10-26
Bm

10-21
1 Bm

Aer-MA-610/496

20 MAY 1958

SIXTH ENDORSEMENT on HMR(L)-363 AAR ser 2-57
concerning HUS-1 BuNo 144640 accident occurring 26 Oct 57

From: Chief, Bureau of Aeronautics
To: Chief of Naval Operations (OP-57)
Via: Commander, U.S. Naval Aviation Safety Center

Subj: Aircraft Accident Report; forwarding of

Ref: (a) Telcon between CNO (OP-57) and Chief, Bureau of Aeronautics (MA-61) of 14 April 1958

(b) (5) [redacted]

RECEIVED
MAY 22 1958
NAVAL AVIATION
SAFETY CENTER

O L Maupin

O. L. MAUPIN
By direction

01

FF4-1/A25
Serial No:
80/ 17245

6 DEC 1957

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PART VII OPNAVINST 3750.6B

FIFTH ENDORSEMENT on HMR(L)-363 AAR ser 2-57 concerning HUS-1 BUNO 144640 accident occurring 26 October 1957, pilot BLOOM

From: Commander Naval Air Force, Pacific Fleet
To: Chief of Naval Operations (OP-57)
Via: (1) Chief, Bureau of Aeronautics (Aer-512)
(2) Director, U. S. Naval Aviation Safety Center

Subj: HMR(L)-363 AAR ser 2-57

(b) (5)

[redacted]

Beecher Snipes
BEECHER SNIPES
By direction

Copy to:
NAVAVSAFCEN (2)(Airmail)
CMC (Code AAP)
CINCPACFLT
CG, AIRFMFPAC
CG, 3rd MAW
CO, MAG (HR)(L)-36
CO, HMR(L)-363

SPECIAL HANDLING REQUIRED
IN ACCORDANCE WITH PART VII
OPNAVINSTR 3750.6B

ORIGINAL

FF13-5
11:dll
A25-1
3 DEC 1957

FOURTH ENDORSEMENT on HMR(L)-363 AAR ser 2-57 concerning HUS-1, BuNo 144640, accident occurring 26 October 1957, pilot BLOOM

From: Commanding General, Aircraft, Fleet Marine Force, Pacific
To: Chief of Naval Operations (Op-57)
Via: (1) Commander, Naval Air Force, Pacific Fleet
(2) Chief, Bureau of Aeronautics (Aer-512)
(3) Director, U. S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, case of First Lieutenant Donald L. BLOOM (b) (6) /7335 USMCR

Ref: (a) OPNAV Instruction 3740.7

(b) (5)

[redacted]

CLAYTON C. JEROME

Copy to:
CMC (AAP)
BuAer (Aer-512)
NavAvnSafCen (2)
CinCPacFlt
ComNavAirPac
BAR, Hartford, Conn.
Helicopter Caused Accident Committee, Ream Field (2)
CG, 3rd MAW
CO, MAG(HR)(L)-36
CO, VMO-6
CO, HMR(L)-361
CO, HMR(L)-362
CO, HMR(L)-363

03

ORIGINAL

ORIGINAL

SPECIAL HANDLING REQUIRED
in accordance with Part VII
of OPNAV INST 3750.6B

31:HBH:dph
NOV 21 1957

THIRD ENDORSEMENT on HMR(L)-363 MAR 2-57 concerning HUS-1, BuNo. 144640, accident occurring 26 October 1957, pilot BLOOM

From: Commanding General, 3d Marine Aircraft Wing
To: Chief of Naval Operations (Op-57)
Via: (1) Commanding General, Aircraft, Fleet Marine Force, Pacific
(2) Commander, Naval Air Force, Pacific Fleet
(3) Chief, Bureau of Aeronautics (Aer-512)
(4) Director, Naval Aviation Safety Center

Subj: Aircraft Accident Report, forwarding of

(b) (5)

[redacted]

ORIGINAL

(b) (5)

[redacted]

T. G. Ennis

T. G. ENNIS

Copy to:

Dir., U.S. Nav. AvnSafCen (2) (Air Mail)
Bu/er (Aer-512)
CMC (Code AIP)
CinCPacFlt
COMNAVAIRPac
B/R, 400 E. Main St., Hartford, Conn.
Helicopter Caused Accident Committee
Ream Field (2)
CO MAG(HR)(L)-36
CO VMO-6
CO HMR(L)-361
CO HMR(L)-362
CO HMR(L)-363

05

ORIGINAL

Special Handling Required in
Accordance with Part VII
OPNAV INSTR 3750.6B

39:JAS:cej
A25
13 November 1957

SECOND ENDORSEMENT on HMR(L)-363 AAR 2-57 concerning HUS-1, BuNo. 144640, accident occurring 26 October 1957, pilot "BLOOM"

From: Commanding Officer, Marine Helicopter Transport Group (Light) 36
To: Chief of Naval Operations (OP-57)
Via: (1) Commanding General, 3d Marine Aircraft Wing
(2) Commanding General, Aircraft, Fleet Marine Force, Pacific
(3) Commander, Naval Air Force, U. S. Pacific Fleet
(4) Chief, Bureau of Aeronautics (Aer-512)
(5) Director, U. S. Naval Aviation Safety Center

Subj: Aircraft Accident Report, forwarding of

(b) (5)

[redacted]

R. J. Johnson
R. J. JOHNSON

Copy to:
NAVAVNSAFCENTER (2) (Airmail direct)
BUAER (Aer-512) (1) (Airmail direct)
CMC (Code AAP)
CinCPacFlt
COMNAVAIRPAC (1) (Airmail direct)
BAR, 400 E. Main St., Harford Conn.
Helicopter Caused Accident Committee
Ream Field (2)
CO VMO-6
CO HMR(L)-361
CO HMR(L)-362
CO HMR(L)-363

06

ORIGINAL

Special Handling Required
In accordance with Part VII
OPNAV Instrn 3750.6B

ORIGINAL

7 November 1957

FIRST ENDORSEMENT on HMR-363 AAR 2-57 concerning HUS-1, BuNo. 144640 accident occurring 26 October 1957, Pilot BLOOM

From: Commanding Officer, Marine Helicopter Transport Squadron 363
To: Chief of Naval Operations (OP-57)
Via: (1) Commanding Officer, Marine Helicopter Transport Group 36
(2) Commanding General, 3d Marine Aircraft Wing
(3) Commanding General, Aircraft, Fleet Marine Force, Pacific
(4) Commander, Naval Air Force, U. S. Pacific Fleet
(5) Chief, Bureau of Aeronautics (Aer-512)
(6) Director U. S. Naval Aviation Safety Center

Subj: Aircraft Accident Report, forwarding of

(b) (5)

[redacted]

07

ORIGINAL

ORIGINAL

(b) (5)

[redacted]

ORIGINAL

(b) (5)

[redacted]

F. G. PARKS

COPY TO:

NAVAVSFACT (2) (Airmail)
BUAER (Aer-512)
CMC (Code AAP)
CINCPACFLT
COMNAVAIRPAC
CG, 3d MAW
CO, MAG(HR)(L)-36 (2)
Naval Liason Officer,
Directorate of Flight Safety Research,
San Bernadino, Calif.
HelCauAccComm, Ream (2)
BAR, East Hartford, Conn.
CO, HMR(L)-361
CO, HMR(L)-362
CO, VMO-6

09

ORIGINAL

ORIGINAL (

AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1 (REV. 11-55)
PAGE 1

See Instructions for completion prior to filling out

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OPNAVINST 3750.6B
OPNAV REPORT 3750-1

PART I – GENERAL

1. AIRCRAFT ACCIDENT BOARD CONVENED BY: HMR(L)-363

2. DATE OF ACCIDENT: 26 Oct 57 | TIME: 1440T | 3. AAR SERIAL #: 2-57

4. TO: CHIEF OF NAVAL OPERATIONS (Op-57)

5. ENCLOSURES:
(1) Pilot's Statement
(2) Co-pilot's Statement
(3) Crew Chief's Statement
(4) Passenger's Statements
(5) Witnesses Statements
(6) Photographs
(7) Dispersion Pattern
(8) Weather Report
(9) Medical Officer's Report (Ori

6. VIA:
(1) CO, MAG(HR)(L)-36
(2) CG, 3dMAW
(3) CG, AirFMFPac
(4) COMNAVAIRPAC
(5) BUAER (ALR512)
(6)
(LAST) DIRECTOR, U. S. NAV. AV. SAFETY CENTER

7. REPORTING CUSTODIAN (if different than item number 1):

8. ACTIVITY OPERATING AIRCRAFT (if different than ite

9. KIND OF FLT.: 1A1

10. TIME OF DAY: ☐ DAWN ☒ DAY ☐ DUSK ☐ NIGHT

11. LOCATION OF ACCIDENT: 15 miles west of Bridgeport, Calif.

12. ELEV. ABOVE LEVEL: 7300 feet

13. PLACE OF LAST TAKE-OFF: USMC Cold Weather Training Unit, Bridgeport, Calif.

14. CLEARED FROM MCCWTU TO MCCWTU

15. TYPE CLEARANCE: ☐ IFR ☒ VFR ☒ LOCAL ☐ OPERATIONAL ☐ AIRWAYS ☐ DIRECT ☐ OTHER, Specify

16. TIME IN FLT.: 0 / 40

17. TYPE ACCIDENT: J-1 Hard Landing

18. PHASE OF FLIGHT: (9) Wave-off

AIRCRAFT

19. MODEL: HUS-1

20. SERIAL NO.: 144640

21. DAMAGE TO AIRCRAFT: ☒ A. ☐ B. ☐ C. ☐ D.

22. DOL. COST: 323,000

23. AIRSPEED (kts.): 20

24. A/C WT.: 10,050

25. LIST MODEL, SER. NRS, REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (comp separate OPNAV Form 3750-1 for each A/C): None

PILOT AND CO-PILOT

1. PERSONNEL	2. NAME (last, first and middle initial)	3. GRADE RATE	4. MIL. SERV. NO.	5. DESIG-NATOR	6. DATE DESIG-NATED	7. DATE OF BIRTH	8.
PILOT (PERSON AT CONTROLS AT TIME OF ACCIDENT)	BLOOM, Donald L.	1st Lt	(b) (6) [redacted]	7335	19Dec56	[redacted]	
CO-PILOT	FINKELSTON, Donald (n)	1st Lt	[redacted]	7335	18Jul56		

8. PERSONNEL	9. OPERATIONAL FLT. TRAINER AVAILABLE?	USED?	10. UNIT TO WHICH ATTACHED	11. TYPE INSTRUMENT CARD
PILOT	☐ YES ☒ NO	☐ YES ☒ NO	HMR(L)-363	☐ STANDARD ☐ SPECIAL
CO-PILOT	☐ YES ☒ NO	☐ YES ☒ NO	HMR(L)-363	☐ STANDARD ☐ SPECIAL

SECTION B – PERSONNEL

12. PILOT CO-PILOT STUDENT EXP.: TOTAL PILOT HOURS

ITEM	PILOT	CO-PILOT	STUDENT
ALL MODELS	639.0	578.5	
ALL MODELS IN LAST 12 MOS.	389.7	268.4	
ALL MODELS IN LAST 3 MOS.	125.1	94.9	
ALL SERIES THIS MODEL	289.3	138.1	
ALL SERIES THIS MODEL, LAST 12 MONTHS	289.3	138.1	
ALL SERIES THIS MODEL, LAST 3 MONTHS	125.1	94.9	

ITEM	PILOT	CO-PILOT	
CV LANDINGS DAY/NIGHT	45/9	28/0	
FCLP LANDINGS DAY/NIGHT	109/9	78/6	
INSTRUMENT HOURS, LAST 3 MONTHS	7.8	10.3	
NIGHT HOURS, LAST 3 MOS.	17.3	9.7	
(jet accidents only) TOTAL JET PILOT HOURS			
DATE LAST FLIGHT, ALL SERIES THIS MODEL	10-26-57	10-25-57	
DURATION LAST FLIGHT, ALL SERIES, THIS MODEL	1.3	1.4	

13. ALL PERSONNEL

NAME (last, first and middle initial)	GRADE RATE	MIL. SERVICE NO.	ORG. TO WHICH ASSIGNED	DUTY STAT	BILLET
1. BLOOM, Donald L.	1stLt	(b) (6) [redacted]	HMR(L)-363	E	Pilot
2. FINKELSTON, Donald (n)	1stLt	[redacted]	HMR(L)-363	E	CP
3. EICHOF, Charles R.	Sgt	[redacted]	HMR(L)-363	E	CC
4. ANDRZEJEWSKI, Eugene R.	Sgt	[redacted]	HMR(L)-363	D	Pass Cab
5. SAYRS, Larry L.	HM-3	[redacted]	MCCWTU	D	Pass Cab

(If additional space is necessary, attach additional sheet(s))

OPNAV FORM 3750-1 (REV. 11-55)

PAGE 2

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

1. CEILING	2. VISIBILITY	3. WIND DIRECTION AND VELOCITY	4. TEMPERATURE	OUTSIDE AIR	RUNWAY	5. DEW POINT	6. ALTIMETER SETTINGS
E 1500	5	Headwind 0-5K		43		39	30.42

7. OTHER WEATHER CONDITIONS *(winds aloft, icing levels, state of sea, etc., if pertinent to accident)*

Light rain showers.

ITEM	P	S	ITEM	P	S	ITEM	P

(b) (5)

[redacted]

FOR ACCIDENTS ABOARD DEPLOYED CARRIERS *(Complete following Section on Pilot)*

1. DATE DEPLOYED	2. DAY-HOURS/LANDINGS LOGGED SINCE DEPLOYED	3. DAY-HOURS/LANDINGS LOGGED LAST 30 DAYS
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT	5. NIGHT-HOURS/LANDINGS LOGGED SINCE DEPLOYED	6. NIGHT-HOURS/LANDINGS LOGGED LAST 30 DAYS

PART II – MAINTENANCE, MATERIAL AND FACILITIES DATA

1. AIRCRAFT HISTORY

DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO. OF OVERHAULS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE ACCEPTANCE	TYPE CHECK LAST PERFORMED	FLIGHT HRS. SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK

2. ENGINE HISTORY

	ENGINE MODEL	SERIAL NO. OF ENGINE						
NO. 1								
NO. 2								
NO. 3								
NO. 4								

3. GENERAL

a. DID FIRE OCCUR: ☐ BEFORE ACCIDENT ☑ AFTER ACCIDENT ☐ DID NOT OCCUR

b. DID EXPLOSION OCCUR IN FLIGHT? ☐ YES ☒ NO

c. CHECK IF APPLICABLE: ☑ AMP FOR SERIAL

D. HAS DIN BEEN REQUESTED? ☐ YES ☐ NO

E. FAILED COMPONENTS INVOLVED

4. PILOT AND ENG. FACTORS

CHECK BELOW ITEMS PRESENT IN THIS ACCIDENT

a. ☐ AIRCRAFT DESIGN

b. ☐ AIRCRAFT EQUIPMENT

c. ☐ MAINTENANCE

d. ☐ UNDETERMINED

e. ☐ TECHNICAL INSTRUCTION

f. ☐ OTHER, Specify

g. ☐ SURFACE FACILITIES

h. ☐ HUMAN ENGINEERING (e.g. cockpit configuration)

11

5. MISCELLANEOUS DATA

A. ALTITUDE AT MALFUNCTION	B. AIR SPEED (kts)	C. OPERATING TEMPERATURE	D. WEIGHT OF AIRCRAFT	E. C.G. (% MAC)	F. KIND OF FUEL	G. [illegible]
				140.7 in		

H. EVIDENCE OF FUEL CONTAMINATION

I. CAUSE OF ENGINE FAILURE OR FLAMEOUT

J. FUEL CONTROL REGULATOR/CARBURETOR *(List Stock and Ser. nos., give time since new or overhauled)*

K. EXTERNAL STORES ABOARD A

(If additional space is necessary, attach additional sheet(s))

NAV FORM 3750-1 (REV. 11-55)
AGE 3

AIRCRAFT ACCIDENT REPORT

ORNAV REPORT 370

PART II – MAINTENANCE, MATERIAL AND FACILITIES DATA (Cont'd)

SECTION B – FACILITIES DATA

1. GEN. (CK. BASIC FACILITIES INVOLVED, DESCRIBE EFFECT OF ACCIDENT IN THE ANALYSIS SECTION)

a. ☐ CLEARANCE AUTHORITY
b. ☐ FLIGHT PLANNING INFORMATION SOURCE
c. ☐ LANDING AIDS (GCA, CCA, ILS, etc.)
d. ☐ TRAFFIC CONTROL TOWER (Field or Ship)
e. ☐ APPROACH AND ENROUTE AIDS TO NAVIGATION
f. ☐ RUNWAY WATCH
g. ☐ LANDING SIGNAL OFFICER
w. ☐ OTHER, Specify .....

h. ☐ RUNWAY
i. ☐ WATER LANDING AREA
j. ☐ APPROACH ZONE
k. ☐ END ZONE
l. ☐ SHOULDERS
m. ☐ TAXIWAY
n. ☐ PARKING AREA

o. ☐ EMERGENCY ARRESTING GEAR (Runway)
p. ☐ AIRCRAFT SERVICING, HANDLING & DIRECTING (Field or S
q. ☐ CRASH AND RESCUE
r. ☐ SEARCH AND RESCUE
s. ☐ CATAPULT
t. ☐ ARRESTING GEAR (Carrier)
u. ☐ BARRIER OR BARRICADE (Field or Ship)
v. ☐ FLIGHT DECK

2. SHIPS DATA

a. EQUIPMENT INVOLVED: ☐ CATAPULT ☐ ARRESTING GEAR	B. PRESSURE SETTINGS	C. WIND OVER DECK	D. RELATIVE HEADWIND	E. APPROACH SPEED (SP READING)
F. MARK NUMBER	G. MODEL NO.	H. LOCATION ON SHIP	I. LAUNCHING BRIDLE AND CONFIGURATION U	

J. CATAPULT/ARRESTING GEAR BULLETINS OR NOMOGRAMS USED

K. THIS PORTION SHALL BE COMPLETED WHENEVER (1) A MAJOR 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. MINOR ACCIDENTS OR ROUTINE DAMAGE TO CABLES, WELDINGS AND OTHER EXPENDABLE COMPONENTS NEED NOT BE REPORTED.

ENGAGED	DECK RUNOUT (FT.)	RAM TRAVEL (IN.)	CONTROL VALVE SETTINGS: CONSTANT PRESSURE DOME (P.S.I.)	CONSTANT PRESSURE RATIO	CONSTANT RUNOUT (WT. LBS.)	ACCUMULATOR PRESSURE (PSI)	COMMENTS (for cable failure specify number of landings and months in service)
DECK PENDANT							
DECK PENDANT							
BARRIER							
BARRIER							
BARRICADE							

PART III – REMARKS (continue on separate pages if necessary)

PART	SECTION	ITEM	
			No damage to Government or Private Property
I	A	5(10)	Gross weight vs density altitude chart
I	A	5(11)	Supply Officer's Statement

12

(b) (6)

[redacted]

V. THE ACCIDENT ORIGINAL

1. Marine Helicopter Transport Squadron (Light) 363 departed the U. S. Marine Corps Air Facility, Santa Ana, California (Elevation 52 feet) on 20 October 1957, and arrived at the U. S. Marine Corps Cold Weather Training Unit, Bridgeport, California (Elevation 6,760 feet) on 21 October 1957 for high altitude training in the HUS-1 helicopter. This training was completed on 25 October 1957.

2. 26 October 1957 was devoted to miscellaneous flying, preparation for the return trip the next day, rest and recreation. Six (6) Aircraft Commanders were on a standby alert for transporting the Commandant of the Marine Corps and his inspection party in the event such service was desired.

3. The pilot of 144640 was scheduled for a rough area training mission with instructions to return the recreation party to the Cold Weather Training Unit upon completion of the period. The personnel in the recreation party had been directed to meet the helicopter at the landing site near the scene of the accident.

4. After the briefing, the pilot inspected and signed the yellow sheet for 144640. He then conducted the proper pre-flight inspection, checked the engine for proper operation and became airborne at approximately 1400.

5. The pilot practiced rough area landings at various landing sites up to and including 9,600 feet, completing a total of eight (8). He then proceeded to the landing site near the scene of the accident and commenced an approach without making a preliminary pass. The wind was between 0 and 5 knots and coming from approximately forty-five (45) degrees to the left of the tail. The speed during the approach was such that a steep flare would have been required over the point of intended landing.

6. When the pilot realized that a landing would not be feasible, he added power, dropped the nose and flew over the site without coming to a hover. The rotor RPM decreased and the pilot lowered the collective pitch control in an attempt to recover. A partial recovery had been effected when two large trees were observed directly ahead. It was necessary to increase the collective pitch again in order to avoid the trees and the rotor RPM decreased again. The helicopter was now settling rapidly. Another two trees were ahead, again the collective pitch was increased and again the rotor RPM decreased.

7. By now the pilot realized that complete recovery was no longer possible. He selected the only area available where a controlled landing was possible, executed a forward flare of forty-five (45) degrees and a side flare of thirty (30) degrees, cushioned the landing and contacted the ground in this attitude.

8. Upon initial impact the tail rotor blades were bent, the tail wheel sheared off on the rocks and the base of the tail pylon was crushed. As the helicopter continued to turn left and settle, the main rotor blades hit a stump and the left landing gear collapsed. The underside of the helicopter slid over sharp rocks that broke the fuel shut-off valve, the strainer in the forward fuel cell and possibly tore holes in the fuel cells. Gasoline spilled in the path of the helicopter along the ground.

9. When the last of the main rotor blades broke, the helicopter rolled over on it's left side, the gasoline ignited and it was soon engulfed in flames. The pilot and the co-pilot escaped through the pilot's window. The personnel in the cabin pushed out the window in the cabin door and escaped through that small opening. When the last person to leave the cabin caught his foot in the seat, the other two re-entered the flames and carried him to safety.

VI DAMAGE TO AIRCRAFT

1. The initial contact with the ground was made by the tail wheel and the tail rotor. (Enclsure 6(a).) At the time of initial contact the helicopter was approximately forty-five (45) degrees nose high, banked approximately thirty (30) degrees to the left and descending at an angle of approximately forty-five (45) degrees. The initial damage consisted of breaking off the tail wheel as it hit the rocks and bending the tail rotor blades in toward the tail pylon as the tail rotor hit the dirt and a small tree. When the tail wheel axle broke, the weight of the helicopter was supported by the base of the tail pylon. The above angles were derived by the following means:

a. The tail rotor left paint on the rock near the point of initial contact and cut the top off of a small tree to the left. The angle between the top of the small tree and the hole near the rock measured thirty (30) degrees and indicated a steep side flare.

b. The base of the tail pylon was crushed and left scratches in the rock at the point of initial impact. (Enclosure 6(b).) This indicated that the base of the tail pylon and the tip of the rotor were on the ground simultaneously. The helicopter had to be approximately forty-five (45) degrees nose high for this to occur.

c. The helicopter had to descend at an angle of approximately forty-five (45) degrees in order to clear the tall trees under the flight path.

2. The steep flare decreased the rate of descent sufficiently to prevent a serious accident at this point. The nose of the helicopter continued to turn to the left as the tail continued straight ahead for thirty (30) feet. The point selected for touch-down by the pilot was the most logical in the area. (Enclosure 6(c).)

3. The nose of the helicopter continued the left turn until the main rotor collided with a tree stump fourteen (14) inches in diameter. This stump was located on the left side of the helicopter and the force of the impact swung the tail sharply to the left for a distance of fifteen (15) feet, causing the fuselage to buckle slightly a little forward of the tail folding lock. The bolts holding this blade (#1 blade) to the rotor head were sheared and the blade broke at the point of impact. The section of the blade toward the rotor head then fell to the ground. The eight (8) foot section toward the tip sailed through the air at an angle of twenty-five (25) degrees to the horizontal, hit an eight (8) inch tree limb fifty (50) feet in the air, ricocheted, altered course ten (10) degrees, passed through another tall tree nearby breaking off several dead branches three (3) inches in diameter and finally landed in a ravine two hundred and fifty (250) feet away.

VI DAMAGE TO AIRCRAFT (CONT'D)

The course of this blade was approximately sixty (60) degrees to the right of the final flight path. The tree stump was broken at the base and rolled under the helicopter to finally stop a few feet to the right. The helicopter was in a twenty-five (25) degree bank to the left during this period. (Enclosures 6(d), 6(e), 6(f).)

4. The #2 blade missed the remainder of the stump but with the reduced rotor RPM the nose was falling through rapidly. The helicopter landed on the left wheel breaking the rim and ripping the tire on a sharp rock and also breaking off the landing gear. (Enclosure 6(b) and 6(g).) The #3 blade hit the remainder of the stump breaking seven (7) feet from the tip. This seven foot section followed approximately the same flight path as the eight (8) foot section of the #1 blade except that the small branches of the first tree halted the forward flight of the blade and it dropped to the ground. (Enclosure 6(h).)

5. The #4 blade missed the stump. When the next rotation of the rotor blades made contact, the remaining section of the #3 blade hit the ground at a rock pile, followed by the #4 and #2 blades. When the #4 blade hit the rock pile, #3 blade hit the tree directly ahead breaking off another thirteen (13) feet and #2 blade hit the ground breaking off three (3) feet from the rotor hub. (Enclosure 6(i), 6(j), 6(k), 6(l), 6(m).)

6. There was nothing to protect the under side of the helicopter from the sharp rocks after the left landing gear became broken. As the helicopter continued to slide forward, the rocks ripped off the fuel shut-off valve, the fuel strainer in the forward fuel cell and probably ruptured the fuel cells. The gasoline was permitted to drain freely and saturate the area.

7. With the breaking of the #2 blade, there was nothing to support the helicopter and it rolled over to the left side. Either the hot exhaust or the sparks from the rocks ignited the gasoline and the helicopter was soon engulfed in flames. The force of the explosion, if there was one, was negligible. (Enclosure 6(n), 6(o), 6(p), 6(q).)

8. It is believed that had the helicopter been level when the nose fell through, the landing gear may have absorbed the shock. However, under the circumstances, a steep side flare was required to miss the large trees that would have been directly ahead.

9. A close visual inspection of the helicopter revealed that no parts were worth salvaging. The wreckage was piled in a ravine and painted with a series of yellow crosses.

VII THE INVESTIGATION

(b) (5)

[redacted]

(b) (5)

[redacted]

VIII THE ANALYSIS

(b) (5)

[redacted]

(b) (5)

[redacted]

(b) (5)

[redacted]

IX CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

(b) (5)

[redacted]

(b) (5)

[redacted]

STATEMEMT OF FIRST LIEUTENANT DONALD L. BLOOM, (b) (6) [redacted] 7335, USMCR, concerning the accident involving HUS-1 Bureau Number 144640, on 26 October 1957

(b) (5)

[redacted]

(b) (6)

[redacted]

DONALD L. BLOOM

This is considered a credible witness

(b) (6)

[redacted]

ORIGINAL

24

Enclosure (1) to HMR(L)-363 M/R 2-57

STATEMENT OF FIRST LIEUTENANT DONALD FINKELSTON, (b) (6) [redacted] /7335, USMCR, concerning the accident involving HUS-1, Bureau Number 144640, on 26 October 1957.

(b) (5)

[redacted]

Enclosure (2)

(b) (5) [redacted]

(b) (6) [redacted]

DONALD FINKELSTON

This is considered a credible witness

(b) (6) [redacted]

STATEMENT OF SGT CHARLES R. EICHOF, (b) (6) [redacted], USMC, concerning the accident involving HUS-1, Bureau Number 144640, on 26 October 1957

(b) (5)

[redacted]

(b) (6) [redacted]

CHARLES R. EICHOF

This is considered a credible witness

(b) (6) [redacted]

STATMENT OF SGT EUGENE R. ANDRZEJEWSKI, (b) (6) [redacted]
USMC, conterning the accident involving HUS-1, Bureau
Number 144640, on the 26th October 1957

(b) (5) [redacted]

(b) (6) [redacted]

EUGENE R. ANDRZEJEWSKI

This is considered a credible witness (b) (6) [redacted]

Unclassified

Statement of Sayrs, Larry L., HM3, (b) (6) [redacted], USN, concerning the accident involving HUS-1, bureau number 144640, on the 26th of October, 1957.

(b) (5)

[redacted]

(b) (6) [redacted]

Larry L. Sayrs
HM3, USN

Enclosure (48) to HMR(L) 363 AAR 2-57

ORIGINAL

(b) (5)

[redacted]

(b) (6)

[redacted]

ORIGINAL

ORIGINAL

STATEMENT OF MSGT Joseph V. SEYMOUR, (b) (6) USMC, concerning the accident involving HUS-1, Bureau Number 144640, on 26 October 1957.

(b) (5), (b) (6)

[redacted]

(b) (6)

[redacted]

JOSEPH V. SEYMOUR

This is considered a credible witness.

(b) (6)

[redacted]

Enclosure (5a) to HMR(L)-363 AAR 2-57

ORIGINAL

ORIGINAL

STATEMENT OF TSGT Gustave J. LANGSDORF, (b) (6) [redacted], USMC, concerning the accident involving HUS-1, Bureau Number 144640, on 26 October 1957

(b) (5), (b) (6)

[redacted]

(b) (6)

[redacted]

GUSTAVE J. LANGSDORF

This is considered a credible witness.

(b) (6)

[redacted]

32

ORIGINAL

Enclosure (5b) to HMR(L)-363 AAR 2-57

ORIGINAL

STATEMENT OF SSGT David L. GUFFEY, (b) (6) [redacted], USMC, concerning the accident involving HUS-1, Bureau Number 144640, on 26 October 1957.

(b) (5)

[redacted]

(b) (6)

[redacted]

DAVID L. GUFFEY

This is considered a credible witness.

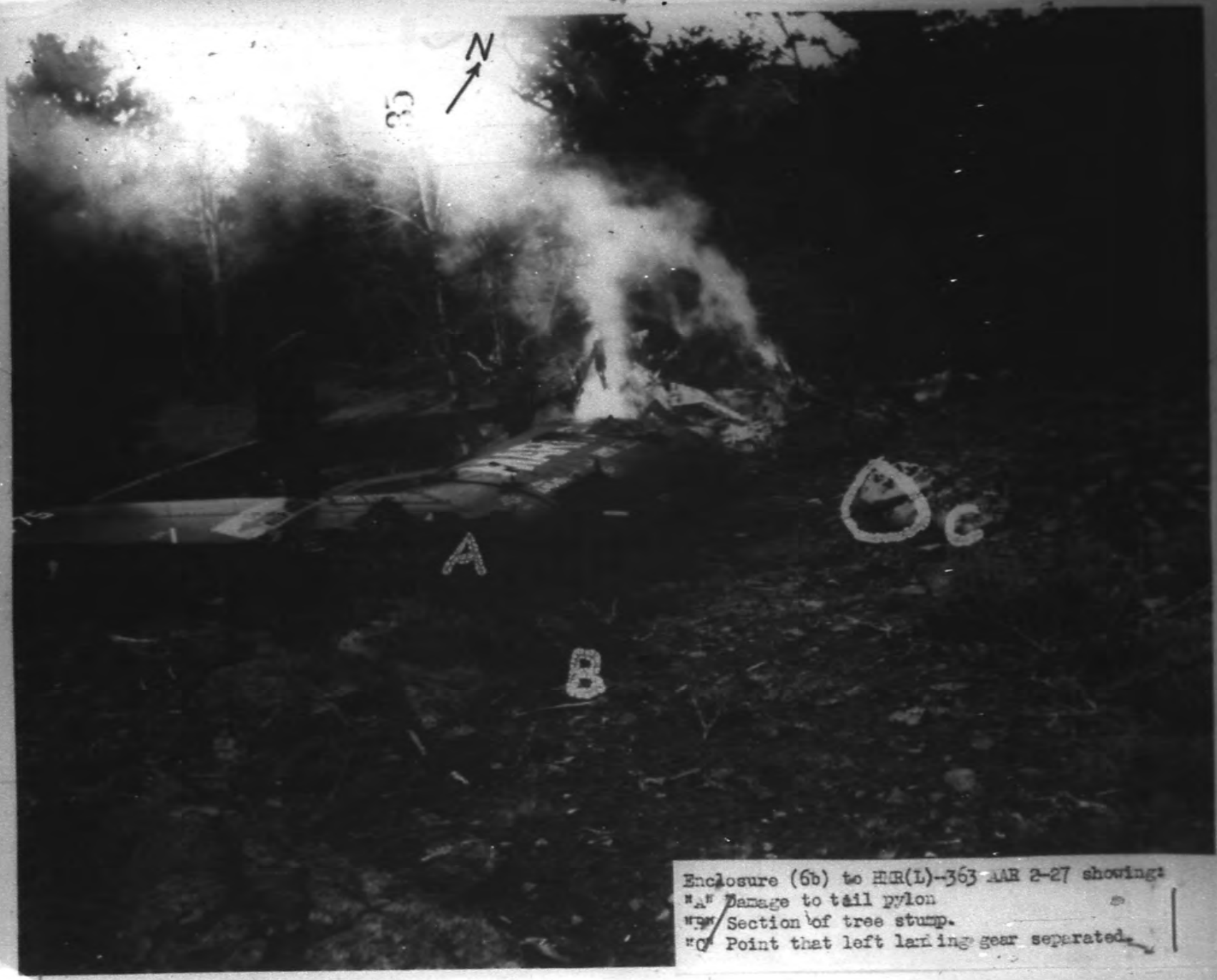
(b) (6)

[redacted]

ORIGINAL

Enclosure(6a) to H&R(L)- 363 A&R 2-57 showing:
"A" Initial contact of tail rotor with the ground
"B" Tail rotor clipped the top of this small tree
"C" Tail wheel axle broke on this rock and tail pylon left marks and metal on top of rock.

Enclosure(6a) to H&R(L)- 363 A&R 2-57 showing:
"A" Initial contact of tail rotor with the ground
"B" Tail rotor clipped the top of this small tree
"C" Tail wheel axle broke on this rock and tail pylon left marks and metal on top of rock.

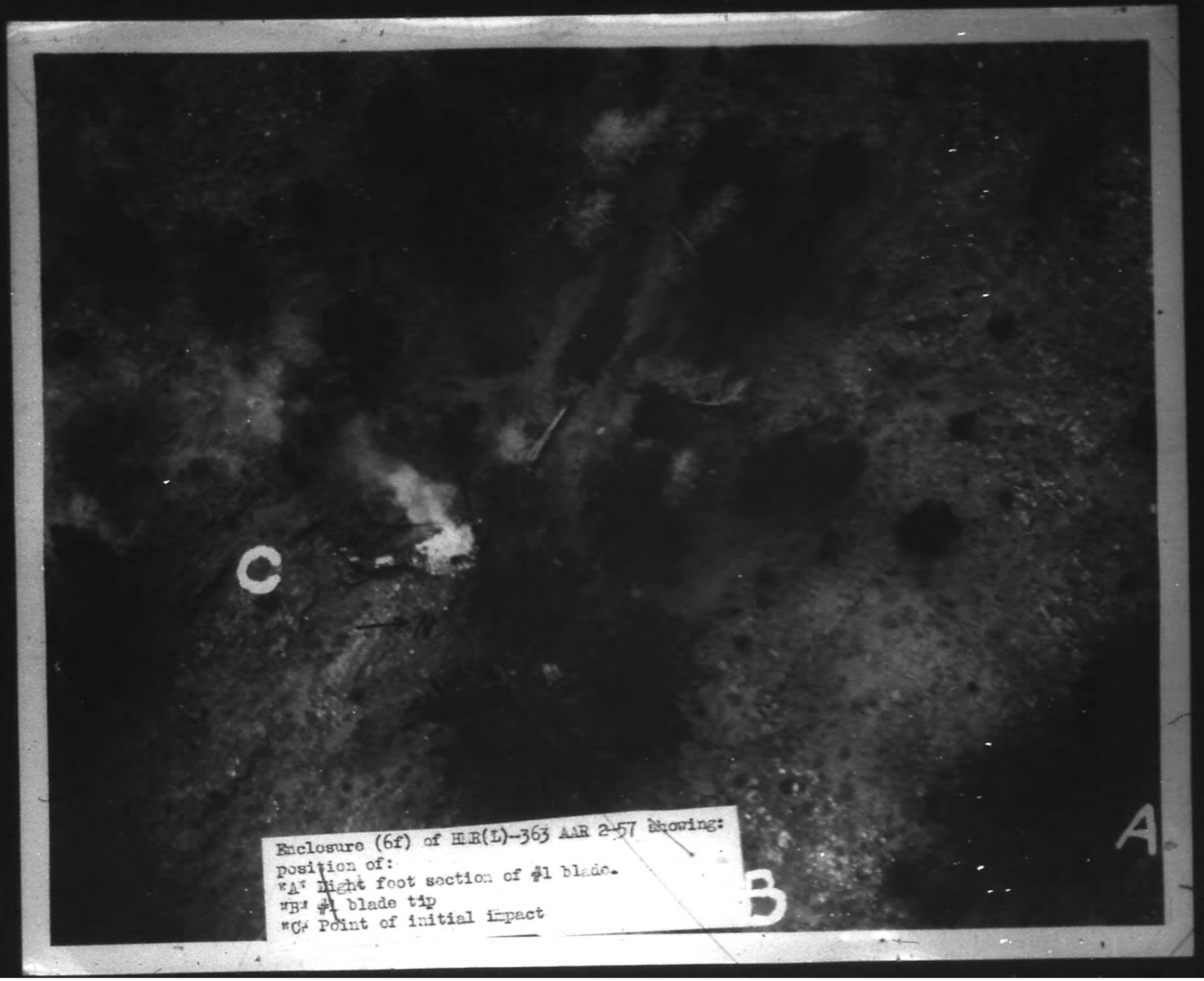


Enclosure (6b) to HMR(L)-363 AAR 2-27 showing:
"A" Damage to tail pylon
"B" Section of tree stump.
"C" Point that left landing gear separated.

Enclosure (6c) to HMP(L)-363 AAR 2-57
Aerial photograph showing general location of:
"A" Point of Initial Impact
"B" Location of the 8 ft section of the #1 Blade.

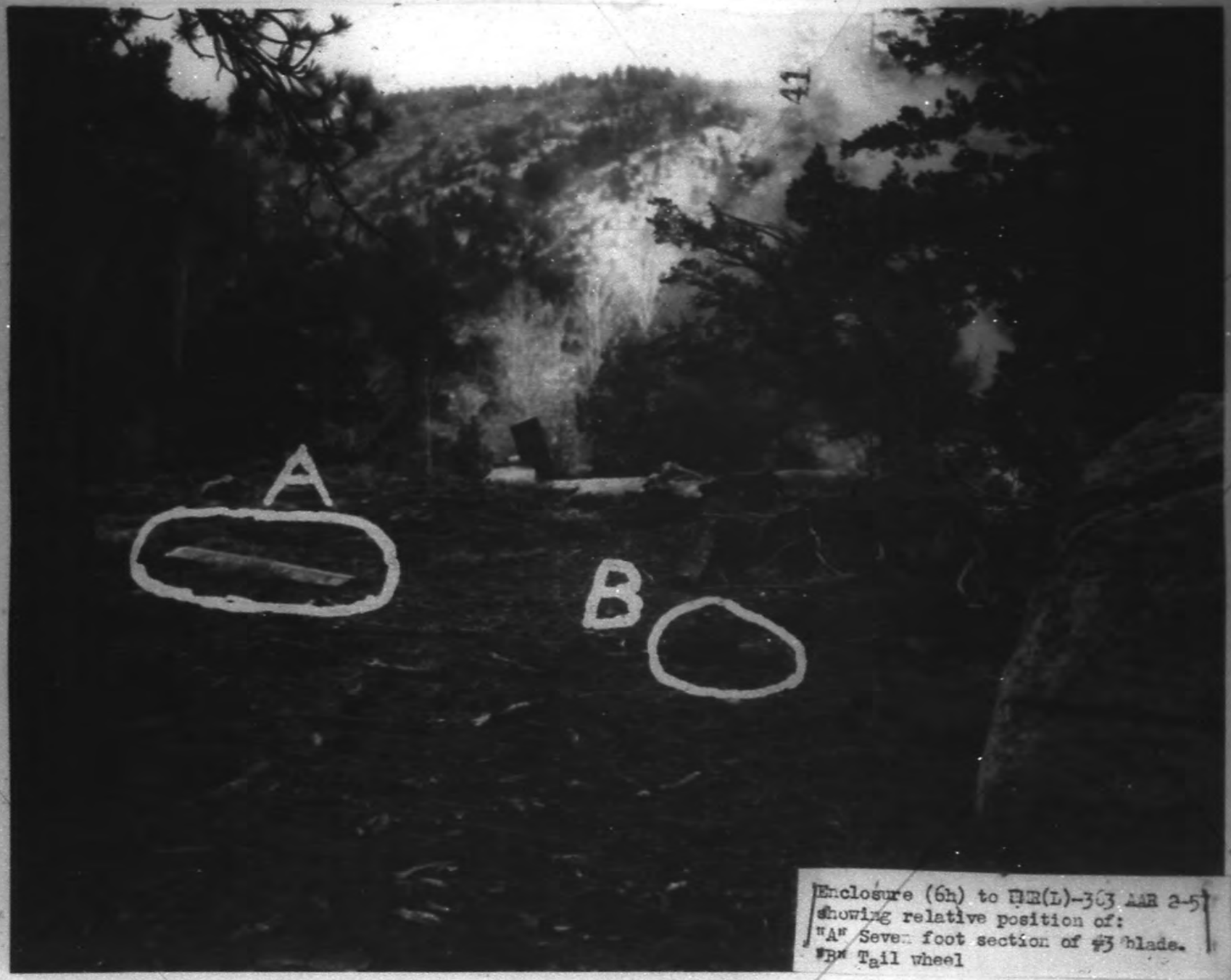
Enclosure (6d) to HMR(L)-363 MAP 2-57 showing:
"A" Relative position of the rotor head end of the #1 Blade.
"B" Base of the 14 inch stump.

Enclosure (6e) to HMR(L)-363 AAR 2-57 showing
"A" Base of 14 inch stump
"B" Rotor head end of #1 blade

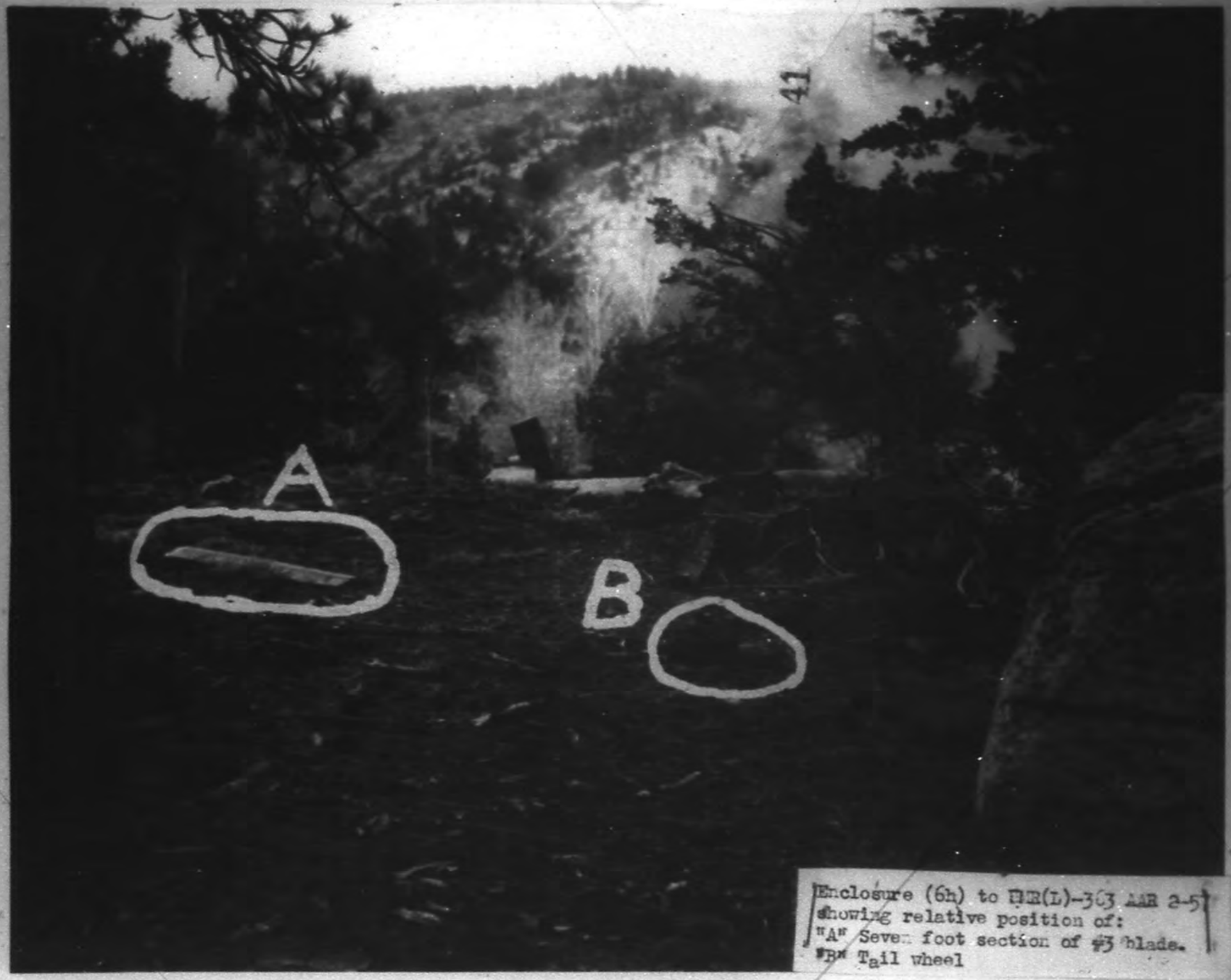


Enclosure (6f) of HLR(L)-363 AAR 2-57 showing:
position of:
"A" Right foot section of #1 blade.
"B" #1 blade tip
"C" Point of initial impact

Enclosure (6g) to HER(L)-363 AAR 2-57
showing relative position of:
"A" #2 rotor blade.
"B" Left landing gear.



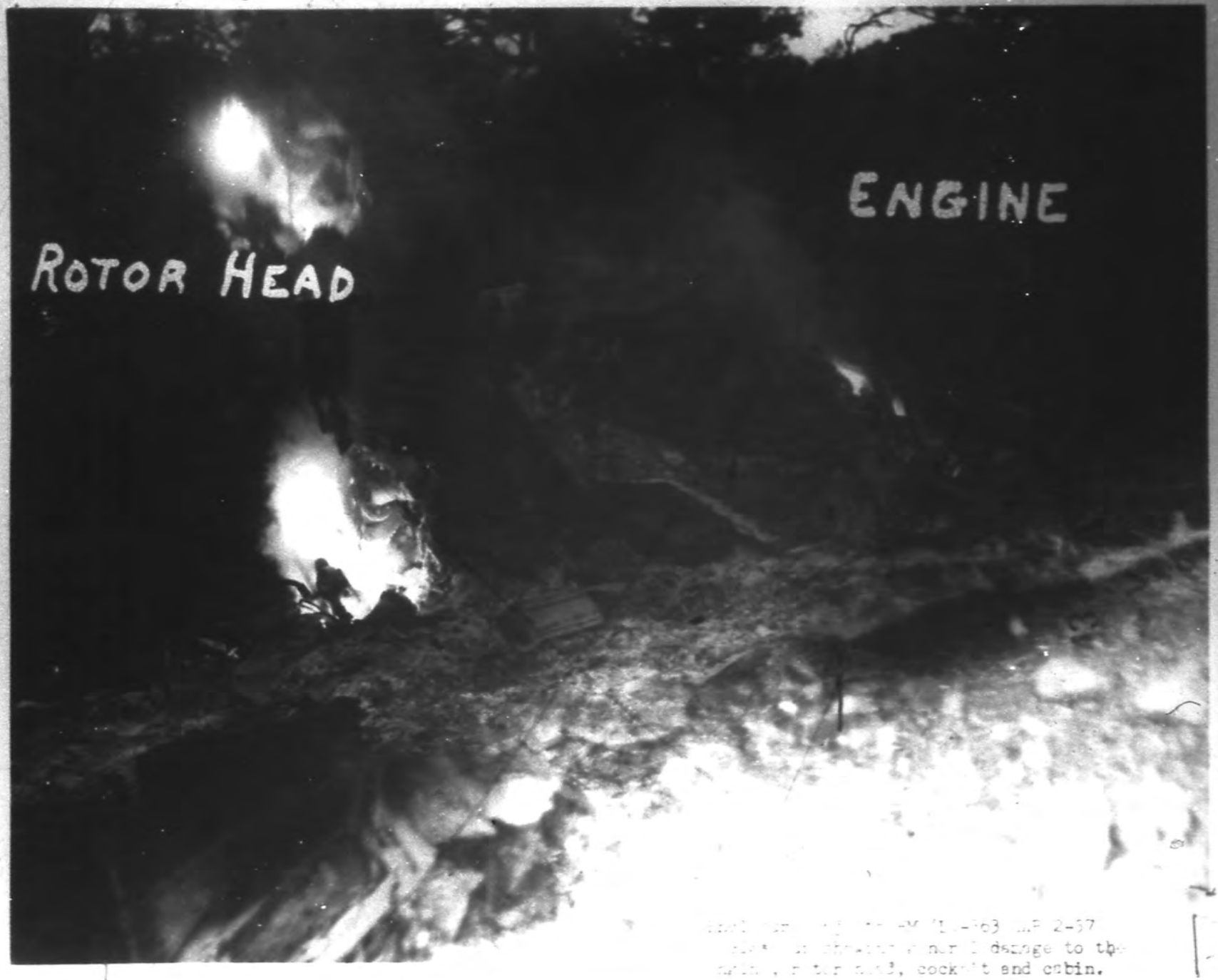
Enclosure (6h) to NAR(L)-363 AAR 2-5
showing relative position of:
"A" Seven foot section of #3 blade.
"B" Tail wheel



Enclosure (6h) to NAR(L)-363 AAR 2-5
showing relative position of:
"A" Seven foot section of #3 blade.
"B" Tail wheel

Enclosure (6i) to HMP(L)-363 MP 2-57 showing General damage to the rotor head and the main rotor blades.

[illegible] to BM (1)-363 [illegible] 2-57 showing [illegible] the rotor head and the main



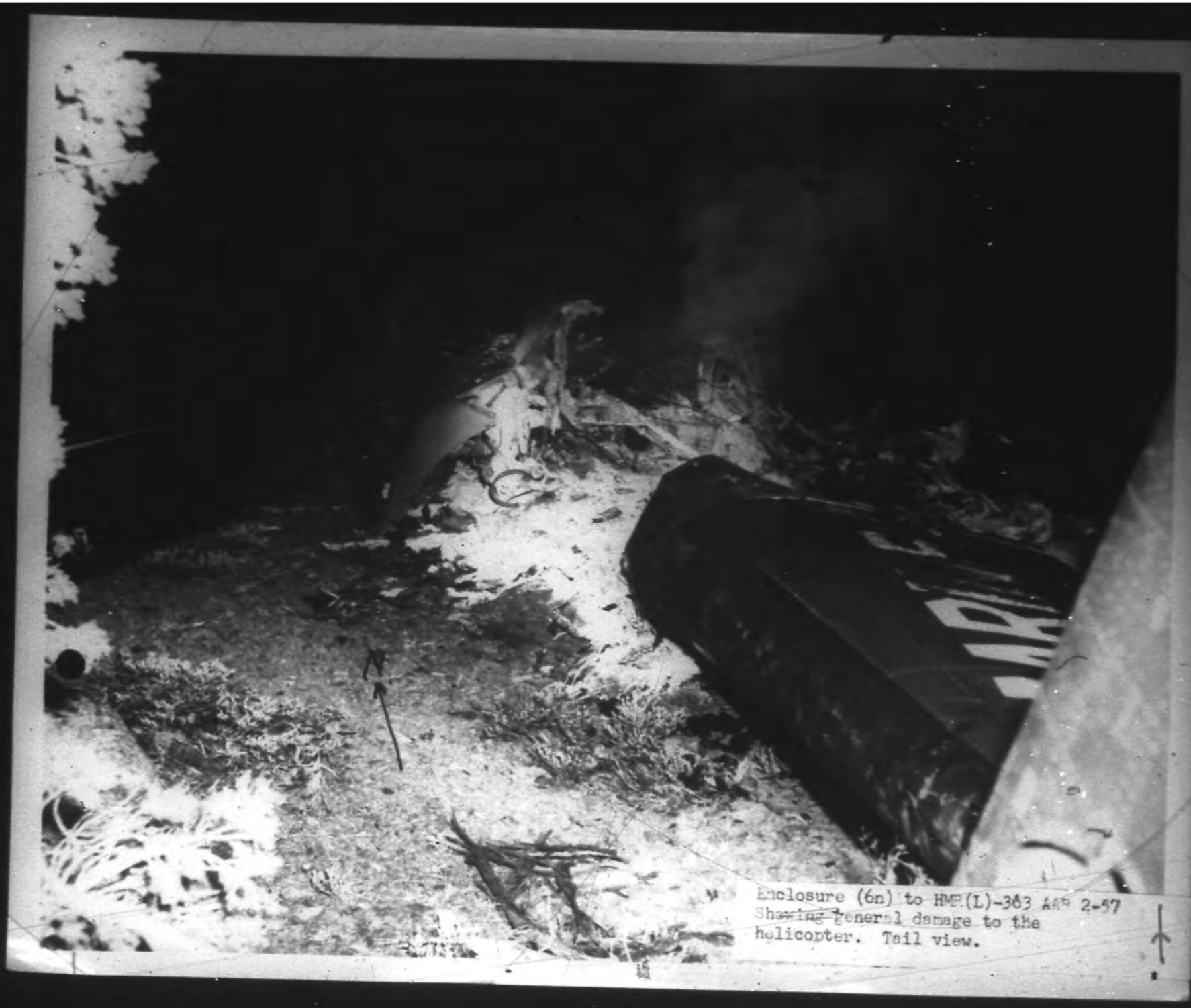
[illegible] 2-57
[illegible] damage to the
[illegible], cockpit and cabin.

Enclosure (6j) to HMP(L)-363 AAP 2-57
A close up showing general damage to the engine, rotor head, cockpit and cabin.

Enclosure (6k) to HMR(L)-363 AAP 2-57
~~Showing~~ where the remaining section of
the #3 blade hit the tree.

Enclosure (61) to HMP(L)-363 AAR 2-57 showing:
"A" #4 Rotor Blade
"B" 14 inch tree stump where main rotor blades made initial contact.

Enclosure (6m) to HMR(L)-363 AAR 2-57
showing relative position of;
"A" Root end of #3 Blade.
"B" Middle section of #3 blade.



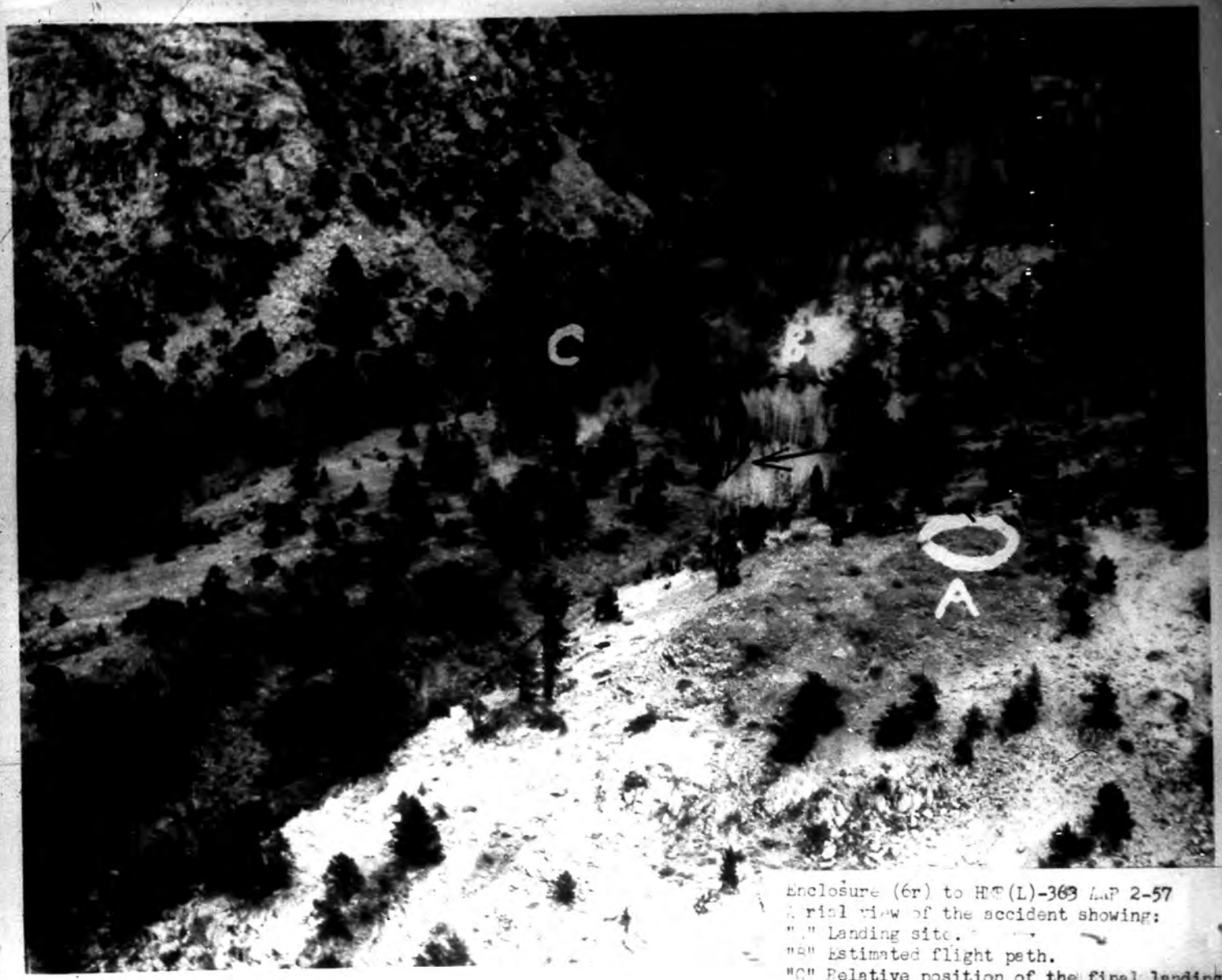
Enclosure (6n) to HMR(L)-363 AAR 2-57
Showing general damage to the
helicopter. Tail view.

Enclosure (6o) to HMR(L)-363 AAR 2-57
Showing general damage to the helicopter.
Front view.

Enclosure (6p) to HMP(L)-363 MAR 2-57
Showing close-up view of damage to aft section of cabin.

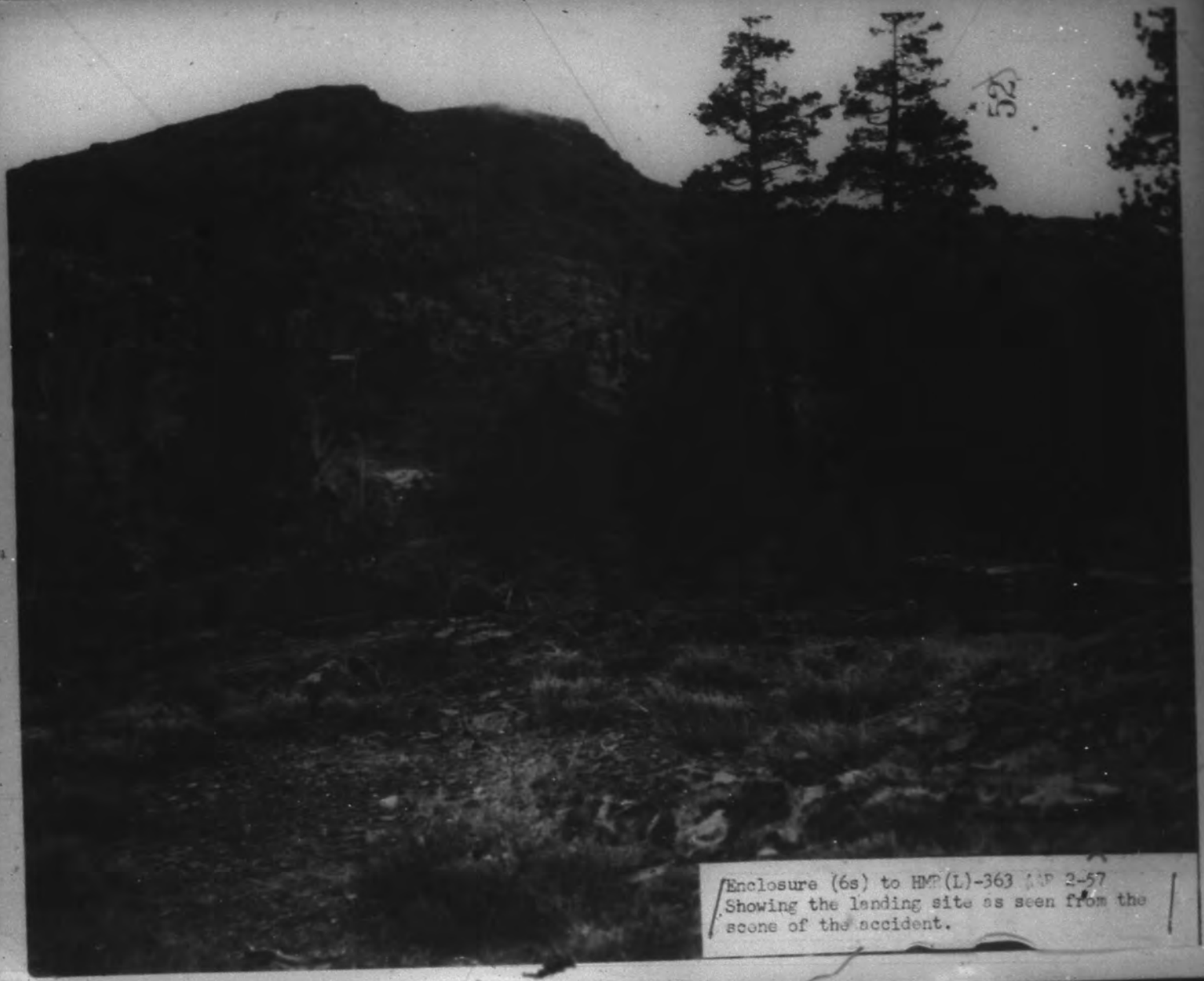
Enclosure (6p) to HQ(L)-363 MAR 2-57
Showing close-up view of damage to aft section of cabin.

Enclosure (6r) to HMP(L)-363 MAP 2-57
Aerial view of the accident showing:
"A" Landing site.
"B" Estimated flight path.
"C" Relative position of the final landing.



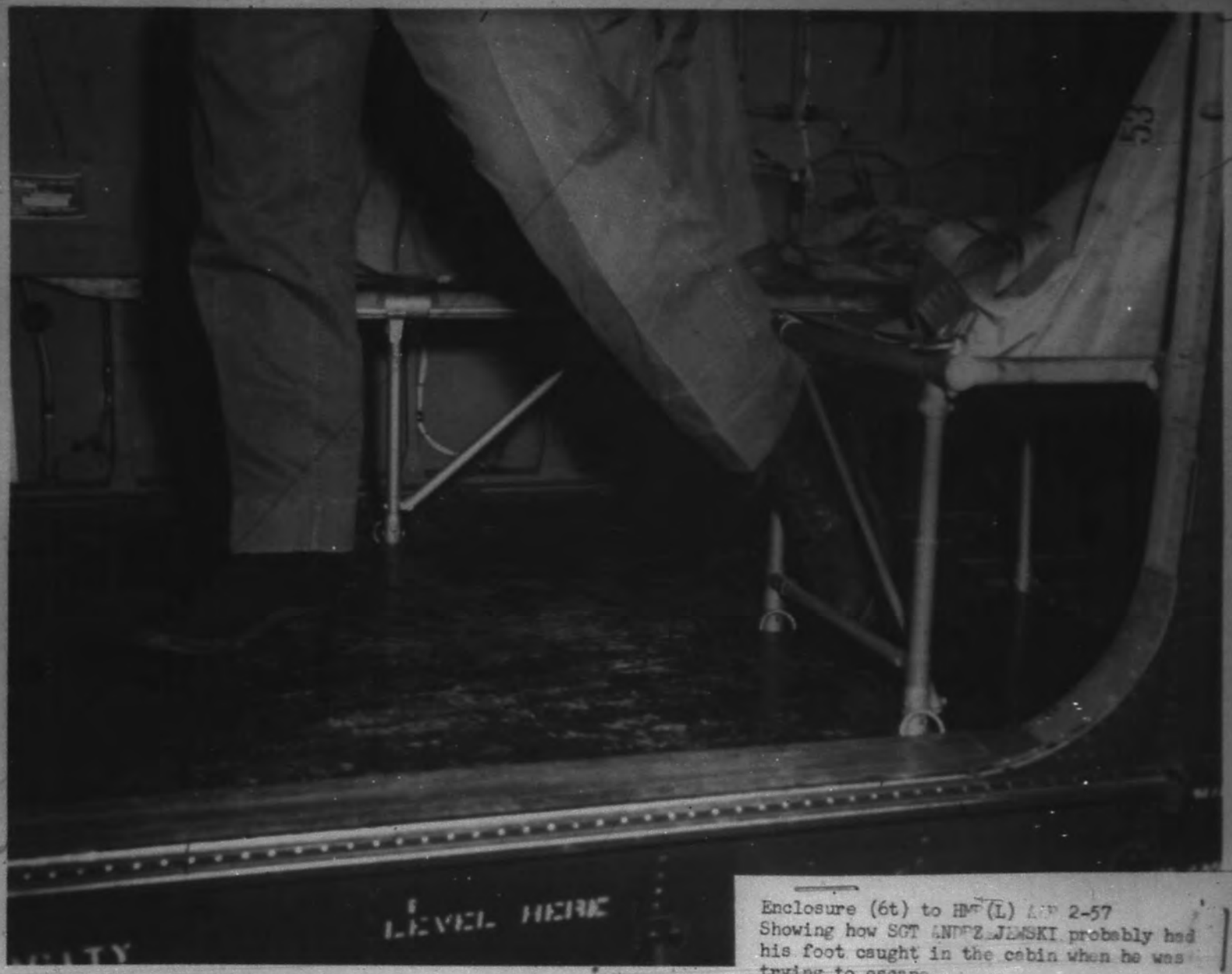
Enclosure (6r) to HQ(L)-363 MAP 2-57
Aerial view of the accident showing:
"A" Landing site.
"B" Estimated flight path.
"C" Relative position of the final landing.

2-57



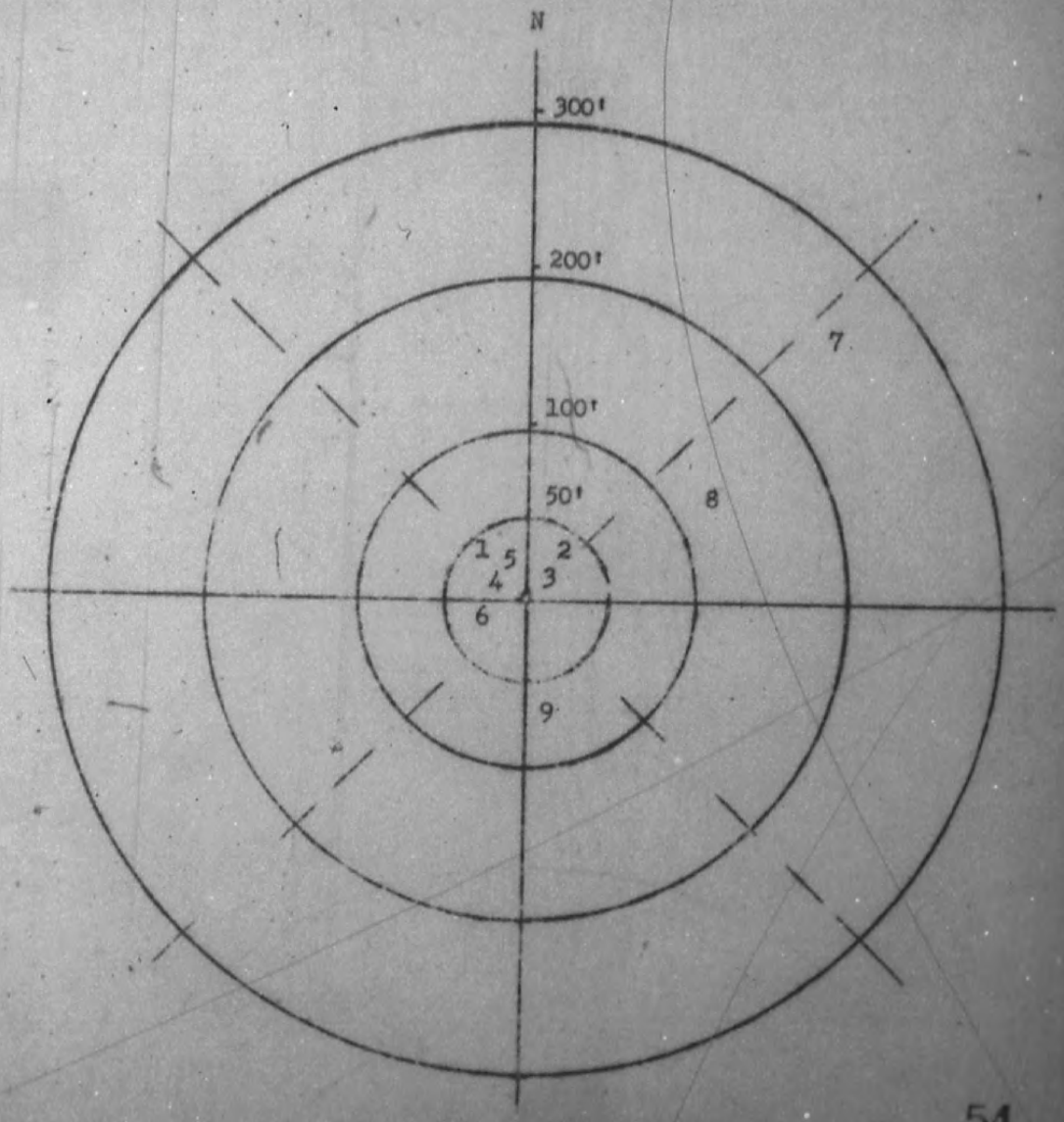
Enclosure (6s) to HMR(L)-363 [illegible] 2-57
Showing the landing site as seen from the scene of the accident.

52



Enclosure (6t) to HMP(L) [illegible] 2-57
Showing how SGT ANDRZEJEWSKI probably had his foot caught in the cabin when he was trying to escape.

DISPERSION PATTERN
(rotor head is the center)



1.	Left Landing Gear	36'	6.	#1 Blade Root	28'
2.	Tail Wheel	36'	7.	#1 Blade Tip Section	250'
3.	#3 Blade Tip	30'	8.	#1 Blade Tip	125'
4.	#3 Blade Section	9'	9.	Small metal particles from tail pylon	70'
5.	#2 Blade	19'			

Enclosure (7) to HMC(L)-363 AAR 2-57

AEROLOGICAL SECTION
U. S. MARINE CORPS AIR FACILITY
SANTA ANA, CALIFORNIA

CRASH REPORT

DATE 26 Oct 1957 TIME 1440T

PILOTS NAME BLOOM, Donald L. RANK 1stLt

ORGANIZATION HMR(L)-363 TYPE AIRCRAFT HUS-1

BUREAU NO. 144640 LOCATION OF CRASH 15 miles West Bridgeport, Calif.

MODEX NO. OF AIRCRAFT INVOLVED YZ-75

WEATHER INFORMATION

OBSERVATION TAKEN AT Scene of Accident TIME OF OBSERVATION 1530T

SKY (Type weather) Cloudy RESTRICTION TO VISIBILITY RW

CEILING (Feet) E 1500 ft VISIBILITY (miles) 5RW

CLOUD AMOUNT (1st layer) 10

CLOUD HEIGHT (1st layer) 1500 ft

TEMPERATURES: DRY BULB(F°) 43 WET BULB(F°) 41

DEW POINT (F°) 39 RELATIVE HUMIDITY (%) 87

WIND: DIRECTION (True degrees) 360 AVERAGE VELOCITY (Kts) 3

GUSTS(Time of crash) None HIGHEST GUSTS(15 minutes) None

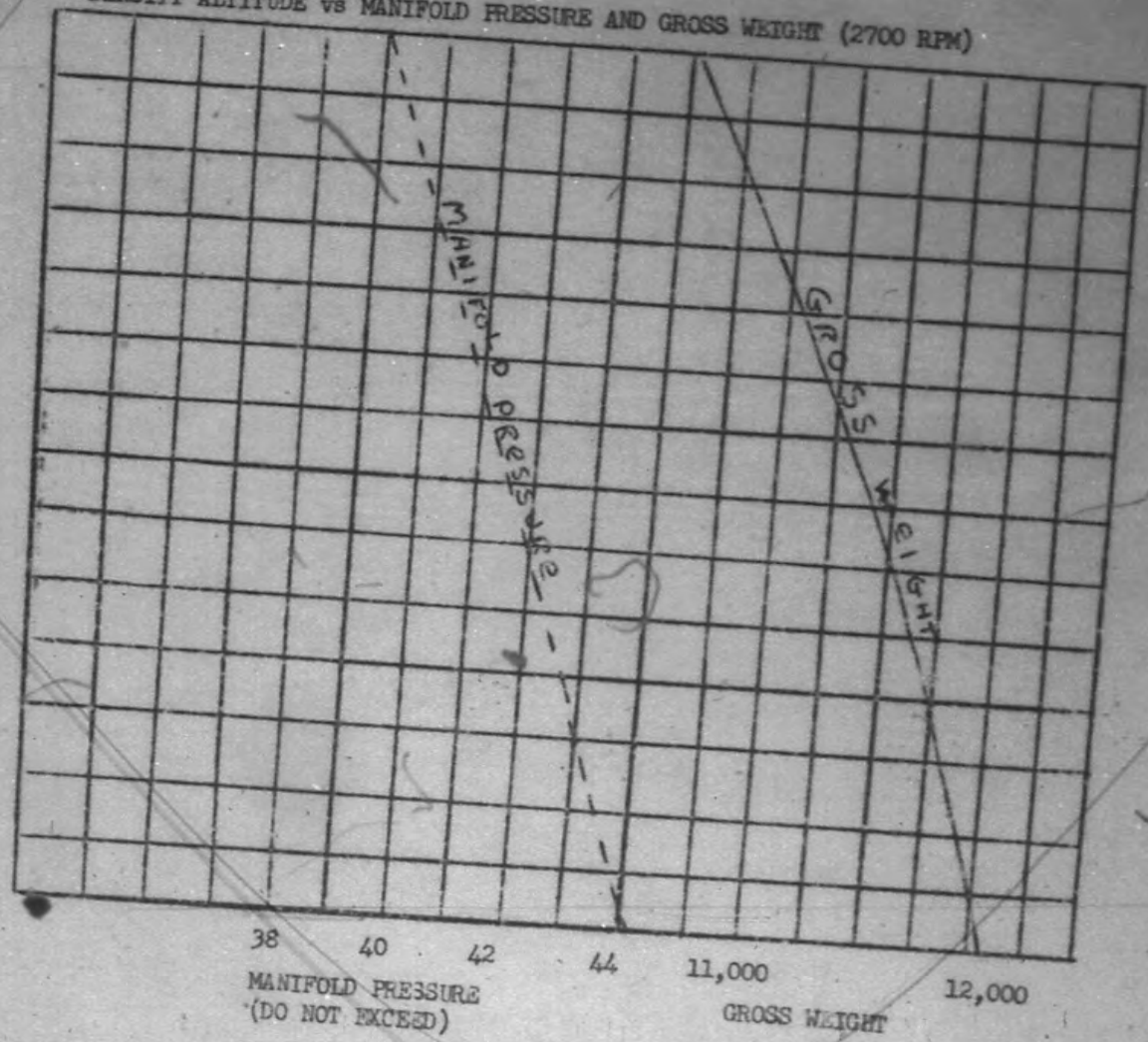
ALTIMETER SETTING (Inches) 30.42 SEA LEVEL PRESSURE(Mbs) NA (In) NA

STATE OF LANDING AREA(hard, soft, wet, dry, ect.) Hard and dry

REMARKS(State of weather for 30 minutes prior to crash) Overcast, ceiling estimated 1500 ft, visby restricted to 5 miles in RW, surface winds N 0-5 Kts, density altitude 8100 ft.

G. H. GREEN, MAJOR, USMC
SAFETY OFFICER, HMR(L)-363

DENSITY ALTITUDE vs MANIFOLD PRESSURE AND GROSS WEIGHT (2700 RPM)



GROUP SUPPLY OFFICE
MARINE HELICOPTER TRANSPORT GROUP (LIGHT) 36
3d MARINE AIRCRAFT WING, AIRCRAFT, FMF, PACIFIC
MARINE CORPS AIR FACILITY
SANTA ANA, CALIFORNIA

45:REB:rek
L8-3-(1)
31 October 1957

From: Group Supply Officer
To: Aviation Safety Officer, Marine Helicopter Transport Squadron (Light) 363

Subj: Statement Concerning Oxygen Equipment ordered by HMR(L)-363

1. The following information concerning oxygen equipment ordered by the material section of HMR(L)-363 is hereby submitted.

2. On 7 October 1957, HMR(L)-363 materiel officer submitted in excess requisitions for oxygen equipment needed for training maneuvers at Marine Corps Cold Weather Training Unit, Pickle Meadows, Bridgeport, California. Prior to deployment of the squadron the following items had been issued:

STOCK NO.	NOMENCLATURE	QUANTITY
R6830-324-1704-G500	Cylinder Oxygen	3 EA.
R1669-217-3095-GA20	Mask, Oxygen	22 EA.
R6680-252-7796-Y120	Regulator Oxygen	14 EA.
R1660-217-3094-GA20	Mask Oxygen	2 EA.

3. The remainder of the items were either not in the supply system or not available in the local area for issue, but remained on order.

R. E. BRAMEL

Enclosure (11) of HMR(L)-363 AAR 2-57