U. S. NAVAL AVIATION SAFETY CENTER
U. S. NAVAL AIR STATION
NORFOLK, VIRGINIA 23511

NASC/we
Ser 131/1398
25 August 1965

SPECIAL HANDLING REQUIRED IAW OPNAVINST P3750.6 SERIES

From: Commander, U. S. Naval Aviation Safety Center
To: Commanding Officer, Fighter Squadron ONE HUNDRED TWENTY-ONE

Subj: VF-121 AAR ser 3-65A concerning F-4B BuNo 148395 accident occurring 2 June 1965, pilot COLLINS

1. The subject report and all endorsements thereon have been reviewed. The Naval Aviation Safety Center concurs with the comments and recommendations of the Aircraft Accident Board as modified by subsequent endorsers.

2. The cause of this accident has been recorded by the Center as UNDETERMINED with PILOT (violation of general air discipline) and OTHER PERSONNEL (supervisory - squadron level) as the most probable contributing factors.

E. W. HESSEL
Chief of Staff

Copy to:
BUWEPS (F-12) (2)
COMNAVAIRPAC
COMFAIRSDIEGO
COMRCVW-12
BUWEPSREP ST LOUIS

AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1A (Rev. 3-63) Page 1

SPECIAL HANDLING REQUIRED in accordance with Para. 4b, OPNAV INSTRUCTION 3750.6, effective

OPNAV REPORT 3750-1

PART I. GENERAL

SECTION A. IDENTIFICATION

1. MISHAP ACCIDENT BOARD APPOINTED BY * CO VF-121	2. SERIAL NO. * 3-65A	3. DTG (LOCAL) OF MISHAP * 021143T	4. MODEL AIRCRAFT * F4B	5. BUREAU NUMBER * 148395
6. * TO: Commander, Naval Aviation Safety Center		9. LOCATION OF MISHAP * 080°/2NM HECTOR VORTAC		10. DAMAGE * ALFA
7. VIA: Commanding Officer VF-121 * CONRCVW 12 CONNAVAIRPAC	8. *	11. TIME OF DAY * DAY	12. TIME IN FLIGHT * 00+51	13. FLIGHT CODE * 1A1
		14. CLEARED FROM: NAS MIRAMAR	TO: NAS MIRAMAR	
		15. TYPE CLEARANCE * LOCAL VFR	16. AIRSPEED 400 KTS (E)	17. A/C WEIGHT 40,000 LBS
18. BRIEF DESCRIPTION OF MISHAP * COLLISION WITH GROUND			19. ELEVATION AT TIME OF MISHAP 2200 feet TERRAIN FLAT DE	

20. LIST MODEL, BUREAU, REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (Complete OPNAV Form 3750-1 for each)

SECTION B. CONTRIBUTING FACTORS

✓	FACTOR	✓	FACTOR	✓	FACTOR
	1. PILOT ERROR IN TECHNIQUE/JUDGMENT		9. SERVICING PERSONNEL		17. WEATHER
	2. PILOT DEVIATION FROM NATOPS PROCEDURES		10. LANDING SIGNAL OFFICER		18. DESIGN AIRCRAFT
	3. PILOT INCORRECT OPERATION OF A/C SYSTEM		11. OTHER PERSONNEL (Specify)		19. DESIGN CREW EQUIPMENT
	4. PILOT OTHER (Specify)		12. ADMINISTRATIVE		20. DESIGN OTHER (Specify)
	5. CREW		13. FACILITIES-RUNWAY, OVERRUN, TAXIWAY, FLIGHT DECK		21. ROLLING/PITCHING DECK, ROUGH SEAS
	6. MAINTENANCE PERSONNEL		14. FACILITIES-NAV AIDS, LANDING AIDS (IFCA, CCA, ILS, MIRROR)		22. MATERIAL FAILURE/MALFUNCTION
	7. MAINTENANCE SUPERVISORY PERSONNEL		15. FACILITIES-CATAPULT, ARRESTING GEAR (Ship or field)	X	23. UNDETERMINED
	8. SUPERVISORY OTHER (Specify)		16. FACILITIES OTHER (Specify)		24. OTHER (Specify)

SECTION C. PERSONNEL DATA

1. NAME (Last, First, & middle initial)	2. RANK/GRADE	3. [redacted]	4. [redacted]	5. [redacted]	6. [redacted]	7. [redacted]	8. [redacted]	9. [redacted]	10. [redacted]
PILOT (at controls at time of mishap) COLLINS, Charles D.	LTJG	(b) (6) [redacted]	1310	USN	25	1½	Pilot	F/C	A
CO-PILOT (Identify & submit separate page 1)									

PILOT EXPERIENCE IN HOURS

ITEM			ITEM		
11. ALL MODELS		1234	17. CV LANDINGS DAY/NIGHT	ALL	23 / 0
12. ALL MODELS IN LAST 12 MONTHS		553		IN MODEL	12 / 0
13. ALL MODELS IN LAST 3 MONTHS		81	18. FCLP LANDINGS LAST 6 MONTHS DAY/NIGHT	ALL	55 / 92
14. ALL SERIES THIS MODEL	A/C	105		IN MODEL	55 / 92
	OPT/CPT	3 / 2	19. INSTRUMENT HOURS LAST 3 MONTHS ACTUAL/SIMULATED	ALL	3.0 / 1.1
15. ALL SERIES THIS MODEL LAST 12 MONTHS	A/C	105		IN MODEL	3.0 / 1.1
	OPT/CPT	3 / 2	20. NIGHT HOURS LAST 3 MONTHS	ALL	36 / -
16. ALL SERIES THIS MODEL LAST 3 MONTHS	A/C	79		IN MODEL	36 / -
	OPT/CPT	0 / 0	21. TOTAL HOURS IN JETS (if jet mishap) HELOS (if helo mishap)		416
17. DATE/GRADE LAST NATOPS [illegible]		1-21-1965/3.7	22. LAST PRIOR FLIGHT ALL SERIES THIS MODEL	DATE	6-1-65
				DURATION	1+36
			23. TYPE INSTRUMENT CARD		STD

OTHER PERSONNEL

1. NAME (Last, First, & middle initial)	2. [redacted]	3. [redacted]	4. [redacted]	5. [redacted]	6. [redacted]	7. [redacted]	8. [redacted]	9. [redacted]
ADDIS, William E.	-	[illegible]	USNR	(b) (6) [redacted]	-	A	RIO	R/C

AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1A (Rev. 3-63) Page 2

SPECIAL HANDLING REQUIRED in accordance with Para. 66, OPNAV INSTRUCTION 3750.6, of [illegible]

OPNAV REPORT 3750-1

PART II MAINTENANCE, MATERIAL, AND FACILITIES DATA

A. A/C HISTORY

1. DATE OF MANUFACTURE	2. FLIGHT HRS. SINCE ACCEPTANCE	3. NO. OF PAR/OVERHAUL	4. MONTHS SINCE LAST PAR/OVERHAUL	5. FLT. HRS. SINCE LAST PAR/OVERHAUL	6. LAST/PAR OVERHAUL ACTIVITY	7. TYPE OF LAST CHECK PERFORMED	8. FLIGHT HOURS SINCE LAST CHECK	9. DAYS SINCE LAST CHECK
2 AUG 1961	929.5	2	1	38.0	NORIS	PAR	38.0	22

B. ENGINE HISTORY

1. ENGINE MODEL	2. ENGINE SERIAL NUMBER	3. FLIGHT HRS. SINCE ACCEPTANCE	4. NUMBER OF OVERHAULS	5. WAS DIR. REQUESTED?	6. FLT. HRS. SINCE LAST OVERHAUL	7. LAST OVERHAUL ACTIVITY	8. TYPE OF LAST CHECK PERFORMED	9. FLIGHT HOURS SINCE LAST CHECK	10. DAYS SINCE LAST CHECK
(1) J79GE-8A	401612	920.1	2	NO	41.2	NORIS	OVHL	41.2	
(2) J79GE-8A	401968	477.7	0	NO	-	-	CALENDAR MAJOR	38.0	
(3)									
(4)									

C. COMPONENT HISTORY

1. COMPONENT INVOLVED NOMENCLATURE	2. MANUFACTURERS PART NUMBER	3. TOTAL HRS ON PART	4. NO. OF OVERHAULS	5. HOURS SINCE LAST OVERHAUL	6. OVERHAUL ACTIVITY	7. WAS DIR REQUESTED?	8. SI OVERHA
(1)							
(2)							
(3)							
(4)							

D. INCIDENTS & GROUND ACCIDENTS

1. PARTS REPAIRED		3. DIRECT MANHOURS INVOLVED	4. PARTS REPLACED	
PART NUMBER	NOMENCLATURE		PART NUMBER	NOMENCLATURE

E. ENGINE FAILURES

JET ENGINE FLAMEOUT (include intentional securing to prevent engine damage)

AT TIME OF FLAMEOUT	1. ALTITUDE	2. IAS	3. RPM	4. EGT	5. MANEUVER AT TIME OF FLAMEOUT	6. FUEL FLOW	7. ATTITUDE

8. IS FORCED	9. RELIGHT ☐ ATTEMPTED ☐ ACCOMPLISHED	10. ALTITUDE	11. IAS	12. MAX EGT	13. FUEL CONTROL ☐ PRIMARY ☐ MANUAL	14. [illegible] ATTEMPTED

INTENTIONAL SECURE	15. ENGINE SYMPTOMS	16. CAUSE OF SYMPTOMS

RECIPROCATING ENGINE FAILURE

17. ALTITUDE	18. IAS	19. ATTITUDE	20. RPM	21. MAP	22. TORQUE/BHP	23. FUEL FLOW PRESSURE	24. OIL PRESSURE

INTENTIONAL SECURE	25. ENGINE SYMPTOMS	26. CAUSE OF SYMPTOMS

F. OTHER REPORT

SUMMARY OF OTHER REPORTS CONCERNING THIS OPNAV

1. [illegible]
2. [illegible] DATE TIME GROUP 0621572 [illegible] OPNAVINST [illegible]
3. OTHER PRELIMINARY MSG 022130Z
4. SUPPLEMENTARY MSG 032043Z

AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1A (Rev. 3-63) Page 3

SPECIAL HANDLING REQUIRED in accordance with Para. 66, OPNAV INSTRUCTION 3750.6, effective [illegible]

OPNAV REPORT 375[illegible]

G. SHIPS DATA

1. EQUIPMENT INVOLVED ☐ CATAPULT ☐ ARRESTING GEAR	2. PRESSURE SETTING	3. WIND OVER DECK	4. RELATIVE WIND	5. APPROACH/END SPEED

6. MARK NUMBER	7. MODEL NUMBER	8. LOCATION OF SHIP	9. LAUNCHING BRIDLE AND BRIDLE ARRESTER

10. CATAPULT/ARRESTING GEAR BULLETINS OR NOMOGRAMS USED

11. This portion shall be completed whenever (1) an aircraft accident involves arresting gear-barrier and/or barricade equipment or (2) an aircraft accident involves malfunctioning of arresting gear, barrier and/or barricade equipment. Incidents or routine damage to cables, weldings and other expendable equipment need not be reported herein.

ENGAGED	12. DECK RUNOUT (FEET)	13. RAM TRAVEL (INCHES)	14. CONTROL VALVE SETTINGS: CONSTANT PRESSURE DOME (P.S.I.)	CONSTANT PRESSURE RATIO	CONSTANT RUNOUT (WT. LBS.)	15. ACCUMULATOR PRESSURE (PSI)	16. COMMENTS (for cable failures specif[illegible] landings and mouths in [illegible]
DECK PENDANT							
DECK PENDANT							
BARRIER/ BARRICADE							

H. DEPLOYMENT

FOR ACCIDENTS ABOARD CARRIERS (complete on pilot)

1. DATE DEPLOYED CONUS	3. DAY HOURS/LANDINGS SINCE DEPLOYMENT	4. DAY HOURS/LANDING LAST 30 DAYS
2. NO. DAYS OPERATING PERIOD		
5. INST. HOURS LOGGED SINCE DEPLOYMENT ACTUAL/SIMULATED	6. NIGHT HOURS/LANDINGS SINCE DEPLOYMENT	7. NIGHT HOURS/LANDINGS LAST 30 DAYS

I. WEATHER

WEATHER AT SCENE OF MISHAP

1. CEILING	2. VISIBILITY	3. RELATIVE WIND DIRECTION AND VELOCITY	4. TEMPERATURE RUNWAY OUTSIDE AIR	5. DEW POINT	6. ALTIMETER SETTING
-	10				

7. OTHER WEATHER CONDITIONS (winds aloft, icing level, sea state, density altitude, as appropriate)

PART III ADDITIONAL INFORMATION

PART	SECTION	ITEM	
IV		5	(b) (6) [redacted] VF-121 (b) (6) [redacted] SAFETY OFFICER

2. COPY DISTRIBUTION
2CC NAVAVNSAFECN DIRECT (AAR)
1CC BUWEPS DIRECT (AAR)
1cc COMNAVAIRPAC
1cc COMFAIRSDIE[illegible]
1cc COMRCVW 12
1cc BUWEPSREP ST[illegible]
1 cc NAVY LIAISO[illegible]
OFF. DIR AEROSP[illegible]
SAFE, NORTON [illegible]
1cc CO VF 121

COST DAMAGE TO: 3. GOVERNMENT PROPERTY 4. PRIVATE PROPERTY 5. DATE SUBMITTED TO CO 22 JUN 1965

PART IV SIGNATURES O[illegible]

1. S[illegible] (b) (6) [redacted] (b) (6) [redacted] LCDR MAINTENANCE OFFICER, VF-143 UNIT BILLET

2. M[illegible] (b) (6) [redacted] (b) (6) [redacted] LT LINE OFFICER, VF-121 UNIT BILLET

3. FLIGHT [illegible] (b) (6) [redacted] (b) (6) [redacted] LT, MC, NAS MIRAMAR

3. MEMBER (b) (6) [redacted] VF-161 AVIATION SAFETY OFFICER, UNIT BILLET

* When preparing Incident and Ground Accident reports, items indicated by an asterisk in the upper right hand corner must be filled in. Other items considered appropriate should also be filled in.

X-607

PART V THE ACCIDENT

On 2 June 1965 at 1053T, LTJG C. D. COLLINS, USN and ENS W. E. ADDIS, USNR departed NAS Miramar in F4B BUNO 148395 on a section low level navigation training flight. The flight was being led by 148395 and was progressing normally. Communications were normal with fuel checks being made at each check point along the route.

Approximately 45 minutes after take off, at a point near Hector VORTAC, the chase pilot spotted a freight train and assigned it to 148395 as a target. LTJG COLLINS acknowledged by stating he was commencing a Zuni run. 148395 then commenced a left turn climbing to about 4,000 feet AGL with a turn reversal on top and rolled-in on the run. The chase pilot observed the roll-in position to be too close to the target and called LTJG COLLINS to abort. The run, however, was continued and the chase pilot and RIO transmitted "pull out" several times (Enclosure (2)). The aircraft did not recover from the dive and neither crew member ejected.

PART VI THE DAMAGE

The aircraft entered the ground in a relatively steep dive angle (Enclosure (5)) and sustained strike damage due to impact forces (Enclosure (10)).

SPECIAL HANDING REQUIRED IN ACCORDANCE WITH PARA 66, OPNAV INST 3750.6E

PART VII INVESTIGATION AND ANALYSIS

Investigation of this accident included detailed inspection of the wreckage, examination of aircraft and engine log books and maintenance records, interviews with the instructor chase pilot and witnesses, and a review of the VF-121 training syllabus and procedures.

LTJG COLLINS and ENS ADDIS received a proper brief and the requirements for this flight were met except as noted in A.4.b. below. The mission assigned was a conventional weapons low level navigation flight without ordnance.

The aircraft was considered to have been ready to perform the mission and no discrepancies were outstanding that could have contributed to this accident (Enclosure (7)).

A. PERSONNEL FACTORS:

1. PILOT FACTORS: LTJG COLLINS was classified as an above average student in instruments, weapons, carrier qualifications and tactics. He was very aggressive, sometimes jeopardizing the rules of safety (Enclosures (2) & (4)). A review of his training jacket reflects a tendency to press the attack, to recover from dives below minimum safe altitudes and to fly below the minumum 500 feet on low level navigation routes. He had been coaxed and warned a number of times to abide by minimum altitudes by both flight instructors and his flight leader. On one particular low level flight COLLINS was told not to re-attack an isolated box car. He continued the attack, in the instructor's words, "in a half hearted dive", and recovered at an estimated 200 feet above ground level (Enclosure (4)). LTJG COLLINS was qualified, capable and apparently mentally and physically fit to undertake the assigned, scheduled mission. There were no indications of mental or physical distress observed by the briefing officer. COLLINS had deployed to MCAS YUMA for live bomb and rocket runs. He had also flown low level routes while in VF-121. He was apparently satisfied with the brief and further realized both his responsibilities and the mechanics of flying this type mission.

2. RIO FACTORS: A review of ENS ADDIS' training jacket indicates that he was a slightly below average radar intercept officer. His performance in VF-121 had been average while his performance during Basic NAO(I) training had been below average. It is impossible to know how he was performing on this particular flight. It should be noted that the standard RIO duties on a bombing or rocket run, after roll-in at 7,000 feet AGL, are to call speed at 5,000 feet AGL (fast or slow), call dive angle at 4,000 feet AGL, call "standby" at 3,500 feet AGL, call "mark" at 3,000 feet AGL (release altitude), and "pull out" immediately after calling "mark". ENS ADDIS was relatively new in the squadron and had not made rocket or bombing runs

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66, OPNAV INST 3750 6E

prior to this flight but was briefed on the above voice calls. (Enclosure (2)).

3. MAINTENANCE, SERVICING AND GROUND HANDLING PERSONNEL FACTORS: There were no factors in this category considered relevant by the board.

4. SUPERVISORY FACTORS: Supervisory error was noted in that:

a. The chase pilot deviated from the approved syllabus by briefing runs on "targets of opportunity" along the low level route, and after doing so, allowing the student to attack an unscheduled (moving) target.

b. The student RIO did not fulfill the squadron's flight requirements for this type mission in that prior to a low level navigation or conventional weapons flight with a replacement pilot the student RIO should have flown at least one low level navigation flight and simulated runs with an instructor pilot.

B. MATERIAL FAILURES OR MALFUNCTIONS:

The fact that a catastrophic failure occurred prior to contact with the ground was considered but discounted. Neither crew member of the chase plane (Enclosures (2) & (3)) nor witnesses on the ground (Enclosure (6)) sighted anything unusual prior to impact. A control malfunction was also considered. All recoverable parts of the longitudinal control system and all available instruments were delivered to O&R NORF for a laboratory analysis and DIR. No area of suspect was uncovered.

C. FACILITIES:

Facilities were not considered contributory to this accident.

D. NATOPS:

1. All NATOPS requirements and procedures were met.

2. The NATOPS manual was being complied with.

3. There are no changes to NATOPS indicated as a result of this accident or the subsequent investigation.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66, OPNAV INST 3750.6E

PART VIII CONCLUSIONS

The evidence is inconclusive, and the cause is undetermined. Probable contributing cause factors follow:

The probable primary contributing cause is pilot error. LTJG COLLINS failed to attain a proper entry position for a 30 degree Zuni run. The target, the leading cars of a freight train Westbound at 70 MPH, was approximately 3 miles distant when LTJG COLLINS initiated his climb for roll-in. LTJG COLLINS attack was along a run-in line of 120°-130°. It was impossible, given a KTAS of 360 prior to the climb, for him to attain a proper 7000 ft AGL roll-in position without exceeding the 30 degree dive angle. He rolled-in approximately 3000 ft below the proper altitude and was immediately recognized as too close by LT (b) (6) [redacted] This close starting position would necessitate an excessively steep dive. A proper 30 degree Zuni run allows a pilot at least 5 seconds of pipper tracking time. Had LTJG COLLINS tracked for that length of time, the collision with the ground would have been inevitable. LT (b) (6) [redacted] several abort transmissions. Even assuming that all their transmissions were not received due to intercom conversation between LTJG COLLINS and ENS ADDIS and additionally assuming LT (b) (6) [redacted] and ENS (b) (6) [redacted] were transmitting simultaneously, it is still difficult to understand why the run was not aborted as the flight leader ordered. It must be noted that LTJG COLLINS, on a previous hop, was [illegible] to abort a similar 30 degree run. On that occasion, he cleared the ground by approximately 200 feet, almost 1400 feet beneath proper ground clearance.

A probable contributing cause is the inexperience of ENS ADDIS.

A probable contributing cause is supervisory in nature. Some squadron instructors had been briefing for moving targets of opportunity on conventional weapon hops for at least 5 months. The command was not aware of this. There was an apparent lack of communication.

A probable contributing cause involves LT (b) (6) [redacted] decision to permit [illegible] of this nature. Some of the factors which may have induced his decision are:

1. LTJG COLLINS was recognized as an accomplished pilot, who was eager to make the runs.

2. Paragraph 3 of COMFAIRSDIEGO INST 3710.5B states; "They (the described low level routes) are designed to give the pilot a wide selection of targets and profiles." This could be interpreted as permitting such runs on the sandblower routes in addition to on the authorized ranges usually adjacent to the route ending points.

3. Many Miramar pilots report that similar runs were made by them in the training command, suggesting they are permissable.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66 OF OPNAV INST 3750.6E

4. There has been criticism of CRAW training because it is not designed to produce a 100 percent readiness level.

Actually, the <u>reason</u> for LT (b) (6) [redacted] decision is a probable cause in this accident.

A probable contributing cause is the factor(s) which resulted in extreme aggressiveness of LT'G COLLINS. He had been warned by at least two instructors apparently with little effect. When a pilot is told he is not sufficiently aggressive, he receives the news as severe critism. When a pilot is told he is too aggressive, he takes it as praise rather than criticism.

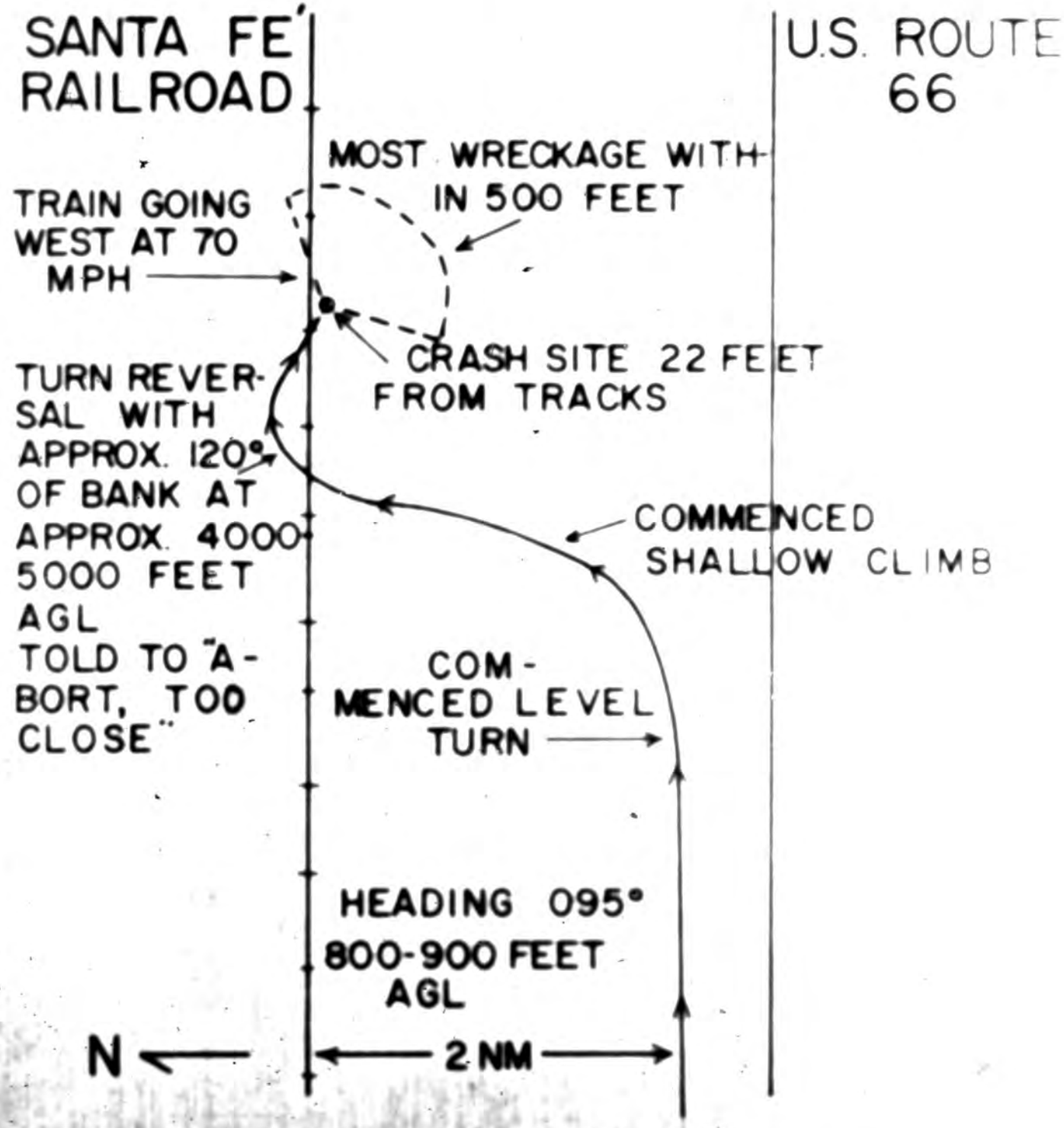
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66 OF OPNAV INST 3750.6E

PART IX RECOMMENDATIONS

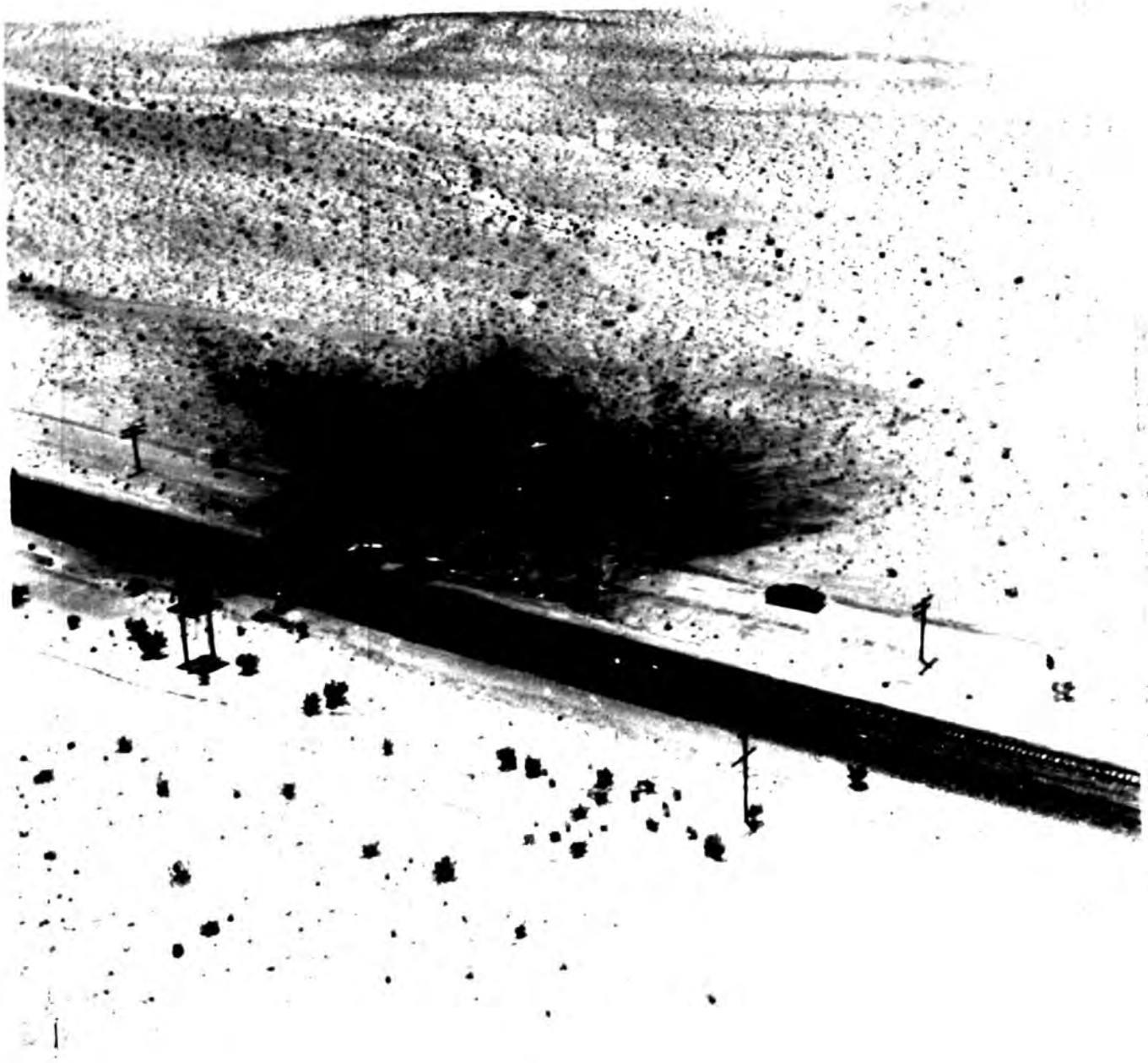
1. That any infractions of safety and/or significant departures from the syllabus, while in a training status, be immediately brought to the attention of the proper authority for appropriate action.

2. That it be re-emphasized that even an above average pilot is capable of overextending himself.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66 OPNAVINST 3750.6E



SKETCH OF MANEUVER PERFORMED
VF-121 AAR-3-65A, OCCURRING 2 JUNE 1965, F4B BUNO 148395, PILOT: COLLINS

Enclosure (5)

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARA 66 OPNAV INST 3750.6A