HEADQUARTERS
COMMANDER AIR FORCE, U. S. ATLANTIC FLEET
U. S. NAVAL AIR STATION
NORFOLK 11, VIRGINIA

REFER TO
FF4-2
A25

SERIAL
14B/ 14468

15 DEC 1954

FOURTH ENDORSEMENT on VP-23 AAR Ser 3-54, P2V-5, 131473, accident occurring 27 July 1954, pilot (b) (6)

From: Commander Air Force, U.S. Atlantic Fleet
To: Chief of Naval Operations (OP-57)
Via: Officer in Charge, U.S. Naval Aviation Safety Activity

Subj: Aircraft Accident Report

1. Forwarded, concurring in the comments set forth in the third endorsement subject to the following:

a. It is considered that investigation of recommendation 5 e should be undertaken by the Bureau of Aeronautics.

2. As previously noted, this is the second recent P2V accident resulting from fuel starvation in which the automatic fuel system was not used. Defective parts, whether permanently or intermittently malfunctioning, must be made the subject of UR's in order that presently unreliable systems may be corrected.

(b) (6) [redacted]

(b) (6) [redacted]
By direction

Copy to:
BUAER (2)
COMFAIRWINGSLANT
COMFAIRWING THREE
CO, VP-23

ORIGINAL

FF12/1/A25-1
Ser: 24/ 1897
27 October 1954

THIRD ENDORSEMENT on VP-23 A.R No. 3-54, P2V-5 BuNo 131473, pilot CDR [redacted]

From: Commander Fleet Air Wings, U.S. Atlantic Fleet
To: Chief of Naval Operations (Op-57)
Via: Commander Air Force, U. S. Atlantic Fleet
Officer in Charge, Naval Aviation Safety Activity

Subj: VP-23 Aircraft Accident Report 3-54; submission of

Encl: (1) First endorsement on Board of Investigation's report of 23 August 1954 of the accidentof P2V-5 aircraft, dated 10 Sept 1954
(2) ComFAirWingsLant spdltr 1634 of 10 Sept 1954
(3) CO, VP-23 spdltr 1024 of 5 Oct 1954
(4) ComFAirWingsLant Admin despatch 082040Z of Sept 1954

1. Forwarded, concurring with the conclusions and recommendations of the Aircraft Accident Board as amended by the second endorsement, subject to the following comments.

2. It is to be noted that there has been two separate investigations of this aircraft accident; the subject aircraft accident report and a Board of Investigation, reference (a). Reference (a) of the second endorsement should read 23 August 1954 in lieu of 18 August 1954. A combined view of these two reports present a better picture of the accident, the recommendations, and the corrective action taken. Since the report of the Board of Investigation is not available to all the addressees, enclosure (1) has been included for additional information and to show the parallel of conclusions and the action taken.

3. Enclosure (2) was issued in an effort to clarify the safety of flight query raised by paragraph 5a of the first endorsement of the aircraft accident report. Enclosure (3), an ambiguous reply, leaves the safety of flight point confused. By copy of this endorsement the Commanding Officer of Patrol Squadron TWENTY-THREE is directed to further clarify enclosure (3) and the safety of flight issue mentioned in paragraph 5a of his endorsement. The Commanding Officer of Patrol Squadron TWENTY-THREE is further directed to report to this commandthe corrective action taken in fuel management and pre-flight inspection procedure as directed by paragraph 3 of enclosure (1). It is to be further noted that prior to this accident a P2V-5 was lost while operating on "Manual". To date this command knows of no P2V-5 aircraft lost from fuel starvation that resulted from following the procedure as set forth in the pilot's handbook. Recommendations 5(a), (b), (c), (d) and (f) are concurred in. Enclosure (4) indicates action already taken toward implementing recommendations 5(c), (d) and (f). Do not concur with the Aircraft Accident Board's recommendation 5(e). Proper storage will eliminate the danger of loose gear. The bulkhead and door would add considerable weight and might tend to trap or become an obstruction to the crew in ditching. Its ability to increase the buoyancy of the aircraft is questionable.

FF12/1/A25-1
Ser: 24/ 1897
27 October 1954

4. The delay in forwarding this report is realized, but was necessary in order to obtain a clear and decisive view from this abnormally complicated and perplexed accident.

E. J. SULLIVAN
Acting

H. P. Burden

H. P. BURDEN
Chief of Staff

Copy to:
CFAW - 3
CO, VP-23

3

FF12/1-3/A25
Serial: 936
10 Sept 1954

FIRST ENDORSEMENT on Board Of Investigation's report of 23 Aug 1954 of the accident of P2V-5 aircraft

From: Commander Fleet Air Wing THREE
To: Judge Advocate General
Via: (1) Commander Fleet Air Wings, Atlantic Fleet
(2) Commander Air Force, Atlantic Fleet

Subj: Report of Board of Investigation to inquire into the accident of P2V-5 Aircraft, Bureau Number 131473, on 29 July 1954; action on

1. Forwarded. The findings of fact, opinion and recommendations are herewith approved, except that recommendation 8(a) is considered to be basically an opinion and should henceforth be regarded as such.

2. This command concurs with the recommendation contained in paragraph 8(d) that no responsibility for the accident be assigned since the exact cause of the accident has not been determined. It is apparent, however, from the entire record of testimony, that from its very inception the subject flight tended to be accident-prone as evidenced by defects of crew organization and lack of adherence to established flight crew procedures as regards proper fuel management and pre-flight inspection.

3. In the absence of any concrete evidence establishing the foregoing discrepancies, listed in paragraph 2, as the primary cause of the accident, no action is contemplated by this command with regard to the performance of any one crew member's duties. However, by separate correspondence and direct liaison, the Commanding Officer, Patron Squadron TWENTY-THREE has been directed to incorporate and ensure strict adherence to proper fuel and cockpit management procedures, including automatic fuel transfer for normal operations, and proper pre-flight inspection procedure and method of reporting completion thereof.

THOMAS ASHCRAFT

ENCLOSURE (1)

SND GEN 1006 (REV. 1-49)

NAVAL SPEEDLETTER

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CLASSIFICATION

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IN REPLY REFER TO

FF12/1/F11
Ser: 30/ 1634

DATE

10 Sep 1954

TO: CO, PATRON 23
Naval Air Station
Brunswick, Maine

NAVAL SPEEDLETTER—

Permits dispatch or informal language.

May be sent (1) with enclosures, (2) in a window envelope (size 8¾" x 3⅞"), **if contents are not classified as confidential or higher,** (3) to both naval and nonnaval activites.

Is packaged 500 sheets of white or of one color: yellow, pink, or green.

(Fold)

Referring to paragraph 5(a) of CO VP-23 endorsement on VP-23 AAR 3-54 of 18 August 1954 the statement is made that "the squadron is still experiencing failure of the main tank floats on occasions, with service change (623) installed".

Since no RUDMS have been received on this subject from VP-23, it is requested that RUDMS or other suitable reports be made of the cases referred to.

T. O. DAHL
Acting

(b) (6) [redacted]
By direction

5

COPY TO

CFAW-3
ComAirLant

ADDRESS: Commander Fleet Air Wings Atlantic (Admin)
Naval Air Station
Norfolk, Virginia

← SENDER'S MAILING ADDRESS

Address reply as shown at left, or reply hereon and return in window envelope (size 8¾" x 3⅞"), **if not classified as confidential or higher.**

CLASSIFICATION

UNCLASSIFIED

ENCLOSURE (2)

NAVY—DPPO SND Norfolk

SND GEN 1006 (REV. 1-49)

USE FOR URGENT LETTERS ONLY

NAVAL SPEEDLETTER

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☐ REGULAR MAIL ☐ SPECIAL DELIVERY

☐ AIR MAIL ☐ REGISTERED MAIL

CLASSIFICATION

UNCLASSIFIED

IN REPLY REFER TO

F/VP-23/PAC:rcm
Serial: 1024

DATE

Oct 5, 1954

TO: Commander Fleet Air Wings, Atlantic
U.S. Naval Air Station
Norfolk 11, Virginia
Attn: Administration

NAVAL SPEEDLETTER—

Permits dispatch or informal language.

May be sent (1) with enclosures, (2) in a window envelope (size 8⅞" x 3⅞"), if contents are not classified as confidential or higher, (3) to both naval and nonnaval activites.

Is packaged 500 sheets of white or of one color: yellow, pink, or green.

(Fold)

YOUR SPDLTR SER 50/1634 DTD 10 SEPT 1954 REFERS

FAILURES REFERRED TO WITH SERVICE CHANGE 623 INSTALLED WERE OF INTERMITTENT NATURE WHICH RENDERED PRACTICABILITY OF CHANGING FLOAT VALVE AND ISSUING UR QUESTIONABLE X THESE CASES WERE SIMILAR TO ONE DESCRIBED IN MY AAR 3-54 X

PERMANENT FAILURE HAS BEEN ENCOUNTERED IN OUR 131 SERIES AWAITING SERVICE CHANGE 623 AND AS SOON AS KITS ARRIVE UR'S WILL FOLLOW ON THE DEFECTIVE FLOATS REPLACED X

INTERMITTENT FAILURES HAVE ALSO BEEN ENCOUNTERED IN OUR 128 SERIES TO WHICH SERVICE CHANGE 623 DOES NOT APPLY X IN ONE CASE NEW FLOAT VALVE WAS ORDERED AND RECEIVED BUT PRIOR TO INSTALLATION RELATED FAILURE CORRECTED ITSELF MAKING CHANGE UNNECESSARY X

H.W. HOP

6

COPY TO

CFAW-3
ComAirLant

ADDRESS: Commanding Officer
Patrol Squadron TWENTY- THREE
% Fleet Post Office
New York, New York

← SENDER'S MAILING ADDRESS

Address reply as shown at left; or reply hereon and return in window envelope (size 8⅞" x 3⅞"), if not classified as confidential or higher.

CLASSIFICATION

UNCLASSIFIED

NAVY—DPPO SND Norfolk

ENCLOSURE (3)

DEFERRED
Ø82Ø4ØZ

FM COMFAIRWINGSLANT ADMIN
TO BUAER/PATRON TWO SIX
INFO COMAIRLANT/NAVAL AVIATION SAfety ACTY/
COMFAIRWING THREE/ PATRON TWO THREE

STRONGLY CONCUR WITH RECOMMENDATIONS PAREN FIVE PAREN PAREN CHARLIE

CMM DOG AND FOX PAREN PATRON 23 AAR 3-54 X PATRON 26 DESIGNATED TO

PROTOTYPE AND SUBMIT PROPOSED CHANGES IN ACCORDANCE BUAER INSTR NAVER ØØPT3Ø

7

FF12/1-3/A25
Serial: 962

14 SEP 1954

SECOND ENDORSEMENT on VP-23 Aircraft Accident Report 3-54 of 18 Aug 54

From: Commander Fleet Air Wing THREE
To: Chief of Naval Operations (Op-57)
Via: (1) Commander Fleet Air Wings, U. S. Atlantic Fleet
(2) Commander Air Force, U. S. Atlantic Fleet
(3) Naval Aviation Safety Activity

Subj: VP-23 Aircraft Accident Report 3-54; submission of

Ref: (a) Board of Investigation report of 18 August 1954

1. Forwarded, concurring in the first conclusion of the Aircraft Accident Board. Concur in the second conclusion in so far as concerns a determination that a secondary and contributing factor causing this accident was pilot error, consitituted either by improper selection of fuel or by lack of close personal control of fuel which is evidenced from the testimony adduced in reference (a).

2. It is considered that the action taken on the recommendations of the board are adequate to prevent similar occurrences in the future.

Thomas Ashcraft
THOMAS ASHCRAFT

Copy to:
CO, VP-23

ORIGINAL

VP-23/A25/SYB:tl
Serial: 912

UNITED STATES ATLANTIC FLEET
AIR FORCE
PATROL SQUADRON TWENTY THREE

Naval Air Station
Brunswick, Maine
26 August 1954

FIRST ENDORSEMENT on VP-23 Aircraft Accident Report 3-54 of 18 August 1954

From: Commanding Officer
To: Chief of Naval Operations (Op-57)
Via: (1) Commander Fleet Air Wing THREE
(2) Commander Fleet Air Wings, U.S. Atlantic Fleet
(3) Commander Air Force, U.S. Atlantic Fleet
(4) Naval Aviation Safety Activity

Subj: Aircraft Accident Report 3-54; submission of

1. Forwarded.

2. Concur in the conclusion that the primary cause of the accident was due to abnormal operation of both engines, the cause of which is undetermined. Do not concur in the secondary conclusion. (b) (5) [redacted] (b) (5), (b) (6) [redacted]. Repeated tests conducted by this command since the accident occurred reveals engines will operate 5 to 10 minutes on the inboard tank after the tank is supposedly dry; that is, booster left on for five minutes after the amber light comes on. (b) (5) [redacted] (b) (5) [redacted]

3. Concur with first recommendation. At the time of the accident there was no written doctrine in the squadron that the Patrol Plane Commander approve of all changes in the cockpit as it was believed all plane commanders would insist on this without specific instructions. However, squadron policy now dictates that Patrol Plane Commanders approve all changes in the cockpit. This includes opening and closing cowl flaps, alternate air doors, etc. In addition it is now mandatory that the pilot initial each hourly set of fuel entries as they occur.

4. Concur with the second and third recommendations.

5. Concur in part with the fourth recommendation. Even though the accident board found no evidence to support the possibility of fuel starvation in this case due to use of the manual system, the term "manual system" should be clarified at this time. "Manual", as used by accident board, does not mean to imply any switching of fuel valves. It means that booster pumps for tanks containing fuel are not left on at all times until fuel is exhausted and low pressure light come on. In checking with other squadrons it was discovered that all use a modified automatic system of one kind or another. The following are this command's reasons for not using the fully automatic system:

a. Safety of flight. This command is still waiting for necessary parts to make service change 623 in four aircraft which should help eliminate faulty float valve operation; however, the squadron is still experiencing failure of the main tank floats on occassions, with service change installed. Using the fully-automatic system on ground turn-up with the main tanks full can result in an overflow at a very critical time; therefore, it is considered mandatory to leave the inboard booster off until the aircraft is in flight, where any overflow from the vents would be carried well clear of the aircraft.

b. The time at which the fuel system should be placed on the fully-automatic position is debatable. Using the fully automatic system throughout the flight is conducive to making pilots fail to be fuel conscious in an aircraft in which you seldom conclude a flight with less than 3 hours fuel remaining. For that reason it is believed advantageous to let the main tank level reach approximately 2000 pounds before turning on the inboard boosters. This accomplishes two purposes:

(1) Provides a check on actual transfer rate of inboard booster pump, revealing if the pump is breaking down and not capable of transferring at a rate of 600 gallons per hour.

(2) Provides good graphic demonstration to pilots as to the manner in which the pumps and floats operate.

The following reasons support the policy of turning the inboard boosters off prior to the time that the fuel is completely transferred from the inboard to the outboard tanks:

(1) In the event of failure of the normal fuel system you would have emergency fuel to switch to.

(2) In the event the engine fuel pump fails, it provides an additional booster pump capable of maintaining adequate fuel pressure to the engine. This could be needed in the event the outboard booster failed after prolonged operation in the high position.

(3) Provides fuel for the cabin heater, which is supplied by the right inboard tank.

6. In reference to the accident board's belief that at the time of engine trouble the fuel selectors were on the main tanks with ample fuel therein, the following amplifying comments are considered relevant.

a. It has never been this command's policy to use the emergency system for normal operations. Tanks have been switched to emergency for demonstration purposes only. If the pilot had been operating on the emergency system his main tanks could not have required fuel to be transferred to them. At the time of the 1400 transfer, when the plane captain transferred gas by use of the inboard boosters, bringing the outboards from a recognized low level of (1100) eleven hundred pounds up to twenty-five hundred (2500) pounds, it is not conceivable that the plane captain would have switched to the emergency position, and not remembered it. Had he done so when he secured his transfer it would have been impossible for the main tanks to have been at 3200 pounds of fuel at the time of ditching. Previous fuel logs maintained by Chief (b) (6) reveal that he always secured transfer when mains read 2500 pounds. The fact that CDR (b) (6) and LT (b) (6) are both positive that the starboard main tank read 3200 pounds at the time of engine malfunction indicates that the plane captain failed to turn off the inboard boosters and that the main float stuck or stopped at a higher than normal level.

b. Repeated tests conducted by this activity of letting an engine fail by running a tank dry reveal almost identical symptoms to those experienced in the case in question. First fuel flow became erratic followed shortly by lesser MEP fluctuations. However in all tests cases the fuel pressure fell to approximately 14 pounds with the first surge of RPM. In addition engines did not backfire while running dry. Since all personnel in the cockpit were positive fuel pressure stayed up at normal and went from about 28 pounds up to approximately 32 pounds when high low switch was placed in the high position, it is concluded as a result of these tests that there was fuel from the tank to the carburetor at the time engines failed.

7. Concur in recommendation number five.

8. It is believed CDR (b) (6) should be commended for his skill in making an excellent ditching; however, it has been called to all pilots attention that in the future no effort be made to lighten ship of anything other than loose gear when at low altitude and ditching is imminent since personnel engaged in trying to remove radar gear could have been seriously injured had they been in the process of throwing gear over the side at the time the plane hit the water.

/s/ [illegible] HOP

11

Copy to:

Baker	(2)
NASL	(2)
BAR, Burbank, Calif.	(1)
ComAirLant	(1)
ComFAirWingsLant	(1)
ComFAirWingTHREE	(1)

AIRCRAFT ACCIDENT REPORT

PAGE 1 OF 11 PAGES

THE AIRCRAFT ACCIDENT BOARD SHALL SUBMIT THIS REPORT TO THE C.O. OF THE ACTIVITY CONDUCTING THE INVESTIGATION. IT SHALL THEN BE FORWARDED BY THE C.O. IN ACCORDANCE WITH CURRENT ANM INSTRUCTIONS.

1. DATE OF ACCIDENT: 29 July 1954 — TIME: 1454L
2. ACTIVITY SUBMITTING REPORT: Patrol Squadron TWENTY THREE
3. NAVY SERIAL NO.: 3-54
4. MODEL AND SERIES: P2V-5 — BUNO: 131473 — CHECK CHANGE TO A/C: X, ☐, ☐, ☐, ☐
5. ACTUAL OWNER OF A/C: Patrol Squadron TWENTY THREE
6. NAME OF UNIT OPERATING THE A/C: Patrol Squadron TWENTY THREE, NAS, Brunswick, Me. — BASED AT: — OPERATING TAS OF COMMAND: CPAM-3, CPAMLANT, COMAIRLANT
7. LOCATION OF ACCIDENT: 40-10N 69-40W
8. UNIT TO WHICH OPERATOR ATTACHED: Patrol Squadron TWENTY THREE

9. PERSONNEL INVOLVED (Including name and injury code of those injured, not occupants of A/C)

	A Full name, rank, service, file no. (List person on control form)	B	C Rank	D Position	E Injury
1.	(b) (6) [redacted] CDR	(b) (6) [redacted] 1310 USN	PPC	Left seat	X
2.	LT	1315 USNR(A)	Co-Pilot	Right seat	X
3.	ENS	1325 USNR(A)	Navigator	Flight deck	X
4.	ENS	1325 USNR(A)	Navigator	Flight deck	X
5.	LT	1115 USNR(A)	Observer	Flight deck	D
6.	ADC	(b) (6) [redacted] USN	Plane Capt	Flight deck	D
7.	ADJ3	USN	2nd Mech	Aft Station	D
8.	AIAM	USN	Radioman	Aft Station	X
9.	AN	USN	2nd Radio	Aft Station	X
10.	ATO	USN	Technician	Flight deck	X
11.	AGAN	USN	Ordnance	Aft station	D

10. PILOT EXPERIENCE

	Total all models	Total this model	Last 12 months all models	Last 6 months all models	Last 6 months this model	Instrument data: Special/Tos/Ha
Total hours	7,[illegible].9	400.6	639.4	229.2	229.2	
Instrument hours			102.9	17.3	17.3	34
Night hours			100.0	22.3	22.3	
IP qualified						7 Feb 1941

11. FLIGHT: ☐ FLIGHT ☐ TO FLIGHT — 12. PURPOSE OF FLIGHT: Operational Exercise — CODE: 1A8 — 13. TIME IN FLIGHT: 07-40

14. TYPE OF ACCIDENT: Ditched at sea — CODE: D — 15. WEATHER PRIOR: Cruising at 1100 feet

16. WEATHER: X VFR ☐ IFR — CEILING: Unlimited — VISIBILITY: 10-15 miles — ☐ YES X NO — CLEARANCE CODE: VFR

18. WIND DIRECTION: SE — SPEED: 10-5 kts — 19. SEA: (a) Level (b) [illegible] — CONTRAIL HEIGHT: 300 yards — SPEED ON SPOT: 90 kts — ☐ YES X NO

21. AIRCRAFT AND ENGINE DATA (Fill in all data in every case of material failure or malfunction, actual or suspected)

History	Service year	Total number of overhauls	Months in this year	Not hours since overhaul	Flt hours since last acceptance	Type of check last performed	Flt hours since check	No. days since check
Aircraft	1	0	3		240.0	Periodic (30hr)	7.3	2
Engine 1		0			240.0	Periodic (30hr)	7.3	2
Engine 2		0			240.0	Periodic (30hr)	7.3	2
Engine 3								
Engine 4								

WAS THIS A/C DATA CHANGED IN PREVIOUS ACCIDENT(S) DURING PRESENT SERVICE YEAR? ☐ YES X NO — IF YES, GIVE DETAILS OF PREVIOUS ACCIDENT: U.S. Serial No. on this accident, if submitted - None

24. CONTRIBUTORY FACTORS (Check on file or note 100 primary "P" factor, all others secondary "S")

P S Pilot (or crew) error — P S Error of other personnel — P S Material failure or malfunction — P S Unknown: Undetermined

26. DATA CONDITIONS PRESENT IN THIS ACCIDENT (Check correct): ☐ Rain, fog, thunderstorm, turbulence — ☐ Pitching or rolling deck — ☐ Communication difficulty — ☐ Airport hazard — ☐ Radar — ☐ Terrain characteristics

12

27. EMERGENCY CONDITIONS: X Immediate forced landing — ☐ Precautionary landing — ☐ Engine failure — ☐ Fuel exhaustion or near exhaustion

28. PERSONNEL SAFETY EQUIPMENT USED: ☐ Parachute — ☐ Ejection seat — X Shoulder harness — X Safety belt — ☐ Oxygen mask — ☐ G-suit — ☐ Protective helmet — ☐ Other

X List stowed: Life vests — 10x VII Life raft — 4x IV Life raft, Serial No. 3-54

29. ENCLOSURES AND DISTRIBUTION (Check off list)

Check	Enclosures	Check	No.	Distribution of enclosures
X	1 Pilot		ORIG.	CNO (OP-537) via CDR. OF COMMAND
	2 Log		1CC	CNO COMMANDANT
	3 Map		2CC	BUAER DIRECT
				Check and list others as required

Prepared by: [illegible] — Approved by: [illegible] — Lockheed Corp. Burbank, Calif.

(b) (6) [redacted] (b) [redacted] USN
Flight Surgeon
(b) (6) [redacted] (b) (6) [redacted] LT,
Safety Officer
(b) (6) [redacted]
Flight
(b) (6) [redacted]

29. The Accident. On 29 July at 07[illegible], GMT [redacted]/1310, USN took departure from NAS Brunswick, Maine in P2V-5 BuNo. 131473 on a VFR clearance for an ASTEVEX. The flight was being utilized as an operational readiness inspection of VP-23 by Commander Fleet Air Wing [illegible]. Aboard the flight, in addition to the crew of ten (10), was the [illegible] Observer LT [redacted]

The flight to the operating area approximately 150 miles east of Atlantic City was performed at an altitude of 1500 feet and was without incident.

The aircraft remained on station at altitudes below 1500 feet from about 1000Q until about 1400Q carrying out the assigned exercise.

At about 1400Q the aircraft departed station and proceeded VFR at 1500 feet enroute to Brunswick.

At about 1450Q the fuel flow on the port engine dropped to zero. The tachometer and BMEP gauges remained normal for a very short time and then both began to fluctuate radically. This indication was followed by a loss of power from the engine which was physically felt by the co-pilot on the rudder. The engine operated intermittently. The pilot put the mixture controls in the full rich position and added 2600 RPM and 45 in. of manifold pressure to both engines. The port engine continued to surge. After hearing what he thought was the port engine back firing, the pilot feathered the engine, and the co-pilot performed the single engine check using the check-off list provided. At this time the starboard engine was operating normally and smoothly at rated power and continued to do so for approximately thirty seconds. The pilot switched the IFF to the Emergency position, ordered crew to ditching stations, notified the OCI station at Montauk Point that he had lost his port engine, and requested a steer direct to NAS Quonset Point. Shortly thereafter the fuel flow meter, the tachometer, and the BMEP indicators for the starboard engine began to fluctuate. The starboard fuel valve was turned to the emergency position and the booster pump for the right center section tank was turned on. The engine continued to surge, losing power then regaining it and overspeeding. The pilot was unable to hold both airspeed and altitude so was forced to begin a descent maintaining between 135-140 knots. The engine quit completely at about 500 feet.

When the aircraft reached 100 feet the pilot notified the OCI station at Montauk Point that he was ditching in 10 seconds. He dropped his flaps and leveled off in a slightly nose-high (normal landing) attitude. The starboard propeller was left to windmill to provide hydraulic pressure for the flap operation.

13

The tail touched the water first at an estimated speed of 90 knots. The ECM dome and Radome are believed to have been carried away at this time filling the tail cone with water and tearing it from the plane. When the tail was felt to drag in the water, the pilot allowed the nose to come down slightly and the aircraft planed along the surface of the water for an estimated distance of 300 yards before the nose could no longer be held up. When the nose came down the plexiglass nose carried away and water gushed into the cockpit through the opening, leaving all members on the flight deck sitting in approximately 2½ feet of water.

The crew exited the aircraft within about thirty seconds and boarded the rafts. The CO2 bottle on the Mark VII raft had broken and expelled the CO2 so that the raft had to be inflated manually. The hand pump came apart and had to be reassembled and held together for the operation.

Once in the rafts, the crew set up the Gibson Girl transmitter and began sending distress signals and messages.

They were picked up by an Air Force/Air Rescue Plane after being down approximately two hours. Position information was provided by the OCI station at Montauk Point.

They crew was flown to NAS Quonset Point, Rhode Island where two of the crew were treated for minor injuries. All were examined and returned to the same day.

30. Damage to Aircraft.

BuNo. 131473 touched the water in a normal landing attitude as the result of a controlled glide to a ditching. The speed of impact was estimated to be 90 knots as the co-pilot stated that he noticed the airspeed indicator at 92 knots just before the aircraft hit the water. The aircraft came to a stop after planing for an estimated 300 yards and after floating for approximately six (6) minutes sank in 245 feet of water.

According to observations of the crew, the aircraft structure sustained the following damage as a result of the water landing:

The ECM dome and the Radome were carried away on initial impact. The tail cone filled with water and carried away shortly thereafter. The Plexiglass nose broke and carried away as soon as the nose lowered into the water. It is worthy to note that the aircraft did not break aft of the main spar as was usual in past cases of P2V ditching and there was no sign of wrinkles in the fuselage. The deck turret remained in place.

31. The Investigation.

The investigation revealed the following facts:

a. CDR (b) is an experienced patrol plane commander with a total of 5455.9 hours in all models including 465.6 hours in the P2V-5. His time in the last three months in this model is 229.2.

b. LT (b) is a qualified naval aviator in training for PP3P designation with a total of 370.1 hours in all models including 98 hours in the P2V-5. His time in the last three months in this model is 63 hours.

c. Proper utilization was made of squadron pre-flight and in-flight check off lists. The fuel tanks were "dip sticked" prior to turn-up at the flight line and revealed 2510 gallons total gas on board, the wing tips and main tanks both full and center tanks carrying about 710 gallons. Main and center section fuel tank drains were checked by the plane captain and crew prior to turn-up and no water was found. Wing tip tank drains were not checked. Prior to turn-up, while the APU was connected, the fuel system was checked in accordance with the squadron pre-start check off, tank empty-warning light operation and fuel pressure low/high on all systems. During taxi, the plane captain, in accordance with squadron "While taxiing Check-off", operated the emergency fuel system. Both systems were returned to normal (main tanks) as the tank selectors and the tank-engine cross-feed selectors were direct tank-to-engine. The pre-take-off check-off list was used item for item prior to take-off. Take off was at 0736Q.

d. Until the power failures resulting in the accident occurred, there was no indication of malfunction of either engine prior to or during the flight, with the following exception:

During flight the port engine BMEP gauge fluctuated 5 to 10 BMEP with a slight fluctuation of RPM. This type fluctuation is not unusual on squadron engines and maintenance efforts to correct it have thus far been unsuccessful.

14

e. From investiagtion of fuel management during the flight the following chronological record is the most accurate that the board could reconstruct from statements of personnel concerned:

(1) Take off was made with tank selectors normal on main tanks and tank-engine cross-feed selectors direct tank-to-engine. Main tanks and tip tanks were full and center tanks contained about 710 gallons.

(2) A fuel log was maintained throughout the flight by the plane captain with recordings entered hourly and whenever power changes were made.

(3) The fuel system was operated manually rather than utilizing the automatic system throughout the flight. Such operation is in accordance with current squadron doctrine.

(4) The first fuel transfer was made by the pilot at approximately 1200Q. Approximately 600 pounds of fuel was transferred from each center tank to the main tanks which brought the main tanks to approximately 2000 pounds each, with 1500 pounds remaining in each of the center tanks.

(5) The second fuel transfer was made by the pilot at approximately 1330Q when both tip tanks were transferred to the center tanks, which brought center tanks to approximately 2700 pounds each.

(6) The third fuel tansfer was made by the plane captain at approximately 1400Q when approximately 1700 pounds was transferred from each center tank to the main tanks. Transfer was completed about 1420Q with 2500 pounds in each main tank and 1000 pounds in each center tank.

f. From the time of on-station (1000Q) for the exercise to off-station (1400Q), the plane captain took station in the bow and remained there except to come up to the flight deck to record hourly fuel log entries. All other changes of power, fuel flow etc. were given to the plane captain for his log by inter-phone. This was more expeditious because the FAA-3 observer (LT (b) (6) was occupying the Plane Captain's position to better observe the PPC's handling of the exercise.

g. At about 1450 Q LT (b) co-pilot, who was in actual control in the co-pilot's seat, noticed the port engine fuel flow meter drop. This was followed by a drop in BMEP and power failure on the port engine. The pilot assumed control, placed the mixture in rich and adjusted power to 48 inches manifold pressure and 2600 RPM on both engines. Fuel flow, BMEP and RPM on the port engine fluctuated sharply resulting in recurrent surges of power. According to observations of pilot and co-pilot all other engine instruments remained normal. Engine and flight instruments read approximately as follows:

Fuel Pressure: Constant at 2[illegible] pounds.
Oil Pressure: 80 pounds.
Oil Temperature: 75°C.
Cylinder Head Temperature: 1[illegible]°C.
Carburetor Air Temperature: 20°C - 24°C.
Outside Air Temperature: 22°C.
Altitude: 1000 feet.
Airspeed: 170 knots.

15

Attempts to keep the port engine running such as adjusting throttles, RPM and mixture were to no avail. When the pilot heard what he took to be back-firing, he feathered the port engine. The co-pilot performed the single engine check using the check-off list carried in the cockpit. As a part of the check it was definitely noted that the starboard tank-engine cross-feed selector was direct tank-to-engine. The fuel booster pump was placed in the high position with a rise in fuel pressure noted and the prop synchronizer turned off.

h. Just prior to feathering the port engine, the pilot turned the IFF to the emergency position and transmitted to the Montauk Point CCI station that one engine was out and requested a steer direct to NAS Quonset Point. At about the same time he ordered the crew to ditching stations.

i. Within 15-30 seconds after the port engine was feathered the starboard engine began to fluctuate in a manner similar to the port, accompanied by what the co-pilot described as severe backfires. The principal difference noted between the port and starboard engines was less fluctuation of the starboard engine fuel flow, which remained low, and higher surges of RPM which reached 3200 RPM. According to the pilot's statement, he turned the fuel selector valve to the emergency position and turned on the inboard boost pump. According to the co-pilot's statement and the plane captain's statement, the co-pilot, on order from the pilot, turned the selector to the emergency position. According to all statements the plane captain checked the seating of the valve and the boost pump in the on position. The plane captain stated under questioning that he checked at this time that the tank-engine cross-feed selector was still positioned direct tank to engine.

j. Engine instruments on the starboard engine, except fuel flow, BMEP and RPM remained normal approximating those on the port engine. According to the pilot's statement the fuel pressure was 32 psi and according to the co-pilot's statement the fuel pressure went up from 28 psi when the high/low boost pump was turned on.

k. The starboard engine failed completely at about 500 feet. The pilot notified the Montauk Point GCI station that he was ditching. Ditching was accomplished as described heretofore.

(1) The weather in the immediate vicinity of the forced landing was clear of cloud coverage and visibility good with some slight haze. Wind was so light, it was impossible to determine its direction, sea calm and glassy with swells SE to NW and about 5 feet high. There were thin layers of stratus clouds at various low altitudes, ranging from 1400 feet up, within a few miles of the point of landing. Outside air temperature was 22°C.

32. The Analysis.

Due to the nature of the accident involving failure of both engines, at almost the same instant, each operating on basically independent systems, the board had to attempt to determine what factor or factors existed which would cause simultaneous loss of engines. Coincidental failure of like or different units in each engine within one minute was ruled out as unlikely. Aviation experience in general and the experience of this squadron in particular, which has operated P2V-5 aircraft for eight months without a single complete engine failure, support this conclusion. An ignition failure basic to both engines is equally unlikely in that such failure would have caused both engines to cut simultaneously and would not have resulted in the intermittent power surges which occurred.

The major possibility which presented itself in these circumstances was that of fuel starvation, including the possibility of carburetor icing. Failure of the port engine due to carburetor ice would have a definite bearing on the subsequent failure of the starboard engine, and an analysis of this possibility was undertaken. Detailed questioning of pilot, co-pilot, navigator and bow observers established the fact that the aircraft had not encountered moisture in the form of rain or clouds within the previous hour. The fact was also established that the aircraft had been in level flight for at least 15 minutes prior to failure. The nearest surface weather observation obtainable is a 1428Q report from Nantucket lighship approximately 19 miles north of the ditching: weather, haze; visibility, 3 miles; air temperature, 78°F; water temperature, 65°F. At the scene of the ditching, however, the pilot reported that it was clear, visibility 10 to 15 miles. The Flight Handbook, Navy Model P2V-5 aircraft, AN-01-75EDA-1, indicates the carburetor air temperature operating range is + 15°C to + 38°C. Temperatures below 15°C would allow carburetor icing and temperatures above 38°C would cause detonation. The pilot stated that he considered the possibility of icing but considered the carburetor air temperature of 24°C near the optimum temperature and therefore took no measures to combat ice. The only factors which the board could find to favor the possibility of ice was the fact that the plane had previously been flying 500 feet below the base of stratus clouds and the co-pilot's report of 20°C temperature at the time of engine failure which, if true, would indicate a rapid drop in the carburetor air temperature. The board also considered that no evidence exists of loss of manifold pressure common to carburetor icing and that the erratic operation of the engine was not typical of such icing. Carburetor icing was, therefore, ruled out as a cause of the accident. The board, therefore, made a thorough investigation of the fuel management and attempted to reconstruct from the information available, the actual condition of the fuel system at the time of engine failure. Included in this information were the earlier statements of all personnel involved, detailed questioning of those personnel who participated in or had opportunity to observe fuel management, engine or flight instruments, and squadron practice which would tend to substantiate or discredit the conclusion reached. Where reasonable assurance of accurate reconstruction was in doubt, the board accepted those data which, if correct, would have been most likely to have contributed to engine failure through fuel starvation.

16

The board could find no reason to doubt that the fuel system was operated from take-off until the failure of the port engine with fuel selector valves in the normal (main tank) positions and tank-engine cross feed valves in the direct tank-to-engine positions. The quantity (2513) gallons) and distribution of gasoline at the time of take-off appears to be well established. The time at which the first fuel transfer was made (1200Q) was established despite the pilot's impression that the plane captain had transferred fuel earlier from the wingtip tanks. The plane captain and co-pilot denied transfer of this fuel. A logical explanation of the apparent discrepancy exists in the established fact that the wing tip tanks normally transfer themselves through gravity feed when the gasoline level in the center tanks is below 400 gallons and therefore the quantity gauges would indicate such transfer.

The pilot stated that he transferred about 600 pounds from each center to each main tank at about 1200Q. In the absence of any evidence to the contrary, this was accepted as correct. His recollection that the main tanks contained 2000-2200 pounds before this transfer cannot be reconciled with a reasonable gasoline consumption. It was, therefore, assumed to be in error and the actual fuel in the main tanks was established at approximately 1350 pounds before transfer and 1950 pounds after transfer.

The pilot stated - and the co-pilot and plane captain confirmed - that at about 1330Q the wing tip tanks were emptied into the center tanks. Utilizing the gasoline consumption rate reported by the plane captain of 180 gals/hr., which checks closely with the power settings being used at this time (1900 rpm, 7% lean from 140 BMEP), the fuel after this transfer was established at 1140 pounds in each main and 2700 pounds in each center tank.

The last fuel transfer was made by the plane captain at about 1400Q as the plane departed station for return to home base. Before transfer (still using a rate of 180 gals/hr.) the gasoline levels were established at 870 pounds in each main and 2700 pounds in each center tank. The plane captain's recollection of the main tank gauge readings at this time was 1100 pounds each. This transfer by the plane captain was confirmed by his own statement and, in questioning, by those of the pilot, co-pilot and second mechanic. The plane captain was very positive in his recollection that he leveled the main tanks at 2500 pounds each and believed that each center tank read 1100 pounds. He was also positive that the booster pump switches were placed in the "off" position on completion of transfer.

Recognizing that fuel management at this point was critical to a determination of fuel starvation within the next hour, the board examined three possibilities, projecting each forward to the time of engine failure, to test its possible contribution to the failure and compare its likelihood with the evidence pro and con. These three possibilities are: (1) That no fuel was transferred; (2) That fuel was transferred as stated by the plane captain to 2500 pounds in each main tank and the transfer pumps turned off; and (3) That all fuel was transferred to the main tanks. Each possibility was analyzed in turn.

17

(1) According to the board's gasoline consumption data and its estimate of 870 pounds in each main tank at 1400Q, fifty minutes later, if no fuel was transferred, the main tanks would have contained approximately 300 pounds or 50 gallons each. It is probable that erratic engine operation would have followed due to the low fuel level and it is possible that fuel starvation could have resulted at about 1450Q. In that event, the failure of the port engine, its erratic operation with surges of power, fluctuation of fuel flow, BMEP and RPM and its maintenance of fuel pressure until feathered could have occurred. The reported results of tests run on a P2V-5 by Patrol Squadron TWENTY-SIX on 12 August 1954, in which a tank was allowed to be exhausted, substantiate such engine and instrument indications, including normal fuel pressure reading for more than two minutes after fuel depletion. Likewise,

under this hypothesis, the failure of the starboard engine one to two minutes later with similar indications would not be unreasonable. However, if the fuel selector valve for the starboard engine were turned to the center tank and the fuel booster pumps were on while the engine was still delivering intermittent power at an altitude of approximately 1400 feet, the engine would be expected to receive fuel and resume operation before ditching was necessary. If the engine operated intermittently on a tank running dry for the length of time indicated in the Patrol Squadron TWENTY- SIX test and the engine is switched to a tank with ample fuel when it first begins to cut, it is not likely that it would thereafter fail completely and remain inoperative for approximately one full minute due to fuel starvation. There is ample evidence in the statements of pilot, co-pilot and plane captain that the starboard engine was in fact switched to the center tank immediately on the first sign of failure at an altitude of approximately 1400 feet. In the opinion of the board the complete failure of the starboard engine operating on the center tank argues against a fuel situation in which the main tanks were empty and the center tanks contained all available fuel. When tested against the evidence available in written and oral statements of all personnel with knowledge of the fuel situation, the possibility of fuel exhaustion in the main tanks becomes remote. This evidence contains the statement of the plane captain that fuel was transferred to the main tanks to the level of 2500 pounds within thirty minutes before failure. That fuel was transferred at this time is confirmed by pilot, co-pilot and second mechanic. It also contains the statements of pilot, co-pilot and observer, LT (b) (6) that the main tank gauges indicated 3200 pounds at the time of engine failure. In view of the foregoing, the board accepted as coincidence the apparent fact that, if no fuel were transferred to the main tanks at about 1400Q, engine failure could logically have occurred from fuel starvation at ~~that~~ time the failure did occur. Engine failure due to simple fuel exhaustion in the main tanks could not be supported. The board does not wish to leave the impression that it considers the engine performance described above as typical of fuel starvation. In tests conducted by VP-23 on 16 August 1954, in which a tank was allowed to run dry, there was an almost immediate drop in fuel pressure to 14 psi and little fluctuation of engine instruments before the engine failed completely.

(2) If the plane captain transferred fuel to a level of 2500 pounds in each main tank and turned off the center tank booster pumps, the center tanks, according to the boards fuel consumption data, would have contained approximately 1000 pounds each. With the center tank booster pumps off no more fuel would have been transferred and at the time of engine failure, each main tank would have contained 2200 pounds and each center tank 1000 pounds. Such a fuel situation obviously could in no way contribute to either engine failure. Consequently, it was, for the time being, discarded.

(3) If the plane captain transferred fuel from the center tanks to the main tanks to level of 2500 pounds each and failed to turn off the center tank booster pumps, or inadvertently turned off the main tank booster pumps instead, the following possibilities would have existed: 18

(a) Fuel would have been transferred to the main tanks until each main tank contained 2880 pounds at which time the main tank float valves would have stopped the flow and thereafter allowed transfer at the rate of engine consumption. In that case, at the time of engine failure, each main tank would have contained 2680 pounds and each center tank 320 pounds. This fuel situation should have had no bearing on the failure of either port or starboard engines, except that a possibility existed that when the starboard engine was switched to the center tank there remained insufficient fuel to feed the engine. It is probable, however, that the fuel remaining would have been sufficient to feed the engine for a short time at least intermittently. Little evidence exists in written or oral statements of personnel to support this situation. While 2680 pounds of fuel in each main tank approaches the quantity observed by pilot, co-pilot, and observer, there is sufficient spacing on the fuel quantity gauges to observe clearly the difference.

(b) In the event of malfunction of either main tank float valve, all fuel would have been transferred to the corresponding main tank. Such transfer would have required approximately 17 minutes and thereafter the pumps would have continued to run, pumping residual fuel as the residual fuel sloshed in the center tank. If both center tank float valves stuck, all fuel would have been transferred from center to main tanks. In this case, at the time of engine failure, each main tank would have contained 3200 pounds and each center tank Q pounds. This fuel situation, on first examination, appears to have no bearing on the failure of the port engine and no bearing on the

initial failure of the starboard engine, if, as the evidence indicates, this engine was not switched to the center tank until failure was already indicated. It would, of course, explain the failure of the starboard engine to operate after the switch to center tank was accomplished. Closer examination of such a fuel situation does present certain possibilities beyond those previously examined. Operation of the center tank booster pumps for more than five minutes after the low pressure warning lights came on is an abnormal situation and consequently there is little doubt residual fuel not normally transferred from the center tanks would under these circumstances be pumped to the main tanks. This residual fuel would contain any water or other contamination which might have been allowed to accumulate or which might have been in the wingtip tanks. The possibility of contaminated fuel being pumped to the main tanks provides in turn a possible explanation for the performance of both port and starboard engines and, coupled with the subsequent actions of the pilot, a possible explanation of the accident. Assuming such to be the case - that contaminated fuel was pumped to the port main tank and thence to the port engine, intermittent delivery and loss of power could be expected. It would not be expected, however, that the fuel flow meters would have fluctuated in the manner described nor that the intermittent engine operation would have been in the symmetrical time sequence described by the pilot. According to the pilot's statement such intermittent operation still existed at the time the port engine was feathered. Similarly, when contaminated fuel was pumped to the starboard main tank and thence to the starboard engine almost identical symptons developed. When the fuel selector was switched to the center tank, which was empty, the engine surged briefly and then stopped completely.

When this possibility was tested against the evidence available, the following factors supported it:

(1) Pilot, co-pilot and observer's statements that fuel quantity in the main tanks was 3200 pounds each at the time of failure.

(2) Fuel panel doors were closed at the time of the accident and fuel low-pressure warning lights could not have been observed.

(3) The port engine, operating on the main tank, never failed completely before it was feathered, whereas the starboard engine failed completely when shifted to the center tank.

The following evidence available refutes this possibility:

(1) The pilot's statement that the inboard tanks read 800 pounds at the time of failure. Since the board, on the basis of fuel consumption data, could not accept a total fuel remaining quantity of 8000 pounds and in the absence of confirming evidence, this recollection may well have been in error. 19

(2) The plane captain's statement that he positively turned off the center tank booster pumps. This also could not be verified and the possibility exists that he may have neglected to do so or may have turned off the main tank booster pumps instead. Closing of the fuel panel doors would have prevented detection of such an error by observation of the warning lights.

(3) At the time of failure of the port engine the pilot opened the fuel panel doors. In a check of the fuel panel he should have observed the center tank warning lights. If he had done so and interpreted this information correctly, his decision to switch to the center tank is not plausible. According to the co-pilot's statement, he (the co-pilot) during single engine check turned all switches on and turned each off on which the warning light showed. He could not state which lights these were. Consequently, if the center tank warning lights had not been observed prior to this time, they would have been off until the starboard fuel selector was turned to the center tank and the booster switch turned on. Failure to see the light or take corrective action at this time on the part of either pilot or plane captain can not be explained.

(4) For this situation to exist requires three abnormalities in series: (1) Contaminated fuel, requiring either improper check of the center tank drains or contaminated fuel in the wing tip tanks; (2) Failure of the plane captain to properly turn off the center tank booster switches; (3) Malfunction of the main tank float valves. In this respect, malfunction of these valves has constituted a problem of such proportions to justify in this squadron use of the manual rather than the automatic fuel system.

In weighing this evidence against the probability of engine failures due to empty center section tanks and fuel contamination, the board was most impressed by the series of abnormalities required to reach this result. However, inasmuch as many aircraft accidents involve such a series and inasmuch as it is contradictory to no verified evidence, the board considered it as a reasonable possibility. It also recognized that, by malfunction of only one main tank float valve, this situation would be applicable to the failure of only one engine.

Having failed to establish with reasonable certainty that both engines failed as a result of fuel management, and since failure of one engine due to material failure or malfunction and subsequent failure of the second engine due to cockpit procedure is logical, the board next undertook an examination of this possibility. It was assumed the failure would have occurred in the port engine, since this engine had previously indicated slightly abnormal operation and since it failed first. Inasmuch as the failure symptoms suggest fuel starvation, the possibility of carburetor failure was recognized. A previous instance of engine failure occurred in this squadron when the mixture control bolt (R43GR-G155H-14) failed, resulting in gradual leaning of the starboard engine. The engine was run on prime and returned to base. (See VP-23 UR 17-54). The existence of normal oil temperature and pressure, as well as normal cylinder head temperature, would support a similar type failure. However, the board could not determine a reason for failure of the port engine.

Assuming a failure of the port engine due to material failure or malfunction the possible act or actions taken in the cockpit which might result in failure of the starboard engine was considered. There appeared to be two possibilities: (1) The starboard crossfeed valve was turned to the "off" position; and (2) The starboard fuel selector was turned to an empty tank.

With respect to the first possibility, the pilot stated that the co-pilot reached for the crossfeed valve and that the pilot hit his wrist to prevent the action. The pilot also stated that he, himself, turned the starboard fuel selector valve to the center tank while the co-pilot and plane captain stated the co-pilot turned the valve. These statements, taken together, indicate considerable confusion and the possibility of either pilot or co-pilot turning the crossfeed valve to the "off" position. A similar movement in the same (counter-clockwise) direction is required to turn the fuel selector valve to the center tank as is required to turn the crossfeed valve to the "off" position. The complete failure of the starboard engine shortly thereafter would logically follow. Evidence refuting such a possibility exists in statements of both co-pilot and plane captain that the fuel line was definitely traced tank to engine. Furthermore, if the crossfeed valve had been turned to the "off" position, an immediate drop in fuel pressure would have resulted. Pilot, co-pilot and observer were quite positive that fuel pressure remained normal at all times. The board considered this possibility as unlikely.

20

With respect to the second possibility, the question is whether the starboard center tank was empty since the fact that the engine was switched to that tank is reasonably established. For the starboard main tank float valve only to have malfunctioned allowing the starboard center tank to run dry and introduce contaminated gasoline to the main tank would not only result in the empty center tank but also explain the indication of engine failure before the selector valve was switched to the center tank. Furthermore, without malfunction of the float valve, and provided only that the center tank booster switch was on, the center tank would be at a marginal condition. The board considered that the possibility of the starboard center tank being empty or nearly empty was not unlikely and that material failure of the port engine followed by switching the starboard engine to an empty tank is a possibility.

33. Conclusions and Recommendations.

A. Conclusions:

(1) The primary factor causing the accident was the abnormal operation of both engines, the cause of which the board was unable to determine.

(2) The secondary factor causing the accident was the action taken in the cockpit by the pilot in turning the starboard fuel selector valve to the starboard center section tank when it was either empty or had insufficient fuel to allow the engine to operate. This action coupled with the previous feathering of the port engine propeller precluded further effort to regain normal operation of the engines.

B. Recommendations:

(1) The board recommends that steps be taken at the squadron level to insure that the Patrol Plane Commander retain positive control of fuel management within his aircraft at all times and that no state of crew efficiency or team training be allowed to relieve him of such control.

(2) While the evidence of fuel contamination was not sufficient to support a conclusion of its presence the board was impressed by the possibility in that it provided the most logical explanation for the entire series of events which resulted in the accident. It is recommended that continued effort be made to insure proper indoctrination of all flight crew personnel in adequate pre-flight fuel drain inspection.

(3) While the inadvertent turning of the cross feed valve instead of the main tank to center tank fuel valve was not a factor in this accident, the board, from its investigation, was impressed with the proximity of the two valves and the similarity in shape, direction of rotation, and amount of travel. Similar rotation of both valves would shut the gas to the engine off at the cross feed valve and put the main tank selector valve to the center tank position. The board therefore recommends that a mechanical device, such as a spring loaded lock, be designed for the cross feed valve to prevent the inadvertent turning of this valve for the main tank selector valve.

21

(4) While this accident cannot be attributed to the manual operation of the fuel system, the question was inevitably raised during the course of the investigation. The board, being fully aware of the history of malfunction of float valves in the automatic system, nevertheless recommends that it be used for airborne operations. The board further recommends that the switch to the automatic system be incorporated into the cruise check list. Pending correction of the faulty float valves it is further recommended that the automatic transfer be closely monitored in order to prevent the over filling of the main tanks.

(5) The board considered that the ditching of the aircraft was accomplished in a most skillful manner. This fact coupled with nearly ideal sea conditions resulted in minimum structural damage to the aircraft. The board endorses all the recommendations arising from the ditching, as contained in the medical officer's report, OPNAV form 3750-8 and set forth below:

(a) The metal fitting joining the CO2 bottle with the life raft be constructed of a stronger metal to withstand greater stresses.

(b) That a modified method of securing the base of the life raft hand pump to the main barrel be devised to replace the press fit method currently in use. While inflating the Mark VII raft with the hand pump, the base of the pump was blown off. The pump was effectively used when one man held the base of the pump to the barrel and another pumped.

(c) That the door separating the nose compartment from the companionway open forward instead of aft, so that applied pressure, such as inrushing water in this accident, in the nose compartment, will not force the door open.

(d) That a hinged panel constructed of sturdy material replace the fabric which at present separates the nose compartment from the instrument panel. It is felt that such a device would prevent or delay inrushing water into the pilot's compartment and through the flight deck during a water landing.

(b) (5)

[redacted]

(f) That a positive locking device such as a bolt be mounted on the hatch between the nose wheel companionway and the flight deck to prevent water from entering the flight deck from the radar compartment and nose wheel compartment. Such a device would further increase the buoyancy of the aircraft.

22

ORIGINAL

Personal statement of CDR (b) (6) [redacted] /1310 U.S. Navy for Ditching of P2V Bu No 131473 on 29 July 1954.

At 0709Z on 29 July 1954 my crew and I plus an observer from the Fleet Air Wing THREE Staff departed NAS Brunswick on a VFR clearance for an ASW flight in connection with an Operational Readiness Inspection being conducted by Commander Fleet Air Wing THREE. This mission was a joint ASW effort simulating an escort of convoy mission which took place at 30°-45'N 71°-30'W.

The flight to the operating area was made at 1500 feet. As soon as I leveled off I had my co-pilot, LTJG (b) (6) [redacted] complete the cruising check-off list and manually lean the engines at 7 percent lean from 155 MEP. Upon completion of the check off list the co-pilot reported that the voltage was about 30 to 31 volts. I tried isolating each generator in an effort to determine if any one generator was causing the difficulty, but without results. I then had the Technician adjust the voltage which he did, getting the system down to 28 to 29 volts. I decided to continue the flight at this time since all else appeared normal. The only other factor that could be considered an abnormal condition was that the BMEP unit on the port engine flucuated about 5 to 10 MEP and a slight indication of the RPM following was noticed. However the fuel flow on that engine remained constant. This was not a new situation on this engine in particular and on many in the squadron in general. This engine has performed in this manner, as have many others in the squadron, since the aircraft was assigned. Engines operating in this manner have been the topic of many discussions between pilots of this command and with those of other commands.

I arrived on station at 0953Z and commenced the exercise. Shortly after arriving on station some of the fuel was transferred from the wing tip cells to the center section tanks. During this flight I was operating the fuel system manually vice the automatic system since occasionally fuel float valves have been known to stick thus allowing fuel to continue transferring above the normal transfer limit. At this time, and during most of the on-station time, I operated at 1000 to 1500 feet with 1900 RPM using 7 percent lean from 140 MEP.

While operating with the surface forces the OTC asked the state of our fuel supply on three different occasions. At these times an added check above that normally made by the plane captain was made prior to reporting to the OTC. After one of these checks, I believe the second report, I transferred some fuel from the inboard tanks to the outboard tanks and continued to operate the engines from the main tanks. Normally the plane captain accomplishes the fuel transfer, but I did in this case since he was the bow observer at the time. I cannot recall just how much I transferred, but I believe I transferred approximately 600 pounds of fuel from each inboard to each main. The main tanks held about 2200 pounds prior to this time. In addition, at some time while on station the remainder of fuel in the wing tips was transferred to the center section tanks. Whether this transfer was effected just prior to leaving station or just after leaving station I cannot recall.

I departed station at approximately 1400Z and commenced the return flight to Brunswick with every thing operating normally. The weather in the general area was very thin stratus clouds with bases varying from 1500 feet to above 2000 feet, the surface winds were negligible, and the outside air temperature remained at 22 degrees centigrade. Visibility was 10-15 miles. The flight

23

ENCL: (1)

was being made at 1000 f[redacted]. As I [illegible] along the co[redacted]e I contacted the Montauk Point C.C.I. station every half hour. The last time that I reported to them prior to the Mayday was at 1443C.

At some time during the exercise period I had exchanged co-pilots putting LT [redacted] in the seat in place of [redacted] LT [redacted] was in control of the aircraft when the following incident occurred.

I was checking with the navigator on a point in question when LT [redacted] hit me on the arm and pointed toward the EMEP gauge. The port EMEP gauge was fluctuating severely, going from 0 to about 200, the RPM started fluctuating from about 1500 to 2200, and the fuel flow was fluctuating from 0 to about 1200. At this time I checked all other gauges and they were normal. Fuel pressure was constant at 28 PSI, oil temperature was 75 degrees, oil pressure was 80 PSI, carburetor air temperature was at 24 degrees centigrade, cylinder head temperature was 160 degrees, and the main tanks showed approximately 3200 pounds of fuel and the inboard tanks showed approximately 600 pounds. I thought perhaps that the inverter had failed thus locking the instruments in the positions at which they had been, so I checked the inverter failure warning light and the switch, but all was normal. I then realized that the inverter had to be operating to reflect the EMEP fluctuation. I was at 1100 feet indicating 170 knots when this happened. I eased the altitude up to about 1400 feet maintaining 150 knots as soon as the trouble occurred.

At about this time I was also preparing the aircraft for single engine operation by setting the RPM to 2600 and manifold pressure to 48 inches. I had by this time taken control of the aircraft. Simultaneously with this, I alerted the crew to prepare to ditch, put the mixture control to the rich position, switched the ICF to emergency and transmitted a Mayday to the Montauk Point GCI station stating that one engine was out and that I requested a steer for Quonset Point.

During this period which was perhaps a matter of one minute, the engine continued to intermittently operate, dying for what seemed about 3 seconds, surging in again for about three seconds, then dying again. The engine reacted as though someone gradually retarded the throttle for a few seconds then pushed it on with a gradual but positive movement. This condition continued almost as though something were running in a perfect time cycle. Although I am not certain, I believe that the high-low switch was placed on high position. I planned on switching the fuel system to the emergency position and hitting the fuel manifold when I heard loud backfiring. Believing this to be from the port engine I immediately thought the engine might be disintegrating and I became concerned with the possibility of fire. At that time I checked by pointing to the number 1 engine, number 1 EMEP gauge, the number 1 fuel flow, then the number 1 feather button which I pushed. Until the feather button was pushed, the engine continued to operate in surges with all but the EMEP, fuel flow and RPM being normal.

I noticed that the sea was glassy with slight swells moving from southeast to northwest. In the event I had to ditch I planned on ditching toward the northeast on the crest of a swell.

Almost immediately after the port engine was secured I notice that the Starboard engine was beginning to fluctuate in a similar manner to the port with the same kind of a cyclic operation. I called for the fuel valve to be

24

ENCL: (1) Cont'd

turned to the emergency position. The co-pilot reached for the starboard cross feed and I grabbed his wrist before he had touched it. I then turned the main selector to emergency position and put the booster on the inboard tank to the "on" position. I saw the plane captain who was between the seats check to see that the valve was seated properly and check the booster pump. I also saw him either put the high-low boost pump in high or check that it was in high. At this time I noted that the fuel pressure read about 32 PSI and was steady. At some time during this period the co-pilot pushed forward on the fuel transfer gang bar, but as to the exact time, I cannot say. At this time I reported to the GCI station that we were preparing to ditch.

This surging condition continued for about one more minute with the RPM surging from about 1400-3200 and the aircraft was going down at about 800 feet per minute. I maintained 135 to 140 during the descent and left the throttle open to 48" setting, to RPM at the 2600 setting and the mixture in rich with hopes that the engine might start again, but at about 400 feet the engine quit surging power and was completely dead.

At this time I realized that the MARK VIII gunsight was still installed. My first reaction was to get the glass plate out from in front of my face which was accomplished with one blow. I don't recall removing the sight from the mount, but shortly there-after I had it in my hand and threw it under the APS-20 table.

When we reached about 100 feet the GCI station called and requested our altitude, to which I replied "Ditching in 10 seconds". I then pulled the flap lever to the full down position, leveled the aircraft and flew the aircraft into the altitude I desired for ditching. At this time I recall checking the fuel pressure which was at about 32 PSI, the airspeed which was 100 and the flaps which were slightly less than 2/3 down. I had not feathered the starboard engine in order to have hydraulic pressure for flap operation.

I suddenly realized that I had not jettisoned my overhead escape hatch, but with only seconds remaining until impact I felt it more important to lock my shoulder harness and maintain control of the aircraft which I did. It had been locked previously, but I had unlocked it while reaching for things in the cockpit.

25

Very shortly thereafter with the aircraft in a slightly nose high attitude I felt the tail drag the water. I was at an estimated 90 knots on ititial impact. Apparently the APS-20 dome and ECM dome carried away immediately. Also I believe that the water scooped in through the hole where the ECM dome had been and forced the MAD tail cone off. As soon as I felt the water dragging on the tail of the aircraft I flattened the attitude to the normal landing position and the aircraft planed along for an estimated 300 yards on the surface before the nose could no longer be held up. As soon as the nose came down the plexiglass in the nose observers position shattered and caused the nose to dig deep and scoop in water. When the nose went in, water came rushing through the cockpit waist deep, and very shortly thereafter green water came over the cockpit. I was still hanging on to the yoke when the green water started receding. I then opened my overhead escape hatch, released the safety belt and shoulder harness, and stood up in the seat ready to leave the aircraft. On first impact I felt or heard only the water against the aircraft. The second impact was apparently far more severe, although I cannot even recall being forced against the shoulder straps. The swells were about five feet high and I landed exactly as I had planned. The time of the ditching was 1454

ENCL: (1) Cont'd

My first reaction as I stood on the pilot's seat was to see if all crew members had gotten out of the aircraft. On my first count I only counted ten, so I climbed on top of the fuselage to re-count the survivors. On this count I counted eleven, apparently having excluded myself on the initial count. I was the last man to leave the aircraft and enter the raft. I estimated that it took 30 seconds from the time of final impact until all hands were in the raft (or hanging on) and clear of the ship.

After I had climbed out of the aircraft and while waiting a chance to get in a raft I took a quick glance over the aircraft to note the visible damage in ditching. I noted that there were no structural wrinkles on the top side of the aircraft either in the wings or on the fuselage. The starboard propeller appeared to have all blades attached, but the outer ½ of each blade was curled back. The windshield never cracked which I had noted previously, and I made particular note that the structure around the turret and the skin just aft of the bulkhead separating the radio compartment from the afterstation showed no signs of failure. Although the flaps were under water, I could see no apparent damage to them. In-so-far as I could positively ascertain the only damage was to the plastic nose, the plastic tail cone and the propeller. The aircraft remained afloat for 6½ minutes after ditching.

The seven man raft came out of the aircraft without tearing, but the CO2 inflating bottle broke at the brass threaded fitting thus emitting the CO2 into the air. Even though there was very little or no inflation of this raft three men hung onto it and it remained afloat. Seven men got into the four man raft until we could clear the ship. The other man hung on to the 4 man raft.

Some of the emergency equipment got away from us at some time during the period of hitting the water and clearing the ship. The first aid kit was lost, one emergency container was seen sitting on the starboard elevator, and the Gibson Girl transmitter was drifting away. I left the four man raft and picked up the emergency container and returned with it to the raft. The next thing we attempted was to clear the vicinity of the aircraft in the event the smoke lights which were burning inside the aircraft torched off a fire. We set out then to retreive the Gibson Girl transmitter.

At 1500, about ½ to 1 minute before the aircraft sank, we sighted a P2V flying on a direct course toward us. I presumed it to be the aircraft that had been on station at the same time I had been. When the aircraft was about one and one half miles from being directly overhead, I used one day smoke flare, and when it burned out another was lighted. However, the aircraft continued on its course, never seeing our signals.

Dye marker containers of personnel in the water were leaking leaving a long, very noticeable trail. In addition dye was leaking into the rubber boats and the bailing process further accentuated the trail of dye in the water.

Some of the crew was paddling by hand and I was attempting to assemble the oars. The life rafts were held together by hand. Members of the other raft who were sitting in the uninflated raft were given the hand pump and started to inflate it. Difficulty was encountered here since the bottom of the pump blew off. I then reassembled the pump and held it together while sitting in the four man raft and the men in the large raft took turns pumping.

ENCL: (1) Cont'd

With seven men in the four man raft the raft continually shipped water. Bailing was to no avail, and until such time as we could transfer personnel to the seven man raft and get each boat bailed out we made little or no headway toward retreiving the Gibson Girl. Also conditions were so cramped at the time, I did not consider it feasible to break out any more emergency equipment than was absolutely necessary for fear of losing it before it could be secured to the boat. We did, however, break out the emergency kit from the 7 man raft and get the other hand pump. By this time the seven man raft was relatively well inflated and personnel were transferred to the other raft. I got into the seven man raft leaving LT (b) (6) in charge of the four man raft. Two other men also transferred to the 7 man raft making 7 men in Mark VII raft and 4 in the Mark IV raft. As soon as possible thereafter, the boats were bailed dry and we started making headway to the Gibson Girl which was picked up a very few minutes later. The radioman and technician of the crew commenced assembling the Gibson Girl while other personnel rigged the radar reflector and the sail. Remaining members of the crew commenced inventorying the gear that we had at our disposal. Additional day/night flares from the emergency container were issued to as many men as possible. I used about ½ a cup of fresh water from the emergency water breaker to cleanse the wounds inflicted on (b) (6) [redacted]. The observer, LT (b) (6) [redacted] who had (b) (6) [redacted] (b) [redacted] in the ditching remained in the four man raft in a semi-reclining position. (b) (6) [redacted] was made to recline in the seven man raft, with his head resting on the seat. I cautioned all hands against sunburn and many made hats from their handkerchievies.

We got the Gibson Girl working at about 16000 using the balloon to lift the antenna and commenced transmitting. We sent automatic SOS signals and two messages, one stating all hands survived ditching and, later, another giving the sea condition in hopes that the rescue plane would receive it.

At approximately 16300 we were sighted by a Coast Guard PB1G. To attract his attention we used the hand held flares that were in the life vests. Two were used, one being torched off after the first one went out. The PB1G commenced circling and shortly thereafter a Navy UF appeared on the scene. Not more than minutes later a U.S. Air Force SA16 arrived on the scene and two or three P2V's arrived and circled the rafts.

The UF and SA16 made numerous low passes, and at about 16500 the SA16 landed and came along side. All survivors were taken aboard, and we were airborne and on our way to NAS Quonset Point at about 17000.

On arrival at Quonset Point the entire crew was taken to the Dispensary for a check and then released to return to our home base.

(b) (6) [redacted]

(b) (6) [redacted] CDR, USN

27

End of ENCL: (1)

S[redacted]EMENT of LT (b) (6) [redacted] 315, USNR, ORIGINAL
Co-pilot in crew 7

Approximately 30 minutes prior to the loss of the engines I exchanged co-pilot duties with ENS (b) (6) [redacted] after having performed the duties of 2nd navigator. While becoming familiar with the seat I noted the starboard main fuel quantity reading approximately 3200 pounds. For approximately 15 minutes prior to the accident I had been at the controls flying straight and level at approximately 165 Kts.IAS. During this time, the observer and pilot conversed for a while and then the pilot proceeded to double check the navigator in regard to a position report.

The first thing I noticed out of the ordinary was a fluctuating decrease in the fuel flow gauge. I checked the other engine instruments and since they still read normal, I presumed that the observer may have pulled a circuit breaker to the fuel flow gauge. I proceeded to "tap" the pilot and at the same instant I noted a better than ordinary drop in the BMEP (about 30-50 BMEP).

The pilot immediately placed mixtures to rich and increased power as well as doing many other things. But after the port engine cut out intermittently, it cut out completely. I continued to fly straight and level maintaining altitude and airspeed and retrimmed. The pilot took over the controls after applying power etc. He climbed to about 1450 to 1500 feet and still had 150 Kts. The pilot called GCI notified them of our flight, and requested a steer direct to Quonset. Right after this, he notified the crew to man their ditching stations.

Meanwhile I proceeded to go through the check off list for single engine flight and for securing an engine. The port engine kept cutting in and then out again, at that time I was checking the engine instruments I noted that oil pressure, oil temperature, cylinder head temperature, and carburetor air were operating normally. The fuel flow on the port engine was zero to 200 pounds all the time that I saw it and the BMEP was fluctuating from zero up and down again.

After repeated efforts by the pilot to recover the port engine, he proceeded to feather number 1. As he did so the starboard engine backfired and sputtered at least two or three times. The pilot attempted to regain # 2 engine but it kept sputtering and cuttin in and out. I noticed the prop overspeeding to about 3200 RPM's accompanied by a severe vibration and loud explosion. After a partial recovery of the engine it cut completely.

28

About this time, the GCI came back with a direct steer to Quonset and asked our altitude. CDR (b) [redacted] answered that we were ditching in 30 seconds.

Our descent was at 135-140 knots. Sometime during the descent the pilot called for emergency gas position. I complied and noted the hi-low boost posit as well as fuel pressure which still worked normally. I also hit the booster emy bar at sometime during my check off. I remember that while going thru the check off list I checked the starboard gas line leading from tank to engine and fuel was definitely going from main tank direct to the starboard engine. I do not recall the exact position of the crossfeed valve handles but I remember that the starboard fuel line led direct to the starboard engine.

ENCL: (2)

After switching the starboard fuel selector valve to the emergency position the pilot asked me to switch to emergency on the port engine and I did so.

We flared out and hit the water tail first (I noticed air speed at 92 knots). The impact of landing did not seem great. For a brief moment I had the feeling of skiing along the water.

Somewhere in the succession of events I had pulled the emergency hatch release but the hatch did not fly off. After impact, we were in water up to our stomachs.

I glanced at the pilot after our coming to a stop and noted he still was controlling the yoke. At this time the pilots compartment seemed to me to be below the water. I remember pulling at the raft release over my shoulder but it was already out. I then pushed the escape hatch open and jumped out of the plane. My next recollection was walking on the fuselage and seeing men scrambling out of the navigators escape hatch. I turned to note the pilot still in the plane but looking out of the escape hatch aft evidently counting all hands. I walked over to the pilot helped him take off his headset and confirming the fact that he was all right. All hands were counted as present and we proceeded to abandon the ship and take to the rafts.

The MK-4 raft was inflated but the MK-7 was not. I jumped off of the starboard wing and swam to the MK-4, placed on hand onto the side of the raft and held on. Two men were already in the raft. The rafts were tied together by someone in the crew.

After boarding the raft I again counted heads and noted all hands present. Either 6 or 7 men were in the MK-4, 2 or 3 in the water and 2 men in the partially inflated MK-7, The men in the water were comfortable and unhurt and were attempting to inflate their MK-7 raft.

A P2V-5 flew directly over us at that time and continued on course evidently headed for Quonset but not cognizant of our situation in spite of some of us using day flares.

29

We proceeded to paddle away from the airplane first with our hands and later with paddles taken from the emergency packet.

The airplane fuselage appeared intact and I did not notice any ripples in the skin except for the MAD tail assembly which was evidently broken off when we landed.

After inflating the MK-7 fully; 7 men went to the MK-7 in command of CDR (b) [redacted] and I assumed command of the MK-4.

Once we became squared away in the rafts, we were able to make more headway paddling and picked up the Gibson Girl packet which had floated away from us after ditching. Together with the technician I assembled the Gibson Girl and placing it into operation, using both manual and automatic positions.

The time of landing was ascertained to be 1454 local time (the technician's watch smashed on this time). A convorted B-17 started circling at exactly 1630 local according to someones watch in the raft.

ENCL: (2) Cont'd

Navy UF followed shortly thereafter and commenced making low observation passes. Two P2V-5 were seen on the scene and orbiting. I'm not too sure but I believe another Navy UF started orbiting. Other P2V-5's joined the scene.

Then after one pass over us, an Air Force UF landed and picked us up after making a somewhat hard landing.

(b) (6) [redacted]

(b) (6) [redacted] LT, USNR

30

End of ENCL: (2)

STATEMENT REGARDING DITCHING OF P2V-5 BUNO 131473

On 29 July 1954, at approximately 1850Z I was flying as observer with crew #7 of Patrol Squadron TWENTY THREE in P2V-5 bureau number 131473, enroute from the operating area to the Naval Air Station, Brunswick, Maine, on a course of approximately 030° true.

I was sitting in the jump seat between pilot and co-pilot. We were at an altitude of 1100 feet, VFR, having descended to remain clear of strato-cumulus clouds. Visibility was unrestricted; sea state was 0.

My recollection of instrument readings are as follows: manifold pressure - 32"; 1900 RPM; BMEP 155; airspeed approx. 155 knots; fuel 3200 pounds.

My first impression of engine malfunction was a rapidly fluctuating BMEP guage for #1 engine, followed immediately by mis-firing and then complete failure within twenty (20) seconds.

Approximately one minute later #2 engine began mis-firing, at which time I hastily left my post for my ditching station on the deck beside navigator's station. Altitude was 700 feet when #2 engine completely quit.

The landing was accomplished in expert fashion and subsequent ditching effected in an outstanding manner. All men were clear of the wr kage within thirty (30) seconds.

OBSERVATIONS:

(1) The plastic nose collapsed on impact, filling fuselage with water almost immediately. (b) (5) [redacted] (b) (5) [redacted] 31

(2) (b) (5) [redacted]

(3) The CO_2 bottle did not inflate the 7-man raft; bottle evidently missing or torn off during ejection.

(4) One of the hand pumps on life raft was defective, coming apart during use.

(5) The plane sank five (5) minutes from time I cleared the aircraft.

(b) (6) [redacted]

Lieutenant, USNR, (b) (6) [redacted] /1315
Fleet Air Wing THREE

ENCL: (3)

ORIGINAL

STATEMENT of ENS (b) (6) [redacted] /1325, USNR,
Navigator in Crew 7

At approximately 0745 we departed NAS Brunswick for the operating area. We reported on station at about 1000 and upon completion of our exercise were relieved at 1400.

Until about 1330 I was flying as co-pilot. During this time we transferred all the gas from the tip tanks to the center section tanks. throughout the flight all instruments indicated that the engines were operating normally, with the exception of #1 EGTP which appeared to be fluctuating more than normally and was accompanied by a fluctuation in #1 RPM. I mentioned this to CDR (b) [redacted] who stated that that was a normal idiosyncrasy of MA-7.

When I was relieved as co-pilot by LT (b) (6) I proceeded to the after-station. A short time later (b) (6) [redacted] and I seated ourselves by the two aft plexiglass windows. (b) (6) [redacted] had on a head-set and I did not. Feeling a violent movement of the tail I stated that one of the engines must have been cut, and we were probably going to have a ditching drill. I immediately went forward to the flight deck and upon assuming my ditching station in the MAD Operator seat I heard #2 engine backfiring excessively. I realized at that time that this was not a drill. I took the navigator's hatch out and placed the MK-4 life raft between my legs. During this time I could hear #2 prop overspeeding and then I realized we had lost all power on both engines as silence prevailed.

As soon as the plane came to a complete stop on the water (1454), I exited throught the navigator's escape hatch and pulled out the MK-4 life raft, which was being lifted up through the hatch by ENS (b) (6) out onto the starboard wing. With some assistance we opened, inflated and manned a MK-4 life raft. With seven men in the MK-4 life raft we paddled clear of the plane to see it slip beneath the water some six minutes after ditching.

32

During our first hour in the life raft all hands kept busy bailing the MK-4 and trying to inflate the MK-7 by use of the hand pump which came apart numerous times. The CO2 bottle had broken off the MK-7 without inflating it. Once the MK-7 was inflated we shifted personnel to balance the load in the two rafts. Thereupon we set up the radar reflector and began assembling the Gibson Girl, which had floated away from us while we were boarding the life rafts and only after about 45 minutes were we able to recover it.

After about one and a half hours, a Coast Guard PB-1G arrived at the scene and at approximately the same time we began transmitting on the Gibson Girl. While he was circling we sent a message to the effect that the ditching was successful and all aboard had survived.

Later a Navy UF and P2V's appeared on the scene and commenced circling at various altitudes. At about 1700 an Air Force UF landed and took all of us aboard. We were flown back to Quonset Point NAS.

(b) (6) [redacted]

ENCL: (4)

STATEMENT of ENS (b) (6) [redacted] /1325, [redacted] NR,
Navigator in Crew 7

ORIGINAL

At approximately 0736Q 29 July 1954, BuNo 131473 departed NAS Brunswick on a flight which was a part of the Squadrons' Operational Readiness Inspection. As Navigator, I logged our "on station" time to the best of my recollection, as 0950Q. We worked in the operating area approximately 150 miles East of New York, and I recall logging off station at about 1440Q. I gave the pilot a heading to Nantucket Shoals Lightship, and at approximately 1450Q, while I was in the process of obtaining a fix position through radio bearings, I noticed an engine had been lost. My first thought was that the observer, who was at a position between the pilot and co-pilot, had pulled off an engine to check the pilot's emergency lost-engine procedure. Immediately the pilot alerted us to take ditching positions and I estimate about 2-3 minutes later the other engine started cutting out. The engine (starboard) cut back in 3 or four times and then stopped completely. In preparing for ditching, the astro-hatch was removed and stowed between my legs. The MK IV raft was removed from the overwing compartment and stowed between ENS (b) (6) [redacted] legs. About this time I noticed the altitude by the Navigator's altimeter was 800'. Crew members were stationed as follows on the flight deck: Plane Captain - (b) (6) [redacted] - on deck with back against bulkhead adjoining the C-106 panel. Observer - LT (b) (6) [redacted] - on deck with back against the pull-up ditching board and the Technician - (b) [redacted] was at a position between the Observers' legs. The first seat forward was unoccupied and moved aft and locked in that position to allow the plane captain access to the cockpit before impact. I occupied the second seat and ENS (b) (6) [redacted] the third. The cable on my seat was put underneath the forward cross member and then attached to the deck. At about 100' I braced myself against the back of the seat with my head on the head rest. I felt avery slight jolt when the tail section hit the water, then the forward section hit and along with the substantial jar from the impact, I noticed a large amount of water immediately rushing in from the after station. So much water infact, that it completely blocked my view to the radio compartment. Then the plane apparently came to a stop in the water and I found myself in approximately 1½-2 feet of water. I pulled the emergency release handle for the MK VII raft and with a minimum of confusion it seemed to me, under the circumstances, we immediately began to vacate the sinking plane. ENS (b) (6) [redacted] first climbed through the astro hatch, and I handed him the MK IV raft, then I climbed through and the Technician - (b) [redacted] - had removed the water breaker which he passed to me through the hatch. By this time the Pilot and Co-pilot had removed their escape hatches and were on top of the fuselage, the pilot accounting for all eleven men. I entered the water with the water breaker, inflated my life jacket, and began swimming toward the MK VII raft. As I swam past the tail section, I noticed the skin just forward of the horizontal stabilizer on the fuselage was pulled loose from the structure, but no other damage was visable to me. (b) (6) [redacted] and (b) (6) [redacted] were at the MK VII raft which had drifted about 20 feet from the plane. It had been only very slightly inflated, as the CO2 bottle had broken off at the neck probably upon impact. I arrived at the raft approximately 10 minutes later and in the meantime the men in the MK IV had passed by and picked up the water breaker. When we got the two rafts together, we broke out the hand pump, and began to pump up the MK VII raft. In the process, the hand pump came apart and we had to use the pump from the other raft. Altogether, I would estimate that (b) (6) [redacted] and

33

ENCL: (5)

myself were in the water for 30-[illegible] minutes before getting the raft inflated. We then bailed out the MK VII raft, and transferred four men to it from the MK IV raft. We had in the meantime made way to the survival kit, containing the Gibson girl, which was set up immediately with the Hydrogen Ballon (it took about 30 minutes to inflate the ballon). The radar reflector was also set up and the tarpaulin or sail rigged on the same mast. Approximately 1½ hours from the time we ditched, a search and rescue plane was sighted, at which time we kept smoke signals burning until we were sure the plane had us insight. The first aircraft circled us and a few minutes later two Navy UF seaplanes arrived and they also circled but at a lower altitude. Approximately 30 minutes after the first aircraft arrived, an Air Force SA-16A was sighted. The Air Force plane made one low pass and dropped a smoke light, circled and landed, came alongside, and we boarded her, with no difficulty.

In preparing for the ditching I did have time to check the AFSAL packet and make sure the canvas bag container was snapped securely, but the weighted packet was left in the aircraft.

In my opinion, a ditching could not have been more perfectly executed, and we all owe our lives to the precision in which it was carried out by the pilot, in bringing the plane down as he did. We also owe a great deal to the ditching drills which have been carried out at various times throughout our flights.

(b) (6) [redacted]

End of ENCL: (5)

STATEMENT of (b) (6) [redacted] ADC, (b) (6) [redacted] USN,
Plane cap[redacted]n of Crew Seven

ORIGINAL

I was sitting in the bow of the plane where I had been bow lookout during the last half-hour of the operation. I remained there, as I had understood we would probably carry on a check of shipping on the way back as another phase of our ORI.

At approximately 1445, one of the engines backfired sharply two or three times, and I heard CDR (b) [redacted] say he was feathering. The plane yawled somewhat, and I felt power being applied to the Starboard engine. At first, I thought it was just a drill being carried on in connection with the Inspection, but thought we were quite low to be feathering an engine if it was a drill. I took off my phones, and made a dash for the flight deck to see if it was a drill.

The observer was in the plane Captains seat, so I stroched up and looked over him to check the instruments. All pressures and temperatures appeared normal for single engine operation. I checked the fuel quantity gages, and noted that everything was alright. The observer moved out of the seat, and I took another check of the pressures and temperatures and fuel gages - all were alright. By this time, the stbd engine started to cut out and backfire, catching itself now and then with terrific surges of R.P.M. CDR (b) (6) called for Emergency fuel position on the Starboard Engine. The Co-Pilot turned the selector valve. I checked it to make sure it had positioned, and turned on the Booster pump for the Starboard Engine. Fuel pressure remained steady, as it had been before. The engine continued to sputter and cut out with momentary surges of R.P.M. (From my flowsheets, and by the gages, I determined we had about 1100 gallon of fuel aboard.)

The Pilot shouted to lighten ship, at which I immediately started to loosen the APS 20B radar scopes. I glanced out the window and noticed the water was very close to the plane. I asked if we should continue with lightening ship, at which the Pilot shouted - "we're going in in ten seconds." I checked to make sure everyone was in their ditching stations, and then settled into a sitting position as the ditching position at the 186 panel. I just touched the deck, when the first jolt was felt, and was fully prepared for the second.

35

Water rushed and gushed in very rapidly right away, and when the gushing of water calmed down, I decided we must be dead in the water. By this time, the water was up to my chin, so I stood up, and I checked the cockpit to see if the pilots were alright. Both were busy getting out, I checked the Flight deck, and everyone was up moving, and getting out. I pulled one of the releases for the MK-7 raft, thinking perhaps it had not released automatically. The radar operator was just going out with his water breaker. I looked over the wing root, to see if everyone aft had gotten out. Seeing no one, I pulled some very pistol cartridges and the very pistol from its holder, and left the plane thru the astro hatch. The MK-4 raft was already inflated, so I hopped in it. The MK-7 was well aft, but had not inflated. Two men had already reached it. After being in the water about 5 minutes a P2V passed over us. We lit off flares, but were not seen by the plane. After a count of heads showed everyone had escaped, we shoved off to meet the men with the MK-7 raft. The bottle had broken loose from the MK-7, so inflating it by hand was necessary. In the process, however; the pump broke. I started paddling with my hands, in an effort to put as much distance between us and the plane as possible,

ENCL: (6)

in event it exploded. We bailed the raft with shoe and bailing bags. We used the pump from the MK-4 raft to inflate the MK-7. When both rafts were inflated I climbed in the MK-7 and dried the interior of our raft. The injured mans face was washed with fresh water. The Gibson Girl was floating about 50 yards away, and it was finally retrieved. We put up the radar reflector, while the men in the small raft started to set up and operate the Gibson Girl. We rigged the sail on our raft. Shortly thereafter, a plane was heard, and we sighted a B-17. We lit up several flares, and were overjoyed when the plane started to circle us, shortly, four more planes appeared - two PZV - and two UF's. The planes circled for a while, and about 5:20, one UF from the USAF landed and taxied around us. We paddled toward it when his forward motion had stopped. A line was thrown to us from the plane which I and the Navigator caught. We pulled ourselves toward the plane and boarded it, sending the injured man in first.

In the hurried process, and short notice for ditching, the first aid kit from the aftorstation was not obtained. If this kit were stowed in the radio compartment, it would be much more readily accessible in an emergency. [redacted]

(b) (5) [redacted]

(b) (6) [redacted]

End of ENCL: (6)

ORIGINAL

ADDITIONAL STATEMENT of (b) (6) [redacted], CDC, (b) (6) [redacted]
USN, Plane Captain of Crew 7

This additional statement by (b) (6) [redacted] CDC, plane captain of Crew 7, is made at the request of the Accident Investigation Board of VP-23.

A regular operational check of the fuel panel was made during taxi from the aircraft parking area to the turnup area at the end of the duty runway. That is, the engines were started with the engine selectors on direct feed, and the tank selectors on normal. As we began to taxi, I shifted both center section booster pumps to the ON position, leaving the high/low switch on LOW. I then turned the tank selectors to the emergency position, and noted the fuel pressure, which I could read, because the inverter was on at this time. The pilot was informed the fuel panel was being checked on the emergency system. I left the tank selectors on emergency for the remainder of taxiing, and turned the main tank boost pumps off. For a period of about two or three minutes, I checked the engine driven pumps while running on the center section tanks, by turning the center section boost switches off - returning them to the on position, when I have satisfied myself the engine driven pumps were operating normally.

After we reached the turnup ramp at the end of the runway, I turned on the main tank boosters to both engines, and shifted both tank selector valves to the normal position, checking the pressures with the boosters in the off, on, and high boost positions. All pressures remained normal. The pilot was informed the fuel panel had been checked on emergency, and was then back on normal. The take off was made with the fuel panel on normal with the main tank boost pumps ON and the high/low switch on High Boost. Fuel pressure was 31 pounds on both engines.

37

After the mixture controls were put in the normal position, the high/low switch was put in low, the main boosters were left on and the fuel panel left in the normal position, and remained so, to my knowledge. I went to the bow observer position about an hour after take off. The first fuel transfer I actually heard had taken place, was when the wingtip tanks were emptied. I heard on the phones, the co-pilot said the wing tip lights had come on, and PN (b) (6) said to leave the switches on for five minutes. I did, however, note previously as I took my hourly fuel readings, that fuel from the center section had been pumped to the main tanks. This I noted by the quantity changes. The exact time of transfer, or amount, I do not know for sure. Shortly after the tip tanks had been drained, I went to the flight deck from the bow to transfer fuel. This was approximately 1345. At that time, I noted the main tanks were around 1100 pounds. At this time, I transferred fuel from the center section, bringing the main tanks each to about 2500 pounds. The center sections were about, to the best of my recollections, 1100 pounds. At the completion of the fuel transfer, the center section boost pumps were returned to the off position. The fuel selectors were not changed from the normal position.

(b) (6) [redacted]

ENCL: (7)

STATEMENT of (b) (6) [redacted] AM2, (b) (6) [redacted], USN, **ORIGINAL**
Second Mechanic in Crew 7

I was sitting in after-station talking to ENS (b) (6) in the 2 seats by the large window just forward of the aparnage. Suddenly I heard one of the engines start to cut and sputter. Immediately I felt the plane start to fish tail until Cmdr. (b) (6) got it under control. My first thought was that the O.R.I. Observer was pulling a drill so I wasn't too alarmed. At this time ENS (b) (6) went forward and I followed him as far as the radiomans compartment. When I got there (b) (6) [redacted] and (b) (6) [redacted] were in ditching positions, so I raised the ditching board and sat down too. I had just gotten settled when I heard the other engine sounding the same as the first. At this time (b) [redacted] told us to stand by to ditch. I put my hand on the emergency escape handle and looked over my shoulder to the flight deck. I pointed at the handle and ENS (b) (6) [redacted] was nodding his head quite urgently so I turned the handle and left the hatch go out. Then I stepped down to the galley and pulled the water breaker loose and handed it up to the radio compartment, I don't recall who took it. I then turned to the stove and saw the switch was still on so I turned it off and threw the frying pan out the escape hatch. At this time I was going to get the first aid kit but a glance out of the hatch showed me it was too late so I resumed my ditching position at the ditching board. At this time (b) [redacted] said to be ready to ditch any second. I had been told and was under the impression that the crown turret would break loose in the event of ditching so instead of putting my arms over my face and head like it was recommended to me I watched the turret so if it did break loose I would see it and then take my chance and get up and move forward over the wing to the flight deck. Then [redacted] hit the water and the tail cone broke about 2 or 3 feet forward of the tip and the water started to come in. I was waiting for the second shock to come but I glanced out of the corner of my eye and saw we were hardly in motion. At the same time I could feel the plane riding on the waves. I immediately leaped out the hatch come forward on the port wing and over the fuselage. When I got there the MK 4 raft was all laid out and I saw the inflating cable directly before me so I pulled it and jumped in the raft. By this time (b) (6) and (b) (6) [redacted] had retrieved the MK 7 but it wasn't inflated. The plane was still floating so we started rowing and paddling away from it. The plane stayed afloat for 4 or 5 minutes and we were a safe distance away when it finally sank. Prior to rowing away in the raft Cmdr. (b) (6) took a count to insure all hands had gotten out. Right after the plane sank (b) (6) [redacted]
(b) (6) [redacted]
This was the first I realized that I had been hurt. We had a little difficulty inflating the mark 7 since the hand pump broke but eventually it was pumped up and so the crew settled themselves in the 2 rafts which by this time had been tied together. At this time the Gibson Girl was see floating in the water so we made for it and picked it up. Some of the crew started setting up the Gibson Girl, the sail, and radar deflector and I boiled water with my shoe. Cmdr. (b) [redacted] then asked for my handkerchief and took some clean water from the breaker and washed my cuts out the best he could. He then had me lay down in the raft and shortly thereafter we heard a plane which was the B17. He circled us and soon an Air Force seaplane was spotted which landed after a couple circles around us and picked us up.

(b) (6) [redacted]

38

ENCL: (B)

ORIGINAL

ADDITIONAL STATEMENT of (b) (6) [redacted] AD3, (b) (6) [redacted]
USN, Second Mechanic of Crew 7

This is an additional statement by (b) (6) [redacted] AD3, (b) (6) [redacted] second mechanic of Crew 7 by request of VP-23 Accident Board.

I had been rotating the bow lookout with Chief (b) (6) throughout the entire hop and occassionaly when the proper time came around and when I was not on watch I took the fuel readings. As I remember I had taken at least 3 readings on this hop, my last one being at 1347. After I had taken this reading I went down to the bow and asked Chief (b) (6) how much fuel he estimated we had remaining. He replied that he estimated 1400 gallons and my figures showed we still had 1399 gallons. I remember this conversation very well since (b) (6) estimate was so close to my readings. We talked for about 10 or 12 minutes after this and then (b) (6) gave me the head phones and he went up to the flight deck. He returned about 20-25 minutes later and told me he had transferred fuel, and I should go back to the galley and start making steak sandwiches for the crew. He also told me to check all engine instruments on my way aft, which I did. After I had been cooking for 20-25 minutes the port engine cut out.

(b) (6) [redacted]

39

ENCL: (9)

ORIGINAL

STATEMENT of (b) (6) [redacted], AT3, USN,
Technition in Crew 7

I was setting the radar at about 1445 when I heard the first engine quit. The observer was sitting in the plane captain's seat between the two pilots. When I looked up to see what was going on the observer had his feet up and Cmdr. (b) [redacted] was checking the gas panel. About that time Chief (b) (6) who had been in the bow came up to find out what was going on. The observer moved out of the way and I heard someone tell us to rig for ditching. I turned my seat around and moved out so the observer could get out from behind. By this time the other engine was going too and Chief (b) (6) told us to strip ship. We weren't able to get anything out before Cmdr. (b) (6) hollered that we were going down. Mr. (b) (6) and I grabed the Mark 4 life raft and placed it between Mr. (b) (6) legs as he sat down. The observer had already sat down at the plane captain's ditching platform so I sat down in front of him with my hands behind my head. A few seconds later we hit. As soon as we hit a lot of water came over the wing with some loose or broken stuff. I got up and started to get the water breaker, but instead helped push the Mark 4 life raft out then went back and got the water breaker and shoved it out. After that I got out myself. As I came out I saw the Mark 4 life raft inflated on the starboard wing. Most everybody was out by then except Cmdr. (b) (6) and Chief (b) (6) There were four men hanging on to the Mark Seven which had only partially inflated. When Cmdr. (b) (6) came out he started counting the men and after seeing them all he climbed in the Mark 4 with us and we started pushing ourselves away from the plane and towards the Mark Seven which was about a hundred yards behind. When the two rafts met the men in the seven explained that the CO2 bottles had broken off. The men in it got the hand pump and after trying to inflate it with it the pump broke too. Finally by holding it together and with the hand pump from the Mark 4 the Mark 7 was fully inflated. We bailed the rafts out then went after the Gibson Girl which had broken off. It took about forty minutes to set it up and start transmitting. At about the same time the big raft had the radar antenna up plus a sail. A few minutes later the planes started getting there. An Air Force plane out of Westover picked us up.

(b) (6) [redacted]

40

ENCL: (10)

STATEMENT of (b) (6) [redacted] AD[redacted] USN

First Radioman in Crew 7

ORIGINAL

At approximately 1445 the port engine went, it gave a couple of spurts and then quit while the engine was dying we began yawling badly. It then settled down. CDR (b) [redacted] called over the ICS to strip ship. I was in the radioman's seat. I stood up and started on the ECM, I could not work it loose. About a minute after the first engine the second began to spurt. CDR (b) (6) was on UHF talking to a GCI station when the second quit he called "Mayday" and was rogered for every part of his message. We were at 500 and falling rapidly. CDR (b) [redacted] called for all to be in ditching stations. The crew was allready to ditch. The radioman's escape hatch was jettisoned at 500 feet. It was out and gone in less than a second. We all sat still and stiff. I did not have a flash light handy. The parachute was behind my seat and after we hit it was under water. I did not bother to dig for it. We hit at 1454. There was only one impact a gush of water came from all directions. In the gush of water (b) (6) [redacted] was hit by some unseen object. As the plane settled the water settled. The water was up to the radioman's hatch. I was last out of the radio hatch. I went up one of the wing and across to the other. They were still coming out up forward. The four man raft was on the wing. I started to unbutton to get at the CO_2 when I noticed two men swimming after the seven man raft which broke away and was not inflated. I then pulled the CO_2 on my vest and dove in the water and swam to the seven man raft and the three of us tried to inflate it. We could not do it so we held on till the other raft came out with eight on it when they reached us the plane sunk, it took six minutes. We heard smoke lights and PDC's going off. We then inflated the seven man raft with a hand pump from the four. In an hour we were also in rafts that were bailed out with shoes. Right after we were away from the plane, an aircraft P2V5 passed directly overhead without seeing us. We finally caught up the gibson girl it took 3/4 of an hour to set that up. The radar screen was set up also. CDR (b) [redacted] washed (b) (6) [redacted] face with water from a bracker and a handkerchief. At about 1705 a coast guard plane B-17 found us started a pattern, 3 or 4 other planes joined them. An Airforce UF made the landing at 1720 we were in the plane at 1730 after grabbing a line tossed to us.

(b) (6) [redacted]

41

ENCL: (11)

ORIGINAL

STATEMENT of (b) (6) [redacted] AM, (b) (6) [redacted] USN
Second Radioman in Crew 7

I was sitting in the E.C.M. seat when the first engine (port) went out, the time was 15 minutes until 5. At the first indication of trouble I took my ditching station, it was J-28 at the time, the reason (b) (6) (b) (6) [redacted] takes the E.C.M. ditching position is that he is tall and fits much better there. CDR (b) (6) gave the order to take ditching positions immediately after the port engine quit, very shortly after the port engine went out the starboard also sputtered and quit. We lost altitude quickly. I had phones on and heard CDR (b) (6) talking to someone. I heard him say we were hitting the water in 10 seconds, so I braced myself against the wing and held on to the radioman's seat. I could not find a flashlight in the short time I had, it all happened very fast.

After we hit, I followed (b) (6) [redacted] out of the escape hatch, which (b) (6) [redacted] had jettisoned while we were still airborne, when I hit the wing I slid off into the water inflating my Mae West at the same time. When I came up I was behind the plane, which was still floating, I looked back and saw CDR (b) (6) counting the men. I was looking for the raft and found that the seven man raft had not inflated. (b) (6) [redacted] was swimming for it as it was approximately 50 to 75 yards behind the plane, so I started out for it, after I arrived, (b) (6) [redacted] and I tried to inflate it but couldn't at the time so we started to pull away from the plane, at this time (b) [redacted] and ENS (b) [redacted] also arrived and we treaded water until the raft with all the others came. All of us then turned and watched the plane sink about 6 minutes after we had hit the water. We then proceeded to inflate the seven man raft by hand, the pump broke and we had to hold it together by hand after we inflated it and had bailed the water out we put seven men in it and four men in the other, I traded rafts with (b) (6) [redacted] so CDR (b) [redacted] could do what he could for him. (b) [redacted] was in the process of setting up the Gibson Girl so I helped him as much as possible. After it was set up which took 45 minutes, the hydrogen generator takes 30 minutes to fill the balloon, (b) [redacted] started cranking and I sending with the key. Shortly after a Coast Guard plane flew over and then 4 other planes arrived and circled while the Air Force UF landed and picked us up.

(b) (6) [redacted]

42

ENCL: (12)

STATEMENT of (b) (6) [redacted] AOAN, (b) (6) [redacted] USN, ORIGINAL
Ordnancoman in Crew 7

As of 29 July 1954 I was a crew member in MA-7 131473. We were returning from the exercise area when at 1445 or there about the port engine began to sputter. (We had all been wearing life jackets from the time we took off from the Brunswick field.) When the first engine was feathered we didn't need the word to man our ditching station, we just went. Then the word was past to go to ditching station. Within a minute or so of the first engine cutting , the second one cut. When going to my ditching station I picked up the first aid kit. I didn't have time to get a parachute or flashlight as I should have. After we were in our ditching station, (b) (6) [redacted] pulled the handle on the emergency hatch. Then we hit the water. As soon as the plane had stopped I was the first one out the hatch. After leaving the plane (b) (6) and myself swam after the MK-7 raft. When we tried to inflate the raft we found that the CO2 bottle was broken at the section where it entered the raft. We had to inflate the raft by hand. (The plane stayed afloat for 5:30 minutes.) As soon as we were in the raft Cmdr. (b) (6) took charge and made preparations for being rescued. We put up the radar screen and sail in the seven man raft and they put the balloon up for the Gibson Girl. About a half hour latter we were seen by the Coast Guard B-17 then the Air Force picked us up at sea in a UF and flew us to Quonset Point.

(b) (6) [redacted]

43

ENCL: (13)

ORIGINAL

MAINTENANCE OFFICER'S ACCIDENT REPORT STATEMENT FOR BUNO. 131473

The past history of MA-7 Bureau Number 131473 indicates it was an average aircraft from the maintenance standpoint. The most serious trouble encountered was a fire in the port engine on 25 June 1954 caused by the propeller being stuck in reverse pitch. On that date the engine was personally inspected by myself and (b) (6) [redacted], ADC, USN, at that time the Engineering Chief. No serious damage to the wiring or cowling was found and the propeller was checked for proper setting and reset to insure proper setting. All was found normal. Turn up and check proved propeller was functioning normally. Previous discrepancies consisted of a BMEP fluctuation combined with a tachometer fluctuation. The BMEP Fluctuation is common with most aircraft in this squadron and all efforts to clean up the cause have proven to no avail. CDR (b) (6) [redacted] stated that the tachometer fluctuation was approximately 20-30 RPM with the BMEP fluctuation of from 10-15 BMEP. The fuel flow fluctuation was noticeable but no accurate readings were given. He mentioned one case of the starboard engine cutting out while in Nassau but it had no series of malfunctions as the port engine had.

After acceptance in May 1954 the port engine cut out when operating out of Windsor Field New Providence Island B.W.I. and again on 22 June it was written up as "still cutting out." In each case the trouble was remedied in the air by placing the mixture control in rich, whereupon the engine ran normally. On the ground the engine was checked for timing, carburetion, etc. No discrepancies were found.

An analysis of engine operation prior to complete failure seems to indicate fuel starvation. The aircraft was flying at normal cruise power settings: 155 kts IAS, 7% manual lean, 155 BMEP and approximately 550 #/hr. fuel flow. The first indication was the BMEP fluctuation of a very large order immediately followed by the tachometer fluctuation of about 100-150 RPM. The mixture was placed in rich, but did no good since the fuel flow indicator swung between approximately 1700 #/hr to 0 with the engine cutting out and surging back in, followed by complete stoppage. Shortly thereafter the pilot stated the starboard engine did the same thing. At that time the fuel valves were switched to emergency and the booster pump placed in the high position. The engine cut out and surged in with loud backfiring followed by complete failure. During this time the fuel pressure was steady and held pressure until just before the impact. In the system the fuel flow transmitter is in the fuel line leading to the carburetor and the fuel pressure transmitter receives pressure directly from a chamber in the carburetor. With a loss of A.C. power no reading can be obtained from the fuel pressure gauges. From all information obtainable there was still an indeterminate ammount of fuel left in the center and outboard fuel tanks.

ORIGINAL

ENCL: (14)

ORIGINAL

UNITED STATES ATLANTIC FLEET
AIR FORCE
PATROL SQUADRON TWENTY THREE

MAINTENANCE OFFICER'S ACCIDENT REPORT STATEMENT FOR BUNO. 131473 (CONT'D)

The port engine R3350-30WA (UR 563660) had a total time including day of loss of 267.3 hours with 232.6 hours put on in this squadron and 40.7 hours flown since last intermediate check with 8.0 hours since last periodic.

The starboard engine R3350-30WA (UR 563661) had a total time including day of loss of 254.3 hours with 232.6 hours put on in this squadron and 40.7 hours flown since last intermediate check with 8.0 hours since last periodic. Both engines were new and beyond reported malfunctions operated normally.

Normal maintenance practices were followed in correcting discrepancies and it is my opinion that both engines failed from lack of fuel, the fuel starvation being from causes unknown.

(b) (6) [redacted]

(b) (6) [redacted] LT(JG), USN
Asst. Maintenance Officer

45

ORIGINAL

End of ENCL: (14)