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RGT



EMERGENCY PROCEDURES CHECKLIST

NOT INTENDED FOR REAL FLIGHTS.



AIRSPEED FOR EMERGENCY OPERATION

Engine Failure After Takeoff:

Wing flaps up	70 KIAS
Wing flaps down	65 KIAS

Maneuvering Speed:

3100 Lbs	112 KIAS
2550 Lbs	101 KIAS
2000 Lbs	89 KIAS

Maximum glide:

3100 Lbs	80 KIAS
2550 Lbs	72 KIAS
2000 Lbs	64 KIAS

Precision Landing with Engine Power	65 KIAS
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Landing without engine power:

Wing flaps up	75 KIAS
Wing flaps down	65 KIAS

OPERATIONAL CHECKLIST

ENGINE FAILURES

ENGINE FAILURE DURING TAKE OFF RUN

1. Throttle – IDLE
2. Brakes – APPLY
3. Wing flaps – RETRACT
4. Mixture – IDLE CUTOFF
5. Ignition Switch – OFF
6. Master Switch – OFF



ENGINE FAILURE IMMEDIATELY AFTER TAKE OFF

1. Airspeed – 70 KIAS (Flaps up)
65 KIAS (Flaps down)
2. Mixture – IDLE CUTOFF
3. Fuel Selector Valve – OFF
4. Ignition switch – OFF
5. Wing Flaps – AS REQUIRED (40° recommended)
6. Master Switch – OFF

ENGINE FAILURE DURING FLIGHT

1. Airspeed – 80 KIAS
2. Carburetor Heat – ON
3. Fuel Selector Valve – BOTH
4. Mixture – RICH
5. Ignition Switch – BOTH (or START if propeller is stopped)
6. Primer – IN and LOCKED

FORCED LANDINGS

EMERGENCY LANDING WITHOUT ENGINE POWER

1. Airspeed – 70 KIAS (flaps UP)
65 KIAS (Flaps Down)
2. Mixture – IDLE CUTOFF
3. Fuel selector Valve – OFF
4. Ignition Switch – OFF
5. Landing gear – DOWN (UP if terrain is rough or soft)
6. Wing Flaps – AS REQUIRED (40° recommended)
7. Doors – UNLATCH PRIOR TO TOUCHDOWN
8. Master Switch – OFF when landing is assured
9. Touchdown – SLIGHTLY TAIL LOW
10. Brakes – APPLY HEAVILY.



PRECAUTIONARY LANDING WITH ENGINE POWER

1. Airspeed – 65 KIAS
2. Wing flaps – 20°
3. Selected field – FLY OVER, noting terrain and obstructions, then retract flaps upon reaching a safe altitude and airspeed.
4. Electrical Switches – OFF
5. Landing gear – DOWN (UP if terrain is rough soft)
6. Wing flaps – 40° (on initial approach)
7. Airspeed – 65 KIAS
8. Doors – UNLATCH PRIOR TO TOUCHDOWN
9. Avionics Power and Master Switches – OFF
10. Touchdown – SLIGHTLY TAIL LOW
11. Ignition Switch – OFF
12. Brakes – APPLY HEAVILY

DITCHING

1. Radio – TRANSMIT MAYDAY on 121.5 MHz, giving location and intentions
2. Heavy Objects (in baggage area) – SECURE OR JETTISON
3. Landing gear – UP
4. Flaps – 20° -40°
5. Power – ESTABLISH 300FT/MIN DESCENT at 60 KIAS
6. Approach – High Winds, Heavy seas – INTO THE WIND
Light Winds, Heavy Swells – PARALLEL TO SWELLS

NOTE

When the nose wheel is lifted, the gear motor may run 1-2 seconds to restore hydraulic pressure.

7. Cabin Doors – UNLATCH
8. Touchdown – LEVEL ATTITUDE AT ESTABLISHED DESCENT.
9. Face – CUSHION at touchdown with folded coat
10. Airplane – EVACUATE through cabin doors. If necessary, open windows and flood cabin to equalize pressure so doors can be opened.
11. Life vest and raft – INFLATE



FIRES

DURING START ON GROUND

1. Cranking – CONTINUE, to get a start which would suck the flames and accumulated fuel through the carburetor and into the engine

If engine starts:

2. Power – 1700 RPM for a few minutes
3. Engine – SHUTDOWN and inspect for damage

If engine fails to start:

4. Throttle – FULL OPEN
5. Mixture – IDLE CUTOFF
6. Cranking – CONTINUE
7. Fire Extinguisher – OBTAIN (Have ground attendants obtain if not installed)
8. Engine – SECURE
 - a. Master Switch – OFF
 - b. Ignition Switch – OFF
 - c. Fuel Selector Valve – OFF
9. Fire – EXTINGUISH using fire extinguisher, wool blanket, or dirt.
10. Fire Damage – INSPECT, repair damage or replace damaged components or wiring before conducting another flight.

ENGINE FIRE INFLIGHT

1. Mixture – IDLE CUTOFF
2. Fuel Selector Valve – OFF
3. Master Switch – OFF
4. Cabin heat and Air – OFF (Except overhead vents)
5. Airspeed – 100 KIAS (if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture)
6. Forced Landing – EXECUTE (as described in Emergency Landing without Engine Power)

ELECTRICAL FIRE IN FLIGHT

1. Master Switch– OFF
2. Avionics Power Switch – OFF
3. All others Switches (Except ignition switch) – OFF
4. Vents/Cabin Air/Heat -- CLOSED
5. Fire Extinguisher – ACTIVATE (if available)

WARNING

After discharging an extinguisher within a closed cabin, ventilate the cabin.
If fire appears out and electrical power is necessary for continuance of flight.

6. Master Switch – ON
7. Circuit Brakers – CHECK for faulty circuit, do not reset.
8. Radio Switches – OFF
9. Avionics Power Switch – ON
10. Radio/Electrical Switches – ON one at time, with delay after each until short circuit is localized
11. Vents/Cabin Air/ Heat – OPEN when it is ascertained that fire is completely extinguished.

CABIN FIRE

1. Master Switch – OFF
2. Vents/Cabin Air/Heat – CLOSED (To avoid drafts)
3. Fire Extinguisher – ACTIVATE (if available)

WARNING

After discharging an extinguisher within a closed cabin, ventilate the cabin.

4. Land the airplane as soon as possible to inspect the damage.

WING FIRE

1. Navigation light Switch – OFF
2. Strobe light switch (if installed) – OFF
3. Pitot heat switch (if installed) – OFF

NOTE

Perform a sideslip to keep the flames away from the fuel tank and cabin, and land as soon as possible using flaps only as required for final approach and touchdown.

ICING

INADVERTENT ICING ENCOUNTER

1. Turn pitot heat switch ON (if installed)
2. Turn back or change altitude to obtain an outside air temperature that is less conducive to icing.
3. Pull cabin heat control full out and rotate defroster control clock-wise to obtain maximum defroster air flow
4. Increase engine speed to minimize ice build-up on propeller blades
5. Watch for sings of carburetor air filter ice and apply carburetor heat as required. An unexplained loss in manifold pressure could be caused by carburetor ice or air instake filter ice. Lean the mixture if carburetor heat is used continuously.
6. Plan a landing at the nearest airport, with an extremely rapid ice buildup, select a suitable “off airport” landing site.
7. With an ice accumulation of $\frac{1}{4}$ inch or more on the wing leading edges, be prepared for significantly higher stall speed.
8. Leave wing flaps retracted. Eith a severe ice build-up on the horizontal tail, tha change in wing wake airflow direction caused by wing flaps extension could result in a loss of elevator effectiveness
9. Open the window and if practical, scrape ice form a portion of the windshield for visibility in the landing approach
10. Perform a landing approach using a forward slip, if necessary, for improved visibility
11. Approach at 85 to 95 KIAS, depending upon the amount of ice accumulation.
12. Perform a landing in level attitude.

STATIC SOURCE BLOCKAGE

(Erroneous Instrument reading suspected)

1. Alternate Static source Valve – PULL ON
2. Airspeed – Consult appropriate table in Section 5
3. Altitude – Cruise 50 feet higher and approach 30 feet higher than normal

LANDING GEAR MALFUNCTION PROCEDURES

LANDING GEAR FAILS TO RETRACT

1. Master switch – ON
2. Landing gear lever – CHECK (lever full up)
3. Landing gear and gear pump circuit breakers – IN
4. Gear up light – CHECK
5. Landing gear lever – RECYCLE
6. Gear motor – CHECK operation (ammeter and noise)

LANDING GEAR FAILS TO EXTEND

1. Landing gear lever – DOWN
2. Emergency hand pump – EXTEND HANDLE, and PUMP (perpendicular to handle until resistance becomes heavy – about 20 cycles)
3. Gear down lights – ON
4. Pump handle – STOW

GEAR UP LANDING

1. Landing gear lever – UP
2. Landing gear and gear pump circuit breakers – IN
3. Runway – SELECT longest hard surface or smooth sod runway available
4. Wing flap – 40° (on final approach)
5. Airspeed – 65 KIAS
6. Doors – UNLATCH PRIOR TO TOUCHDOWN
7. Avionics power and master switches – OFF when landing is assured
8. Touchdown – SLIGHTLY TAIL LOW
9. Mixture – IDLE CUTOFF
10. Ignition switch – OFF
11. Fuel selector valve – OFF
12. Airplane – EVACUATE

LANDING WITHOUT POSITIVE INDICATION OF GEAR LOCKING

1. Before landing check – COMPLETE
2. Approach – NORMAL (full flap)
3. Landing gear and gear pump circuit breakers – IN
4. Landing – TAIL LOW as smoothly as possible
5. Braking – MINIMUM necessary
6. Taxi – SLOWLY
7. Engine – SHUTDOWN

LANDING WITH A DEFECTIVE NOSE GEAR (Or flat nose Tire)

1. Movable load – TRANSFER to baggage area
2. Passenger – MOVE to rear seat
3. Before landing checklist – COMPLETE
4. Runway – HARD SURFACE or SMOOTH SOD
5. Wing flaps – 40°
6. Cabin doors – UNLATCH PRIOR TO TOUCHDOWN
7. Avionics power and master switches – OFF when landing is assured
8. Land – SLIGHTLY TAIL LOW
9. Mixture – IDLE CUT OFF
10. Ignition Switch – OFF
11. Fuel selector valve – OFF
12. Elevator Control – HOLD NOSE OFF GROUND as long as possible
13. Airplane – EVACUATE as soon as it stops

LANDING WITH A FLAT MAIN TIRE

1. Approach – NORMAL (full flap)
2. Touchdown – GOOD TIRE FIRST, hold airplane off flat tire as long as possible with aileron control
3. Directional control – MAINTAIN using brake on good wheel as required

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

OVER-VOLTAGE LIGHT ILLUMINATES

1. Avionics Power Switch – OFF
2. Master Switch – OFF (Both sides)
3. Master Switch – ON
4. Over voltage light – OFF
5. Avionics Power switch – ON

If over voltage light illuminates again

6. Flight – TERMINATE as soon as practical

AMMETER SHOWS DISCHARGE

1. Alternator – OFF
2. Non essential Radio/Electrical Equipment – OFF
3. Flight – TERMINATE as soon as practical



NORMAL PROCEDURES CHECKLIST

NOT INTENDED FOR REAL FLIGHTS.



NORMAL PROCEDURES CHECKLIST

BEFORE TAKEOFF

1. Pre-flight inspection -- COMPLETE

2. Seats, belts, Shoulder Harnesses -- ADJUST and LOCK

3. Fuel Selector Valve -- BOTH

Master switch -- ON

4. Avionics Power Switch, Autopilot (if installed), Electrical pump equipment -- OFF

Fuel quantity gauges -- CHECK

Master switch -- OFF

Ignition -- OFF

CAUTION

The avionics power switch must be OFF during engine start to prevent possible damage to avionics.

Exterior -- CHECK FOR DAMAGE

Control surfaces -- CHECK FOR INTERFERENCE,

5. Brakes -- TEST and SET

Hinges -- CHECK FOR INTERFERENCE

6. Cowling flaps -- OPEN (move lever out of locking hole to reposition)

Wings -- FREE OF ICE, SNOW, FROST

7. Landing gear level -- DOWN

Stall warning -- CHECK -- CHECK IN

Fuel Tanks -- CHECK SUPPLY VISUALLY,

STARTING ENGINE

Fuel Tanks sumps -- DRAIN AND CHECK FOR WATER

1. Mixture -- RICH

2. Propeller -- HIGH RPM

Fuel vents -- OPEN

3. Carburetor heat -- COLD

Main Gear Struts -- PROPER INFLATION (4.50IN)

4. Throttle -- PUMP once, or as much as six times if engine is very hot; leave

Tires -- CHECKS

Brakes -- CHECKS

5. Master switch -- ON

6. Throttle -- REMOVE COVER HOLES CLEAR

7. Windshield wipers -- START (release when engine starts)

8. Oil Pressure -- CHECK

Propeller and spinner -- CHECK

9. Flashing Beacon and Navigation Lights -- ON as required

Fuel and Oil -- CHECK FOR LEAKS

10. Avionics Power Switch -- ON

Oil -- CHECK LEVEL

11. Radios -- ON

Dipstick -- PROPERLY SEATED

BEFORE TAKEOFF

Inspection covers -- SECURE

Nose wheel tire -- CHECK

1. Cabin doors and windows -- CLOSED and LOCKED

Nose gear strut -- PROPER INFLATION (3.25IN)

2. Parking brake -- SET

Air filter -- CLEAR

Alternator belt -- CHECK TENSION

5. Fuel Selector Valve -- BOTH

6. Mixture -- RICH

Baggage -- STOWED PROPERLY-SECURE

7. Auxiliary Fuel pump -- ON (check for rise in fuel pressure), then OFF

Baggage door -- CLOSE AND SECURE

Fuel strainer -- DRAIN AND CHECK FOR WATER

SEDIMENT PROPER FUEL



Primary flight controls -- PROPER OPERATION

Cabin door -- CLOSE AND SECURE

Required papers -- ON BOARD

NOTE

Seat belts and harness -- FASTEN/ADJUST. Fully supply satisfactory fuel flow if the engine driven fuel pump should fail. However, if a fuel pump failure causes the fuel pressure to drop below 0.5 PSI, use the auxiliary fuel pump to assure proper engine operation.

BEFORE STARTING ENGINE

8. Elevator and rudder trim -- TAKEOFF

9. Throttle -- 1700 RPM

Brakes -- SET
a. Magnetos -- CHECK (RPM drop should not exceed 175 RPM on either carburetor heat -- FULL COLD magneto or 50 RPM differential between magnetos)

Fuel selector -- DESIRED TANK
b. Propeller -- CYCLE from high to low RPM; return to high RPM (full in)

Radios -- OFF
c. Carburetor heat -- CHECK (for RPM drop)
d. Engine Instrument and ammeter -- CHECK

STARTING ENGINE WHEN COLD

10. Throttle -- 800 - 1000 RPM

11. Radios -- OPEN

12. Autopilot (if installed) -- OFF

Master switch -- ON
13. Flashing Beacon, Navigation Lights and/or Strobe lights -- ON as required

Electric fuel pump -- ON
14. Throttle friction lock -- ADJUST

Mixture -- FULL RICH
15. Parking Brake -- RELEASE

Starter -- ENGAGE

Throttle -- CHECK

TAKEOFF

If engine does not start within 10 sec. prime and repeat starting procedure.

1. Wing flaps -- 0°-20°

STARTING ENGINE WHEN HOT

2. Carburetor heat -- COLD

3. Power -- FULL THROTTLE and 2400 RPM

Throttle -- OPEN
4. Elevator control -- LIFT THROTTLE at 50 KIAS

Master Switch -- ON

Electric fuel pump -- ON

Mixture -- FULL RICH
NOTE: When the nose wheel is lifted, the gear motor may run 1-2 seconds to restore hydraulic pressure.

Starter -- ENGAGE

Throttle -- ADJUST

5. Climb speed -- 70 KIAS (Flaps 20°)

Oil pressure -- CHECK
80 KIAS (Flaps UP)

6. Brakes -- APPLY momentarily when airborne

7. Climb speed -- 55 KIAS until all obstacles are cleared

9. Landing gear -- RETRACT after obstacles are cleared

Throttle -- OPEN FULL
10. Wings flaps -- RETRACT slowly after reaching 75 KIAS

Master switch -- ON

Electric fuel pump -- OFF

Mixture -- IDLE CUT-OFF

Starter -- ENGAGE

Mixture -- ADVANCE



Throttle -- RETARD

Oil pressure -- CHECK

ENROUTE CLIMB

STARTING WITH EXTERNAL POWER SOURCE

NORMAL CLIMB

Master switch -- OFF

Air speed -- 90-100 KIAS

All electrical equipment -- OFF

Terminals -- CONNECT

3. Fuel selector Valve -- BOTH

External power plug -- INSERT IN FUSELAGE

4. Mixture -- FULL RICH (mixture may be leaned above 3000 feet)

5. Cowl flaps -- OPEN as required

Proceed with normal start

Throttle -- LOWEST POSSIBLE RPM

External power plug -- DISCONNECT FROM FUSELAGE

Master switch -- ON-CHECK AMMETER

Air speed -- 88 KIAS at sea level 75 KIAS at 10,000 feet

Oil pressure -- CHECK

3. Fuel selector Valve -- BOTH

4. Mixture -- FULL RICH (mixture may be leaned above 3000 feet)

5. Cowl Flaps -- FULL OPEN

Throttle -- 800 to 1200 RPM

CRUISE

TAXIING

1. Power -- 15-23 INCHES HG, 2100-2400 RPM (no more than 75% power)

2. Elevator and rudder trim -- ADJUST

Chocks -- REMOVED

3. Mixture -- LEAN

4. Cowl flaps -- CLOSED

Throttle -- APPLY SLOWLY

Brakes -- CHECK

Steering -- CHECK

1. Fuel Selector Valve -- BOTH

2. Power -- AS DESIRED

3. Carburetor heat -- AS REQUIRED to prevent carburetor icing

4. Mixture -- ENRICHEN as required

Parking brake -- SET

5. Cowl flaps -- CLOSED

Throttle -- 2000 RPM

6. Wing Flap -- AS DESIRED (0°-10° below 140 KIAS, 10°-40° below 95 KIAS)

Magnetos -- MAX. DROP 175RPM MAX. DIFF. 50RPM

Vacuum -- 5.0" HG+1

Oil Temp -- CHECK

Oil pressure -- CHECK

Air conditioner -- CHECK

Annunciator panel -- PRESS TO TEST

Carburetor heat -- CHECK

Engine is warm for takeoff when throttle can be opened without

engine faltering.

NOTE

The landing gear may be used below 140 KIAS to increase the rate of descent.



Electric fuel pump -- OFF

Fuel pressure -- CHECK

BEFORE LANDING

1. Seats, Belts, Shoulder Harnesses -- ADJUST and LOCK

2. Fuel selector valve -- BOTH

3. Landing gear -- DOWN (below 140 KIAS)

Master switch -- ON CHECK (observe main gear down and green indicator light)

Flight instruments -- CHECK

Fuel selector -- PROPER TANK

4. Carburetor Heat -- ON (apply full heat before closing throttle)

Electric fuel pump -- ON

7. Propeller -- HIGH RPM

Engine gauges -- CHECK

8. Autopilot (if installed) -- OFF

Carburetor heat -- OFF

Seat backs -- ERECT

Primer -- LOCKED

Belts/harness -- FASTENED/ADJUSTED

Empty seats -- SEAT BELTS SNUGLY FASTENED

1. Airspeed -- 70-80 KIAS (Flaps up)

2. Wing flaps -- AS DESIRED (0°-10° below 140 KIAS, 10°-40° below 95 KIAS)

3. Airspeed -- SET

4. Airspeed -- 65-75 KIAS (Flaps Down)

5. Trim -- ADJUST

5. Touchdown -- MAIN WHEELS FIRST

6. Landing roll -- LOWER NOSE WHEEL GENTLY

7. Braking -- Minimum required.

TAKEOFF

SHORT FIELD LANDING

NORMAL

1. Airspeed -- 70-80 KIAS (Flaps UP)

2. Wing flaps -- 40°(below 95 KIAS)

3. Airspeed -- MAINTAIN 63 KIAS

4. Airspeed -- 52 to 65 KIAS

Control wheel -- BACK PRESSURE TO ROTATE

6. Touchdown -- MAIN WHEELS FIRST

7. Brakes -- APPLY HEAVILY

8. Wing flaps -- RETRACT for maximum brake effectiveness

SHORT FIELD, OBSTACLE CLEARANCE

Flaps -- 25° (SECOND NOTCH)

Accelerate to 41 to 49 KIAS depending on aircraft weight

Control wheel -- BACK PRESSURE TO ROTATE

TO CLIMB ATTITUDE

After breaking ground, accelerate to 45 to 54 KIAS depending on aircraft weight.

Accelerate to best flaps up angle of climb speed 64 KIAS, slowly retract the flaps and climb past the obstacle.

BALKED LANDING
Accelerate to best flaps up rate of climb speed 76 KIAS

SOFT FIELD
1. Power -- FULL THROTTLE and 2400 RPM

2. Carburetor heat -- COLD

3. Wing flaps -- RETRACT to 20°

Flaps -- 75° (SECOND NOTCH)

4. Climb speed -- 75 KIAS

Accelerate to 41 to 49 KIAS depending on aircraft weight.

5. Wing flaps -- RETRACT slowly after reaching 75 KIAS

Control wheel -- BACK PRESSURE TO ROTATE

6. Cowl flaps -- OPEN
TO CLIMB ATTITUDE

AFTER LANDING, accelerate to 45 to 54 KIAS depending on Aircraft weight.

Accelerate to best flaps up rate of climb speed 76 KIAS.

2. Carburetor heat -- COLD

Flaps -- RETRACT SLOWLY
3. Cowl flaps -- OPEN

CLIMB SECURING AIRPLANE

Best rate (flaps up) -- 76 KIAS

1. Parking brake -- SET

Best angle (flaps up) -- 64 KIAS

2. Throttle -- IDLE

In route -- 87 KIAS

3. Avionics power switch, Electrical equipment -- OFF

Electric fuel pump -- OFF AT DESIRED ALTITUDE

4. Mixture -- IDLE CUTOFF (pulled full out)

5. Ignition switch -- OFF

6. Master switch -- OFF

CRUISING Lock -- INSTALL

8. Fuel selector Valve -- RIGHT

Reference performance charts and

Avco-Lycoming Operator's Manual.

Normal max. Power -- 75%

Power -- SET POWER TABLE

Mixture -- ADJUST

DESCENT

NORMAL

Throttle -- 2500 RPM

Airspeed -- 122 KIAS

Mixture -- RICH

Carburetor heat -- ON IF REQUIRED



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PERFORMANCE

NOT INTENDED FOR REAL FLIGHTS.



NORMAL PROCEDURES CHECKLIST

PREFLIGHT CHECK

Performance data charts on the following pages are presented so that you may know what to expect from the airplane under various conditions, and also, to facilitate the planning of flights in detail and with reasonable accuracy. The data in the charts has been computed from actual flight test with the airplane and engine in good condition and using average piloting techniques.

Control wheel -- **RELEASE BELTS**
Avionics -- **OFF**
Master Switch -- **ON**
Fuel quantity gauges -- **CHECK**
Master switch -- **OFF**
It should be noted that the performance information presented in the range and endurance profile charts allow for 45 minutes reserve fuel based on 45% power.

Ignition -- **OFF**
The following data for cruise is based on the recommended lean mixture setting.

Some factors that may affect performance such as mixture leaning technique, fuel metering characteristics, engine and propeller condition, and air turbulence may account for variations of 10% or more in range and endurance. Therefore, it is important to utilize all available information to estimate the fuel required for the particular flight.

Hinges -- **CHECK FOR INTERFERENCE**

Wings -- **FREE OF ICE, SNOW, FROST**

USE OF PERFORMANCE CHARTS

Stall Warning -- **CHECK**

Performance data is presented in tabular or graphical form to illustrate the effect of different fuel tanks. -- **CHECK SUPPLY VISUALLY**
The following information is provided in the tables so that conservative values can be used and used to determine the particular performance figure with reasonable accuracy.

Fuel tanks sumps -- **DRAIN AND CHECK FOR WATER**

SEDIMENT AND PROPER FUEL

SAMPLE PROBLEM

Fuel vents -- **OPEN**

The following sample flight problem utilizes information from the various charts to determine the predicted performance data for a typical flight. The following information is known.

Main Gear Struts -- **PROPER INFLATION (4.50IN)**

Tires -- **CHECKS**

Brakes Blocks -- **CHECKS**

Airplane -- **REMOVE COVERATIONS CLEAR**

Takeoff weight -- **CLEAN** 3050 Pounds

Usable fuel -- **CLEAN** 75 Gallons

Propeller and spinner -- **CHECK**

Fuel and Oil -- **CHECK FOR LEAKS**

TAKEOFF CONDITIONS

Oil -- **CHECK LEVEL**

Field pressure altitude

1500 Feet

Dipstick -- **PROPERLY SEATED**

28°C (16°C above standard)

Temperature

12 knot headwinds

Cowling -- **SECURE**

3500 Feet

Wind component along runway

Fuselage covers -- **SECURE**

Nose wheel tire -- **CHECK**

CRUISE CONDITIONS

Nose gear strut -- **PROPER INFLATION (3.25IN)**

720 nautical miles

Total distance

7500 Feet

Air inlets -- **CLEAR**

16°C (16°C above standard)

Pressure altitude

10 knot headwind

Alternator Belt -- **CHECK TENSION**

Temperature

Tow bar and control locks -- **STOW**

Expected wind enroute

Baggage -- **STOWED PROPERLY-SECURE**

Baggage door -- **CLOSE AND SECURE**

Fuel tanks sumps -- **DRAIN AND CHECK FOR WATER**

2000 Feet

Temperature -- **SEDIMENT PROPER FUEL**

25°C

Field length

3000 Feet



Primary flight controls -- PROPER OPERATION

Cabin door -- CLOSE AND SECURE

Required papers -- ON BOARD

Seat belts and harness -- FASTEN/ADJUST --

The takeoff distance chart, figure 5-4, should be consulted, keeping in mind that the distances shown are based on the short field technique. Conservative distances can be established by reading the chart at the next higher value of weight, altitude and temperature. For example, in this particular sample problem, the takeoff distance information presented for a weight of 3100 pounds, pressure altitude of 2000 feet and temperature of 30°C should be used and results in the following:

Carburetor heat -- FULL COLD

Fuel selector -- DESIRED TANK

1085 Feet

Radio altitude to clear a 50-foot obstacle

2110 Feet

STARTING ENGINE WHEN COLD

The total distance is well within the available takeoff field length. However, a correction for the effect of wind may be made based on Note 3 of the takeoff chart. The correction for 12 knot headwind is:

Throttle -- 1/4" OPEN

Master switch -- ON

12 Knots * 10% = 13% Decrease

Electric fuel pump -- ON

9 Knots

Mixture -- FULL RICH

Starter -- ENGAGE The following distances corrected for wind:

Throttle -- CHECK

Ground roll, zero wind

1085

Decrease in ground roll

If engine does not start within 10 sec. prime and

(1085 feet * 13%)

repeat starting procedure

141

944 Feet

STARTING ENGINE WHEN HOT

Total distance to clear a 50-foot

obstacle, zero wind

2110

Decrease in total distance

Throttle -- 1/4" OPEN

Master switch -- ON

274

Corrected total distance to clear foot obstacle

1836 Feet

Mixture -- FULL RICH

CRUISE

Starter -- ENGAGE

Throttle -- ADJUST

Oil pressure -- CHECK

The cruising altitude should be selected based on a consideration of trip length, winds aloft, and the airplane's performance. A cruising altitude and the expected wind enroute have been given for this sample problem. However, the power settings selection for cruise must be determined based on several considerations. These include the cruise performance characteristics presented in figure 5-7. The range profile chart presented in figure 5-8, and the endurance profile chart presented in figure 5-9.

STARTING ENGINE WHEN FLOODED

Throttle -- OPEN FULL

Master switch -- ON

Electric fuel pump -- OFF

Mixture -- IDLE CUT-OFF

Starter -- ENGAGE

Mixture -- ADVANCE



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Throttle -- RETARD

Oil pressure -- CHECK

The relationship between power and range is illustrated by the range profile chart. Considerable fuel savings can be realized when lower power settings are used.

STARTING WITH EXTERNAL POWER SOURCE

The range profile chart indicates that use of 65% power at 7500 feet yields a predicted range of 802 nautical miles with no wind. The endurance profile chart shows a corresponding 5.5 hours. Using this information, the estimated distance can be determined for expected 10 knot headwind at 7500 feet as follows.

Master switch -- OFF
All electrical equipment -- OFF
Terminals -- CONNECT

External power plug -- INSERT IN FUSELAGE 802

Range, zero wind

Decrease in range due to wind

(5.5 hours * 10 knot headwind) 55

Range with normal start

Corrected range 747 Nautical Miles

Throttle -- LOWEST POSSIBLE RPM

External power plug -- DISCONNECT FROM FUSELAGE

This indicates that the trip can be made without a fuel stop using approximately 65% power.

Master switch -- ON-CHECK AMMETER

Oil pressure -- CHECK

The cruise performance chart for 8000 feet pressure altitude is entered using 20°C above standard temperature. These values most nearly correspond to the planned altitude and expected temperature conditions. The power setting chosen is 2200 RPM and 21 inches of manifold pressure, which results in the following:

WARM UP

Throttle -- 800 to 1200 RPM

Power 65%

True airspeed

150 Knots

Throttle -- 2000 RPM

Manifold flow

11.7 GPH

TAXING

The power computer may be used to determine power and fuel consumption more accurately during the flight.

Check -- REMOVED
Taxi area -- CLEAR

Throttle -- APPLY SLOWLY

FUEL REQUIRED

Brakes -- CHECK

Steering -- CHECK

The total fuel requirement for the flight may be estimated using the performance information in figures 5-6 and 5-7. For this sample problem, figure 5-6 shows that a normal climb to 8000 feet requires 3.4 gallons of fuel. The corresponding distance during the climb is 16 nautical miles. These values are for a standard temperature and are sufficiently accurate for most flight planning purposes. However, a further correction for the effect of temperature may be made as noted on the climb chart. The approximate effect of a non-standard temperature is to increase the time, fuel, and distance by 10% for each 10°C above standard temperature, due to the lower rate of climb. In this case, assuming a temperature 16°C above standard, the

Correction would be:

Oil Temp -- CHECK

Oil pressure -- CHECK

Air conditioner -- CHECK 16°C * 10% = 16% Increase

Annunciator panel -- PRESS TO TEST 10°C

Carburetor heat -- CHECK

Engine is warm for takeoff when throttle can be opened without engine faltering.



Electric fuel pump -- OFF

Fuel pressure -- CHECK

With this RETARD included, the fuel estimate would be calculated as follows:

Fuel to climb, standard temperature 3.4

Increase due to non-standard temperature

(3.4 * 16%) 0.5

Master switch -- ON 3.9 Gallons

Flight instruments -- CHECK

With an expected 10 knot headwind, the ground speed for cruise is predicted to be:

Fuel selector -- PROPER TANK

Electric fuel pump -- ON 150

Engine gauges -- CHECK -10

Carburetor heat -- OFF 140 Knots

Seat backs -- ERECT

Mixture -- SET The time required for the cruise portion of the trip is:

Primer -- LOCKED

Belts/harness -- FASTENED/ADJUSTED 701 Nautical Miles = 5.0 Hours

Empty seats -- SEAT BELTS SNUGLY FASTENED 140 Knots

Flaps -- SET

The fuel required for cruise is:

Trim tab -- SET

Controls -- FREE 5.0 hours * 11.7 gallons/hour = 58.5 Gallons

Doors -- LATCHED

The total estimated fuel required is as follows:

Air conditioner -- OFF

TAKEOFF Fuel to start, taxi, and takeoff 2.0

Climb 3.9

Cruise 58.5

NORMAL 64.4 Gallons

Flaps -- SET This will leave a fuel reserve of:

Tab -- SET

Accelerate to 52 to 65 KIAS 75.0

Control wheel -- BACK PRESSURE TO ROTATE 64.4

TO CLIMB ATTITUDE. 10.6 Gallons

Once the flight is underway, ground speed checks will provide a more accurate basis for estimating the time enroute and the corresponding fuel required to complete the trip with ample reserve.

Flaps -- 25° (SECOND NOTCH)

Accelerate to 41 to 49 KIAS depending on aircraft weight

Control wheel -- BACK PRESSURE TO ROTATE

TO CLIMB ATTITUDE

After breaking ground, accelerate to 45 to 54 KIAS depending on aircraft weight.



Accelerate to best flaps up angle of climb speed 64 KIAS, slowly retract the flaps and climb past the obstacle.
Accelerate to best flap up rate of climb speed 76KIAS

LANDING SOFT FIELD

A procedure similar to takeoff should be used for estimating the landing distance at the destination airport. Figure 5-10 presents landing distance information for the short field technique. The distance depends on airfield weight.

Accelerate to 41 to 49 KIAS depending on aircraft weight
Control wheel as BACK PRESSURE TO ROTATE

TO CLIMB ATTITUDE

Ground roll
After breaking ground, accelerate to 45 to 54 KIAS depending
Total distance to clear a 50-foot obstacle
on Aircraft weight.

680 Feet
1450 Feet

Accelerate to best flaps up rate of climb speed 76 KIAS

A correction for the effect of wind may be based on Note2 of the landing chart using the same procedure as outlined for takeoff.

CLIMB

Best rate (flaps up) -- 76 KIAS

Best angle (flaps up) -- 64 KIAS

En route -- 87 KIAS

Electric fuel pump -- OFF AT DESIRED ATTITUDE

CRUISING

Reference performance charts and
Avco-Lycoming Operator's Manual.

Normal max. Power -- 75%

Power -- SET POWER TABLE

Mixture -- ADJUST

DESCENT

NORMAL

Throttle -- 2500 RPM

Airspeed -- 122 KIAS

Mixture -- RICH

Carburetor heat -- ON IF REQUIRED

POWER OFF

Carburetor heat -- ON IF REQUIRED

Throttle -- CLOSED

AIRSPEED CALIBRATION

ALTERNATE STATIC SOURCE

HEATER/VENTS AND WINDOWS CLOSED

FLAPS UP												
NORMAL KIAS	60	70	80	90	100	110	120	130	140	150	160	
ALTERNATE KIAS	62	72	83	93	103	113	123	133	143	153	163	
FLAPS 20°												
NORMAL KIAS	50	60	70	80	90	95	---	---	---	---	---	---
ALTERNATE KIAS	51	62	73	84	94	99	---	---	---	---	---	---
FLAPS 40°												
NORMAL KIAS	40	50	60	70	80	90	95	---	---	---	---	---
ALTERNATE KIAS	39	51	62	73	82	92	96	---	---	---	---	---

HEATER/VENTS OPEN AND WINDOWS CLOSED

FLAPS UP												
NORMAL KIAS	60	70	80	90	100	110	120	130	140	150	160	
ALTERNATE KIAS	60	70	81	90	100	110	120	129	139	149	159	
FLAPS 20°												
NORMAL KIAS	50	60	70	80	90	95	---	---	---	---	---	---
ALTERNATE KIAS	50	61	71	81	91	96	---	---	---	---	---	---
FLAPS 40°												
NORMAL KIAS	40	50	60	70	80	90	95	---	---	---	---	---
ALTERNATE KIAS	38	48	58	69	78	88	93	---	---	---	---	---

Figure 5-1. Airspeed Calibration (Sheet 2 of 2)

Flaps -- FULL UP

Wheel chocks -- IN PLACE

Tie downs -- SECURE

EMERGENCY CHECK LIST

ENGINE FIRE DURING START

AIRSPEED CALIBRATION

ALTERNATE STATIC SOURCE

HEATER/VENTS AND WINDOWS CLOSED

FLAPS UP												
NORMAL KIAS	60	70	80	90	100	110	120	130	140	150	160	
ALTERNATE KIAS	62	72	83	93	103	113	123	133	143	153	163	
FLAPS 20°												
NORMAL KIAS	50	60	70	80	90	95	---	---	---	---	---	---
ALTERNATE KIAS	51	62	73	84	94	99	---	---	---	---	---	---
FLAPS 40°												
NORMAL KIAS	40	50	60	70	80	90	95	---	---	---	---	---
ALTERNATE KIAS	39	51	62	73	82	92	96	---	---	---	---	---

HEATER/VENTS OPEN AND WINDOWS CLOSED

FLAPS UP												
NORMAL KIAS	60	70	80	90	100	110	120	130	140	150	160	
ALTERNATE KIAS	60	70	81	90	100	110	120	129	139	149	159	
FLAPS 20°												
NORMAL KIAS	50	60	70	80	90	95	---	---	---	---	---	---
ALTERNATE KIAS	50	61	71	81	91	96	---	---	---	---	---	---
FLAPS 40°												
NORMAL KIAS	40	50	60	70	80	90	95	---	---	---	---	---
ALTERNATE KIAS	38	48	58	69	78	88	93	---	---	---	---	---

Figure 5-1. Airspeed Calibration (Sheet 2 of 2)

Engine gauges -- CHECK FOR INDICATION OF CAUSE
OF POWER LOSS

Primer -- CHECK LOCKED

If no fuel pressure is indicated, check tank selector
position to be sure it is on a tank containing fuel.

When power is restored:

TEMPERATURE CONVERSION CHART

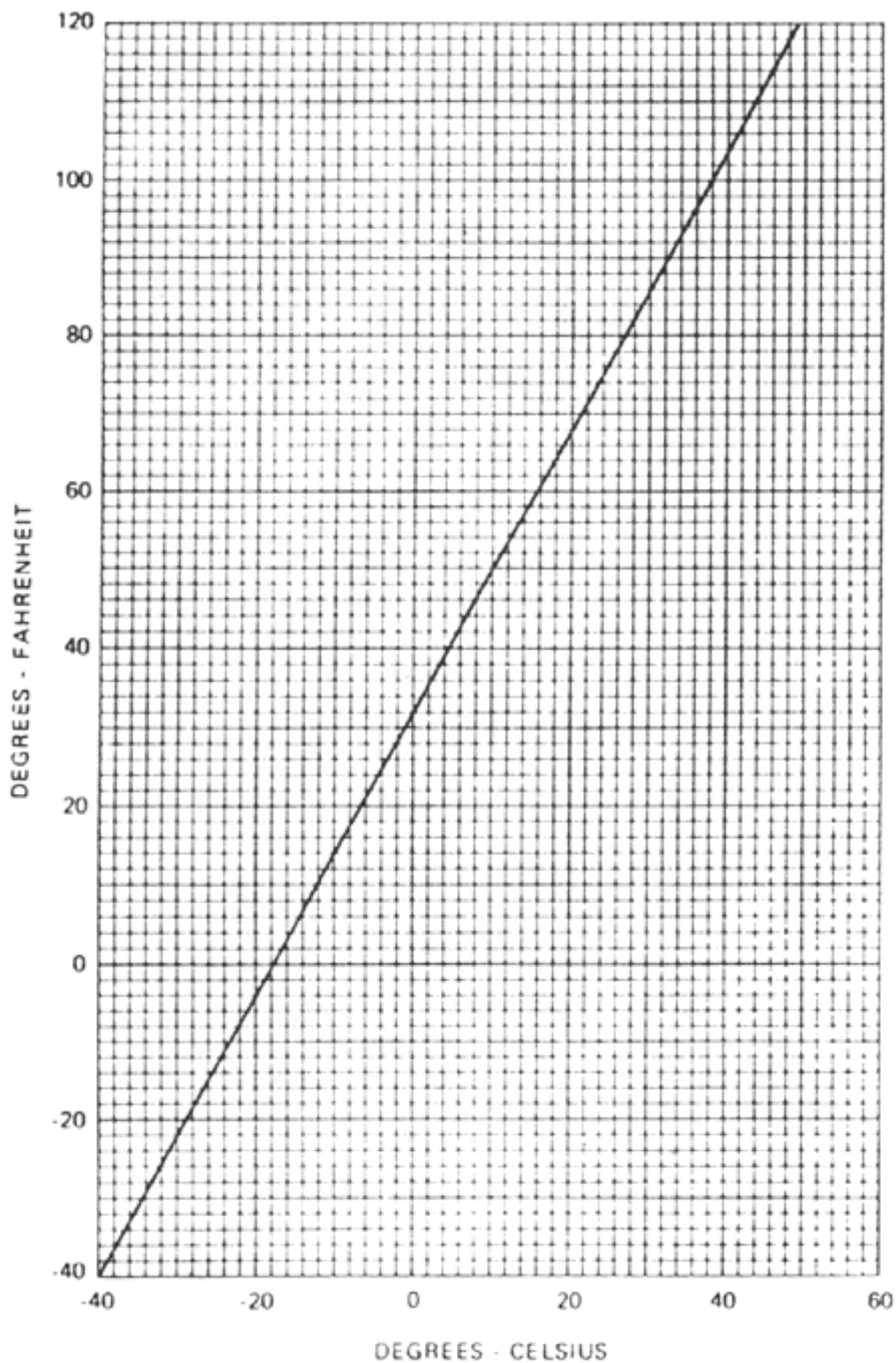


Figure 5-2. Temperature Conversion Chart

LOSS OF OIL PRESSURE

STALL SPEEDS

CONDITIONS:

Power Off

NOTES:

- Maximum altitude loss during a stall recovery may be as much as 240 feet.
- KIAS values are approximate.

MOST REARWARD CENTER OF GRAVITY

WEIGHT LBS	FLAP DEFLECTION	ANGLE OF BANK							
		0°		30°		45°		60°	
		KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
3100	UP	40	54	43	58	48	64	57	76
	20°	38	51	41	55	46	61	55	72
	40°	35	50	38	54	43	59	52	71

MOST FORWARD CENTER OF GRAVITY

WEIGHT LBS	FLAP DEFLECTION	ANGLE OF BANK							
		0°		30°		45°		60°	
		KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
3100	UP	42	55	45	59	50	65	59	78
	20°	40	52	41	56	46	62	55	74
	40°	37	52	40	56	45	62	54	74

Figure 5-3. Stall Speeds

**ELECTRICAL OVERLOAD****(Alternator over 20 amp above known electrical load)**

FOR AIRPLANES WITH SEPARATE BAT AND ALT SWITCH OPERATION

ALT switch -- ON

BAT switch -- OFF

If alternator loads are reduced:

Electrical load -- REDUCE TO MINIMUM

Land as soon as practical

TAKEOFF DISTANCE
MAXIMUM WEIGHT 3100 LBS**CONDITIONS:**

Flaps 20°

2400 RPM and Full Throttle Prior to Brake Release

Cowl Flaps Open

Paved, Level, Dry Runway

Zero Wind

SHORT FIELD**NOTES:**

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum power in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
4. Where distance value has been deleted, climb performance after lift-off is less than 150 fpm at takeoff speed.
5. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
				GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS
	LIFT OFF	AT 50 FT											
3100	47	55	S.L.	735	1410	790	1515	850	1625	910	1745	975	1870
			1000	800	1545	860	1660	925	1785	995	1915	1065	2060
			2000	875	1690	940	1820	1010	1960	1085	2110	1165	2275
			3000	955	1860	1030	2010	1105	2165	1190	2340	1275	2525
			4000	1045	2055	1125	2225	1210	2405	1300	2605	1395	2825
			5000	1145	2280	1235	2475	1330	2690	1430	2925	1535	3185
			6000	1255	2550	1355	2775	1460	3030	1570	3310	1685	3635
			7000	1380	2870	1490	3140	1605	3450	1730	3805	---	---
			8000	1520	3260	1640	3600	1770	3990	---	---	---	---

Figure 5-4. Takeoff Distance (Sheet 1 of 2)

Slow airplane to 87 KIAS

Cabin vents -- CLOSE

Storm window -- OPEN

If upper latch is open -- LATCH

If side latch is open -- PULL ON ARMREST WHILE MOVING

LATCH HANDLE TO LATCHED POSITION

If both latches are open -- SIDE LATCH, THEN TOP LATCH



ENGINE DEFOOR ICING

Carburetor Heat -- ON

When the upper and side panels are open the doors will trail slightly open and airspeed will be reduced slightly.

ENGINE ROUGHNESS

To close the door in flight:

Slow airplane to 87 KIAS

Cabin vents -- CLOSE

Carburetor heat -- OPEN

TAKEOFF DISTANCE

2800 LBS AND 2500 LBS

SHORT FIELD

REFER TO SHEET 1 FOR APPROPRIATE CONDITIONS AND NOTES.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS
2800	45	53	S.L.	580	1115	625	1195	670	1275	720	1365	770	1460
			1000	635	1215	680	1300	730	1395	785	1490	840	1595
			2000	690	1325	745	1420	800	1520	855	1630	915	1750
			3000	755	1445	810	1555	870	1670	935	1790	1000	1920
			4000	820	1585	885	1705	950	1835	1020	1975	1095	2125
			5000	900	1745	970	1880	1040	2025	1120	2185	1200	2355
			6000	985	1925	1060	2080	1140	2250	1225	2430	1315	2630
			7000	1080	2140	1165	2315	1255	2510	1350	2725	1450	2960
			8000	1185	2385	1280	2595	1380	2825	1485	3080	1595	3365
2500	42	50	S.L.	450	870	485	925	520	990	555	1055	595	1125
			1000	490	940	525	1005	565	1075	605	1145	645	1220
			2000	530	1020	570	1090	615	1165	660	1245	705	1330
			3000	580	1110	625	1190	670	1270	720	1360	770	1455
			4000	630	1210	680	1300	730	1390	785	1490	840	1590
			5000	690	1325	745	1420	800	1525	855	1635	915	1750
			6000	755	1450	810	1560	875	1675	935	1800	1005	1930
			7000	825	1595	890	1715	955	1850	1025	1990	1100	2140
			8000	905	1760	975	1900	1050	2050	1130	2210	1210	2385

Figure 5-4. Takeoff Distance (Sheet 2 of 2)

RATE OF CLIMB

MAXIMUM

CONDITIONS:

Flaps Up
Gear Up
2400 RPM
Full Throttle
Mixture Full Rich
Cowl Flaps Open

NOTE:

Mixture may be leaned above 3000 feet for increased power.

WEIGHT LBS	PRESS ALT FT	CLIMB SPEED KIAS	RATE OF CLIMB - FPM			
			-20°C	0°C	20°C	40°C
3100	S.L.	88	1270	1195	1120	1045
	2000	85	1110	1035	960	890
	4000	82	945	875	805	730
	6000	80	785	715	645	570
	8000	77	625	555	485	415
	10,000	74	465	395	325	- - -
	12,000	72	305	235	165	- - -

Figure 5-5. Rate of Climb

TIME, FUEL, AND DISTANCE TO CLIMB

MAXIMUM RATE OF CLIMB

CONDITIONS:

Flaps Up
Gear Up
2400 RPM
Full Throttle
Mixture Full Rich
Cowl Flaps Open
Standard Temperature

NOTES:

1. Add 2.0 gallons of fuel for engine start, taxi and takeoff allowance.
2. Mixture may be leaned above 3000 feet for increased power.
3. Increase time, fuel and distance by 10% for each 10°C above standard temperature.
4. Distances shown are based on zero wind.

WEIGHT LBS	PRESSURE ALTITUDE FT	TEMP °C	CLIMB SPEED KIAS	RATE OF CLIMB FPM	FROM SEA LEVEL		
					TIME MIN	FUEL USED GALLONS	DISTANCE NM
3100	S.L.	15	88	1140	0	0	0
	1000	13	86	1065	1	0.4	1
	2000	11	85	995	2	0.8	3
	3000	9	84	920	3	1.2	4
	4000	7	82	850	4	1.6	6
	5000	5	81	775	5	2.1	8
	6000	3	80	705	7	2.6	10
	7000	1	78	630	8	3.1	12
	8000	-1	77	560	10	3.7	15
	9000	-3	76	485	12	4.4	18
	10,000	-5	74	415	14	5.1	21
	11,000	-7	73	340	17	6.0	25
	12,000	-9	72	265	20	7.1	30

Figure 5-6. Time, Fuel, and Distance to Climb (Sheet 1 of 2)

TIME, FUEL, AND DISTANCE TO CLIMB

NORMAL CLIMB - 95 KIAS

CONDITIONS:

Flaps Up
 Gear Up
 2400 RPM
 23 Inches Hg or Full Throttle
 Mixture Full Rich
 Cowl Flaps Open
 Standard Temperature

NOTES:

1. Add 2.0 gallons of fuel for engine start, taxi and takeoff allowance.
2. Mixture may be leaned above 3000 feet for increased power.
3. Increase time, fuel and distance by 10% for each 10°C above standard temperature.
4. Distances shown are based on zero wind.

WEIGHT LBS	PRESSURE ALTITUDE FT	TEMP °C	RATE OF CLIMB FPM	FROM SEA LEVEL		
				TIME MIN	FUEL USED GALLONS	DISTANCE NM
3100	S.L.	15	680	0	0	0
	1000	13	680	1	0.5	2
	2000	11	680	3	1.0	5
	3000	9	680	4	1.5	7
	4000	7	680	6	2.0	10
	5000	5	680	7	2.6	12
	6000	3	640	9	3.1	15
	7000	1	565	11	3.7	18
	8000	-1	485	12	4.4	21
	9000	-3	410	15	5.2	25
	10,000	-5	330	18	6.1	30
	11,000	-7	255	21	7.3	37
	12,000	-9	175	26	8.8	46

Figure 5-6. Time, Fuel, and Distance to Climb (Sheet 2 of 2)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 2000 FEET

CONDITIONS:

3100 Pounds

Recommended Lean Mixture

Cowl Flaps Closed

NOTE

For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -9°C			STANDARD TEMPERATURE 11°C			20°C ABOVE STANDARD TEMP 31°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	23	---	---	---	76	148	13.6	73	149	13.2
	22	74	143	13.3	71	145	12.8	69	146	12.4
	21	69	140	12.4	67	141	12.0	64	142	11.6
	20	64	136	11.6	62	137	11.3	60	138	10.9
2300	23	75	145	13.5	72	146	13.1	70	147	12.6
	22	71	141	12.7	68	142	12.3	66	143	11.9
	21	66	137	11.9	64	138	11.5	62	139	11.2
	20	61	134	11.2	59	135	10.8	57	135	10.5
2200	23	72	142	12.9	69	143	12.5	67	144	12.1
	22	67	139	12.1	65	140	11.7	63	141	11.4
	21	63	135	11.4	61	136	11.0	59	137	10.7
	20	59	131	10.7	57	132	10.3	55	133	10.0
2100	23	68	139	12.2	66	140	11.8	63	141	11.5
	22	64	136	11.5	62	137	11.2	60	137	10.8
	21	60	132	10.9	58	133	10.5	56	134	10.2
	20	55	128	10.1	54	129	9.8	52	129	9.5
	19	51	124	9.4	50	124	9.1	48	125	8.9
	18	47	119	8.7	45	119	8.5	44	120	8.2

Figure 5-7. Cruise Performance (Sheet 1 of 6)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 4000 FEET

CONDITIONS:
3100 Pounds
Recommended Lean Mixture
Cowl Flaps Closed

NOTE

For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -13°C			STANDARD TEMPERATURE 7°C			20°C ABOVE STANDARD TEMP 27°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	23	---	---	---	78	153	14.0	75	154	13.6
	22	76	148	13.7	73	149	13.2	71	150	12.8
	21	71	144	12.8	69	145	12.4	66	146	12.0
	20	66	140	12.0	64	141	11.6	62	142	11.2
2300	23	77	149	14.0	75	150	13.5	72	151	13.0
	22	73	145	13.1	70	147	12.7	68	148	12.2
	21	68	142	12.3	66	143	11.9	64	144	11.5
	20	64	138	11.5	61	139	11.1	59	140	10.8
2200	23	74	146	13.3	71	148	12.9	69	149	12.4
	22	70	143	12.5	67	144	12.1	65	145	11.7
	21	65	139	11.8	63	140	11.4	61	141	11.0
	20	61	135	11.0	59	136	10.7	57	137	10.3
2100	23	70	143	12.7	68	145	12.2	65	146	11.8
	22	66	140	11.9	64	141	11.5	62	142	11.2
	21	62	136	11.2	60	137	10.9	58	138	10.5
	20	58	132	10.5	55	133	10.1	54	134	9.8
	19	53	128	9.8	51	129	9.5	50	129	9.2
	18	49	123	9.1	47	124	8.8	46	124	8.5

Figure 5-7. Cruise Performance (Sheet 2 of 6)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 6000 FEET

CONDITIONS:
 3100 Pounds
 Recommended Lean Mixture
 Cowl Flaps Closed

NOTE

For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -17°C			STANDARD TEMPERATURE 3°C			20°C ABOVE STANDARD TEMP 23°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	22	---	---	---	75	154	13.6	73	155	13.1
	21	73	148	13.2	71	150	12.7	68	151	12.3
	20	69	145	12.3	66	146	11.9	64	147	11.5
	19	64	140	11.5	61	141	11.1	59	142	10.8
2300	23	---	---	---	77	155	13.9	74	156	13.4
	22	75	150	13.5	72	151	13.0	70	152	12.6
	21	70	146	12.7	68	147	12.2	66	148	11.8
	20	66	142	11.9	63	143	11.5	61	144	11.1
2200	23	76	151	13.7	74	152	13.3	71	153	12.8
	22	72	147	12.9	69	148	12.5	67	150	12.1
	21	67	144	12.1	65	145	11.7	63	146	11.4
	20	63	140	11.4	61	141	11.0	59	141	10.7
2100	23	72	148	13.1	70	149	12.6	68	150	12.2
	22	68	144	12.3	66	145	11.9	64	146	11.5
	21	64	141	11.6	62	142	11.2	60	142	10.8
	20	60	137	10.9	57	137	10.5	56	138	10.2
	19	55	132	10.1	53	133	9.8	52	133	9.5
	18	51	128	9.4	49	128	9.1	48	128	8.8

Figure 5-7. Cruise Performance (Sheet 3 of 6)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 8000 FEET

CONDITIONS:
3100 Pounds
Recommended Lean Mixture
Cowl Flaps Closed

NOTE

For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -21°C			STANDARD TEMPERATURE -1°C			20°C ABOVE STANDARD TEMP 19°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	21	76	153	13.6	73	154	13.1	70	155	12.7
	20	71	149	12.7	68	150	12.3	66	151	11.9
	19	66	145	11.9	63	146	11.5	61	147	11.1
	18	61	140	11.1	59	141	10.7	57	142	10.3
2300	21	73	151	13.1	70	152	12.6	68	153	12.2
	20	68	147	12.2	65	148	11.8	63	149	11.4
	19	63	142	11.4	61	143	11.1	59	144	10.7
	18	58	138	10.6	56	138	10.3	54	139	9.9
2200	21	70	148	12.5	67	149	12.1	65	150	11.7
	20	65	144	11.7	63	145	11.3	60	146	11.0
	19	60	140	11.0	58	141	10.6	56	141	10.3
	18	56	135	10.2	54	136	9.9	52	136	9.5
2100	21	66	145	11.9	64	146	11.5	61	147	11.2
	20	62	141	11.2	59	142	10.8	57	142	10.5
	19	57	137	10.5	55	137	10.1	53	138	9.8
	18	53	132	9.7	51	132	9.4	49	133	9.1
	17	49	127	9.0	47	127	8.7	45	127	8.4

Figure 5-7. Cruise Performance (Sheet 4 of 6)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 10,000 FEET

CONDITIONS:
3100 Pounds
Recommended Lean Mixture
Cowl Flaps Closed

NOTE
For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -25°C			STANDARD TEMPERATURE -5°C			20°C ABOVE STANDARD TEMP 15°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	20	73	154	13.1	70	155	12.6	68	156	12.2
	19	68	149	12.2	65	150	11.8	63	151	11.4
	18	63	145	11.4	60	145	11.0	58	146	10.6
	17	58	140	10.6	56	140	10.2	54	141	9.9
2300	20	70	151	12.6	67	152	12.2	65	153	11.8
	19	65	147	11.8	63	148	11.4	61	149	11.0
	18	60	142	11.0	58	143	10.6	56	143	10.3
	17	56	137	10.2	53	138	9.8	52	138	9.5
2200	20	67	149	12.1	65	150	11.7	62	150	11.3
	19	62	144	11.3	60	145	10.9	58	146	10.6
	18	58	140	10.5	56	140	10.2	54	140	9.9
	17	53	134	9.8	51	135	9.4	49	135	9.1
2100	20	64	146	11.5	61	146	11.2	59	147	10.8
	19	59	141	10.8	57	142	10.4	55	142	10.1
	18	55	136	10.1	53	137	9.7	51	137	9.4
	17	51	131	9.3	49	131	9.0	47	131	8.7
	16	46	125	8.6	44	125	8.3	43	125	8.1

Figure 5-7. Cruise Performance (Sheet 5 of 6)

CRUISE PERFORMANCE

PRESSURE ALTITUDE 12,000 FEET

CONDITIONS:
3100 Pounds
Recommended Lean Mixture
Cowl Flaps Closed

NOTE

For best fuel economy, operate at the leanest mixture that results in smooth engine operation or at peak EGT if an EGT indicator is installed.

		20°C BELOW STANDARD TEMP -29°C			STANDARD TEMPERATURE -9°C			20°C ABOVE STANDARD TEMP 11°C		
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	18	65	149	11.7	62	150	11.3	60	151	10.9
	17	60	144	10.9	57	145	10.5	55	145	10.1
	16	55	138	10.0	53	139	9.7	51	139	9.4
	15	50	132	9.2	48	132	8.8	46	132	8.6
2300	18	62	147	11.3	60	148	10.9	58	148	10.6
	17	57	142	10.5	55	142	10.1	53	142	9.8
	16	53	136	9.7	51	136	9.3	49	136	9.0
	15	48	130	8.8	46	130	8.5	44	129	8.3
2200	18	60	144	10.9	58	145	10.5	56	145	10.2
	17	55	139	10.1	53	139	9.7	51	139	9.4
	16	50	133	9.3	48	133	9.0	47	133	8.7
2100	18	57	141	10.4	55	141	10.0	53	142	9.7
	17	52	136	9.6	50	136	9.3	49	136	9.0
	16	48	130	8.9	46	130	8.6	44	129	8.3

Figure 5-7. Cruise Performance (Sheet 6 of 6)

RANGE PROFILE

45 MINUTES RESERVE 56 GALLONS USABLE FUEL

CONDITIONS:

3100 Pounds
Recommended Lean Mixture for Cruise
Standard Temperature
Zero Wind

NOTES:

1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the distance during a normal climb as shown in figure 5-6.
2. Reserve fuel is based on 45 minutes at 45% BHP and is 6.3 gallons.

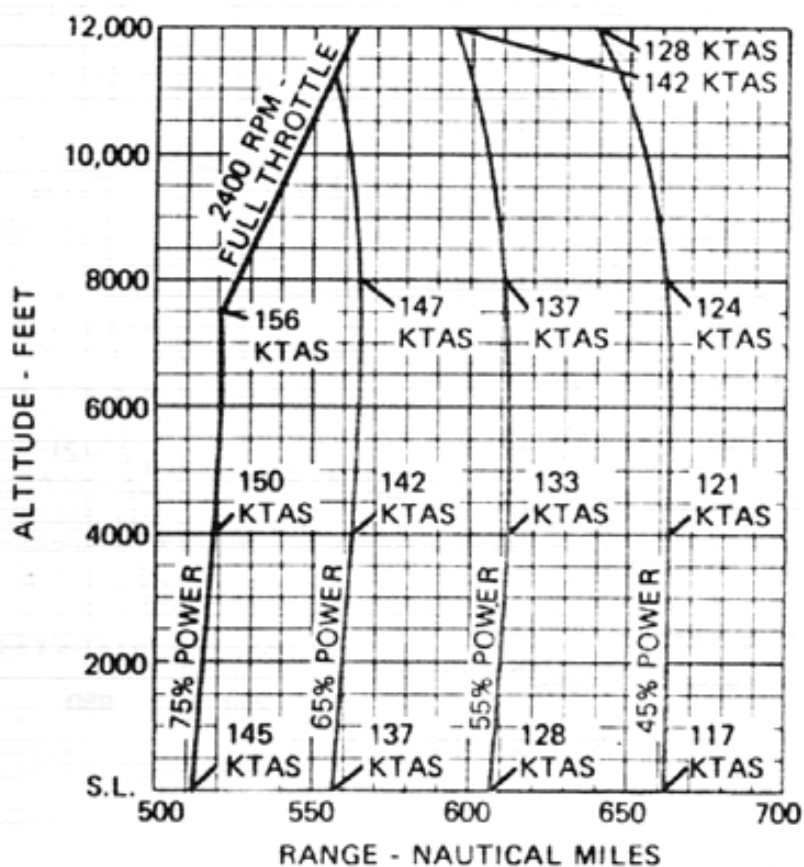


Figure 5-8. Range Profile (Sheet 1 of 2)

RANGE PROFILE 45 MINUTES RESERVE 75 GALLONS USABLE FUEL

CONDITIONS:

3100 Pounds

Recommended Lean Mixture for Cruise

Standard Temperature

Zero Wind

NOTES:

1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the distance during a normal climb as shown in figure 5-6.
2. Reserve fuel is based on 45 minutes at 45% BHP and is 6.3 gallons.

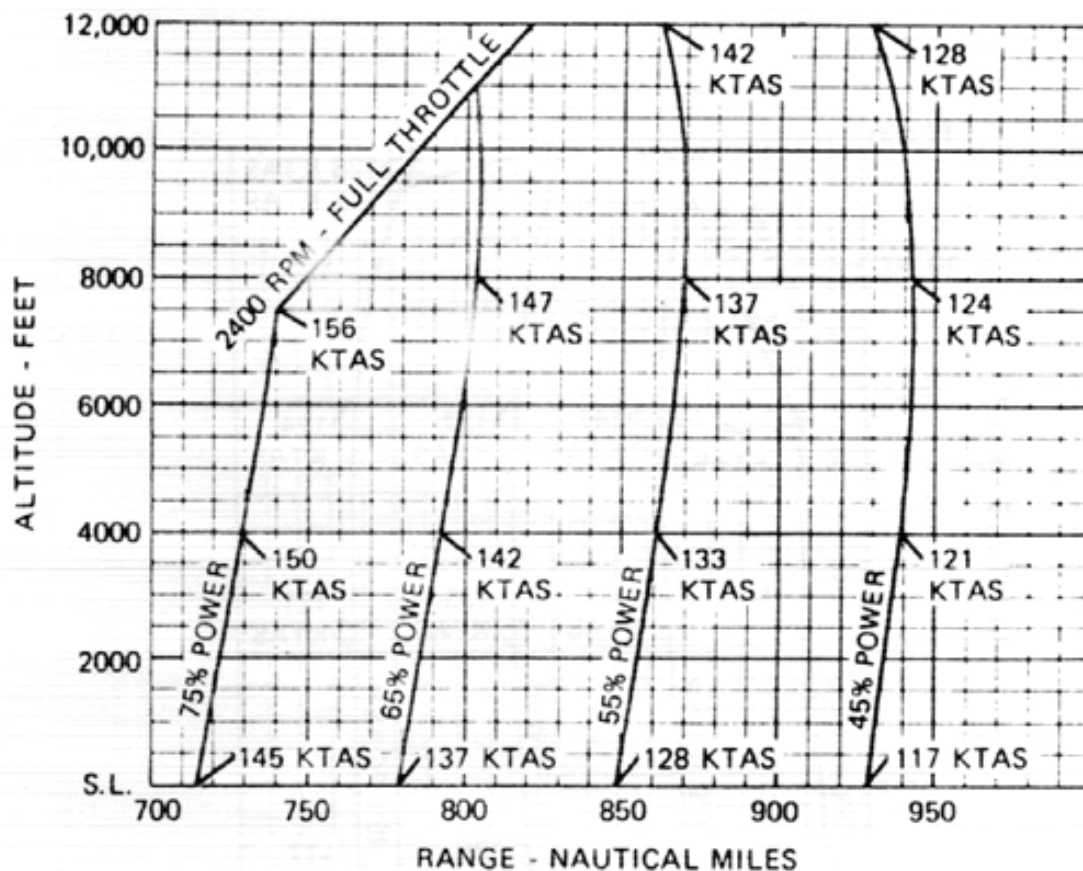


Figure 5-8. Range Profile (Sheet 2 of 2)

ENDURANCE PROFILE

45 MINUTES RESERVE
56 GALLONS USABLE FUEL

CONDITIONS:

3100 pounds

Recommended Lean Mixture for Cruise

Standard Temperature

NOTES:

1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the time during a normal climb as shown in figure 5-6.
2. Reserve fuel is based on 45 minutes at 45% BHP and is 6.3 gallons.

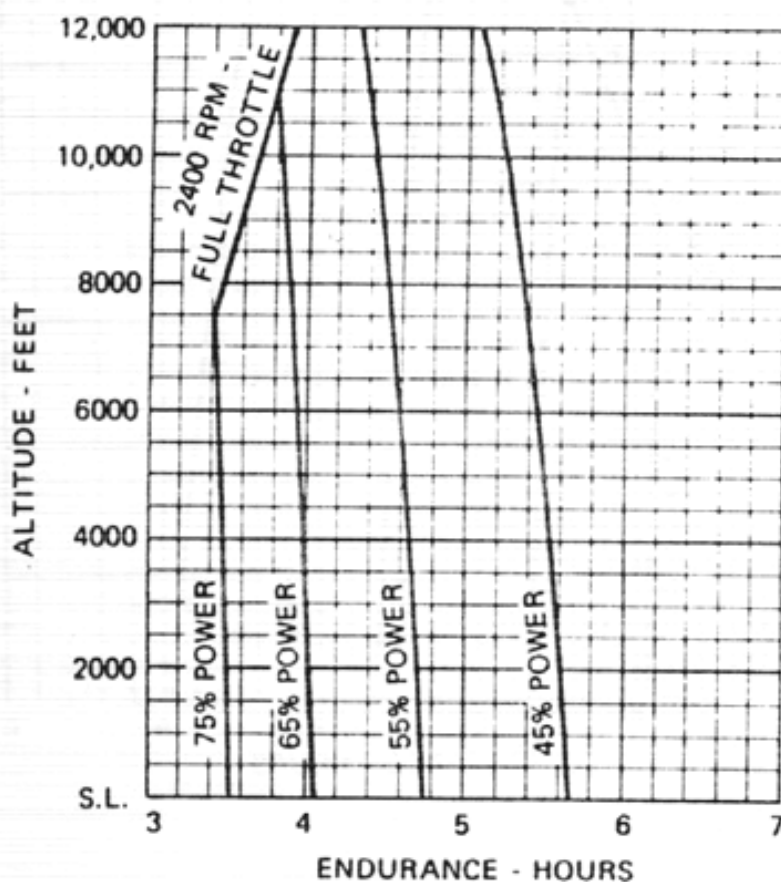


Figure 5-9. Endurance Profile (Sheet 1 of 2)

LANDING DISTANCE

SHORT FIELD

CONDITIONS:

Flaps 40°
Power Off
Maximum Braking
Paved, Level, Dry Runway
Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on a dry, grass runway, increase distances by 40% of the "ground roll" figure.

WEIGHT LBS	SPEED AT 50 FT KIAS	PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
			GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS
3100	63	S.L.	570	1270	590	1305	610	1335	630	1370	650	1400
		1000	590	1305	610	1335	635	1375	655	1410	675	1440
		2000	610	1335	635	1375	655	1410	680	1450	700	1480
		3000	635	1375	660	1415	680	1450	705	1490	730	1530
		4000	660	1415	685	1455	705	1490	730	1530	755	1570
		5000	685	1455	710	1495	735	1535	760	1580	785	1620
		6000	710	1500	735	1540	760	1580	790	1625	815	1665
		7000	735	1540	765	1585	790	1630	820	1675	845	1715
		8000	765	1585	795	1635	820	1675	850	1725	880	1770

Figure 5-10. Landing Distance

5-27/(5-28 blank)