely forceful position during an earlier possible Short Round investigation. He stated, 'No Short Round took place, every bomb delivered by the fighters was on target!' Four soldiers had indeed been injured but facts on injuries to his personnel were most difficult to obtain because he considered this rare delivery error to be acceptable under the existing combat situation. All U.S. Army personnel contacted on both of the above Short Rounds expressed sincere satisfaction with all tactical air support. Each one expressed fears that the Air Force may become so overly cautious that the effectiveness of tactical air support would be degraded."

"Near" Short Rounds

A further lesson was learned in June 1968. A Short Round almost occurred when the ground forces continued to fire in the target area, while the FAC was marking.^{35/} The fighters mistook the ground fire as the FAC mark. Although a Short Round did not occur, 7AF reminded all FACs and ALOs to have all artillery stopped in the target area prior to marking and to brief all strike pilots prior to strikes on the exact location of all artillery adjacent to the target area.^{36/}

Another "near" Short Round occurred on 22 November 1968, in a very confused incident between elements of III DASC and the 1st Australian Task Force. The problem centered around the use of the terms "clearance" and "confirmation" of targets, and the difference in organizational and procedural responsibilities between U.S. and Australian forces.^{37/} A review of this misunderstanding was

[REDACTED]

undertaken by TACC Weapons Force Plans, ^{38/} and improvement of internal
coordination procedures was recommended. ^{39/} The lessons learned were to be
particularly cautious of differences in language and organizational procedures.

CHAPTER V

REPORTING SHORT ROUNDS

The basic guidance for reporting Short Rounds was found in the MACV Directive 335-12, "Reports and Statistics, Spot Reports".^{1/} The term "Spot Reports" included any significant friendly or enemy actions and included what USAF called Short Rounds. COMUSMACV desired that this information be submitted without delay. Therefore a special format for Spot Reports was attached to the directive. All major force elements in SEA, including 7AF, were directed to dispatch Spot Reports by the fastest available means to the MACV Command Center.

In-Country Incidents

In October 1968, the 7AF Regulation 55-39, "Short Round Incidents (In-Country)", was reissued as part of the planned effort at that time to reduce the number of Short Rounds.^{2/} The revised regulation provided improved guidance to subordinate units and new reporting procedures. All information relating to Short Rounds was to be reported to the 7AF Director of Information immediately for release to higher headquarters and, if necessary, to the press.

Anyone in the command who had knowledge of an incident was responsible for reporting it to the appropriate DASC. The DASC Deputy Director notified the TACC Senior Duty Officer who, in turn, informed the Deputy Director of TACC. The Deputy Director, TACC, then assumed primary responsibility for compiling and coordinating all details. Convenient, timesaving reporting forms and check lists were included as attachments to 7AFR 55-39.^{3/} The regulation also prescribed interim reports, preliminary investigation reports by the DASC Deputy

Director, and formal investigation reports by 7AF, if considered appropriate.

When an incident became a closed case, TACC Weapons Force Plans (TACWFP) sent a complete evaluation to PACAF and MACV, and filed all related materials for future reference and recording purposes. In April 1969, this responsibility was transferred to TACC Current Operations (TACO). TACO produced its own Operating Instruction 55-4 which clearly defined the responsibilities of the TACC Senior Duty Officer, the Deputy Director TACC, and the TACO Short Round Project Officer.^{4/} This instruction also included checklists and an additional 7AF Short Round Report for a resume of each incident.

There was a tendency for personnel in the field to over-react in reporting incidents as Short Rounds when they actually were not. From June 1968 through June 1969, there were 29 incidents initially reported as possible Short Rounds which were later found to be unauthenticated. The following list suggests some reasons for lack of authentication:

- . KBA changed to KIA through enemy action.
- . U.S. Army would not declare a Short Round.
- . Injuries slight--not incapacitating.
- . No injuries occurred.
- . Aircraft crashed destroying five houses.
- . "Bomb landed in friendly village" changed to "not in village", changed to "in village occupied by Viet Cong".
- . ARVN did not want to report.
- . Injury a result of enemy bullet.
- . Napalm splashed in tree.
- . USMC did not want to report.
- . Jettisoned ordnance injured civilians the following day when they picked it up.
- . Ordnance jettisoned in an emergency dropped long of approved area.
- . Soldier first reported injured, then not injured, then as a mental case.

[REDACTED]

In an attempt to define more clearly the duties of the TACC Senior Duty Officer, TACO published a memorandum of guidance for the SDO which stated: ^{5/}

"There still seems to be some confusion as to what is and what is not a possible Short Round incident... A short round incident is defined as the air delivery of ordnance which results in injury or death to friendly military forces or non-combatants.' The term applies to the accidental placement of armed weapons so as to cause injury or death to friendly peoples. When weapons are accidentally placed on a wrong target (providing no injury or death to friendlies result) or when the wrong type weapons are placed on the selected targets, they are air delivered ordnance incidents and are reportable as such. All other ordnance incidents should be investigated and reported by the wing in accordance with Flying Safety Explosive Ordnance Incident procedures (AFR 127 series as supplemented)."

The TACO memorandum further stated that if the incident were not of joint air/ground command interest, or if the injured person's unit commander decided not to report it as a Short Round, 7AF would nonetheless follow up with a unilateral investigation, even though a formal report to higher headquarters was not required. Each such incident was to be investigated, so that if some procedure were found to be incorrect it could be corrected.

Out-Country Incidents

At first, the rare incidents which occurred out-country were reported, investigated, and coordinated in accordance with 7AFR 55-39 just as were in-country Short Rounds. The difference in organizational structure, however, made it imperative to publish a separate directive for out-country incidents. This was being staffed within 7AF at the time of this report. ^{6/} The draft of the proposed regulation placed the responsibility for primary reporting of Short Rounds on the Tactical Unit Operations Center (TUOC), since no DASCs

SECRET

were involved. It required the TUOC to notify immediately the SDO at 7AF/13AF TACC at Udorn RTAFB, and the SDO at DOCC, Tan Son Nhut AB, and the commander of the wing involved. Then the TUOC was to send a JOPREP/OPREP-3/PINNACLE message to all OPREP-3 addressees, the Deputy Commander 7AF/13AF, and info to USAIRA Vientiane. Subsequent actions required by the proposed regulation were essentially the same as for in-country operations, except that the Director of Operations, 7AF/13AF substituted for the DASC Deputy Director in compiling information and investigating the incident, and DOC substituted for the TACC Deputy Director as OPR for 7AF. Approved final investigations were to be sent to the same addressees and completed cases were to be filed in DOCCS rather than in TACO.^{7/} Appropriate message formats and checklists for convenient coordination were attached to the regulation.

The Command and Control Division for the Director of Combat Operations; specifically, the Office of Special Actions and Mission Analysis (DOCCS), was the filing point for case reports. A directive was published outlining internal handling procedures for out-country Short Rounds.^{8/} Division Operating Instruction 55-71, a working draft until publication of the regulation, spelled out in detail the responsibilities of the SDO and of the Battle Staff Director (BSD) of the 7AF Airborne Battlefield Command and Control Center in notifying key personnel of reported incidents. It fixed responsibility for handling completed cases, and stated that inadvertent releases that caused damage or injury should be considered as possible or actual Short Rounds as applicable.^{9/}

The Director of Operations, 7AF/13AF, published a directive outlining procedures for reporting and investigating the inadvertent release of munitions/

[REDACTED]

missiles and Short Rounds by Thai-based units.^{10/} The reporting procedures called for notification of key agencies from the CSAF on down, including the American Embassy and the USAF Combat Support Group Commander at the RTAFB nearest the point of impact. It was the responsibility of the Support Group Commander to furnish fire fighting, rescue, medical, legal, security, and EOD assistance as required.^{11/}

For an incident to fall under the out-country directives it had to occur in Laos, and either the strike pilot or the FAC had to be based in Thailand.^{12/} By definition, Short Rounds did not take place in Thailand. All incidents there were considered inadvertent ordnance releases, and as such were investigated and reported in accordance with AFR 127-4.^{13/}

During the period of this report, the number of authentic and falsely reported Short Rounds out-country was small compared with the number of in-country incidents (15-59). Reporting procedures for out-country Short Rounds were considered satisfactory. Pending publication of the 7AF regulation, the operating level organizations had directives which were clear and workable.^{14/}

[REDACTED]

CHAPTER VI

SUMMATION

The previous CHECO report on Short Rounds predicted an increase of incidents in the future. That prognostication came true for the last half of 1968. During the first half of 1969, the number of Short Rounds decreased partly as a result of a stricter definition of the term and because of the shred-out of unilateral actions.

For several years, more Short Rounds occurred during the third quarter than other quarters. This report has documented this fact and emphasized that July, August, and September were months requiring extra caution. There were no new causes of Short Rounds during the period of this report. Incidents continued to be caused by a combination of factors, each of which, taken by itself, would not have been significant. The most common cause was "strike pilot hit the wrong target"--a factor which could include poor visibility, low fuel, tense environment, less-than-perfect communication, and an intense desire to strike the enemy. The second most common cause was "troop location not known"--which could include the difficulty of communication in a dense jungle mass, keeping track of several hundred men, or convincing the men to keep their heads down and not to watch the show.

Commanders at all levels continued to review each case, hoping to find a magic formula for prevention. No formula was found, but all involved were eager to do their part on the Short Round prevention team. Each case provided a number of lessons learned which added to the accumulating pool of information.

[REDACTED]

Nearly as many false alarms were reported as were authentic cases. Although investigation of these consumed time and energies, lessons were often learned from the false alarms as well as from the authentic cases.

The growing trend for ground commanders not to declare a Short Round was significant. This was a result largely of their appreciation of air support and their desire not to see it curtailed because of excessive Short Round incidents. A measure of that appreciation can be seen in the statement of Lt. Col. Wray E. Bradley, Senior Advisor to the 51st Infantry Regiment, commenting on the incident of 12 July 1968:^{1/}

"I feel that we could not have had better air support. It was both timely and accurate. During the operation, only 24 enemy were killed by ground troops and 137 were killed by airstrikes. It was also evident that some of our prisoners...allowed themselves to be captured as a result of the effective airstrikes during the entire three-day operation...As the C.O., 51st Regiment, stated, "This unfortunate incident is a chance we had to take with close air support; without it throughout the operation we would have lost many more killed and wounded."

~~SECRET~~

FOOTNOTES

FOREWORD

1. (S) Staff Summary Sheet, 7AF, TACPAL to TACO, "Enlarging ARC LIGHT Target Boxes", 7 Feb 69, Doc. 1. (Hereafter cited: Staff Summary Sheet, 7 Feb 69.)

CHAPTER I

1. (S) Staff Summary Sheet, 7 Feb 69, Doc. 1.
2. (C) Ltr, 7AF, "Short Rounds", 8 Mar 68, Doc. 2.
3. Ibid.
4. (S) Extract, CHECO Special Rprt, PACAF, DOTE, "Short Rounds", 23 Aug 68.
5. (C) Memo, "Short Round Summary", undated, Doc. 3.
6. (S) MACV Quarterly Rprt (1968 Short Round Statistics);
(S) 7AF Command Status Rprt (1969 Short Round Statistics).
7. (S) Extract, USAF SEA Air Operations Rprt, DOTE, DO, PACAF, Jun 68-May 69, Doc. 5.
8. Ibid.
9. (S) Memo, "DASC Directors' Conference, 28 Apr 69", undated, Doc. 6.
10. (C) Staff Summary Sheet, 7AF TACWFP, "Short Round Summary - 1968", 6 Jan 69, Doc. 7.
11. (C) Msg, COMUSMACV to VMAC, MACJ 341/2907, 141105Z Oct 68, Doc. 8.
12. Ibid.
13. (C) Msg, COMUSMACV to VMAC, MACJ3-051/2106, 280925Z Jan 69, Doc. 9.
14. (C) Msg, 7AF TACWFP, "Short Rounds", 090635Z Jan 69, Doc. 10.
15. (C) Extract from Indicated Short Round Preliminary Reports, Doc. 11.
(U) Ltr, DPLYC to DOTE, PACAF, subj: Draft Project CHECO Rprt-Short Rounds, 15 Oct 69.

CHAPTER II

1. (C) Interview, Lt Col Forrest E. Kissinger, Short Round Coordinator, TACO, 10 Jun 69, Doc. 12.
2. (U) Article, "Short Rounds", by Lt Col Forrest E. Kissinger, TACO, undated. Doc. 13.
3. (S/NF) Msg, Air Attache, VTN Laos, "Situation Report Nr IV Thateng", 261130Z Mar 69, Doc. 14.
4. (C) Rprt, I DASC to 7AF TACWFP, "Short Round Preliminary Investigation," 16 Jul 68, w/1 Atch, Statement by Lt Col Bradley, Doc. 15.
5. (C) Msg, 7AF TACWFP, "Short Round", 272345Z Aug 68, Doc. 16.

CHAPTER III

1. (C) Msg, 7AF TACWFP, "Short Round - 11 Aug 68", 28 Oct 68, Doc. 17.
2. (U) Staff Summary Report, 7AF DOAC, "Short Rounds", 12 Apr 68, Doc. 18.
3. (U) Staff Summary Sheet, 7AF DOOT, "Short Rounds - CHECO Report", 20 Apr 68, Doc. 19.
4. (C/
AFE0) Msg, COMUSMACV, "Unnecessary Casualties", MAC 10826, Doc. 20.
5. (C) Msg, 7AF TACWFP, "Short Round - 10 Aug 68", 151211Z Aug 68, Doc. 21.
6. (CEO) Msg, COMUSMACV, "Unnecessary Casualties", MAC 11979, Doc. 22.
7. (C) Msg, COMUSMACV to VMAC, MACJ341/2907, 141105Z Oct 68, Doc. 8.
8. (C) Msg, from Gen. G. S. Brown, "Short Round - 26 Sep 68", 100745Z Oct 68, Doc. 23.
9. Ibid.
10. (U) Msg, from 504th TASG, "Short Round Prevention", 210824Z Aug 68, Doc. 24.
11. (C) Ltr, Horn DASC Director, "Standardization/Tactics Review and Short Round Prevention", 20 Aug 68, Doc. 25.
12. Ibid.

- SECRET**
13. Ibid.
 14. (C) Msg, CINCPACAF, "7AF Ltr, Short Round Report - 18 Jul 68", 050440Z Oct 68, Doc. 26.
 15. (C) Msg, 7AF TACWFP, "Short Round - 11 Aug 68", 28 Oct 68, Doc. 17.
 16. Ibid.
 17. (C) Msg, 7AF TACWFP, "Short Round - 24 Oct 68," 172341Z Nov 68, Doc. 27.
 18. Ibid.
 19. (C) Ltr, PACAF, DOTSET to 7AF (VC), "Qualification of Forward Air Controllers," 4 Apr 69, w/1 Atch, USAFMPC (AFPMRER) Ltr, 18 Feb 69 (C) w/1 Atch, (C), Doc. 28.
 20. Ibid.
 21. Ibid.
 22. (C) Msg, 7AF TACWFP, "Weapons Minimum Safe Distances", 021513Z Sep 68, Doc. 29.
 23. (C) Msg, 7AF TACWFP, "Close Air Support", 021512Z Sep 68, Doc. 30.
 24. (S) Msg, 7AF TACWFP, "Proximity of Friendly Forces to CAS Bombing Attacks", 140025Z Sep 68, Doc. 31.
 25. Ibid.
 26. (C) Msg, 7AF TACWFP, "Close Air Support", 021512Z Sep 68, Doc. 30.
 27. (C) Msg, COMUSMACV to VMAC, "Close Air Support Safety Precautions", 130340Z Sep 68, Doc. 32.

CHAPTER IV

1. (C) Rprt, III DASC, "Short Round Report", 15 Aug 68, Doc. 34.
2. Ibid.
3. Ibid.
4. Ibid.
5. (C) Rprt, IV DASC (DD), "Short Round Preliminary Investigation",

[REDACTED]

undated, Doc. 35.

6. Ibid.
7. Ibid.
8. (C) Staff Summary Sheet, 7AF TACWFP, "Short Round - 5 Jul 68,"
4 Aug 68, Doc. 36.
9. Ibid.
10. (C) Ltr, 7AF TACWFP to PACAF CG and MACV CDC-2, "Short Round Report -
3 Sep 68", 20 Sep 68, Doc. 37.
11. (U) Ltr, DSAF/3728 to 7AF (TACC), "Summary of F-100 Weapon Release
System Investigation", Sep 68, Doc. 38.
12. (EFTO) Msg, SMAMA to 7AF, "Revision of Stores Release Relay System
F-100 C/D/F Acft", 291647Z Aug 68, Doc. 39.
13. (S) Staff Summary Sheet, TACWFP, "Enlarging ARC LIGHT Target Boxes",
3 Feb 69, Doc. 41.
14. (S) Msg, COMUSMACV to CINCPAC, "Short Round Incident ARC LIGHT,"
231238Z Mar 68, Doc. 43.
15. (S) Extract, MACV DIR 95-14, pp 2-3 of Annex C, undated, Doc. 42.
16. Ibid.
17. (S) Staff Summary Sheet, TACWFP, "Short Round Report - 30 Jan 69",
14 Feb 69, Doc. 40.
18. (S) Ltr, 7AF DO to CINCPACAF and COMUSMACV, "Short Round Report -
30 Jan 69", 16 Feb 69, Doc. 41.
19. Ibid.
20. (S) Msg, SAC to COMUSMACV, "Short Impacts", 250105Z Mar 69, Doc. 45.
21. Ibid.
22. (S) Staff Summary Sheet, TACWFP, "Enlarging ARC LIGHT Target Boxes",
3 Feb 69, Doc. 44.
23. (C) Msg, 7AF TACWFP, "Short Round Incident - 3 Apr 69", 230230
Apr 69, Doc. 46.
24. (C) Rprt, from DASC III Corps, "Alleged Short Round Preliminary

[REDACTED]

Report", 7 Apr 69, Doc. 47.

25. Ibid.
26. (U) Ltr, 7AF TACO to CG, II FFV, "Investigation of Short Round Incident", 4 May 69, Doc. 48.
27. (C) Staff Summary Sheet, 7AF TACWFP, "Short Round Incident - 3 Apr 69", Doc. 49.
28. Ibid.
29. (C) Rprt, from DASC, III Corps to 7AF (TACWFP), "Possible Short Round Preliminary Report", 13 Dec 68, Doc. 50.
30. Ibid.
31. (U) Regulation, USARV Reg Nr 27-4, "Solatium (Condolence) Payments", 25 Aug 68, Doc. 51.
32. (C) Interview, Lt Col Forrest E. Kissinger, Short Round Coordinator, TACO, 10 Jun 69, Doc. 12.
33. (C) Msg, I Corps FWF ALO to 7AF TACWFP, "Alleged Short Round 10 Aug 68", 220930 Aug 68, Doc. 53.
34. (U) Ltr, from DASC, III Corps to 7AF TACWFP, "Report of Short Round", 14 Oct 68, Doc. 54.
35. (C) Msg, 7AF TACWFP, "Short Round Prevention", 290935Z Jun 68, Doc. 55.
36. (C) Msg, 7AF TACWFP, "Short Round Prevention", 180715Z Jul 68, Doc. 56.
37. (U) Memo, TACWFP to Col Voll, "COMBAT SKYSPOT Drop on IATF - 22 Nov", undated, Doc. 57.
38. Ibid.
39. (U) Memo, TACWFP to Col Voll, "Recommendations on CSS Incident," undated, Doc. 58.

CHAPTER V

1. (U) Regulation, MACV Dir 335-12, "Reports and Statistics, Spot Reports," 30 Aug 68, with chg 1 dated 27 Dec 68, Doc. 59.
2. (U) Regulation, 7AFR 55-39, "Short Round Reports (In-Country),"

SECRET

w/4 Atch, 4 Oct 68, Doc. 60.

3. Ibid.
4. (U) TACO Operating Instruction 55-4, "Handling/Reporting of Short Rounds," w/1 Atch, 20 Apr 69, Doc. 61.
5. (U) Memo, 7AF TACO to SDO, "Short Rounds," undated, Doc. 62.
6. (U) Draft Regulation, 7AFR 55-39, "Short Round Incidents (Out-country)", w/4 Atch, undated, Doc. 63.
7. Ibid.
8. (U) Draft, DOCC Operating Instruction 55-71, "Handling/Reporting of Short Rounds", w/2 Atch, undated, Doc. 64.
9. Ibid.
10. (U) Operations Directive Nr 2, Hq Dep Comdr, 7AF/13AF, "Reporting and Investigating Inadvertent Release of Munitions/Missiles and Short Round Incidents", 12 May 68, Doc. 65.
11. Ibid.
12. (S) Interview with Lt Col Wettstein, DODO, 7/13AF DO, Udorn, RTAFB, 26 Jun 69, Doc. 66.
13. Ibid.
14. Ibid.

CHAPTER VI

1. (C) Rprt, I DASC to 7AF TACWFP, "Short Round Preliminary Investigation", 16 Jul 68, w/1 Atch, Statement by Lt Col Bradley, Doc. 15.

APPENDIX I

CHRONOLOGICAL LIST OF SHORT ROUNDS
JUNE 1968-JUNE 1969

The following list of verified Short Round incidents was compiled from the records of three Seventh Air Force agencies which at one time had Short Round responsibility during the reporting period. They were TACC Weapons Force Plans (TACWFP), TACC Current Operations (TACO), and the Special Actions and Mission Analysis Branch (DOCCS).

<u>Date/Time</u>	<u>Acft</u>	<u>Unit</u>	<u>KBA/WBA Damage</u>	<u>Remarks</u>
<u>1968</u>				
261845 Jun	F-4B	1 MAW	4/2 ARVN	Malfunction of bomb ejector system.
021400 Jul	F-4C	366 TFW	2 PF 1 Civ/6 PF	Special Forces clearance procedures inadequate or not followed.
051127 Jul	F-100	120 TFS	2/5 Civ 2 huts	Inadvertent release due to faulty release mechanism and burred cartridge holder.
120514 Jul	F-100	416 TFS	3/11 ARVN	Poor communication between FAC and strike pilot; weather; low experience level of strike pilot.
180135 Jul	B-57	8 TBS	1/5	FAC and strike pilot misjudged distances in target area.
021425 Aug	F-100	355 TFW	0/10 USA	Friendly position unknown; dynamic ground situation.
061505 Aug	F-4	1 MAW	0/26 USMC	Strike pilot observed two marks.
100705 Aug	F-100	37 TFW	7/54 USA	Wrong run-in heading, rockets fired long, troops in unknown location.
111115 Aug	F-4	366 TFW	0/11 0/3 Civ	Personal error or malfunction. Strike aircraft flight path over unknown friendly position.

SECRET

<u>Date/Time</u>	<u>Acft</u>	<u>Unit</u>	<u>KBA/WBA Damage</u>	<u>Remarks</u>
111900 Aug	AP-2H	USN	0/1 Civ	Erroneous target coordinates passed from TACP to DASC.
181530 Aug	A-26	56 SOW	1/6 USA	Troops did not notify FAC that ground flare drifted over them.
191557 Aug	A-1H	6 SOS	1/15 USA	Commander not aware of previous impact point. Wind and jungle cover were contributory causes.
211710 Aug	F-100	31 TFW	1 RF 6 Civ/6 Civ	Hung bomb with delayed release.
030722 Sep	F-100	352 TFS	2 Civ/2 Civ 2 USA	Hung bomb with delayed release.
031205 Sep	F-100	37 TFW	3/7 ARVN	Rocket malfunction through fin failure or collision in flight.
191115 Sep	F-100	120 TFS	0/14 ATF	Doubtful judgment on part of FAC. Lack of communication with ground commander at the critical moment.
261637 Sep	F-100	136 TFS	0/4 USA	Failure of troops to mark location. Inaccurate bombing; low fuel.
271045 Sep	F-100	3 TFW	1/3 Civ	Dispenser tube for SUU-7 C/A inadvertently opened.
110130 Oct	O-2	20 TASS	2/3 ARVN	FAC misidentified target and fired white phosphorous rocket on troops.
241145 Oct	F-100	35 TFW	3/6 RF	Misidentified target due to ground wind, drifting smoke and altered run-in heading.
230945 Nov	F-4C	12 TFW	0/6 USA	Ground troops changed location without informing FAC.
182130 Dec	A-4	1 MAW	0/7 Civ	Four bombs dropped short in Qua Giang hamlet 13 KM south of Da Nang.

SECRET

[REDACTED]

<u>Date/Time</u>	<u>Acft</u>	<u>Unit</u>	<u>KBA/WBA Damage</u>	<u>Remarks</u>
<u>1969</u>				
101520 Jan	F-4D	8 TFW	0/2	Weather clear, no problems, one bomb dropped 500 meters off.
301420 Jan	B-52	4258 SW	6/2 PF 8 houses	MSQ guided, but probably a bent bomb fin.
221640 Feb	A-6	1 MAW	6/9 USMC	Ground controlled by USMC unknown to pilot.
062050 Mar	F-100	31 TFW	2/6 Civ 6 houses	Wrong coordinates not checked. MSQ.
132311 Mar	F-100	3 TFW	2/7 Civ 7 houses	Eight M-117s dropped on civilians because USA copied target coordinates incorrectly. MSQ.
251715 Mar	F-100	31 TFW	4/6	Combination of sunset, loss of communication with FAC, and over-confidence of strike pilot.
031340 Apr	F-4	12 TFW	0/5 ARVN	Poor visibility caused pilot to strike wrong target.
192005 Apr	AC-119	71 SOS	1/1 CIDG	Ground commander failed to advise of another friendly location.
232231 May	F-4	12 TFW	0/3 Civ	CBU-24 dropped on civilians at XS 640245. Fuse malfunction, or faulty trajectory of cannister. MSQ not at fault.
261538 May	F-4B	MAG 13	0/10	Troops strafed from a heading of 090 instead of 060.
280500 May	F-100	3 TFW	0/4 Civ	Target coordinates copied as XS instead of XR.

UNCLASSIFIED

GLOSSARY

AFAL	Air Force Armament Laboratory
AFR	Air Force Regulation
ALO	Air Liaison Officer
ANG	Air National Guard
ARVN	Army of Republic of Vietnam
BDA	Bomb Damage Assessment
Bde	Brigade
Bn	Battalion
BSD	Battle Staff Director
CAS	Close Air Support
CBU	Cluster Bomb Unit
CIDG	Civilian Irregular Defense Group
CINCPACAF	Commander-in-Chief, Pacific Air Forces
COC	Combat Operations Center
COMUSMACV	Commander, U.S. Military Assistance Command, Vietnam
CSS	COMBAT SKYSPOT
CTIP	Combat Tactical Instructor Pilot
CTZ	Corps Tactical Zone
DASC	Direct Air Support Center
DOCC	Command and Control Division, Director of Combat Operations
DOCCS	Special Actions and Mission Analysis Branch
EOD	Explosive Ordnance Disposal
FAC	Forward Air Controller
FFV	Field Forces, Vietnam
GP	General Purpose
HD	High Drag
JOPREP	Joint Operational Report
KBA	Killed by Air
KM	Kilometer
LD	Low Drag
MACV	Military Assistance Command, Vietnam
MAW	Marine Air Wing
OPREP	Operations Report

UNCLASSIFIED

UNCLASSIFIED

PACAF	Pacific Air Forces
PF	Popular Forces
RF	Regional Forces
RTAFB	Royal Thai Air Force Base
RVN	Republic of Vietnam
SAC	Strategic Air Command
SCAR	Strike Control and Reconnaissance
SDO	Senior Duty Officer
SEA	Southeast Asia
SOS	Special Operations Squadron
SOW	Special Operations Wing
SW	Southwest
TAC	Tactical Air Command
TACC	Tactical Air Control Center
TACP	Tactical Air Control Party
TACO	TACC Current Operations
TACWFP	TACC Weapons Force Plans
TASS	Tactical Air Support Squadron
TFS	Tactical Fighter Squadron
TFW	Tactical Fighter Wing
TBS	Tactical Bomber Squadron
TIC	Troops in Contact
TRW	Tactical Reconnaissance Wing
TO	Technical Order
TUOC	Tactical Unit Operations Center
USA	United States Army
USAFMPC	USAF Military Personnel Center
USAIRA	United States Air Attache
USMACV	U.S. Military Assistance Command, Vietnam
USMC	United States Marine Corps
USN	United States Navy
VC	Viet Cong
VNAF	Vietnamese Air Force
WAAPM	Wide Area Antipersonnel Mine
WBA	Wounded by Air
WP	White Phosphorous