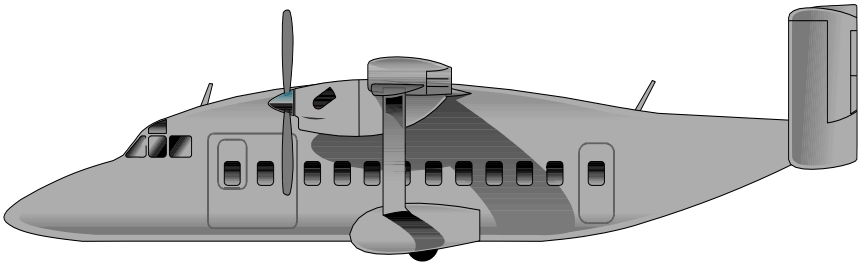
SHORTS SD3/SD3-60
C-23 SHERPA

CREWMEMBER'S CHECKLIST

ISSUE 6

JANUARY 2008



HEADQUARTERS
U.S. ARMY OPERATIONAL SUPPORT AIRLIFT AGENCY
6970 Britten Drive, Suite 201, Fort Belvoir, VA 22060-5133

SHORTS SD3/SD3-60
C-23 SHERPA
CREWMEMBER'S CHECKLIST
ISSUE 6, JANUARY 2008

By Order of the Director, Army National Guard

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OFFICIAL:

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IMPLEMENTATION:
Begin using this checklist immediately upon receipt. Commanders will ensure that unit IP and FI conduct appropriate implementation training for the benefit of all assigned crewmembers.

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS
You can improve this checklist. To recommend changes, use DA Form 2028 and send to: Commander, U.S. Army Operational Support Airlift Agency, ATTN: Flight Standards, 6970 Britten Drive, Suite 201, Fort Belvoir, Virginia, 22060-5133 or osacomst@osaa-arng.belvoir.army.mil. A reply will be furnished to you.

SYMBOLS USED IN CHECKLIST:

(0) Indicates if installed
★Indicates detailed procedure available on (page)
(PNF) Indicates Pilot Not Flying action

PRE-FLIGHT CHECKS - EXTERNAL

NOTE: The items listed below are the minimum required for a safe flight. While making the external inspection, check: all surfaces for general condition; no fuel, oil and hydraulic leaks; covers and ground maintenance locks removed; struts for proper extension; and tire condition. Additional checks may be performed at the discretion of the flight crew.

PRIOR TO EXTERNAL CHECKS

★	1.	Forms and Publications (22)	Check
	2.	Batteries	ON
	3.	Electrical Master	INTERNAL
	4.	Battery Volts	Internal start min. 22 External start min. 14
	5.	Emergency Accumulators	Check
	6.	Hydraulic Contents	Check
	7.	External Lights	Check
	8.	Fuel Contents	Check
	9.	Batteries	OFF
	10.	Electrical Master	OFF
	11.	Parking Brake	ON
	12.	Emergency Brake System	EMERGENCY
	13.	Emergency Exit Hatch	SHUT
★	14.	Emergency Equipment (22)	Check
	15.	Rain Repellent Contents	Full
	16.	Oxygen Systems and Regulators	Gauges 1000 PSI min. Check, set as required.
	17.	Air Conditioning System Summer/Winter Valve	Set
	18.	Role Equipment	Check
(0)	19.	Mission Equipment	Check, set as req.
	20.	AFT Cabin Panel Switches	Set
	21.	3D Panel Circuit Breakers	Closed

EXTERNAL CHECKS

1.	Chocks and Tie Downs	Removed
2.	Prop Ties, Engine and Pitot Covers	Removed
3.	Left Rear Passenger Door	Unlocked / Check

4. Hydraulic Servicing Door..... ..... Secured
5. Left Main Landing Gear and Pin ..... Check / Removed
6. Left Engine Fire Extinguisher Discs (2) ... Green
7. Left Wing ..... Check
8. Wing Tip and Navigation Light ..... Check
9. Pneumatic De-ice Boots ..... Check
10. Landing Light ..... Check
11. Left Wing Strut ..... Check
12. Left Engine and Propeller ..... Check
13. Forward Cargo Door / Emergency Exit .. Unlocked / Check
14. Fuselage Left Side ..... Check
15. Forward Baggage Compartment ..... Unlocked / Check
16. Fuselage Underside ..... Check
17. Nose Landing Gear and Pin ..... Check / Removed
18. Radome ..... Check
19. Windshields and Wipers ..... Check
20. Emergency Exit Hatch..... Secured
21. Fuselage Right Side ..... Check
22. Emergency Exit ..... Secured
23. Oxygen Discharge Indicator ..... Green

(O) 24. Emer. Landing Gear Selector Valve ..... NORMAL

25. Right Engine and Propeller ..... Check
26. Right Wing Strut ..... Check
27. Landing Light ..... Check
28. Pneumatic De-ice Boots ..... Check
29. Wing Tip and Navigation Light ..... Check
30. Right Wing..... Check
31. Right Engine Fire Extinguisher Discs (2) Green
32. Right Main Landing Gear and Pin ..... Check / Removed
33. Refueling Door ..... Secured
34. Fuel Sample ..... Check
35. Right Rear Passenger Door ..... Unlocked / Check
36. Right Horizontal Stabilizer
    and De-ice Boot..... Check
37. Right Vertical Stabilizer,
    Rudder, and De-ice Boot..... Check
38. Elevator ..... Check
39. Left Vertical Stabilizer,
    Rudder, and De-ice Boot ..... Check
40. Left Horizontal Stabilizer
    and De-ice Boot..... Check
41. Aft Fuselage and Ramp Door ..... Check

BRIEFINGS

★ 1. Passenger Briefing (22)..... Complete as nec.
★ 2. Pre-Jump Briefings (23)..... Complete as nec.
★ 3. Paradrop Safety Briefing (24)..... Complete as nec.

PRE-FLIGHT CHECKS – INTERNAL

Flight Compartment
Circuit Breakers ..... Closed
(1D, 5D, 2D, 6D)

Parking Brake ..... ON

Avionics Master ..... OFF

Emergency Brake System ..... EMERGENCY

Landing Gear Lever ..... DOWN

LP Valves ..... OPEN and safetied

Emergency Gear Handle ..... Up

4P Panel - Electrics

Batteries ..... ON

Electrical Master ..... INTERNAL

Battery Volts ..... Internal start min. 22
External start min. 14

Tail Battery Volts ..... Min. 24

Essential Services ..... NORMAL

Generators ..... OFF

Shedding Buses ..... EMERGENCY

★ Inverters (25) ..... ON, Transfer check
(110±10 VAC, 400±4 Hz)

TO START ON EXTERNAL POWER

Ground Supply El ..... Horizontal
Electrical Master ..... EXTERNAL
Volts ..... 22 - 28
Busbars..... Coupled

4P Panel - Engines

Ignitions ..... OFF

Fire Extinguisher Discharge Lights ..... OFF

10P Panel - Lights

Emergency Lights ..... ARMED, if int. start

Landing, Taxi Lights ..... OFF

Navigation Lights ..... As necessary

Anti Collision Beacon and Strobe ..... OFF

Cabin Signs ..... As necessary

Emergency Flight Compartment Lights ..... Test, then OFF

4P Panel – Anti-icing / Fuel

★ Pitot/Static/Stall (25)..... Check

Booster Pumps ..... OFF

★ Fuel Cross-feed Valve (25)..... Check

Leveling Valve ..... SHUT

Fuel Contents ..... Correct

Fuel Totalizer ..... Set

7P Panel - Hydraulics

Contents ..... Yellow / Black

Pump Inlet Valves ..... OPEN, Els vertical

Nosewheel Steering ..... ON

Emergency Accumulators ..... Check

1P Panel

★ GPWS (26) ..... Test

Prop Sync ..... OFF

Landing Gear ..... Three green

Landing Gear Horn ..... TEST

Recording Systems

Cockpit Voice Recorder ..... TEST (green 5 sec.)

★ Flight Data Recorder (26) ..... Set, Gnd. Check, DDI

3P Panel - Center Console

★ Reserve Power System (26) ..... Check

Prop Levers ..... MAX, FEATHER

Fuel Levers ..... OFF

Trims ..... Operate, then Set

9P Panel

★ Air Conditioning (26) ..... Set

11P Panel

Light Filaments ..... TEST

Engine Fire Warning ..... TEST

Fire Fault Warnings ..... TEST

Smoke Detectors ..... TEST, then Set

Hi-Speed Warning Horn ..... TEST

In-Flt Ramp Door Enable/Inhibit Switch ..... INHIBIT

Ramp Door Open Warning ..... TEST

TURN AROUND CHECKS

Parking Brake ..... ON

Avionics Master ..... OFF

Emergency Brake System ..... EMERGENCY

Batteries ..... ON

Electrical Master ..... INTERNAL

Battery Volts ..... Internal start min.22
External start min. 14

Tail Battery Volts ..... Min. 24

TO START ON EXTERNAL POWER

Ground Supply EI ..... Horizontal
Electrical Master ..... EXTERNAL
Volts ..... 22 - 28
Busbars ..... Coupled

Leveling Valve ..... SHUT

Fuel Contents ..... Correct

Fuel Totalizer ..... Set

Emergency Passenger Lights ..... ARMED, if int. start

Lights ..... As necessary

Cabin Signs ..... As necessary

★ Air Conditioning (26) ..... Set

Flight Data Recorder ..... Set, Gnd. Check, DDI

Power, Prop, Fuel Levers ..... FLIGHT IDLE,
FEATHER, OFF

STARTING ENGINE CHECKS

Intercom ..... Check

Fire Guard ..... Posted

Landing Gear Pins (3) Jacks (2) ..... Removed

Door Warning EIs ..... Check

Anti Collision Beacon ..... ON

Booster Pumps ..... ON

Start Master ..... ARMED

Starting engine abnormal procedures:

If there is no light-up within 25 seconds from START, or within 10 seconds of moving the fuel lever to GROUND, stop the start. Wait 60 seconds before initiating second start attempt. Wait 30 minutes before any further start attempts.

TO STOP THE START

Fuel Lever..... OFF
Start Switch ..... STOP
Ignition ..... OFF

IF THERE IS A HOT START (ITT >1000 >5 seconds)

Fuel Lever ..... OFF
Start Switch (ITT<400) ..... STOP
If ITT continues to rise, LP Valve ..... SHUT
Notify maintenance of highest temperature and duration.

ELECTRICAL FAILURE - during engine start

Fuel Lever ..... OFF
Start Switch ..... STOP
Ignition ..... OFF

ENGINE START LIGHT Remains on at > 50% Ng

Start Switch .....STOP
Ignition .....OFF
Start Master .....NORMAL
Electrical Master .....OFF
Engines .....STOP
External Power .....Disconnect
Do NOT connect external power again before inspection.

VENTILATION START PROCEDURE
(Use for second start attempt after engine failed to light or after start abort without exceeding any limits.)

Start Switch .....START
Ng .....>10% for 10 sec.
Ignition .....NORM
Fuel Lever .....GROUND

★ First Engine (27)..... Start

Internal start only
Generator ..... ON
Generator Amps ..... Less than 250

★ Second Engine (27)..... Start

AFTER START CHECKS

Start Master ..... NORMAL

Ignitions ..... OFF

Electrical Master ..... INTERNAL

Generators ..... ON

Volts ..... 27 - 28.5

Amps ..... Less than 80

Note: If above 80, operate Flaps (27) and check De-ice Boots thru Anti-ice Vanes (27) while batteries are charging.

Shedding Buses ..... NORM

External power start only

External Supply ..... Disconnect
Emergency Lights ..... ARMED

Electrical EIs ..... Vertical

Warning Lights ..... Control Locks,
Pitot L & R, Doors

Air Conditioning and Fans ..... As necessary

Wait 3 sec. between bleed selections

★ Flaps (27) ..... Operate, Set for T/O

(0) Mission Equipment ..... As required

★ Anti-icing (27) ..... Check

Avionics Master ..... ON

APX 100 Transponder ..... STBY

FMSs ..... ON

★ Avionics (28)..... Test, then Set

★ Autopilot (32) ..... Test

Crew Harnesses ..... On

Cargo Compartment ..... Secure

Prop Levers ..... TAXI

Emergency Brake System ..... NORMAL

Parking Brake ..... OFF

Wheel brake pressure..... Test L & R

Parking Brake ..... As necessary

Engine/Propeller Tests ..... Perform first flight

11P Panel – ENGINE/PROPELLER TESTS

Note: Perform tests prior to the first flight of the day. If possible, position aircraft into the wind ± 45° and set Parking Brake.

AUTO FEATHER TEST

Power Levers ..... FLIGHT IDLE

Prop Levers ..... TAXI

Auto Feather Test Switch ..... TEST and hold

Auto Feather EIs ..... On

PRPMs ..... Decrease and cycle

Anti-icing Vane EIs ..... Off

Auto Feather Test Switch ..... Release, check indications normal.

LOW BLADE ANGLE (LBA), SECONDARY STOP, AND REVERSE PITCH INDICATION TESTS

Power Levers ..... FLIGHT IDLE

Prop Levers ..... TAXI

LBA Switches ..... TEST and hold

Power Levers ..... Move slowly to Ground Range until:

Fine Pitch Lights ..... Cycle

LBA Switches ..... Release

Power Levers ..... REVERSE

Reverse Pitch Lights ..... On

Power Levers ..... FLIGHT IDLE

RESERVE POWER SYSTEM TEST

Air Conditioning ..... OFF

Reserve Power Switches..... ARM

Power Levers ..... FLIGHT IDLE

Prop Levers ..... TAXI

Fuel Levers ..... FLIGHT

Reserve Power Test (One at a time) ..... TEST and hold

Reserve Power EI ..... RTOP ON

Ng ..... Increase 1 - 4%

Reserve Power Test ..... Release

Fuel Levers ..... GROUND

Reserve Power Switches..... As required

Air Conditioning ..... As necessary

PROPELLER OVERSPEED GOVERNOR TEST
(Perform before flights with intentional engine shutdown.)

Reserve Power Switches..... OFF

Flaps 35

Control Locks ..... UNLOCKED

Prop Levers ..... MAX

Power Levers (One at a time) ..... Set 1620 prpm

Overspeed Governor Test Switch ..... TEST and hold

PRPM ..... Decrease to 1565 ± 30

Overspeed Governor Test Switch..... Release

PRPM ..... Increase to 1620

Power Levers ..... FLIGHT IDLE

Prop Levers ..... TAXI

Control Locks ..... LOCKED

Flaps ..... Set for takeoff

Reserve Power Switches ..... As necessary

TAXI AND PRE-TAKEOFF CHECKS

Taxi Lights ..... As necessary

Brakes ..... Test

Nosewheel Steering ..... Check

Flight Instruments ..... Check

Oil Pressures and Temperatures ..... Green area

Trims ..... Set for takeoff

Flaps ..... Set for takeoff

Reserve Power ..... As necessary

★ Crew Briefing (33)..... Complete

RUNWAY CHECKS

(0) Mission Equipment ..... Set

Air Conditioning ..... OFF, EIs horizontal

Lights ..... As necessary

Ignitions ..... As necessary

Pitot, Static, Stall ..... ON

Anti-icing ..... As necessary

Control Locks ..... UNLOCKED

Flight Data Recorder ..... DDI

Transponder, TCAS, Radar and Clock ..... Set

Warning Lights ..... Off

Prop Levers ..... MAX

Fuel Levers..... FLIGHT

AFTER TAKEOFF CHECKS

Landing Gear ..... UP

Lights ..... As necessary

Flaps ..... As necessary

Reserve Power ..... As necessary

Power ..... Set

Prop Sync ..... As necessary

Air Conditioning ..... As necessary
Wait for ITT/Torque to stabilize before second bleed ON.

Cargo Compartment / Engines ..... Check

(0) Mission Equipment ..... Check

Ignitions ..... As necessary

CRUISE CHECKS

Air Conditioning ..... As necessary

Cabin Signs ..... As necessary

Cruise Power ..... Set

Cargo Compartment / Engines ..... Check

Trend Monitoring ..... As necessary

Fuel Check ..... Complete

Ignitions ..... As necessary

DESCENT CHECKS

Altimeters	Set
Lights	As necessary
Fuel	Balanced
Anti-icing	As necessary
Performance	Weight, Speeds, GA Power
Approach Briefing	Complete
Avionics, TCAS, GPWS, Radar Alt.	Set
Cargo Compartment	Secure
Ignitions	As necessary

TACTICAL APPROACH/LANDING CHECKS

Landing Gear	DOWN, Three green
Prop Levers	As necessary
Flaps	On speed
Brakes	Test, then no pressure indicated

TACTICAL FINAL LANDING CHECKS

Auto-Pilot / Yaw Damper	Disengage
Landing Gear	DOWN, Three green confirmed
Prop Levers	MAX
Flaps	As necessary
Runway	Clear

APPROACH CHECKS

Cabin Signs ..... As necessary

Landing Gear ..... DOWN, Three green

Flaps 10

Brakes ..... Test, then no pressure indicated

LANDING CHECKS

Air Conditioning ..... OFF

Landing and Taxi Lights ..... As necessary

Prop Sync ..... OFF

Prop Levers ..... MAX

Flaps 15

FINAL LANDING CHECKS

Auto-Pilot / Yaw Damper ..... Disengage

Landing Gear..... DOWN, Three green confirmed

Flaps ..... As necessary

AFTER LANDING CHECKS

Fuel Levers ..... GROUND

Prop Levers ..... TAXI

Control Locks ..... LOCKED

Flaps ..... UP

Transponders and Radar ..... STBY

Landing / Taxi / Strobe Lights ..... As necessary

Ignitions ..... OFF

Anti-icing ..... OFF

(0) Mission Equipment ..... As necessary

Air Conditioning ..... As necessary

SINGLE ENGINE TAXI

Shedding Buses..... Emergency
Left Generator ..... OFF
(PNF) Start Master ..... Armed, if restarting
Normal, if shutdown
Left Power Lever..... FLIGHT IDLE
(PNF) Left Fuel Lever..... OFF
(PNF) Left Prop Lever ..... FEATHER

PRIOR TO LEFT ENGINE RESTART

Parking Brake ..... ON
FMSs STANDBY
Avionics Master ..... OFF
APX 100 Transponder ..... Code Hold / OFF
Air Conditioning and Fans ..... OFF
★ Second Engine (27)..... Start
After Start Checks (10) ..... Perform

SHUTDOWN CHECKS

Parking Brake ..... ON

Emergency Brake System ..... EMERGENCY

Power Levers ..... FLIGHT IDLE

FMS ..... OFF/Standby

Avionics Master ..... OFF

APX 100 Transponder ..... Code Hold/OFF

Shedding Buses ..... EMERGENCY

Anti-Icing ..... OFF

Emergency Lights ..... OFF

Taxi Lights ..... OFF

Air Conditioning and Fans ..... OFF

Air Conditioning Mode Switches ..... MANual

Fuel Levers ..... OFF

Prop Levers ..... FEATHER

Lights ..... As necessary

Booster Pumps ..... OFF

Generators ..... OFF

Main Hydraulic Pressure ..... 0 indicated

Batteries ..... OFF

Electrical Master ..... OFF

Flight Clocks ..... ZERO

BEFORE LEAVING THE AIRCRAFT

All Electrics ..... OFF

Oxygen Regulator Switches ..... NORMAL, 100%, OFF

Emergency Pax Compartment Lights ..... RESET

Emergency Flight Compartment Lights..... OFF

Exterior Walk-around ..... Complete

Aircraft Security Check ..... Complete

LONG TERM PARKING

Propeller Ties ..... Attach

Engine Protective Covers and Bungs ..... In

Pitot Covers ..... On

Landing Gear Pins ..... In

Main Wheels..... Chocked

Aircraft Tie-downs..... Attach

DETAILED PROCEDURES

FORMS AND PUBLICATIONS

AFM and Crew Manual
Checklist
Aircraft Logbook
Weight & Balance File
Required Equipment List
Fuel Cards
UNS Operator's Manual
Weather Radar Operator's Manual
Stormscope Operator's Manual
(O) AN/AAR-57 CMWS Operator's Manual
Other mission specific or locally required publications

EMERGENCY EQUIPMENT

First Aid kits
Crash axe
Smoke hoods
Fire extinguishers (and wand, if required)
Survival kits, rafts, and other mission or locally required equipment

PASSENGER BRIEFING (BRIEF ITEMS AS REQUIRED)

INTRODUCTION and general information
- Destination, parking location
- Flight Route, Altitude and Time
- Weather
- Hearing Protection
- Seat Belts & Signs
- Seat Backs & Tray Tables (If Installed)
- Overhead Lights/Ducts
- Oxygen System (If required for the flight)
- Aeromedical (Val salva, hypoxia, airsickness bags, etc.)
- Comfort Equipment (If Installed)

EMERGENCY INFORMATION
- Normal Exits
- Emergency Exits (Procedures & Floor Lighting)
- Emergency Equipment (Fire Ext., First Aid Kits, Crash Ax)
- Survival Equipment (Survival Kits, Radio, Life Vests, Rafts)

SPECIFIC RESTRICTIONS
- No Tobacco Use
- Electronic Equipment Usage (PC's, Phones etc.)
- No LASER pointing devices
- Additional requirements, per unit SOP

DETAILED PROCEDURES

PRE-JUMP BRIEFING (Mandatory final coordination briefing conducted by PC and attended by all crewmembers, including jump masters. Conducted prior to safety briefing.)

MISSION OVERVIEW
- Sortie / Manifest Information
- Special Requirements
- Restrictions
- Weather
- Jump Unit Briefing Time/Assignments
- Safety Observer Required?

PICKUP INFORMATION
- Location
- Time

DROP ZONE INFORMATION
- Location Markings
- Time
- Altitude
- Airspeed
- Heading
- Check Points

COMMUNICATIONS
- Call Signs and Frequencies
- Visual Signals

EMERGENCY PROCEDURES
- Equipment
- Emergency Bell
- Exits

PARA-DROP SAFETY BRIEFING (Mandatory briefing conducted by primary FE and attended by all personnel participating in the jump operation.)

CREW INTRODUCTION

FLIGHT DATA
- Route to Drop Zone
- Altitude (enroute to drop zone)
- Time (enroute to drop zone)
- Weather

ENTRY / EXIT OF AIRCRAFT

SEATING/SEAT BELTS

PERSONNEL
- Movement Inside/Outside/Around aircraft

COMMUNICATIONS
- Internal/External
- Hand Signals

SECURITY OF EQUIPMENT

SMOKING PROHIBITED

OXYGEN USE

REFUELING

WEAPONS

PROTECTIVE MASKS

ID TAGS

HEARING PROTECTION

ALSE

PARACHUTES (Automatic Opening Devices / Special Procedures)

HELMETS

EMERGENCY PROCEDURES (Equipment, Bell, Exits)

DETAILED PROCEDURES

NOTE: Detailed equipment check/test procedures are consolidated here and provided for reference. For initial training and checklist consistency they are presented in the "call and response" format. In normal operations they are to be performed from memory.

INVERTERS

Volts/freqs on both inverters ..... Check
Within limits, Left/Right EIs vertical, Standby EI lower half On.
Left Inverter ..... OFF
EIs indicate Standby transfers to Left, volts/freqs within limits.
Standby Inverter ..... Off
Volts/freqs Left zero, lower half Standby EI Off.
Right Inverter ..... OFF
Volts/freqs zero both sides, lower half Right EI Off.
Left Inverter ..... ON
Volts/freqs correct Left, Left EI vertical, Standby indicates transfer Right.
Standby Inverter ..... ON
Volts/freqs correct Right.
Right Inverter ..... ON
Volts/freqs correct Right, Standby Inverter standby, all EIs vertical.

PITOT/STATIC/STALL

Pitot/Static/Stall Switches ..... ON
Pitot L&R EIs (CWP)..... Off
Static & Stall-LOW EIs..... On
Stall Warning Test Switches ..... TEST, one at a time
Stall-HI EI On, Stick Shaker, Warning Horn, Light, On.
Stall Warning Test Switches ..... Release, check normal indications
Pitot/Static/Stall Switches ..... OFF

FUEL CROSSFEED VALVE

Crossfeed Valve ..... OPEN
EIs On.
One Booster Pump ..... ON
Both CWP Fuel Pressure lights Off.
Crossfeed Valve ..... SHUT
EIs Off, CWP Fuel Pressure Light on OFF Side On.
Booster Pump ..... OFF
Both Fuel Pressure Lights On.

GROUND PROXIMITY WARNING SYSTEM (GPWS)

Gear and Flap/INHIBIT..... Cancel, if required
GPWS TST..... Press
PULL UP, BELOW GS, GPWS FAIL – Illuminated.
“Glideslope, Whoop Whoop, Pull Up” ..... Audible warnings (3).
GPWS TST..... Release
Warnings should cease.
Gear and Flap/INHIBIT ..... Press
Check for amber INHIBIT.
Gear and Flap/INHIBIT..... Cancel

FLIGHT DATA RECORDER

DAY/MONTH/FLT LEG/FLT NUMBER..... Enter
GROUND CHECK Switch ..... GROUND CHECK
Hold for 20 seconds and ensure FAULT light remains out.
FAULT Light ..... Press to check filament
Documentary Data Insert (DDI) Button..... Press and release

RESERVE POWER SYSTEM

Reserve Power Switches..... ARM
Control Locks ..... UNLOCKED
Full and free movement.
Power Levers ..... Forward
Reserve Power EIs RTOP ON.
Power Levers ..... FLIGHT IDLE
Reserve Power Els Off.
Control Locks ..... LOCKED

AIR CONDITIONING

Engine Bleed Switches ..... OFF
Anti-Fog Switch ..... OFF
Main and Gasper Fans..... OFF
Mode Switches..... MANual
Auto Control Switch..... PILOT

ENGINE START

Start Switch ..... START
Ignition Switches (Ng more than 10%)..... NORM
Fuel Lever (Ng more than 12% and stable) .. GROUND
ITT ..... Monitor, NTE
1000° Max / 5 secs
Start & Ignition Lights ..... Off above 50% Ng
Engine Oil Pressure ..... Minimum 90 psi
Hydraulic Pressures (three gauges) ..... Green Area
Hydraulic Contents ..... Green Area

FLAPS

Flap Lever ..... 10°, 15°, 35°
Flap Lever ..... 15°, 10°, 0°
Flap Lever ..... Set for Takeoff

ANTI-ICING

(Perform before first flight of the day, and thereafter as necessary. Use ground or generated power. Visually confirm operation of De-ice Boots and Anti-Ice Vanes, if possible.)

De-icing Boots Timer Switch..... One minute, OFF
Operation of INNER, OUTER, TAIL segments, corresponding lights.
Wing and Tail Bleed Switches ..... SHUT, then NORM
Timer Switch ..... OFF
Ice Spot Light Switch ..... OFF
Ice Detector Switch..... OFF
Engine Anti-ice Vane Switches..... ON
NORMAL EI Off, In Transit (no indication), ANTI ICE EI On.
Engine Anti-ice Vane Switches..... OFF
ANTI ICE EI Off, In Transit (no indication), NORMAL EI On.

Engine Intake Heater Switches..... ON, one at a time
EI On, electrical load increases, system cycles Off, then back ON.
Engine Intake Heater Switches..... OFF
EIs Off, electrical load normal.
Propeller Anti-icing Switches ..... ON, one at a time
EI On, electrical load increases, system cycles Off, then back ON.
Propeller Anti-icing Switches ..... OFF
EIs Off, electrical load normal.
Windshield Heater Switches ..... ON, one at a time
EIs NORM, electrical load increases, await NORM Off, press EI, O/HEAT On.
Windshield Heater Switches ..... OFF
EIs Off, electrical load normal.

AVIONICS

(Perform before first flight of the day, and thereafter as necessary. Use ground or generated power. Obtain ATIS/ASOS and route clearance, if possible, then Test and Set for flight.)

Radar Altimeter – Pilot

Control Knob ..... Turn
Set DH bug >50', check DH lights On.
Control Knob ..... Press
Height needle indicates 1000 ± 100', DH lights Off, ADI Radar Altitude Indictors move vertically.
Control Knob ..... Release, height 0
Control Knob ..... Turn OFF

Flight Director - Pilot and Copilot

Flight Control Panel (FCP) Test Button ..... Press, release
Mode enunciators flash; GA, or GA and VS On, V-bars down.
Flight Control Panel (FCP) Test Button ..... Press, release
Mode enunciators flash; panel display clears, V-bars stowed.
Lateral and Vertical Modes..... Set for takeoff

Altimeter – Pilot and Copilot

Current Altimeter Setting ..... Set
Altimeter Error ..... Check
Indicated altitude within 75' of field elevation.
Altitude Preselector ..... Set within 1000' of field elevation
PTT Button ..... Press, hold
OFF Flag visible, pointer increases a minimum of 300 to 800', aural tone, light and OFF flag on altitude preselector.
PTT Button ..... Release
OFF flags masked, normal indications resume.

ADF – Pilot

ADF Audio Switch (P & CP) ..... On
EHSI and/or RMI (P & CP) ..... Select ADF
ADF Nav Receiver..... Tune AM/NDB
Audio present and EHSI/RMI Bearing Pointer active.
Receiver Test Button..... Press
Pointer rotates 90°, receiver active frequency display shows four dashes, preset display shows 00 (if receiving a signal), display lighting varies intensity, 1kHz tone heard.
Receiver Test Button..... Release
Pointer returns to original direction, display items and audio resume normal operation.
ADF Nav Receiver..... Set for flight

VHF Navigation – Pilot and Copilot

VOR

NAV Id/Voice Audio Switches ..... ON
RMI ..... Select VOR
NAV Selector Switch ..... VHF NAV Mode
EHSI Course..... Set 360
VHF Nav Receiver..... Tune VOR frequency
Identifier/voice (if station available), RMI Bearing Pointer active.
Receiver Test Button ..... Press
EHSI NAV enunciator On, then Off; RMI pointer at 360, EHSI course deviation bar centered with TO indication, receiver active frequency display shows four dashes, preset display shows 00, display lighting varies intensity.
Receiver Test Button ..... Release
Pointer returns to original direction, display items and audio resume normal operation.

ILS/ MARKER BEACON

MKR Audio Switches ..... ON
EHSI Course..... Set w/in 105° of aircraft heading (enables G/S display)
VHF Nav Receiver..... Tune localizer freq
Receiver Test Button ..... Press
NAV and glide slope enunciators On, then Off; course deviation bars indicate one dot right and glide slope one dot low (on both EHSI and ADI), receiver active frequency display shows four dashes, preset display shows 00, display lighting varies intensity, a 30 Hz tone heard, and Marker lights flicker.
Receiver Test Button ..... Release
Display items and audio resume normal operation.

ATC Transponder – Copilot

Code ..... Set
Power/Mode Switch..... ON
Transponder Test Button ..... Press
Display lighting varies intensity, "AL" is displayed in upper window, pressure altitude in thousands/hundreds of feet displayed in lower window.
Transponder Test Button ..... Release
Display resumes normal operation.
Power/Mode Switch..... STBY
Note: If a fault is detected, "dIAG" is displayed in the upper window and a two-digit diagnostic code is displayed in the lower window. Report fault codes to maintenance.
Code ..... Set ATC assigned

VHF/UHF/FM Transceiver – Pilot and Copilot

COM Audio Switches ..... ON
Mode Selector Knob..... T/R
Frequency Mode Selector ..... Select non-ATC freq
Handwheel Transmit Switch..... Key for 3 seconds
Mode Selector Knob..... TEST
Satisfactory BIT indicated by tone, then 888.888 in display.
Mode Selector Knob..... T/R or T/R & G
Note: Display of fault codes or a decimal point indicates BIT failure. Report fault codes to maintenance.

Weather Radar - Pilot

WARNING

DO NOT TURN THE WEATHER RADAR TO ANY POSITION EXCEPT OFF, STBY, OR TEST WHEN THE ANTENNA WILL BE DIRECTED TOWARD GROUND PERSONNEL, NEARBY HANGARS OR OTHER LARGE METAL BUILDINGS, OR OTHER AIRCRAFT. MAKE SURE ALL PERSONNEL ARE CLEAR OF THE ANTENNA RADIATION HAZARD AREA (60 DEGREES EITHER SIDE OF AIRCRAFT HEADING). NEVER OPERATE THE RADAR DURING FUELING OR DEFUELING OPERATIONS.

Mode Pushbutton Switch..... STBY (minimum 1 min)
Range Pushbutton Switch 25
Gain Control Knob..... Set to MAX
Tilt Control Knob..... Set to +5 degrees
Mode Pushbutton Switch ..... TST
Test pattern consists of green, yellow, red, yellow, green bands; note center band alternates red and black at a 1-1 rate; no video noise on display.
In uncongested areas, continue as follows:
Mode Pushbutton Switch..... WX momentarily, then reselect TEST
HOLD Switch ..... ON
Test pattern ”freezes” on the display.
HOLD Switch ..... OFF
Display resumes normal updating.
Mode Pushbutton Switch..... WX
Range Pushbutton Switch 10
Range marks at 2, 4, 6, 8, and 10 miles.
Tilt Control Knob..... Adj +15 to -5 deg
Close-in ground clutter appears at lower settings; local detectable weather at higher settings.
Mode Pushbutton Switch..... STBY

Stormscope - Pilot

OFF/Bright Control Knob ..... On, bright
Mode Legend..... Displays “Self Test”
Mode Legend..... Displays “All Tests OK” then “Main Menu” after satisfactory completion of internal checks.
UP/DOWN Control Buttons..... Select operating mode
Note: Test completion takes approximately 15 seconds. If system was turned on cold, self-test may complete before display filament warms up. In this case initial display will be Main Menu.

IFF Transponder - Pilot

Modes 1, 2, and 4 ..... Set/Load
Master Switch ..... STBY (2min)
IFF STANDBY and TEST/MON NO-GO Indicator Lights On, TEST/GO Indicator Light Off.
Mode 3A Pushbuttons ..... Set code 1200
Master Switch ..... NORM
IFF STANDBY and TEST/MON NO-GO indicators Out.
Mode 1 Switch ..... TEST
TEST/GO indicator light On.
Mode 1 Switch ..... As necessary
Repeat for Mode 2, Mode 3/A and Mode C.
MODE 4 AUDIO/LIGHT/OUT Switch ..... OUT
MODE 4 TEST/ON/OUT Switch ..... TEST
If computer in use observe the TEST/GO indicator lights. If computer not in use observe the TEST/MON NO-GO and KIT STATUS indicator lights. Observe MODE 4 REPLY and MODE 4 caution indicator lights Out.
MODE 4 TEST/ON/OUT Switch ..... OUT
Master Switch ..... STANDBY
Mode 3 Code ..... Set ATC assigned

UNS-1K FMS – Set at Pilot and Copilot Stations

#1 (Pilot)

Date, Time, Database, Version..... Verify correct
Line Select Key..... ACCEPT
FPL Function Key ..... Press
Page 1 of Active Flight Plan displayed. Use CDU Keys to enter departure procedure (if known), flight plan route and destination.
(Optional) FPL or NEXT Key ..... Press
FLIGHT PLAN SUMMARY page displayed. Use CDU Keys to enter departure time (UTC), time conversion, TAS, fuel flow, arrival time conversion, and required fuel reserve. Compare displayed fuel required with planned fuel required. Check flight plan route entered for data entry error if mismatch occurs.

FUEL Key ..... Press
Page 1 of 5 displayed. Use CDU Keys to enter Operating Weight, pax, cargo, and fuel onboard. Compare displayed gross weight with FE's computed Weight and Balance Takeoff Gross Weight.
FUEL or NEXT Key ..... Press
Page 2 of 5 displayed. Line Select and enter time conversion.
FUEL or NEXT Key ..... Press
Page 3 of 5 displayed. No entry required.
FUEL or NEXT Key ..... Press
Page 4 of 5 displayed. No entry required.
FUEL or NEXT Key ..... Press
Page 5 of 5 displayed. Line Select and enter #1 Fuel Flow. Repeat for #2 Fuel Flow.
PERF Key ..... Press
Verify aircraft weight, fuel quantity, and fuel endurance.
NAV Key ..... Press
Page 1 of 2 displayed, FMS ready for service.

#2 (Copilot) (after #1 is readied, above)
Line Select Key ..... MASTER XFILL
Line Select Key ..... FROM FMS #1
Line Select Key ..... ACCEPT
FUEL Key ..... Press
Page 2 of 5 displayed, time conversion crossfilled.
PREV Key ..... Press
Page 1 of 5 displayed, all data crossfilled.
PREV Key ..... Press
Page 5 of 5 displayed. Line Select and enter #1 Fuel Flow. Repeat for #2 Fuel Flow.
NAV Key ..... Press
Page 1 of 2 displayed, FMS ready for service.

Autopilot – Pilot and Copilot (Perform first flight of day.)
Note: Center EHSI HDG bug if HDG is selected on FCP.

Control Locks ..... UNLOCK
Check full freedom of movement.
Elevator Trim ..... Neutral
Autopilot Control Transfer Switch ..... Xfer right, verify Xfer
Flight Controls ..... Xfer to Right Seat Pilot

Right Seat Pilot –
1) Autopilot Engage Button ..... ON
Green AP and YAW on Flight Director Control Panel (FCP) and Autopilot Control Panel (APP), green AP ENG on 1P Panel EI.
Elevator Yoke Trim Switch ..... Operate one half

Autopilot disengages, amber AP DIS on FCP, APP and 1P Panels, Yaw Damper still engaged. Reset AP DIS EIs by pressing the switch/indicator.

Elevator Yoke Trim Switch..... Operate each half
Elevator trim wheel does not move.

Elevator Yoke Trim Switches..... Operate both together
Elevator trim wheel moves in commanded direction.

2) Autopilot Engage Button ..... ON, check green

Autopilot Yoke Disconnect Button..... Press
Autopilot and yaw damper disengaged, appropriate amber indications.

3) Autopilot Engage Button ..... ON, check green

Autopilot Control Transfer Switch ..... Xfer to Left Seat Pilot
Transfer completed, autopilot and yaw damper disengaged, appropriate amber and directional indications.

Flight Controls ..... Xfer to Left Seat Pilot

Left Seat Pilot –

Repeat the first two steps as described above. Then,

Autopilot Engage Button..... ON, check green

Autopilot Engage Button..... OFF, check amber

Autopilot Yaw Engage Button..... OFF, check amber
Reset the AP DIS EIs by pressing the switch/indicator.

Flight Controls ..... LOCK

CREW BRIEFING

State takeoff weight and power settings for MTOP, RTOP, MCP. State desired flap setting and verify position.

Normal Takeoff: State V1(Bug Right); Vr; V2 (Bug Left); V2+15; Vyse; Vy.

Military T/O: State Vcrit (Bug Right); Vr; 1Vco (Bug Left); 2Vco; Vyse.

Brief crew for emergency before/after V1/Vcrit. (Use own words.) Sample: “Any crewmember can abort the takeoff prior to V1 (Vcrit) by calling ABORT, ABORT, ABORT and we’ll stop on the runway. After V1 (Vcrit) we’ll continue the takeoff and handle the problem in-flight. We’ll remain VMC and return here for landing. Any questions?” (Add military takeoff taxi/line-up considerations, departure procedures, weather void time, fuel for mission, tactical considerations, etc. as appropriate.)

NOTE: For right seat takeoffs Bug V1/Vcrit Left, Bug V2/1Vco Right, except when IP demonstration is in progress.

FERRY FUEL PROCEDURES

Limitations, Procedures, and Information for Flights with a 360 Gallon Long-Range Fuel Tank Installed (Condensed from AFM Supplements).

Use of Aircraft - The aircraft shall not be used for the purpose of public transport or aerial work, and flights may be made solely to reach a place at which it is intended to use the aircraft in its normal role.

Carriage of Persons - No person shall be carried who is not a member of the crew or who is not necessary for the safety of the aircraft during the flight.

Maximum Takeoff Weight
C-23B – 27,100 lbs
C-23B+ - 25,600 lbs

Limitations When Above 25,600 lbs:

Required Log Book Entry – Make an appropriate entry in the aircraft logbook and increase the number of flights by 10 in the accumulated total number of flights.

Maximum Ramp Weight – 27,200 lbs
Maximum Landing Weight – 25,800 lbs

Rough Air Conditions (Vra)
27,100 lbs – 162 KIAS
26,400 lbs – 161 KIAS

Runway Surface - No take-off shall be attempted except from a smooth, hard-surfaced runway.

Center of Gravity – Refer to chart on pg. 15 of AFM Supp. 13.

Rear Ramp Door Operation – Do not open the ramp door in flight.

Reserve Power System – Must be operative and armed for takeoff.

Maneuvering Limits (0 Flaps) - +2.75 to -1.0g.

TOLD – Refer to performance charts in AFM Supplement 13.

Normal Procedures:

Pre-flight Checks
Check contents with dipsticks
Long Range Drain Valve..... SHUT
Long Range Isolation Valve..... OPEN
Long Range Booster Pumps (2) ..... OFF
Normal aircraft checks ..... Complete

After Starting Engines - Complete normal starting checks, then:
Crossfeed Valve ..... OPEN
Main System Booster Pumps (2) ..... OFF
Long Range LP Lights (2)..... On
Fuel L & Fuel R Lights ..... On
Switch ON each Long Range Booster Pump in turn to check that the associated Long Range LP and the Fuel L & Fuel R Lights go out. Switch each pump OFF before switching the next pump ON.
Main System Booster Pumps (2) ..... ON
Crossfeed Valve ..... SHUT
Fuel L & Fuel R Lights (2)..... Out

Takeoff - Use the main fuel system normally.

After Takeoff - Use main system to top of climb, then:
Long Range Booster Pumps (2) ..... ON
Long Range LP Lights (2)..... Out
Crossfeed Valve ..... OPEN
Main System Booster Pumps (2) ..... OFF
Fuel L & Fuel R Lights (2)..... Out

Fuel L & Fuel R Lights - On (Long-Range Tank is empty)
Main System Booster Pumps (2) ..... ON
Crossfeed Valve ..... SHUT
Fuel L & Fuel R Lights (2)..... Out
Long Range Booster Pumps (2) ..... OFF
Long Range Isolation Valve..... SHUT

Abnormal Procedures:

Booster Pump Failure
Long Range LP Lights (2)..... On
Panel 1D, Row 3, CB 316..... In
Panel 2D, Row 3, CB 367..... In
Failed Long Range Booster Pump ..... OFF
The system will operate normally on the remaining pump.

Main Fuel System Contents Increase

CAUTION
Regularly check that the contents of the main fuel tanks remain stable. A leaking non-return valve in the main fuel system would allow fuel from the ferry tank to enter the main tanks. Should the contents of either main tank increase, it will be necessary to occasionally switch on the appropriate main tank pump and switch off the ferry pumps to reduce the level of fuel. Otherwise, fuel will be lost overboard from the main tanks vent.

PERFORMANCE
C-23B
NORMAL TAKE-OFF AND CLIMB SPEEDS

Weight x 1000 lbs		18	19	20	21	22	23	24	25	25.6
FLAPS 15°	V_R	87	87	87	88	91	93	95	97	99
	V_2	88	88	88	90	92	94	96	98	99
FLAPS 10°	V_R	87	88	90	93	95	98	100	102	104
	V_2	88	89	92	94	96	99	101	103	105
1 V_{FR} 15 TO 10° and V_{YSE}		91	93	95	97	100	103	105	107	109
FLAPS 0°	2 Eng Climb	124	124	124	126	128	130	132	134	135

NORMAL LANDING SPEEDS

Weight x 1000 lbs	18	19	20	21	22	23	24	25.1
FLAPS 35°	90	90	90	92	94	96	98	101
FLAPS 15°	95	95	95	97	99	102	104	106
FLAPS 0°	102	105	108	111	113	117	120	123

MILITARY TAKE OFF AND CLIMB SPEEDS

FLAPS 15°

Weightx1000 lbs		18	19	20	21	22	23	24	25	25.6
2 ENGINE	V_R	80	80	80	81	83	85	86	88	89
	V_{CO}	91	92	93	94	95	96	97	98	99
1 ENGINE	V_{CO}	85	85	85	86	88	90	92	94	95
$1V_{FR}$ 15°-10° and V_{YSE}		91	93	96	98	101	103	105	108	109
$2V_{FR}$ 15°-10°		103	103	103	105	107	109	111	113	114
$2V_{FR}$ 10°-0°		103	104	107	109	111	114	116	118	119

MILITARY LANDING SPEEDS

FLAPS 35°

Weight x 1000 lbs		18	19	20	21	22	23	24	25.1
LAND DIST (5.2°)	V_{REF}	85	87	90	92	94	96	98	101
GND. ROLL (3.0°)		84	84	86	88	90	92	94	96

NOTE: ALL SPEEDS ROUNDED UP TO NEAREST KNOT.

PERFORMANCE
C-23B+
NORMAL TAKE-OFF AND CLIMB SPEEDS

Weight x 1000 lbs		18	19	20	21	22	23	24	25	25.6
FLAPS 15°	V_R	87	87	88	90	93	95	97	100	101
	V_2	88	88	90	92	94	96	98	100	101
FLAPS 10°	V_R	87	90	92	95	97	100	102	105	106
	V_2	89	92	94	96	98	101	103	105	107
1 V_{FR} 15 TO 10° and V_{YSE}		93	95	97	100	102	105	107	110	111
FLAPS 0°	2 Eng Climb	124	124	126	127	129	131	134	136	137

NORMAL LANDING SPEEDS

Weight x 1000 lbs	18	19	20	21	22	23	24	25.1
FLAPS 35°	90	90	92	94	96	99	101	103
FLAPS 15°	95	95	97	99	101	104	106	108
FLAPS 0°	104	107	110	113	115	119	122	126

MILITARY TAKE OFF AND CLIMB SPEEDS

FLAPS 15°

Weightx1000 lbs		18	19	20	21	22	23	24	25	25.6
2 ENGINE	V_R	80	80	81	83	85	86	88	90	91
	V_{CO}	92	93	94	95	97	98	99	100	101
1 ENGINE V_{CO}		86	86	86	88	90	92	94	96	97
1V_{FR} 15°-10° and V_{YSE}		93	95	98	100	103	105	107	110	111
2V_{FR} 15°-10°		103	103	105	106	109	111	113	115	116
2V_{FR} 10°-0°		104	106	108	111	113	115	118	120	121

MILITARY LANDING SPEEDS

FLAPS 35°

Weight x 1000 lbs		18	19	20	21	22	23	24	25.1
LAND DIST (5.2°)	V_{REF}	88	90	92	94	97	99	101	103
GND. ROLL (3.0°)		84	86	88	90	92	94	96	98

NOTE: ALL SPEEDS ROUNDED UP TO NEAREST KNOT.
.

MTOP TORQUE -70kt
NORMALTAKE-OFF

IOAT°C	-36	-30	- 24	-18	-12	-6	0	6	12	18	24	30	36	42	50
≈ °F	-33	-22	-11	-1	10	21	32	43	54	64	75	86	97	108	122
8000 FT	3525	3555	3585	3615	3640	3525	3415	3285	3150	3015	2860	2695	2540	----	----
7000 FT	3615	3645	3670	3700	3730	3675	3560	3430	3285	3145	2985	2820	2660	----	----
6000 FT	3615	3645	3670	3700	3730	3750	3710	3575	3430	3285	3120	2950	2780	2605	----
5000 FT	3615	3645	3670	3700	3730	3750	3750	3720	3565	3420	3250	3070	2895	2715	----
4000 FT	3615	3645	3670	3700	3730	3750	3750	3750	3705	3550	3375	3190	3010	2820	----
3000 FT	3615	3645	3670	3700	3730	3750	3750	3750	3750	3685	3505	3315	3125	2930	----
2000 FT	3615	3645	3670	3700	3730	3750	3750	3750	3750	3750	3635	3440	3245	3045	2775
1000 FT	3615	3645	3670	3700	3730	3750	3750	3750	3750	3750	3750	3570	3365	3160	2880
0	3615	3645	3670	3700	3730	3750	3750	3750	3750	3750	3750	3710	3495	3280	2990

NOTE: DO NOT EXCEED 820°C ITT. WITH ANTI-ICE VANES ON, ADD 4°C TO IOAT.

RTOP TORQUE – 110 KIAS
CONTINUED SINGLE ENGINE TAKE-OFF & GO-AROUND

IOAT°C	-36	-30	-24	-18	-12	-6	0	6	12	18	24	30	36	42	50
APPROX°F	-33	-22	-11	-1	10	21	32	43	54	64	75	86	97	108	122
8000 FT	4020	4130	4080	4110	4140	4065	3950	3830	3690	3550	3400	3240	3080	----	----
7000 FT	4130	4160	4190	4215	4240	4230	4115	3990	3845	3700	3550	3380	3215	----	----
6000 FT	4150	4175	4205	4230	4260	4290	4285	4155	4005	3860	3705	3525	3355	3180	----
5000 FT	4165	4195	4225	4250	4280	4310	4310	4310	4165	4015	3855	3670	3490	3310	----
4000 FT	4185	4215	4240	4270	4295	4325	4325	4325	4325	4165	4000	3810	3625	3440	----
3000 FT	4205	4230	4260	4290	4315	4345	4345	4345	4345	4320	4150	3955	3765	3570	----
2000 FT	4225	4250	4280	4305	4335	4365	4365	4365	4365	4365	4305	4100	3905	3700	3425
1000 FT	4245	4270	4300	4325	4355	4385	4385	4385	4385	4385	4385	4250	4045	3840	3555
0 FT	4265	4290	4320	4350	4375	4400	4400	4400	4400	4400	4400	4400	4200	3905	3690

NOTE: DO NOT EXCEED 855°C ITT. WITH ANTI-ICE VANES ON, ADD 4°C TO IOAT

MCP TORQUE - 110kt

SINGLE ENGINE EN-ROUTE CLIMB

IOAT°C	-36	-30	-24	-18	-12	-6	0	6	12	18	24	30	36	42	50
APPROX°F	-33	-22	-11	-1	10	21	32	43	54	64	75	86	97	108	122
20000 FT	2425	2455	2485	2515	2455	2380	2300	2225	2150	----	----	----	----	----	----
19000 FT	2525	2560	2590	2620	2560	2480	2400	2320	2245	----	----	----	----	----	----
18000 FT	2630	2665	2695	2730	2665	2585	2500	2420	2340	2335	----	----	----	----	----
17000 FT	2740	2775	2810	2840	2775	2690	2605	2515	2435	2330	----	----	----	----	----
16000 FT	2855	2890	2925	2960	2890	2800	2710	2620	2535	2430	----	----	----	----	----
15000 FT	2975	3010	3045	3080	3010	2915	2825	2730	2640	2530	2420	----	----	----	----
14000 FT	3095	3135	3175	3210	3135	3035	2940	2840	2745	2635	2520	----	----	----	----
13000 FT	3220	3260	3295	3335	3260	3160	3055	2955	2855	2740	2620	----	----	----	----
12000 FT	3350	3390	3430	3470	3395	3285	3180	3075	2970	2850	2725	2605	----	----	----
11000 FT	3485	3530	3570	3610	3530	3420	3305	3200	3095	2965	2835	2710	----	----	----
10000 FT	3625	3670	3715	3755	3670	3555	3440	3325	3215	3085	2950	2820	----	----	----
9000 FT	3775	3820	3825	3825	3820	3705	3585	3465	3350	3215	3075	2940	2795	----	----
8000 FT	3825	3825	3825	3825	3825	3825	3735	3610	3485	3350	3205	3060	2915	----	----
7000 FT	3825	3825	3825	3825	3825	3825	3825	3755	3630	3490	3355	3190	3040	----	----
6000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3780	3635	3475	3325	3170	3010	----
5000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3825	3775	3610	3450	3290	3125	----
4000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3740	3575	3410	3235	----
3000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3705	3530	3350	3230
2000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3655	3470	3340
1000 FT	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3825	3780	3590	3460

NOTE: DO NOT EXCEED 840°C ITT. WITH ANTI-ICE VANES ON, ADD 4°C TO IOAT. WITH AIR CONDITIONING ON, ADD 7°C TO IOAT.

RTOP-TORQUE STATIC
MILITARY TAKE-OFF

IOAT°C	-36	-30	- 24	-18	-12	-6	0	6	12	18	24	30	36	42	50
≈ °F	-33	-22	-11	-1	10	21	32	43	54	64	75	86	97	108	122
8000 FT	3950	3980	4010	4040	4060	3950	3840	3710	3570	3440	3280	3120	2965	----	----
7000 FT	4060	4085	4115	4140	4170	4115	4000	3870	3725	3585	3425	3260	3100	----	----
6000 FT	4075	4100	4130	4155	4185	4200	4165	4030	3885	3740	3575	3405	3235	3060	----
5000 FT	4090	4120	4145	4175	4200	4225	4225	4195	4040	3890	3725	3545	3370	3190	-----
4000 FT	4110	4135	4165	4190	4220	4240	4240	4240	4195	4040	3865	3680	3500	3310	----
3000 FT	4130	4155	4185	4210	4240	4260	4260	4260	4260	4195	4015	3825	3635	3440	----
2000 FT	4150	4175	4200	4230	4255	4280	4280	4280	4280	4280	4165	3965	3775	3570	3300
1000 FT	4165	4195	4220	4250	4275	4300	4300	4300	4300	4300	4300	4115	3915	3705	3425
0	4185	4215	4240	4270	4295	4315	4315	4315	4315	4315	4315	4270	4055	3850	3560

NOTE: DO NOT EXCEED 855° ITT. WITH ANTI-ICE ON, ADD 4° TO IOAT.

MTOP TORQUE - 110kt
TWO ENGINE GO-AROUND

IOAT°C	-36	-30	-24	-18	-12	-6	0	6	12	18	24	30	36	42	50
≈ °F	-33	-22	-11	-1	10	21	32	43	54	64	75	86	97	108	122
8000 FT	3685	3615	3645	3680	3710	3630	3520	3395	3255	3120	2970	2805	2645	----	----
7000 FT	3685	3710	3740	3770	3795	3785	3665	3540	3395	3255	3105	2930	2765	----	----
6000 FT	3685	3710	3740	3770	3795	3825	3820	3690	3540	3395	3240	3060	2890	2715	----
5000 FT	3685	3710	3740	3770	3795	3825	3825	3825	3685	3530	3370	3185	3010	2830	----
4000 FT	3685	3710	3740	3770	3795	3825	3825	3825	3820	3665	3500	3310	3125	2935	----
3000 FT	3685	3710	3740	3770	3795	3825	3825	3825	3825	3800	3630	3435	3245	3050	----
2000 FT	3685	3710	3740	3770	3795	3825	3825	3825	3825	3825	3765	3560	3365	3165	2885
1000 FT	3685	3710	3740	3770	3795	3825	3825	3825	3825	3825	3825	3695	3490	3280	2995
0 FT	3685	3710	3740	3770	3795	3825	3825	3825	3825	3825	3825	3825	3620	3405	3110

NOTE: DO NOT EXCEED 820°C ITT. WITH ANTI-ICE VANES ON. ADD 4°C TO IOAT.

MAXIMUM RECOMMENDED CRUISE POWER

1425 PRPM

IOAT°C / P ALT	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	50
0																									3625	3540	3400	3265	3130	2995	2910
1000																								3625	3545	3410	3275	3145	3015	2885	2800
2000																							3625	3550	3420	3290	3160	3035	2910	2785	2710
3000																						3625	3555	3430	3300	3180	3055	2930	2815	2690	2615
4000																					3625	3545	3430	3310	3185	3065	2950	2830	2715	2600	
5000																				3625	3530	3420	3310	3195	3075	2960	2845	2730	2620		
6000																		3625	3615	3510	3400	3295	3190	3080	2965	2855	2745	2635	2525		
7000																	3625	3580	3475	3370	3265	3165	3065	2950	2845	2735	2625	2520			
8000																3625	3535	3430	3330	3230	3125	3025	2930	2825	2715	2610	2505				
9000														3625	3580	3485	3385	3285	3185	3085	2990	2895	2800	2695	2595	2490	2390				
10000												3625	3620	3525	3430	3335	3240	3140	3050	2955	2865	2770	2675	2575	2475	2375					
11000											3625	3560	3470	3375	3285	3195	3105	3010	2920	2825	2735	2650	2555	2460	2360						
12000									3625	3585	3500	3410	3320	3235	3145	3060	2970	2880	2790	2705	2615	2530	2440	2345	2250						
0																								3625	3500	3360	3220	3085	2950	2815	2730
1000																							3625	3500	3360	3225	3095	2960	2830	2705	2620
2000																						3625	3505	3370	3235	3110	2980	2855	2730	2605	2525
3000																				3625	3610	3495	3375	3245	3120	2995	2870	2750	2630	2510	2430
4000																			3625	3595	3480	3365	3250	3130	3005	2885	2765	2645	2530	2415	
5000																		3625	3575	3460	3350	3235	3130	3010	2895	2775	2660	2550	2435		
6000																	3625	3550	3440	3330	3220	3115	3015	2900	2780	2670	2560	2450	2340		
7000															3625	3620	3515	3405	3300	3190	3090	2985	2880	2770	2660	2550	2440	2330			
8000														3625	3565	3465	3360	3255	3150	3045	2945	2845	2745	2640	2530	2425	2320				
9000												3625	3610	3510	3410	3310	3210	3110	3005	2910	2810	2715	2615	2510	2405	2305	2205				
10000											3625	3545	3450	3360	3260	3160	3065	2970	2870	2775	2680	2585	2490	2390	2290	2195					
11000									3625	3565	3485	3395	3300	3205	3115	3020	2925	2835	2740	2645	2555	2465	2370	2275	2180						
12000							3625	3555	3485	3410	3330	3240	3155	3065	2975	2885	2795	2700	2610	2520	2430	2350	2260	2165	2075						
0																															
1000																															
2000																															
3000																															
4000																3625	3620														
5000															3625	3585	3485														
6000														3625	3550	3450	3335														
7000													3625	3595	3500	3405	3310	3215													
8000											3625	3530	3440	3350	3260	3170	3080														
9000								3625	3610	3540	3465	3380	3290	3205	3120	3030	2945														
10000						3625	3590	3525	3455	3390	3320	3240	3155	3070	2980	2900	2815														
11000				3625	3570	3505	3440	3375	3310	3250	3180	3095	3015	2935	2855	2775	2690														
12000	3625	3605	3545	3480	3420	3355	3295	3235	3170	3110	3040	2965	2890	2810	2730	2650	2570														

AIR CONDITIONING OFF
ANTI-ICE VANES OFF

TORQUE LIMIT 3625 LB FT
APPLIES IN THIS AREA

AIR CONDITIONING ON
ANTI-ICE VANES OFF

TORQUE LIMIT 3625 LB FT
APPLIES IN THIS AREA

AIR CONDITIONING ON
ANTI-ICE VANES ON

TORQUE LIMIT 3625 LB FT
APPLIES IN THIS AREA

AIR CONDITIONING OFF
ANTI-ICE VANES ON
Add 155 lb ft

NOT APPLICABLE

MAXIMUM RECOMMENDED CRUISE POWER

NOTE: ITT MUST NEVER EXCEED 770°C FOR CRUISE

PT6A-65AR

PT6A – 65AR 1425 PRPM

IOAT C	-40	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	50	IOAT C
Pressure Altitude -Feet																																Pressure Altitude -Feet
13000							3625	3570	3500	3430	3355	3265	3180	3095	3010	2925	2840	2755	2670	2585	2500	2325	2235									13000
14000					3625	3555	3485	3420	3355	3290	3210	3130	3045	2965	2880	2800	2715	2630	2550	2465	2385	2215										14000
15000		3625	3610	3540	3470	3410	3340	3275	3215	3150	3075	2995	2915	2835	2775	2675	2595	2515	2435	2350	2270	2105										15000
16000	3610	3520	3455	3390	3330	3265	3200	3135	3075	3015	2935	2860	2780	2705	2630	2550	2470	2390	2315	2235	3160	2080										16000
17000	3460	3370	3310	3245	3185	3120	3060	3000	2940	2880	2805	2730	2655	2580	2505	2430	2350	2275	2200	2120												17000
18000	3310	3225	3165	3105	3045	2985	2925	2865	2810	2750	2675	2605	2530	2455	2385	2310	2235	2160														18000
19000	3165	3085	3025	2970	2910	2850	2795	2740	2685	2625	2550	2480	2410	2340	2270	2195																19000
20000	3025	2950	2890	2835	2780	2720	2665	2610	2560	2495	2425	2355	2285	2220																		20000
13000				3625	3615	3545	3470	3400	3330	3265	3185	3100	3015	2925	2840	2755	2665	2575	2485	2405	2320	2240	2150	2060								13000
14000		3625	3600	3530	3455	3385	3320	3250	3185	3120	3045	2960	2875	2795	2710	2625	2535	2455	2375	2295	2215	2135	2045									14000
15000	3605	3510	3440	3375	3305	3240	3175	3110	3045	2985	2905	2825	2745	2665	2580	2505	2420	2340	2260	2185	2105											15000
16000	3480	3350	3285	3220	3160	3095	3030	2970	2905	2845	2770	2690	2615	2535	2460	2385	2305	2225	2150	2070												16000
17000	3285	3200	3140	3075	3015	2950	2890	2830	2770	2710	2640	2565	2490	2415	2340	2265	2190	2115														17000
18000	3140	3055	2995	2935	2875	2815	2755	2700	2645	2585	2515	2445	2370	2300	2225	2155																18000
19000	2995	2915	2855	2800	2740	2685	2635	2580	2525	2465	2395	2330	2255	2185																		19000
20000	2855	2780	2725	2670	2615	2565	2510	2460	2405	2345	2275	2210																				20000
13000	3535	3455	3395	3340	3275	3215	3155	3100	3040	2980	2910	2835	2760	2685	2610	2535	2455															13000
14000	3390	3310	3250	3195	3140	3080	3025	2965	2910	2855	2785	2710	2640	2565	2490	2420	2350															14000
15000	3245	3170	3115	3060	3005	2950	2895	2840	2785	2730	2660	2590	2520	2450	2385	2315	2245															15000
16000	3105	3035	2980	2930	2875	2820	2765	2715	2660	2605	2540	2475	2410	2340	2275	2205	2140															16000
17000	2970	2905	2850	2800	2750	2695	2645	2595	2545	2490	2425	2365	2300	2235	2170	2105																17000
18000	2840	2775	2725	2675	2625	2575	2530	2480	2435	2380	2320	2255	2190	2130																		18000
19000	2715	2650	2605	2560	2515	2465	2420	2375	2325	2270	2215	2155																				19000
20000	2600	2535	2495	2445	2400	2355	2310	2265	2220	2165																						20000

AIR CONDITIONING OFF
ANTI-ICE VANES OFF

AIR CONDITIONING ON
ANTI-ICE VANES OFF

AIR CONDITIONING ON
ANTI-ICE VANES ON

NOT APPLICABLE

NOTE: For Air Conditioning OFF, Anti-icing ON values read the Air Conditioning ON, Anti-icing ON values and add 155 lb ft.

The torque must not exceed 3625 lb ft.

MAXIMUM RECOMMENDED CRUISE POWER — 1300 PRPM

IOAT°C / P ALT	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	50
AIR CONDITIONING OFF ANTI-ICE VANES OFF																															
0																											3625	3570	3420	3275	3185
1000																										3625	3575	3435	3295	3155	3065
2000																									3625	3590	3450	3315	3180	3045	2960
3000																								3625	3600	3465	3335	3200	3070	2940	2855
4000																							3625	3610	3475	3345	3215	3090	2965	2840	
5000																						3625	3610	3480	3355	3230	3100	2960	2860		
6000																					3625	3590	3480	3360	3235	3110	2990	2875	2755	
7000																				3625	3560	3450	3340	3215	3100	2960	2865	2745			
8000																			3625	3515	3405	3295	3190	3075	2960	2845	2730				
9000																	3625	3575	3465	3360	3260	3155	3050	2935	2825	2715	2605				
10000																3625	3525	3420	3320	3215	3115	3015	2915	2805	2695	2590					
11000														3625	3570	3475	3375	3275	3175	3075	2980	2885	2780	2675	2570						
12000												3625	3615	3520	3420	3325	3230	3130	3035	2940	2845	2755	2655	2550	2450						
AIR CONDITIONING ON ANTI-ICE VANES OFF																															
0																										3625	3515	3370	3220	3075	2985
1000																									3625	3520	3375	3235	3095	2955	2865
2000																								3625	3530	3390	3255	3115	2980	2845	2760
3000																							3625	3540	3405	3265	3155	3005	2870	2740	2655
4000																						3625	3545	3410	3275	3150	3020	2890	2760	2640	
5000																					3625	3530	3410	3280	3155	3025	2905	2780	2655	
6000																				3625	3510	3395	3280	3155	3030	2915	2795	2670	2555		
7000																		3625	3590	3475	3360	3250	3135	3015	2895	2780	2660	2540			
8000																	3625	3540	3430	3315	3205	3100	2990	2875	2755	2640	2530				
9000															3625	3600	3495	3380	3270	3165	3060	2955	2850	2735	2620	2515	2400				
10000														3625	3545	3440	3330	3230	3125	3020	2915	2815	2710	2600	2495	2390					
11000												3625	3590	3485	3385	3285	3185	3080	2980	2880	2780	2680	2580	2475	2375						
12000											3625	3525	3430	3330	3235	3135	3040	2940	2840	2740	2645	2555	2455	2360	2260						
AIR CONDITIONING ON ANTI-ICE VANES ON																															
0																															
1000																															
2000																															
3000																															
4000																															
5000																															
6000																	3625														
7000															3625	3615	3510														
8000														3625	3555	3455	3355														
9000												3625	3590	3495	3400	3305	3205														
10000										3625	3620	3525	3435	3340	3250	3160	3065														
11000							3625	3610	3545	3460	3370	3285	3195	3110	3020	2930															
12000						3625	3590	3525	3455	3390	3315	3230	3145	3055	2970	2885	2800														

TORQUE LIMIT 3625 LB FT
APPLIES IN THIS AREA

AIR CONDITIONING OFF
ANTI-ICE VANES ON
Add 170 lb ft

NOT APPLICABLE

MAXIMUM RECOMMENDED CRUISE POWER **PT6A-65AR**
NOTE: ITT MUST NEVER EXCEED 770°C FOR CRUISE **PT6A–65AR 1300 PRPM**

IOAT C	-40	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	50	IOAT C
Pressure Altitude -Feet																																Pressure Altitude -Feet
13000											3625	3555	3460	3365	3275	3185	3090	2995	2900	2810	2720	2630	2530	2430								13000
14000									3625	3585	3495	3405	3315	3220	3135	3045	2955	2860	2770	2685	2595	2505	2410									14000
15000							3625	3570	3500	3430	3345	3260	3170	3080	2995	2910	2820	2730	2645	2560	2470	2385	2290									15000
16000					3625	3555	3485	3415	3345	3280	3195	3110	3025	2940	2855	2770	2685	2600	2515	2430	2345											16000
17000		3625	3600	3535	3465	3395	3330	3265	3200	3135	3050	2965	2885	2800	2720	2640	2555	2470	2390													17000
18000	3605	3510	3445	3380	3310	3245	3180	3120	3055	2990	2910	2830	2750	2670	2590	2510	2430															18000
19000	3445	3555	3290	3230	3165	3100	3040	2980	2920	2850	2775	2695	2615	2540	2645																	19000
20000	3290	32052	3145	3085	3020	2960	2900	2840	2785	2715	2635	2560	2485																			20000
13000									3625	3555	3465	3370	3275	3180	3085	2995	2895	2800	2705	2615	2525	2435	2340	2245								13000
14000						3625	3615	3540	3465	3395	3310	3220	3125	3035	2945	2850	2760	2670	2580	2490	2405	2320										14000
15000				3625	3600	3525	3455	3385	3315	3245	3160	3070	2985	2895	2805	2720	2630	2545	2460	2370	2290											15000
16000		3625	3580	3505	3435	3365	3295	3225	3160	3095	3010	2920	2840	2755	2675	2590	2505	2420	2335													16000
17000	3575	3485	3415	3345	3280	3210	3145	3075	3015	2945	2865	2785	2705	2625	2545	2460	2380															17000
18000	3415	3325	3255	3190	3125	3060	2995	2935	2875	2810	2730	2655	2575	2500	2420																	18000
19000	3255	3170	3105	3040	2980	2920	2860	2805	2745	2680	2605	2530	2450	2375																		19000
20000	3105	3020	2965	2905	2845	2785	2730	2670	2615	2545	2475																					20000
13000				3625	3570	3505	3435	3375	3310	3245	3170	3090	3005	2920	2840	2760	2675															13000
14000	3625	3605	3540	3480	3420	3355	3295	3230	3170	3110	3030	2955	2875	2790	2710	2635	2555															14000
15000	3535	3455	3395	3335	3275	3215	3150	3090	3035	2975	2895	2820	2745	2665	2595	2520	2440															15000
16000	3385	3305	3245	3190	3130	3370	3010	2955	2895	2835	2765	2690	2620	2545	2475	2400	2325															16000
17000	3235	3160	3105	3045	2990	2935	2875	2820	2770	2710	2640	2570	2500	2430	2360																	17000
18000	3095	3020	2965	2910	2855	2805	2750	2700	2650	2590	2520	2455	2385																			18000
19000	2955	2885	2835	275	2735	2685	2630	2580	2530	2470	2405																					19000
20000	2825	2760	2710	2665	2615	2565	2515	2465	2415																							20000

AIR CONDITIONING OFF
ANTI-ICE VANES OFF

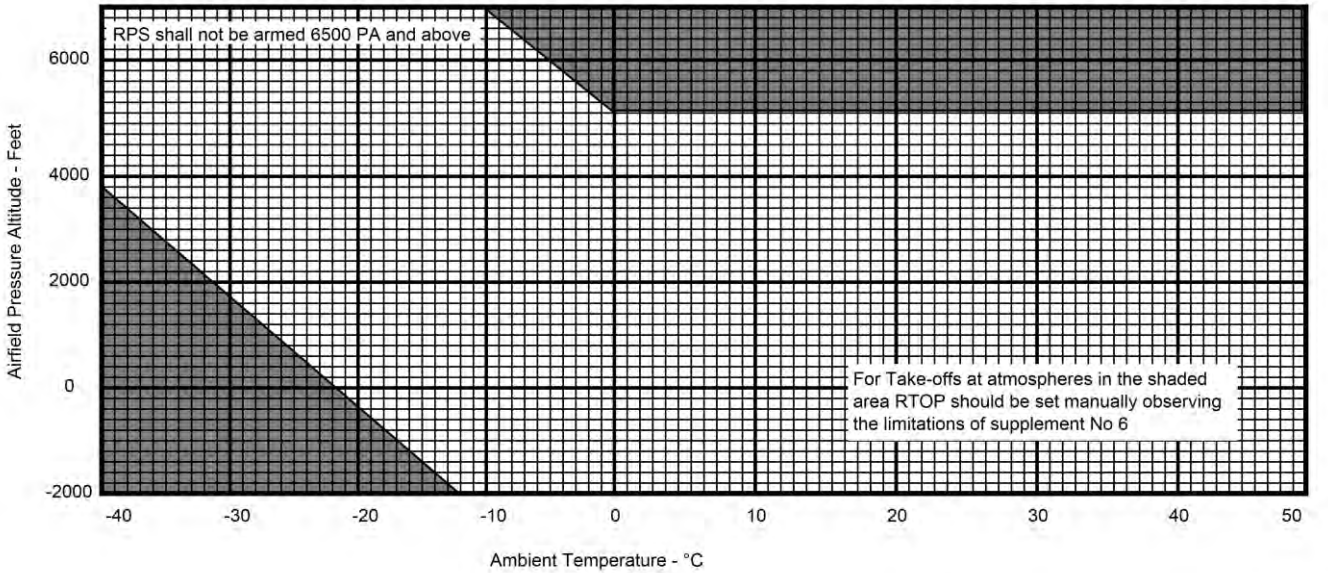
AIR CONDITIONING ON
ANTI-ICE VANES OFF

AIR CONDITIONING ON
ANTI-ICE VANES ON

NOT APPLICABLE

For Air Conditioning OFF, Anti-icing ON values read the Air Conditioning ON, Anti-icing ON values and add 170 lb ft. The torque must not exceed 3625 lb ft.

Limitations to arming of Reserve Power System



WEIGHT LIMITATIONS

Max. Ramp .....25700 lb
Max. Take-off .....25600 lb
Max. Landing .....25100 lb

SPEED LIMITATIONS

Max. Operating Limit Speed (V_{MO}) .....196 kt
Landing Gear Speeds
  Operating (V_{LO}) .....150 kt
  Extended (V_{LE}) .....160 kt
Flaps Speeds
  10° .....145 kt
  15° .....140 kt
  35° .....130 kt
Rough Air Speed (V_{RA})
  15700 lb .....150 kt
  25600 lb .....160 kt
Maneuver Speed (V_A)
  16000 lb .....124 kt (B)
  .....126 kt (B+)
  25600 lb .....161 kt (B)
  .....163 kt (B+)
Windshield Wipers Max Operating Speed .....150 kt
Windshield Heat Mandatory Operating Temp.....-15°C or colder
  (Maintain 190 kts or below when windshield heat is inop.)

ENVIRONMENTAL LIMITATIONS

Air Temperature
  Min. Ground.....-40°C
  Min. Flight.....-45°C
  Max .....+50°C
Wind Speed
  Max Crosswind (Takeoff/Landing).....30 kt
  Cargo Door (Open/Close on ground).....50 kt

RAMP DOOR

Max Speed - Ramp Door Operation .....130 kt
Max Speed - Ramp Door Open (15° flaps) .....140 kt
Max Weight - On Operating Door .....535 lb
Max Weight - Door Up and Locked.....800 lb
Max Weight - Level, Static Position, Supported by
  Actuators, Shut-off Valve CLOSED .....5000 lb
Max Weight - Supported by Ground At Rear Edge .3500 lb

TIRES

No groove less than 2mm depth for more than ¼ circumference.
No pattern less than 2mm depth worn across all grooves.
Tire Pressures (-0, +6): Nose 58, Main 81

HYDRAULIC PRESSURES

Main System Pressure .....3000 –100/+200 psi
Brakes .....1500 –50/+200 psi
Emergency Brake and Gear Accumulators.....3000 –200/+400 psi
Min. Emer. Brake Accum. Press. For Towing .....1800 psi

POWER PLANT LIMITATIONS **PT6A-65AR**

Condition	Torque	PRPM	NG%	ITT°C	Time
Starting and relight				1000	5 sec
Ground Operation:	3625	* below	56-104	770	
PRPM below 1000	2000				
Ng below 62%	2000			715	
Ng above 62%	3625			770	
Reverse	1590	1650		785	
Flt Idle/ Fuel-Ground			70-72		
Flt Idle/ Fuel-Flight			79-80		
RTOP	4400	1700±10	104.0	855	5 min
MTOP	3825	1700±10	104.0	820	5 min
MCP	3825	1700±10	104.0	840	
Climb, Cruise, Descent	3625	1200-1700	79-104	770	
Transient, except start	5100	1870	79-104	870	20 sec

***PROPELLER OPERATING RANGE**

Ground feathered ..... 0 – 400
unfeathered ..... 900 – 1170
unfeathered ..... 1400 - 1700.
Flight up to 150 kt ..... 1200 - 1700
above 150 kt ..... 1200 - 1450

OIL TEMPERATURE

Min. start and relight ..... -40°C
Min. take-off ..... 20°C
Normal range ..... 20°C to 99°C
Max. MCP/MTOP ..... 105°C
Max. RTOP and 10 min. transient ..... 110°C

OIL PRESSURE

Max. cold start ..... 200 psi
Normal range, ground ..... 60 psi - 135 psi
Min. take-off ..... 90 psi
Normal range, flight ..... 90 psi - 135 psi
Min. to complete flight ..... 60 psi
Between 60 and 90 psi set Torque below 2000
Transient ..... 40 psi - 200 psi

ENGINE STARTING

Minimum Volts ..... 22 Internal, 14 External
Generator Ground Start ..... 250 amps
Flight start ..... 300 amps
Start attempts ..... 2 in 30 minute period
Starter Engagement ..... 60 seconds

GENERATOR LOADS CONTINUOUS

Ground, and Flight below ISA +25°C ..... 300 amps
Flight above ISA +25°C ..... 250 amps

ENGINE FIRE
Indication: FIRE L P to C or FIRE R P to C

(PNF) Ignition Switches ..... EMERGency

Autopilot / Yaw Damper ..... Disengage

(PNF) Fire Bell ..... Cancel

(PNF) Fire ..... Visually confirm

(PNF) Fuel Lever ..... Confirm, OFF

(PNF) Prop Lever ..... Confirm, FEATHER

(PNF) LP Valve ..... Confirm, SHUT

(PNF) Fire Extinguisher ..... SHOT 1

(PNF) Fire Warning ..... Off

Fire Extinguisher ..... SHOT 2
(after 25 sec.)

After Shutdown Checks (53) ..... Complete

CONTINUED TAKEOFF (ENGINE FAILURE AFTER V1)

Accelerate to Vr ..... Rotate

Gear (positive climb) ..... UP/Confirm RTOP

(PNF) Ignition Switches ..... EMERGency

Airspeed ..... V_2
At a safe altitude, 500' minimum
Failed Engine ..... Identify

(PNF) Failed Engine ..... Verify

Engine Shutdown, After Shutdown Checks (53),
After T/O Checks (16) ..... Perform

1500 feet AGL minimum, either:

In traffic pattern

Accelerate ..... Maintain altitude
Flaps..... 10° passing V_{YSE}
Reserve Power System..... OFF passing 130 kts
Power Levers ..... Adjust as required

Or, for continued climb

Accelerate ..... Maintain V_{YSE}
Flaps..... 10°
Reserve Power System..... OFF, after 5 minutes
Power Levers ..... Set MCP

ENGINE FAILURE ENROUTE

(PNF) Ignition Switches..... EMERGency

Autopilot / Yaw Damp ..... Disengage

Power Levers..... Adjust as required

Failing Engine..... Identify

(PNF) Failing Engine..... Verify

(PNF) Prop Levers ..... MAX, below 150 kts

Power Levers..... Set MCP

Pitch to maintain altitude. If below 125 KIAS:

(PNF) Flaps 10

Minimum Airspeed..... Vyse, Drift down

Eng. Shutdn/After Shutdn Checks (53)..... Perform

ENGINE FAILURE ON FINAL APPROACH

(PNF) Ignition Switches..... EMERGency

Power Levers..... Adjust as required

(PNF) Landing Gear, Flaps ..... Confirm

(PNF) Rudder Trim..... Neutral

Eng. Shutdn/After Shutdn Checks (53)..... Perform, if poss.

ENGINE SHUTDOWN CHECKS

Fuel Lever	Confirm, OFF
Prop Lever	Confirm, FEATHER
LP Valve	Confirm, SHUT

AFTER SHUTDOWN CHECKS

Prop Sync	OFF
Air Conditioning (Failed Engine)	OFF
Hydraulic Pump Inlet EI (Failed Engine)	Horizontal
Booster Pump (Failed Engine)	Confirm, OFF
Intake & Prop Anti-icing (Failed Engine)	OFF
Volt/Amp Meters	Check
Generator (Failed Engine)	Confirm, COUPLE
Shedding bus (Failed Engine)	Confirm, O/RIDE
Anti-ice Vane Switch (Failed Engine)	ON
Ignition (Failed Engine)	OFF
Volt/Amp Meters	Turn off loads to keep amps less than continuous limit
Fuel Balance	Adjust, refer to Fuel Balance, page 78.
Autopilot	As required

ENGINE FLAMEOUT IN FLIGHT (Perform if time allows.)
Indication: Ng above 50% and reducing

Ignition Switches	EMERGency
Failing Engine Prop Lever	In operating range
Failing Engine Power Lever	Confirm, FLIGHT IDLE

Failing Engine Fuel Lever ..... Confirm, GROUND
The engine should light up within 10 seconds. When the engine lights, monitor ITT, control fuel input to prevent hot start. Then:
Engine Power Lever ..... As required

Engine Fuel Lever ..... FLIGHT
If engine does not light:
Failing Engine Fuel Lever ..... Confirm, OFF
Wait until Ng below 20%, then proceed as for:
Indication: Ng below 10% but above 0:
Ignition Switches..... EMERGency

Failing Engine Prop Lever ..... In operating range

Failing Engine Power Lever..... Confirm, FLIGHT IDLE

Failing Engine Fuel Lever ..... Confirm, OFF

Failing Engine Fuel Lever ..... GROUND, monitor ITT
When Ng above 50%:

Recovering Engine Fuel Lever ..... FLIGHT

Recovering Engine Power Lever ..... Set as required
If engine fails to relight:
Eng. Shutdn/After Shutdn Checks (53)..... Perform

If desired, Airborne Engine Re-Start (below) may be attempted.

AIRBORNE ENGINE RE-START (STARTER MOTOR)

Airspeed ..... 90 - 150 kt

Autopilot ..... Disengaged

Shedding Buses ..... EMGY

LP Valve ..... OPEN

Booster Pump..... ON

Power Lever ..... FLIGHT IDLE

Prop Lever..... TAXI

Start Master ..... ARMED

Amps ..... Less than 300

Start Switch ..... START

Ignition (Ng more than 10%) ..... NORMal

Fuel Lever (Ng more than 12% and stable) ... GROUND

If there is no start in 25 secs from START
or
In 10 secs from fuel to GROUND - Stop the start

TO STOP THE START

Fuel Lever ..... OFF
Prop Lever ..... FEATHER
Start switch ..... STOP
Ignition ..... OFF

ITT ..... Monitor (max 1000°C for 5 secs)

Start and Ignition Lights ..... OFF at > 50% Ng

ENGINE START LIGHT Remains on at > 50% Ng

Start Switch ..... STOP
Ignition ..... OFF
Start Master ..... NORMAL
Generator (defective side) ..... OFF
Battery (defective side) ..... OFF
Essential Services (defective side) ..... TRANSFER
------- DO NOT COUPLE THE BUSBARS -------
Complete the Engine Start and After Start Checks; do NOT turn on battery or generator on the defective side.

Oil Pressure ..... Minimum 90 psi

Hydraulic Pressures ..... Green area

Hydraulic Contents ..... Green area

Fuel Lever ..... FLIGHT

Prop Levers ..... Set

Power Levers ..... Set

Prop Sync ..... ON

Flaps ..... Set

Airborne After Start Checks (57)..... Perform

AIRBORNE ENGINE START (WINDMILL)
(Make windmill start only if starter motor start is not possible.)

LP Valve ..... OPEN

Booster Pump..... ON

Power Lever ..... FLIGHT IDLE

Prop Lever (Failed Engine)..... TAXI

Prop Lever (Operating Engine)..... 1450 maximum

Flaps 0

Airspeed ..... Minimum 160 kt

Yaw aircraft smoothly from side to side to unfeather the propeller.
When Ng Indicates 9% and the propeller is unfeathered:

Ignition ..... EMERGency.

Fuel Lever..... GROUND

If no start in 10 secs from fuel to GROUND, Stop the start.

TO STOP THE START	
Fuel Lever	**OFF**
Prop Lever	**FEATHER**
Ignition	**OFF**

ITT ..... Monitor. Max 1000°C for 5 secs

Oil Pressure..... Minimum 90 psi

Hydraulic Pressures ..... Green area

Hydraulic Contents ..... Green area

Fuel Lever..... FLIGHT

Prop Levers ..... Set

Power Levers..... Set

Prop Sync ..... ON

AIRBORNE AFTER START CHECKS

Start Master ..... NORMAL

Ignition ..... OFF

Generator ..... ON

Shedding Buses..... NORM

Electrical EIs..... Vertical

Warning Lights..... Off

Fuel Balance..... As necessary
Refer to FUEL BALANCE, page 78.

Anti-icing ..... As necessary

Air Conditioning ..... As necessary

LOW OIL PRESSURE

Indication OIL L OR OIL R

Oil Pressure:

60 - 90 psi ..... Torque 2000 max

Less than 60 psi..... Stop the engine
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

HIGH ITT

Power lever..... Decrease
If ITT does NOT decrease, stop the engine.
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

ENGINE OVERSPEED (Ng)

Power Lever ..... Decrease
If the Ng stays higher than 104% stop the engine.
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

PROPELLER OVERSPEED

PRPM` ..... Check, >1710
Power Lever ..... Decrease
Airspeed ..... Below 150 KIAS
PRPM ..... Set 1700
If PRPM remains above 1700, stop the engine.
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

CHANGING NG/PRPM FLUCTUATING

Ignition Switches ..... EMERGency
Power Lever ..... Decrease
Prop sync..... OFF
Airspeed ..... below 150 KIAS
Prop Lever..... 1700 PRPM
If the Ng change continues, stop the engine.
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

TORQUE INDICATION DEFECT

Ignition Switches..... EMERGency
Examine ITT, PRPM and Fuel Flow.
If these are correct this shows a torque indication defect.
Refer to CHANGING Ng/PRPM FLUCTUATING, above.

BOTH AUTOFEATHER ARM INDICATIONS CYCLE ON/OFF

This is associated with cyclical torque fluctuations, possibly with accompanying yaw inputs, and both Autofeather indicators fluctuating ON/OFF giving the impression that both engines are in the Autofeather Cycle. It may be experienced when both autofeather microswitches are misrigged such that the Autofeather system is armed below a power setting equivalent to 90% Ng. This can be alleviated by moving the power levers gently one way or the other to get out of the affected zone.

ELECTRICAL FIRE OR OVERHEAT
To remove the smoke:

Side Window ..... Open

Oxygen Mask / Smoke Hood ..... Don, O2 ON

Use the Aircraft Fire Extinguisher, If necessary.

Emergency flight compartment lights..... BRIGHT

COM 1 and 2 direct from battery..... NORMAL, use headset

Electrical Master ..... OFF

Left and Right Batteries ..... OFF

Generators..... OFF

Note: Standby attitude gyros, altimeters and associated lighting will remain powered while the rest of the drill is carried out. Both ADI's will fail instantly.

When the fire is extinguished:

Switch OFF all services except Emergency Lighting. Do not enter icing conditions if at all possible. Leave icing conditions if possible. Land as soon as possible.

To restore essential electrical systems:

Electrical Master ..... INTERNAL

Left Battery ..... ON
If there is a defect:
Left Battery ..... OFF
Left Normal/Transfer switch..... TRANSFER

Right Battery..... ON
If there is a defect:
Right Battery..... OFF
Right Normal/Transfer switch ..... TRANSFER

If the left battery is on:
Left Generator ..... ON
If there is a defect:
Left Generator ..... COUPLE
Panel 1D, Row 1, CB 6 ..... TRIP

If the right battery is on:
Right Generator..... ON
If there is a defect:
Right Generator..... COUPLE
Panel 2D, Row 1, CB 156 ..... TRIP

Select each Essential Electrical System (page 66) ON in turn, returning to OFF any which are defective.

Before starting the approach:

When required, decrease speed to V_{LO} (150 kt), then:

Landing Gear ..... DOWN

Emergency Gear Handle..... Pull

(There may be no gear down indication.)

Flaps ..... As necessary

(There may be no flap indication.)

FORWARD BAGGAGE COMPARTMENT FIRE

Indication: SMOKE FWD

Discharge an aircraft fire extinguisher into the port on the right side of the flight compartment.

FLIGHT AND PASSENGER COMPARTMENT FIRE

Discharge an aircraft fire extinguisher at the base of the fire.

MAIN CABIN COMPARTMENT FIRE (Cargo operations)

Indication: SMOKE CABIN

Flight Controls ..... Right Seat Pilot

Left Seat Pilot:
Oxygen Mask/Smoke Hood ..... Don, O2 ON
Flight Compartment Door ..... Shut
Flight Controls ..... Transfer back
Contact ATC and arrange divert to nearest airfield.

Right Seat Pilot:
Oxygen Mask/Smoke Hood ..... Don, O2 ON
Flight Compartment Door ..... Shut
Air Conditioning Bleeds ..... OFF
Fan/Ram Air Switches ..... OFF
If needed, move to cabin and assist FE with fire-fighting efforts.

FE:
Oxygen Mask/Smoke Hood ..... Don, O2 ON
Flight Compartment Doors ..... Confirm Shut
Smoke or Fire ..... Confirm
Fire Extinguisher..... Use, aim at base of fire

SMOKE REMOVAL

Air Conditioning Bleeds ..... ON

Fan/Ram Air Switches ..... RAM

Side Window..... Open

FIRE FAULT

Indication: FIRE FAULT L or FIRE FAULT R

Monitor the engine instruments.

There is a defect in the fire detection system.

SINGLE GENERATOR FAILURE

Indication: GEN L or GEN R

Voltmeter - Less than 27V
Ammeter - At Zero

> CAUTION
> MAKE SURE THAT VOLTS ARE SHOWN ON THE DEFECTIVE SIDE. IF VOLTS ARE ZERO, OR LESS THAN BATTERY VOLTS, DO NOT COUPLE THE BUSBARS. Refer to BUSBAR FAILURE, page 63.

Generator ..... RESET (If reset fails, select trip)

If the defect continues:

Generator ..... COUPLE

Shedding Bus..... O/RIDE

Turn off loads if necessary to keep the amps less than the continuous limit.

DOUBLE GENERATOR FAILURE

Indication GEN L and: GEN R

Voltmeters - Less than 27V
Ammeters - Zero

Generators ..... RESET

It one generator resets, refer to SINGLE GENERATOR FAILURE above.

If the defect continues:

Generators ..... OFF

Start Master..... ARMED

Keep the essential electrical systems, page 66.
Estimated power available from the two main batteries is 45 minutes.
Land as soon as possible.

MAIN BUSBAR FAILURE

Indication: GEN L or GEN R

Voltmeter decreasing or at zero
Ammeter at zero

CAUTION
DO NOT COUPLE THE BUSBARS

Battery (Defective Bus Side)..... OFF

Generator (Defective Bus Side) ..... OFF

Essential Services (Defective Bus Side)..... TRANSFER is automatic

Turn off loads to keep amps less than the continuous limit.
Land as soon as possible.

BUSBAR AND OPPOSITE GENERATOR FAILURE

Indication GEN L and GEN R

Voltmeters - Zero on the defective busbar side.
Less than 27V on the defective generator side
Ammeters - At zero

CAUTION
DO NOT COUPLE THE BUSBARS

Battery (Defective Bus Side)..... OFF

Generator (Defective Bus Side)..... OFF

Essential Services (Defective Bus Side)..... TRANSFER is automatic

Generator (Serviceable Bus) ..... RESET

Turn off loads to keep the amps less than the continuous limit.
Land as soon as possible.

If the defect continues:

Generator (Serviceable Bus Side) ..... OFF

Keep the essential electrical systems, page 66.
Estimated power available from the two main batteries is 45 minutes.
Land as soon as possible.

BATTERY OVERHEAT

Indication OVERHEAT

Battery ..... OFF

Land as soon as possible. Maintenance action is required before subsequent flight.

INVERTER FAILURE

Indication: Inverter EI Off
Inverter voltmeter correct

Defective Inverter ..... OFF

Standby Inverter ..... Check ON.

AC BUS FAILURE

Indication: Inverter EI Off
Inverter voltmeter at zero

Standby Inverter ..... ON

If the standby inverter is defective or if one of the two main inverters show a defect, then:

Left Inverter Failure
Panel 2D, Row 3, CB 175 ..... OPEN

Right Inverter Failure
Panel 1D, Row 3, CB 25. ..... OPEN

CAUTION
DO NOT TOUCH THE SERVICEABLE SYSTEM

OVERVOLTAGE - Ground Power Unit

Indication: Electrics disconnect

GPU ..... Disconnect

When the GPU is set to 28 volts, reconnect the GPU.

REVERSE POLARITY - Ground Power Unit.
If there is reverse polarity you cannot connect a GPU to the aircraft.

TAIL BATTERY VOLTAGE LOW (Pre-flight)

Tail Battery Voltage ..... <24 volts
Left Engine ..... Run w/ gen. on line, 20 minutes minimum
Tail Battery Voltage ..... 25 volts minimum, read with generator OFF

NOTE: This is only required in the passenger role.

ESSENTIAL ELECTRICAL SYSTEMS

1. These electrical systems can be turned on:

   Electrical master
   Batteries
   Flight Compartment Emergency Lights - L, Center, and R
   Inverters - L, Standby, and R
   Pitot Heater - L and R
   Avionics Master
   COM 1 and COM 2
   Two navigation aids
   Landing Lights for 1 minute of operation

2. In applicable conditions, the following systems from the above list can be turned off to decrease loads:

   Flight Compartment Emergency Lights - L, Center, and R
   Pitot Heater - L and R
   COM 1 / 2
   Navigation aids
   Landing lights

3. These electrical systems can NOT be turned off:

   Engine Fire Extinguishers
   Engine Fire Warnings
   Engine Instruments
   Main Horizon Indicators (ADI) – L and R
   Standby Horizon Indicators - L and R
   EHSIs – L and R
   Rain Repellent System
   Landing Gear Indication and Control
   Hydraulic Control
   LBA Stop and Propeller Pitch Indication

ELECTRICAL LOAD LIST (Item, Busbar, Load)

Cargo Winch – Ground Services..... 110
Ramp Door (Outwards) – Ground Services... 100
Ramp Door (Inwards) – Ground Services 24
Engine Intake Anti-ice – L and R Main 97
Windshield Heating – L and R Shedding 56
Propeller De-ice – L and R Main 30
Air Conditioning Fan – Ground Services 20
Landing Lights – L and R Main..... 16
Inverter DC Input – L and R Main..... 14
Items with <10 amp draw listed in ACM, Sec. 1-04, Page 6.

SINGLE PUMP FAILURE

Indication: HYD L or HYD R

Pump Inlet: ..... SHUT

DOUBLE PUMP FAILURE

Indication: HYD L and HYD R

Main System pressure - Less than 2900
Contents - In the Green Area

Pump Inlets..... SHUT

NOTE: If sufficient fuel remains and not flying in icing conditions, lower the landing gear immediately.

When necessary:

Airspeed ..... <150 KIAS

Landing Gear ..... DOWN

Emergency Gear Handle ..... Pull, three green

Emergency Brake System ..... EMERGENCY

Do NOT operate the brakes in flight.
Make a 0° flap landing.
Select Gear and Flap INHIBIT on GPWS.
Nosewheel Steering is NOT available.
Anti-skid is NOT available, brake carefully.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

LOSS OF HYDRAULIC CONTENTS

Indication HYD L and HYD R

Main System pressure - Less than 2900 psi
Contents - In the Red Area

Pump Inlets..... SHUT

Airspeed ..... Immediately decrease <150 KIAS

Landing Gear ..... DOWN

Emergency Gear Handle..... Pull, Three green

Emergency Brake System ..... EMERGENCY

CAUTION DO NOT RETRACT THE LANDING GEAR

Do NOT operate the brakes in flight.
Make a 0° flap landing.
Select Gear and Flap INHIBIT on GPWS.
Nosewheel Steering is NOT available.
Anti-skid is NOT available: brake carefully.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

HYDRAULIC FLUID OVERHEAT

Indication: HYD L and HYD R

and FLUID O'HEAT light illuminated on 7P Panel.

If a pump temperature is more than 115°C:

Pump Inlet ..... SHUT
Complete the flight on the serviceable system.

If the two pump temperatures are more than 115°C:

Pump Inlets ..... SHUT

Each 15 minutes, to lubricate the systems:
Pump Inlets..... OPEN for 1 minute, then SHUT

Before the Approach Checks:

Pump Inlets ..... OPEN

Emergency Brake System..... EMERGENCY

Flaps ..... Set

When Landing Checks are completed:

Pump Inlets..... SHUT

Do NOT operate the brakes in flight.
Nosewheel Steering is NOT available.
Anti-skid is NOT available: brake carefully.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

HYDRAULIC CONTENTS DECREASE

Indication: Hydraulic contents in the Red Area and decreasing.

Airspeed ..... <150 KIAS

Landing Gear..... DOWN, Three green

If landing gear does NOT lock down:

Emergency Gear Handle ..... Pull, Three green

Emergency Brakes System ..... EMERGENCY

Flaps ..... UP

CAUTION DO NOT RETRACT THE LANDING GEAR

Do NOT operate the brakes in flight.
Make a 0° flap landing.
Select Gear and Flap INHIBIT on GPWS.
Nosewheel Steering is NOT available
Anti-skid is NOT available: brake carefully.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

If HYD L and HYD R warning lights illuminate:

Pump Inlets ..... SHUT

FLAP MALFUNCTION

If flaps do NOT move when set, reset them to the initial position.
If malfunction compels landing with less than 35° flap setting, INHIBIT GEAR/FLAP on GPWS.

FLAPS NOT SYMMETRICAL DURING T/O OR APPROACH

Flap Selector Lever ..... Return to previously selected position.

If the flaps are still not symmetrical:

Flap Selector Lever ..... Select flaps to 0°

DO NOT MAKE ANY FURTHER FLAP SELECTIONS.

Note: INHIBIT GEAR/FLAP on GPWS.

LANDING GEAR FAILURE (TWO SITUATIONS)

1) Incorrect indication after landing gear is retracted:

Landing Gear ..... DOWN, Three green

> CAUTION
> DO NOT RETRACT THE LANDING GEAR

2) Incorrect indication after landing gear is lowered:

Main System ..... Between 2900-3200 psi

Landing Gear ..... Retract and lower two times

> CAUTION
> If the main system pressure is less than 2900 psi, refer to DOUBLE PUMP FAILURE or LOSS OF HYDRAULIC CONTENTS, page 67.

If the defect continues:

Landing Gear ..... DOWN

Landing Gear Horn ..... TEST

Flaps ..... Set 35, then set as necessary

Power Levers ..... FLIGHT IDLE, then set as necessary

If the landing gear horn does NOT operate the landing gear is locked down.

If the landing gear horn operates the landing gear is NOT locked down. Make a 360° turn with 45°of bank at 120 KIAS.

If the defect continues:

Emergency Gear Handle ..... Pull

If the defect continues, examine the main landing gear from the passenger compartment. Ask the Control Tower to examine it during a fly-by. Use the emergency landing procedure, this page.

EMERGENCY LANDING PROCEDURE

Panel 1D, Row 3, CB 38 ..... Open

Panel 1D AC, Row 3, CB 314 ..... Open

Land at V_{ref} at a minimum rate of descent and:

Main landing gear defect -

If the left main landing gear is defective, land on the right side of the runway.
If the right main gear is defective, land on the left side of the runway.
After landing, set ground fine slowly and keep the wings level for as long as possible.
Use differential braking to keep straight.

Nose landing gear defect -

After landing, set ground fine slowly and hold the nose clear of the ground. Lower the nose smoothly.
Apply the brakes carefully.

BRAKE FAILURE - In flight

Indication - Low brake pressure on one or two gauges
when the landing gear is down.

Emergency Brake System ..... EMERGENCY

Do NOT operate the brakes in flight.
Anti-skid is NOT available; brake carefully.
If there is no braking, use Reverse.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

BRAKE PRESSURE STAYS ON - In flight

Indication - Pressure more than zero on one or both gauges.

Parking Brake..... Off

Brake Pedal Pressure ..... Release

If the defect continues:

Landing Gear ..... UP, then DOWN

Emergency Brake System..... EMERGENCY

Do not operate the brakes in flight.
Anti-skid is NOT available; brake carefully.
If there is no braking, use Reverse.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

BRAKE FAILURE - Taxiing

Indication - Brakes do not operate.

Emergency Brake System..... EMERGENCY

If the defect continues:

Power Levers ..... REVERSE

Prop Levers..... MAX

The co-pilot must also try to stop the aircraft.
When Emergency Brake pressure is at 1500 psi, stop the aircraft.

NOSEWHEEL STEERING FAILURE

Indication – Aircraft does not respond to steering inputs.

Nosewheel Steering ..... OFF

Control the aircraft with rudder, brakes and power.

FUEL LOW PRESSURE - Engine operates correctly

Indication: FUEL L or FUEL R

Booster Pump ..... ON

Fuel Contents ..... Check, Sufficient

If the defect continues:

FUEL L
Panel 1D AC, Row 3, CB 320..... Check (do not close)

FUEL R
Panel 2D AC, Row 3, CB 370..... Check (do not close)

CAUTION
Do not attempt to restore power by means of circuit breaker selection. Flight must continue with affected booster pump inoperative.

If the defect continues:

Booster Pump ..... Confirm, OFF

To supply fuel pressure during turbulence and landing:

Crossfeed Valve ..... OPEN

Fuel L and R Lights ..... Off

FUEL LOW PRESSURE-Engine does not operate correctly

Indication: FUEL L or FUEL R

Ignition Switches ..... EMERGency

Booster Pump ..... ON

Fuel Contents..... Check, Sufficient

Crossfeed Valve..... OPEN

Fuel L and R Lights ..... Off

If the defect continues, immediately:

Crossfeed Valve ..... SHUT

Fuel Lever ..... Confirm, OFF
Stop the engine.
Refer to ENGINE SHUTDOWN and AFTER SHUTDOWN, page 53.

If the engine operates normally with Crossfeed Valve OPEN:

Booster Pump (Defective Side) ..... OFF

Fuel Contents ..... Monitor
If necessary adjust the flight plan.

If the fuel is supplied from the aft tank only and there is not sufficient fuel available to complete the flight, then:

Leveling Valve ..... OPEN

Booster Pump (Defective Side) ..... ON

Crossfeed Valve ..... SHUT

This may allow some of the fuel trapped in the forward tank to become available.

If the engine malfunctions again:

Refer to FUEL LOW PRESSURE – Engine does not operate correctly, page 74.

FUEL LOW PRESSURE - Engine runs down

Indication: FUEL L or FUEL R

Ignition Switch (failed engine)..... OFF

Fuel Contents ..... Sufficient

LP Valve ..... OPEN

Crossfeed Valve ..... OPEN

If FUEL L or FUEL R stays on:

Crossfeed Valve..... SHUT

LP Valve ..... SHUT

CAUTION DO NOT START THE ENGINE

If FUEL L or FUEL R goes off:

Engine ..... Start, page 54

Fuel Contents..... Monitor
If necessary adjust the flight plan.

If the fuel is being supplied from the aft tank only and there is not sufficient fuel available to complete the flight, then:

Leveling Valve..... OPEN

Booster Pump (Defective Side)..... ON

Crossfeed Valve ..... SHUT

This may allow some of the fuel trapped in the forward tank to become available.

If the engine malfunctions again:

Refer to FUEL LOW PRESSURE – Engine does not operate correctly, page 74.

FUEL CONTENTS INDICATOR - ERRATIC INDICATION

Indication - Either Fuel Contents Gauge reading becomes erratic.

Forward tank
Panel 1D, Row 2, CB 13..... Check

Panel 2D, Row 8, CB 254..... Check

Aft tank

Panel 2D, Row 2, CB 163 ..... Check

Panel 2D, Row 8, CB 254 ..... Check

CAUTION DO NOT RESTORE POWER

Flight must continue with the failed gauge inoperative. Fuel can be managed by reference to the Fuel Totalizer and the remaining operating contents gauge, if necessary.

FUEL CONTENTS INDICATOR - CIRCUIT BREAKER TRIPS

Indication: CB 13 (Panel 1D, Row 2) or CB 163 (Panel 2D, Row 2) trips.

Panel 2D, Row 8, CB 254 ..... Trip

CAUTION DO NOT RESTORE POWER

Flight must continue with the failed gauge inoperative. Fuel can be managed by reference to the Fuel Totalizer and the remaining operating contents gauge, if necessary.

LOW FUEL

Indication: LOW FUEL FWD and/or LOW FUEL AFT

Crossfeed Valve ..... OPEN

Now fuel is available to the two engines if one tank becomes empty.

FUEL BALANCE

Crossfeed Valve..... OPEN
Low Contents Tank Booster Pump..... OFF
High Contents Tank Booster Pump..... ON

When the two tanks are equal:
Booster Pump ..... ON
Crossfeed Valve..... SHUT

BLOCKED FILTER

Indication: FILTER light comes on

No procedure is necessary.

SPAR BOX OVERHEAT

Indication: A'COND and SPAR BOX O'HEAT on 9P Panel

Wings and Tail Bleeds ..... SHUT

Air Conditioning Bleeds ..... OFF

When the lights go off, set one at a time:

Wing and Tail Bleed L..... NORM. If the lights come on, SHUT

Wing and Tail Bleed R ..... NORM. If the lights come on, SHUT

Air Conditioning Bleed L ..... ON. If the lights come on, OFF

Air Conditioning Bleed R..... ON. If the lights come on, OFF

DUCT LOW PRESSURE

Indication: A'COND and DUCT LOW PRESSURE on 9P

Air Conditioning Bleeds ..... OFF

Mode Selector Switches ..... MAN

Temperature Selector Switches..... COLD

When the lights go off:

Air Conditioning Bleed L ..... ON. If the lights come on, OFF

Air Conditioning Bleed R..... ON. If the lights come on, OFF

NOTE: DUCT LOW PRESSURE will come on when one bleed is turned on, and if HOT is set.

SYSTEM OVERPRESSURE AND/OR OVERHEAT

Indication: A'COND and OVERPRESS and/or OVERHEAT

Air Conditioning Bleeds ..... OFF

When the lights go off:

Panel 1D, Row 7, CB 90..... Open

Panel 2D, Row 5, CB 211..... Open

Circuit Breakers..... Closed

Air Conditioning Bleed L..... ON. If A'COND comes on, OFF

Air Conditioning Bleed R ..... ON. If A'COND comes on, OFF

OVERHEAT - Flight or passenger compartments

Indication: A'COND and OVERHEAT on 9P

Mode Selector Switches..... MAN

Temperature Selector Switches ..... COLD

Main Fan ..... RAM (if necessary)

AUTO TEMPERATURE SELECTOR FAILURE

Mode Selector Switches..... MAN

Temperature Selector Switches ..... Set

INTAKE HEAT FAILURE

Indication: Intake Heat ON EI - Off continuously

Intake L
Panel 1D, Row 1, CB 11A..... Closed

Panel 1D, Row 2, CB 23 ..... Closed

Intake R
Panel 2D, Row 1, CB 161A..... Closed

Panel 2D, Row 2, CB 173 ..... Closed

If the defect continues, fly out of icing conditions.
Note: The engine Ignition Switches should be selected to EMERGency and remain so selected for the remainder of the flight to protect against engine flameout due to ice ingestion.

PROPELLER HEAT FAILURE

Indication: Propeller Heat ON EI - Off continuously

Propeller L
Panel 1D, Row 1, CBs 7 & 8 ..... Closed

Propeller R
Panel 2D, Row 1, CBs 157 & 158 ..... Closed

If the defect continues:

Defective Propeller ..... TFR

With TFR set, fly out of Icing conditions if the two propeller heat EIs do NOT show ON, alternately.

PROPELLER HEAT TIMER FAILURE

Indication: Propeller Heat ON EI - On continuously.

Defective Propeller ..... TFR

With TFR set, fly out of icing conditions if the two propeller heat EIs do not show ON, alternately.

PITOT/STATIC HEAT FAILURE

Indication: PITOT L or PITOT R

Or STATIC - Off

Pitot/Static L
Panel 1D, Row 2, CBs 21 and 22 ..... Closed

Pitot/Static R
Panel 2D, Row 2, CBs 171 and 172 ..... Closed

STALL VANE HEAT FAILURE

Indication: In flight: HIGH – Off; or on ground: LOW – Off.

Stall L
Panel 1D, Row 7, CBs 92 and 93 ..... Closed

Stall R
Panel 2D, Row 7, CBs 240 and 241 ..... Closed

NOTE: Stall vane heaters operate with STALL EI off.

WINDSHIELD HEAT FAILURE

Indication: Windshield cold and NORM EI on continuously.

Windshield L
Panel 1D, Row 7, CB 86..... Closed

Windshield R
Panel 2D, Row 7, CB 236..... Closed

If windshield heat is defective, turn off the defective side(s).
If IOAT is less than -15° keep the airspeed at less than 190 KIAS.

WINDSHIELD HEAT - Control Failure

Indication: Windshield NORM EI off continuously

Windshield L
Panel 1D, Row 7, CB 85. ..... Closed

Windshield R
Panel 2D, Row 7, CB 235 ..... Closed

If windshield heat is defective, turn off the defective side(s).
If IOAT is less than -15°C, keep the airspeed at less than 190 KIAS.

WINDSHIELD HEAT - Normal Temperature Control Failure

Indication: NORM then O'HEAT

Windshield Heat OFF, if heat is not necessary.
If IOAT is less than -15°C, keep the airspeed less than 190 KIAS.

WINGS AND TAIL - Spar Box Overheat

Refer to SPAR BOX OVERHEAT, page 79.

WINGS AND TAIL - Duct Pressure

Indication: A'ICE PANEL and DUCT PRESS

Wings and Tail Bleeds L & R ..... SHUT

When the lights go off, set one at a time:

Wings and Tail Bleed L..... NORM. If the light comes on, SHUT

Wings and Tail Bleed R ..... NORM. If the light comes on, SHUT

WINGS AND TAIL - Timer Failure

Indication: The cycle is NOT correct.

Timer ..... Set Alternative Cycle

If the defect continues:

Timer ..... OFF, Fly out of icing conditions

VANE 1 OR 2 INDICATION ON CWP

Indication:

VANE 1 or VANE 2

(Intake/Prop Anti-icing switches ON; Anti-ice Vanes switches OFF)

Anti-ice Vane Switches..... ON, if icing cond.

ANTI-ICE VANE FAILURE

Left Vane
Panel 1D, Row 2, CB 24..... Check

Panel 1D, Row 5, CB 62..... Check

Right Vane
Panel 2D, Row 2, CB 174..... Check

Panel 2D, Row 6, CB 229..... Check

REJECTED TAKEOFF

Power Levers ..... FLIGHT IDLE, Set GROUND FINE as req.

Brakes ..... As required

Nosewheel Steering..... As required

AUTOPILOT FAILS TO DISENGAGE

Panel 1D, Row 4, CB 49 ..... Open

Panel 2D, Row 6, CB 223 ..... Open

GPWS CONTINUAL SPURIOUS READINGS

Panel 1D, Row 3, CB 314 ..... Open

RAMP DOOR FAILS TO OPEN

If the ramp door fails to open when unlatched, re-secure the latches.

CAUTION
DO NOT ATTEMPT TO RE-OPEN DOOR

RAMP DOOR FAILS IN OPEN POSITION

Indication: Ramp Door El: OPEN or OPEN/SHUT

Visual Indicators ..... Check LOCKED

If any visual indicator shows UNLOCKED or door is jammed open, then:

Airspeed ..... <140 KIAS

Vertical Speed on Landing ..... <400 ft/min

CAUTION
RTOP MUST NOT BE USED

If visual Indicators show LOCKED continue flight as normal but do NOT attempt to reopen the door.

FUSELAGE DOOR WARNING ON CWP

Per FWPEO Memo, “At the PC’s discretion, land at the nearest practical airfield consistent with the mission and enemy situation.”

Transponder ..... Emergency

Radio Distress Call ..... Accomplish

Emergency and Exterior Lights..... ON

ELT ..... ON

Panel 1D, Row 3 Right, CB 38 ..... Open

Panel ID AC, Row 3 Left, CB 314 ..... Open

Fuel ..... Reduce to minimum

Complete approach and landing checks except set:

Flaps 35

Landing Gear ..... UP

Crew, Passengers, Cargo, Mission Equip. .. Secured

Make final approach parallel to the line of wave crests with a minimum glidepath angle. Keep the wings level. Touchdown with a pitch attitude of 10° and at the ditching speed, below.

DITCHING SPEEDS

Weight (lbs)	Speed (KIAS)	
	B+	B
18000	67	72
19000	69	73
20000	71	76
21000	72	78
22000	74	80
23000	76	82
24000	78	83
25000 and above	79	85

If the wings are level after ditching, evacuate the aircraft through the forward emergency exits. If one wing is in the water, evacuate through the opposite emergency exit and through the flight compartment roof emergency exit.

Transponder ..... Emergency

Radio Distress Call..... Accomplish

Emergency and Exterior Lights ..... ON

ELT ..... ON

Panel 1D, Row 3 Right, CB 38 ..... Open

Panel ID AC, Row 3 Left, CB 314..... Open

Flaps ..... UP

Landing Gear ..... UP

Propellers ..... FEATHERed

Crew, Passengers, Cargo, Mission Equip. .. Secured

Make final approach at 1.3 Vs, leveling out approximately 10' above the surface and parallel to the line of wave crests. Keep the wings level and decelerate, touching down at or just above Vs and with a pitch attitude close to 9°.

DITCHING SPEEDS

Weight (lbs)	1.3Vs, Vs Speed (KIAS) B+	B
18000	104, 80	101, 78
19000	107, 82	105, 81
20000	109, 84	108, 83
21000	112, 86	111, 85
22000	114, 88	113, 87
23000	118, 91	116, 89
24000	121, 93	120, 92
25000 and above	125, 96	123, 95

If the wings are level after ditching, evacuate the aircraft through the forward emergency exits. If one wing is in the water, evacuate through the opposite emergency exit and through the flight compartment roof emergency exit.

Emergency Brake System..... EMERGENCY

Parking Brake ..... On

Fuel Levers ..... OFF

Prop Levers..... FEATHER

Evacuation ..... Announce

ATC ..... Notify

Electrical Master ..... OFF

Evacuation ..... Complete

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	A'ICE PANEL	PITOT L	FIRE FAULT L	SMOKE AFT
	83	82	61	60

51	62	86	62	51
FIRE L	GEN L	DOORS	GEN R	FIRE R
P TO C				P TO C

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VANE 1	OIL R	HYD R	FUEL PRESS R	LOW FUEL AFT
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