TECHNICAL MANUAL

Operator's and Crewmember's Checklist
ARMY MODELS
RC-12P
NSN 1510-01-370-0805
AND
RC-12Q
NSN 1510-01-417-0137
AIRCRAFT

Pilot's Checklist

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

***This manual supersedes TM 1-1510-224-CL dated 16 May 1997, including all changes.**

HEADQUARTERS
DEPARTMENT OF THE ARMY
31 December 1998

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 1-1510-224-10), but is a condensed version of each procedure.

Procedural steps pecular to the RC-12P model will be identified with an icon **P**. Procedural steps peculiar to the RC-12Q model will be identified with an icon **Q**. Steps common to both models will have no icons.

NORMAL PROCEDURES PAGES.

The contents of the normal procedures of this manual are a condensation of the amplified checklist appearing in the normal procedures, or crew duties portion of the applicable operator'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 thru flights.

N - Means performance of step is mandatory for night flights.

H - 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 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 any way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 direct to: Commander, U.S. 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.
H 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**.
H 10. Fuel pumps/crossfeed operation - Check.
11. Ice vane control switches - Check.
* 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 - Check.
16. Engine fire protection system - Check.
17. Stall and gear warming system - Check.
18. GPU - Check connected and DC voltage if steps 19 through 26 are to be performed.
H19. Overhead control panel switches - Set as required.
H20. Mission control panel switches - Check and set as required.
H21. INS - Align as required.
H22. Pilot's and copilot's **EFIS TEST** switches - Depress. Verify indications.
H23. Automatic flight control system - Check.
H24. ASE/ACS - Perform **BIT** checks as required.
H25. ASE/ACS - Program as required.
H26. Avionics - Check.
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. Thru-flight is check required only if aircraft has been refueled.

EXTERIOR CHECK

LEFT WING AREA

1. Left wing - Check.
2. Left main landing gear- Check.
H* 3. Fire extinguisher 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 AREA

1. Right wing center section - Check.
2. Right engine and propeller - Check.
3. Right main landing gear- Check.
H*4. Fire extinguisher 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.
H2. 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 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 LTS** 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, RPM stabilizes above 13% minimum) - LOW IDLE.
6. TGT and N, - Monitor (TGT 10000 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 - **RESET**, then **ON.**

*__SECOND ENGINE START (BATTERY START)__

1. **GENERATOR DC 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, RPM stabilizes above 13% minimum) - LOW IDLE.
5. TGT and N1 - Monitor (TGT 10000 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 - **RESET**, then **ON.**
13. **BEACON** lights switch - **OFF**, 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 minute 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. 3- **AC CONTROL** switches, **AUTO** and **#2 INV - OFF.**
3. **EXTERIOR LTS** switches - As required.
4. Propeller area - Clear.
5. **ENG START** switch - **START-IGNITION. IGN ON** annunciator should illuminate and **FUEL PRESS** annunciator should extinguish.
6. **CONDITION** lever (after N, RPM stabilizes above 13% minimum) - **LOW IDLE.**
7. TGT and N, - Monitor (TGT 10000 C maximum).
8. Oil pressure - Check (60 PSI minimum).
9. ENG START switch - OFF after TGT peaks.
10. **CONDITION** lever - **HIGH IDLE.** Monitor TGT as **CONDITION** lever is advanced.
11. **DC GPU** disconnect - As required.
12. **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 N1 RPM stabilizes above 13% minimum) - **LOW IDLE.**
4. TGT and N, - Monitor (TGT 10000 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** lever - **HIGH IDLE.** Monitor TGT as **CONDITION** levers are advanced.
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 - **RESET**, then **ON.**
14. **BEACON** lights switch - **OFF**, then as required.

BEFORE TAXIING

* 1. **BRAKE** deice switch - Check and set as required. Ensure both bleed air valves are open.
* 2. **CABIN AIR MODE** and **TEMP** controls - Set as desired.
*.3. AC/DC power - Check.
H4. **AUTO PLT POWER** switch - **ON.**
*5. **AVIONICS MASTER POWER** switch - **ON.**
* 6. **# 1** and **# 2 EFIS POWER** switches - **ON.**
*7. Mission panel - Set.
* 8. Pilot's and copilot's **EFIS TEST** switches - As required. Verify indications.
H9. Automatic flight control system - Perform as required.
H10. Avionics - Check and set as required.
11. Weather radar/LSS - **SBY.**
12. Flaps - Check.

13. 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 - After receiving clearance from IPF set as instructed.
2. Propeller feathering - Check by pulling PROP levers aft past detent to FEATHER. Check that each propeller feathers, then advance levers to HIGH RPM position.

H3. Autofeather/auto ignition - Check.

H4. Overspeed governors and rudder boost - Check.

H5. Primary governors - Check.

6. Engine anti-ice - Check.

H7. Anti-ice and deice systems - Check.

H8. Pneumatics/vacuum/pressurization - Check.

9. WINDSHIELD anti-ice - As required.

H10. 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.
H13. Departure briefing - Complete.

*__LINE UP__

(1) **ENG ANTI-ICE** switches - 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** switch - **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 - As required.
(5) **ICE VANE CONTROL** switches - As required.
(6) **STANDBY PUMP** switches - As required. 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 ALT switch - OFF.

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 ALT** switch - **ON.**
(7) ASE - As required.
(8) **STANDBY PUMP** switches - As required.
9. Flarelchaff dispenser safety pin - Insert.
10. Avionics and EFIS display controller - Set and check Ensure EFIS displays match procedure to be flown.
H11. 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** switch - As required.
(6) **AUTOFEATHER** switch **- ARM.**
(7) **ICE VANE CONTROL** switches - As required.
(8) **BRAKE** deice - As required.
(9) **WOW OVERRIDE** switch **- OFF.**
(10) **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** switch **- OFF.**
5. Climb power- Set.
(6) **BRAKE** deice **- 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 - Set.

ENGINE SHUTDOWN

1. **PARKING BRAKE -** Set.
2. LANDING/TAXI LIGHTS switches - OFF.
(3) **INS - OFF.**

4. **BUS CROSS TIE** switch **- OFF.**
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 **- 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 - OFF.

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 V1 (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 V1

1. Power- Maximum allowable.
2. Gear - UP (two positive climb Indications).
3. Propeller - Verify feathered.
4. Flaps - UP after V,, (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.) **CABIN AIR MODE SELECT** switch - As required.
(5.) **FIRE PULL** handle - Push (**PUSH TO EXTINGUISH** annunciator extinguished).
(6.) Engine anti-ice - Off.
(7.) **GENERATOR** switch (inoperative engine) - **OFF**.

8. Airspeed - As required (140 knots propeller windmilling, 190 knots propeller feathered).
9. Altitude - Below 25,000 feet.
10. Engine cleanup - Perform if engine restart is unsuccessful.
(11.) Engine N1 - Monitor (10% minimum, propeller feathered).
(12.) **AUTO IGNITION** switch - **ARM**.
(13.) **CONDITION** lever- **LOW IDLE**.
14. Power - As required (after TGT peaks).
(15.) **GENERATOR** switch - **RESET**, then ON.
16. **PROP SYNC** switch - As required.
(17.) Electrical equipment - As required.
(18.) **CONDITION** lever- **HIGH IDLE**.
(19.) **CABIN AIR MODE SELECT** 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 restart is unsuccessful.
(17.) **GENERATOR** switch - **RESET**, then ON.
(18.) Engine **AUTO IGNITION** - As required.
19. **PROP SYNC** switch - As required.
(20.) **CABIN AIR MODE SELECT** switch - As required.
(21.) Electrical equipment - 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
H 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. 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.

L OR R CHIP DETR WARNING ANNUNCIATOR ILLUMINATED

If the **L CHIP DETR** or **R CHIP DETR** 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 ILLUMINATED

(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 (affected engine) - **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 (affected engine) - **IDLE**.
2. **PROP** lever (affected engine) - **FEATHER**.
3. **CONDITION** lever (affected engine) - **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.) Auxiliary fuel quantity - Monitor.
(3.) **AUX XFER** switch (after respective auxiliary fuel has completely transferred) - **AUTO**.

NACELLE FUEL LEAK

1. Engine shutdown (affected engine) - Perform.
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

1. 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 ANNUNCIATORS 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 systems will be affected:

NAV #1
NAV #2
Heading #2
#1 torquemeter
#2 torquemeter
Pilot's EFIS
Copilot's EFIS

INS
ADF
#1 rate of turn
#2 rate of turn
Air data computer

Under these conditions, power must be governed by indications of N_1 and TGT gages. Perform the following:

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.
2. Pressing the **AP ENGAGE** pushbutton on the autopilot controller.
3. Pressing the **GO-AROUND** switch (yaw damper will remain on).
4. Pulling the **AP CONTR** and **AFCS DIRECT** circuit breakers.
5. Setting **AVIONICS MASTER POWER** switch to the off (aft) position.
6. Setting aircraft **MASTER SWITCH** to the **OFF** position.
7. Setting the **AUTO PLT** power switch to off position.

YAW DAMP EMERGENCY DISCONNECTION

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

UNSCHEDULED RUDDER BOOST ACTIVATION

1. **AP & YD/TRIM DISC** switch - 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. **ELEC 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.

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** pushbutton selector switch (display controller) - Press as required.
6. Autopilot **EFIS 1/2** switch **- 1**.

MISSION CONTROL PANEL SWITCHES

1. Mission control panel circuit breakers - Check in.
2. **ANT ORIDE** switch - **AUTO ROTATE**.
3. **MISSION CONTROL** switch - As required.
4. **RADIO ALT** switch - **ON**.
5. **PME PWR REDUCTION** switches (2) - As required.
6. **WOW OVERRIDE - OFF**.
7. **BUS CROSS TIE** switch - As required.
8. **# 2** 3-phase **INV** switch - **RESET/ON.**
9. **# 1** 3-phase **INV** switch - **RESET/ON.**
10. **EXT PWR** switches - As required.
11. AC phase meter switch - As required.
12. **ASE SILENT** switch - **OFF**.

INS ALIGNMENT

1. Mode switch B (MFD) - Depress to select **FPLN** page.
2. **NAV SETUP** (R5) - Depress.
3. **INS SETUP** (R5) - Depress.
4. **INS** mode selector **- STBY**. Text at L1 will be blank until **INS** mode selector is placed in **STBY** or **ALIGN**. The **1. LAST ALIGN** and **2. LAST KNOWN** text 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 L2.
   c. SKPD in alignment coordinates, then depress L1.
   d. If using the Data Transfer System, load the present position by depressing **SETUP DATA** L5 in the desired data set on bd. DATA TRANSFER page.

NOTE

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

6. When the **INS LOADING** message is extinguished - Place the INS mode selector switch to ALIGN.

PILOT'S AND COPILOT'S EFIS TEST SWITCHES

Depress and verify the following indications:

1. EADI
   a. Radio altimeter - Slews to 100 ±10 feet.
   b. **DH** display - Replaced with dashes.
   c. Marker beacon annunciators - Appear.
   d. **HDG** and **ATT** annunciators - Appear.
   e. **ATT FAIL** annunciator - Appears.
   f. Pitch and roll command cue - Out of view.
   g. Caution and warning flags - All will be in view.
   h. **TEST** should appear in left center of display to indicate that flight director mode selector lamp test is good. **FD FAIL** will appear momentarily and be replaced by TEST.
2. EHSI - **DTRK**, **NM**, **GSPD**, and **HDG** displays - Replaced with dashes.
3. AP disconnect horn sounds after 5 to 7 seconds.

NOTE

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

A localizer frequency must be tuned on both NAV receivers to annunciate ILS comparator monitor.

EFIS test is inhibited during glideslope capture.

AUTOMATIC FLIGHT CONTROL SYSTEM

1. Altitude alerter - Check as follows:

NOTE

Pause for 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 pilot's altimeter. Pilot's altimeter altitude alert annunciator light should be extinguished.
   b. Pilot's altimeter barometric set 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 alerter 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** pushbutton switch-indicator (flight director mode selector Depress for at least 5 to 8 seconds and verify the following indications:
      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** pushbutton 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** pushbutton switch-indicator - Release.
   d. **FD** and **ATT** annunciations 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

The 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 slowly 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) check illuminated after approximately 6 to 8 seconds. **AP TRIM** annunciators (instrument panel) check illuminated 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 degrees 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) - **TEST**. Check the **RUDDER BOOST** annunciator above the EADI's illuminates, yaw damper disengages, **YD** 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 on the ELEVATOR trim tab indicator.

14. **YD ENGAGE** pushbutton switch-indicator (autopilot controller) - Depress while holding rudder boost/yaw control test 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.
    b. Pilot and copilot trim switches - Check operation.

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.

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

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

e. Pilot or copilot trim switches - Check trim disconnects while activating pilot or copilot trim disconnect switches.

f. **ELEV TRIM** switch - **OFF** then on (**ELEC 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 is 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. **UTIL** on MFD - Depress.

d. **SYSTEM BIT** (R1) - Depress.

e. **INS BIT** (R2) - Depress.

f. **NAV** on flight director mode selector - Select.

g. Check indications as follows:

1) MFD - **INS BATT, INS FAIL**, and **WAYPOINT ALERT** CWA annunciators (3) illuminated.

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 light and amber **NO INS UPDATE** annunciator light illuminated.

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

4. ASE RTU, **2-FM, 3-UHF, 5-UHF, DTS, MFD KU, GPS,** and **ASE BIT** checks Conduct as required by depressing the appropriate line button.

ASE/ACS PROGRAMMING

1. Waypoint list - Build as follows:

a. Mode switch B - Depress to select **FLIGHT PLAN** 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. Or load waypoint list using the data transfer system by depressing **NAV DATA** (L2) when the desired data set is boxed on the data transfer page.

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 WPTs.
   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 list - Build as follows:
   a. Mode switch B - Depress to select **FLIGHT PLAN** page.
   b. R5 line selection switch - Depress to select **TACAN LIST** page.
   c. TACAN station information (list number, ID, channel number, latitude/longitude, and station elevation) - Enter into scratchpad.
   d. R1 line selection switch - Depress to load into system or load TACAN list using the **DATA TRANSFER SYSTEM** by depressing **NAV DATA** (L1) on the **DATA TRANSFER** page.
   e. TACAN stations to be used for updating - Select and enter into scratchpad.
   f. R4 line selection switch - Depress to select **TACAN SELECT**.
4. Pattern steering mode - Program as follows:
   a. Mode switch B - Depress to select **FLIGHT PLAN** page.
   b. R5 line selection switch - Depress to select **NAV SETUP** page.
   c. True bearing - Enter into scratchpad.
   d. L1 line selection switch - Depress to enter **BEARING.**

e. Leg length in NM - Enter into scratchpad.
f. L2 line selection switch - Depress to enter **LEG LENGTH**.
g. L3 line selection switch - Depress to select **LEFT** or **RIGHT**.
h. Offset distance in NM - Enter into scratchpad.
i. L4 line selection switch - Depress to enter **OFFSET**.

5. Waypoint move mode - Program as follows:
   a. True bearing - Enter into scratchpad.
   b. R1 line selection switch - Depress to enter **BEARING**.
   c. Range in NM - Enter into scratchpad.
   d. R2 line selection switch - Depress to enter **RANGE**.

AVIONICS

1. VHF comm (#1 and #2) - Press **TEST** and observe the following:
   a. Normal - Dashes displayed in the active display and 00 in the preset display.
   b. Fault - Flag in the active display and a two digit fault code in the preset display.
2. VHF navigation receivers (#1 and #2) - Test as follows:
   a. VOR self test/marker beacon test:
      1) Tuning knobs (**NAV** control unit) - Select a VOR frequency.
      2) VOR/localizer pushbutton selector switch (display controller) - Select VOR 1 or VOR 2.
      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** switch (**NAV** control unit) - Depress.
      7) **NAV** flag on the EHSI - 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 degree magnetic bearing. The VIR-32 will return to normal after 15 seconds.

8) EHSI - Check for three marker indications on the EHSI and listen for a 30 Hz tone on the audio channel of NAV system.

b. ILS self test (NAV 1 and NAV 2):
   1) Tuning knobs (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 right 2/3 full scale, and the glide slope pointer will deflect down 2/3 full scale.
   4) VIR-32 - Will return to normal after 15 seconds.

c. ADF receiver test:
   1) Power and mode switch - On.
   2) Tuning knobs - Tune a nearby NDB, compass locater, or broadcast station.
   3) EFIS display controller - Select ADF on the single needle pointer bearing source selector switch.
   4) **TEST** switch - Depress. Bearing pointer will rotate 90 degrees from the previous indication. Release **TEST** switch and verify the bearing pointer returns to the previous indication.

d. TACAN/DME indicator system:
   1) The TACAN/DME 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) **MASTER** switch - STBY.
   2) Warmup - Allow two minutes.
   3) Mode 1 and mode 3/A codes - Set.
   4) Lamp indicators - Press to test.
   5) Antenna switch - Select **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 (g).
9) Antenna switch - Select **DIV** and repeat step (g).
10) Mode 4 - Hold to test and observe **GO** light (If code has been set in the external computer).

FIRE EXTINGUISHER PRESSURE

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

BT03865

Check pressure within limits.

CABIN/CARGO DOORS

1. Cabin door - Check closed and latched as follows:
   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 as follows:
   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 comer.)
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.

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.

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. **POWER** levers - **IDLE**.
7. **AUTOFEATHER** switch - **ARM**.
8. **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** lever - 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. Yaw damper - Re-engage yaw damper, and repeat steps b through f with other engine.

PRIMARY GOVERNORS

1. POWER levers - Set at 1500 RPM.

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

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** deice switch - **ON** (momentarily). .Check for loadmeter rise.
3. **MANUAL PROP** deice switch - ON (momentarily). Check for loadmeter rise, then off.
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 pneumatic pressure.
5. **SURFACE** deice switch - **MANUAL**. Check that surface boots inflate, and remain inflated, then off.
6. **ANTENNA** deice switch - **SINGLE CYCLE AUTO.** Check for drop in pneumatic pressure and that antenna deice boots inflate.
7. **ANTENNA** deice switch - **MANUAL**. Check that boots inflate, 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 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** annunciator - 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** pushbutton 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 remain **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) - Select 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 a magenta lightning alert symbol is displayed at maximum selected range at 45 degrees right of center.
10. **LSS** mode selector switch - **SBY** or as required.

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.

DEPARTURE BRIEFING

1. ATC clearance - Review.
   a. Routing.
   b. Initial altitude.
2. Departure procedure - Review.
3. Copilot duties - Review.
   a. Adjust static power.
   b. Monitor engine instruments.
   c. Ensure **AUTOFEATHER** lights illuminated at 65 knots.
   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. PPC - Review.
   a. Static power.
   b. V_1.
   C. V_r.

d. $V_{2.}$

e. V_{enr}.

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.

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