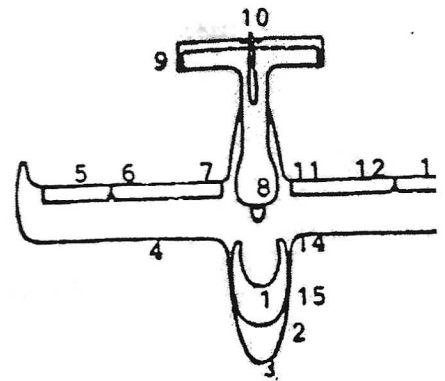


PT6A-20 Lmts	SHp	NP RPM	OIL Pressure	Max ITT C	N1%	Torque Limit %	Torque PSIG	LB/ESH P/HR
Take-off: Time limited	550	2200**	65-80	579	101.6	100	42.4	0.649
Max Continuous	550	2200	65-80	579	100	100	42.4	0.649
Max Climb	538	2200	65-80	566	100	95	41.4	0.653
Max Cruise	495	2200	65-80	522	100	90	38.1	0.67

N71RJ Engine Limits	SHp	NP RPM	OIL Pressure	Max ITT C	N1%	Torque Limit %	Torque PSIG	Torque Ft LBS	OIL Temp Range C
Starting	0		40+	1090 for 2 Sec	49-51	0.0	0.0	0	-40
Ground Idle	100		40+	685	49-51	18.2	7.7	239	-40-99
Flight Idle	200		40+	685	80	36.4	15.4	359	0-99
Max Reverse	500		65-80	750	101	90.9	38.5	1195	0-99
Take-off	450	2200**	65-80	750	100	81.8	34.7	1075	10-99
Max Continuous	450	2200	65-80	705	100	81.8	34.7	1075	10-99
Max Climb	450	2200	65-80	725	95	81.8	34.7	1075	0-99
Max Cruise	450	1900	65-80	705	95	81.8	34.7	1075	0-99
Recommended Cruise	350	1900	65-80	705	90	63.6	27.0	1075	0-99

STEP 8 - FIGURE 2

PRE FLIGHT INSEPTION SHEET
 DATE TIME
 GAS gal. OIL qts.
 INSPECTED BY



1. COCKPIT

- a) IGNITION OFF
- b) FLAPS DOWN
- c) CONTROLS FREE
- d) COWL FLAP OPEN

2. FRONT HATCH

- a) HYDRAULIC RESERVOIR LEVEL
- b) HYDRAULIC LEAKS
- c) BALLAST CHECK
- d) BRAKE RESEVOIR LEVEL

3. NOSE GEAR

- a) AIR PRESSURE
- b) TIRE DAMAGE
- c) DOOR HINGE INSPECTION
- d) PARTS INSPECTION (NUTS, ETC.,)
- e) SHIMMY DAMPER TENSION

4. STARBOARD WING INSPECTION

- a) WING MOUNT BOLTS
- b) FUEL DRAIN
- c) LEADING EDGE INSPECTION
- d) PITOT TUBE COVER OFF - TUBE CLEAR
- e) FLOAT BOTTOM INSPECTION
- f) FUEL QUANTITY-FILLER CAP O.K.
- g) VENT CLEAR

5. AILERON (STARBOARD)

- a) HINGE INSPECTION
- b) PUSH ARM INSPECTION
- c) TRAILING EDGE DELAMINATION
- d) FREEDOM OF MOVEMENT
- e) TRIM TAB SECURE

6. FLAP (STARBOARD)

- a) TRAILING EDGE DELAMINATION
- b) PUSH ARM INSPECTION
- c) FULL MOVEMENT
- d) INSPECTION PLATES SECURE

7. MAINGEAR STARBOARD

- a) AIR PRESSURE
- b) TIRE DAMAGE INSPECTION
- c) PARTS INSPECTION (NUTS, SCREWS, ETC.)
- d) LEG DELAMINATION
- e) LOCK CABLE CHECK
- f) BRAKES
- g) DRAIN HEADER

8. ENGINE

- a) OIL LEVEL-LID SECURE
- b) ENGINE MOUNT INSPECTION
- c) COWLING MOUNTS
- d) PROP EDGES
- e) NOSECONE SCREWS
- f) EXHAUST PIPES
- g) BREATHER BOX
- h) GASCOLATOR
- i) COWL FLAP INSPECTION

9. HORIZONTAL STABILIZER AND TRIM

- a) HINGE INSPECTION
- b) HORN AND PUSH ARM
- c) STRUCTURAL DELAMINATION
- d) FREEDOM OF MOVEMENT
- e) TRIM TAB SECURE

10. RUDDER AND FIN

- a) HINGE INSPECTION
- b) CABLE MOUNT INSPECTION
- c) TRAILING EDGE INSPECTION
- d) FREEDOM OF MOVEMENT
- e) UPPER FIN SECURE
- f) TRIM TAB SECURE
- g) WATER RUDDER INSPECTION

11. MAIN GEAR PORT

- a) AIR PRESSURE
- b) TIRE DAMAGE INSPECTION
- c) PARTS INSPECTION (NUTS, SCREWS, ETC.)
- d) LEG DELAMINATION
- e) LOCK CABLE CHECK
- f) BRAKES
- g) DRAIN HEADER

12. FLAP PORT

- a) TRAILING EDGE DELAMINATION
- b) PUSH ARM INSPECTION
- c) FULL MOVEMENT
- d) INSPECTION PLATES SECURE

13. AILERON PORT

- a) HINGE INSPECTION
- b) PUSH ARM INSPECTION
- c) TRAILING EDGE DELAMINATION
- d) FREEDOM OF MOVEMENT
- e) TRIM TAB SECURE

14. PORT WING INSPECTION

- a) WING MOUNT BOLTS
- b) FUEL DRAIN
- c) LEADING EDGE INSPECTION
- d) PITOT TUBE COVER OFF-TUBE CLEAR
- e) FLOAT BOTTOM INSPECTION
- f) FUEL QUANTITY-FILLER CAP O.K.
- g) VENT CLEAR

15. COCKPIT TESTS AND INSPECTION

- a) CONTROLS-FREEDOM OF MOVEMENT
- b) RUDDER PEDALS-FREEDOM OF MOVE
- c) CHECK BATTERY VOLTAGE
- d) TEST FUEL BOOST
- e) TEST BILGE
- f) TEST FUEL SELECT
- g) TEST RADIO
- h) RUN TRIM
- i) HYDRAULIC PRESSURE
- j) CHECK CANOPY HINGES
- k) CHECK CANOPY LOCKS
- l) CLEAN AND INSPECT STATIC AIR
- m) CLEAN COCKPIT AND BILGE WATER
- n) FLIGHT PERMIT ABOARD

COMMENTS: _____

16 Clean fuel filter
 wings & tail

1. Check flight controls for correct operation and lube yoke travel
2. Check all trim inputs for correct orientation
3. Flap indicator and flap symmetry
4. Mixer
5. Header Tank
6. Swing gear and check all up and down microswitches
7. Fuel System Check out
8. Familiarize fuel vent system
9. Familiarize and test aux fuel transfer and main to main transfer
10. Check boost pumps.
11. Clean engine injectors and spark plugs
12. Regulate hydraulic fluid flow to flaps, gear and nose wheel steering
13. Strengthen nose wheel weak points
14. Check out all Com/nav systems
15. Pitot-static/transponder check; check antenna installation
16. Familiarize with GPS nav systems
17. Water rudder up lock
18. Water rudder travel 50 degrees stbd and 45 degrees port
19. Top off hydraulic fluid, 12 quarts oil and full main fuel tanks
20. Engine run-up, mag and prop checks, taxi test and braking
21. Hi speed taxi tests on runway
22. CG calculation

**N-71RJ TURBINE SEAWIND
ABBREVIATED NORMAL and EMERGENCY OPERATING
PROCEDURES**

PREFLIGHT

1. Documentation: A.R.O.W.
2. Inspections current in logbook.
3. W&B analyzed and printed to POH
4. Eng. fire suppression valve ON/green
5. **Wing root valves on. No fumes, leaks.**
6. Headsets – *all operational with 1 spare*
7. Fight bag – all charts, IPADs for flight
8. General Exterior Condition – CHECK
9. Fight Controls – **CHECK 3 FREE!**
10. Propeller Security – REMOVED
11. Pitot tube covers - REMOVED
12. A&E Fuel Drains (7) – DRAIN
13. Water Rudder UP and locked
14. Bilge Pump – Check for water Ops
15. Mooring equipment: Stowed
16. **Fuel & Oil Min Quantity – CHECK**
17. Fuel Caps (4) – LOCKED CLOSED
18. Emer Ldg gear pump handle in console
19. O2 system valve open. 2 masks ready for flight above 8000/6000 MSL, day/night
20. Emergency and nose hatch secure
21. GRT and G-900 database current
22. EFIS SD Recorder card in USB drive
23. VOR Receivers Current
24. Emergency equipment secure
25. Cams, Nosewheel & Engine Lit.
26. Brakes – SET or OFF
27. Chocks – all REMOVED

BEFORE START

1. Exterior inspection – COMPLETED
2. Passengers and Co-Pilot briefed.
3. Seat Belts – FASTENED
4. Landing Gear – **UP or DOWN**
5. Power Levers – IDLE stop
6. Propeller Control – Full forward
7. Condition Levers – CUT-OFF
8. Fuel Selector – **BOTH**
9. Fuel center tank bypass – Select tank
10. Circuit Breakers – CHECK
11. **Battery Master** – Both A&B ON
12. GRT EIS – Check ON engine page
13. Warning Lights/flags – test & check
14. Warnings; OP and FP Check
15. **All gages have numbers displayed. If not, stop here.**
16. SL 30 and Sorcerer AP – OFF
17. A/P – CHECK THEN OFF
18. SL 30 and Sorcerer AP – OFF X

ENGINE START

1. Beacon – ON
2. Electric Fuel Pump – ON, + 10 PSI
3. Ignition – ON.
4. Start – ON 15 % 5 seconds **COUNT**
5. Oil Pressure **60-80/135 PSI, low/Hi idle.**
6. **Discontinue start if outside this range**
7. Condition Lever – LOW-IDLE
8. **ITT (max 925°C and 5 sec). If above, Abort start immediately – idle cut off**

9. Start and **IGN** – OFF (at 50% N1 or +)

i. CAUTION

10. If no ITT rise is observed 5 seconds after moving the condition lever to **LOW IDLE**, move the condition lever to cut-off and the starter switch to **OFF**. Allow a 30 seconds delay to drain fuel, then motor the engine by placing the starter switch to on and follow engine clearing procedures.

ENGINE CLEARING PROCEDURE

1. Fuel Selector: Both. Fuel pump ON.
2. Condition Lever – CUT-OFF
3. **Ignition – OFF**
4. Battery Master – ON
5. Start Switch – ON for 40 seconds
6. **CAUTION**
7. Observe the starter limits of 40 seconds ON, 60 seconds OFF, 40 seconds ON, 60 seconds OFF, 40 seconds ON, then 30 minutes OFF.
8. Start Switch – OFF

AFTER START

1. **Ignition switch OFF**
2. **Generator – ON**
3. **All engine indications – GREEN**
4. **Oil Pressure low/high idle 40-65/65-85**
5. **ITT – Less than 825**
6. **Torque meter – Pos indication**
7. **Propeller moves to low pitch**
8. Avionic Master – ON
9. SL 30 – ON Grd Freq.
10. G900 NAV & COM Freqs tuned
11. Transponder- ON Squawk correct code
12. Garmin GDL 52/IPAD ON & ready
13. Lights – AS REQUIRED
14. Flight Instruments – CHECKED
15. Electric Trims (3each) – SET
16. ATIS, Taxi, ATC/TW IFR Clearances

17. Hydraulic Pump: ON. **1000+ PSI**
18. Altimeters and heading bugs set.
19. **G900 FP. GRT Recorder - On**
20. Brakes – **CHECK**

21. BEFORE TAKE-OFF

22. **Ignition OFF, Generator ON**
23. Beta indication light – ON < 50% N1
24. Oil Temp – 0-93 degrees C.
25. All engine indications – **GREEN**
26. All flight instruments OK. No flags
27. **Fuel Selector: Center Tank + BOTH**
28. **Fuel pressure & flow rate Positive**
29. 2nd electric fuel pump: **ON**
30. Fuel heater: ON below 5 C cruise Alt
31. Warning Lights – TEST. **NO FLAGS**
32. Trims – Neutral, Right Rudder
33. Radios Set. Passenger Com check
34. Overspeed Governor – TEST
35. Propeller control – FULL INCREASE
36. Power Lever – BELOW 1900 RPM
37. Overspeed Test Switch - HOLD
38. Power Lever – INCREASE: 1900 – 2100 RPM
39. Observe MAX ITT & TORQUE, Beta light OFF. Overspeed Test – RELEASE. RPM increases.
40. Prop Governor – CHECK at 1900 RPM
41. Propeller Control – **FULL FORWARD**
42. **Flaps – SET 20 Degrees**
43. Lights – AS REQUIRED
44. Water Rudder – Confirm UP & locked
45. G900 and GRT – set for flight.
46. **Baro – Set x 3. Heading bug, Synch**
47. **FL 100 day/80 at night don O2 masks.**
48. Set G900 TMR/REF **ON**
49. **Canopy closed, latched & locked**

TAKE-OFF

1. Hydraulic pressure 1000+
2. Condition Lever – HIGH IDLE
3. Water only: 5 Deg R. of wind, rudder up, 40kts, gradually release yoke.
4. Line up.
5. Instruments all green, no flags.
6. Nose wheel confirm UP or centered
7. Yoke: Full Aft
8. Take off power set: Max. Torque 38-40 PSIG. Max ITT : 750° C 2200 Max RPM. OP 65-85.
9. Rotate at 70/60 knots Normal/Short Fld
10. GW Rotation at Std Cond = 2000'

AFTER TAKE-OFF

1. Wheels – UP
2. Flaps 20 Vx/Vy 64/86 KIAS
3. 500 AGL Flaps 0, VY=90
4. Lights – AS REQUIRED

CRUISE

1. Engine Instruments – CHECKED
2. Warning Lights – ALL OFF
3. Fuel Selector – BOTH or L/R
4. Cruise -1900 RPM
5. Max 94 % N1, 148 Knots Max IAS
6. Torque – 27/34 ~ 350/450 HP
7. AP SET & activated if desired
8. Flaps – Full up to -10 degrees
9. Hydraulic pump OFF
10. Emergency fuel pump: **OFF**
11. Fuel flow – less than 25 GPH
12. HVAC – set.
13. VFR – FSS 122.2 Open Flight plan
14. Activate O2, maintain 8000' > 10 Min

15. Alarm 1 H. Pump Aux-Main Fuel Tanks.
16. Timer: Reset to 30 Min: Shut off aux pumps
17. Auto Pilot: Set as needed
18. Passengers: Brief and check.

DESCENT- BEFORE LANDING

1. VFR – Close flight plan
2. Hydraulic pump on, 1000+ PSI
3. Brake Lock; push IN
4. ATIS/Altimeters – SET
5. G900 – Set for approach
6. Lights – AS REQUIRED
7. Fuel Selector – BOTH
8. 2nd Electric fuel pump: On
9. Prop Lever Full Advance +2100 RPM
10. Torque 20.
11. VLE/VFE < 122/105.
12. Landing Gear – UP or Down –
13. 3 greens land or 3 blues water
14. Gear Position: Visually Check
15. Abeam: Flaps – 20 degrees, N1 80%
16. Nose wheel confirm UP/down-Hero 3
17. Torque 10-20 for ROD 500'
18. Base F30/75, Final trim F40/70. 10-15' AGL smoothly reduce Power: Flare to 3-5 Deg Up. Note torque. Touch @ 60 Kt

AFTER TOUCHDOWN

1. Power Lever: Smoothly full aft
2. Condition Lever – LOW IDLE
3. Flaps – ZERO
4. Short Field Only: Power lever: *Retard to beta; Prop air brake, engage.*
5. Yoke: use to counter rearward thrust.
6. Power lever back to low power (non beta) when < 20 knots roll speed.
7. Water Rudder–DOWN after water landing

8. Lights – AS REQUIRED
9. 2nd Fuel pump – OFF

SHUTDOWN

1. Parking Brake – SET
2. Trims (2) – RESET NEUTRAL
3. Timer Ref STOP. Note time in logbooks
4. **ITT – BELOW 610°C 1 minute**
5. Generator – OFF
6. Propeller - Forward
7. Condition Lever – **CUT-OFF**
8. Fuel Pumps– OFF.
9. **Fuel Selector – OFF**
10. GRT EFIS Next/Demo/Stop recording.
11. Avionics Master Off
12. Battery Master – OFF
13. Bilge pump set to **OFF** or **AUTO**.
14. *Propeller – Check feathered, secured*
15. *Canopy pitot tubes cover*
16. *Tie down and chalk.*
17. **Check & log oil level + 15-30 minutes.**
18. Wing valves closed if storing
19. *Remove personal items*
20. *Exhaust plugs – Placed*
21. Lock Canopy as needed
22. **Fight plan – Closed**
23. Cameras Off

EMERGENCY PROCEDURES

LANDING GEAR FAILURE TO GO UP OR DOWN

1. Check hydraulic pressure. 1000+
2. If no pressure, cycle switch ON
3. Actuate gear UP or DOWN Lever
4. Still INOP?
5. Put handle in Back Up Manual Pump, select up/down valve on it and manually pump. Wheels will gradually go in direction selected until 3 up/down position lock lights appear.
6. If no nose gear light. Check wheel position with Cam.
7. Us NW steering to free nosewheel
8. If any gear is still stuck up...
9. Make rapid emergency descent and pull 2-3 G force to drop them

ENGINE FAILURE/FIRE

DURING TAKE-OFF Ground Roll

ABORT

1. Power – IDLE or Reverse
2. Condition Lever – CUT-OFF
3. Fuel Valve – OFF
4. Elec Fuel Pump – OFF
5. Avionics + Master: OFF
6. Brake and exit ASAP

ENGINE FAILURE AFTER TAKE-OFF.

1. Immediately Push THE nose down.
2. MAINTAIN 20F best glide 67 Kts
3. FUEL SELECTOR – BOTH
4. IGNITION ON

5. FUEL PUMP – ON
6. STBY Fuel Pump - ON
7. If NO Re-Start: SHUT DOWN
8. Power Lever – IDLE
9. Propeller Control – Feather
10. Condition Lever – CUT-OFF
11. Fuel Valve - Off
12. Ignition - OFF
13. Gear – UP or DOWN
14. ATC – NOTIFY, Land ASAP

CRUISE FLAME OUT

1. *PROCEED WITH THE AFTER TAKE-OFF PROCEDURE AND TRY A RE-START IF NO ENGINE MALFUNCTION DETECTED.*
2. FUEL PUMP – 1&2 ON
3. FUEL SELECTOR – BOTH
4. START PROCEDURE – APPLY

IF NO RE-START or ENGINE FIRE

1. ENGINE SHUTDOWN
2. PROCEDURE – APPLY
3. GW Best Glide, flaps 0 is 91 Knots.
4. LAND ASAP. Winds less than 10 Kts? Consider suitable Water landings

EMERGENCY LANDING

1. Consider water landing.
2. + 1000 PSIG hydraulic pressure
3. FLAPS 40 & Landing gear
4. G900, GRT or IPAD “Nearest” Turn to heading.
5. *Pre-landing checklist complete*
6. *BEFORE TOUCHDOWN – All Fuel and electrical switches OFF*
7. Safety latch lock pin: Pull
8. ATC – NOTIFY 121.5, 7700

ELECTRICAL FIRE

1. Maintain level flight attitude.
2. Check battery gauges for load indications of short. Switch to Battery Bank with lowest amperage.
3. Activate AP ALT hold.
4. Open air vents and if available,
5. Don oxygen masks.
6. Check circuit breakers. Do not reset an open breaker with smoke in cockpit.
7. G900, GRT or IPAD “Nearest” Turn to heading.
8. Gradually turn off all nonessential components until smoke abates
9. Last option is turn master A&B OFF and go to Emer Flt gauges.
10. Stay on instruments
11. Contact ATC. Portable radio.
12. Descend and Land ASAP.
Consider water landing.

United Aircraft of Canada Limited
PT6A-20 MAINTENANCE MANUAL
P/N 3011402

POWER SETTING	Temp. Available To	Gas Generator (N _G) 100% = 37,500 rpm		Power Turbine (N _P) 100% = 33,000 rpm		Maximum Observed ITT T _{t5}	Max. Torque		SFC lbs/shp/hr	Normal Oil Pressure psig	Oil Temp. Range
		%	rpm	%	rpm		lbs-ft	psi			
Take-off	21°C (70°F)	101.6	38,100	100	33,000	750°C (1382°F)	1315	42.5	0.683	65-80	10° - 93°C (50° - 200°F)
Max. Cont.	21°C (70°F)	100		100	33,000	750°C (1382°F)	1315	42.5	0.683	65-80	0° - 93°C (32° - 200°F)
Max. Climb	15°C (59°F)					725°C (1338°F)	1284	41.6	0.688	65-80	0° - 93°C (32° - 200°F)
Max. Cruise	15°C (59°F)			100	33,000	705°C (1301°F)	1122 1178	38.2	0.705	65-80	0° - 93°C (32° - 200°F)
Flight Idle			24,500 Typical				217 Typical	7.0			0° - 93°C (32° - 200°F)
Ground Idle		50.6	19,000 Typical			685°C (1265°F) (7)	115 Typical	5.0		40 Min.	-40° - 93°C (-40° - 200°F)
Starting						1090°C (1994°F) (6)					-40° Min.
Momentary Acceleration		102.6 (6)	38,500	110 (6)	36,300	850°C (1562°F) (6)	1500 (6)	48.5 (6)		65-80	0° - 93°C (32° - 200°F)
Maximum Reverse	21°C (70°F)	99.5	37,350	95	31,350	750°C (1382°F)	1263	40.8		65-80	0° - 93°C (32° - 200°F)

- NOTES:
- 1 All limits are based on sea level and ambient temperatures, as specified.
 - 2 Accessory drive seal leakage should not exceed 3 cc per hour.
 - 3 Maximum acceleration time from flight idle to 95% take-off power should not exceed 5 seconds.
 - 4 Minimum oil pressure above 28000 N_G is 65 psig.
 - 5 For rpm, ITT and torque limits, refer to Table 6-11 and Figures 6-45, 6-46 and 6-47.
 - 6 These figures are time-limited to two seconds.
 - 7 Increase N_G rpm to maintain this limit.

Table 6-10 Ground Operating Limits

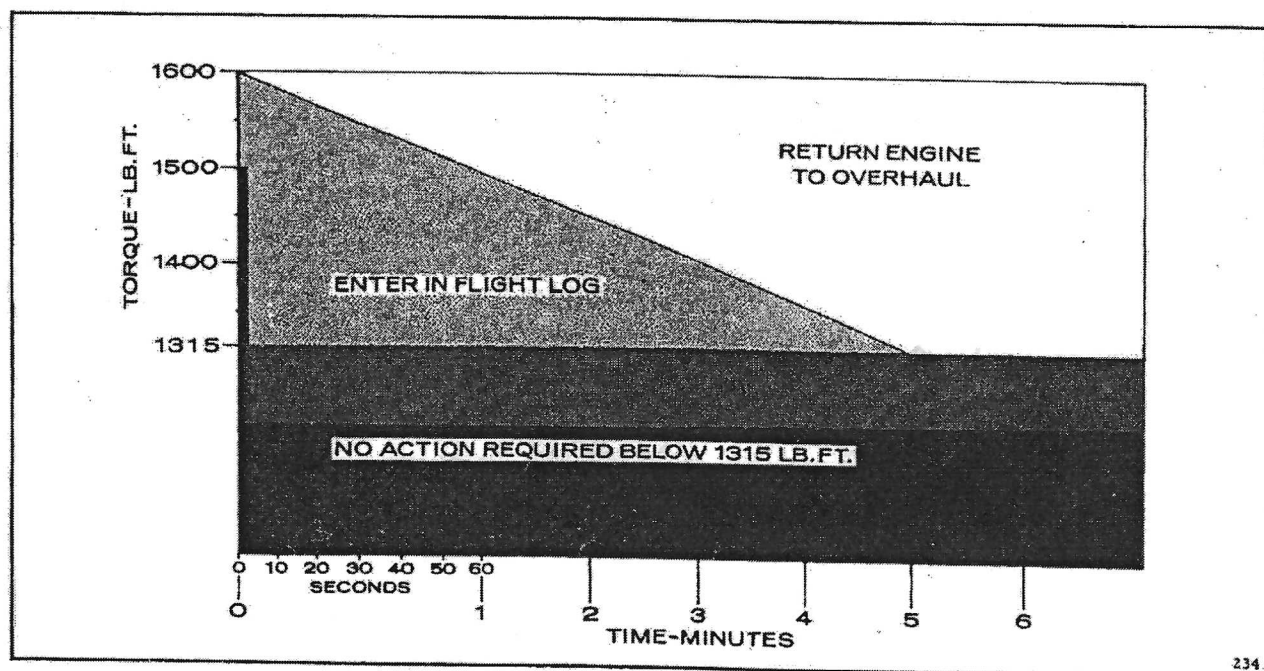


Figure 6-47 Overtorque Limits - All Conditions

- (9) High generator loads at low N_1 speeds may cause the ITT acceleration temperature limit to be exceeded. This does not apply during engine start.

GENERATOR LOAD VS MINIMUM N_1

GENERATOR LOAD	MINIMUM GAS GENERATOR RPM
0 to .5 Load	49%
.5 to .75 Load	53%
.75 to .90 Load	59%
.90 to 1.0 Load	63%

TEMPERATURE LIMITS

Aircraft shall not be operated when takeoff ambient temperature exceeds ISA + 37°C.

MINIMUM OIL TEMPERATURE REQUIRED FOR FLIGHT

Engine oil is used to heat the fuel on entering the fuel control. Since no temperature measurement is available for the fuel at this point, it must be assumed to be the same as the OAT. The graph below is supplied for use as a guide in preflight planning, based on known or forecast operating conditions, to allow the operator to become aware of operating temperatures where icing at the fuel control could occur. If the plot should indicate that oil temperatures versus OAT are such that ice formation could occur during takeoff or in flight, anti-icing additive per MIL-I-27686 should be mixed within the fuel at refueling to insure safe operation.

