# **OPERATING LIMITATIONS**

#### WEIGHT

Maximum Ramp Weight	15 000 Pounds
Maximum Takeon Weight	14 800 Poundo
Maximum Landing Weight	13 500 Pounds
Maximum Zero Fuel Weight	15,500 Pounds
**************************************	11,300 Pounds

Maximum takeoff and landing weights may be additionally restricted due to altitude, temperature and field length.

# **CENTER - OF - GRAVITY LIMITS**

Forward Limit:

At 9147 pounds - 18.54 percent MAC (276.57 inches aft of datum) At 14,800 pounds - 23.99 percent MAC (280.97 inches aft of datum) (Straight line variation between 18.54 and 23.99 percent MAC)

Aft Limit:

At 14,800 pounds or less - 30.00 percent MAC (285.85 inches aft of datum)

Refer to Section VII of this manual or to Section II of the FAA Approved Airplane Flight Manual for the Center-of-Gravity Limits Graph. The airplane must be operated in accordance with the approved loading schedule. (Refer to the Weight and Balance Data Sheet and Model 550 Citation Bravo Weight and Balance Manual.)

#### **AIRSPEED**

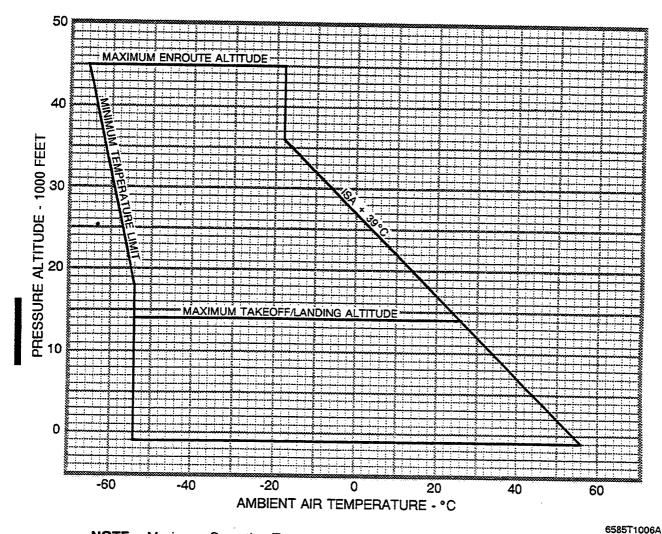
Maximum Operating Speed (V <sub>MO</sub> /M <sub>MO</sub> ): Above 27,900 Feet	275 KIAS
Management of the control of the con	er to Section if of the
FAA Approved Air	plane Flight Manual
Partial Flaps 15° (T.O. & APPR. Position)	200 KIAS
Flaps 40° (LAND Position)	174 6146
Landing Gear Operating Speed, Extend - (V <sub>LO</sub> Extend)	174 KIAO
Landing Coar Operating Speed Patrick At Date 1	250 KIAS
Landing Gear Operating Speed, Retract - (VLO Retract)	200 KIAS
Landing Gear Extended Speed - (VIF)	260 KIAS
Speed Brake Operation Speed - (VSB)	No Limit
Minimum Control Speed - Airborne (V <sub>MCA</sub> )	79 KIAC
Minimum Control Speed - Ground (Vice)	
Minimum Control Speed - Ground (V <sub>MCG</sub> )	89 KIAS
Maximum Tire Ground Speed	165 Knots
Autopilot Operation	IAS or 0.700 MACH

# TAKEOFF AND LANDING

■ Maximum Altitude  Maximum Tailwind Component  Maximum Runway Water/Slush Accumulation  Maximum Ambient Temperature  Minimum Ambient Temperature  The Engine Synchronizer must be OFF for takeoff and landing.	
The Engine Synchronizer must be OFF for takeoff and landing.	

(Continued Page 1-11)

# TAKEOFF/LANDING/ENROUTE TEMPERATURE LIMITATIONS



NOTE: Maximum Operating Temperature Limit is ISA + 39° C ambient temperature adjusted for ram rise

Figure 1-3

#### **OPERATING LIMITATIONS**

#### WEIGHT

Maximum Ramp Weight	15 000 Pounds
Maximum Takeoff Weight	14 900 Bounds
Maximum Landing Woight	14,000 Founds
Maximum Landing Weight	13,500 Pounds
Maximum Zero Fuel Weight	11.300 Pounds
	,

Maximum takeoff and landing weights may be additionally restricted due to altitude, temperature and field length.

#### **CENTER - OF - GRAVITY LIMITS**

Maximum Operating Speed (V. 10/M. 10):

TAKEOFF AND LANDING

Forward Limit:

At 9147 pounds - 18.54 percent MAC (276.57 inches aft of datum) At 14,800 pounds - 23.99 percent MAC (280.97 inches aft of datum) (Straight line variation between 18.54 and 23.99 percent MAC)

At 14,800 pounds or less - 30.00 percent MAC (285.85 inches aft of datum)

Refer to Section VII of this manual or to Section II of the FAA Approved Airplane Flight Manual for the Center-of-Gravity Limits Graph. The airplane must be operated in accordance with the approved loading schedule. (Refer to the Weight and Balance Data Sheet and Model 550 Citation Bravo Weight and Balance Manual.)

#### **AIRSPEED**

Maximum Operating Speed (VMO/MMO):
Above 27,900 Feet 0.700 Mach (Indicated)
Between 8000 feet and 27,900 Feet
Between Sea Level and 8000 Feet
Maneuvering Speed (VA) Refer to Section II of the
FAA Approved Airplane Flight Manual
Partial Flaps 15° (T.O. & APPR. Position)
Flaps 40° (LAND Position) 174 KIAS
Landing Gear Operating Speed, Extend - (V <sub>IO</sub> Extend)
Landing Gear Operating Speed, Retract - (VLO Retract)
Landing Gear Extended Speed - (V <sub>LE</sub> )
Speed Brake Operation Speed - (V <sub>SB</sub> )
Minimum Control Speed - Airborne (V <sub>MCx</sub> )
Minimum Control Speed - Ground (V <sub>MCo</sub> )
Maximum Tire Ground Speed
Autopilot Operation

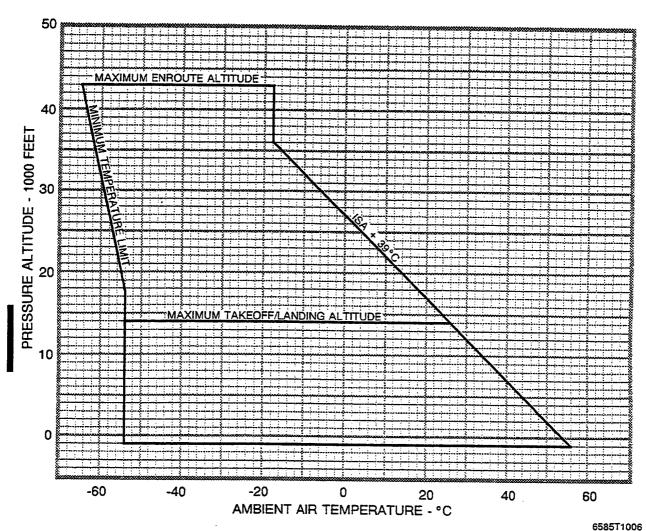
(Continued Page 1-11)

Maximum Altitude ..... 14,000 Feet

Maximum Tailwind Component .....

10 Knots

# TAKEOFF/LANDING/ENROUTE TEMPERATURE LIMITATIONS



NOTE: Maximum Operataing Temperature Limit is ISA + 39° C ambient temperature adjusted for Ram rise

Figure 1-3

### TAKEOFF AND LANDING (Continued)

Autopilot and yaw damper must be OFF for takeoff and landing.

All vertical navigation systems must be OFF below 500 feet above ground level.

Takeoffs and landings are limited to paved runways unless equipped with optional Gravel Runway Modification, either factory installed or through appropriate Cessna Service Bulletin.

# **ENGINE OPERATING LIMITS**

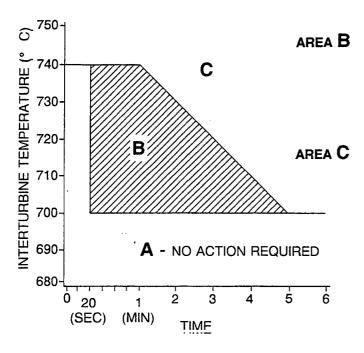
THRUST SETTING	TIME LIMIT (MINUTES)	ITT TEMPERA- TURE °C	N <sub>2</sub> % TURBINE RPM	N <sub>1</sub> % FAN RPM	OIL PRESSURE PSIG (NOTE 2)	OIL TEMPERATURE °C
TAKEOFF	5	700	100	100 (NOTE 4)	45 TO 140 (NOTE 3)	10 TO 121
MAXIMUM CONTINUOUS	CONTINUOUS	700	100	100 (NOTE 4)	45 TO 140	10 TO 121
GROUND IDLE (NOTE 7)	CONTINUOUS		45.3 (MIN) (NOTE 5)		20 (MIN)	-40 TO 121
FLIGHT IDLE (NOTE 7)	CONTINUOUS	580	49.4 (MIN) (NOTE 6)		20 (MIN)	-40 TO 121
STARTING	5 SEC	740 FIGURE 2-3				-40 (MIN)
TRANSIENT	20 SEC	740 FIGURE 2-3	102	102	(NOTE 3)	0 TO 121

#### **NOTES**

- 1. The maximum start limit is 740°C for 5 seconds; refer to Figure 1-6.
- 2. Normal oil pressures are 45 to 140 PSIG above 60% TURBINE RPM. Oil pressures below 45 PSIG are undesirable and should be tolerated only for the completion of the flight, preferably at reduced power setting. Oil pressures below 20 PSIG are unsafe and require that either the engine be shut down or a landing be made as soon as practical, using the minimum power required to sustain flight.
- 3. The maximum transient oil pressure can be 250 PSIG for 20 seconds.
- 4. N<sub>1</sub>% Fan RPM is limited to either 100% N<sub>1</sub> or the appropriate thrust setting charts in Section IV (Standard Charts), whichever is less.
- Ground idle (LOW) turbine RPM is 45.3 minimum with ignition ON, pressurization bleed air OFF and oil temperature stabilized. Maximum ground idle (LOW) turbine RPM should not exceed the HI setting.
- 6. Flight (HI) idle turbine RPM is 49.4 + 1.0% -0% with ignition ON, pressurization bleed air OFF and oil temperature stabilized.
- 7. With pressurization bleed air ON, idle speeds may be up to  $1.5\%~N_2$  less than noted above.

Figure 1-4

# ENGINE OVERTEMPERATURE LIMITS ALL CONDITIONS EXCEPT STARTING

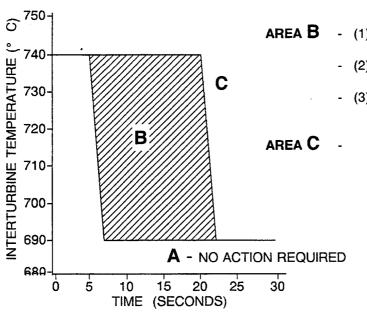


- (1) DETERMINE CAUSE AND CORRECT
- (2) INSPECT HOT SECTION USING BORESCOPE
- (3) RECORD IN ENGINE LOG BOOK
  - RETURN ENGINE
    TO OVERHAUL FACILITY

6584C6050

Figure 1-5

# ENGINE OVERTEMPERATURE LIMITS STARTING



(1) DETERMINE CAUSE AND CORRECT

(2) INSPECT HOT SECTION USING BORESCOPE

(3) RECORD IN ENGINE LOG BOOK

RETURN ENGINE
TO OVERHAUL FACILITY

6584C6049

Figure 1-6

# **ENGINE OVERSPEED LIMITS**

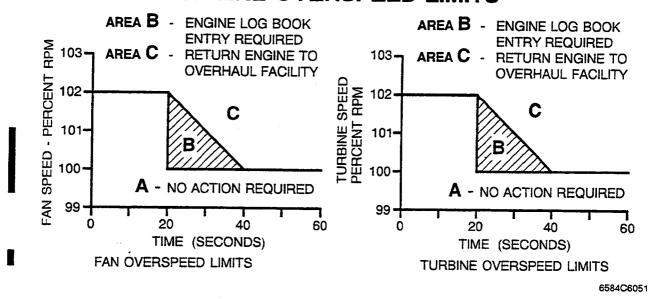


Figure 1-7

### **BATTERY AND STARTER CYCLE LIMITATIONS**

#### NOTE

This limitation is independent of starter power source; i.e., battery generator assisted cross strart, or external power unit.

#### **NOTES:**

- 1. If battery limitation is exceeded, a deep cycle including a capacity check must be accomplished to detect possible cell damage. Refer to Chapter 24 of the Maintenance Manual for procedure.
- 2. Three generator assisted cross starts are equal to one battery start.
- 3. If an external power unit is used for start, no battery cycle is counted.
- 4. Use of an external power source with voltage in excess of 28.0 Volts Direct Current (VDC) or current in excess of 1000 amperes may damage the starter.

# PROLONGED GROUND OPERATIONS

Continuous engine ground static operation up to and including five minutes at takeoff thrust is limited to ambient temperatures not to exceed 39°C above international standard atmosphere (ISA).

Continuous ground operation of the starter-generator above 315 amperes is prohibited.

Limit ground operation of pitot/static heat to two minutes to preclude damage to the pitot/static tubes and the angle-of-attack probe.

#### HYDRAULIC FLUID

Approved Fluids: Use Skydrol 500B-4 or LD-4, or Hyjet, Hyjet IVA, or IVA Plus only.

### APPROVED OILS

The following oils are approved for use:

MOBIL JET OIL II MOBIL JET OIL 254 EXXON TURBO OIL 2380 AERO SHELL TURBINE OIL 500 CASTROL 5000

**AERO SHELL TURBINE OIL 560** 

ROYCO TURBINE OIL 500 ROYCO TURBINE OIL 560

In addition, oils listed for the engine in the latest revision to Pratt & Whitney Canada Inc. Maintenance Manual P/N 30J1112 are approved.

#### CAUTION

WHEN CHANGING FROM AN EXISTING LUBRICANT FORMULATION TO **GENERATION**" LUBRICANT **FORMULATION** (AEROSHELL/ROYCO TURBINE OIL 560 or MOBIL JET 254) THE ENGINE MANUFACTURER STRONGLY RECOMMENDS THAT SUCH A CHANGE SHOULD ONLY BE MADE WHEN AN ENGINE IS NEW OR FRESHLY OVERHAULED. FOR ADDITIONAL INFORMATION ON USE OF THIRD GENERATION OILS, REFER TO THE ENGINE MANUFACTURER'S PERTINENT OIL SERVICE BULLETINS.

Should oils of nonapproved brands or of different viscosities become intermixed, drain and flush the complete oil system and refill with an approved oil in accordance with the Engine Maintenance Manual instructions.

Minimum starting oil temperature is minus 40°C.

#### **FUEL LIMITATIONS**

The following fuels are approved for use in accordance with Figure 1-8:

COMMERCIAL KEROSENE JET A, JET A-1, JET B, JP-4, JP-5, and JP-8 per CPW 204 Specification.

#### NOTE

JP-4, JP-5 and JP-8 type fuels have anti-icing additive preblended by the refinery. Refer to Section IV Operating Procedures, Servicing - Fuel, for blending and checking fuel anti-ice additives.

Boost Pump - ON; When low fuel lights illuminate or at approximately 200 pounds or less indicated fuel. To crossfeed, turn boost pump OFF on side opposite selected tank.

# **FUEL LIMITATIONS AND ADJUSTMENTS**

FUEL GRADE	FUEL SPECIFICATION	MINIMUM FUEL TEMPERATURE (TAKEOFF)	MAXIMUM FUEL TEMPERATURE (TAKEOFF)
JET A	ASTM-D1655	-35°C	+ 56°C
JET A-1	ASTM-D1655	-40°C	+ 56°C
JET B*	ASTM-D1655	-45°C	+ 56°C
JP-4*	MIL-T-5624	-54°C	+ 56°C
JP-5	MIL-T-5624	-40°C	+56°C
JP-8	MIL-T-83133	-40°C	+56°C

<sup>\*</sup> Refer to Figure 1-8A for altitude operating limitations with JET B or JP-4 fuel.

#### Figure 1-8

Maximum asymmetrical fuel differential for normal operations	200 pounds
Maximum emergency asymmetrical fuel differential	600 pounds

#### NOTE

Flight characteristics requirements were not demonstrated with unbalanced fuel above 200 pounds.

#### **UNUSABLE FUEL**

Fuel remaining in the fuel tanks when the fuel quantity indicator reads zero is not usable in flight.

# JET B/JP-4 FUEL OPERATING LIMITATIONS

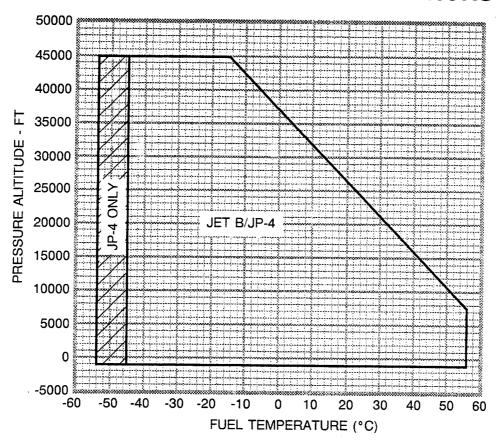


Figure 1-8A

# WINDSHIELD ICE PROTECTION FLUID

Use TT-I-735 Isopropyl Alcohol for windshield anti-ice.

# NOSE GEAR TIRES

Nose Gear Tire Pressure: 120 PSI, +5 or -5 PSI

Goodyear nose tire part numbers 184F08-1 and 184F13-5 and nose tire part number 031-613-8 (manufactured by BFGoodrich/Michelin) are the only approved nose gear tires.

#### MANEUVER LOAD FACTOR

In Flight:

Flaps - UP Position (0°) . . . . . . . . . . . . . . . . . . -1.44 to  $\pm$  3.6G's at 14,800 Pounds Flaps - T.O. & APPR to LAND Position (15° to 40°) . . 0.0 to  $\pm$  2.0G's at 14,800 Pounds

These accelerations limit the angle-of-bank in turns and limit the severity of pullup maneuvers.

Landing:

Flaps - T.O. & APPR to LAND Position (15° to 40°) ..... + 3.38G's at 13,500 Pounds

#### **FUEL LIMITATIONS**

The following fuels are approved for use in accordance with Figure 1-8: COMMERCIAL KEROSENE JET A, JET A-1, JP-5, and JP-8 per CPW 204 Specification.

#### NOTE

JP-5 and JP-8 type fuels have anti-icing additive preblended by the refinery. Refer to Section IV Operating Procedures, Servicing - Fuel, for blending and checking fuel anti-ice additives.

Boost Pump - ON; When low fuel lights illuminate or at approximately 200 pounds or less indicated fuel. To crossfeed, turn boost pump OFF on side opposite selected tank.

# **FUEL LIMITATIONS AND ADJUSTMENTS**

FUEL GRADE	FUEL SPECIFICATION	MINIMUM FUEL TEMPERATURE (TAKEOFF)	MAXIMUM FUEL TEMPERATURE (TAKEOFF)
JET A	ASTM-D1655	-35°C	+56°C
JET A-1	ASTM-D1655	-40°C	+56°C
JP-5	MIL-T-5624	-40°C	+56°C
JP-8	MIL-T-83133	-40°C	+56°C

#### Figure 1-8

Maximum asymmetrical fuel differential for normal operations	200 pounds
Maximum emergency asymmetrical fuel differential	600 pounds

#### NOTE

Flight characteristics requirements were not demonstrated with unbalanced fuel above 200 pounds.

#### **UNUSABLE FUEL**

Fuel remaining in the fuel tanks when the fuel quantity indicator reads zero is not usable in flight.

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Use TT-I-735 Isopropyl Alcohol for windshield anti-ice.

#### **NOSE GEAR TIRES**

Nose Gear Tire Pressure: 120 PSI, +5 or -5 PSI

Goodyear nose tire part numbers 184F08-1 and 184F13-5 and nose tire part number 031-613-8 (manufactured by BFGoodrich/Michelin) are the only approved nose gear tires.

# MANEUVER LOAD FACTOR

### PRESSURIZATION DIFFERENTIAL

#### **CABIN**

#### **SEATS**

For all takeoffs and landings, all passenger seats must be fully upright and outboard. The seat just aft of the emergency exit must be fully tracked the most aft position (toward the rear of the airplane) to ensure unobstructed access to emergency exit. Seats near the exit door must be positioned to allow access.

#### **ENROUTE OPERATIONAL LIMITS**

Maximum Operating Altitude	45,000 Feet
Maximum Operating Altitude (Single Pressurization Source)	43,000 Feet
Maximun and Minimum Temperature Limits	ISA +39°C (Refer to Figure 1-3)
Generator Load	400 Amperes up to 35,000 Feet
	315 Amperes above 35,000 Feet

#### **AUTHORIZED OPERATIONS**

This airplane is approved for day and night, VFR, IFR flight and flight into known icing conditions.

#### NOTE

lcing conditions exist, when operating on the ground or in flight, when visible moisture is evident and the indicated OAT is +10°C or below.

#### **MANEUVERS**

Aerobatic maneuvers and spins are prohibited. No intentional stalls are permitted above 25,000 feet.

#### MINIMUM CREW

Minimum Flight Crew for all Operations: 1 Pilot and 1 Copilot

The pilot in command must have a C-500 type rating and meet the requirements of FAR 61.58 for two pilot operation.

The copilot shall possess a multiengine rating and meet the requirements of FAR 61.55.

# THRUST REVERSING

Reverse thrust power must be reduced to the idle reverse detent position at 60 KIAS on landing roll.

Maximum reverse thrust setting is limited to no more than maximum takeoff power less 2%  $N_1$  for the existing ambient conditions.

Maximum allowable thrust reverser deployed time is 15 minutes in any 1-hour period.

Engine static ground operation is limited to idle power if thrust reversers are deployed.

Thrust reversing on sod/dirt or gravel runways is not allowed.

Use of thrust reversers is prohibited during touch and go landings.

The thrust reverser(s) must be verified to be operational by the Before Takeoff Test in Section IV, Normal Procedures, in this manual and in Section III, Normal Procedures, in the FAA Approved Airplane Flight Manual.

Use of thrust reversers is prohibited at speeds greater than 115 KIAS. Nose down column pressure is required with thrust reversers deployed at speeds greater than 60 KIAS.

The use of thrust reversers to back the airplane is prohibited.

# **DEICE/ANTI-ICE SYSTEMS**

Operation of the deice boots below -40°C is prohibited.

All anti-ice systems must be ON when operating in visible moisture and the indicated RAT is  $\pm 10^{\circ}$ C or lower.

Limit ground operation of pitot/static heat to 2 minutes ON with 2 minutes OFF between cycles to preclude system damage.

# **RAT INDICATOR**

RAT Indications on the ground are unreliable. Use reported surface temperature from the appropriate ground station for determining takeoff thrust setting.

### PRESSURIZATION DIFFERENTIAL

Normal (Both Valves) ..... 0.0 to 8.9 PSI + 0.1 or -0.1 PSI Differential

#### **CABIN**

#### **SEATS**

For all takeoffs and landings, all passenger seats must be fully upright and outboard. The seat just aft of the emergency exit must be fully tracked the most aft position (toward the rear of the airplane) to ensure unobstructed access to emergency exit. Seats near the exit door must be positioned to allow access.

#### **ENROUTE OPERATIONAL LIMITS**

Maximum Operating Altitude	43.000 Feet
Maximun and Minimum Temperature Limits	ISA +39°C (Refer to Figure 1-3)
Generator Load	400 Amperes up to 35,000 Feet
	315 Amperes above 35,000 Feet

# **AUTHORIZED OPERATIONS**

This airplane is approved for day and night, VFR, IFR flight and flight into known icing conditions.

#### NOTE

lcing conditions exist, when operating on the ground or in flight, when visible moisture is evident and the indicated OAT is +10°C or below.

#### **MANEUVERS**

Aerobatic maneuvers and spins are prohibited. No intentional stalls are permitted above 25,000 feet.

#### **MINIMUM CREW**

Minimum Flight Crew for all Operations: 1 Pilot and 1 Copilot

The pilot in command must have a C-500 type rating and meet the requirements of FAR 61.58 for two pilot operation.

The copilot shall possess a multiengine rating and meet the requirements of FAR 61.55.

# THRUST REVERSING

Reverse thrust power must be reduced to the idle reverse detent position at 60 KIAS on landing roll.

Maximum reverse thrust setting is limited to no more than maximum takeoff power less 2%  $N_1$  for the existing ambient conditions.

Maximum allowable thrust reverser deployed time is 15 minutes in any 1-hour period.

Engine static ground operation is limited to idle power if thrust reversers are deployed.

Thrust reversing on sod/dirt or gravel runways is not allowed.

Use of thrust reversers is prohibited during touch and go landings.

The thrust reverser(s) must be verified to be operational by the Before Takeoff Test in Section IV, Normal Procedures, in this manual and in Section III, Normal Procedures, in the FAA Approved Airplané Flight Manual.

Use of thrust reversers is prohibited at speeds greater than 115 KIAS. Nose down column pressure is required with thrust reversers deployed at speeds greater than 60 KIAS.

The use of thrust reversers to back the airplane is prohibited.

#### **DEICE/ANTI-ICE SYSTEMS**

Operation of the deice boots below -40°C is prohibited.

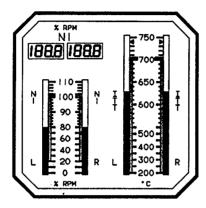
All anti-ice systems must be ON when operating in visible moisture and the indicated RAT is +10°C or lower.

Limit ground operation of pitot/static heat to 2 minutes ON with 2 minutes OFF between cycles to preclude system damage.

## **RAT INDICATOR**

RAT Indications on the ground are unreliable. Use reported surface temperature from the appropriate ground station for determining takeoff thrust setting.

### ENGINE N<sub>1</sub>% RPM AND INTERTURBINE TEMPERATURE



N<sub>1</sub> (FAN) % RPM

100% RPM

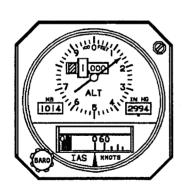
20% TO 100.0% RPM

# INTERTURBINE TEMPERATURE (ITT)

700°C

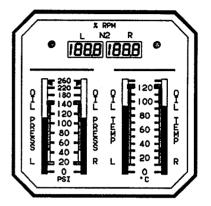
200°C TO 700°C

### **AIRSPEED**



ALTITUDE-FT	Vmo-KIAS
S.L. to 8,000	261
8,000 to 27,900	276
27,900 to 37,000	228
37,000 to 45,000	186
37,000 to 45,000	186

#### ENGINE N2% RPM, OIL PRESSURE AND OIL TEMPERATURE



### N<sub>2</sub> (TURBINE) % RPM



ABOVE 100% RPM (FLASHING DISPLAY)

#### **OIL PRESSURE**

20 PSI AND BELOW AND ABOVE 140 PSI

20 TO 45 PSI

45 TO 140 PSI

#### **OIL TEMPERATURE**



121°C

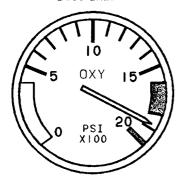


10°C TO 121°C

9912450-1 9912450-2 WI 102AMS6 9662801-4 9690802-2

Figure 1-9 (Sheet 1 of 2)

#### **OXYGEN**



- 2000 PSI
- 0 TO 400 PSI.
- 1600 TO 1800 PSI

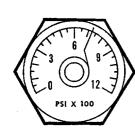
# BRAKE HYDRAULIC ACCUMULATOR PRESSURE INDICATOR



- **W** UNDER/OVER PRESSURE
- OPERATING PRESSURE
- PRECHARGE PRESSURE
- CAUTION

#### ENGINE FIRE BOTTLE PRESSURE

(IN AFT COMPARTMENT)

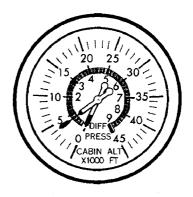


125 CUBIC INCH CAPACITY

TEMPERATURE DEGREES F	MIHIMUM ALLQWABLE PRESSURE	
-60	270	
-40	300 330	
-20		
0	370	
20	420 470 540 610	
40		
60		
80		
100	690	
120	790	
140	940	
K	BELLEVILLE	

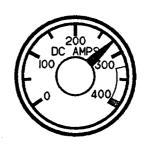
Figure 1-9 (Sheet 2)

#### **DIFFERENTIAL PRESSURE**



- 8.9 PSI
- 0.0 TO 8.9 PSI

#### **AMMETER**



- 400 AMPERES
- 325 AMPERES ABOVE 35,000 FEET

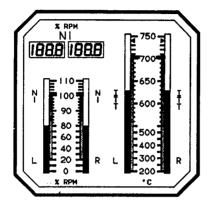
# GEAR AND BRAKE PNEUMATIC PRESSURE



- 0 TO 1600 PSI AND ABOVE 2050 PSI
- 1600 TO 1800 PSI
- 3 1800 TO 2050 PSI

C668512-10 56187001 1821C5203 153LA30C 56187001 56187001 9912103

# ENGINE N<sub>1</sub>% RPM AND INTERTURBINE TEMPERATURE



N<sub>1</sub> (FAN) % RPM

100% RPM

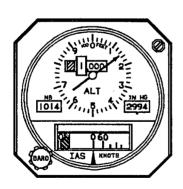
20% TO 100.0% RPM

# **INTERTURBINE TEMPERATURE (ITT)**

700°C

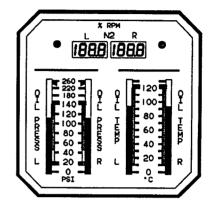
200°C TO 700°C

#### **AIRSPEED**



ALTITUDE - FT Vmo - KIAS S.L. TO 8,000 261 8,000 TO 27,900 276 27,900 TO 35,000 238 35,000 TO 43,000 196

# ENGINE N<sub>2</sub>% RPM, OIL PRESSURE AND OIL TEMPERATURE



### N<sub>2</sub> (TURBINE) % RPM



ABOVE 100% RPM (FLASHING DISPLAY)

#### **OIL PRESSURE**

20 PSI AND BELOW AND ABOVE 140 PSI

20 TO 45 PSI

45 TO 140 PSI

#### **OIL TEMPERATURE**

121°C



10°C TO 121°C

9912450-1 9912450-2 WI 102AMS6 9662801-4

1-19.1

Figure 1-9 (Sheet 1 of 2)

#### **OXYGEN**



- 2000 PSI
- 0 TO 400 PSI
- 1600 TO 1800 PSI

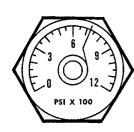
# BRAKE HYDRAULIC ACCUMULATOR PRESSURE INDICATOR



- UNDER/OVER PRESSURE
- **OPERATING PRESSURE**
- PRECHARGE PRESSURE
- ☐ CAUTION

# **ENGINE FIRE BOTTLE PRESSURE**

(IN AFT COMPARTMENT)

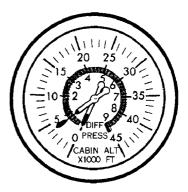


125 CUBIC INCH CAPACITY

-	CBrF3-N2 TEMP-PRESS RELATION TABLE				
	IEMPERATURE OEGREES F	MINIMUM ALLOWABLE PRESSURE			
	-60	270			
-	-40	300			
	-20	330			
	0	370			
	20	420			
	40	470			
	60	540			
	80	610			
	100	690			
	120	790			
i	140	940			
	K KIDO	BELLEVILLE			

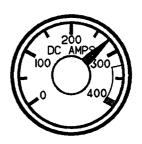
Figure 1-9 (Sheet 2)

#### **DIFFERENTIAL PRESSURE**



- 8.9 PSI
- 0.0 TO 8.9 PSI

#### **AMMETER**



- 400 AMPERES
- 325 AMPERES ABOVE 35,000 FEET

# GEAR AND BRAKE PNEUMATIC PRESSURE



- 0 TO 1600 PSI AND ABOVE 2050 PSI
- 1600 TO 1800 PSI
- 1800 TO 2050 PSI

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#### **AUTOPILOT**

- One pilot must remain in his seat with the seat belt fastened during all autopilot operations.
- 2. Autopilot operation is prohibited if any comparison monitor annunciator illuminates in flight.
- 3. Minimum autopilot use height for enroute is 1000 feet AGL. Minimum autopilot use height for approaches is 180 feet AGL.

### HONEYWELL PRIMUS-1000 FLIGHT GUIDANCE SYSTEM

- 1. The Honeywell P-1000 Integrated Flight Control System Pilot's Manual P/N A28-1146-109-00 revision 00 or later revision for the Cessna Citation Bravo must be immediately available to the flight crew.
- 2. Both flight director and autopilot coupled Category II approaches are not approved using the Honeywell P-1000 EFIS displays.
- EFIS ground operation with the pilot's NOSE AVN FAN FAIL annunciator light illuminated is limited to 30 minutes or until either PFD HOT or MFD HOT annunciator light illuminates, whichever occurs first.
- 4. Dispatch is prohibited if the PFD HOT, MFD HOT or IC HOT annunciator light is illuminated.
- Dispatch is prohibited following a flight during which the PFD HOT or MFD HOT or IC HOT annunciator light was illuminated, until the condition is identified and corrected.
- 6. The pilot's and copilot's PFD's must be installed and operational in the normal (nonreversionary) mode for takeoff.
- 7. The P-1000 system must be verified to be operational by a satisfactory preflight test as contained in the NORMAL procedures.
- 8. Dual PFD SG reversion to the MFD is prohibited.
- 9. Flight Director and autopilot coupled VOR approaches without DME are not approved.

55BOM-04

# STANDBY FLIGHT INSTRUMENTS

1. A satisfactory preflight test must be accomplished on the standby gyro system.

 The standby flight instruments, ATT, ALT/ASI and HSI must be functioning prior to takeoff.

# HIGH FREQUENCY (HF) AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS

The ADF bearing information may be erratic when keying the HF transmitter. Should this occur, disregard the ADF bearing during periods of transmission.

#### **OXYGEN MASK**

The pressure demand oxygen mask must be properly stowed to qualify as a quick-donning oxygen mask.

#### NOTE

Headsets, eyeglasses or hats worn by crew members may interfere with the quick-donning capabilities of the oxygen masks.

#### SUPPLEMENTAL OXYGEN SYSTEM

Continuous use of the supplemental oxygen system is prohibited above: 25,000 feet when passengers are using dropout oxygen masks. 37,000 feet with crew only using pressure demand sweep-on oxygen masks.

#### AIRPLANE BATTERY

If the BATT O'TEMP light illuminates during ground operation, do not take off until after the proper maintenance procedures have been accomplished.

#### **AUTOPILOT**

- One pilot must remain in his seat with the seat belt fastened during all autopilot operations.
- 2. Autopilot operation is prohibited if any comparison monitor annunciator illuminates in flight.
- 3. Minimum autopilot use height for enroute is 1000 feet AGL. Minimum autopilot use height for approaches is 180 feet AGL.

#### HONEYWELL PRIMUS-1000 FLIGHT GUIDANCE SYSTEM

- The Honeywell P-1000 Integrated Flight Control System Pilot's Manual P/N A28-1146-109-00 revision 00 or later revision for the Cessna Citation Bravo must be immediately available to the flight crew.
- 2. Both flight director and autopilot coupled Category II approaches are not approved using the Honeywell P-1000 EFIS displays.
- 3. EFIS ground operation with the pilot's NOSE AVN FAN FAIL annunciator light illuminated is limited to 30 minutes or until either PFD HOT or MFD HOT annunciator light illuminates, whichever occurs first.
- Dispatch is prohibited if the PFD HOT, MFD HOT or IC HOT annunciator light is illuminated.
- 5. Dispatch is prohibited following a flight during which the PFD HOT or MFD HOT or IC HOT annunciator light was illuminated, until the condition is identified and corrected.
- 6. The pilot's and copilot's PFD's must be installed and operational in the normal (nonreversionary) mode for takeoff.
- 7. The P-1000 system must be verified to be operational by a satisfactory preflight test as contained in the NORMAL procedures.
- 8. Dual PFD SG reversion to the MFD is prohibited.
- Flight Director and autopilot coupled VOR approaches without DME are not approved.

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#### STANDBY FLIGHT INSTRUMENTS

- 1. A satisfactory preflight test must be accomplished on the standby gyro system.
- 2. The standby flight instruments, ATT, ALT/ASI and HSI must be functioning prior to takeoff.
- 3. The Meggitt standby flight display is not approved for instrument approaches.

# HIGH FREQUENCY (HF) AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS

The ADF bearing information may be erratic when keying the HF transmitter. Should this occur, disregard the ADF bearing during periods of transmission.

#### **OXYGEN MASK**

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#### NOTE

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#### SUPPLEMENTAL OXYGEN SYSTEM

Continuous use of the supplemental oxygen system is prohibited above: 25,000 feet when passengers are using dropout oxygen masks. 37,000 feet with crew only using pressure demand sweep-on oxygen masks.

#### AIRPLANE BATTERY

If the BATT O'TEMP light illuminates during ground operation, do not take off until after the proper maintenance procedures have been accomplished.

#### **AUTOPILOT**

- One pilot must remain in his seat with the seat belt fastened during all autopilot operations.
- 2. Autopilot operation is prohibited if any comparison monitor annunciator illuminates in flight.
- 3. Minimum autopilot use height for enroute is 1000 feet AGL. Minimum autopilot use height for approaches is 180 feet AGL.

#### HONEYWELL PRIMUS-1000 FLIGHT GUIDANCE SYSTEM

- 1. The Honeywell P-1000 Integrated Flight Control System Pilot's Manual P/N A28-1146-109-00 revision 00 or later revision for the Cessna Citation Bravo must be immediately available to the flight crew.
- 2. Both flight director and autopilot coupled Category II approaches are not approved using the Honeywell P-1000 EFIS displays.
- 3. EFIS ground operation with the pilot's NOSE AVN FAN FAIL annunciator light illuminated is limited to 30 minutes or until either PFD HOT or MFD HOT annunciator light illuminates, whichever occurs first.
- 4. Dispatch is prohibited if the PFD HOT, MFD HOT or IC HOT annunciator light is illuminated.
- 5. Dispatch is prohibited following a flight during which the PFD HOT or MFD HOT or IC HOT annunciator light was illuminated, until the condition is identified and corrected.
- 6. The pilot's and copilot's PFD's must be installed and operational in the normal (nonreversionary) mode for takeoff.
- 7. The P-1000 system must be verified to be operational by a satisfactory preflight test as contained in the NORMAL procedures.
- 8. Dual PFD SG reversion to the MFD is prohibited.
- 9. Flight Director and autopilot coupled VOR approaches without DME are not approved.

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#### STANDBY FLIGHT INSTRUMENTS

- 1. A satisfactory preflight test must be accomplished on the standby gyro system.
- 2. The standby flight instruments, ATT, ALT/ASI and HSI must be functioning prior to takeoff.
- The standby airspeed limitations listed on the ALT/KIAS placard apply only to the standby indicators and should be used only when both pilot's and copilot's PFD airspeed tapes are unreliable or inoperative.

# HIGH FREQUENCY (HF) AUTOMATIC DIRECTION FINDER (ADF) SYSTEMS

The ADF bearing information may be erratic when keying the HF transmitter. Should this occur, disregard the ADF bearing during periods of transmission.

#### **OXYGEN MASK**

The pressure demand oxygen mask must be properly stowed to qualify as a quick-donning oxygen mask.

#### NOTE

Headsets, eyeglasses or hats worn by crew members may interfere with the quick-donning capabilities of the oxygen masks.

#### SUPPLEMENTAL OXYGEN SYSTEM

Continuous use of the supplemental oxygen system is prohibited above: 25,000 feet when passengers are using dropout oxygen masks. 37,000 feet with crew only using pressure demand sweep-on oxygen masks.

#### AIRPLANE BATTERY

If the BATT O'TEMP light illuminates during ground operation, do not take off until after the proper maintenance procedures have been accomplished.

# ANGLE-OF-ATTACK / STICK SHAKER SYSTEM

The angle-of-attack (AOA) indicating system may be used as a reference system but does not replace the airspeed display on the PFD as a primary instrument. The AOA gage and Low Airspeed Awareness (LAA) indications must be verified in flight against Airplane Flight Manual speeds prior to use as a reference.

The angle-of-attack system can be used as a reference for approach speed (1.3  $V_{SI}$ ) at all airplane weights and center-of-gravity locations at zero, takeoff, takeoff/approach and landing flap positions. 1.3  $V_{S1}$  is indicated by approximately .6 on the AOA indicator and by the top of the white tape on the pilot's and copilot's airspeed displays.

If the stick shaker does not operate during the warning system test, it must be repaired before flight.

#### **ENGINE FAN INSPECTION**

To ensure accurate fan speed thrust indication, inspect the fan for damage prior to each flight.

#### NOTE

Refer to the exterior inspection in the Normal Procedures Section of this manual for engine duct and fan inspection.

#### **GROUND IDLE SWITCH**

The ground idle switch must be in HIGH position when conducting touch and go landings.

The ground idle switch must be in HIGH position when making a generator assisted cross start from an operating engine.

# GLOBAL GNS-XLS FLIGHT MANAGEMENT SYSTEM (SINGLE OR DUAL)

- The GNS-X<sub>LS</sub> Operator's Manual, Report Number TR08845-1, Revision 2 dated January, 1996 or later appropriate revision, must be available to the flight crew whenever navigation is predicated on the use of the GNS-X<sub>LS</sub>. The software status displayed on the initialization page must match that stated in the Operators Manual.
- 2. The GNS-X<sub>LS</sub> is not approved as the sole means of navigation. Other navigation equipment appropriate to the ground facilities along the intended route must be installed and operable, as required by the FAR's applicable to the specific type of operation (i.e., VOR, DME etc.).
- 3. The GNS-X<sub>LS</sub> as installed has been found to comply with the requirements for GPS primary means of navigation in oceanic and remote airspace, when used in conjunction with the prediction program imbedded in the GNS-X<sub>LS</sub> P/N 17960-0102-X. This does not constitute operational approval.
- 4. Navigation within the national airspace system shall not be predicated upon the GNS-X<sub>LS</sub> during periods of dead reckoning (DR).
- 5. The GNS-X<sub>LS</sub> is approved for enroute and terminal operations.
- 6. The GNS-X<sub>LS</sub> P/N 17960-0102 is approved for oceanic operations.
- 7. The GNS-X<sub>LS</sub> P/N 17960-0102 with software mod 2 (SM02) is approved for non-precision GPS approaches or GPS overlay approaches.
- 8. Accomplishment of ILS, LOC, LOC-BC, LDA, SDF, and MLS approaches is not authorized for the GNS-X<sub>LS</sub>.

(Continued Next Page)

# GLOBAL GNS-X<sub>LS</sub> FLIGHT MANAGEMENT SYSTEM (SINGLE OR DUAL) (Continued)

#### NOTE

- Instrument approaches must be conducted with the GNS-X<sub>LS</sub> in the approach mode of operation and RAIM must be available at the final approach fix.
- AAPP (cyan) must be annunciated in the PFD at or prior to the FAF.
- When an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS navigation, the airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.
- The GNS-X<sub>LS</sub> can only be used for approach guidance if the reference coordinate datum system for the instrument approach is WGS-84.
- IFR enroute and terminal navigation is prohibited unless the pilot verifies the currency of the data base or verifies each selected waypoint for accuracy by reference to current approved data.
- 10. The internal data base (IDB) must be updated to the latest revision every 28 days; Updating to be accomplished with a Global Wulfsberg update disc, or equivalent. Update discs will be received by mail (to subscribers) or obtained from authorized Global Wulfsberg installation centers or update centers.
- 11. The fuel management mode is for advisory purposes only, and it should not replace the airplane primary fuel flow and fuel quantity gages.
- 12. When operating outside the magnetic variation model area (north of 70 degrees north latitude or south of 60 degrees south latitude), the pilot must manually insert magnetic variation.
- 13. The GNS-X<sub>LS</sub> with GPS sensor may be used as one of the required navigation systems in the North Atlantic Track Minimum Navigation Performance Specification (NAT-MNPS) Airspace provided the proper documentation and approval is obtained and an additional navigation system is installed in accordance with Advisory Circular 91-49.
- 14. In dual GNS-X<sub>LS</sub> installations, FMS 2 use is prohibited during single pilot operations if FMS 2 is located in the right (copilot's) panel.

# OPERATIONS IN SEVERE ICING CONDITIONS

#### **WARNING**

SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRPLANE IS CERTIFIED. FLIGHT IN FREEZING RAIN, FREEZING DRIZZLE, OR MIXED ICING CONDITIONS (SUPERCOOLED LIQUID WATER AND ICE CRYSTALS) MAY RESULT IN ICE BUILD-UP ON PROTECTED SURFACES EXCEEDING THE CAPABILITY OF THE ICE PROTECTION SYSTEM, OR MAY RESULT IN ICE FORMING AFT OF THE PROTECTED SURFACES. THIS ICE MAY NOT SHED WHEN THE ICE PROTECTION SYSTEMS ARE USED, AND MAY SERIOUSLY DEGRADE THE PERFORMANCE AND CONTROLABILITY OF THE AIRPLANE.

All wing icing inspection lights must be operative prior to flight into known or forecast icing conditions at night.

#### NOTE

This supersedes relief provided by the Master Minimum Equipment List.

Severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues:

- 1. Unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice.
- 2. Accumulation of ice on the upper surface of the wing aft of the protected area.

If one or more of these visual cues exist:

- 1. Use of the autopilot is prohibited.
- 2. Immediately request priority handling from Air Traffic Control to facilitate a route or altitude change to exit the icing conditions.
- 3. Leave flaps in current position, do not extend or retract.
- 4. Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- 5. If unusual or uncommanded roll control movement is observed, reduce angle-of-attack.

Tactile cues that indicate adverse changes in handling characteristics may be masked when the autopilot is operating. Use of the autopilot is prohibited when:

- 1. Unusual lateral trim is required while the airplane is in icing conditions.
- 2. Autopilot trim warnings are encountered while the airplane is in icing conditions.

#### OPERATIONS IN SEVERE ICING CONDITIONS

#### WARNING

SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRPLANE IS CERTIFIED. FLIGHT IN FREEZING RAIN, FREEZING DRIZZLE, OR MIXED ICING CONDITIONS (SUPERCOOLED LIQUID WATER AND ICE CRYSTALS) MAY RESULT IN ICE BUILD-UP ON PROTECTED SURFACES EXCEEDING THE CAPABILITY OF THE ICE PROTECTION SYSTEM, OR MAY RESULT IN ICE FORMING AFT OF THE PROTECTED SURFACES. THIS ICE MAY NOT SHED WHEN THE ICE PROTECTION SYSTEMS ARE USED, AND MAY SERIOUSLY DEGRADE THE PERFORMANCE AND CONTROLABILITY OF THE AIRPLANE.

All wing icing inspection lights must be operative prior to flight into known or forecast icing conditions at night.

#### NOTE

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Severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues:

- 1. Unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice.
- Accumulation of ice on the upper surface of the wing aft of the protected area.

If one or more of these visual cues exist:

- 1. Immediately request priority handling from Air Traffic Control to facilitate a route or altitude change to exit the icing conditions.
- 2. Leave flaps in current position, do not extend or retract.
- 3. Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- 4. If unusual or uncommanded roll control movement is observed, reduce angle-of-attack.