

Carenado



Normal & Emergency Checklist

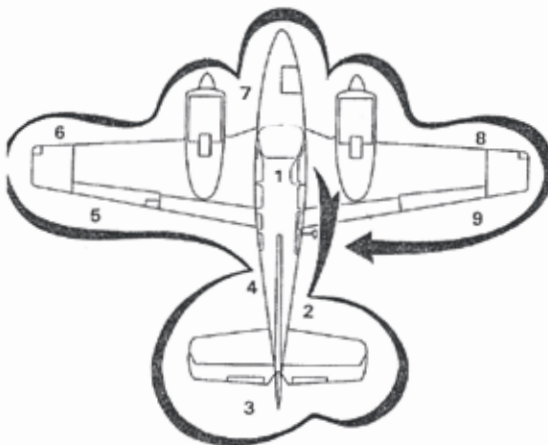


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PREFLIGHT INSPECTION

1. COCKPIT

- a. Control Locks - REMOVE AND STOW
- b. Parking Brake - SET
- c. All Switches - OFF
- d. Trim Tabs - SET TO ZERO
- e. Oxygen - CHECK



2. FUSELAGE RIGHT SIDE

- a. Load Distribution - CHECK and SECURED
- b. Static Port - CLEAR OF OBSTRUCTIONS
- c. Emergency Locator Transmitter - ARMED

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- a. Control Surfaces, Tabs and Deice Boots - CHECK CONDITION, SECURITY AND ATTACHMENT
- b. Tail Cone, Tail Light, and Rudder Beacon - CHECK
- c. Tie Down - REMOVE

4. FUSELAGE LEFT SIDE

- a. Cabin Air Inlet - CLEAR OF OBSTRUCTIONS
- b. Cabin Air Outlet - CLEAR OF OBSTRUCTIONS
- c. Static Port - CLEAR OF OBSTRUCTIONS
- d. All Antennas and Lower Beacon - CHECK

5. LEFT WING TRAILING EDGE

- a. Fuel Sump Aft of Wheel Well - DRAIN
- b. Fuel Vents - CHECK
- c. Flaps - CHECK GENERAL CONDITION
- d. Aileron - CHECK CONDITION AND FREEDOM OF MOVEMENT, TAB NEUTRAL WHEN AILERON NEUTRAL

6. LEFT WING LEADING EDGE

- a. Lights and Deice Boot - CHECK FOR CONDITION
- b. Stall Warning Vane - CHECK FREEDOM OF MOVEMENT
- c. Fuel - CHECK QUANTITY AND SECURE CAP(S). ALWAYS CHECK WING TIP TANK FIRST (IF INSTALLED); DO NOT REMOVE INBOARD CAP IF FUEL IS VISIBLE IN TIP TANK.
- d. Wing Tip Tank (if installed) Sump - DRAIN
- e. Fuel Sight Gage - CHECK

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- f. Tie Down, Chocks - REMOVE
- g. Engine Oil - CHECK QUANTITY, SECURE CAP AND DOOR
- h. Engine Cowling and Doors- CHECK CONDITION AND SECURITY
- i. Landing Light (if tip tanks are installed) - CHECK
- j. Engine Air Intake - REMOVE COVER AND EXAMINE FOR OBSTRUCTIONS
- k. Propeller - EXAMINE FOR NICKS, SECURITY AND OIL LEAKS
- l. Cowl Flap - CHECK
- m. Wheel Well Doors, Tire, Brake Line and Shock Strut - CHECK
- n. Landing Gear Uplock Roller and Downlock Mechanism - CHECK
- o. Fuel Drains - DRAIN

7. NOSE SECTION

- a. Wheel Well Doors, Tire and Shock Strut - CHECK
- b. Pitot(s) - REMOVE COVER, EXAMINE FOR OBSTRUCTIONS
- c. Taxi Light - CHECK
- d. Heater Air Inlets - CLEAR
- e. Oxygen- CHECK
- f. Baggage Door - SECURE

8. RIGHT WING LEADING EDGE

- a. Wheel Well Doors, Tire, Brake Line, and Shock Strut - CHECK
- b. Landing Gear Uplock Roller and Downlock Mechanism - CHECK
- c. Cowl Flap - CHECK
- d. Fuel Drains - DRAIN

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- f. Tie Down, Chocks - REMOVE
- g. Engine Oil - CHECK QUANTITY, SECURE CAP AND DOOR
- h. Engine Cowling and Doors- CHECK CONDITION AND SECURITY
- i. Landing Light (if tip tanks are installed) - CHECK
- j. Engine Air Intake - REMOVE COVER AND EXAMINE FOR OBSTRUCTIONS
- k. Propeller - EXAMINE FOR NICKS, SECURITY AND OIL LEAKS
- l. Cowl Flap - CHECK
- m. Wheel Well Doors, Tire, Brake Line and Shock Strut - CHECK
- n. Landing Gear Uplock Roller and Downlock Mechanism - CHECK
- o. Fuel Drains - DRAIN

7. NOSE SECTION

- a. Wheel Well Doors, Tire and Shock Strut - CHECK
- b. Pitot(s) - REMOVE COVER, EXAMINE FOR OBSTRUCTIONS
- c. Taxi Light - CHECK
- d. Heater Air Inlets - CLEAR
- e. Oxygen- CHECK
- f. Baggage Door - SECURE

8. RIGHT WING LEADING EDGE

- a. Wheel Well Doors, Tire, Brake Line, and Shock Strut - CHECK
- b. Landing Gear Uplock Roller and Downlock Mechanism - CHECK
- c. Cowl Flap - CHECK
- d. Fuel Drains - DRAIN

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- f. Engine Cowling and Doors - CHECK CONDITION AND SECURITY
- g. Landing Light (if tip tanks are installed) - CHECK
- h. Propeller - EXAMINE FOR NICKS; SECURITY AND OIL LEAKS
- i. Engine Air Intake - REMOVE COVER AND EXAMINE FOR OBSTRUCTIONS
- j. Fuel Sight Gage - CHECK
- k. Fuel - CHECK QUANTITY AND SECURE CAP(S). ALWAYS CHECK WING TIP TANK FIRST (IF INSTALLED); DO NOT REMOVE INBOARD CAP IF FUEL IS VISIBLE IN TIP TANK.
- l. Wing Tip Tank (if installed) Sump - DRAIN
- m. Tie Down and Chocks - REMOVE
- n. Lights and Deice Boot - CHECK FOR CONDITION

9. RIGHT WING TRAILING EDGE

- a. Aileron - CHECK CONDITION AND FREEDOM OF MOVEMENT
- b. Fuel Vents - CHECK
- c. Fuel Sump Aft of Wheel Well - DRAIN
- d. Flaps - CHECK GENERAL CONDITION
- e. Utility Doors - SECURE

NOTE

Check operation of lights if night flight is anticipated.

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BEFORE STARTING

1. Seats - POSITION AND LOCK; Seat Backs - POSITION FOR TAKEOFF
2. Seat Belts and Shoulder Harnesses - FASTEN AND ADJUST
3. Parking Brake - SET
4. All Avionics - OFF
5. Oxygen - CHECK QUANTITY AND OPERATION
6. Emergency Static Air Selector (located on left side panel) - EMERGENCY POSITION TO DRAIN, THEN RETURN TO NORMAL
7. Landing Gear Handle - DOWN
8. Cowl Flap Switches - CHECK, OPEN
9. Fuel Selectors - CHECK ON
10. All Circuit Breakers, Switches and Equipment Controls - CHECK
11. Battery and Alternator Switches - ON (if external power is to be used, Alternator Switches - OFF)
12. Fuel Quantity Indicators - CHECK QUANTITY (See LIMITATIONS Section for take-off fuel)
13. Landing Gear Position Lights - CHECK
14. Emergency Landing Gear Handcrank - STOWED

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STARTING

CAUTION

Do not engage starter for more than 30 seconds in any 4-minute period.

NOTE

When using external power, refer to COLD WEATHER OPERATION procedures in this section.

1. Mixture Control - FULL RICH
2. Propeller Control - HIGH RPM
3. Throttle - FULL OPEN
4. Fuel Boost Pump Switch - HI - until fuel flow peaks then -OFF
5. Throttle - CLOSE, THEN OPEN APPROXIMATELY 1/2 INCH
6. Magneto/Start Switch - START Position; release to BOTH position when engine starts
7. Throttle - 900 to 1000 RPM after start

NOTE

If the engine is hot, and the ambient temperature is 32°C or above, place mixture control in IDLE CUT-OFF, switch fuel boost pump to HI for 30 to 60 seconds, then OFF. Return mixture control to FULL RICH.

In the event of a balked start (or overprime condition) place mixture control in IDLE CUT-OFF and open the throttle; operate the starter to remove excess fuel. As engine starts, reduce the throttle to idle rpm and place the mixture control in FULL RICH.

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8. Oil Pressure - 10 PSI WITHIN 30 SECONDS
9. Warm-up - 900 to 1000 RPM
10. External Power (if used) - DISCONNECT

WARNING

When using external power, start the right engine first, since the external power receptacle is on the left nacelle. Disconnect external power before starting left engine.

11. Alternator Switch - ON
12. Loadmeters and Voltmeter - CHECK FOR BATTERY CHARGE
13. Voltmeter - CHECK FOR 28 VOLTS
14. Red START Annunciator Light - CHECK; should be illuminated during start and extinguished after start.

CAUTION

If the red START annunciator light is inoperative and the total of both loadmeters exceeds 20 amperes after two minutes at 900 - 1000 rpm, with no additional electrical equipment on, and the indication shows no signs of decreasing, an electrical malfunction is indicated. The battery master and both alternator switches should be placed in the OFF position. Do not take off.

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Low voltage, high loadmeter readings, dimming of lights, or excessive noise in radio receivers could be indications that problems are developing in the starter system. A noted change in such normal conditions could indicate prolonged starter motor running and the engine should be shut down. No further flight operations should be attempted until the cause is determined and repaired.

15. Using the same procedure, start other engine.

AFTER STARTING AND TAXI

CAUTION

Do not operate engine above 1200 RPM until oil temperature reaches 24°C or above and oil pressure is in the green arc.

1. Avionics - ON, AS REQUIRED
2. Exterior Lights - AS REQUIRED
3. Brakes - RELEASE AND CHECK

BEFORE TAKEOFF

1. Parking Brake - SET
2. Seat Belts and Shoulder Harnesses - CHECK
3. Fuel Boost Pumps - OFF
(If ambient temperature is 32°C or above, use LOW pressure boost)

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4. All Instruments - CHECKED
5. Fuel Indicators - CHECK QUANTITY INDICATED
6. Mixture - FULL RICH
7. Starter Energized Annunciator Light - CHECK; should be illuminated during start and extinguished after start. If light is inoperative, check loadmeters for proper indication.
8. Throttles - 2200 RPM
9. Propellers - EXERCISE (To obtain 200-300 rpm drop, then return to high rpm)

CAUTION

When exercising propellers in their governing range, do not move the control lever aft past the detent. To do so will allow the propeller to change rapidly to the full feathered position, imposing high stresses on the blade shank and engine.

10. Throttles - 1700 RPM
11. Magnetos - CHECK (Variance between individual magnetos should not exceed 50 rpm, max. drop 150 rpm)
12. Throttles - 1500 RPM
13. Propellers - FEATHERING CHECK (Do not allow an rpm drop of more than 300 RPM)
14. Throttles - IDLE (Note RPM)
15. Throttles - 900 to 1000 RPM
16. Electric Trim - CHECK OPERATION
17. Trim - AS REQUIRED FOR TAKE-OFF
18. Flaps - CHECK AND SET FOR TAKE-OFF
19. Flight Controls - CHECK PROPER DIRECTION, FULL TRAVEL AND FREEDOM OF MOVEMENT
20. Doors and Windows - LOCKED
21. Parking Brake - OFF

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TAKEOFF

Takeoff Power Full Throttle, 2700 rpm
Minimum Takeoff Oil Temperature 24°C

1. Power - SET TAKEOFF POWER (MIXTURE - FULL RICH) BEFORE BRAKE RELEASE
2. Airspeed - ACCELERATE TO AND MAINTAIN RECOMMENDED SPEEDS
3. Landing Gear - RETRACT (when positive rate of climb is established)
4. Airspeed - ESTABLISH DESIRED CLIMB SPEED (when clear of obstacles)

CRUISE CLIMB

1. Mixture - FULL RICH
2. Cowl Flaps - AS REQUIRED
3. Power - FULL THROTTLE
4. Propellers - 2500 RPM
5. Engine Temperatures - MONITOR
6. Fuel Boost Pumps - OFF

FUEL FLOW SCHEDULE FOR FULL THROTTLE AND 2500 RPM			
PRESSURE ALT (FEET)	FUEL FLOW GPH/ENG	PRESSURE ALT (FEET)	FUEL FLOW GPH/ENG
SL	24.6 - 26.3	10000	17.5 - 20.0
2000	23.2 - 24.2	12000	16.3 - 19.0
4000	21.8 - 23.4	14000	14.8 - 18.0
6000	20.3 - 22.3	16000	13.4 - 17.0
8000	18.8 - 21.2	17000	12.7 - 16.5

*FUEL FLOWS SHOWN ARE FOR BEST RATE OF CLIMB
AND MAY VARY WITH AIRPLANE ATTITUDE.*

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NOTE

With the mixture control in the FULL RICH position, the Engine Driven Altitude Compensating Fuel Pump will automatically lean engine mixture for the airplane's pressure altitude as the airplane climbs.

CAUTION

Engine roughness at high altitudes or fuel flow fluctuation or low fuel flow can occur when climbing on hot days. These can be eliminated by switching the fuel boost pump to LO and manually leaning to the prescribed fuel flow schedule.

MANUALLY LEANING FUEL FLOW SCHEDULE FOR FULL THROTTLE AND 2500 RPM WITH LOW BOOST

PRESSURE ALT (FEET)	FUEL FLOW GPH/ENG	PRESSURE ALT (FEET)	FUEL FLOW GPH/ENG
SL	25.5	10000	18.8
2000	23.7	12000	17.7
4000	22.6	14000	16.4
6000	21.3	16000	15.2
8000	20.0	17000	14.6

NOTE

After adjustment of the mixture control, setting the fuel flow per the manual leaning schedule, the Engine Driven Altitude Compensating Fuel Pump will automatically lean engine mixture for the airplane's pressure altitude as the airplane climbs.

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CAUTION

Return the mixture control to FULL RICH before switching the fuel boost pump to OFF.

CRUISE

See Cruise Tables and MANIFOLD PRESSURE vs RPM graph in PERFORMANCE Section.

1. Cowl Flaps - CLOSED
2. Power - SET
3. Fuel Boost Pumps - AS REQUIRED
4. Mixtures - SET USING EGT

LEANING USING THE EXHAUST GAS TEMPERATURE INDICATOR (EGT)

A thermocouple-type exhaust gas temperature (EGT) probe is mounted in the exhaust system. The probe is connected to an indicator in the engine instrument array. The indicator is calibrated in degrees Celsius. Using the EGT system to lean the fuel/air mixture when cruising at 2500 rpm and 25 in. Hg manifold pressure power setting or less in the following manner:

1. Slowly lean the mixture and note the point on the indicator where the EGT temperature peaks. Further lean or enrichen the mixture to the desired cruise mixture. Further leaning is referred to as operation on the lean side of peak EGT. Enrichening the mixture is referred to as operation on the rich side of peak EGT.
2. At lower power settings, the engine may be continuously operated at any mixture settings from FULL RICH to 27°C on the lean side of peak EGT. At higher power settings, as indicated on the MANIFOLD PRESSURE vs RPM graph, (in the PERFORMANCE Section) the engine should not be operated closer to peak EGT than 20°C (rich side or lean side).



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3. If engine roughness is encountered operating at lower power settings on the lean side of peak, enrichen the mixture slightly for smooth engine operation.
4. Performance Data is presented in the PERFORMANCE Section for mixture settings of:
 - a. CRUISE LEAN Mixture - 20°C below peak on the lean side of peak.
 - b. CRUISE RICH Mixture - 20°C below peak on the rich side of peak.

NOTE

If Cruise RICH Mixture cannot be obtained at higher altitudes, switch the fuel boost pump from OFF to LO and manually lean to 20°C below peak on the rich side of peak.

5. Changes in altitude and power settings require the peak EGT to be rechecked and the mixture reset.

DESCENT

1. Altimeter - SET
2. Mixture - FULL RICH
3. Cowl Flaps - CLOSED
4. Flaps - AS REQUIRED
5. Power - AS REQUIRED (Avoid prolonged idle settings. Cylinder Head Temperatures are not to fall below 149°C for longer than five minutes)

NOTE

With the mixture control in the FULL RICH position, the engine driven altitude compensating fuel pump will automatically adjust the fuel mixture for the airplane's pressure altitude. i.e. As the airplane descends the mixture will automatically enrichen.

6. Windshield Defroster - AS REQUIRED (ON before descent into warm, moist air)

Recommended descent speeds:

16,000 to 13,000 ft	160 kts
Below 13,000 ft	170 kts

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1. Seat Belts and Shoulder Harnesses.- FASTENED; Seat Backs - POSITION FOR LANDING
2. Fuel Selector Valves - SELECT FULLER TANK (feel for detent)
3. Fuel Boost Pumps - OFF, OR LOW AS PER AMBIENT TEMPERATURE
4. Cowl Flaps - AS REQUIRED
5. Mixture Controls - FULL RICH
6. Flaps - APPROACH (15°) (Observe Maximum Extension Speed 152 kts)
7. Landing Gear - DOWN (Observe Extension Speed 152 kts)
8. Flaps - FULL DOWN (30°) (Observe Maximum Extension Speed 122 kts)
9. Airspeed - ESTABLISH NORMAL LANDING APPROACH SPEED.
10. Propellers - HIGH RPM

BALKED LANDING

1. Propellers - HIGH RPM
2. Power - MAXIMUM ALLOWABLE
3. Airspeed - BALKED LANDING CLIMB SPEED (95 kts)
4. Flaps - UP (0°)
5. Landing Gear - UP
6. Cowl Flaps - AS REQUIRED

AFTER LANDING (CLEAR OF RUNWAY)

1. Landing and Taxi Lights - AS REQUIRED
2. Flaps - UP
3. Trim Tabs - SET TO ZERO
4. Cowl Flaps - OPEN
5. Fuel Boost Pumps - AS REQUIRED

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SHUTDOWN

1. Parking Brake - SET
2. Propellers - HIGH RPM
3. Throttles - 1000 RPM
4. Fuel Boost Pumps - OFF
5. Electrical and Avionics Equipment - OFF
6. Mixture Controls - IDLE CUT-OFF
7. Magneto/Start Switches - OFF, AFTER ENGINES STOP
8. Battery and Alternator Switches - OFF
9. Controls - LOCKED
10. If airplane is to be parked for an extended period of time, install wheel chocks and release the parking brake as greatly varying ambient temperatures may build excessive pressures on the hydraulic system.

NOTE

Induction air scoop covers, included in the loose tools and accessories, are to prevent foreign matter from entering the air scoops while the aircraft is parked.

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ONE ENGINE OPERATION

Two major factors govern one engine operations: airspeed and directional control. The airplane can be safely maneuvered or trimmed for normal hands-off operation and sustained in this configuration by the operative engine **AS LONG AS SUFFICIENT AIRSPEED IS MAINTAINED.**

DETERMINING INOPERATIVE ENGINE

The following checks will help determine which engine is inoperative.

1. **DEAD FOOT - DEAD ENGINE.** The rudder pressure required to maintain directional control will be on the side of the operative engine.
2. **THROTTLE.** Partially retard the throttle for the engine that is believed to be inoperative; there should be no change in control pressures or in the sound of the engine if the correct throttle has been selected. **AT LOW ALTITUDE AND AIRSPEED THIS CHECK MUST BE ACCOMPLISHED WITH EXTREME CAUTION.**

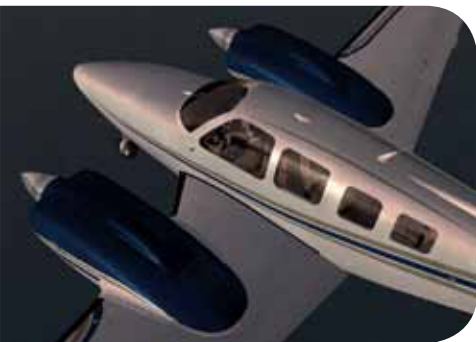
Do not attempt to determine the inoperative engine by means of the tachometers or the manifold pressure gauges. These instruments often indicate near normal readings.

ONE-ENGINE-INOPERATIVE PROCEDURES

ENGINE FAILURE DURING GROUND ROLL

1. **Throttles - CLOSED**
2. **Braking - MAXIMUM**
3. **Fuel Selectors - OFF**
4. **Battery, Alternator, and Magneto/Start Switches - OFF**

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NOTE

Braking effectiveness is improved if the brakes are not locked.

ENGINE FAILURE AFTER LIFT-OFF AND IN FLIGHT

An immediate landing is advisable regardless of take-off weight. Continued flight cannot be assured if take-off weight exceeds the weight determined from the TAKE-OFF WEIGHT graph. Higher take-off weights will result in a loss of altitude while retracting the landing gear and feathering the propeller. Continued flight requires immediate pilot response to the following procedures.

1. Landing Gear and Flaps - UP
2. Throttle (inoperative engine) - CLOSED
3. Propeller (inoperative engine) - FEATHER
4. Power (operative engine) - AS REQUIRED
5. Airspeed - MAINTAIN SPEED AT ENGINE FAILURE (100 kts MAX.) UNTIL OBSTACLES ARE CLEARED

After positive control of the airplane is established:

6. Secure inoperative engine:
 - a. Mixture Control - IDLE CUT-OFF
 - b. Fuel Selector - OFF
 - c. Fuel Boost Pump - OFF
 - d. Magneto/Start Switch - OFF
 - e. Alternator Switch - OFF
 - f. Cowl Flap - CLOSED
7. Electrical Load - MONITOR. Maximum load of 60 amps (or 100 amps on optional alternator) on remaining engine. Reduce electrical load if voltmeter indicates less than 28 volts.

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NOTE

The most important aspect of engine failure is the necessity to maintain lateral and directional control. If airspeed is below 84 kts, reduce power on the operative engine as required to maintain control. Refer to the SAFETY INFORMATION Section for additional information regarding pilot technique.

AIR START

CAUTION

The pilot should determine the reason for engine failure before attempting an airstart.

1. Fuel Selector Valve - ON
2. Throttle - SET approximately 1/4 travel
3. Mixture Control - FULL RICH
4. Fuel Boost Pump - LOW
5. Magnetos - CHECK ON
6. Propeller:

WITH UNFEATHERING ACCUMULATORS:

- a. Move propeller control forward of feathering detent until engine obtains 600 rpm; then back to detent to avoid overspeeding. Use starter momentarily if necessary to accomplish unfeathering

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proceed to WITHOUT UNFEATHERING ACCUMULATORS procedure.

WITHOUT UNFEATHERING ACCUMULATORS:

- a. Move propeller control to full decrease rpm
 - b. Engage Starter to accomplish unfeathering
 - c. If engine fails to run, clear engine by allowing it to windmill with mixture in IDLE CUT-OFF. When engine fires, advance mixture to FULL RICH
-
7. When Engine Starts - ADJUST THROTTLE, PROPELLER and MIXTURE CONTROLS
 8. Fuel Boost Pump - OFF (when reliable power has been regained)
 9. Alternator Switch - ON
 10. Oil Pressure - CHECK
 11. Warm Up Engine (approximately 1500 rpm and 15 in. Hg)
 12. Set power as required and trim

ENGINE FIRE

ON THE GROUND

1. Mixture Controls - IDLE CUT-OFF
2. Continue to crank affected engine -
3. Fuel Selector Valves - OFF
4. Battery and Alternator Switches - OFF
5. Extinguish with Fire Extinguisher

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IN FLIGHT

Shut down the affected engine according to the following procedure and land immediately. Follow the applicable single-engine procedures in this section.

1. Fuel Selector Valve - OFF
2. Mixture Control - IDLE CUT-OFF
3. Propeller - FEATHERED
4. Fuel Boost Pump - OFF
5. Magneto/Start Switch - OFF
6. Alternator Switch - OFF

EMERGENCY DESCENT

1. Throttles - CLOSED
2. Propellers - 2700 RPM
3. Airspeed - 152 kts
4. Landing Gear - DOWN
5. Flaps - APPROACH (15°)

GLIDE

1. Propellers - FEATHER
2. Flaps - UP (0°)
3. Landing Gear - UP
4. Cowl Flaps - CLOSED
5. Airspeed - 115 kts

The glide ratio in this configuration is approximately 2 nautical miles of gliding distance for each 1000 feet of altitude above the terrain.

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GEAR-UP LANDING

If possible, choose firm sod or foamed runway. When assured of reaching landing site:

1. Cowl Flaps - CLOSED
2. Wing Flaps - AS DESIRED
3. Throttles - CLOSED
4. Fuel Selectors - OFF
5. Mixture Controls - IDLE CUT-OFF
6. Battery, Alternator and Magneto/Start Switches - OFF
7. Keep wings level during touchdown.
8. Get clear of the airplane as soon as possible after it stops.

NOTE

The gear up landing procedures are based on the best available information and no actual tests have been conducted.

ONE-ENGINE-INOPERATIVE LANDING

On final approach and when it is certain that the field can be reached:

1. Landing Gear - DOWN
2. Flaps - APPROACH (15°)
3. Airspeed - NORMAL LANDING APPROACH SPEED (95 kts)
4. Power - AS REQUIRED to maintain 800 ft/min rate of descent

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When it is certain there is no possibility of go-around:

5. Flaps - DOWN (30°)
6. Execute normal landing

ONE-ENGINE-INOPERATIVE GO-AROUND

WARNING

Level flight might not be possible for certain combinations of weight, temperature and altitude. In any event, **DO NOT** attempt a one-engine-inoperative go-around after flaps have been fully extended.

1. Power - MAXIMUM ALLOWABLE
2. Landing Gear - UP
3. Flaps - UP (0°)
4. Airspeed - MAINTAIN 100 KTS MINIMUM

SYSTEMS EMERGENCIES

ONE-ENGINE-INOPERATIVE OPERATION ON CROSSFEED

NOTE

The fuel crossfeed system is to be used only during emergency conditions in level flight only.

Left engine inoperative:

1. Right Fuel Boost Pump - LOW
2. Left Fuel Selector - OFF
3. Right Fuel Selector - CROSSFEED
4. Right Fuel Boost Pump - LOW or OFF as required

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2. Right Fuel Selector - OFF
3. Left Fuel Selector - CROSSFEED
4. Left Fuel Boost Pump - LOW or OFF as required

ELECTRICAL SMOKE OR FIRE

Action to be taken must consider existing conditions and equipment installed:

1. Battery and Alternator Switches - OFF

WARNING

Electrically driven flight/engine instruments and stall warning speaker will become inoperative.

2. Oxygen - AS REQUIRED
3. All Electrical Switches - OFF
4. Battery and Alternator Switches - ON
5. Essential Electrical Equipment - ON (Isolate defective equipment)

NOTE

Ensure fire is out and will not be aggravated by draft. Turn off CABIN HEAT switch and push in the CABIN AIR control. Open pilot's storm window, if required.

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STARTER ENERGIZED ANNUNCIATOR LIGHT ILLUMINATED

After engine start, should the starter relay remain engaged, the starter will remain energized and the starter energized annunciator light will remain illuminated. Continuing to supply power to the starter will result in eventual loss of electrical power.

Illuminated on the Ground:

1. Battery Master and both Alternator Switches - OFF
2. Do not take off.

Illuminated In Flight After Air Start:

1. Battery Master and both Alternator Switches - OFF
2. Land as soon as practical.

ALTERNATOR-OUT PROCEDURE

Illumination of a Single Alternator Annunciator:

1. Verify alternator out with respective loadmeter - will show zero output.

NOTE

If the loadmeter does not show zero output, a malfunction in the annunciator light system is indicated, and the alternator switch should be left ON.

2. If loadmeter shows zero output, Alternator Switch - OFF **MOMENTARILY, THEN ON** (this resets the overvoltage relay)

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3. If annunciator illuminates and there is no load indication, turn Alternator Switch - OFF

4. Nonessential Electrical Equipment - OFF. Reduce load to single alternator capacity.

Illumination of Second Alternator Annunciator:

1. Repeat steps 1 thru 3 above.

2. Nonessential Electrical Equipment - OFF (to conserve battery power)

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CRUISE POWER SETTINGS

20° RICH

MAXIMUM CRUISE POWER
25 IN. HG (OR FULL THROTTLE)
@ 2500 RPM (5200 LBS)

OF PEAK EGT

	PRESS. ALT.	IOAT		MAN. PRESS.	FUEL FLOW/ ENGINE		AIRSPEED	
	FEET	°C	°F	IN. HG	PPH	GPH	KIAS	KTAS
ISA -36°F	SL	-2	29	25	101	16.8	194	187
	2000	-6	22	25	105	17.5	196	193
	4000	-9	15	25	109	18.2	196	199
	6000	-13	8	24	105	17.5	191	200
	8000	-17	1	22	98	16.3	184	198
	10000	-21	-6	21	92	15.3	177	196
	12000	-25	-14	19	86	14.3	169	194
	14000	-29	-21	18	80	13.3	162	191
ISA -20°C (ISA -36°F)	16000	-33	-28	16	74	12.3	154	167
	SL	18	65	25	98	16.3	189	188
	2000	15	58	25	101	16.8	190	195
	4000	11	51	25	105	17.5	191	201
	6000	7	44	24	102	17.0	186	202
	8000	3	37	22	95	15.8	179	200
	10000	-1	30	21	89	14.8	171	198
	12000	-5	23	19	83	13.8	162	195
STANDARD DAY (ISA)	14000	-9	15	18	77	12.8	156	192
	16000	-13	8	16	72	12.0	148	188
	SL	38	101	25	95	15.8	184	190
	2000	35	94	25	99	16.3	185	196
	4000	31	88	25	101	16.8	185	202
	6000	27	81	24	98	16.3	181	203
	8000	23	73	22	92	15.3	183	201
	10000	19	66	21	86	14.3	166	199
ISA +20°C (ISA +36°F)	12000	-15	59	19	80	13.3	159	196
	14000	-11	51	18	75	12.5	151	193
	16000	-7	44	16	70	11.7	143	188

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

Carenado



BARON58

CRUISE POWER SETTINGS

20° LEAN

OF PEAK EGT

**RECOMMENDED CRUISE POWER
25 IN. HG (OR FULL THROTTLE)
@ 2500 RPM (5200 LBS)**

	PRESS. ALT. FEET	IOAT		MAN. PRESS. IN. HG	FUEL FLOW/ ENGINE		AIRSPEED	
		°C	°F		PPH	GPH	KIAS	KTAS
ISA -20°C (ISA -36°F)	SL	-2	28	25	87	14.5	189	182
	2000	-6	22	25	91	15.2	191	188
	4000	-9	15	25	94	15.7	191	194
	6000	-13	8	24	91	15.2	188	196
	8000	-17	1	22	84	14.0	179	183
	10000	-21	-7	21	78	13.0	172	191
	12000	-26	-14	19	72	12.0	164	188
	14000	-30	-21	18	67	11.2	157	185
STANDARD DAY (ISA)	16000	-34	-28	16	62	10.3	149	181
	SL	18	65	25	84	14.0	184	184
	2000	14	58	25	87	14.5	185	190
	4000	11	51	25	91	15.2	186	196
	6000	7	44	24	88	14.7	181	197
	8000	3	37	22	81	13.6	174	195
	10000	-1	30	21	76	12.6	167	193
	12000	-6	22	19	70	11.7	159	190
ISA +20°C (ISA +36°F)	14000	-10	15	18	65	10.8	152	186
	16000	-14	7	16	60	10.0	143	182
	SL	38	101	25	81	13.5	179	185
	2000	34	94	25	84	14.0	180	191
	4000	31	87	25	87	14.5	181	197
	6000	27	80	24	84	14.0	176	198
	8000	23	73	22	78	13.0	169	195
	10000	19	66	21	72	12.0	161	193
	12000	15	58	19	67	11.2	154	190
	14000	11	51	18	62	10.3	146	187
	16000	6	43	16	56	9.7	138	182

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

Carenado



BARON58

CRUISE POWER SETTINGS

20° RICH

RECOMMENDED CRUISE POWER
23 IN. HG (OR FULL THROTTLE)
@ 2300 RPM (5200 LBS)

OF PEAK EGT

	PRESS. ALT.	IOAT		MAN. PRESS.	FUEL FLOW/ ENGINE		AIRSPEED	
	FEET	°C	°F	IN. HG	PPH	GPH	KIAS	KTAS
ISA -20°C (ISA -36°F)	SL	2	28	23	81	13.5	176	170
	2000	-6	21	23	84	14.0	178	176
	4000	-10	14	23	87	14.5	179	182
	6000	-14	7	23	91	15.2	180	188
	8000	-18	0	22	89	14.8	177	190
	10000	-22	-7	21	84	14.0	169	189
	12000	-26	-14	19	78	13.0	162	185
	14000	-30	-21	18	73	12.2	154	182
	16000	-34	-29	17	68	11.3	146	178
STANDARD DAY (ISA)	SL	18	64	23	78	13.0	171	171
	2000	14	57	23	81	13.5	173	177
	4000	10	50	23	85	14.2	174	183
	6000	6	44	23	88	14.7	175	190
	8000	3	37	22	87	14.5	171	192
	10000	-2	29	21	81	13.5	164	189
	12000	-6	22	19	76	12.7	156	186
	14000	-10	15	18	71	11.8	149	183
	16000	-14	7	17	66	11.0	140	178
ISA +20°C (ISA +36°F)	SL	38	100	23	76	12.7	166	171
	2000	34	93	23	79	13.2	168	178
	4000	30	86	23	82	13.7	169	184
	6000	26	80	23	85	14.2	169	191
	8000	23	73	22	84	14.0	166	193
	10000	19	65	21	78	13.0	159	190
	12000	14	58	19	73	12.2	151	187
	14000	10	51	18	68	11.3	143	183
	16000	6	43	17	64	10.7	135	178

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

Carenado



BARON58

20° LEAN

OF PEAK EGT

RECOMMENDED CRUISE POWER
23 IN. HG (OR FULL THROTTLE)
@ 2300 RPM (5200 LBS)

	PRESS. ALT.	IOAT		MAN. PRESS.	FUEL FLOW/ ENGINE		AIRSPEED	
	FEET	°C	°F	IN. HG	PPH	GPH	KIAS	KTAS
ISA -20°C (ISA -36°F)	SL	-3	27	23	67	11.2	171	164
	2000	-6	21	23	70	11.7	172	170
	4000	-10	14	23	73	12.2	173	176
	6000	-14	7	23	76	12.7	174	182
	8000	-18	0	22	75	12.5	171	184
	10000	-22	-7	21	69	11.5	184	182
	12000	-26	-14	19	64	10.7	156	179
	14000	-30	-22	18	60	10.0	149	176
	16000	-34	-29	17	56	9.3	140	171
STANDARD DAY (ISA)	SL	18	64	23	64	10.7	166	165
	2000	14	57	23	67	11.2	167	171
	4000	10	50	23	70	11.7	169	177
	6000	6	43	23	73	12.2	169	184
	8000	2	36	22	72	12.0	166	185
	10000	-2	29	21	67	11.2	159	183
	12000	-6	22	19	62	10.3	151	180
	14000	-10	14	18	58	9.7	143	176
	16000	-14	7	17	54	9.0	135	171
ISA +20°C (ISA +36°F)	SL	38	100	23	62	10.3	161	166
	2000	34	93	23	65	10.8	162	172
	4000	30	86	23	68	11.3	163	178
	6000	26	79	23	70	11.7	164	184
	8000	22	72	22	69	11.5	160	186
	10000	18	65	21	64	10.7	153	182
	12000	14	58	19	60	10.0	145	180
	14000	10	50	18	56	9.3	137	175
	16000	6	43	17	52	8.7	128	169

NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.

2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.

3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

Carenado



BARON58

CRUISE POWER SETTINGS

20° RICH
OF PEAK EGT

RECOMMENDED CRUISE POWER
25 IN. HG (OR FULL THROTTLE)
@ 2100 RPM (5200 LBS)

	PRESS. ALT. FEET	IOAT		MAN. PRESS. IN. HG	FUEL FLOW/ ENGINE PPH GPH		AIRSPEED KIAS KTAS	
		°C	°F					
ISA -20°C (ISA -36°F)	SL	-2	28	25	79	13.2	175	168
	2000	-6	21	25	82	13.7	176	174
	4000	-10	14	25	85	14.2	176	180
	6000	-14	7	24	83	13.8	173	181
	8000	-18	0	23	78	13.0	166	179
	10000	-22	-8	21	73	12.2	158	176
	12000	-26	-15	19	68	11.3	151	173
	14000	-30	-22	18	64	10.7	143	169
STANDARD DAY (ISA)	16000	-34	-30	17	60	10.0	135	164
	SL	18	64	25	77	12.8	170	169
	2000	14	57	25	80	13.3	171	175
	4000	10	50	25	82	13.7	171	181
	6000	6	43	24	81	13.5	167	182
	8000	2	36	23	76	12.7	160	180
	10000	-2	29	21	71	11.8	153	177
	12000	-6	21	19	66	11.0	145	173
ISA +20°C (ISA +36°F)	14000	-10	14	18	62	10.3	137	169
	16000	-14	6	17	58	9.7	128	163
	SL	38	100	25	74	12.3	165	170
	2000	34	93	25	77	12.8	166	176
	4000	30	86	25	80	13.3	166	181
	6000	26	79	24	78	13.0	162	183
	8000	22	72	23	73	12.2	155	180
	10000	18	65	21	69	11.5	148	177
ISA +20°C (ISA +36°F)	12000	14	57	19	64	10.7	140	173
	14000	10	50	18	60	10.0	131	168
	16000	6	42	17	56	9.3	122	160

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

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BARON 58

CRUISE POWER SETTINGS

20° LEAN

OF PEAK EGT

RECOMMENDED CRUISE POWER
25 IN. HG (OR FULL THROTTLE)
@ 2100 RPM (5200 LBS)

	PRESS. ALT.	IOAT		MAN. PRESS.	FUEL FLOW/ ENGINE		AIRSPEED	
	FEET	°C	°F	IN. HG	PPH	GPH	KIAS	KTAS
ISA -20°C (ISA -36°F)	SL	-3	27	25	63	10.5	167	160
	2000	-6	20	25	66	11.0	168	166
	4000	-10	14	25	68	11.3	168	171
	6000	-14	7	24	67	11.2	165	173
	8000	-18	-1	23	62	10.3	158	170
	10000	-22	-8	21	58	9.7	150	167
	12000	-26	-16	19	55	9.2	143	164
	14000	-30	-23	18	51	8.5	135	159
	16000	-35	-30	17	48	8.0	126	153
STANDARD DAY (ISA)	SL	17	63	25	61	10.2	162	161
	2000	14	56	25	64	10.7	163	167
	4000	10	50	25	66	11.0	163	172
	6000	6	43	24	65	10.8	160	174
	8000	2	35	23	60	10.0	152	171
	10000	-2	28	21	56	9.3	145	167
	12000	-6	21	19	53	8.8	137	163
	14000	-10	13	18	50	8.3	129	158
	16000	-15	6	17	46	7.7	119	151
ISA +20°C (ISA +36°F)	SL	37	99	25	59	9.8	167	162
	2000	34	93	25	61	10.2	158	167
	4000	30	86	25	64	10.7	158	173
	6000	26	79	24	62	10.3	165	174
	8000	22	71	23	58	9.7	147	171
	10000	18	64	21	55	9.2	139	167
	12000	14	57	19	51	8.5	131	162
	14000	10	49	18	48	8.0	122	158
	16000	5	42	17	45	7.5	111	145

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

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BARON58

20° LEAN
OF PEAK EGT

ECONOMY CRUISE POWER
21 IN. HG (OR FULL THROTTLE)
@ 2100 RPM (5200 LBS)

	PRESS. ALT.	IOAT		MAN. PRESS.	FUEL FLOW/ ENGINE		AIRSPEED	
	FEET	°C	°F	IN. HG	PPH	GPH	KIAS	KTAS
ISA -20°C (ISA -36°F)	SL	-3	26	21	50	8.3	147	141
	2000	-7	19	21	52	8.7	149	147
	4000	-11	13	21	54	9.0	150	153
	6000	-15	6	21	56	9.3	151	158
	8000	-18	-1	21	58	9.7	152	164
	10000	-22	-8	21	58	9.7	150	167
	12000	-26	-15	19	55	9.2	143	164
	14000	-30	-23	18	51	8.5	135	159
	16000	-35	-30	17	48	8.0	126	153
STANDARD DAY (ISA)	SL	17	62	21	48	8.0	142	141
	2000	13	55	21	50	8.3	144	147
	4000	9	49	21	52	8.7	145	153
	6000	5	42	21	54	9.0	146	159
	8000	2	35	21	56	9.3	146	164
	10000	-2	28	21	56	9.3	145	167
	12000	-6	21	19	53	8.8	137	163
	14000	-10	13	18	50	8.3	129	158
	16000	-15	6	17	46	7.7	119	151
ISA +20°C (ISA +36°F)	SL	37	98	21	47	7.8	137	141
	2000	33	91	21	49	8.2	138	147
	4000	29	85	21	51	8.5	140	152
	6000	25	78	21	52	8.7	141	158
	8000	22	71	21	54	9.0	141	164
	10000	18	64	21	55	9.2	139	167
	12000	14	57	19	51	8.5	131	162
	14000	10	49	18	48	8.0	122	156
	16000	5	42	17	45	7.5	111	146

- NOTES: 1. SHADED AREA REPRESENTS OPERATION WITH FULL THROTTLE.
2. FULL-THROTTLE MANIFOLD VALUES ARE APPROXIMATE.
3. FUEL FLOWS ARE TO BE USED FOR FLIGHT PLANNING ONLY AND WILL VARY FROM AIRPLANE TO AIRPLANE. LEAN USING THE EGT.

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