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EMERGENCY PROCEDURES CHECKLIST

NOT INTENTED FOR REAL FLIGHTS.

	LANDPLANE AND SKIPLANE
Gross Weight	1900 lbs
Flight Load Factor* Flaps Up	+3.8 -1.52
Flight Load Factor* Flaps Down	+3.5
Steep Turns	115 m.p.h.
Spins	Slow Deceleration
Stalls (Except Whip Stalls)	Slow Deceleration
Lazy Eights	115 m.p.h.
Chandelles	115 m.p.h.

AIRSPEED LIMITATIONS.

	LANDPLANE AND SKIPLANE
Glide or Dive (smooth air) *(red line)*	160 m.p.h.
Level Flight or Climb (normal range marked with green arc; caution range marked with yellow arc, 140 to 160 m.p.h., seaplane 110 to 140 m.p.h.)	140 m.p.h.
Flap Extension and Operation (flap operating range marked by white arc)	100 m.p.h.

STALLING SPEEDS
POWER OFF, MPH I.A.S.

CONDITION	ANGLE OF BANK 0°	20°	40°	60°
Flaps Up	58	60	66	82
Flaps Down 10°	56	58	64	79
Flaps Down 20°	54	55	61	75
Flaps Down 40°	52	54	59	73

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

Precutionary Landing with Engine Power	65 KIAS

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 INMEDIATELY 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 (40º 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 (40º 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. Slected 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 – UNLACTH PRIOR TO TOUCHDOWN
9. Avionics Power and Master Switches – OFF
10. Touchdown – SLIGHLTLY 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 if 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 wich 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 istalled)
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 damage 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 continuosly.

6. Plan a landing at the nearest airport, with an axtremely rapid ice buildup, select a suitable “off airport” landing site.

7. With an ice accumulation of ¼ 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
(Erroneus Instrument reading suspected)

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

LANDING GEAR MALFUNCTION PROCEDURES

LANDING GEAR FAILS TO RETRACT

1. Master switch – ON
2. Lading gear lever – CHECK (lever full up)
3. Lading gear and gear pump circuit breakers – IN
4. Gear up light – CHECK
5. Landing gear lever – RECYCLE
6. Gear motor – CHECK operation (ammmeter 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 CUTOOF
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 lading 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 whell as required

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

OVER-VOLTAGE LIGHT ILUMINATES

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

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NORMAL PROCEDURES CHECKLIST

NOT INTENTED FOR REAL FLIGHTS.

BEFORE STARTING ENGINE

1. Preflight inspection – COMPLETE
2. Seats, belts, Shoulder Harnesses – ADJUST and LOCK
3. Fuel Selector Valve – BOTH
4. Avionics Power Switch, Autopilot (if installed), Electrical pump equipment – OFF

CAUTION

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

5. Brakes – TEST and SET
6. Cowl flaps – OPEN (move lever out of locking hole to reposition)
7. Landing gear lever – DOWN
8. Circuit Breakers – CHECK IN

STARTING ENGINE

1. Mixture – RICH
2. Propeller – HIGH RPM
3. Carburetor heat – COLD
4. Throttle – PUMP once, or as much as six times if engine is very hot; leave open ¼ inch.
5. Master switch – ON
6. Propeller area – CLEAR
7. Ignition Switch – START (release when engine starts)
8. Oil Pressure – CHECK
9. Flashing Beacon and Navigation Lights – ON as required
10. Avionics Power Switch – ON
11. Radios – ON

BEFORE TAKEOFF

1. Cabin doors and windows – CLOSED and LOCKED
2. Parking brake – SET
3. Flight Controls – FREE and CORRECT
4. Flight Instruments – SET
5. Fuel Selector Valve – BOTH
6. Mixture – RICH
7. Auxiliary Fuel pump – ON (check for rise in fuel pressure), then OFF

NOTE

In flight, gravity feed will normally supply satisfactory fuel flow if th enginedriven 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.

8. Elevator and rudder trim – TAKEOFF
9. Throttle – 1700 RPM
    a. Magnetos – CHECK (RPM drop should not exceed 175 RPM on either magneto or 50 RPM differential between magnetos)
    b. Propeller – CYCLE from high to low RPM; return to high RPM (full in)
    c. Carburetor heat – CHECK (for RPM drop)
    d. Engine Instrument and ammeter – CHECK
    e. Suction gage – CHECK
10. Throttle – 800 - 1000 RPM
11. Radios – SET
12. Autopilot (if installed) – OFF
13. Flashing Beacon, Navigation Lights and/or Strobe lights – ON as required
14. Throttle friction lock – ADJUST
15. Parking Brake – RELEASE

TAKEOFF

NORMAL TAKEOFF

1. Wing flaps – 0º-20º
2. Carburetor heat – COLD
3. Power – FULL THROTTLE and 2400 RPM
4. Elevator Control – LIFT THROTTLE at 50 KIAS

NOTE

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

5. Climb speed – 70 KIAS (Flaps 20º)
    80 KIAS (Flaps UP)
6. Brakes – APPLY momentarily when airbone
7. Climb speed – 55 KIAS until all obstacles are cleared
9. Lading gear – RETRACT after obstacles are cleared
10. Wings flaps – RETRACT slowly aftr reaching 75 KIAS

ENROUTE CLIMB

NORMAL CLIMB

1. Airspeed – 90-100 KIAS
2. Power – 23 INCHES Hg and 2400 RPM
3. Fuel selector Valve – BOTH
4. Mixture – FULL RICH (mixture may be leaned above 3000 feet)
5. Cowl flaps – OPEN as required

MAXIMUM PERFORMANCE

1. Airspeed – 88 KIAS at sea level 75 KIAS at 10.000 feet
2. Power – FULL THROTTLE and 2400 RPM
3. Fuel selector Valve – BOTH
4. Mixture – FULL RICH (mixture may be leaned above 3000 feet)
5. Cowl Flaps – FULL OPEN

CRUISE

1. Power – 15-23 INCHES HG, 2100-2400 RPM (no more than 75% power)
2. Elevator and rudder trim – ADJUST
3. Mixture – LEAN
4. Cowl flaps – CLOSED

DESCENT

1. Fuel Selector Valve – BOTH
2. Power – AS DESIRED
3. Carburetor heat – AS REQUIRED to prevent carburetor icing
4. Mixture – ENRICHEN as required
5. Cowl flaps – CLOSED
6. Wing Flap – AS DESIRED (0º-10º below 140 KIAS, 10º-40º below 95 KIAS)

NOTE

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

BEFORE LANDING

1. Seats, Belts, Shoulder Harnesses – ADJUST and LOCK
2. Fuel selector valve – BOTH
3. Lading gear – DOWN (below 140 KIAS)
4. Lading gear – CHECK (observe main gear down and green indicator light iluminated)
5. Mixture – RICH
6. Carburetor Heat – ON (apply full heat before closing throttle)
7. Propeller – HIGH RPM
8. Autopilot (if installed) – OFF

LANDING

NORMAL LANDING

1. Airspeed – 70-80 KIAS (Flaps up)
2. Wing flaps – AS DESIRED (0º-10º below 140 KIAS, 10º-40º below 95 KIAS)
3. Airspeed – 65-75 KIAS (Flaps Down)
4. Trim – ADJUST
5. Touchdown – MAIN WHEELS FIRST
6. Lading roll – LOWER NOSE WHEEL GENTLY
7. Braking – Minimum required.

SHORT FIELD LANDING

1. Airspeed – 70-80 KIAS (Flaps UP)
2. Wing flaps – 40º(below 95 KIAS)
3. Airspeed – MAINTAIN 63 KIAS
4. Trim – ADJUST
5. Power – REDUCE to idle as obstacle is cleared
6. Touchdown – MAIN WHEELS FIRST
7. Brakes – APPLY HEAVILY
8. Wing flaps – RETRACT for maximum brake effectiveness

BALKED LANDING

1. Power – FULL THROTTLE and 2400 RPM
2. Carburetor heat – COLD
3. Wing flaps – RETRACT to 20º
4. Climb speed – 75 KIAS
5. Wing flaps – RETRACT slowly after reaching 75 KIAS
6. Cowl flaps – OPEN

AFTER LANDING

1. Wing flaps – UP
2. Carburetor heat – COLD
3. Cowl flaps – OPEN

SECURING AIRPLANE

1. Parking brake – SET
2. Throttle – IDLE
3. Avionics power switch, Electrical equipment – OFF
4. Mixture – IDLE CUTOFF (pulled full out)
5. Ignition switch – OFF
6. Master switch – OFF
7. Control lock – INSTALL
8. Fuel selector Valve -- RIGHT

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PERFORMANCE

NOT INTENTED FOR REAL FLIGHTS.

INTRODUCTION

Performance data charts on the following pages are presented so that you may know what to espect 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.

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.

Fuel Flow data for cruise is based on the recommended lean mixture setting.

Some indeterminate variables 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.

USE OF PERFORMANCE CHARTS

Performance data is presented in tabular or graphical form to illustrate the effect of different variables. Sufficiently detailed information is provided in the tables so that conservative values can be selected and used to determine the particular performance figure with reasonable accuracy.

SAMPLE PROBLEM

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.

AIRPLANE CONFIGURATION

Takeoff weight	3050	Pounds
Usable fuel	75	Gallons

TAKEOFF CONDITIONS

Field pressure altitude	1500 Feet
Temperature	28ºC (16ºC above standard)
Wind component along runway	12 knot headwinds
Field length	3500 Feet

CRUISE CONDITIONS

Total distance	720 nautical miles
Pressure altitude	7500 Feet
Temperature	16ºC (16ºC above standard)
Expected wind enroute	10 knot headwind

LANDING CONDITIONS

Field pressure altitude	2000 Feet
Temperature	25ºC
Field length	3000 Feet

TAKEOFF

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 30ºC should be used and results in the following:

Ground roll	1085 Feet
Total distance to clear a 50-foot obstacle	2110 Feet

These distances are 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:

12 Knots * 10%=13%Decrease
9 Knots

The results in the following distances corrected for wind:

Ground roll, zero wind	1085
Decrease in ground roll (1085 feet * 13%)	141
Corrected ground roll	944 Feet
Total distance to clear a 50 –foot obstacle, zero wind	2110
Decrease in total distance (2110 feet * 13%)	274
Corrected total distance to clear foot obstacle	1836 Feet

CRUISE

The cruising altitude should be selected based on a consideration of trip lenght, 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.

The relationship between power and range is illustrated by the range profile chart. Considerable fuel savings and longer range result when lower power settings are used.
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 feed as follows.

Range, zero wind	802
Decrease in range due to wind (5.5 hours * 10 knot headwind)	55
Corrected range	747 Nautical Miles

This indicates that the trip can be made without a fuel stop using aproximately 65% power.
The cruise performance chart for 8000 feet pressure altitude is entered using 20ºC above standard temperature. These values most nearly correpond to the planned altitude and expected temperature conditions. The power setting chosen is 2200 RPM and 21 inches of manifold pressure, wich results in the following:

Power	65%
True airspeed	150 Knots
Cruise fuel flow	11.7 GPH

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

FUEL REQUIRED

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 from 2000 feet 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 fotr the effect of temperature may be made as noted on the climb chart. The aproximate effect of a non-standard temperature is to increase the time, fuel, and distance by 10% for each 10ºC above standard temperature, due to the lower rate of climb. In this case, assuming a temperature 16ºC above standard, the
correction would be:

$$\frac{16ºC}{10ºC} * 10\% = 16\% \text{ Increase}$$

With this factor 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
Corrected fuel to climb	3.9 Gallons

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

150
-10
140 Knots

Therefore, the time required for the cruise portion of the trip is:

701 Nautical Miles = 5.0 Hours
140 Knots

The fuel required for cruise is:

5.0 hours * 11.7 gallons/hour =58.5 Gallons

The total estimated fuel required is as follows:

Engine start, taxi, and takeoff	2.0
Climb	3.9
Cruise	58.5
	64.4 Gallons

This will leave a fuel reserve of:

75.0
-64.4
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.

LANDING

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 distances corresponding to 2000 feet pressure altitude and temperature of 30ºC are as follows:

Ground roll	680 Feet
Total distance to clear a 50-foot obstacle	1450 Feet

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

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)

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)

TEMPERATURE CONVERSION CHART

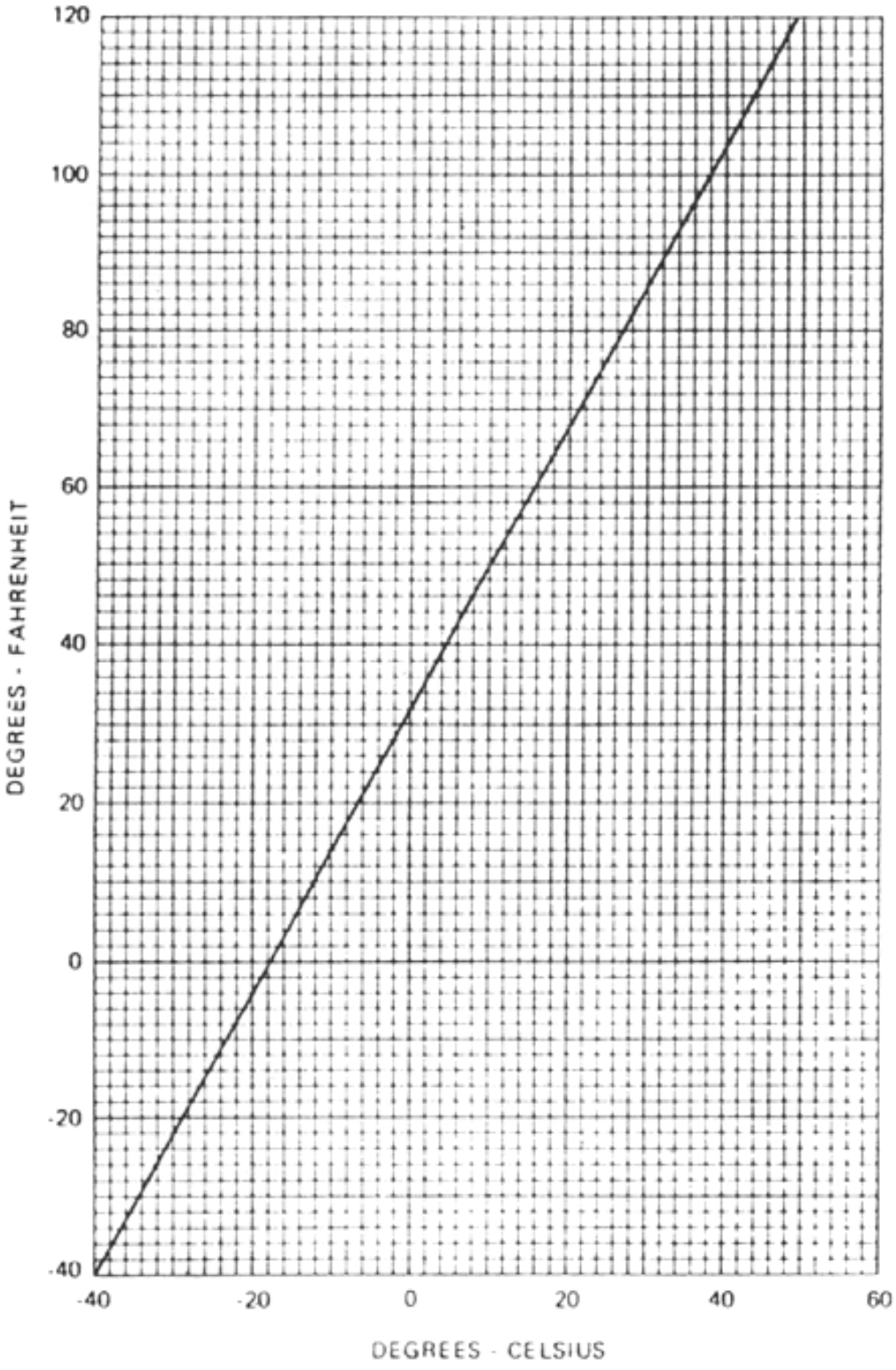

Figure 5-2. Temperature Conversion Chart

STALL SPEEDS

CONDITIONS:
Power Off

NOTES:
1. Maximum altitude loss during a stall recovery may be as much as 240 feet.
2. 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

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	
	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
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)

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.

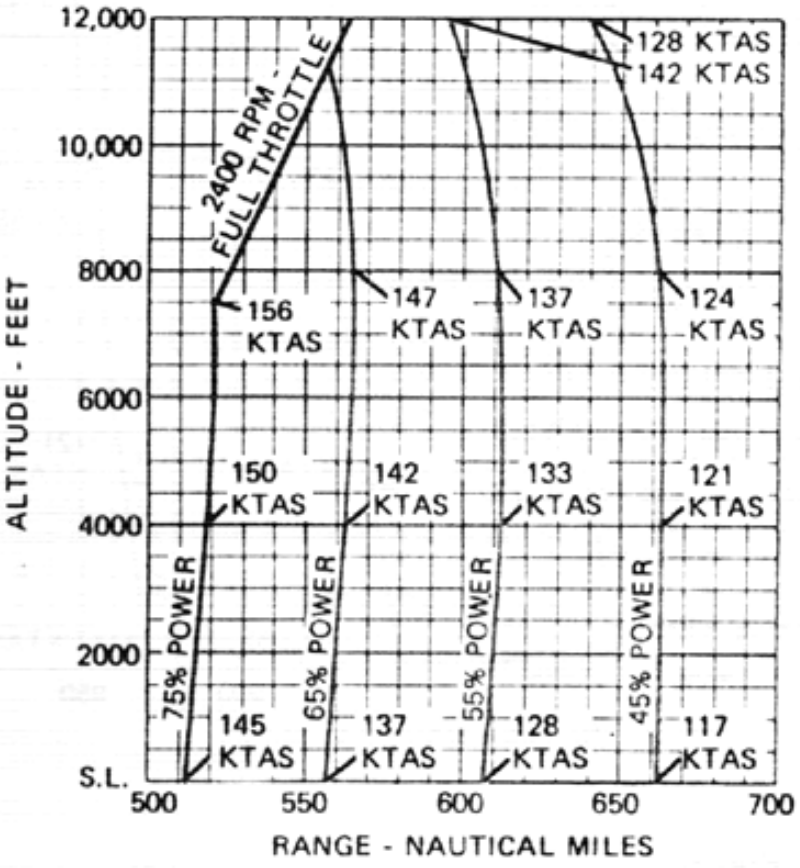

Figure 5-8. Range Profile (Sheet 1 of 2)

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.

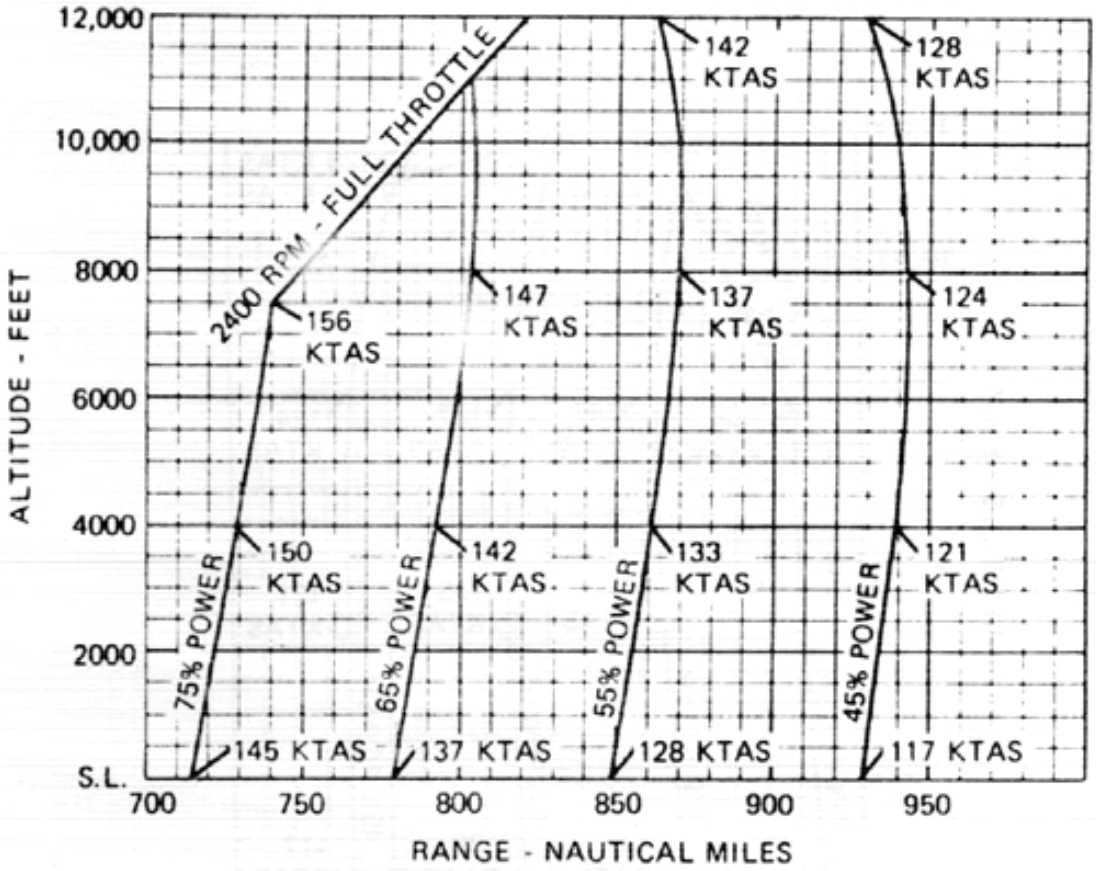

Figure 5-8. Range Profile (Sheet 2 of 2)

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.

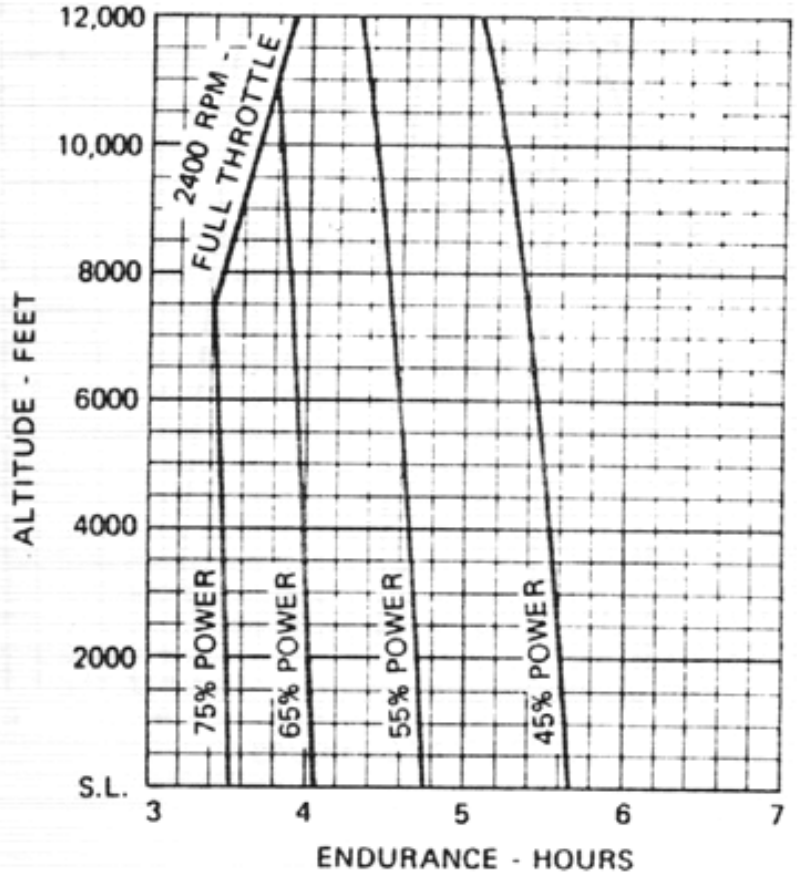

Figure 5-9. Endurance Profile (Sheet 1 of 2)

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