***TM 1-1510-223-CL**

TECHNICAL MANUAL

Operator's and Crewmember's Checklist

ARMY MODEL
RC-12N

Pilot's Checklist

HEADQUARTERS,
DEPARTMENT OF THE ARMY
01 JANUARY 2001

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*This manual supersedes TM 1-1510-223-CL, dated 29 April 1994.

GENERAL INFORMATION AND SCOPE

SCOPE. This checklist contains the operator's and crewmember's checks to be accomplished during normal and emergency operations.

GENERAL INFORMATION. The checklist consists of three parts: normal procedures, emergency procedures, and performance data. Normal procedures consist of the procedures required for normal flight and those required for "before landing". The normal procedures portion will be subdivided to include the before landing checks of Chapter 8 of the operator's manual. Emergency procedures are subdivided into seven classifications as follows: engine, propeller, fire, fuel, electrical, landing and ditching, and flight controls. Performance data consists of performance checks.

NOTE

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 1-1510-223-10), but is a condensed version of each procedure.

NORMAL PROCEDURES PAGES. The contents of the normal procedures of this manual are a condensation of the amplified checklists appearing in the normal procedures, or crew duties portion of the applicable opperator's manual.

EMERGENCY PROCEDURES PAGES. The requirements for this section of the condensed checklist manual (CL) are identical to those for the normal procedures, except that the information is drawn from the amplified checks in the emergency procedures portion of the operator's manual. The emergency requirements are subdivided into the seven classifications listed above. Immediate action items shall be underlined.

Symbols preceding numbered steps:

*	-	Indicates performance of step is mandatory for all through flights.
N	-	Means performance of step is mandatory for night flights.
★	-	Indicates a detailed procedure for this step is included in the performance checks section, located at the back of the checklist.
I	-	Indicates mandatory check for instrument flights.
(O)	-	Indicates if installed.
(3.)	-	Copilot's duties to be performed at pilot's command.

Immediate action emergency items are underlined.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 direct to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. A reply will be furnished to you. You may also send in your comments electronically to our E-mail address: ls-lp@redstone.army.mil or by fax (256)842-6546/DSN 788-6546. Instructions for sending an electronic 2028 may be found at the back of the -10.

NORMAL PROCEDURES

BEFORE EXTERIOR CHECK

1. GPU – Connect as required.

*2. Publications – Check.

★ 3. Oxygen system – Check.

*4. Flight controls – Unlock and check.

*5. PARKING BRAKE – Set.

6. Elevator trim – Set to 0 (neutral).

*7. Gear – DN.

*8. Keylock switch – ON.

*9. Weather radar – OFF.

★ 10. Fuel pumps/crossfeed operation – Check.

*11. ICE VANE CONTROL switches – STBY/OFF.

*12. Battery switch – ON.

*13. Lighting and anti-ice/deice systems – Check as required.

*14. FUEL gages – Check fuel quantity and gage operation.

15. HYD FLUID SENSOR TEST switch – Depress. Check HYD FLUID LOW annunciator light illuminates after approximately 2 seconds, and extinguishes after approximately 6 seconds.

★ 16. Engine fire protection system – Check.

★ 17. Stall and gear warning system – Check.

18. GPU – Check connected and DC voltage if steps 19 through 25 are to be performed.

★ 19. Overhead control panel switches – Set as required.

★ (20.) Mission control panel switches and circuit breakers – Check and set as required.

★ 21. INS Alignment – Align as required.

★ 22. Pilot's and copilot's EFIS TEST switches – Depress. Verify indications.

★ 23. Automatic flight control system – Check as required.

★ 24. ASE/ACS BIT Checks – Perform as required.

★ 25. ASE/ACS Programming – Program as required.

★ 26. Avionics – Check and set as required.

27. BATTERY switch – As required.

28. Toilet – Check condition.

29. Emergency equipment – Check.

(O) 30. Parachutes – Check.

FUEL SAMPLE AND OIL CHECK

*1. Fuel sample – Check collective fuel sample from all drains for possible contamination.

EXTERIOR CHECK

LEFT WING AREA

1. Left Wing – Check.

2. Left main landing gear – Check.

★ *3. Fire extinguisher gage pressure – Check pressure within limits.

4. Left engine and propeller – Check.

5. Left wing center section – Check.

6. Fuselage underside – Check.

NOSE SECTION

1. Nose section – Check.

RIGHT WING

1. Right wing center section – Check.

2. Right engine and propeller – Check.

3. Right main landing gear – Check.

★ *4. Fire extinguisher gage pressure – Check pressure within limits.

5. Right wing – Check.

FUSELAGE RIGHT SIDE

1. Fuselage right side – Check.

EMPENNAGE

1. Empennage – Check.

FUSELAGE LEFT SIDE

1. Fuselage left side – Check.

*INTERIOR CHECK

1. Cargo/loose equipment – Check secured.

★ 2. Cabin/cargo doors – Test and lock.

3. Emergency exit – Check secure and key removed.
4. Mission cooling ducts – Check open and free of obstructions.
5. Flare/chaff dispenser preflight test – Completed.
6. COMSEC keys – Loaded as required.
7. Crew briefing – As required.

BEFORE STARTING ENGINES

*1. Oxygen system – Set as required.
2. Circuit breakers – Check in.
*3. Overhead panel – Check and set.
*4. Fuel panel switches – Check.
5. Magnetic compass – Check for fluid, heading, and current correction card.
*6. Pedestal controls – Set.
*7. Pedestal extension switches – Set.
8. LANDING GEAR ALTERNATE EXTENSION pump handle – Stowed.
9. Free air temperature gage – Check. Note current reading.
10. Pilot's instrument panel – Check and set.
11. Copilot's instrument panel – Check and set.
★ (12.) Mission control panel switches and circuit breakers – As required.
13. Subpanels – Check and set.

14. AC and DC GPU – As required.

*15. BATTERY switch – ON.

16. DC power – Check (22 VDC minimum for battery, 28 VDC maximum for GPU starts).

17. Annunciator panels – Test.

*FIRST ENGINE START (BATTERY START)

1. INS – OFF.

2. Exterior light switches – As required.

3. Propeller area – Clear.

4. ENG START switch – START-IGNITION. IGN ON annunciator should illuminate and FUEL PRESS annunciator should extinguish.

5. CONDITION lever (after N_1 RPM passes 13% minimum) – LOW IDLE.

6. TGT and N_1 – Monitor (TGT 1000° C Maximum).

7. Oil pressure – Check (60 PSI minimum).

8. ENG START switch – OFF after TGT peaks.

9. CONDITION lever – HIGH IDLE. Monitor TGT as CONDITION lever is advanced.

10. Generator switch (operating engine) – RESET, then ON.

*SECOND ENGINE START (BATTERY START)

1. Generator load – Verify less than 50%.

2. Propeller area – Clear.

3. ENG START switch – START - IGNITION. IGN ON annunciator should illuminate and FUEL PRESS annunciator should extinguish.
4. CONDITION lever (after N_1 RPM passes 13% minimum) – LOW IDLE.
5. TGT and N_1 – Monitor (TGT 1000° C maximum.
6. Oil pressure – Check (60 PSI minimum).
7. ENG START switch – OFF after TGT peaks.
8. CONDITION levers – HIGH IDLE. Monitor TGT as CONDITION lever is advanced.
9. PROP levers – HIGH RPM.
10. INVERTER switches – ON, check INVERTER annunciators off.
11. Current limiters – Check.
12. Generator switch – Second switch RESET, then ON.
13. BEACON lights switch – Reset, then as required.

ABORT START PROCEDURE

1. CONDITION lever – FUEL CUTOFF.
2. ENG START switch – STARTER ONLY.
3. TGT – Monitor for drop in temperature.
4. ENG START switch – OFF.

ENGINE CLEARING PROCEDURE

1. CONDITION lever – FUEL CUTOFF.
2. ENG START switch – OFF (15 minutes minimum).

3. ENG START switch – STARTER ONLY.

4. ENG START switch – OFF.

*FIRST ENGINE START (GPU START)

★ (1.) INS mode selector switch – OFF or NAV as appropriate.

2. Exterior light switches – As required.

3. Propeller area – Clear.

4. ENG START switch – START-IGNITION. IGN ON annunciator should illuminate and FUEL PRESS annunciator should extinguish.

5. CONDITION lever (after N_1 RPM passes 13% minimum) – LOW IDLE.

6. TGT and N_1 – Monitor (TGT 1000˚ C maximum).

7. Oil pressure – Check (60 PSI minimum).

8. ENG START switch – OFF after TGT peaks.

9. DC GPU disconnect – As required. Disconnect if second engine is to be started utilizing the Battery Start Procedure (Second Engine).

10. Generator switch – RESET then ON, for second engine battery start.

*SECOND ENGINE START (GPU START)

1. Propeller area – Clear.

2. ENG START switch – START - IGNITION. IGN ON annunciator should illuminate and FUEL PRESS annunciator should extinguish.

3. CONDITION lever (after N_1 RPM passes 13% minimum) – LOW IDLE.

4. TGT and N_1 – Monitor (TGT 1000˚ C maximum).
5. Oil pressure – Check (60 PSI minimum).
6. ENG START switch – OFF after TGT peaks.
7. AC and DC GPU units – Disconnect (check aircraft external power and mission external power annunciators extinguished).
8. CONDITION levers – HIGH IDLE.
9. PROP levers – HIGH RPM.
10. #1 and #2 INVERTER switches – ON. Check INVERTER annunciators extinguished.
11. GENERATOR switch (1) – Reset, then ON.
12. Current limiters – Check.
13. GENERATOR switch – Second switch reset, then on.
14. BEACON lights switch – Reset, then on.

BEFORE TAXIING

*1. BRAKE DEICE switch – Check and set as required.

*2. CABIN AIR MODE and TEMP controls – Set as desired.

★ 3. AC/DC power – Check.

*4. AUTO PLT POWER switch – ON.

*5. AVIONICS MASTER POWER switch – ON.

*6. #1 and #2 EFIS POWER switches – ON.

★ * (7.) Mission control panel switches – Set and checked as required.

★ (8.) INS – Perform stored heading alignment, if required.

9. Weather radar – STBY.

10. Flaps – Check.

11. Altimeters – Set and check.

*TAXIING

1. Prop levers – As required.

2. Brakes – Check.

3. Flight instruments – Check for normal operation.

ENGINE RUNUP

★ (1.) Mission control panel switches – Set after receiving clearance from IPF set.

2. Propeller feathering – Check by pulling PROP levers aft past the detent to FEATHER. Check that each propeller feathers, then advance levers to the HIGH RPM position.

★ 3. Autofeather/auto ignition – Check.

★ 4. Overspeed governors and rudder boost – Check.

★ 5. Primary governors – Check.

★ (6.) Engine anti-ice – Check.

★ (7.) Anti-ice and deice systems – Check.

★ (8.) Pneumatics/vacuum/pressurization – Check.

9. Windshield anti-ice – As required.

★ 10. Weather radar – Test and set as required.

*BEFORE TAKEOFF

1. AUTOFEATHER switch – ARM.
2. PNEU & ENVIRO BLEED AIR valves (2) – As required.
3. ICE & RAIN switches – As required. As a minimum, PITOT, STALL WARN, and FUEL VENT switches shall be on.
4. Fuel panel – Check fuel quantity and switch positions.
5. Flight and engine instruments – Check for normal indications and EFIS display controller is set to desired setting.
6. CABIN CONTROLLER – Set.
7. Annunciator panels – Check (note indications).
8. Flaps – As required.
9. Trim – Set.
10. ASE/ACS – Set.
11. Avionics – Set.
12. Flight controls – Check.

★ 13. Departure briefing – Complete.

*LINE UP

1. Engine anti-ice – As required.
2. Engine AUTO IGNITION switches – ARM.
3. PROP levers – HIGH RPM.
4. Altitude alerter – Check. Set as required.
5. Transponder – As required.
6. Lights – As required.

AFTER TAKEOFF

1. Gear – UP.
2. Flaps – UP.
3. Landing lights – OFF.
4. Windshield anti-ice – As required.

CLIMB

1. Climb power – Set.
2. Propeller synchronization – As required.
3. Yaw damper – ENGAGE (required above 17,000 ft).
4. BRAKE DEICE switch – As required.
5. ICE VANE CONTROL switches – As required.
6. STANDBY PUMP switches – As required.

7. Cabin pressurization – Check. Adjust rate control knob so that cabin rate-of-climb equals one third of aircraft rate-of-climb.
8. Wings and center section – Check for security and no fuel/oil leaks.
9. Flare/chaff dispenser safety pin – Remove, as required.
10. ASE – As required.
11. Radio altimeter – As required.

CRUISE

1. Power – Set.
2. ICE & RAIN switches – As required.
3. AUTOFEATHER – As required.
4. Auxiliary fuel gages – Monitor.
5. Altimeters – Check.
6. Engine instrument indications – Noted.
7. RECOG lights – As required.

DESCENT - ARRIVAL

1. CABIN CONTROLLER – Set.
2. ICE & RAIN switches – As required.
3. Windshield anti-ice – As required.
4. RECOG lights – On.
5. Altimeters – Set to current altimeter setting.

6. Radio altimeter – ON.

7. ASE – As required.

8. Flare/chaff dispenser safety pin – Insert.

9. Avionics and EFIS display controller – Set and check.

★ 10. Arrival briefing – Complete.

BEFORE LANDING

1. PROP SYN switch – As required.

2. PROP levers – As required.

3. Flaps (below 197 KIAS) – APPROACH.

4. Gear (below 179 KIAS) – DN.

5. Landing lights – As required.

6. AUTOFEATHER switch – ARM.

7. ICE VANE CONTROL switches – As required.

8. BRAKE DEICE switch – As required.

9. ANT STOWED annunciator light – Check illuminated.

LANDING

1. Autopilot and yaw damper – Disengage.

2. GEAR DOWN annunciators – Check.

3. PROP levers – HIGH RPM.

TOUCH AND GO/STOP AND GO LANDING

1. PROP LEVERS – HIGH RPM.
2. Flaps – As required.
3. Trim – Set.
4. Power stabilized – Check 25% minimum.
5. Takeoff power – Set.

GO-AROUND

1. Power – Maximum allowable.
2. Gear – UP.
3. Flaps – UP.
4. Landing lights – OFF.
5. Climb power – Set.
6. BRAKE DEICE switch – Off.

AFTER LANDING

1. PROP Levers – Retard to FEATHER detent.
2. ICE VANE CONTROL switches – ON.
3. Engine AUTO IGNITION switches – Off.
4. ICE & RAIN switches – Off.
5. Flaps – UP.
6. Radar/transponder – As required.

7. Lights – As required.

★ (8.) Mission control panel switches – Set.

ENGINE SHUTDOWN

1. PARKING BRAKE – Set.
2. LANDING/TAXI lights – OFF.
3. INS – OFF.
4. Mission equipment – Set and check.
5. CABIN AIR MODE switch – OFF.
6. FWD and AFT VENT BLOWER switches – AUTO.
7. AUTOFEATHER switch – OFF.
8. Inverter switches (4) – Off.
9. AUTO PLT POWER switch – Off.
10. #1 and #2 EFIS power switches – Off.
11. BRAKE DEICE switch – Off.
12. Battery condition – Check.
13. TGT – Check stabilized for 1 minute prior to shutdown.
14. POWER levers – Flight IDLE.
15. PROP levers – FEATHER.
16. CONDITION levers – FUEL CUTOFF.
17. Oxygen system – OFF.

18. COCKPIT LIGHTS switches – OFF.
19. AVIONICS MASTER POWER switch – Off.
20. EXTERIOR LTS – Off.
21. MASTER SWITCH – OFF.
22. Keylock switch – As required.

BEFORE LEAVING AIRCRAFT

1. Wheels – Chocked.
2. PARKING BRAKE – As required.
3. Flight controls – Locked.
4. STANDBY PUMP switches – Off.
5. COMSEC – Zeroize as required.
6. Windows – As required.
7. Emergency exit lock – As required.
8. Aft cabin lights – OFF.
9. Door light – OFF.
10. Walk-around inspection – Complete.
11. Aircraft forms – Complete.
12. Aircraft – Check secured.

EMERGENCY PROCEDURES

ENGINE MALFUNCTION

ENGINE MALFUNCTION PRIOR TO OR AT V_1 (ABORT)

1. POWER levers – GROUND FINE.
2. Braking – As required.
3. Reverse thrust – As required.

If insufficient runway remains for stopping, perform the following:

4. CONDITION levers – FUEL CUTOFF.
5. FIRE PULL handles – Pull.
6. MASTER SWITCH – OFF.

ENGINE FAILURE AFTER V_1

1. Power – Maximum allowable.
2. Gear – UP (two positive climb indications).
3. Propeller – Verify feathered.
4. Flaps – UP after V_{enr} (130 KIAS).
5. Landing lights – OFF.
6. Engine cleanup – Perform.
7. Land as soon as practicable.

ENGINE MALFUNCTION DURING FLIGHT

1. Autopilot/Yaw Damp – Disengage.
2. Power – As required.
3. Dead engine – Identify.
4. POWER lever (dead engine) – IDLE.
5. PROP lever (dead engine) – FEATHER.
6. Gear – As required.
7. Flaps – As required.
8. Engine Cleanup – Perform.
9. Power – Set for single engine cruise.
10. Land as soon as practicable.

ENGINE MALFUNCTION DURING FINAL APPROACH

1. Power – As required.
2. Gear – DN.

ENGINE MALFUNCTION (SECOND ENGINE)

1. Airspeed – As required.
2. POWER lever – IDLE.
3. PROP lever – As required.
4. Conduct engine restart procedure.

ENGINE SHUTDOWN IN FLIGHT

1. POWER LEVER – IDLE.
2. PROP lever – FEATHER.
3. CONDITION lever – FUEL CUTOFF.
4. Engine cleanup – Perform.

ENGINE CLEANUP

1. CONDITION lever – FUEL CUTOFF.
2. Engine AUTO IGNITION switch – Off.
3. AUTOFEATHER switch – OFF.
4. GENERATOR switch – OFF.
5. Mission control switches – As required.
6. PROP SYNC switch – OFF.
7. BRAKE DEICE switch – Off.

ENGINE RESTART DURING FLIGHT (NO STARTER ASSIST)

1. POWER lever – IDLE.
2. PROP lever – HIGH RPM.
3. CONDITION lever – FUEL CUTOFF.
4. FIRE PULL handle – Push (PUSH TO EXTINGUISH annunciator extinguished).

5. Engine anti-ice – Off.
6. GENERATOR switch (inoperative engine) – OFF.
7. Airspeed – As required (140 knots propeller windmilling, 190 knots propeller feathered).
8. Altitude – Below 25,000 feet.
9. Engine N_1 – Monitor (10% minimum, propeller feathered).
10. AUTO IGNITION switch – ARM.
11. CONDITION lever – LOW IDLE.
12. Power – As required (after TGT peaks).
13. GENERATOR switch – RESET, then ON.
14. Engine cleanup – Perform if engine start was unsuccessful.
15. PROP SYNC switch – As required.
16. Electrical equipment – As required.
17. CONDITION lever – HIGH IDLE.
18. Cabin air mode switch – As required.

ENGINE RESTART DURING FLIGHT (USING STARTER)

1. CABIN AIR MODE SELECT switch – OFF.
2. FWD VENT BLOWER switch – AUTO.

3. AUTO PLT POWER switch – Off.
4. EFIS POWER switches (2) – OFF (if conditions permit).
5. Radar – SBY or OFF.
6. POWER lever – IDLE.
7. PROP lever – Low RPM.
8. CONDITION lever – FUEL CUTOFF.
9. FIRE PULL handle – Push in (to extinguish annunciator).
10. ENG START switch – START-IGNITION. Check IGN ON annunciator illuminated.
11. CONDITION lever – LOW IDLE.
12. ENG START switch – OFF after TGT peaks.
13. CONDITION lever – HIGH IDLE.
14. PROP lever – As required.
15. POWER lever – As required.
16. Engine cleanup – Perform if engine start was unsuccessful.
17. GENERATOR switch – RESET, then ON.
18. Engine AUTO IGNITION – As required.
19. PROP SYNC switch – As required.

20. Electrical equipment – As required.

21. Cabin air mode switch – As required.

MAXIMUM GLIDE

1. Gear – UP.
2. Flaps – UP.
3. PROP levers – FEATHERED.
4. Airspeed – As required.

SINGLE-ENGINE DESCENT/ARRIVAL

1. CABIN CONTROLLER – Set.
2. ICE & RAIN switches – As required.
3. RECOG lights – ON.
4. Windshield anti-ice – As required.
5. Radio altimeter – As required.
6. Altimeters – Set to current altimeter setting.
7. ASE – As required.
8. Flare/chaff dispenser safety pin – Insert.

★ 9. Arrival briefing – Complete.

SINGLE-ENGINE BEFORE LANDING

1. PROP lever – HIGH RPM.
2. Flaps – As required.
3. Gear – DN.
4. Landing lights – As required.
5. Yaw damp – Off.
6. BRAKE DEICE switch – Off.

SINGLE-ENGINE LANDING CHECK

1. Autopilot/yaw damp – Disengage.
2. GEAR DOWN lights – Check.
3. PROP lever (operative engine) – HIGH RPM.
4. Flaps – As required.

SINGLE-ENGINE GO-AROUND

1. Power – Maximum allowable.
2. Landing gear – UP.
3. Flaps – UP.
4. Airspeed – V_{YSE}.
5. LANDING lights – OFF.

LOW OIL PRESSURE

1. Oil pressure below 90 PSI and above 60 PSI: Torque – As required (54% maximum).
2. Oil pressure below 60 PSI: Perform engine shutdown, or land as soon as practicable using minimum power to ensure safe arrival.

CHIP DETECTOR WARNING ANNUNCIATOR ILLUMINATED

If the L CHIP DETECTOR or R CHIP DETECTOR warning annunciator illuminates, and safe single-engine flight can be maintained:

1. Perform engine shutdown.
2. Land as soon as practicable.

DUCT OVERTEMP CAUTION ANNUNCIATOR ILLUMINATOR

1. CABIN AIR control – In.
2. CABIN AIR MODE SELECT switch – AUTO.
3. CABIN AIR TEMP CONTROL – DECREASE.
4. FWD VENT BLOWER switch – HIGH.
5. CABIN AIR MODE switch – MAN COOL.
6. CABIN AIR MANUAL TEMP switch – DECREASE (hold).
7. LEFT ENVIRO & PNEU BLEED AIR valve switch – PNEU ONLY.

8. Light still illuminated after 30 seconds: LEFT ENVIRO & PNEU BLEED AIR valve switch – ON.
9. RIGHT ENVIRO & PNEU BLEED AIR valve switch – PNEU ONLY.
10. Light still illuminated after 30 seconds: RIGHT ENVIRO & PNEU BLEED AIR valve switch – ON.

ENGINE ANTI-ICE FAILURE

1. ICE VANE POWER SELECT switch – STBY.
2. VANE FAIL annunciator – Check extinguished.

ENGINE BLEED AIR SYSTEM MALFUNCTION

BL AIR FAIL ANNUNCIATOR ILLUMINATED

1. BRAKE DEICE switch – Off.
2. TGT and torque – Monitor (note readings).
3. ENVIRO & PNEU BLEED AIR valve switch (affected side) – Off.
4. Cabin pressurization – Check.

EXCESSIVE DIFFERENTIAL PRESSURE

1. Cabin altitude and rate-of-climb controller – Select higher setting.

If condition persists:

2. LEFT ENVIRO & PNEU BLEED AIR valve switch – PNEU ONLY (L BL AIR OFF annunciator illuminated).

If condition still persists:

3. RIGHT ENVIRO & PNEU BLEED AIR valve switch – PNEU ONLY (R BL AIR OFF annunciator illuminated).

If condition still persists:

4. Descend immediately.

If unable to descend:

5. Oxygen masks – On and 100%.

6. CABIN PRESS switch – DUMP.

7. ENVIRO & PNEU BLEED AIR valve switches – ON, if cabin heating is required.

LOSS OF PRESSURIZATION (ABOVE 10,000 FEET)

1. Crew oxygen masks – On and 100%.

2. Descend as required.

CABIN DOOR CAUTION ANNUNCIATOR ILLUMINATED

1. ENVIRO & PNEU BLEED AIR valve switches – PNEU ONLY.

2. Descend below 14,000 feet as soon as practicable.

3. Oxygen – As required.

PROPELLER FAILURE (OVER 1802 RPM)

1. POWER lever (affected engine) – IDLE.

2. PROP lever – FEATHER.

3. CONDITION lever – As required.

4. Engine cleanup – As required.

FIRE

ENGINE FIRE

ENGINE/NACELLE FIRE DURING START OR GROUND OPERATIONS

1. PROP levers – FEATHER.
2. CONDITION levers – FUEL CUTOFF.
3. FIRE PULL handle – Pull.
4. PUSH TO EXTINGUISH switch – Push.
5. MASTER SWITCH – OFF.

ENGINE FIRE IN FLIGHT (FIRE PULL HANDLE LIGHT ILLUMINATED)

1. POWER lever – IDLE.
2. If FIRE PULL handle light is extinguished: Advance power.
3. If FIRE PULL handle light is still illuminated: Engine fire in flight procedures (identified) – Perform.

ENGINE FIRE IN FLIGHT (IDENTIFIED)

1. POWER lever – IDLE.
2. PROP lever – FEATHER.

3. CONDITION lever – FUEL CUTOFF.
4. FIRE PULL handle – Pull.
5. Fire extinguisher – Actuate as required.
6. Engine cleanup – Perform.

FUSELAGE FIRE

1. Fight the fire.
2. Land as soon as possible if fire continues.

WING FIRE

1. Perform engine shutdown on affected side.
2. Land as soon as possible.

ELECTRICAL FIRE

1. Crew oxygen – On and 100%.
2. MASTER SWITCH – OFF (visual conditions only).
3. All nonessential electrical equipment – Off.
4. BATTERY switch – ON.
5. GENERATOR switches (individually) – RESET, then ON.
6. Circuit breakers – Check for indication of defective circuit.
7. Essential electrical equipment – On (individually until fire source is isolated).
8. Land as soon as practicable.

SMOKE AND FUME ELIMINATION

1. Crew oxygen – On and 100%.
2. ENVIRO & PNEU BLEED AIR valve switches – PNEU ONLY.
3. FWD VENT BLOWER switch – AUTO.
4. AFT VENT BLOWER switch – Off.
5. CABIN AIR MODE SELECT switch – OFF.
6. If smoke and fumes are not eliminated: CABIN PRESS switch – DUMP.
7. Engine instruments – Monitor.

FUEL SYSTEM

FUEL PRESS WARNING ANNUNCIATOR ILLUMINATED

1. STANDBY PUMP switch – ON.
2. FUEL PRESS annunciator – Check extinguished.
3. FUEL PRESS annunciator still illuminated – Record unboosted time.
4. Monitor system for further abnormal indications.

NO FUEL XFER CAUTION ANNUNCIATOR ILLUMINATED

1. AUX XFER switch (affected side) – OVRD.
2. Auxilliary fuel quantity – Monitor.
3. AUX XFER switch (after respective auxilliary fuel has completely transferred) – AUTO.

NACELLE FUEL LEAK

1. Perform engine shutdown.
2. FIRE PULL handle – Pull.
3. Land as soon as practicable.

FUEL CROSSFEED

1. AUX XFER switches – AUTO.
2. STANDBY PUMP switches – Off.
3. CROSSFEED switch – As required.
4. FUEL CROSSFEED annunciator illuminated – Check.
5. FUEL PRESS annunciator extinguished – Check.
6. Fuel quantity – Monitor.

NAC LOW ANNUNCIATOR ILLUMINATED

Land as soon as practicable.

ELECTRICAL SYSTEM EMERGENCIES

DC GEN ANNUNCIATOR ILLUMINATED

1. GENERATOR switch – OFF, RESET, then ON.
2. GENERATOR switch (no reset) – Off.
3. MISSION CONTROL switch – ORIDE.
4. Operating loadmeter – 100% maximum.

BOTH DC GEN ANNUNCIATOR ILLUMINATED (RESET FAILED)

1. All nonessential equipment – Off.
2. Land as soon as practicable.

EXCESSIVE LOADMETER INDICATION (OVER 100%)

1. BATTERY switch – OFF (monitor loadmeter).
2. Loadmeter over 100% – Nonessential electrical equipment off.
3. Loadmeter under 100% – BATTERY switch ON.

INVERTER ANNUNCIATOR ILLUMINATED

1. Affected INVERTER switch – Off.

INST AC ANNUNCIATOR ILLUMINATED

The following system will be affected:

NAV #1
NAV #2
Heading #1
Heading #2
#1 torquemeter
#2 torquemeter
Pilot's EFIS
Copilot's EFIS
INS
ADF
#2 rate of turn air data computer

1. N_1 and TGT indications – Check.
2. Other engine instruments – Monitor.

CIRCUIT BREAKER TRIPPED

1. Bus feeder breaker tripped – Do not reset.
2. Nonessential circuit – Do not reset.
3. Essential circuit – Reset once.

BATTERY CHARGE ANNUNCIATOR ILLUMINATED

1. Battery ammeter – Check, note indication, and monitor for increasing load. If load continues to increase, turn battery switch OFF.
2. BATTERY switch – OFF.
3. BATTERY switch (landing gear/flap extension only) – ON.

AVIONICS MASTER POWER SWITCH FAILURE

1. AVIONICS MASTER CONTR circuit breaker – Pull.

BAT FEED FAULT ANNUNCIATOR ILLUMINATED

1. BATTERY switch – RESET, then ON.

EMERGENCY DESCENT

1. POWER levers – IDLE.
2. PROP levers – HIGH RPM.
3. Flaps – APPROACH.
4. Gear – DN.
5. Airspeed – 179 KIAS (0.472 Mach) maximum.

FLIGHT CONTROL MALFUNCTIONS

AUTOPILOT EMERGENCY DISCONNECTION

1. Pressing the AP & YD/TRIM DISC switch (control wheels).
2. Pressing the AP ENGAGE pushbutton on the autopilot controller (pedestal extension).
3. Pressing the GO-AROUND switch (left power lever, yaw damper will remain on).
4. Pulling the AP CONTR and AFCS DIRECT circuit breakers (overhead control panel).

5. Setting AVIONICS MASTER POWER switch (overhead control panel) to the off (aft) position.
6. Setting aircraft MASTER SWITCH (overhead control panel) to the OFF position.
7. Setting the AUTO PLT power switch (overhead control panel) to off position.

YAW DAMP EMERGENCY DISCONNECTION

1. Pressing the AP & YD/TRIM DISC switch (control wheels).
2. Pressing the AP ENGAGE pushbutton on the autopilot controller (pedestal extension).
3. SETTING THE RUDDER BOOST/YAW CONTROL TEST switch (pedestal extension) to the YAW CONTROL TEST position.
4. Pulling the AP CONTR circuit breaker (overhead control panel).
5. Pulling the RUDDER BOOST circuit breaker (overhead control panel).
6. Setting AVIONICS MASTER POWER switch (overhead control panel) to the off (aft) position.
7. Setting aircraft MASTER switch (overhead control panel) to the OFF (aft) position.
8. Setting the AUTO PLT power switch (overhead control panel) to off.

UNSCHEDULED RUDDER BOOST ACTIVATION

1. AP & YD/TRIM DISC switch (control wheel) – Disconnect and hold (hold to first level).
2. RUDDER BOOST switch – OFF.
3. RUDDER BOOST circuit breaker – Pull (provided that rudder boost does not deactivate).
4. AP & YD/TRIM DISC switch – Release.
5. Yaw damper – Reengage (if RUDDER BOOST circuit breaker is not pulled).

UNSCHEDULED ELECTRIC TRIM

1. ELEV TRIM switch – OFF.
2. ELECTRIC TRIM circuit breaker – Pull.

LANDING EMERGENCIES

LANDING GEAR UNSAFE INDICATION

1. LDG GEAR CONTR SWITCH – check DN.
2. LANDING GEAR CONTROL and LANDING GEAR IND circuit breakers – Check in.
3. GEAR DOWN lights – Check illuminated.

If indication remains unsafe:

4. Landing gear emergency extension – Perform.

LANDING GEAR EMERGENCY EXTENSION

1. Airspeed – Below 179 KIAS.
2. LANDING GEAR CONTROL circuit breaker – Pull.
3. LDG GEAR CONTR switch – DN.
4. LANDING GEAR ALTERNATE EXTENSION pump handle – Unstow.
5. LANDING GEAR ALTERNATE EXTENSION pump handle – Pump until the three green GEAR DOWN annunciators illuminate and red gear handle lights extinguish.
6. LANDING GEAR ALTERNATE EXTENSION pump handle – Stow (secure in clip).

GEAR-UP LANDING

1. Crew emergency briefing – Completed.
2. Loose equipment – Stowed.
3. ENVIRO & PNEU BLEED AIR valve switches – PNEU ONLY.
4. CABIN PRESS switch – DUMP.
5. Cabin emergency hatch – Remove and stow.
6. Seat belts and harnesses – Secured.
7. LANDING GEAR ALTERNATE EXTENSION pump handle – Stowed.
8. LANDING GEAR CONTROL circuit breaker – In.

9. Gear – UP.
10. Nonessential electrical equipment – Off.
11. Flaps – As required (DOWN for landing).
12. POWER levers (runway assured) – IDLE.
13. PROP levers – FEATHER.
14. CONDITION levers – FUEL CUTOFF.
15. FIRE PULL handles – Pull.
16. MASTER SWITCH – OFF.

CRACK IN ANY SIDE WINDOW OR IN WINDSHIELD

1. Altitude – Maintain 25,000 feet or less.
2. Pressurization controller – Reset to maintain 4.0 PSI or less as required.

DITCHING

1. Radio calls/transponder – As required.
2. Crew emergency briefing – As required.
3. ENVIRO & PNEU BLEED AIR valve switches – PNEU ONLY.
4. Cabin pressure switch – DUMP.
5. Cabin emergency hatch – Remove and stow.

6. Seat belts and harnesses – Secured.
7. Gear – UP.
8. Flaps – DOWN.
9. Nonessential electrical equipment – Off.
10. Approach – Normal power on.
11. Emergency lights – As required.

BAILOUT

1. Notify crew to prepare to bail out.
2. Distress message – Transmit.
3. COMSEC – ZEROIZE.
4. Transponder – 7700.
5. Flaps – DOWN.
6. Airspeed – 116 KIAS.
7. Trim – As required.
8. Autopilot – Engage.
9. Cabin pressure switch – DUMP.
10. Parachute – Attach to harness.
11. Cabin door – Open.
12. Abandon the aircraft.

PERFORMANCE CHECKS

OXYGEN SYSTEM

Check that oxygen quantity is sufficient for the entire mission, that crew masks operate normally, and that the diluter selector is set at 100%.

1. OXYGEN SUPPLY PRESSURE gages – Check.
2. SUPPLY control lever (green) – ON.
3. Diluter control lever – 100% OXYGEN.
4. EMERGENCY control lever (red) – Set to TEST MASK position while holding mask directly away from face, then return to NORMAL.
5. Oxygen mask – Put on and adjust.
6. EMERGENCY pressure control lever – Set to TEST MASK position and check mask for leaks, then return lever to NORMAL.
7. FLOW indicator – Check. During inhalation blinker appears, during exhalation blinker disappears. Repeat a minimum of 3 times.
8. Oxygen masks – Remove and store.

FUEL PUMPS/CROSSFEED OPERATION

1. FIRE PULL handles – Pull.
2. STANDBY PUMP switches – On.
3. BATTERY switch – ON.
4. #1 and #2 FUEL PRESS warning annunciators – Illuminated.

5. FIRE PULL handles – In.
6. #1 and #2 FUEL PRESS warning annunciators – Extinguished.
7. STANDBY fuel pump switches – STANDBY PUMP.
8. #1 and #2 FUEL PRESS warning annunciators – Illuminated.
9. Crossfeed – Check system operation by activating switch momentarily left then right, noting that #1 and #2 FUEL PRESS warning annunciators extinguish and that the FUEL CROSSFEED advisory light illuminates as switch is energized.

ENGINE FIRE PROTECTION SYSTEM

1. ENG FIRE TEST switches – Hold switches to DET position, check that FIRE PULL handle warning annunciators, and MASTER WARNING annunciators illuminate.
2. ENG FIRE TEST switches – Hold switches to EXT position, check that SQUIB OK and EXTGH DISH annunciators, and MASTER CAUTION annunciators illuminate.

NOTE

If MASTER WARNING is cancelled between tests, it may not re-illuminate.

STALL AND GEAR WARNING SYSTEM

1. STALL WARN TEST switch – TEST. Check that warning horn sounds.
2. LDG GEAR WARN TEST switch – TEST. Check that warning horn sounds and that the LDG GEAR CONTR handle warning lights illuminate.

OVERHEAD CONTROL PANEL SWITCHES

1. Aircraft #1 and #2 INVERTER switches – ON.
2. AUTO PLT POWER switch – ON.
3. AVIONICS MASTER POWER switch – EXT PWR.
4. #1 and #2 EFIS POWER switches – ON.
5. ATT push–button selector switch (display controller) – Press as required.
6. Autopilot EFIS 1/2 SWITCH – 1.

MISSION CONTROL PANEL SWITCHES AND CIRCUIT BREAKERS (BEFORE EXTERIOR CHECK)

1. Mission control panel circuit breakers – Check in.
2. ANT ORIDE switch – AUTO ROTATE.
3. MISSION CONTROL switch – OFF.
4. RADIO ALT switch – ON.
5. TDOA SYSTEM switch – OFF.
6. TDOA BIT switch – OFF.
7. DATA LINK HV switch – OFF.
8. DATA LINK ANT SEL switch – AUTO.
9. BUS CROSS TIE switch – As required.
10. #2 3-phase INV switch – RESET/ON.
11. #1 3-phase INV switch – RESET/ON.
12. EXT PWR switch – OFF.

13. AC meter switch – As required.
14. ASE SILENT switch – OFF.
15. ELINT switches – OFF.

INS ALIGNMENT

1. Mode switch (MFD) – Depress to select FPLN page.
2. NAV SETUP (R5) – Depress.
3. INS SETUP (R5) – Depress.
4. INS mode selector – ALIGN. Text at L1 will be blank until selector is placed in STBY or ALIGN. The 1. LAST ALIGN and 2. LAST KNOWN will appear.
5. Present position – Enter by one of these methods:
   a. To accept LAST ALIGN coordinates, SKPD 1, then depress L1.
   b. To accept LAST KNOWN coordinates, SKPD 2, then depress L1.
   c. SKPD in alignment coordinates, then depress L1.

d. If using the Data Transfer System, load the present position by depressing SET-UP DATA (L5) in the desired data set on DATA TRANSFER page.

NOTE

When LI is depressed INS LOADING will appear at the top of the MFD and L1 text changes to ALIGN = X.DD.MM.SSY.DDD.MM.SS and ALIGN STATE 9. It takes 6 to 8 minutes for program to load. Complete the EFIS/automatic flight control system checks while waiting.

PILOT'S AND COPILOT'S EFIS TEST SWITCHES

1. Pilot's and copilot's EFIS TEST switches – Depress. Verify the following indications:

NOTE

For this test to be valid, the AUTO PLT POWER switch and the RADIO ALTIMETER switch must be ON.

a. EADI:

(1) Radio Altimeter – Slews to 100 +/- 10 feet.

(2) DH replaced with dashes.

(3) Marker beacon symbology appears.

(4) HDG and ATT annunciators appear.

(5) ATT FAIL annunciator appears in the center.

(6) Pitch and roll command cue (artificial horizon) – out of view.

(7) Runway cue drops from center.

(8) GS and localizer off flags (Red X) appear.

(9) TEST will appear in the upper corner to indicate that the flight director mode selector lamp is good.

b. EHSI:

(1) DTRK, NM, GSPD, and HDG replaces with dahes.

(2) HDG FAIL annunciator appears.

(3) Course indicator and glideslope off flags appear.

c. AP disconnect horn sounds after 5-7 seconds.

NOTE

Preflight test of the composite mode will cause the same results as the above tests, except digital heading readouts will be replaced with red FAIL indication, and expanded localizer scale and pointer will be removed.

A localizer frequency must be tuned on both NAV receivers to enunciate ILS comparitor monitor.

EFIS test is inhibited during glidescope capture.

AUTOMATIC FLIGHT CONTROL SYSTEM

1. Altitude alerter – Check as follows:

NOTE

Pause a few seconds between each step to allow time for proper indications.

a. Altitude preselector – Set to more than 1000 feet above altitude set on the pilot's altimeter. Pilots's altimeter altitude alert annunciator should be extinguished.

b. Pilot's altimeter barometric knob – Slowly increase pilot's altimeter setting.

c. Altitude alerter annunciator and horn – Verify that altitude alerter annunciator on pilot's altimeter illuminates and altitude alerter horn sounds when pilot's altimeter reading is approximately 1000 feet from value set on altitude select controller.

d. Pilot's altimeter – Reset to field elevation.

e. Altitude preselector – Reset to field elevation.

f. Pilot's altimeter barometric set knob – Slowly increase pilot's altimeter setting.

g. Altitude alerter annunciator and horn – Verify that the altitude alerter annunciator on pilot's altimeter illuminates and altitude horn sounds when altimeter reading is approximately 250 feet from value set on altitude alert controller.

h. Pilot's altimeter – Reset to field elevation.

2. Flight director – Check as follows:

   a. SBY push-button switch-indicator (flight director mode selector) – Depress for at least 5 to 8 seconds and verify the following indication:

      (1) Flight director mode selector – Annunciators illuminate.

      (2) Autopilot controller – Annunciators illuminate.

      (3) Altitude select controller – All 8's illuminate.

      (4) Pilot's altimeter altitude alerter annunciator – Illuminates.

      (5) EADI – FD FAIL (amber) will be annunciated.

   b. After SBY push-button switch-indicator has been held depressed for 5 to 8 seconds verify that:

      (1) AP TRIM annunciator – Illuminates.

      (2) Autopilot disconnect horn – Sounds.

   c. SBY push-button switch-indicator – Release.

   d. FD and ATT annunciators on the EADI – Check extinguished.

3. Autopilot – Check as follows:

   a. Autopilot trim annunciators – Check extinguished.

   b. TURN knob – Center.

   c. ELEV TRIM switch – Check ON.

NOTE

Then control wheel must be held at mid-travel due to ballast in the elevator. The autopilot will disconnect during pitch wheel check due to the heavy nose down force if the control wheel is not off the forward stop.

d. Control wheel – Move to mid-travel.

e. AP ENGAGE switch-indicator (autopilot controller) – Depress to engage autopilot and yaw damper. Check that AP ENGAGE and YD ENGAGE switch-indicators on autopilot controller and remote annunciators on instrument panel are illuminated.

4. Autopilot overpower check – Check as follows:

a. Rudder pedals – Overpower slowly.

b. Control wheel – Overpower in both directions.

WARNING

If the autopilot or yaw damper disengages during the overpower test, the system is considered non-operative and should not be used. The elevator trim system must not be forced beyond the limits which are indicated on the elevator trim indicator.

5. Elevator trim follow-up – Check as follows:

   a. Control wheel – Move aft of mid-travel. Trim wheel should run nose down after approximately 3 seconds. TRIM DN annunciator (autopilot controller) should illuminate after approximately 6 to 8 seconds and AP TRIM annunciator (instrument panel) should illuminate after approximately 15 seconds.

   b. Control wheel – Move forward of mid-travel. Trim wheel should run nose up after approximately 3 seconds. TRIM UP annunciator (autopilot controller) should illuminate after approximately 6 to 8 seconds, and AP TRIM annunciator (instrument panel) should illuminate after approximately 15 seconds.

6. AP & YD/TRIM DISC switch (control wheel) – Depress to first level. Check that autopilot and yaw damper disengage, AP ENGAGE and YD ENGAGE switch-indicators on the autopilot controller and remote annunciators above the EADI's flash 5 times.

7. Control wheel – Hold to mid-travel.

8. AP ENGAGE SWITCH – RE-ENGAGE.

9. Turn knob – Check that elevator control trim wheel follows in each applied direction, then center.

10. Pitch wheel – Check that trim responds to pitch wheel movements. (UP TRIM and DN TRIM annunciators may illuminate).

11. Heading marker – Center and engage HDG. Check that control wheel follows a turn in each direction.

12. GO AROUND button (left power lever) – Depress. Check that AP disengages and FD commands a wings level, 7 degree nose up attitude. Check GA annunciator on EADI illuminates. Yaw damper should automatically engage and YD ENGAGE switch-annunciator should be illuminated on the autopilot controller and the remote annunciators above the EADI's should be illuminated.

13. RUDDER BOOST/YAW CONTROL TEST switch (pedestal extension) – RESET. Check the RUDDER BOOST annunciator above the EADI's illuminates, yaw damper disengages, TD ENGAGE switch-indicator on the autopilot controller extinguishes, and the YD ENGAGE remote annunciators above the EADI's flash 5 times.

WARNING

If the SBY annunciator on the flight director mode selector does not illuminate within 10 seconds after the avionics master switch is turned on, the autopilot has failed self-test and is considered inoperative and should not be used.

CAUTION

Do not force the elevator trim system beyond the limits which are indicated.

14. YD ENGAGE push-button switch-indicator (autopilot controller) – Depress while holding rudder boost/yaw control switch in TEST. Yaw damper should not engage.

15. RUDDER BOOST/YAW CONTROL TEST switch – RUDDER BOOST. Check RUDDER BOOST annunciator extinguished.

16. Electric elevator trim – Check.

    a. ELEV TRIM switch – ON.

WARNING

Operation of the electric trim system should occur only by movement of pairs of switches. Any movement of the elevator trim wheel while depressing only one switch element indicates a trim system malfunction. The electric elevator trim control switch must then be turned OFF and flight conducted by operating the elevator trim wheel manually. Do not use autopilot.

    b. Pilot and copilot trim switches – Check individual element for no movement of trim, then check proper operation of both elements.

    c. Pilot trim switches – Check that pilot switches override copilot switches while trimming in the opposite directions, and trim moves in the direction commanded by the pilot.

    d. Pilot or copilot trim switches – Check trim disconnects while activating pilot or copilot trim disconnect switches.

    e. ELEV TRIM switch – OFF, then ON (ELEV TRIM OFF annunciator extinguishes).

ASE/ACS BIT CHECKS

1. UTIL on MFD – Depress.
2. SYSTEM BIT (R1) – Depress.

NOTE

Before conducting the INS BIT ensure mode selector is in ALIGN and align state 8 or lower, but before mode selector is placed in NAV.

3. INS BIT – Perform as follows:
   a. INS – Select on EHSI by depressing INS/TCN on display controller.
   b. INS – Select on single needle bearing source selector switch on display controller.
   c. INS BIT (R2) – Depress.
   d. Check indications as follows:
      (1) MFD – INS BATT, INS FAIL, and WAYPOINT ALERT CWA annunciators (3) illuminate.
      (2) EHSI – INS needle 30 degrees right of lubber line and course deviation bar displaced right followed by INS needle centering and course deviation bar displaced left. Check WPT alert annunciator illuminated.
      (3) Aircraft caution/advisory annunciator panel – Amber INS annunciator light illuminated.
      (4) INS mode controller – Green READY light and red BATT light illuminated.

(5) Mission annunciator panel – Green INS UPDATE annunciator and amber NO INS UPDATE annunciator light illuminated.

(6) After 15 seconds the text COMPLETE or any active ACTION or MALFUNCTION codes will be displayed. If an action or malfunction code is displayed they may have been cleared by the BIT test. The only way to ensure they are cleared is to conduct another BIT and the text COMPLETE appears.

ASE/ACS PROGRAMMING

1. Waypoint list – Build as follows:

   a. Mode switch B – Depress to select FPLN page.

   b. WPT LIST (R4) – Depress. WPT numbers 10-59 are shown. The WPT select window surrounds a WPT line.

   c. Waypoint string (line number), WPT ID, and LAT/LONG (coordinates) – Enter into scratch pad.

   d. ADD/SEL (R1) – Depress to load WPT into system.

   e. If using the DTS when the desired data set is boxed on the DATA TRANSFER page – Load waypoint list using the data transfer system by depressing NAV DATA (L2).

2. Flight plan – Build as follows:

   a. WPT numbers – Enter into scratchpad in order of desired use (up to nine) or box desired WPT's and PREV (R2) OR NEXT (R3) and depress LOAD SCRATCH PAD (L5).

b. ROUTES (R5) – Depress.

c. Route – Select 1st, 2nd, or 3rd to enter WPT numbers by depressing the appropriate line button to store the WPT's.

d. Routes to use as the active FPLN – Select and depress the adjacent line button to box it.

e. NEW FPLN (L1) – Depress to activate the FPLN.

3. TACAN – Build as follows:

a. Mode switch B – Depress to select FPLN page.

b. TACAN LIST (R5) line selection button – Depress.

c. TACAN station information (list number, ID, channel number, latitude/longitude, and station elevation) – Enter into scratchpad.

d. ADD/SEL (R1) line selection button – Depress to load into system or load TACAN list using the DTS by depressing NAV DATA (L1) on the DATA TRANSFER page.

e. TACAN stations to be used for updating – Select and enter into scratchpad.

f. TACAN SELECT (R4) line selector button – Depress.

4. Pattern steering mode – Program as follows:

a. Mode switch B – Depress to select FPLN page.

b. NAV SETUP (R5) line selection button – Depress.

c. True bearing – Enter into scratchpad.

d. BEARING (L1) line selection button – Depress.

e. Leg length in NM – Enter into scratchpad.

f. LEG LENGTH (L2) line selection button – Depress.

g. TURN DIRECTION (L3) line selection button – Depress to select LEFT or RIGHT.

h. Offset distance in NM – Enter into scratchpad.

i. OFFSET (L4) line selection button – Depress.

5. Waypoint move mode – Program as follows:

a. True bearing – Enter into scratchpad.

b. BEARING (R1) line selection button – Depress.

c. Range in NM – Enter into scratchpad.

d. RANGE (R2) line selection button – Depress.

AVIONICS

1. VHF communication radios (#1 and #2) – Press TEST and observe the following:

a. Normal – Dashes displayed in active display and 00 in present display.

b. Fault – “DIAG” in active display and a two digit fault code in preset display.

2. VHF naviation receivers (#1 and #2) – Test as follows:

   a. VOR self test/marker beacon test:

      (1) Tuning knob (NAV control unit) – Select a VOR frequency.

      (2) VOR/localizer push – button selector switch (display controller) – Select VOR1 or VOR2.

      (3) Single needle bearing pointer source selector switch (display controller) – VOR 1.

      (4) Double needle bearing pointer source selector switch (display controller) – VOR 2.

      (5) Course knob (EHSI) – Rotate until pointer indicates 0 degrees.

      (6) TEST button (NAV control unit) – Depress. Normal test will show dashes in the active window and 00 in the preset window. A fault will show DIAG in active display and a two digit fault code in the preset display.

      (7) NAV flag on the EHSU – Will come into view. After two seconds, the flag will go out of view, the EHSI course deviation bar will center, and a TO indication will appear. The bearing pointers will indicate a 0 magnetic bearing. The VIR - 32 will return to normal after 15 seconds.

      (8) EHSI – Check for three marker beacon indications (I, O, M illuminates) and listen for a 30 Hz tone on B audio channel of intercom box.

b. ILS self test (NAV 1 and NAV 2):

(1) Tuning knob (NAV control unit) – Select a localizer frequency.

(2) TEST switch (NAV control unit) – Depress.

(3) NAV and GS flags on EHSI – WIll come into view. After 3 seconds, the flags will go out of view, the EHSI course deviation bar will deflect 2/3 full scale, and the glideslope pointer will deflect 1–1/4 dot right and down on the glideslope and localizer pointer.

(4) VIR-32 – Will return to normal after 15 seconds.

c. ADF receiver test:

(1) Power and mode switch – ADF.

(2) Tuning knobs (control head) – Tune a nearby NDB, compass locator, or broadcast station.

(3) EFIS display controller – Select ADF on single needle pointer bearing source selector switch.

(4) TEST switch – Depress. Bearing pointer will rotate 90 degrees from previous indication. Release TEST switch and verify bearing pointer returns to previous indications.

d. TACAN/DME indicator system – Will conduct a self-test for 3 seconds after power-up. After 3 seconds, check for SELF TEST PASS or SELF TEST FAIL (with a fail message number).

e. Transponder (APX - 100):

(1) Mode selector – STBY.

(2) Warm-up – Allow two minutes.

(3) Mode 1 and mode 3/A codes – Set.

(4) Lamp indicators – Press to test.

(5) Antenna switch – Select to TOP.

(6) Mode selector – NORM.

(7) Modes 1, 2, 3/A and C – Hold to TEST and observe GO light.

(8) Antenna switch – Select BOT and repeat step (7).

(9) Antenna switch – Select DIV and repeat step (7).

(10) Mode 4 – Hold to TEST and observe GO light (if code has been set in external computer).

FIRE EXTINGUISHER GAGE PRESSURE

Check pressure within limits.

Engine Fire Extinguisher Gage Pressure

TEMP °C	-40	-29	-18	-06	04	16	27	38	48
PSI	190 to 240	220 to 275	250 to 315	290 to 365	340 to 420	390 to 480	455 to 550	525 to 635	605 to 730

CABIN/CARGO DOORS

1. Cabin door – Check closed and latched by the following:
   a. Safety arm and diaphragm plunger – Check position (lift door step).
   b. Index marks on rotary cam locks (6) – Check aligned with indicator windows.
2. Cargo door – Check closed and latched by the following:
   a. Upper handle – Check closed and latched (Observe through cargo door latch handle access cover window).
   b. Index marks on rotary cam locks (4) – Check aligned with indicator windows.
   c. Lower pin latch handle – Check closed and latched (Observe through cargo door lower latch handle access cover window).
   d. Carrier rod – Check orange indicator aligned with orange stripe on carrier rod (Observe through window, aft lower corner).
3. BATTERY switch – OFF.
4. Cargo door – Check closed and latched.
5. Cabin door – Close but leave unlatched. Check CABIN DOOR annunciator light illuminated.
6. Cabin door – Open. Check CABIN DOOR annunciator light extinguished.
7. BATTERY switch – ON. Check CABIN DOOR annunciator light illuminated.

8. Cabin door – Close and latch. Check CABIN DOOR annunciator light extinguished.

NOTE

The above procedures check both cargo and cabin door security provisions.

MISSION CONTROL PANEL SWITCHES AND CIRCUIT BREAKERS (BEFORE STARTING ENGINE)

1. ELINT power – OFF.
2. ELINT battery – OFF.
3. ANT ORIDE switch – AUTO.
4. MISSION CONTROL switch – OFF.
5. TDOA SYSTEM switch – OFF.
6. TDOA BIT switch – OFF.
7. DATA LINK HV switch – OFF.
8. DATA LINK ANT SEL switch – OFF.
9. ANT STEERING selector switch – AUTO.

INS MODE SELECTOR SWITCH - NAV (PRIOR TO ENGINE START)

After placing the INS mode switch to NAV (state 5 or less).

1. FPLN – Depress.
2. NAV SETUP (R5) – Depress.
3. INS SETUP (R5) – Depress.

4. AUTOMIXING (R3) – Select TACAN, DL, or GPS.
5. ROLL LIMIT (R2) – Select ON or OFF, as desired.
6. LEG CHANGE (L3) – Select MAN or AUTO, as desired.

AC/DC POWER

1. AC frequency – 394 to 406 HZ.
2. AC voltage – 104 to 124 VAC.
3. DC voltage – 28 to 28.5 VDC.

MISSION CONTROL PANEL SWITCHES (BEFORE TAXIING)

1. MISSION CONTROL switch – AUTO.
2. RADIO ALT switch – ON.
3. DATA LINK HV switch – STBY.
4. ELINT BATTERY switch – ON.
5. ELINT POWER switch – ON.

INS STORED HEADING ALIGNMENT

NOTE

Perform only if a stored heading shutdown was completed and the aircraft has not been moved. Only one stored heading alignment can be done between full alignments.

1. #1 and #2 3Ø inverters – RESET/ON.
2. BUS CROSS TIE switch – AUTO.
3. INS mode switch – NAV.
4. INS SETUP page – Enter alignment coordinates.
5. After reaching align state zero select automixing mode.

MISSION CONTROL PANEL SWITCHES (ENGINE RUNUP)

After receiving clearance from IPF, set as instructed:

1. ANT SEL – As required.
2. ANT STEERING – As required.
3. DATA LINK HV switch – ON.
4. Mission equipment caution/advisory annunciator panel – Check for no power fault lights.
5. ANT SEL and ANT STEERING switches – AUTO.

AUTOFEATHER/AUTO IGNITION

1. AUTO IGNITION switches – ARM.
2. POWER levers – Approximately 25% torque.

3. AUTOFEATHER switch – Hold to TEST (both AUTOFEATHER annunciators illuminated).
4. POWER levers – Retard individually.
   a. At 13% to 19% torque – Opposite AUTOFEATHER annunciator extinguished, IGN ON annunciator illuminated.
   b. At 7% to 13% torque – Both AUTOFEATHER annunciators extinguished (propeller starts to feather).

NOTE

The POWER lever may have to be lifted and pulled towards the ground fine gate in order to attain the 7% to 13% torque.

AUTOFEATHER annunciators will illuminate and extinguish with each fluctuation of torque as the propeller feathers.

   c. Return POWER lever to approximately 25% torque.
5. Repeat above procedure with other engine.
6. AUTOFEATHER switch – ARM.
7. AUTO IGNITION switches – OFF.

OVERSPEED GOVERNORS AND RUDDER BOOST

1. Yaw Damper – ENGAGE. Observe YD ENG annunciator illuminated.
2. PROP GOVERNOR TEST switch – Hold to PROP GOVERNOR TEST position.
3. Left power – Increase until propeller stabilizes at 1540 to 1580 RPM.

4. Release PROP GOVERNOR TEST switch – Observe that propeller RPM increases.

5. Left POWER lever – Continue advancing. At approximately 50% torque differential, YD ENG annunciator should extinguish, and left rudder pedal should start to move forward. Increasing engine power should result in increased rudder pedal travel. (Observe torque and TGT limits.)

6. Left POWER lever – Slowly retard. Rudder pedal travel should decrease with decreasing power. The YD ENG annunciator may flicker as rudder boost system disengages.

7. Re-engage yaw damper and repeat steps 2. through 6. with other engine.

PRIMARY GOVERNORS

1. POWER levers – Set at 1500 RPM.

2. Exercise propeller – Move to aft detent, check propeller RPM 1150 +/- 50, then return to high RPM.

ENGINE ANTI-ICE

1. ENG LIP HEAT switches (2) – ON. Check #1 and #2 LIP HEAT caution advisory lights illuminated.

2. #1 and #2 LIP HEAT advisory annunciators – Check illuminated and #1 and #2 LIP HEAT caution advisory lights extinguished.

3. ENG LIP HEAT switches (2) – OFF. Check #1 and #2 caution advisory and advisory annunciators extinguish.

ANTI-ICE AND DEICE SYSTEMS

1. WINDSHIELD anti-ice switches (2) – NORMAL then HIGH. Check PILOT and COPILOT (individually) for loadmeter rise, then OFF.
2. AUTO PROP anti-ice switch – ON (momentarily). Check for PROP AMP meter shows indication and the overhead DC % LOAD meter shows a rise.
3. MANUAL PROP anti-ice switch – ON (momentarily). Check for loadmeter rise.
4. SURFACE deice switch – SINGLE CYCLE AUTO. Check for drop in pneumatic pressure and wing deice boot inflation, and after 6 seconds for a second drop in pressure.
5. SURFACE deice switch – MANUAL. Check that surface boots inflate and remain inflated while switch is held in MANUAL. Release switch and check that the boots deflate.
6. ANTENNA deice switch – SINGLE CYCLE AUTO. Check for a drop in pneumatic pressure and antenna deice boot inflation.
7. ANTENNA deice switch – MANUAL. Check that boots inflated, and remain inflated, then OFF.
8. RADOME anti-ice switch – ON. Check for loadmeter rise and pneumatic pressure drop, then off.

PNEUMATICS/VACUUM/PRESSURIZATION

1. PNEUMATIC PRESSURE gage/GYRO SUCTION gage – Check in green arcs.
2. CABIN ALT controller – Set a minimum of 500 feet lower than field pressure altitude.

3. Cabin pressurization RATE control – Set to maximum.
4. ENVIRO & PNEU BLEED AIR valve switches (2) – ENVIRO & PNEU off.
5. Pneumatic pressure gage/gyro suction gage – Check. Pressure should drop to zero.
6. BL AIR OFF annunciators (2) – Check illuminated.
7. BL AIR FAIL annunciators (2) – Check illuminated.
8. CABIN PRESS switch – TEST (hold).
9. LEFT PNEU & ENVIRO BLEED AIR valve switch – ON.
10. L BL AIR OFF annunciators – Check extinguished.
11. L and R BL AIR FAIL annunciators – Check extinguished.
12. PNEUMATIC PRESSURE gage/GYRO SUCTION gage – Check in green arc.
13. CABIN CLIMB indicator – Check for descent indication within approximately 10 - 15 seconds, then release test switch.
14. LEFT PNEU & ENVIRO BLEED AIR valve switch – Off.
15. Repeat steps 9 through 14 using the right bleed air valve.
16. CABIN PRESS switch – Set to pressure position (center).
17. CABIN ALT controller – Reset as required.
18. Cabin pressurization RATE control – Reset as required.

19. PNEU & ENVIRO BLEED AIR valve switches (2) – ON.

WEATHER RADAR

1. RADAR mode selector switch – SBY.
2. LSS mode selector switch – SBY.
3. WX push-button selector switch (display controller) – Depress. Observe that EHSI displays partial compass heading arc.

WARNING

The radar transmitter is radiating X band microwave energy when in the test (TST) mode.

4. RADAR mode selector switch – TST. Observe that WX mode annunciator on EHSI remains in STBY.
5. Range switches (radar control panel) – Depress both switches simultaneously. Observe that WX mode annunciator on EHSI changes from STBY to TEST, and that magenta, red, yellow, and green are displayed. A green noise band will appear at the upper arc range marking.
6. RADAR mode selector switch – SBY, then as required.
7. Range switches (radar control panel) 50 NM or greater.
8. LSS mode selector switch – CLR TST.

9. EHSI – Verify that a white lightning rate symbol appears at approximately 25 NM at 45 degrees right of center and magenta lighting alert symbol is displayed at maximum selected range at 45 degrees right of center.

NOTE

While the aircraft's weight is on the wheels, the weather radar system is forced into the standby mode. This is a safety feature that prevents the radar from transmitting on the ground to eliminate the microwave radiation hazard.

MISSION CONTROL PANEL SWITCHES (AFTER LANDING)

1. ELINT power switch (mission status panel) – OFF.
2. ELINT battery switch (mission status panel) – OFF.
3. DATA LINK HV switch – STBY (2 minutes, then OFF).
4. TDOA SYSTEM switch – OFF.
5. MISSION CONTROL switch – OFF.

DEPARTURE BRIEFING

1. ATC clearance – Review.
   a. Routing.
   b. Initial altitude.
2. Departure procedure – Review.
   a. SID.
   b. ASE/ACS/EFIS – Set.

c. Noise abatement procedure.

d. VFR departure route.

3. Copilot duties – Review.

a. Adjust takeoff power.

b. Monitor engine instruments.

c. Ensure AUTOFEATHER lights illuminated.

d. Call V_1, ROTATE.

e. Call out engine malfunctions.

f. Tune/identify all nav/comm radios.

g. Make all radio calls.

h. Adjust transponder and radar as required.

i. Complete flight log during flight. Note altitudes and headings. Note departure time.

4. TOLD – Review.

a. Takeoff power.

b. V_1.

c. V_r.

d. V_2.

ARRIVAL BRIEFING

1. Weather/altimeter setting.

2. Airfield/facilities – Review.

a. Field elevation.

b. Runway length.

c. Runway condition.

3. Approach procedure – Review.

a. Approach plan/profile.

b. ASE/ACS/EFIS – Set.

c. Altitude restrictions.

d. Missed approach.

(1) Point.

(2) Time.

(3) Intentions.

e. Decision height or MDA.

f. Lost communications.

4. Backup approach/frequencies.

5. Copilot duties – Review.

a. Nav/comm set-up.

b. Monitor altitude and airspeeds.

c. Monitor approach.

d. Call out visual/field in sight.

6. Landing performance data – Review.

a. Approach speed.

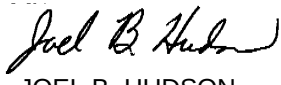
b. Runway required.

TM 1-1510-223-CL

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff



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