

SECTION II—NORMAL PROCEDURES

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PREPARATION FOR FLIGHT.

A check should be made of the takeoff and anticipated landing gross weights, and that the grades and weight of fuel, oil, and special equipment carried is suited to the mission to be performed.

FLIGHT RESTRICTIONS.

Refer to Section V for the information concerning Operating Limitations.

FLIGHT PLANNING.

Flight planning and cruise control information for the complete flight regime is presented in the Appendix. It is recommended that operational charts be prepared from this basic information, favoring reduced power operation whenever possible. Use a power schedule derived from the Nautical Miles Per Pound of Fuel charts, reducing power for every 3000 lb reduction in airplane gross weight, whenever practical.

TAKEOFF AND LANDING DATA.

The takeoff and landing data must be computed and checked during determination of the data necessary for the proposed mission. The takeoff and landing chart will be

reviewed and available for ready reference. Refer to part 8 of the Appendix for an illustration of a takeoff and landing data card and sample problem.

WEIGHT AND BALANCE.

It is the responsibility of the pilot in command to ascertain that the aircraft is properly loaded and balanced and that the center of gravity limits are not exceeded. To obtain further loading information for EC-121R refer to the Operating Limitations in Section V and to the Handbook of Weight and Balance, T.O. 1-1B-40 Chart E. A balance computer is supplied for C-121G which is to be used in conjunction with the weight handbook for computing proper loadings. Be certain that the basic weight being used applies to the aircraft assigned for the flight. It is possible that the aircraft has undergone modifications that may affect the basic weight.

CHECKLISTS.

It will be the responsibility of the pilot that an exterior visual inspection as outlined (see figure 2-1 for recommended inspection route), is conducted and to ensure that a Preflight or Through-Flight inspection as required by the Handbook of Inspection Requirements, T.O. 1C-121(E)R-6, has been performed. The flight engineer will normally

perform this inspection. It also will be the responsibility of the pilot to ensure that each crewmember has accomplished his individual inspection requirement as outlined in Sections II and VIII of this manual.

NOTE

The aircrew visual inspection procedures outlined in this section are predicated on the assumption that maintenance personnel have completed all of the requirements of the appropriate Handbook of Inspection Requirements for Preflight or Through-Flight inspection; therefore, duplicate inspections and operational checks of systems by aircrewmembers have been eliminated, except for certain items required in the interest of flying safety. Preflight or Through-Flight inspections will be accomplished by the flight crew, at stations where maintenance personnel are not available. If a decision is made not to fly the aircraft at any time prior to actual takeoff, the After Landing through the Before Leaving Aircraft Checklists as appropriate will be accomplished.

CREW ENTRANCE.

Crew entrance normally is gained through the aft cabin door.

AMPLIFIED AND ABBREVIATED CHECKLISTS.

The flight manual contains amplified checklists; the abbreviated, and scroll checklists for flight deck coordinators, are issued separately. The scroll checklists will be utilized at the pilot's and flight engineer's station and will include normal operating procedures from Before Starting Engines checklist, through the Before Leaving Aircraft checklist. Line items in the flight manual, applicable to abbreviated and scroll checklists are identical, with regard to arrangement and item number. When a checklist item is followed by a crew position designator; e.g., (P), that crewmember takes the action and reports the action to the person reading the checklist. Frequently, it is desirable to accomplish items prior to reading the checklist. All items must be completed no later than the time the checklist is read.

To initiate the checklist, the Pilot will call for the checklist desired. The Copilot and Flight Engineer will acknowledge by responding with the name of the checklist. The Copilot will be responsible for reading the pilot's checklist and acknowledge each checklist completion to the Pilot. To insure an adequate preflight inspection, the preflight checklist will be utilized as a reference. The thru-flight checklist is integrated into the normal checklist.

NOTE

When an aircraft is flown by the same flight crew in regularly scheduled airline-type operations, or when assigned tactical or administrative missions require intermediate stops, it is unnecessary and wasteful of time to require the flight crew to perform all the before interior inspection, interior inspection, and exterior inspection checks. Under these conditions, only a portion of the normally required checks are actually necessary to ensure safe operation. Accordingly, for those aircraft in which through-flight operation will frequently occur, an asterisk will immediately precede each check that must be performed during through-flight operation. Inspection items not thus marked with an asterisk may be checked at the discretion of the flight crew. If a decision is made not to fly the aircraft at any time prior to actual take-off, the After Landing and Before Landing Checklists as appropriate will be accomplished.

The following procedures will be accomplished by the pilots, or flight engineer, as indicated. For those items that have been accomplished during the interior inspection, it is necessary only that the control or indicator concerned be pointed to or touched and that a verbal reply be made by the crewmember. Any command may be countermanded by the pilot at any time. Items designated by a circled number indicate that coordination is required.

NOTE

If using alternate grade fuel, consult alternate fuel grade operating limit data in Section V.

ENGINEER'S PREFLIGHT CHECKLIST

For the purpose of clarity in this checklist, the flight engineer who is making the takeoff will be referred to as the First Engineer. The other engineer then becomes the Second Engineer. When the flight crew is limited to a single engineer he will perform the duties of both with the assistance of a pilot and/or a ground crewman in the performance of the equipment operational check.

INTERIOR SAFETY CHECK**First Engineer**

- *1. Night lights — On.
- 2. Lower compartment grills or hatches — Installed.
- *3. AFTO 781 — Checked.
- *4. Ignition switches — OFF.
- *5. Landing gear lever — Checked down.
- 6. Emergency hydraulic extension tank — Check fluid level.
- 7. Rudder and elevator relay, and battery condition — Check.
 - a. Battery switch — OFF.
 - b. External power switch — OFF.
 - c. Auxiliary booster control switches — ON.

Wait approximately five second and check battery voltage to determine load on battery. Voltage below 21 volts indicates weak batteries.

 - d. External power switch — ON.

Battery voltage should increase to approximately 24 volts.

 - e. Auxiliary booster control switches — EMER ON, no drop in battery voltage, then OFF.
- 8. Battery relay — Checked.
 - a. Battery switch — ON.

When battery switch is ON, and external power switch is ON, battery voltage should read approximately the same as bus voltage. A minimum of 18 volts is required to close the battery relay.

 - b. Battery switch — OFF.
- 9. Inverter system — Checked.
 - a. No. 1 inverter — MAIN. Check frequency and voltage.
 - b. No. 2 inverter — MAIN. Check voltage and frequency.
 - c. NESA power switch — ALTERNATOR.
 - d. No. 1 inverter — SPARE. Check frequency and voltage.
 - e. No. 2 inverter — SPARE. Check zero voltage and No. 2 dead bus.
 - f. No. 1 inverter — MAIN. Check for proper indications. (No. 2 should go to SPARE).

EXTERIOR SAFETY CHECK**Second Engineer**

- *1. Fire extinguisher — Available and checked.
- *2. Wheel chocks — In place.
- *3. Gear pins — Installed.
- *4. Batteries — Connected.
- *5. Pitot covers — Removed.
- 6. Static ground wire — Connected.
- 7. Auxiliary power unit — Check electrical load.
- 8. Area clear — Checked.

ENGINEER'S PREFLIGHT CHECKLIST — Continued

First Engineer

Second Engineer

g. No. 2 inverter — MAIN. Check for proper indications.

C-121 G

- a. Auxiliary power — ON.
- b. Inverter — Check operation of all phases on all inverters.
- c. NESA Inverter — Checked, OFF.
- *d. Inverters — Main ON, all other OFF.
- e. Emergency flight inverter — ON Emergency, check frequency and OFF flags, then NORMAL.

NOTE

Qualified operator must be at Flight Engineer's station to monitor ground operation of GTPU.

EQUIPMENT OPERATIONAL CHECK

First Engineer

Second Engineer

- ①. Mechanic's ICS — Checked.
- ②. Cowl flaps — Full CLOSED, then OPEN.
- ③. Ram/alternate air doors — CLOSED, then OPEN.
- ④. Oil cooler flaps — Full CLOSED, then OPEN.
- ⑤. Propeller deicer alcohol — Checked, then OFF.
- ⑥. Heat exchanger scoops and exit doors — Full OPEN, then CLOSED.
- ⑦. Pitot heaters — Checked, then OFF.
- 8. Exterior lights master switch — FLASH and BRIGHT.

- ①. Mechanic's ICS — Checked.
- ②. Cowl flaps — Full CLOSED, then OPEN.
- ③. Ram/alternate air doors — CLOSED, then OPEN.
- ④. Oil cooler flaps — Full CLOSED, then OPEN.
- ⑤. Propeller deicer alcohol — Checked, then OFF.
- ⑥. Heat exchanger scoops and exit doors — Full OPEN, then CLOSED.
- ⑦. Pitot heaters — Checked, then OFF.

WARNING

When checking pitot tubes, exercise care to prevent burning hands.

- ⑨. Taxi lights — ON, checked, then OFF.
- ⑩. Anti-collision lights — ON, checked, then OFF.

- ⑧. Taxi lights — ON, checked, then OFF.
- ⑨. Anti-collision lights — ON, checked, then OFF.

ENGINEER'S PREFLIGHT CHECKLIST — EQUIPMENT OPERATIONAL CHECK — Continued

First Engineer

Second Engineer

NOTE

Anti-collision light operation on the ground should be kept to a minimum. Excessive heat on the ground shortens bulb life. Also during ground emergencies the operating light could confuse rescue operations since emergency ground vehicles use a similar light.

(11) Landing lights — Check extension and turn ON, then retract and turn OFF.

(12) Wing tip and tail lights — Check on FLASH and STEADY.

(13) Wheel well lights — ON.

(14) Leading edge lights — ON, then as required.

(15) Position lights — Checked.

(10) Landing lights — Check extension and turn ON, then retract and turn OFF.

(11) Wing tip and tail lights — Checked.

(12) Wheel well lights — Checked.

(13) Leading edge lights — Checked.

(14) Position lights — Checked.

15. Refrigerator — ON, (for later operational check).

FLIGHT STATION CHECK

First Engineer

1. Hydraulic tank replenishing system — Check.
2. Cabin pressure regulator vacuum shutoff lever — OPEN.
- *3. Oxygen system — Check service, flight crew valve open. Check portable oxygen bottle.
4. Flight engineer oxygen regulator — Checked. Mask connected, regulator on 100%.
5. Portable fire extinguisher — Checked.
6. Fire axe — Installed and secure.
7. Fuel System — Check and pressurize. Coordinate with pilot accomplishing exterior preflight as follows:
 - a. Mixture levers — Auto Rich.
 - b. 2B and 3B tank fuel pump switches — ON. (if applicable)
 - c. Tank No. 6 fuel pump switches — LOW, if tank No. 6 contains fuel. (if applicable)
 - d. Tank selector levers 1, 2A, 3A, 4 — ON, check for LOW and HIGH fuel pump operation. Minimum 12 psi on LOW and 27 psi on HIGH or bus voltage.
 - e. Tank selector levers — Select No. 2 and 3 tanks, check for LOW and HIGH fuel pump operation.

TOP WING INSPECTION

Second Engineer

NOTE

Coordination with the first engineer will be required to ascertain that the tip tank fuel pumps are ON.

- *1. All fuel tanks — Check quantities and ensure caps are secure.

WARNING

Caps must be unlocked slowly with a constant down-pressure. If fuel starts to seep out, close cap immediately. If any fuel enters a closed area, it will be opened, vented and inspected.

CAUTION

Aircraft heaters must be OFF until top wing inspection is completed.

- *2. Engine oil tanks — Check quantities and ensure caps are secure.

ENGINEER'S PREFLIGHT CHECKLIST — EQUIPMENT OPERATIONAL CHECK — Continued

First Engineer

f. Tank selector levers — Turn all four OFF while leaving fuel pumps on HIGH. Watch for fuel pressure drop.

g. Emergency shutoff levers OFF check — Completed.

(1) Move slowly to full OFF, check fuel pressure drop and warning light on at approximately 20 ± 0.5 psi.



If lever operation is stiff, do not force movement. Notify maintenance personnel.

NOTE

Fuel pressure will drop to approximately 10 psi at a fairly rapid rate and will continue to drop at a progressively slower rate until it reaches zero. If the fuel pressure drops instantly or very rapidly to zero or near zero, there is a leak in the fuel system. This may be due to an internal or external leak, such as a vapor vent stuck open, a leaking fuel injection pump diaphragm or other causes.

h. Tank selector levers — Move 1, 2, 3, and 4 ON. Check for no increase in pressure.

i. Emergency shutoff levers ON check — Completed.

(1) Move slowly to full ON. Check fuel pressure rise and warning light OFF.

(2) Note lever between hydraulic oil OFF and fuel OFF position.

j. No. 2A, 2, 3, 3A, and 4 fuel pump switches — LOW, No. 1 fuel pump — OFF.

k. Tank No. 5 and No. 1 crossfeed levers — OPEN.

l. No. 5 fuel pump switch — LOW. Note pressure on No. 1 fuel pressure gage.

m. No. 5 fuel pump switch — HIGH.

NOTE

If tank No. 5 contains less than 50 gallons use No. 2 or 3 tank for items k, l, and m.

n. No. 1 fuel pump switch — LOW.

o. No. 2, 3, and 4 crossfeed levers — OPEN. Note fuel pressure increase.

p. No. 1 crossfeed lever — Close momentarily, note fuel pressure decrease, and return to OPEN position.

Second Engineer

3. Deicer fluid tank — Check tank cap and cover for security.

*4. Wing nacelles and turbines — General condition, security of flight hood, condition of bucket wheels and absence of tools and foreign items.

*5. Cowling — Check for locked indication and that cowl flaps are latched and secure.

6. Deicer boots — Condition.

7. Tip tank pumps — Check operation, listen for noisy bearings.

*8. Aileron hinges — Condition.

*9. Life raft hatches — Check that latches are secure and safetied.

10. Reserve oil tank — Check quantity, secure cap and cover.

*11. Main hydraulic reservoir — Check access door for security.

12. Dipsticks — Stowed.

ENGINEER'S PREFLIGHT CHECKLIST — EQUIPMENT OPERATIONAL CHECK — Continued**First Engineer****Second Engineer**

q. Keep fuel system pressurized and mixtures in AUTO RICH until exterior fuel system check is completed.

r. Fuel system check — Completed, after notified by pilot completing outside inspection.

(1) No. 1, 2A, 2, 3, 3A, 4, 5, and 6 fuel pumps switches and mixtures — OFF.

(2) Tip tank pumps — OFF. (If applicable)

(3) Tank 5 and crossfeed levers — CLOSED.

8. Fuel system check — Completed.

a. All fuel pumps and mixtures — OFF.

b. Tank 5 and crossfeed levers — CLOSED.

PANEL CHECKS.**MJB Panel Area.**

- *1. Switches and selectors — Checked and set.
- *2. Fuses and circuit breakers — Checked and set.
- *3. Generators — ON, GTPU Generator (C-121G) as required.
- *4. Warning, indicator, and flight station lights — Operation and proper indication.
- *5. Autopilot master switch (C-121G) — On.
- 6. Ignition analyzer light — Checked.
- 7. Lower MJB 212 panel — Checked.
- 8. Upper MJB 212 panel — Checked.

Upper Switch Panel.

- 1. Switches, selectors and circuit breakers — Checked and set.
- 2. Instruments — Check markings and general condition.
- 3. Warning, indicator, and flight station lights — Operation and proper indication.

Center and Lower Instrument Panel.

- 1. Instruments — Check markings and general condition.
- 2. Warning, indicator, and flight station lights — Operation and proper indication.
- *3. Fuel and oil quantity push-to-test — Checked.

Engineer's Quadrant

- 1. Throttle — Full open, then closed.
- 2. Supercharger levers — HIGH, then LOW and locked.
- 3. Propeller master lever — Checked.
 - a. Full DEC rpm — Note lights on (7.5 to 12 seconds).
 - b. Full INC rpm — Note lights on (7.5 to 12 seconds). (All lights should come on within 1.5 seconds of each other.)
- 4. Spare bulbs and fuses — Checked.

Engineer's Lower Switch Panel.

- 1. Propeller governor switches — Checked.
 - a. Full DEC rpm — Note lights on (7 to 12 seconds).
 - b. Full INC rpm — Note lights on (7 to 12 seconds). (All lights should come on within 1.5 seconds of each other.)
- 2. Master spark control switch — RETARD.
- 3. Feathering buttons — Condition and security.

238 Circuit Breaker Panel.

- *1. Circuit breakers — As required.

Station 260 Area.

- 1. Crash axe — Installation and security.
- *2. Actuate all test switches and note lights and buzzer.

WARNING

Fire warning system must be operative.

- *3. HRD extinguishing system switches – OFF.
- 4. Circuit breakers and switches – As required.
- 5. Spare bulb supply – Checked.
- 6. Pressurization and air conditioning panel – Checked and set.
- 7. Ditching valve handle – Checked and safetied.
- 8. Fuel dump control lever – Neutral and safetied.
- 9. Ditching rope – Condition and security.
- 10. Flight engineer's seat headrest – Installed.
- 11. Seat belt – Checked.
- *12. Log, takeoff data and forms – Initiated.

ENGINEER'S INTERIOR INSPECTION.

These checklists may be accomplished by the first or second flight engineer.

Forward Compartment.

- *1. Forward lower compartment door – Secured.
- 2. Cabin pressurization units – Checked for condition.
- 3. Inverters – Check condition and security.
- *4. Aircraft CO₂ fire extinguisher bottles (C-121G) – Checked for evidence of discharge and condition.
- 5. Electrical wiring, circuit breakers and fuses – Condition, note supply of spare current limiters.
- 6. Electrical units – Condition and security.
- *7. Hydraulic panel area – Evidence of hydraulic leaks.
- 8. Manual oil transfer system – Condition and position (if applicable).
- 9. Hydraulic crossover valve – Condition and operation (if applicable).
- 10. General inspection of area, including all exposed cables – Checked.
- 11. HRD crossover valve – Condition and position and lines secure.

Galley Area and Lavatory.

- 1. Oxygen walkaround bottles – Checked.
- 2. Fire axe (C-121G) – Secured.

- 3. Forward cargo door (C-121G) – Condition, closed, secured.
- 4. Forward cargo door bypass valve (C-121G) – OPEN.
- 5. Forward emergency exit door (C-121G) – Condition closed, secured.
- 6. Very pistol mount (C-121G) – Retracted, cap closed.
- 7. Master ac and dc power switches (C-121G) – ON.
- 8. Circuit breakers (C-121G) – As required.
- 9. Cabin windows – Condition, clean.
- 10. Lights – Checked.
- 11. Water supply and fittings – Quantity and leakage.
- 12. Cabinet – Check for adequate supply of spare hydraulic fluid (10 gallons) and hose.
- 13. Refrigerator and galley – Check for operation.
- 14. Portable fire extinguisher – Checked.
- 15. G file – Check for completeness.
- 16. General condition of area – Checked.

Cabin Compartment.

- 1. Emergency flap crank – Check for adapter and security.
- 2. Portable oxygen bottles – Checked, masks installed.
- 3. Pyrotechnic pistol and cartridges – Aboard and stowed.
- *4. Navigator's astro hatch – Check for security.
- 5. Portable fire extinguisher – Checked.
- 6. Manual oil transfer system – Condition and position.
- 7. Hydraulic crossover valve – Condition and operation.
- 8. Inverter bypass system – ON (if applicable).
- 9. Wing flap emergency extension bypass valve – CLOSED.
- 10. Right secondary heat exchanger hydraulic valve – NEUTRAL (if installed).
- 11. Lights – Checked.
- *12. Upper hatches and latches – Installed and secure (if applicable).
- 13. Hotwall shutoffs – Check for proper position.

Center Lower Compartment.

- 1. Lower hatch – Installed and secure.
- 2. Flap drive motors – Condition and leakage.

3. Wing flap asymmetry shutoff valve – Checked for leakage.
4. Hydraulic lines and fittings – Checked for leakage.
5. Electrical cables – Condition and security.
6. General inspection of area, including all exposed cables – Checked.
7. Evidence of fuel vapors/leaks – Checked.

Aft Lower Compartment.

1. Evidence of fuel vapor/leaks – Checked.
2. Auxiliary vent exit – Proper position.
3. General condition of area – Checked.

Aft Cabin Area.

1. Escape rope – Attached and stowed.
2. Rear main entrance and cargo door – Condition and operation; security of latches.
3. Hydraulic bypass valve for cargo door control – OPEN.
4. Portable oxygen bottle – Checked, mask installed.
5. Portable fire extinguishers – Checked.
6. Fire axe – Stowed.
7. Ladder – Condition and stowed.
8. General condition of area – Checked.
9. Cabin washdown drains (C-121G) – Plugs installed.

Tail Cone Area.

1. Cabin pressure safety relief and dump valve – Check condition and operation (solenoid warm with electrical power ON).
2. Cabin negative pressure relief valve – Check condition and freedom.
3. Flare chutes – Check condition, cable attached.
4. GTPU condition, secured and oil tanks serviced (C-121G).
5. Auxiliary booster accumulator – Check condition and pressure.
6. Servos and controls – Check condition.
7. Hydraulic lines and fittings – Check condition.
- *8. Aft bulkhead door – Condition and security.

NOTE

Upon completion of the engineer's interior inspection, he will determine that the 780 equipment has been installed.

PILOT'S INTERIOR INSPECTION.

Pilot Position.

- *1. Form 781 – Checked.
- *2. Circuit breakers and switches at radio operator's station and J-2 compass circuit breakers on the aft power distribution panel – As required.

CAUTION

Circuit breakers should be engaged simultaneously.

- *3. UHF, VHF and NAV AID radios emergency ICSPA radio – On and checked (to be accomplished by radio operator if aboard).
- *4. No Smoking – Seat Belt signs – ON (C-121G).
- *5. Brake selector – EMERGENCY.
- *6. Parking brake – Set.
7. Elevator booster shift lever (after neutralizing the control column as boost may be used) – Checked and OFF.

WARNING

Clear area around tail of aircraft and make sure tail cone is clear of personnel before operating elevator and rudder.

CAUTION

Shifting the elevator boost shift lever when the control column is full forward may jam the boost assembly; therefore the control column must be neutralized before the elevator boost shift lever is moved.

8. Aileron and rudder booster levers – Checked and OFF.
9. Trim tabs – Checked and centered.
10. Flight controls and Trim Tab position – Check visually. Climbing right turn, diving left turn.
- *11. Seat and rudder pedal adjustments – Checked.
12. Headrest – Checked.
13. Oxygen regulator and smoke mask – Mask installed regulator on 100%, supply lever on.
14. Radio and ICS panel lights – Checked.
15. Flare switches – OFF and safetied (C-121G).

16. Chart lights – Checked and set.
17. Side panel lights – Checked and set.
18. Instrument panel lights – Checked and set.
- *19. Instrument panel – Check all instruments and indicators for condition, indication and set as required.
- *20. Pilot's essential flight instrument power switch – Checked, Normal and EMERGENCY.
21. Warning lights – Push to test.
22. Windshield wipers – OFF.
23. Windshields and side windows – Check for cracks, discoloration and condition.
24. Automatic pilot – Check operation.
 - a. Automatic pilot servo disconnect levers – ON.
 - b. Control surface and trim tabs – Neutralized.
 - c. Automatic pilot – Engage.
 - d. Pitch and trim controller – Move control surface with controller. (Check servo torque meters for correct indication.)
 - e. Altitude control switch – ON
With auto pilot engaged rotate the pitch trim knob, check for no affect on elevator or torque meter.
 - f. All disconnect levers – Checked.
 - g. Automatic pilot servo disconnect levers – OFF.
Pilot should be aware of auto pilot stall (override) valve in the fact that these forces are measured with boost ON and primary hydraulic pressure available.
 - h. Altitude control switch – OFF.
25. Flight path control switches – Checked and OFF.
26. Elevator booster shift control – ON.
27. Aileron and rudder booster levers – ON.
28. Auxiliary control boost switches – Check elevator and rudder operation with switches in NORMAL ON and EMERGENCY ON position.

WARNING

Clear area around tail of aircraft and make sure tail cone is clear of personnel before operating elevator and rudder.

29. Overhead panel lights – Checked and set.
30. APS-42 – Checked and stowed (to be accomplished by navigator, if aboard.)

Copilot Position.

- *1. Seat and rudder pedal adjustments – Checked.
2. Headrest – Checked.
3. Radio and ICS panel lights – Checked.

4. Oxygen regulator and smoke mask – Mask installed, regulator on 100 percent, supply lever ON.
5. Windshield defogger – Checked, then OFF.
6. Pedestal light switch – Checked and set.
7. Chart lights – Checked and set.
8. Side panel lights – Checked and set.
9. Compass light – Checked and set.
10. Emergency fuel dump lever – LG EMER EXT position.
11. Handpump selector – Check for freedom of movement and that levers in EMERGENCY BRAKE (forward) position and latched.
12. Instrument panel lights – Checked and set.
- *13. Instrument panel – Check all instruments and indicators for condition, indication and set as required.
14. Warning lights – Push to test.

EXTERIOR INSPECTION.

A visual inspection will NORMALLY be conducted by the Flight Engineer. The identifying letters on figure 2-1 indicate the area to be checked. The numbered subjects are the points to be checked in those areas. The first engineer will be notified when this inspection has been completed.

Coordination with the pilot making the pilot's interior inspection will be required to complete the flight control check. This check will be completed prior to initiating exterior inspection.

PASSENGER BRIEFING.

Prior to takeoff the pilot or his representative will brief passengers on the following items as applicable to the mission being flown.

1. Aircraft commander's name.
2. Destination, route, ETE, weather, and flight altitude.
3. Seats, safety belts and movement in aircraft. Passengers will be briefed to remain seated with safety belts fastened during taxi operations, takeoff, turbulent air, landing, and at other times when directed by the pilot or other crewmembers.
4. Smoking. Smoking will be at the discretion of the pilot. It will not be permitted until after takeoff and will be discontinued during letdown for landing. At no time will smoking be allowed on the ground within 50 feet of the aircraft.

5. Location of galley area.
6. Location of lavatory equipment
7. Location of air sickness bags and first aid kits.

EXTERIOR INSPECTION DIAGRAM

A AFT FUSELAGE UNDERSIDE

1. SKIN CONDITION — CHECK

B WING TRAILING EDGE

1. WING FLAPS, AILERON, TRIM TABS AND STATIC WICKS — GENERAL CONDITION
2. FUEL DUMP CHUTES — CONDITION
3. TRAILING EDGE OF SKIN — CONDITION

C FLAP RETRACTION AREA

1. FLAP TRACK, CARRIAGE ASSEMBLY, MOUNTING BOLTS, CHAIN AND CABLES — CHECK
2. AFT ROLLERS AND END OF TRACK FOR PROPER SPACING — CHECK

D INBOARD ENGINE NACELLE AND MAIN GEAR

1. FLUID LEAKS — CHECK
2. ACCESS PANELS — SECURE
3. AUXILIARY VENT INTAKE — CLEAR
4. OIL COOLER SCOOP — CONDITION
5. ENGINE NACELLE AND SHIELDING — CONDITION
6. BREATHER LINES — CLEAR
7. DRAIN LINES — CHECK FOR EXCESSIVE LEAKS
8. EXHAUST SYSTEM — CONDITION AND SECURE
9. ENGINE COWLING, COWL FLAPS, STAY RODS — CONDITION AND SECURE
10. OIL COOLER (AFT SIDE) — CONDITION
11. GEAR DOORS — CONDITION AND SECURE
12. DOOR CARRIAGE HOOK — FULL OPEN
13. GEAR UP-LOCK — OPEN
14. HYDRAULIC SHUT-OFF STAR VALVE — SAFETIED
15. LANDING GEAR PINS — INSTALLED AND NOT BINDING
16. FUEL LEAKS AND FUMES — CHECK
17. DEBOOSTER AND LOCK-OUT DEBOOSTERS — INDICATION AND LEAKS
18. HRD FIRE EXTINGUISHER — NOTE PRESSURE
19. ACTUATING CYLINDER — CONDITION AND LEAKAGE
20. DRAG SHOCK STRUT — INFLATION AND LEAKAGE
21. MAIN GEAR STRUT — INFLATION AND LEAKAGE
22. STATIC GROUND — CONTACT
23. TIRES — INFLATION AND CONDITION
24. BRAKES AND HYDRAULIC LINES, BRAKE DRUMS AND SPRINGS — LEAKS AND CONDITION
25. FUEL DUMP CHUTE — CONDITION
26. HRD FIRE EXTINGUISHER BLOW-OUT DISC — INTACT

E INNER WING PANEL AND OUTBOARD NACELLE

1. SKIN CONDITION — CHECK
2. FUEL TANK SURFACES — CHECK FOR LEAKS
3. CABIN SUPERCHARGER ACCESS DOORS AND SCOOP — SECURE
4. HEAT EXCHANGER SCOOPS — CLEAR
5. OIL COOLER SCOOP — CONDITION
6. BREATHER LINES — CLEAR
7. DRAIN LINES — CHECK FOR EXCESSIVE LEAKS
8. EXHAUST SYSTEM — CONDITION AND SECURE
9. ENGINE COWLING, COWL FLAPS AND STAY RODS — CONDITION AND SECURE
10. OIL COOLER (AFT SIDE) — CONDITION

F OUTER WING PANEL

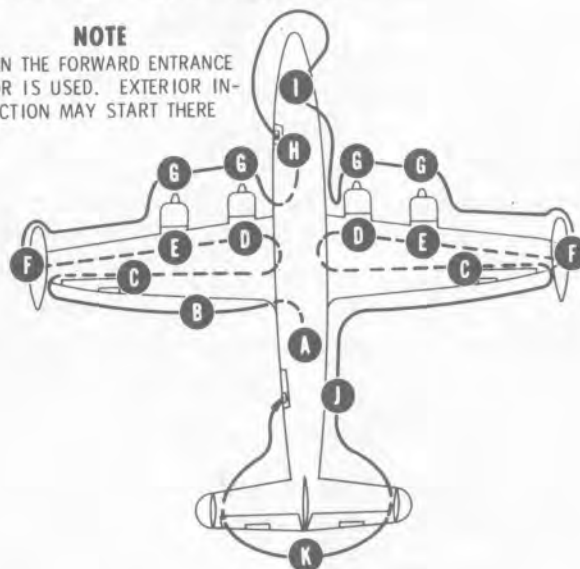
1. ACCESS PANELS — SECURE
2. SKIN CONDITION AND SURFACE — CHECK FOR LEAKS
3. LIGHTS — LENS INTACT AND CONDITION
4. (EC-121R) TIP TANKS — CONDITION AND LEAKS
5. DEICER BOOTS — CONDITION AND LEAKS

G PROPELLER AND FORWARD NACELLE

1. PROPELLER BLADES — CHECK FOR NICKS, POSITIVE PITCH AND BOOTS
2. PROPELLER DOME AND FAIRING — SECURE AND LEAKS
3. CARBURETOR SCOOPS — CLEAN
4. INSIDE COWLING LATCHES AND STAY RODS — SECURE
5. DEICER BOOTS — CONDITION

NOTE

WHEN THE FORWARD ENTRANCE DOOR IS USED, EXTERIOR INSPECTION MAY START THERE



NOTE

THE FIRST FLIGHT ENGINEER WILL BE NOTIFIED WHEN THIS INSPECTION HAS BEEN COMPLETED SO THAT HE CAN COMPLETE THE FUEL SYSTEM CHECK.

H FORWARD FUSELAGE AREA

1. FUSELAGE AND GENERAL CONDITION — CHECK
2. DRIFTMETER — CONDITION
3. FORWARD WATER FILLER — SECURE
4. FORWARD LATRINE DRAIN COVER — SECURE
5. STATIC PORTS — CLEAR
6. DITCHING VALVES — OPEN
7. HYDRAULIC OVERBOARD DRAIN — CHECKED
8. OXYGEN DISCHARGE DISC — INTACT
9. FORWARD ANTENNAS — GENERAL CONDITION
10. NOSE RADOME — GENERAL CONDITION
11. PITOT COVERS — REMOVED
12. OXYGEN FILLER COVER — SECURE
13. CO₂ DISCHARGE DISC (C-121G) — INTACT

I NOSE GEAR AND WHEEL WELL

1. NOSE WHEEL TIRES — GENERAL CONDITION
2. NOSE WHEEL STRUT — INFLATION AND GENERAL CONDITION
3. TAXI LIGHTS — LENS INTACT AND CONDITION
4. NOSE WHEEL STEERING — LEAKS AND GENERAL CONDITION
5. NOSE GEAR SCISSORS PIN — SECURE
6. LANDING GEAR PIN — INSTALLED AND NOT BINDING
7. ACTUATING CYLINDERS AND LINES — CONDITION
8. UP-LOCK — OPEN
9. BATTERIES, DRAIN AND SUMP JARS — SECURE AND CONDITION
10. HYDRAULIC SHUT-OFF STAR VALVE — SAFETIED
11. LOWER CARGO DOOR — LATCH SECURE AND CONDITION
12. NOSE WHEEL WELL DOORS — CONDITION

J AFT FUSELAGE AREA

1. NO. 6 TANK FILLER COVER — INTACT
2. FUSELAGE SKIN — GENERAL CONDITION
3. ANTENNAS — CONDITION
4. AUXILIARY VENT EXIT VALVE — CONDITION
5. FLARE CHUTE COVERS — INTACT

K TAIL CONE AREA

1. DEICER BOOTS — CONDITION
2. STABILIZER, CONTROL SURFACE, TRIM TABS AND STATIC WICKS — GENERAL CONDITION
3. TAIL CONE — GENERAL CONDITION
4. CONTROL BOOSTER DRAIN — LEAKAGE
5. GPTU (C-121G) — NO LEAKS
6. GPTU AREA (C-121G) — CONDITION, ACCESS PLATE SECURED AND OPENINGS UNOBSTRUCTED

HG 05041
F66-0-2-1

Figure 2-1

8. Electronic devices. Passengers having electrical or electronic devices shall not use them during flight. (This does not include hearing aids.)

9. Opening the doors. Doors will not be opened in the air or on the ground by anyone except an authorized crewmember.

10. Use of parachutes (if applicable). Passengers will be fitted with a parachute and the utilization procedures will be explained.

11. Emergency procedures:

a. Brief on the emergency signals, exits, and passenger position for crash landing or ditching.

b. Brief on the location and use of survival and emergency equipment.

c. If fumes, smoke or fire is observed, notify a crew member and move away from affected area, then remain seated if possible.

12. Questions.

BEFORE STARTING ENGINES CHECKLIST

Pilots

- | | |
|---|------|
| 1. UHF radio—ON & checked
(Set to tower frequency and check) | CP |
| 2. Landing gear lever—DOWN | CP |
| 3. Ignition switches—OFF | CP |
| 4. Circuit breakers and switches—Set | P,CP |
| 5. Emergency fuel dump lever—LG EMER EXT | CP |
| 6. Handpump selector—EMER BRAKES | CP |
| 7. Brake selector—EMER | P |
| 8. Parking brakes—Set | P |
| 9. Emergency brake pressure—Actual PSI | CP |
- Copilot notes pressure to ensure that pressure was not depleted when parking brake was set.
- | | |
|--|---|
| 10. Gyro Compass Control (C121G)—Compass Control | P |
| 11. Aileron and rudder boosters—Checked and ON | P |
| 12. Elevator booster shift—Checked and ON | P |

CAUTION

During ground operation do not shift elevator boost unless control column is in neutral position.

- | | |
|--|---|
| 13. Auxiliary boosters—Checked and OFF | P |
|--|---|

NOTE

The elevator and rudder booster levers must be ON to utilize the auxiliary boost system.

- | | |
|------------------------------|------|
| 14. Deicer and anti-icer—OFF | P,CP |
|------------------------------|------|
- Pilot checks deicer OFF, boot cycling switch to be OFF. Copilot checks pitot heaters and Nesa switches OFF. Pilot states "OFF left" and copilot states "OFF right."

- | | |
|---|---|
| 15. Deicer air pump selector valve—VACUUM | P |
|---|---|

Flight Engineer

- | |
|---|
| 1. Circuit breakers—Set |
| 2. Ground power—ON
(Note ground power light(s) and cart switch ON. Check bus voltage.) |

NOTE

If GTPU (C-121G) is being used, its generator will be on the bus, and the battery ON. If external power source is being used, the external power switch will be ON and the aircraft battery switch will be OFF.

- | |
|--|
| 3. Battery voltage—__VOLTS (return selector switch to BUS position.) |
| 4. Generator switches—ON |
| 5. No. 1 inverter—MAIN (C-121G) ON |
| 6. No. 2 inverter—OFF |
| 7. Propeller and carburetor deicer—OFF |
| 8. Carburetor alternate fuel—NORMAL |
| 9. Tank 5 and fuel crossfeed levers—CLOSED |
| 10. Emergency shutoffs—ALL ON |
| 11. Cowl flaps—OPEN |
| 12. Oil cooler flaps—As required |

Position of oil cooler flaps will be dictated by outside air temperature.

- | |
|---|
| 13. Alternate air—RAM |
| 14. Carburetor air—COLD |
| 15. Master engine selector—ENG 1 or ENG 2 |
| 16. Manual spark control—RETARD |

Check spark control master switch and individual control switches in the RETARD position.

- | |
|---|
| 17. Master propeller lever—FULL INC RPM
Check indicator lights ON. |
|---|

- | |
|--|
| 18. Engine supercharger—LOW and locked in detent |
|--|

BEFORE STARTING ENGINES CHECKLIST—Continued

Pilots

16. Jumpmaster's report—Head count, loading ramp clear and door closed P
17. Crew briefing—Starting engines P
Notify crew over PA "starting engines."

Flight Engineer

19. Fuel tank selectors—ON (takeoff tanks)

NOTE

Select tanks 1, 2, 3, and 4. If tanks 2 and 3 contain less than a dipable amount of fuel, select 1, 2A, 3A, and 4.

20. Mixtures—OFF
21. Hydraulic system crossover—NORMAL
22. Air conditioning panel—Position A and panel set

NOTE

Paddle switches should be adjusted so that refrigeration is not called for until after engines are started. This prevents secondary heat exchanger fans from making a heavy demand on the hydraulic system until after the accumulators have been charged and system pressure has built up.

CAUTION

Do not refrigerate on the ground with secondary fan switches off.

18. Engineer's Before Starting Engines checklist—

Completed

23. Engineer's Before Starting Engines checklist—

Completed

STARTING ENGINES.

Before starting, the engines must be turned over a minimum of 6 blades with the starter, while the ignition switch is off, to check for a liquid lock which could seriously damage the engine. If a liquid lock exists, the lower cylinder spark plugs must be removed and the propeller again rotated to remove the oil from the cylinders.

CAUTION

The propellers should not be moved by hand and must never be move opposite to normal engine rotation.

NOTE

Engine starting sequence is 4, 1, 2, 3. To obtain faster cranking speeds when starting without external power, minimize the electrical load. Alternate sequence is 3, 4, 2, 1.

COLD ENGINES.

With a cold engine, use AUTO RICH prior to activating the ignition switch (optimum point depends upon engine temperature). If the engine does not fire within two

revolutions after ignition, or if the engine loads up, move the mixture control to the OFF position momentarily. The primer may be substituted for the mixture when starting cold engines and may be applied in a similar manner until the engine is running smoothly at 800 to 1000 rpm. At that time place mixture control to AUTO RICH and release the primer when a drop in rpm is noted.

WARM OR HOT ENGINE.

With a warm or hot engine, leave mixture in OFF until the engine fires, or two revolutions after ignition, then advance the mixture control to the AUTO RICH position. If the engine fails to fire within a short period in AUTO RICH, return the mixture control to the OFF position.

STARTING ENGINES CHECKLIST

Pilots

Flight Engineer

Before starting, the propeller must be turned a minimum of six blades with the ignition switch OFF to check for presence of liquid lock, which may seriously damage the engine. At home base and bases familiar with interphone technique, this count will be completed by the ground signal man utilizing interphone. At stations where personnel are unfamiliar with this procedure, the Pilot and Copilot will make the count from the cockpit. The starting sequence is 4, 1, 2, 3 in order to provide immediate secondary hydraulic pressure and reduce hazards to ground personnel. After obtaining the all clear signal, complete starting procedure as follows:

1. Start engines—STARTING ENGINES

P

Observe the area, and when ready for engine start, command the flight engineer to start each engine. Stand by to turn on ignition upon request from engineer. Pilot will acknowledge ignition switch "BOTH."

1. Start engines—STARTING ENGINES

- a. Area—CLEAR
 - b. Ground wire—Removed
 - c. Pitot covers—Removed
 - d. Fire guard—Posted
 - e. Pilot's clearance—Received.
2. Start No. 4 engine—START
 - a. Auxiliary fuel pumps switch—LOW
 - b. Mixture—OFF
 - c. Throttle—Set to approximately 1200 rpm
 - d. Engine starter selector—Set to No. 4 engine
 - e. Starter—Engage
 - f. Ignition—(Eng No.—)

Pilot stands by, then turns No. 4 to BOTH.

NOTE

The ignition switch should be turned to BOTH after the propeller has turned 6 blades.

- g. Mixture—As required

STARTING ENGINES CHECKLIST—Continued

Pilots

Flight Engineer

2. Wing flap lever—UP

P

NOTE

Place wing flap lever in the UP position after secondary hydraulic system pressure is normal.

NOTE

Avoid throttle movement until engine is running smoothly. Do not exceed 1400 rpm on start. If engine does not fire within a short period, after the ignition switch is activated, place mixture control in OFF momentarily to prevent afterburning. If engine fails to start within 30 seconds, discontinue starting attempt and allow starter to cool approximately 2 minutes before repeating starting procedure.

- h. Engine oil pressure—Check for rise.

CAUTION

If oil pressure does not register within 10 seconds or reach 40 psi within 20 seconds, shut down engine. Check for rise in cabin supercharger oil pressure.

NOTE

Warm engines at 1000 to 1400 rpm until a 6 degree rise is indicated on the oil temperature gage.

3. Crossover operation—Checked

P

3. Auxiliary fuel pump—OFF

4. Crossover operation—Checked

NOTE

Upon request from the pilot, the flight engineer places the hydraulic crossover switch in the EMERGENCY position. The aileron control should then be moved through a complete cycle to ensure proper operation of the crossover, restriction control, and primary isolation check valves. After the switch is returned to NORMAL position recheck for high flight control forces to determine that the crossover valve has closed.

5. No. 1 engine—START

Use same procedure as for No. 4 engine.

STARTING ENGINES CHECKLIST—Continued

Pilots

Flight Engineer

4. Wing flap shutoff valve—Checked

CP

Test by starting flap retraction and actuating the wing flap asymmetry shutoff switch. Note that the flaps stop retracting. Release test switch and note that retraction continues.

When an alternator and/or cabin supercharger is inoperative, as noted in Form 781, or becomes inoperative after engine start, set affected engine rpm at 1400 and operate the disconnected mechanism. Check zero volts and amps on the alternator and dc generator, zero oil pressure and needle spread on cabin supercharger.

6. Engine No. 4 and No. 1—1200 rpm
7. DC voltage No. 4 and No. 1—Checked
8. Battery—ON
9. Cart switch—OFF
10. External power and landing gear pins—REMOVED

Coordinate with ground crew.

11. Engines No. 2 and No. 3—START

Use same procedures as for No. 4 or No. 1 engines.

12. Starter selector—OFF

5. Engineer's Starting Engines checklist—Completed

CP

13. Engineer's Starting Engines checklist—Completed

ENGINE GROUND OPERATION.

Operate the engine at 1000-1400 rpm until the oil inlet

temperature has risen at least 6°C above the prestarting temperature and the oil pressure is stabilized.

BEFORE TAXI CHECKLIST

Pilots

Flight Engineer

After all four engines are started, the pilot will call for the Before Taxi checklist.

1. Vacuum system pressure—Checked (4 to 7.5 in. Hg) P
2. Engine and flight instruments—Checked and set P,CP

1. Ignition analyzer—ON
2. Engine instruments—Normal
3. Oil tank heaters—ON
4. Mechanic's (ICS) switch—OFF
5. Number 2 Inverter—ON

BEFORE TAXI CHECKLIST—Continued

Pilots

Flight Engineer

NOTE

Gyros should be erect, attitude indicators uncaged, compasses, clocks, and altimeters set. The copilot will select Emergency LH and Emergency RH to check proper operation of the copilot's essential flight instrument's emergency power sources. Check for no-flags on Gyro Flight horizon. Sufficient engine RPM (approximately 1100 rpm) will be required to complete this check. Turn and bank power failure warning light may be ON depending on engine rpm.

3. Hydraulic pressure—Checked CP

4. Taxi clearance—Received CP

5. Alarm bell and cabin rotating beacon—
Checked P

Using the PA systems, the pilot notifies the crew to standby for alarm bell check, (2 short rings) then turns alarm bell on and receives operational check from crewmembers.

6. IFF/SIF controls—STDBY CP

7. APS-42—STDBY (Ensure No. 2 Inverter ON) CP

8. Landing gear pins, pitot covers, ground crew
headset, and ground wire—Aboard CP

9. Engineer's Before Taxi checklist—Completed CP

10. Wheel chocks—Removed P

Retard throttles prior to signal for chock removal.

11. Exterior lights—Set P,CP

Exterior lights switch FLASH, anti-collision light OFF, wheel well lights OFF, etc. as required.

6. Landing gear pins, pitot covers, ground crew headset, and ground wire—Aboard

7. Recirculating fan switches—ON

The recirculating fans should be on for all ground operation except propeller reversing checks.

8. Engineer's Before Taxi checklist—Completed

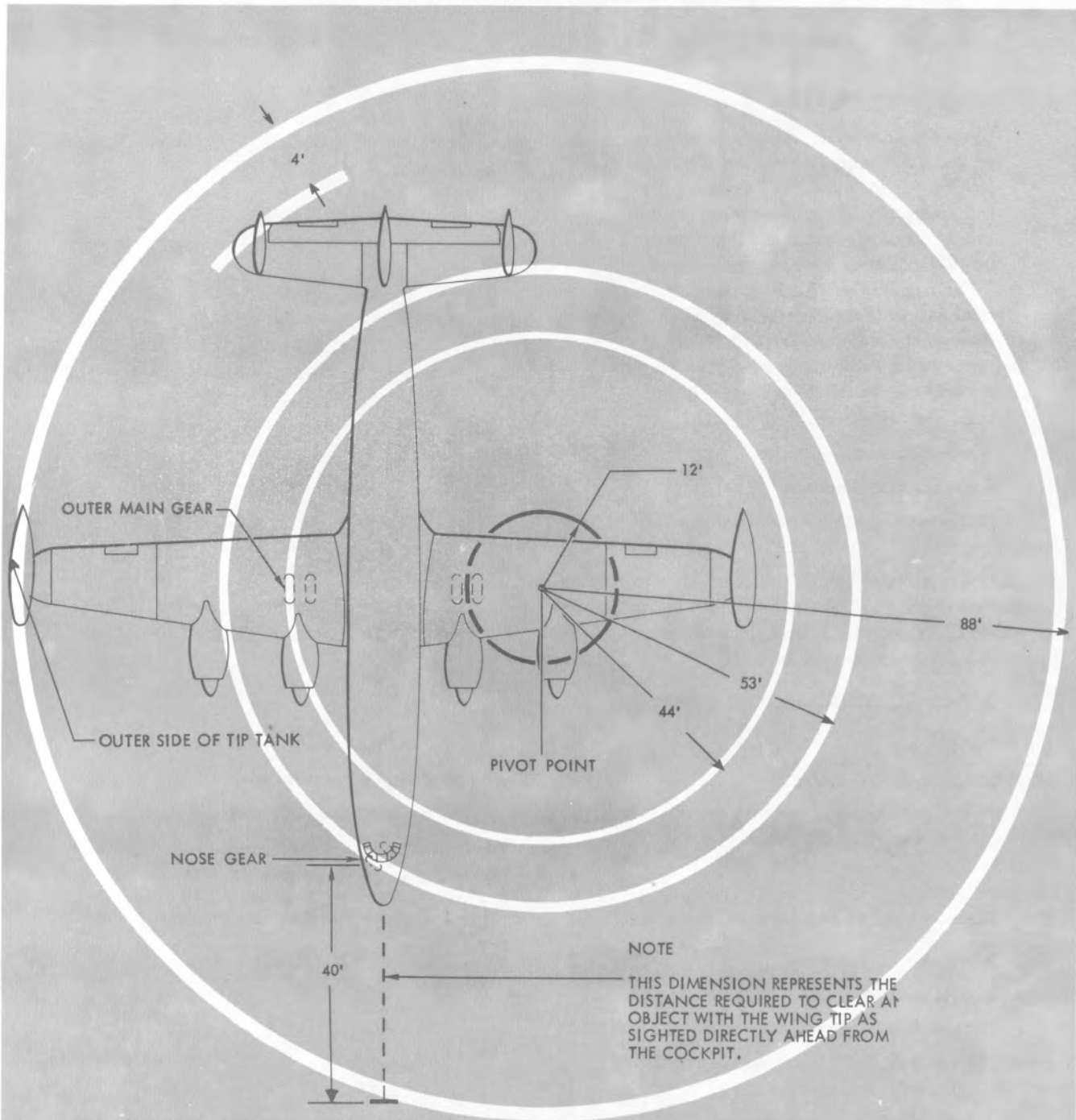
TAXIING.

Pilot instructs flight engineer on required throttle settings for taxiing, or advises that he will handle throttles. As the pilot releases the brakes and the aircraft moves forward, he will smoothly depress the brake pedals and check for proper brake operation. The pilot will state to copilot "Brake check on EMERGENCY." The copilot will reply "Pressure checks." When well clear of parking or congested area, the pilot will call "TAXI CHECKLIST." (See figure 2-2 for turning information.)

If low power is required for taxiing, it is preferable to retard the throttles of the inboard and advance the throttles of the outboard engines to assure adequate generator output and ground refrigeration, if the latter is required.

If the GTPU (C-121G) is not operating, 1000 rpm should be maintained on engines 1 and 4 to insure ample dc output from the generators to support the electrical load on the main dc bus. This will prevent drain on the battery.

TURNING RADIUS



VERTICAL CLEARANCES

VERTICAL STABILIZER TIP	24 FT. 10 IN.
TIP TANK	15 FT. (APPROX)
FUSELAGE	5 FT. 0 IN.
PROPELLER INBOARD	1 FT. 8 IN.
PROPELLER OUTBOARD	3 FT. 7 IN.

F66-0-2-2

Figure 2-2

When refrigeration is desired, 1200 rpm on engines number 1 and 4 will provide optimum supercharger output for ground refrigeration. Maintain 800 rpm or less on engines 2 and 3 to conserve brakes.

Brakes should be used sparingly and applied gently. If taxi speed is too high, use brakes to slow aircraft to a near stop and then allow speed to build up again. This will permit adequate brake cooling. If taxi speed persists in building up, reduce power as necessary. Care should be exercised to avoid dragging the brakes which causes excessive brake temperatures and results in failures of brake expander tubes.

During taxiing operations the pilot and copilot will not perform checklists, tune radios, or be engaged in any duties that may divert attention from taxiing the aircraft until it is well clear of the parking and/or congested area.

At night the Aldis lamp may be utilized by the copilot if required for taxiing. The landing lights set at a 45-degree angle may be used in lieu of the taxi lights to prevent blinding ground personnel during parking and wing walking operation.

CAUTION

When taxiing with full tip tanks, caution should be exercised when a dip or a bump is to be traversed. Reduce speed and contact the dip or bump with both gears simultaneously.

Sharp turns at high speed impose excessive forces on the inside nosewheel tire, strut components, and aircraft structures. Side loads imposed during a high-speed turn may be sufficient to pull the inside tire off the wheel.

STOPPING THE AIRCRAFT.

Use a power-on stop when engine runup is to be accomplished and a power-off stop at station arrival, or whenever it is desirable to stop with the engines idling. The action of the hydraulic drag struts installed on the main gears can induce a rocking motion of the aircraft during either a power-on or a power-off stop unless proper braking techniques are employed.

To make a power-on stop, ease the aircraft to a normal stop while applying approximately 1700 rpm to all four engines. This is ample power to prevent the aircraft from rocking rearward. If it is necessary to hold before takeoff, and it is desired to reduce power to idle rpm, release the brakes as the throttles are closed and allow the main wheels to move forward; then reapply the brakes.

To make a power-off stop, apply the brakes in a normal manner but release and reapply them as the aircraft stops. This will allow the main wheels to move forward and prevent the aircraft from rocking rearward. If it is desired

to run up after a power-off stop, allow the aircraft to roll forward slightly and make a power-on stop as described above.

The aircraft should be parked with the nosewheel straight to avoid side loads and strains on the nosewheel and struts. If the nosewheel is deflected in either direction apply power until the aircraft starts rolling before using nose-wheel steering.

PROCEDURE FOR TAXIING THE AIRCRAFT BACKWARD.

NOTE

The use of reverse thrust for taxiing the aircraft backward shall be restricted to isolated occasions dictated by an emergency or an operational necessity.

When it becomes necessary to taxi the aircraft backward, the following procedure will be used:

CAUTION

Insure that the maneuvering area is clear of obstructions and free of debris which could cause damage to the aircraft of propellers, or injury to ground personnel.

a. Brief the ground controller and/or taxi signalman on the path and distance to be traversed. If ground personnel are not available, the second flight engineer may act as taxi signalman.

b. Position the ground controller and/or taxi signalman in view of the pilot and as far forward of the aircraft as practicable.

c. Open cowl flaps and ram air doors to full open position.

d. Begin rearward motion with all four engines in reverse thrust. Return outboard propellers to forward thrust after the aircraft is in motion and maintain rearward motion with the inboard engines.

e. Taxi slowly and anticipate stopping by using forward thrust for braking action. If brakes are used, they must be applied with caution.

It is possible to set the aircraft on its tail if excessive braking force is applied. It is recommended that forward thrust on the outboard engines be used to decelerate rearward motion and forward thrust on all four engines be used to stop the aircraft.

CAUTION

Due to the limited duty cycle of the propeller reverse solenoid and the rapid rise in cylinder head temperature while props are in reverse pitch, the use of reverse thrust is limited to one minute.

TAXI CHECKLIST

Pilots

1. Brake system — Checked and NORMAL P

To check brake system the pilot will state to copilot "Brakes NORMAL." Copilot moves the brake selector to normal and replies "Brakes NORMAL." Pilot then checks normal brakes and states "Brakes checked NORMAL." Copilot notes secondary system hydraulic pressure and states "Pressure checks."

CAUTION

- Emergency brake selector lever must not be shifted while brake pedals are depressed. Damage to the system may result.
- Avoid taxiing for extended periods of time in the EMER BRAKES position or operating the wing flaps while in that position. It is possible to deplete available emergency system pressure and in the event of a secondary hydraulic failure be without brakes.

2. Turn indicators, compasses and attitude indicators — Checked CP

NOTE

Pilot will make a turn during taxi and the copilot will check indicators, compasses and attitude indicators for proper indication.

3. Pitot heaters — ON CP

- (4). Propeller reversing — Checked P

a. Pilot will announce "Prepare for Reverse."

b. Reverse two engines at a time. (Engines No. 2 and 3, then No. 1 and 4.)

- (1) Reverse throttle levers — Reverse range.
- (2) Reverse pitch indicator lights — Check on.
- (3) Reverse throttle levers — Forward range.
- (4) Reverse pitch indicator lights — Check

out.

c. Very little power (approximately 1000 rpm) should be applied in reverse range and then only for a short duration to minimize the blowing of dust and pebbles into propellers. Reversing at low speeds also has an adverse effect on engine cooling.

- (5). Engineer's Taxi checklist — Completed

Flight Engineer

1. Air conditioning panel — Check and set

a. Auxiliary ventilation control knob — CLOSED position.

b. Paddle switches — Full COOLER position. Leave in full COOLER position after scoop door lights are on to allow mixing valve to go to full cold position.

c. Primary and secondary scoop door indicator lights — ON.

d. Supercharger duct discharge pressure — Check for rise.

e. Refrigeration discharge duct temperature — Check for decrease. Refrigeration may be used during taxiing and engine runup if required.

2. Carburetor deicer — Checked (Switches ON until rpm change is noted. Do not exceed 10 seconds, then OFF.)

3. Carburetor air — Checked and COLD
Check for heat rise, then position to COLD and check for drop.

CAUTION

Do not check carburetor deicing and heat at the same time because fire or faulty indication may occur.

4. NESA inverter — ON (C121G).

5. Recirculating fans — OFF

6. Aux vent knob — Position A

- (7). Propeller reversing — Checked

a. Engines not being reversed — Maintain 1000 rpm.

b. Feathering button lights — On, then off during reversing.

c. Feathering button lights — On, then off during unreversing.

NOTE

Minimum oil-in temperature for reversing is 40°C.

- (8). Engineer's Taxi checklist — Completed

ENGINE RUNUP CHECKLIST

Pilots

Flight Engineer

NOTE

- Make a power-on stop smoothly and keep nosewheel straight so that severe side loads will not be imposed on tires and struts. Head the aircraft into the wind.
- The ignition analyzer should be ON during all engine checks to aid in determining the location and extent of possible malfunction. The pilot will advise the flight engineer when ready for runup.
- An engine oil inlet temperature of at least 40°C is required for runup and oil inlet temperature of 60°C is desired to accomplish a satisfactory auto feathering check.
- Operational check of items with asterisk is mandatory for enroute runup. These items are designated by asterisk on checklist.
- Check manual spark for retard and engine supercharger controls for LOW position only.

- (*)1. Parking brake — Set, engineer cleared for runup P
 *2. NESA — Normal, light on CP
 *3. Deicer boots — Checked and off P

a. Cycle selector switch — NORMAL check pressure (20-24 psi) and segment switch operation.

b. After timer begins operating recycle and check timer (90 second normal, 135 second extended).

c. Check vacuum pumps. Select No. 2 pump to pressure, check pressure within limits, select No. 3 pump to pressure vacuum. Pressure should drop — Select No. 2 pump to vacuum, pressure should rise to within limits, then return No. 3 pump to vacuum.

d. Cycle selector switch off when cycle is completed.

NOTE

Additional crewmember should be advised of the deicer boot check so that boots segments not visible from the pilot position may be visually checked. During the inflation cycle if a drop in pressure is observed it is possible that a leak exists downstream of the distribution valve for that segment. Enter this discrepancy in the Form 781.

- *4. Radio (Nav and Comm) — Checked and set CP
 *5. APS-42 — As required P,CP
 *6. Takeoff and landing data card — Reviewed P,CP
 *7. Departure clearance — Received CP

- (*)1. Runup clearance — Received
 *2. Propellers — Checked

*a. Master propeller lever — INC RPM.

*b. Throttle levers — Set for 1700 rpm.

*c. Propeller governor switches — Toggle to full DEC RPM.

NOTE

Hold the governor switches in the DEC RPM position until the limit light comes on. The rpm should stabilize at 1350, plus or minus 25 rpm.

*d. Propeller governors — Move toward INC RPM position and note limit lights OFF.

*e. Master propeller lever — Move toward DEC RPM position and note limit lights on. Wait 3 seconds and return lever to full INC RPM. Note limit lights on.

f. Master propeller lever — Full DEC RPM position and note limit lights go out and then come on again, denoting low limit. The rpm should stabilize at 1350.

NOTE

The low limit lights going off at this time can be attributed to synchronizer action where the slave governor settings are lower than the master governor setting.

g. Master propeller lever — Set 1600 rpm on master engine and note MAP setting.

h. Synchronizer button — Push and note that slave engines synchronize with master.

i. Master engine throttle lever — Reduce to 1000 rpm and note that slave engines do not drop below 1425 rpm.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

j. Master engine throttle lever — Advance to original MAP setting, verifying that all engines return to 1600 rpm and synchronize.

k. Synchronizer button — Press for across-the-board synchronization at 1600 rpm.

l. Master engine selector — Select other engine as the master and repeat the synchronization checks.

m. Master propeller — Full INC. RPM.

3. Autofeathering — Checked

NOTE

It is not necessary to check manual feathering if an automatic feathering check is made. The feathering pump motor is designed for intermittent duty with a maximum operating cycle of one minute ON and 15 minutes OFF to allow for cooling.

a. Master switch — ON.

b. Throttles — set a minimum of 110 BMEP, then retard to 105 BMEP.

c. Autofeathering test switches — ON.

d. Note that none of the propellers feathers.

NOTE

If a feathering button light comes on, indicating that a propeller is feathering, reject the feathering cycle and reaccomplish step b.

e. Master switch — OFF.

f. Throttles — Retard to 90 BMEP.

g. Master switch — ON.

NOTE

One propeller should begin to feather after a 2-second time delay. Reject the feathering cycle by pulling feathering button to neutral.

h. Autofeathering test switch — OFF on propeller that has started feathering cycle.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

NOTE

When the autofeathering master switch is reset, another propeller should start to feather. Repeat the procedures on remaining propellers. After all propellers have been checked, without resetting the master switch, turn on all four test switches. The autofeathering armed light should be out and no feathering should occur. When autofeathering is not operative, a manual feathering check will be accomplished.

- i. Autofeathering test switches — OFF.
- j. Master switch — Rearm. No propeller should feather, then OFF.
- k. Manual Feather Check:
 - (1) Set all engines to 1700 RPM.
 - (2) Push No. 1 feathering button noting that the light comes on in the button and that the RPM drops on No. 1 engine.
 - (3) After drop of approximately 300 RPM, reject feathering action by returning the feathering button to the neutral position.
 - (4) Note that light goes out and No. 1 engine RPM returns to 1700.
 - (5) Repeat steps (2), (3), and (4) for engines 2, 3 and 4.

NOTE

During feathering check, the ammeter should be monitored to ensure that each generator takes its share of the electrical load.

- 4. Alternate fuel — Checked
 - a. Engine speed — Set to 1600 rpm or more.
 - b. Alternate fuel switches — EMERGENCY (one at a time).

NOTE

If these switches are left in EMERGENCY too long, an excessively rich mixture may result.

- c. Fuel flow — Check for increase.
- d. Alternate fuel switches — NORMAL.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

5. Fuel inlet screen deicing system — Checked
 - a. Fuel inlet screen switches — Hold ON.
 - b. Fuel flows — Check for decrease.
 - c. Fuel inlet screen switches — OFF.
- *6. Manual spark — Checked and RETARD

NOTE

All checks should be made with the master spark control switch in ADVANCE position. The individual spark control switches should be used to check each engine in order to prevent excessive operation of the advance spark relays.

With Ignition Analyzer in Operation:

- a. Master propeller — Full INC RPM.
- b. Mixtures — AUTO RICH.
- c. Throttles — 1600 rpm.
- d. Spark control — RETARD.
- e. Analyzer condition switch — BOTH (on No. 1 cylinder, fast sweep).
- f. Master spark control — ADVANCE.
- g. Spark control — NORMAL.
- h. Spark control — RETARD.
- i. Repeat procedure for No. 2 cylinder.

NOTE

Observe No. 1 and No. 12 patterns on analyzer scope as the spark control switch is placed from NORMAL to RETARD. Required spark advance is 5° plus-or-minus 1° as measured on No. 1 and 2 cylinders. If the advance limits are exceeded, or if the out-of-synchronization exceeds 2° , the discrepancies should be noted in the Form 781. Repeat procedures on remaining engines.

With Ignition Analyzer Inoperative.

- a. Throttles — 2000 rpm.
- b. Mixtures — Manually lean until rpm drops to 1950.
- c. Master spark control — ADVANCE.
- d. Ignition — Select left.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

- e. Spark control — Advance and retard.

NOTE

When checking the manual spark in either the LEFT or RIGHT position, there should be a definite rise in rpm or BMEP (25 rpm and 2 to 4 BMEP) when switching from RETARD to ADVANCE position. If no change in rpm or BMEP occurs, it is impossible to determine whether the manual spark is locked in the ADVANCE or RETARD position; therefore, this malfunction must be corrected before takeoff. If the advance mechanism fails in flight, place spark in RETARD and continue flight.

- f. Repeat procedure from item d. for right distributor.
- g. Ignition — BOTH.
- h. Master spark control — RETARD.
- *7. Engine superchargers — Checked and LOW.
- a. Throttles — Set to 1600 rpm.
- b. Engine supercharger levers — No. 1 and 4 then 2 and 3 shift to HIGH. Note engine oil pressure.
- c. Throttles — Set to 30 in. MAP.

NOTE

Check engine instruments and 260 panel for possible malfunction in cabin superchargers. If the engine oil pressure drops or fluctuates as rpm is increased, extend the warm-up period.

- d. Engine superchargers — No. 1 and 4 then 2 and 3 shift to LOW. Note 1-3 in. drop in MAP.

CAUTION

Do not shift to HIGH ratio more than once in any five minute period.

- *8. Analyzer scan and ignition — Check. Wing flap lever may be set to 60%.
- a. Throttles — No. 2 & 3, retard to 1500 RPM. No. 1 & 4, set to 150 BMEP for one minute and scan analyzer.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

- b. Throttle — Set engines No. 1 & 4 to field barometric pressure and note RPM and BMEP.
- c. Ignition — L and note RPM and BMEP change.
- d. Ignition — Return to BOTH and allow RPM to stabilize.
- e. Ignition — Repeat procedure for R position.
- f. Throttles — No. 1 & 4, retard to 1500 RPM.
- g. Repeat procedures on No. 2 & 3 engines — analyzer scan and ignition check.

NOTE

150 BMEP and Analyzer scan is optional since consideration must be given to OAT, time, etc.

*8. Ignition — Checked.

CAUTION

When rpm drop exceeds 150, or excessive roughness is encountered, retard throttle to IDLE before returning ignition switch to BOTH.

P

*9. Ignition — Checked.

- a. Throttles — No. 2 and 3, retard to 1500 rpm. No. 1 and 4, set to field barometric and note rpm and BMEP.
- b. Ignition — L and note rpm and BMEP change.
- c. Ignition — Return to BOTH and allow rpm to stabilize.
- d. Ignition — Repeat procedure for R position.
- e. Throttles — No. 1 and 4, retard to 1500 rpm. No. 2 and 3, set to field barometric and note rpm and BMEP, and repeat steps b, c and d.

NOTE

Symmetrical engines should turn within 100 rpm of each other at the magneto check power setting. A difference of more than 100 rpm should be investigated before flight. A dead cylinder, propeller low pitch stop setting off, exhaust turbine malfunction, fuel metering, and failure to park headed into the wind are some of the causes for rpm differences. This is in addition to loss due to cabin superchargers and alternators on engines 1 and 4. The pilot's and flight engineer's tachometers should be cross-checked.

CAUTION

When rpm drop exceeds 150, or excessive roughness is encountered, retard throttle to IDLE before returning ignition switch to BOTH.

ENGINE RUNUP CHECKLIST — Continued

Pilots

Flight Engineer

NOTE

- Atmospheric conditions and ignition timing will influence the readings obtained. With a 20-25 degree ignition timing, a drop of 100 rpm or less on one magneto is satisfactory provided no engine roughness is encountered. The use of BMEP as a measure of power loss is recommended to substantiate the rpm variation. A drop of 10 BMEP is considered equivalent to a drop of 100 rpm.
- In cases of known richer than normal carburetion and/or the presence of high atmospheric absolute humidity which effectively richens the fuel air ratio, the following is recommended, if the above limits are exceeded:
 - a. Throttle — Set to field barometric pressure.
 - b. Mixtures — Lean to best power (max BMEP) and enrich to a 2 BMEP drop.
 - c. Ignition — Check as before.

NOTE

If the above limits continue to be exceeded, the conditions should be investigated.

At field barometric pressure, inboard engines should obtain 2175 ± 50 rpm, and outboard engines should obtain 2125 ± 50 rpm.

***10.** Generators — Checked and ON.

- a. Throttles — 1500 rpm and check amperage and voltage for even distribution of load.

9. Ditching lights — ON

P

***10.** Engineer's Runup checklist — Completed.
Wing flap lever may be set to 60%.

CP

11. Engineer's Runup checklist — Completed

 BEFORE TAKEOFF CHECKLIST

If departure is delayed, the pilot should instruct the engineer to set 150 BMEP for one minute every 15 minutes of ground operation to minimize plug fouling. If delayed, spark plug anti-foul procedure is recommended.

BEFORE TAKEOFF CHECKLIST — Continued

Pilots

1. Radar altimeter — Set to 50 ft P

WARNING

The radio/radar altimeters are unreliable in areas covered by large depths of snow and ice such as encountered over polar regions. An apparent terrain clearance 1600 feet greater than actual clearance has been recorded. Do not rely on this equipment to provide terrain clearance when flying over areas covered by a large depth of snow and ice.

2. Static selectors — No. 2 position P,CP

NOTE

Due to the unpredictable error in the No. 1 static system during the takeoff ground run, No. 2 position will be used for takeoff.

3. Doors and windows — Closed and locked P,CP
 4. Autopilot switch — OFF P
 5. Trim tabs — Set P
 6. Seat belt, shoulder harness — Fastened P,CP
 7. Seat pins — Installed P,CP
 8. Crew briefing — Completed P

NOTE

The pilot will advise the copilot and flight engineer of any special instructions required for the takeoff. If none, he will advise that the takeoff will be standard. He will also ensure that the copilot and flight engineer are aware of his intentions should an emergency occur during takeoff or climb. Organizations may develop local directives specifying additional requirements.

9. Engineer's Before Takeoff checklist — Completed

CP

Flight Engineer

1. Door warning lights — Lights out
 2. Carburetor air — COLD & RAM
 3. Auto feathering — As required
 4. GTPU — OFF (C-121G).
 5. Seat belt and seat — Set and locked
 6. Oil cooler flaps — Set (normally 40 percent)

7. Seat pins — Installed

8. Engineer's Before Takeoff checklist — Completed

LINEUP CHECKLIST

This checklist should be completed prior to taking the active runway.

Pilots

- | | |
|--|------|
| 1. Auxiliary control boosters—ON | CP |
| 2. Wing flaps—60 percent | CP |
| 3. Anti-collision and exterior lights and ditching—As required | P,CP |

NOTE

Anti-collision light operation on the ground should be kept to a minimum. Excessive heat on the ground shortens bulb life. Also, during ground emergencies, the operating light could confuse rescue operations since emergency ground vehicles use a similar light.

- | | |
|---------------------------------|----|
| 4. Takeoff clearance—Received | CP |
| 5. IFF/SIF controls—As required | CP |

Flight Engineer

- | |
|--|
| 1. Pressure and temperatures—NORMAL |
| 2. Air conditioning panel—Set |
| a. Auxiliary vent knob position A, cooling doors closed. |
| 3. Recirculating fans—OFF |
| 4. Propeller controls—FULL INCREASE |
| a. Master lever and toggle switches full increase rpm. |
| 5. Auxiliary fuel pumps (takeoff tanks)—HIGH |
| 6. Mixtures—AUTO RICH |

NOTE

Cylinder head temperatures should be below 200°C and oil temperatures above 40°C. (If ambient temperature permits.)

- | | | |
|--|----|--|
| 6. Engineer's Lineup checklist—Completed | CP | 7. Engineer's Lineup checklist—Completed |
|--|----|--|

NOTE

The Lineup checklist will be reaccomplished if takeoff is delayed.

TAKEOFF PROCEDURE

(See figure 2-3)

Pilots

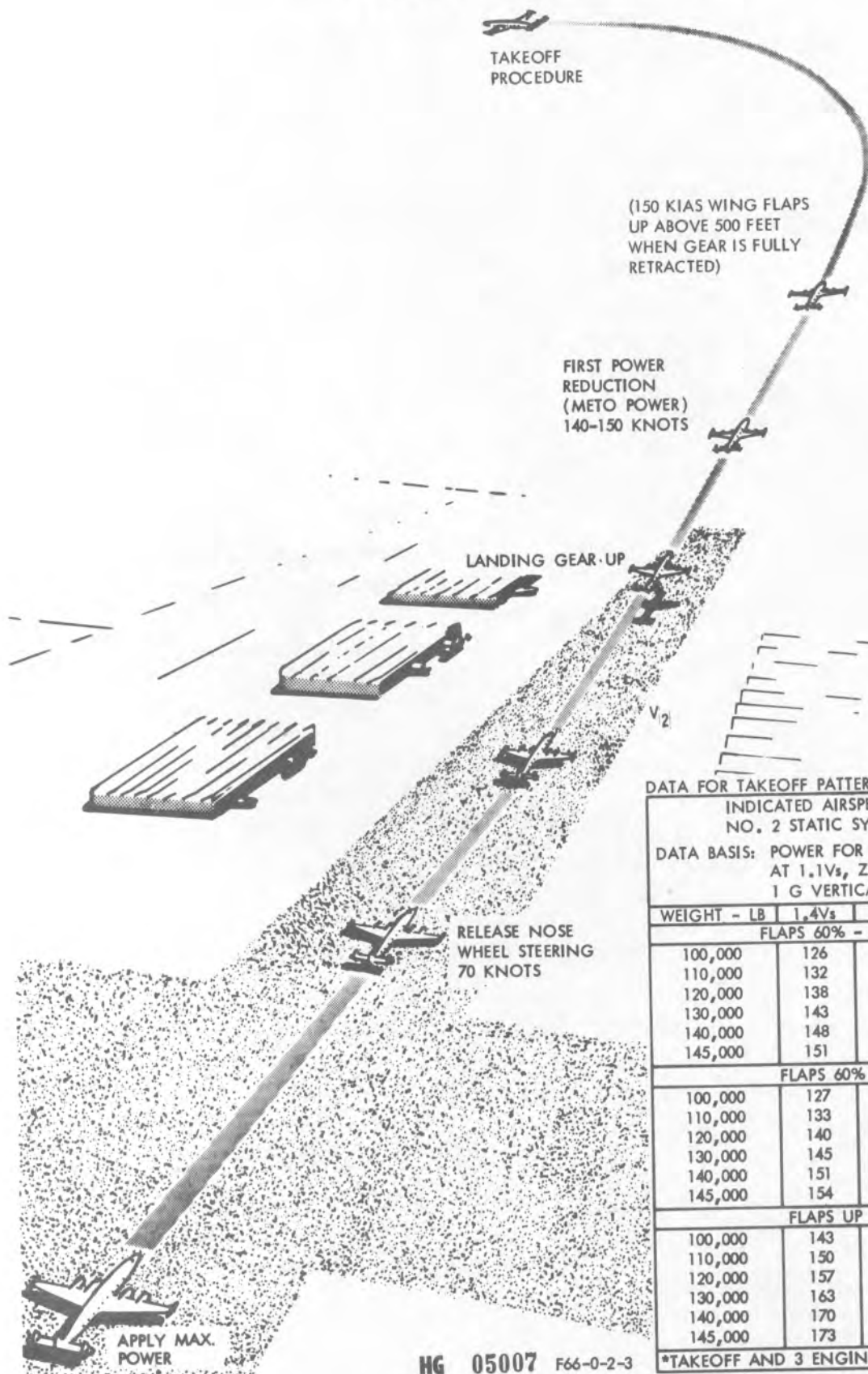
- | | |
|---------------|---|
| a. Brakes—ON. | P |
|---------------|---|

NOTE

- Pilot aligns the aircraft with the runway, advances the power as he applies the brakes to stop the aircraft in takeoff position.
- The pilot should hold the nosewheel steering control during this period so that the nosewheel will not turn.

Flight Engineer

TAKEOFF PATTERN



DATA FOR TAKEOFF PATTERN DIAGRAM

INDICATED AIRSPEEDS - KNOTS
NO. 2 STATIC SYSTEM
DATA BASIS: POWER FOR ZERO-THRUST
AT 1.1V_s, ZERO BANK ANGLE, AND
1 G VERTICAL ACCELERATION

WEIGHT - LB	1.4V _s	1.3V _s	1.15V _s *	V _s
FLAPS 60% - GEAR DOWN				
100,000	126	117	103	89
110,000	132	122	108	93
120,000	138	128	113	98
130,000	143	133	118	102
140,000	148	137	122	106
145,000	151	140	124	108
FLAPS 60% - GEAR UP				
100,000	127	118	105	92
110,000	133	124	109	96
120,000	140	130	114	100
130,000	145	135	119	103
140,000	151	140	123	107
145,000	154	143	125	109
FLAPS UP - GEAR UP				
100,000	143	133	118	103
110,000	150	139	123	108
120,000	157	145	128	112
130,000	163	151	134	117
140,000	170	157	139	121
145,000	173	160	141	123

*TAKEOFF AND 3 ENGINE CLIMBOUT SPEED

HG 05007 F66-0-2-3

Figure 2-3

TAKEOFF PROCEDURE — Continued

Pilot		Flight Engineer
b. Throttles—Set 35 in.	P	
(c.) Cowl flaps—Set (normally 30 percent)	P	(a.) Cowl flaps—Set (normally 30 percent)
d. Brakes—Released.	P	
(e.) Max power—MAX POWER	P	(b.) Max power—MAX POWER

NOTE

- Pilot calls “Cowl flaps” when he starts to advance throttle to 35 in. When the engineer responds “Set,” the brakes are released, the pilot calls “Max power,” and the engineer advances the throttles to maximum power. The power is applied slowly and smoothly over a period of approximately five seconds to minimize spark plug breakdown.
- The refusal speeds and refusal distance charts are based on the technique of applying maximum power before the brakes are released. This procedure should be used when takeoff performance is critical because of high gross weights, short runways, or power deviations. Pilot will not take his hand from throttles until reaching refusal speed. Avoid restricting throttle movement in either direction as this would make it difficult for the engineer to maintain proper BMEP.

f. Nosewheel steering—Released at 70 knots. P

At 70 knots the pilot releases nosewheel steering and maintains directional control with the rudders.

g. Yoke and reverse flag—Standby. CP

NOTE

If an unsafe condition is noted by any crew member prior to reaching refusal speed, he will call out “Abort.” The pilot will close the throttles and reverse if necessary. The copilot will ensure that the propeller reversing flag is pushed in, and will hold the yoke forward to minimize control buffeting and to increase the effectiveness of nosewheel steering.

WARNING

If a takeoff is aborted because of a fire warning light, another takeoff will not be attempted until the affected system has been inspected.

h. Back pressure on yoke 10 knots below V_2 airspeed—Applied. P

Apply slight back pressure on the yoke to relieve the weight from the nosewheel.

i. V_1 and/or V_2 —___knots. CP

The copilot will callout V_1 (the maximum refusal speed) and V_2 (the takeoff and three-engine climbout speed). Omit V_1 speed call if V_1 and V_2 are the same.

j. Fly off— V_1 speed. P

The aircraft should be airborne at V_2 airspeed.

k. Landing gear lever—UP. P,CP

TAKEOFF PROCEDURE — Continued

Pilot

Flight Engineer

NOTE

Maintain a constant climbing attitude. After becoming airborne, do not lower the nose to gain speed. When well established in the climb, the pilot will call for gear up and give the closed-fist, thumbs-up signal. After night or instrument takeoff wait for red light on radar altimeter to go out before retracting the landing gear. The copilot will acknowledge the gear-up command and move the landing gear lever to the UP position. Gear retraction time is approximately 14 seconds. The copilot will advise the pilot when the landing gear is up.

NOTE

If the gear lever will not go past the NEUTRAL position, insert a finger through the hole in the right side of the pedestal and push the solenoid pin out of the way.

CAUTION

Do not apply brakes while the landing gear is being retracted because this can damage the main landing gear retraction linkage crosshead. If it is necessary to stop wheel rotation after breaking ground, the brakes must be applied while the gear is still in the down-and-locked position.

①. METO power—METO Power.

P

③. METO power—METO Power.

NOTE

When the airspeed reaches 140 knots, and a safe distance above the ground and a positive rate of climb are established, the pilot will call for METO power which the flight engineer will acknowledge and set.

d. Auxiliary vent. knob—CLOSED.

e. Air conditioning—Checked, position paddle switches for desired cabin temperature.

f. Recirculating fans—ON.

WET OR SLIPPERY RUNWAY TAKEOFF.

Copilot must hold the yoke forward to prevent nosewheel skipping and to increase the effectiveness of nosewheel steering.

CROSSWIND TAKEOFF PROCEDURES.

The procedures for taking off during a crosswind which are different or in addition to normal takeoff procedures are as follows:

- a. During initial takeoff run, allow the aircraft to accelerate to takeoff speed in the three-point position.
- b. Hold upwind wing down with aileron, as necessary.
- c. Hold the yoke forward until takeoff speed is attained. Make a definite pulloff at takeoff speed, and crab into wind, in order to make good a track in alignment with the runway.
- d. During gusty conditions always increase the takeoff, threshold, and landing speed by the full gust increment, but not to exceed 10 knots. The erratic characteristics of gusts, as to magnitude and direction of the wind, may result in a high relative airspeed reading, which may result in a dangerous situation, should the wind change direction or decay.

EXPEDITED TAKEOFF PROCEDURE.

When it becomes necessary to expedite a takeoff such as in a tactical FLUSH, it will be accomplished in the following manner.

a. Complete all checklists up to and including the Lineup checklist before taking the active runway.

b. When cleared to the active runway, the pilot will call for cowl flaps and taxi in the most expeditious manner so as to reach the center of the runway with the aircraft aligned to the runway heading.

CAUTION

Excessive speed during the turn onto the runway can cause serious damage to the landing gear structure by imposing heavy side loads.

c. The pilot calls "MAX POWER" when the aircraft is in a favorable position to begin the takeoff roll.

NOTE

It is not necessary to stop the aircraft on the runway or pause at the takeoff end of the runway prior to beginning the takeoff roll when using normal takeoff procedures.

AFTER TAKEOFF CHECKLIST**Pilots**

- | | |
|-------------------------------|------|
| 1. Landing gear lever—Neutral | CP |
| 2. Wing flaps—UP | P,CP |

When the gear is up, airspeed is at least 150 knots, and 500 feet altitude has been obtained, the flaps may be retracted. The copilot will ensure that the flaps are fully retracted before removing his hand from the flap lever. Flap retraction time is approximately 15 seconds. Maintain constant attitude and allow airspeed to increase to enroute climb speed (170 knots) as the flaps retract. When operational conditions permit, alternate climb power should be used.

- | | |
|---|------|
| 3. Landing lights—OFF and RETRACTED | CP |
| 4. No smoking, seat belt sign—OFF (C121G) | CP |
| 5. Auxiliary control boosters—OFF | CP |
| 6. Static selectors—Position No. 1 | P,CP |

Flight Engineer

- | |
|---------------------------------------|
| 1. Auto feathering switch—OFF |
| 2. Auxiliary fuel pumps—LOW |
| 3. Pressures and temperatures—Checked |

NOTE

Monitor instruments closely during climb and maintain cleanest configuration possible without exceeding engine operating limits. Manual leaning to reduce high fuel flow is permissible only if calibration cards are installed.

- | |
|-----------------------------|
| 4. Overwing check—Completed |
|-----------------------------|

When METO power is set, the flight engineer or a designated crewmember will inspect the over-wing area for engine condition, and fuel siphoning.