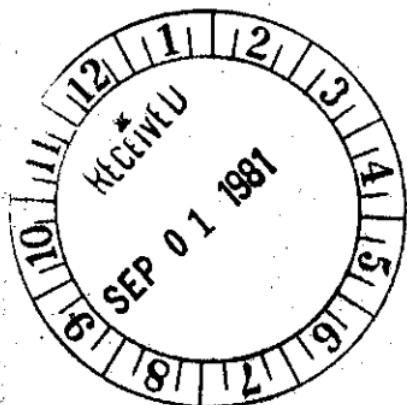


T.O. 1H-1(U)N-1CL-1

PILOTS'

FLIGHT CREW CHECKLIST



USAF SERIES

UH-1N

HELICOPTER

DAAJ01-69-C-0085(2B)
F09603-81-C-0108

This publication is required for official use or for administrative or operational purposes only. Distribution is limited to US Government agencies. Other requests for this document must be referred to Warner Robins ALC/MMEDT, Robins AFB, Georgia 31098.

Commanders are responsible for bringing this check list to the attention of all personnel cleared for operation of the helicopter

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1 SEPTEMBER 1973
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LIST OF EFFECTIVE PAGES

Insert latest changed pages; dispose of superseded pages in accordance with applicable regulations.

NOTE: On a changed page, the portion of the text affected by the latest change is indicated by a vertical line in the outer margin of the page.

Total number of pages in this manual is 90 consisting of the following:

Page No.	# Change No.	Page No.	# Change No.
Title	11	E-11 — E-12	11
A	11	E-13	0
i	11	E-14	4
ii	0	E-15 — E-18	11
iii	8	P-1	0
iv Blank	4	P-2 Blank	0
N-1 — N-2	0	P-3 — P-4	0
N-3	11	P-5 — P-6	8
N-4	0	P-7 — P-9	0
N-5	11	P-10 Blank	0
N-6	9	P-11	0
N-7 — N-8	11	P-12 — P-13	4
N-8A	11	P-14 — P-23	3
N-8B Blank	4	P-24 — P-34	0
N-9 — N-10	11	S-1	0
N-10A Deleted	11	S-2 Blank	0
N-10B Blank Deleted	11	R-1	11
N-11 — N-12	11	R-2	6
N-13	10	A-1	10
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N-15 — N-16	0	A-5 — A-6	10
E-1	10		
E-2	11		
E-3	6		
E-4	11		
E-4A	11		
E-4B Blank	6		
E-5	11		
E-6	0		
E-7	11		
E-8 — E-9	2		
E-10	4		

Zero in this column indicates an original page.

FOREWORD

YOUR RESPONSIBILITY: In accordance with AFR 60-9, the flight crew is required to use this checklist when operating the subject helicopter.

TECHNICAL ORDER NUMBER: This checklist is identified by a T.O. number that is identical to that of the applicable Flight Manual except for the addition of the letters "CL" (Checklist) and a suffix number indicating the crew member to whom it applies.

CONTENT: This checklist consists of four parts, normal procedures, emergency procedures, performance charts, and special procedures. The numbered items (line items) correspond to identically numbered items in Sections II and III of the Flight Manual. A (W) or (C) following a checklist heading or line item indicates one or more **WARNINGS (W)** or **CAUTIONS (C)** are contained in the flight manual amplification. Emergency procedures are identified by a striped border. A Power Assurance Check Chart and a Take-off and Landing Data Card are included at the end of the normal procedures checklist. Performance charts are duplicated from Appendix 1 of the Flight Manual.

NOTE

All figure and section references in the checklist are to the T.O. 1H-1(U)N-1.

FLIGHT MANUAL: This checklist does not replace the procedures in the Flight Manual. To fly the helicopters safely and efficiently, you must read and thoroughly understand why each step is performed and why it occurs in a certain sequence.

CONCURRENCY: As changes are made to procedures in the Flight Manual, concurrent changes will be made to this checklist so that both will agree. However, changes may be made to the Flight Manual that do not affect procedures. Therefore, the Flight Manual date may not be the same as the checklist date. To determine the applicable checklist to a given Flight Manual issue, refer to the bottom of the Flight Manual "A" page under "Current Flight Crew Checklist." For purposes of determining the concurrency between the Flight Manual and this checklist, the latest date of a Safety of Flight Supplement affecting this checklist will be considered to represent the latest change date of the Flight Manual.

SAFETY OF FLIGHT SUPPLEMENTS: When you receive a supplement affecting your checklist write in the appropriate information. Replacement checklist pages will be made available to you as quickly as possible through the "Quick change" checklist program. A notation on the bottom inside corner of these pages will indicate that they reflect certain Safety of Flight Supplements. There is no action in the checklist program that constitutes authority for discarding a Safety of Flight Supplement. Such action is authorized only through the title page of the Flight Manual or T.O. 0-1-1-5.

CHANGES AND REVISIONS: When you receive a normal change or revision to your checklist, check to ascertain that it contains all outstanding Safety of Flight Supplements that affect the checklist. If it does not, add in the required information by hand (sometimes you will be able to accomplish this by retaining the appropriate quick change page which references the outstanding supplement).

BINDERS: Binders containing plastic envelopes, to hold and protect the check list pages, are available through normal AF supply channels.

COMMENTS AND QUESTIONS: Any comments and questions regarding any phase of the Flight Manual Program should be forwarded on AF Form 847 through your aircrew Standardization/Evaluation channels to Warner Robins ALC, Georgia 31098, Attn: MMSRDD.

NORMAL PROCEDURES

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*Indicates a through-flight item

PREFLIGHT INSPECTION

The pilot pre-flight inspection outlined is predicated on maintenance personnel completing the Aircraft Schedule Inspection and Maintenance Requirements, T.O. 1H-1(U)N-6WC-1 for pre-flight.

*BEFORE EXTERIOR INSPECTION

1. Form 781 and flight publications — CHECK.
2. Battery Switch -- OFF.
3. Crew Briefing — As Required.

CREW BRIEFING GUIDE

The following checklist includes the items to be discussed during the briefing:

1. Mission requirements.
2. Flight plan.
3. Fuel load.
4. Emergency/survival equipment.
5. Weather.
6. Special equipment.
7. Personal equipment.
8. Weight and balance.
9. Crew duties and responsibilities.
10. Formation Procedures (if applicable).

EXTERIOR INSPECTION

The pilot will make a walk around inspection, checking for fuel and oil leaks, security of inspection panels and doors, and foreign matter such as ice, snow, or frost. The pilot will check the aft electrical compartments. Perform the exterior inspection in accordance with figure 2-1, and following steps.

1. Cabin Top (W) — Checked.
2. Cabin Right Side — Checked.
3. Tailboom Right Side — Checked.
4. Tailboom Left Side — Checked.
5. Cabin Left Side — Checked.
6. Cabin Front — Checked.
7. All Covers, Tiedowns and Ground Wires — Removed.

PASSENGER BRIEFING GUIDE

When the helicopter is used to transport personnel, they will be briefed before flight and during flight as necessary. The pilot or his representative will perform this duty. The following checklists include the items to be discussed during the briefing:

Predeparture Briefing Guide

1. Introduction of crew.
2. Designate compartment commander.
3. Destination.
4. Flight altitude.
5. Departure time and estimated time enroute.
6. Enroute weather.
7. Seats and safety belts.
8. Movement in the helicopter.
9. Smoking.
10. Emergency exits (location and operation).
11. Emergency landings or autorotations.
12. Emergency/survival equipment.

Predeparture Briefing Guide (Cont)

13. Bailout.
14. Use of portable electronic devices.
15. Helicopter characteristics.

Overwater Briefing Guide

If flight plan includes the crossing of any extensive bodies of water, the following items will be included in addition to the emergency procedures contained in Predeparture Briefing Guide.

1. Use of survival equipment.
2. Escape from parachute after entering water.
3. Emergency landing (signals, positions, exits, location of first aid kits and emergency radio).

INTERIOR AND BEFORE START

- *1. Crew and Passenger (W) – BRIEFED.
- 2. Cabin Interior – CHECKED.
- *3. Safety Belt, Shoulder Harness, Seat and Rotor Pedals – FASTENED and CHECKED.
- *4. Ignition Keylock Switch – ON.
- *5. Flight Controls (W) – CHECKED.

INTERIOR AND BEFORE START (Cont)

6. Landing and Searchlight Switches — OFF.
7. All radios — OFF (Except KY28).
8. Loudhailer Switch — OFF.
9. Instructor Control Panel — AS REQUIRED.
10. Armament Switches — OFF.
- *11. Engine and Fuel Control Panel — SET.
12. Auxiliary Fuel Transfer Pump Switches — OFF.
- *13. Miscellaneous Control Panel — SET.
14. IFF/SIF — OFF.
15. Compass Slaving — AS DESIRED.
- *16. Altimeter — SET.

INTERIOR AND BEFORE START (Cont)

17. Radar Altimeter - OFF.
18. Marker Beacon - OFF.
19. Fire Extinguisher Switch - OFF.
20. Fire Pull Handles - IN.
- *21. Overhead Console Panel - SET.
- *22. Circuit Breakers - AS REQUIRED.
- *23. Rotor Brake - OFF.

INTERIOR AND BEFORE START (Cont)

- *24. Battery Switch (C) – START.
- *25. Battery Switch (C) – OFF, External Power – ON. (If external power is utilized.)
- *26. Battery Switch – ON (if external power voltage is 29.5 or below).
- *27. Inverter – CHECKED. (then OFF if battery start is to be made).
- *28. Instruments – CHECKED.
- *29. Navigation/Anti-Collision Lights - AS REQUIRED.
- 30. Pax Alarm – CHECKED.
- *31. Master Caution Light – RESET.
- *32. Fire Warning Lights – CHECKED.
- *33. Fuel Quantity Indicator (W) – CHECKED. (omit if battery start is to be made).
- *34. Gearbox Chip Detector Panel – CHECKED.
- *35. Caution Panel – CHECKED.
- *36. Primary Communications Radio – AS REQUIRED.
- *37. ICS – SET AND CHECKED.

STARTING ENGINES (W)

1. Throttles (W) – CHECKED AND CLOSED.
2. Beep Switch – DECREASE (hold 3 seconds).
3. Main Fuel Switches – ON.
4. Rotors – CLEAR.
5. Fire Guard – POSTED.
6. Engine (C) – START.
7. Inverter – MAIN (if battery start was made).
8. Combining Gearbox Oil Pressure – INDICATING.
9. Transmission Oil Pressure – INDICATING.
10. Engine Oil Pressure – WITHIN LIMITS.
11. Throttle Sequence – COMPLETED.

STARTING ENGINES (Cont)

12. Generator (W) — ON. (if battery start was made, turn operating engine generator ON and accomplish the following):
 - a. Battery Switch — ON.
 - b. Anti-Collision/Strobe Lights — AS REQUIRED.
 - c. Navigation Lights — AS REQUIRED.
 - d. Fuel Quantity — CHECKED.
 - e. Primary Communications Radio — ON.
 - f. Check Generator Voltage 27 - 28.5
13. Fire Guard — POSTED
14. Second Engine (C) — START
15. Engine Oil Pressure — WITHIN LIMITS
16. Throttle Sequence — COMPLETED
- 16a. Battery — Checked ON
17. External Power — DISCONNECTED.
18. Generators — ON.
19. DC Electrical Systems — CHECKED.
20. NON-Essential Bus Switch — AS REQUIRED.

ENGINE RUN UP

1. No. 1 Throttle – FULL OPEN.
2. Beep Switch – MAXIMUM.
3. No. 2 Throttle (W) – FULL OPEN.
4. Beep Switch – 100% Nf.
5. Hydraulic System – CHECKED.
6. Flight Controls – CHECKED.
7. Auxiliary fuel transfer pump switch (C) – AFT or FWD (If auxiliary fuel tanks installed) OFF, (if auxiliary fuel tanks not installed.)

BEFORE TAKEOFF.

1. Ground Leak and Hydraulic Filter Indicator Check – COMPLETED.
2. Com/Nav Radios – AS REQUIRED.
3. IFF/SIF – STANDBY.
4. Radar Altimeter – ON.
5. Pedestal Cooling Control (C) – AS REQUIRED.
6. Heater Switches – AS REQUIRED.
7. Pitot Heat – AS REQUIRED.

BEFORE TAKE-OFF (Cont)

8. RPM (Nf) — 100%.
9. Engine and Transmission Instruments — CHECKED.
10. Flight and Navigation Instruments — CHECKED.
11. Doors — CHECKED.
12. Shoulder Harness Lock — AS DESIRED.
13. Altimeter and Clock — CHECKED.
14. Force Trim (W) — AS DESIRED.
15. IFF/SID — AS REQUIRED.
16. Crew and Passengers — PREPARED FOR TAKEOFF.
17. Landing, Searchlight, Navigation, Anti-collision/Strobe Lights — AS REQUIRED.
18. Area — CLEAR.

BEFORE TAKE-OFF (MULTIPLE TAKE-OFFS/ LANDINGS)

1. Engine and Transmission Instruments — NORMAL.
2. Crew, Passengers, and Cargo Compartment — PREPARED FOR TAKEOFF.
3. Area — CLEAR.

TAKE-OFF

Hover Check — COMPLETED.

BEFORE LANDING

1. Crew and Passengers — BRIEFED.
2. Engine rpm — 100% Nf.

AFTER LANDING (W)

1. Throttles — FLIGHT IDLE.
2. Force Trim — ON.
3. Non-Essential Com/Nav Radios — OFF (except KY 28).
4. Loudhailer Switch — OFF.
5. IFF/SIF — OFF.
6. Radar Altimeter — OFF.

ENGINE SHUT-DOWN

1. Flight Idle Stop Switch — ACTUATE.
2. Both Throttles — OFF.
3. Main Fuel Switches — OFF.
4. Generators — OFF.
5. Rotor Brake — Apply at or below 40% NR.

BEFORE LEAVING THE HELICOPTER

1. Inverter – OFF.
2. Navigation/Anti-Collision Lights – OFF.
3. All Radios – OFF (except KY 28).
4. Other Switches – AS DESIRED.
5. Form 781 – Complete.

POWER ASSURANCE CHECK
(SINGLE ENGINE)

CHART A

PRESS ALT.	-2000	-1500	-1000	-800	0	600	1000	1500	2000
% TORQUE	49.5	48.8	47.8	47.0	46.0	45.0	44.2	43.4	42.5
PRESS ALT.	2500	3000	3500	4000	4500	5000	5500	6000	6500
% TORQUE	41.5	40.5	39.8	38.9	38.0	37.0	36.2	35.3	34.5
PRESS ALT.	7000	7500	8000	8500	9000	9500	10000	10500	11000
% TORQUE	33.5	32.7	31.8	30.9	30.0	29.2	28.3	27.5	26.5

EXAMPLE

1. ALTIMETER 29.02 IN. HG.
2. OBSERVED ALTITUDE 1500 FT.
3. OBSERVED CHART A TORQUE 43.4 %
4. START BOTH ENGINES
5. ON GROUND, ENGINE NO. 2 TO FLIGHT IDLE
6. STABILIZE NO. 1 ENGINE AT 97% NG AND AT
CHART A TORQUE FOR AT LEAST 30 SECONDS
AND OBSERVE:
- Ng 95.2%
ITT 71°C
OAT 20°C
7. OBSERVED Ng AND ITT MUST BE LESS THAN
CHART B Ng AND ITT FOR OBSERVED OAT
REPEAT CHECK ON NO. 2 ENGINE WITH
NO. 1 ENGINE IN FLIGHT IDLE
8. IF OBSERVED Ng AND/OR ITT ARE GREATER THAN CHART B Ng AND ITT
FOR OBSERVED OAT, STEPS SHOULD BE TAKEN TO DETERMINE IF AN
ACTUAL ENGINE PROBLEM EXISTS
10. HOVER IGE AND CHECK NO. 1 AND NO. 2 ENGINE TORQUE NEEDLE SPLIT,
NO GREATER THAN 6%

CHART B

OAT	°C	50	45	40	35	30	25	20	15	10	5	0
Ng	%	100	99.3	98.6	97.9	97.3	96.6	96.0	95.2	94.5	93.9	93.1
ITT	°C	810	795	780	765	750	735	720	705	695	680	665
OAT	°C	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	
Ng	%	92.5	91.8	91.1	90.5	90.0	89.1	88.5	87.8	87.1	86.4	
ITT	°C	650	635	620	605	590	580	560	550	535	520	

Figure 7-2. Power assurance check chart

TAKE-OFF AND LANDING DATA CARD

DATA	TAKE-OFF	LANDING
Pressure Altitude	_____	_____ Ft.
OAT	_____	_____ °C
Density Altitude (Fig. A-1)	_____	_____ Ft.
Wind	_____	_____ Kts.
Gross Weight	_____	_____ Lb.
Desired Skid Height	_____	_____ Ft.
Desired Rotor Speed	_____	_____ %
Power Available — Two Engine (Fig. A-5)	_____	_____ %Q
Power Available Single Engine (Fig. A-5)	_____	_____ %Q
Power Required to Hover (Fig. A-10 & 11)	_____	_____ %Q

TAKE-OFF AND LANDING DATA CARD (Cont)

DATA

TAKE-OFF

LANDING

Max. Gross Weight for Hover (Fig. A-9 & 11) _____ Lb.

Single Engine Max. Gross Wt. to Hover 4 feet Skid Height (Fig. A-9 & 11) _____ Lb.

Single Engine Take-off Distance (Fig. A-17) _____ Ft.

Min. Safe Single Engine Speed (Fig. A-40) _____ Kts.

Single Engine Service Ceiling (Fig. A-24) _____ Ft.

Max. KIAS (Fig. 5-5) _____ Kts.

EMERGENCY PROCEDURES

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GROUND OPERATIONS

ENGINE FIRE ON GROUND

1. THROTTLES – OFF
2. FIRE PULL HANDLE – PULL
(affected engine)
3. Fire Extinguisher Selector Switch (W) –
Select MAIN and/or RESERVE
4. Complete Engine Shutdown

SINGLE ENGINE FAILURE DURING FLIGHT.

1. NR – MAINTAIN WITH COLLECTIVE.
2. BEEP SWITCH – MAXIMUM.
3. AIRSPEED – 55 KIAS MINIMUM.
4. Engine – SHUTDOWN. Refer to
ENGINE SHUTDOWN IN FLIGHT.
5. Presence of Fire – CHECK. If fire exists
or the ITT does not decrease normally,
complete the procedures for ENGINE
FIRE.

AUTOMATIC START

1. Generator (Inoperative engine) — OFF.
2. Throttle — OFF.
3. Main Fuel Switch — ON.
4. Starter Switch — ENGAGE.
5. Engine Oil Pressure — INDICATING.
6. Throttle — Open to Stop at 12% Ng.
7. ITT — Monitor (1090°C Maximum).
8. Starter — OFF at 50% Ng.
9. Engine Oil Pressure — WITHIN LIMITS.
10. Flight Idle Stop Switch — ACTUATE.
11. Throttle — Increase Slowly to FULL OPEN.
12. Particle Separators — AS REQUIRED.
13. Generator — ON.

MANUAL START (C)

1. Generator, (inoperative engine) – OFF.
2. Throttle – OFF.
3. Main Fuel Switch – ON.
4. Engine Governor Switch – MANUAL.
5. Starter Switch – ENGAGE.
6. Throttle – Slowly start opening at 12% Ng, observing fuel flow indications.
7. ITT – Monitor, control ITT and fuel flow rise with throttles.
8. Engine Oil Pressure – INDICATING.
9. Starter – OFF at 50% Ng.
10. Engine Governor Switch (C) – AS REQUIRED.
11. Flight Idle Stop Switch - Actuate.
12. Throttle – Increase slowly to Nf desired.
13. Generator – ON.
14. Particle Separator – AS REQUIRED.

ENGINE SHUTDOWN IN FLIGHT

1. Throttle (affected engine) - FLIGHT IDLE.
2. Throttle (affected engine) - OFF.
3. Main Fuel Switch (affected engine) - OFF.
4. Particle Separators (C) - AS REQUIRED.
5. Generator (affected engine) - OFF.

TWO-ENGINE FAILURE DURING TAKE-OFF AND CLIMB (C)

1. ESTABLISH AUTOROTATION.
2. Engines - SHUTDOWN.

TWO-ENGINE FAILURE DURING FLIGHT

1. ESTABLISH AUTOROTATION.
2. THROTTLES - OFF.
3. Main Fuel Switches - OFF.
4. Crew/Passengers - ALERTED.

ENGINE FIRE

1. FIRE PULL HANDLE (C) - PULL (affected engine)
2. NR - MAINTAIN WITH COLLECTIVE
3. BEEP SWITCH - MAXIMUM

ENGINE FIRE (Cont)

- 4. AIRSPEED - 55 KIAS MINIMUM**
- 5. FIRE EXTINGUISHER SELECTOR SWITCH (C) - SELECT MAIN AND/ OR RESERVE (if fire persists).**
- 6. Complete engine shutdown as outlined under ENGINE SHUTDOWN IN FLIGHT (C).**

CONSECUTIVE FIRES IN ALTERNATE ENGINES

1. Apply ENGINE FIRE procedures for first engine fire.
2. Enter Autorotation.
3. Reset actuated FIRE PULL handle.
4. Follow ENGINE FIRE procedure for second engine except select RESERVE instead of MAIN.

SIMULTANEOUS FIRES IN BOTH ENGINES

1. Enter Autorotation.
2. Throttles – OFF (Both).
3. One fire pull handle – PULL.
4. Select MAIN.
5. Both Main Fuel Switches and Particle Separator Switches – OFF.
6. Return actuated FIRE PULL handle to closed position.
7. Second fire pull handle – PULL.
8. Select RESERVE.
9. Accomplish landing as outlined under TWO ENGINE FAILURE.

FUSELAGE FIRE

1. Alert Crew and Designate Crewmember to Fight Fire (W).

If the fire is uncontrollable:

2. Execute Emergency Descent or Bail Out.

ELECTRICAL FIRE

1. Alert Crew and Designate crewmember to fight fire.
2. Isolate Affected Circuit (C).

SMOKE ELIMINATION

1. Pilot and Copilot Windows — OPEN.
2. Cabin Ventilators — OPEN.
3. Cargo Doors — OPEN.

BAILOUT

If a decision is made to bail out accomplish the following:

1. Warn crew/passengers and radio position.
2. Trim for level flight.
3. Move crew seats full aft.
4. Disconnect seat belt/shoulder harness and communications leads.
5. Jettison crew doors and slide cargo door full open.
6. Bail Out.

DITCHING CHART

PILOT

PLANNED DITCHING

1. Crew and Passengers — ALERTED
2. Distress Message — TRANSMIT IFF/SIF-EMERGENCY
3. Survival Equipment — PREPARED
4. Personal Equipment — CHECKED
5. Helicopter — HOVER
6. Door — JETTISON
7. Crew and Equipment — EVACUATE
8. Helicopter —
PROCEED APPROX
50 YDS DOWNWIND
 - a. Hovering
Autorotation
 - b. Collective — Continue to Increase
 - c. Maintain Level
Attitude
 - d. Rotor Brake — Apply
 - e. Evacuate Helicopter

IMMEDIATE DITCHING

1. Autorotation — ESTABLISHED
MINIMUM RATE OF
DESCENT
2. Crew and Passengers — ALERTED
3. Distress Message — TRANSMIT
4. Door — JETTISON
5. Shoulder Harness — LOCKED
6. Engine — SHUTDOWN
7. Crew — ALERTED FOR
DITCHING
8. Helicopter — DITCH
 - a. Collective — Continue to Increase
 - b. Maintain Level
Attitude
 - c. Rotor Brake — Apply
 - d. Evacuate Helicopter

Figure 3-5. Ditching Chart (Sheet 1 of 3)

DITCHING CHART

COPilot

PLANNED DITCHING

1. Survival Equipment – PREPARED
2. Personal Equipment – CHECKED
3. Door – JETTISON IN HOVER
4. Helicopter –
EVACUATE ON
PILOT'S COMMAND

IMMEDIATE DITCHING

1. Shoulder Harness – LOCKED
2. Personal Equipment – CHECKED
3. Door – JETTISON
4. Brace for Ditching
5. Evacuate Helicopter

Figure 3-5. Ditching Chart (Sheet 2 of 3)

DITCHING CHART
CABIN OCCUPANTS

PLANNED DITCHING

1. Survival Equipment — PREPARED
2. Personal Equipment — CHECKED
3. Cabin Doors — OPEN
4. Helicopter —
EVACUATE ON
PILOT'S COMMAND
WITH SURVIVAL
EQUIPMENT

IMMEDIATE DITCHING

1. Cabin Door — OPEN
2. Seal Belt — FASTENED
3. Personal Equipment — CHECKED
4. Brace for Ditching
5. Helicopter —
EVACUATE WITH
SURVIVAL EQUIP-
MENT

Figure 3-5. Ditching Chart (Sheet 3 of 3)

MANUAL FUEL CONTROL SYSTEM ACTUATION

1. Throttle (C) — FLIGHT IDLE (Maintain NR with collective).
2. Governor Switch — MANUAL.
3. Throttle (C) — INCREASE (To power required to maintain flight).

LANDING WITH MANUAL FUEL CONTROL SYSTEM ACTIVATED

1. Maintain Nf between 97% and 100% RPM.
2. Execute a Shallow Approach to a slide on or Hover Landing as Terrain Dictates.
3. After landing closely monitor NR and coordinate power reduction on affected engine as power is reduced.

HYDRAULIC POWER SYSTEM FAILURE

Single Failure

1. Hydraulic Control Circuit Breaker — IN.
2. Hydraulic Selector Switch — BOTH.
3. If System Still Fails, Select Operative System.
4. Master Caution Light — Reset, if system still failed.
5. Land as Soon as Practical.

Dual Failure

1. Airspeed — Adjust for minimum control forces.
2. Hydraulic MASTER Switch — ON.
3. Hydraulic Control Circuit Breaker — OUT, then back IN.
4. Hydraulic MASTER Switch — OFF, if power has not been restored.
5. Land as Soon as Possible (W).

RECOVERY FROM COLLECTIVE BOUNCE

During flight or ground operation if vertical oscillation is experienced, one or more of the following procedures will aid recovery.

1. Break elbow (i.e. do not stiff arm collective stick).
2. Increase pilot's adjustable collective friction.
3. Make a positive change of collective position, either up or down.

CAUTION AND WARNING LIGHT - INITIAL ACTION

When caution and warning lights are illuminated, the crew should refer to aircraft instruments to verify a malfunction exists, then accomplish the action, and procedures as follows for confirmed emergencies.

<u>SEGMENT WORDING</u>	<u>FAULT CONDITION</u>	<u>CORRECTIVE ACTION</u>
MASTER CAUTION LIGHT		Check the CAUTION PANEL for the fault.

CAUTION PANEL

OIL PRESSURE (ENG 1 & 2)	Engine oil pressure below 30 psi.	Check instruments to verify. Reference OIL STARVATION, Section III.
CHIP DETECTOR (ENG 1 & 2)	Metal particles in engine.	Reduce power as soon as possible. Reference ENGINE CHIP DETECTORS, Section III.
DC GENERATOR (1 & 2)	Failure of DC generator.	Check starter switch OFF. GEN FIELD circuit breaker - Check IN. RESET GENERATOR SWITCH. Reference ELECTRICAL POWER SYSTEM FAILURE, Section III.

<u>SEGMENT WORDING</u>	<u>FAULT CONDITION</u>	<u>CORRECTIVE ACTION</u>
GOV MANUAL (ENG 1 & 2)	Governor in manual mode.	No Corrective action required. Reference MANUAL FUEL CONTROL SYSTEM ACTUATION , Section III.
FUEL FILTER (ENG 1 & 2)	Filter is partially clogged.	No inflight corrective action possible. Continue flight, and correct before next flight.
PART SEP OFF (ENG 1 & 2)	Particle separator door closed. Ice and dust protection system inoperative.	Position particle separator switch to "ON". If light extinguishes, continue flight. The particle separator switch should be returned to "AUTO" after landing but before shutdown. If light doesn't extinguish, return the particle separator switch to "AUTO" and reduce power on affected engine to 30% of engine torque, except as needed for landing.
AC FAIL	Failure of inverter.	Check MAIN INV PWR circuit breaker – IN. Reference AC INVERTER FAILURE , Section III.

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SEGMENT WORDING	FAULT CONDITION	CORRECTIVE ACTION
HYD SYS (1 & 2)	Hydraulic pressure, Sys 1, below 650 psi.	Land as soon as possible. Reference HYDRAULIC POWER SYSTEM FAILURE , Section III.
ROTOR BRAKE	Hydraulic pressure of 10 psi sensed. Puck(s) not fully retracted.	If the brake has not been intentionally applied, check the rotor brake handle — OFF. During flight, if the light remains on, land as soon as possible.
EXTERNAL PWR	External power access door open.	If the door has not been intentionally opened for connection of the external power, check door closed.
LEFT OR RIGHT FUEL BOOST	Left/Right fuel boost pump off.	Set fuel crossfeed switch — ON. Circuit breaker to affected pump — PULL. Reference FUEL BOOST PUMP FAILURE , Section III.
C BOX OIL FILTER	Combining gearbox oil filter partially clogged.	Land as soon as practical and correct before next flight.
IFF CODE HOLD	Code hold switch ON.	None. Indicates IFF MODE 4 switch has been actuated.

SEGMENT WORDING	FAULT CONDITION	CORRECTIVE ACTION
FUEL LOW	Fuel quantity 150 ± 20 lbs	Land as soon as practical.
C BOX DIL PRESS	Combining gearbox oil pressure below 30 psi.	Begin minimum power descent. Reference OIL STARVATION, Section III.
IFF	IFF MDDE 4 inoperative.	No inflight corrective action possible. Indicates IFF MODE 4 inoperative.
AUX FUEL LOW	Auxiliary fuel tank empty.	Applicable AUX FUEL TRANSFER PUMP switch - OFF. Reference AUXILIARY FUEL TRANSFER, Section IV.
XMSN OIL HOT	Transmission oil temperature is above 110°C.	Begin minimum power descent. Reference OIL STARVATION, Section III.
XMSN OIL PRESS	Transmission oil pressure below 30 PSI	Begin minimum power descent. Reference OIL STARVATION, Section III.
CHIP DETECTORS	Metal particles in oil.	Refer to CHIP DETECTOR PANEL which will indicate which gearbox has the fault.

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<u>SEGMENT WORDING</u>	<u>FAULT CONDITION</u>	<u>CORRECTIVE ACTION</u>
ALT ENCODER	AC power interrupted.	No inflight corrective action possible. Indicates ALT ENCODER inoperative.
<u>CHIP DETECTOR PANEL</u>		
90°	Metal particles in oil.	Begin minimum power descent. Reference CHIP DETECTOR CAUTION PANEL, Section III.
C BOX	Metal particles in combining gearbox.	Same as 90°
42°	Metal particles in oil.	Same as 90°
XMSN	Metal particles in oil.	Same as 90°
<u>FIRE DETECTOR/WARNING LIGHTS</u>		
FIRE 1 PULL	Fire indication in No. 1 Engine compartment.	Reference ENGINE FIRE, Section III.
FIRE 2 PULL	Fire indication in No. 2 engine compartment.	Same as FIRE 1 PULL.
<u>RPM WARNING LIGHT</u>		
RPM	Rotor is too low or high.	Maintain NR within limits and check for engine failure.