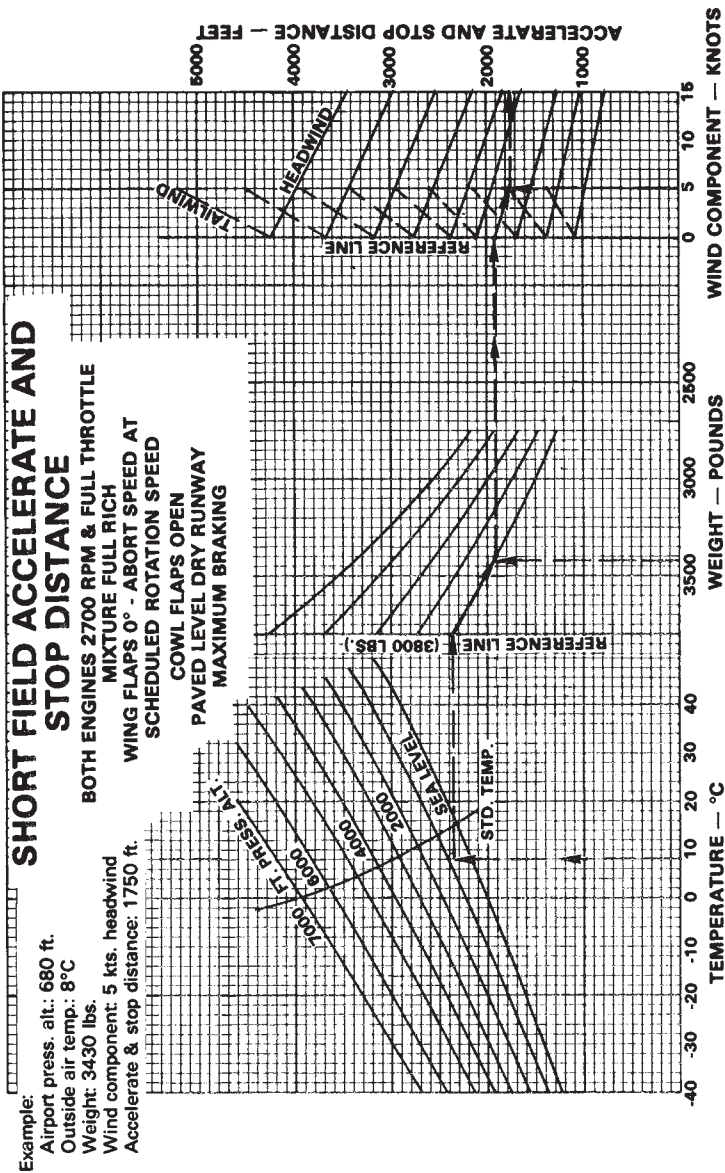


# PA-44-180

## SHORT FIELD ACCELERATE AND STOP DISTANCE



Accelerate And Stop Distance - Short Field Effort

Figure 5-11

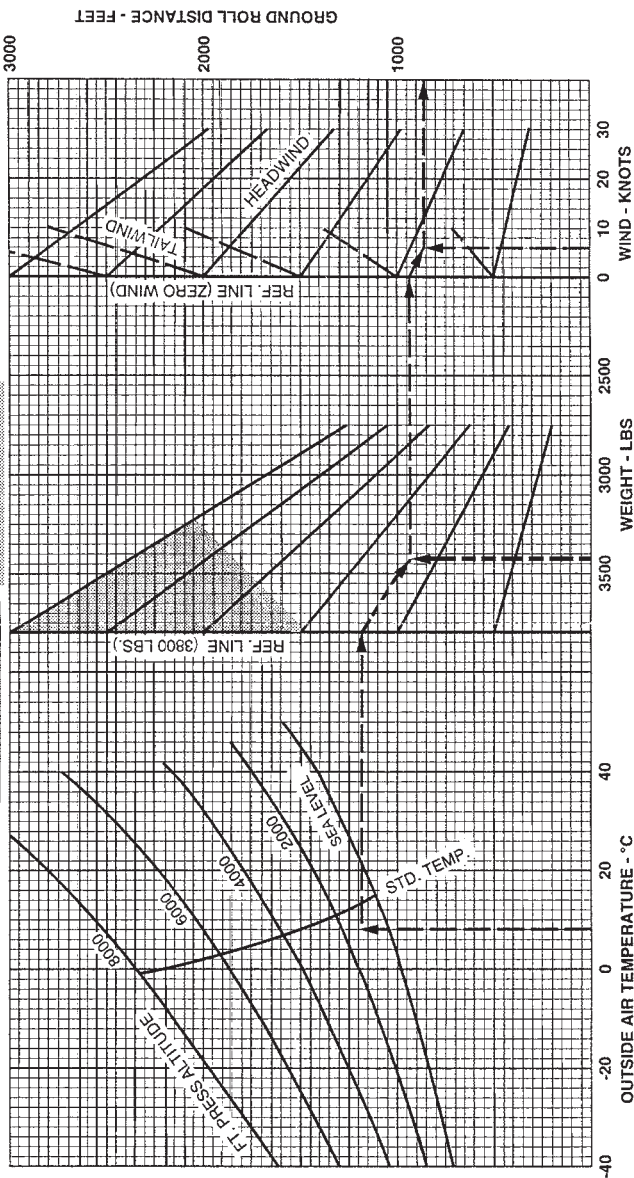
TAKEOFF GROUND ROLL - SHORT FIELD EFFORT

**ASSOCIATED CONDITIONS:**  
 Wing Flaps: 0° OPEN  
 Cowl Flaps: 2700 RPM & FULL THROTTLE BEFORE BRAKE RELEASE  
 Runway: PAVED, LEVEL & DRY

WEIGHT POUNDS	ROTATE SPEED KIAS
3800	70
3400	66
3000	62
2600	57

**CAUTION**  
 BEST ONE ENGINE INOPERATIVE RATE OF CLIMB IS LESS THAN 50 FPM IF T.O. WT. IS IN THE SHADED AREA.

**EXAMPLE:**  
 O.A.T.: 8°C  
 Airport Pressure Altitude: 1250 FT  
 Weight: 3430 LBS  
 Wind Component: 6 KT HEADWIND  
 Takeoff Ground Roll: 860 FT



Takeoff Ground Roll - Short Field Effort

Figure 5-13

**TAKEOFF DISTANCE OVER 50 FT OBSTACLE - SHORT FIELD EFFORT**

**ASSOCIATED CONDITIONS:**

Wing Flaps: 0°  
 Cowl Flaps: OPEN  
 Power: 2700 RPM & FULL THROTTLE BEFORE BRAKE RELEASE  
 Runway: PAVED, LEVEL & DRY

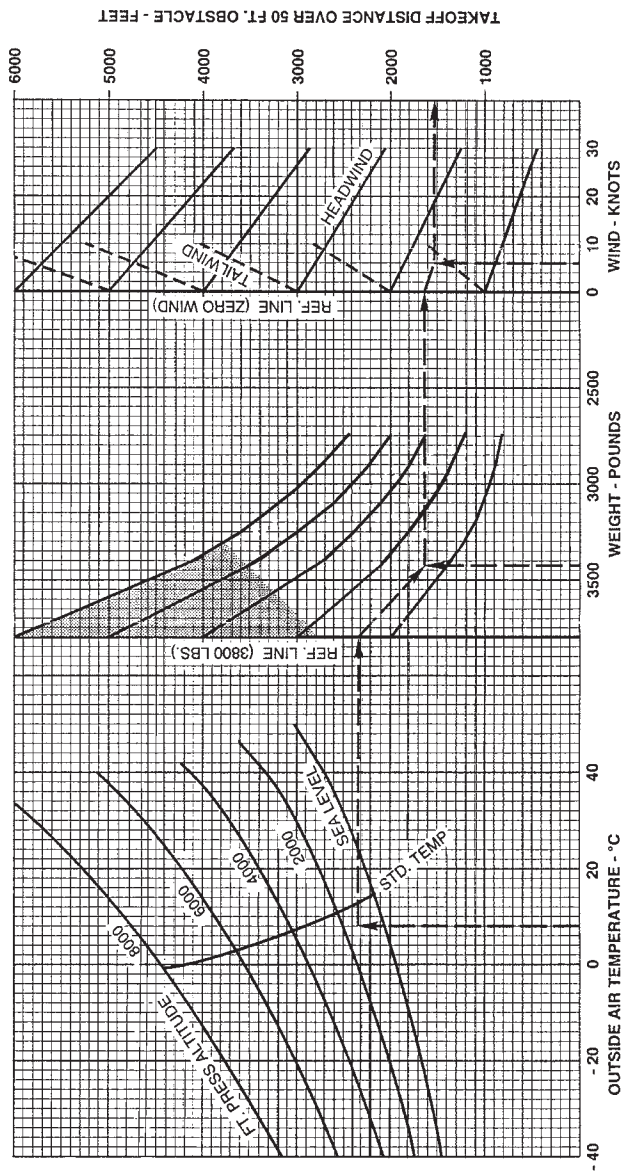
WEIGHT POUNDS	ROTATE SPEED, KIAS	OBSTACLE SPEED, KIAS
3800	70	82
3400	66	77
3000	62	72
2600	57	67

**CAUTION**

BEST ONE ENGINE INOPERATIVE RATE OF CLIMB IS LESS THAN 50 FPM I.F.O. WT. IS IN THE SHADED AREA.

**EXAMPLE:**

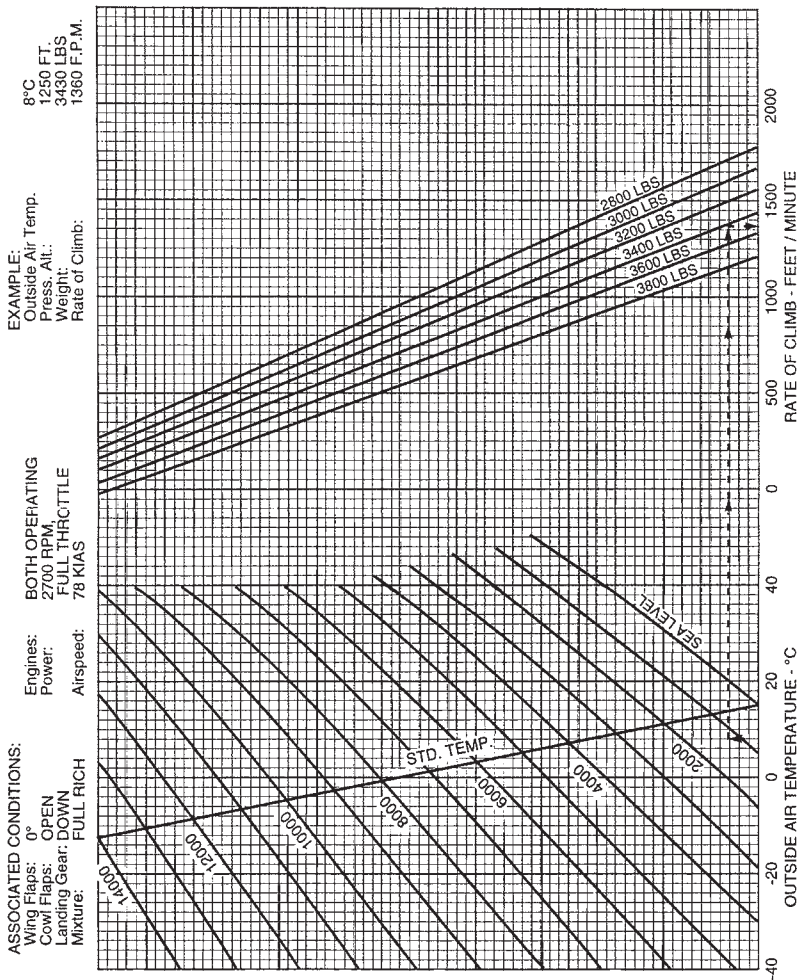
O.A.T.: 8°C  
 Airport Pressure Altitude: 1250 FT  
 Weight: 3430 LBS  
 Wind Component: 6 KT HEADWIND  
 Takeoff Distance Over 50 FT Obstacle: 1520 FT



**Takeoff Distance Over 50 Ft. Obstacle - Short Field Effort**

Figure 5-15

**CLIMB PERFORMANCE - BOTH ENGINES OPERATING - GEAR DOWN**



Climb Performance - Both Engines Operating - Gear Down

Figure 5-17

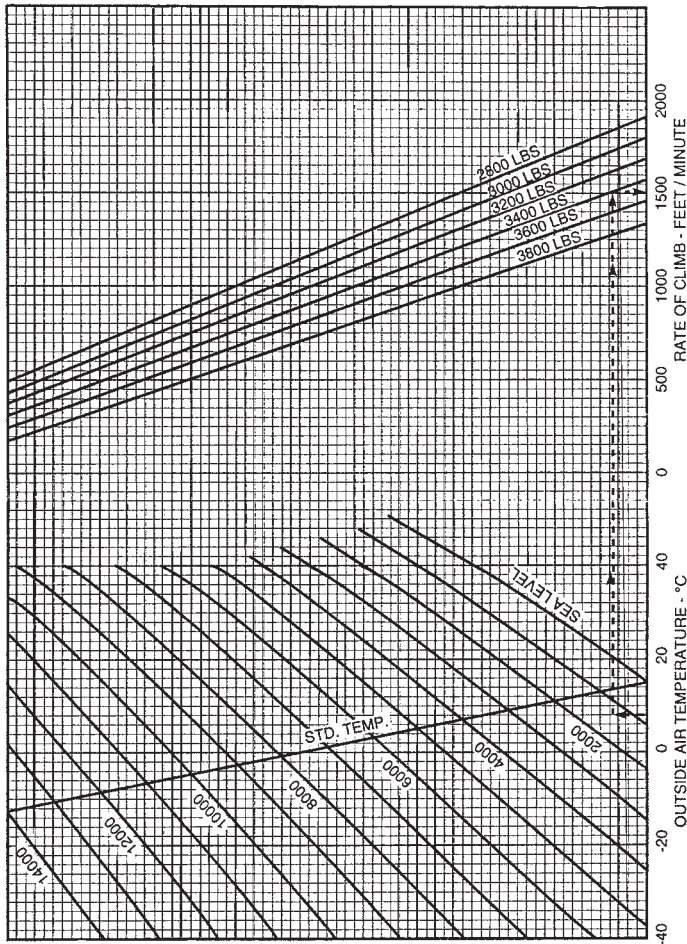
**CLIMB PERFORMANCE - BOTH ENGINES OPERATING - GEAR UP**

ASSOCIATED CONDITIONS:

Power: FULL THROTTLE, 2700 RPM  
 Cowl Flaps: OPEN  
 Mixture: FULL RICH  
 Airspeed: 88 KIAS  
 Wing Flaps: 0°

Engines: BOTH OPERATING  
 Landing Gear: UP

EXAMPLE:  
 Press. Alt.: 1250 FT.  
 Outside Air Temp.: 8°C  
 Weight: 3420 LBS  
 Rate of Climb: 1505 FT/MIN



Climb Performance - Both Engines Operating - Gear Up

Figure 5-19

# CLIMB PERFORMANCE - ONE ENGINE OPERATING - GEAR UP

**ASSOCIATED CONDITIONS:**

Wing Flaps: 0°  
 (Operating Engine): OPEN  
 (Inoperative Engine): CLOSED  
 Landing Gear: UP

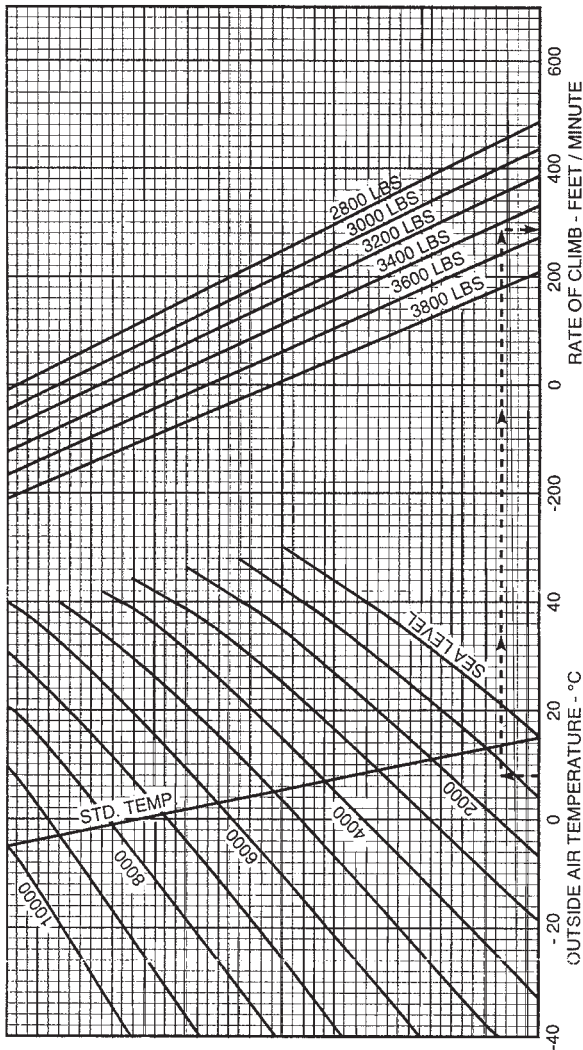
Mixture: FULL RICH  
 Prop (Inoperative Engine): FEATHERED  
 Power: 2700 RPM, FULL THROTTLE  
 Airspeed: 88 KIAS

**NOTE**

2° TO 3° BANK TOWARD OPERATING ENGINE

**EXAMPLE:**

Outside Air Temp.: 8°C  
 Press Alt.: 1250 FT.  
 Weight: 3430  
 One Engine Inoperative  
 Inoperative Climb: 285 F.P.M.

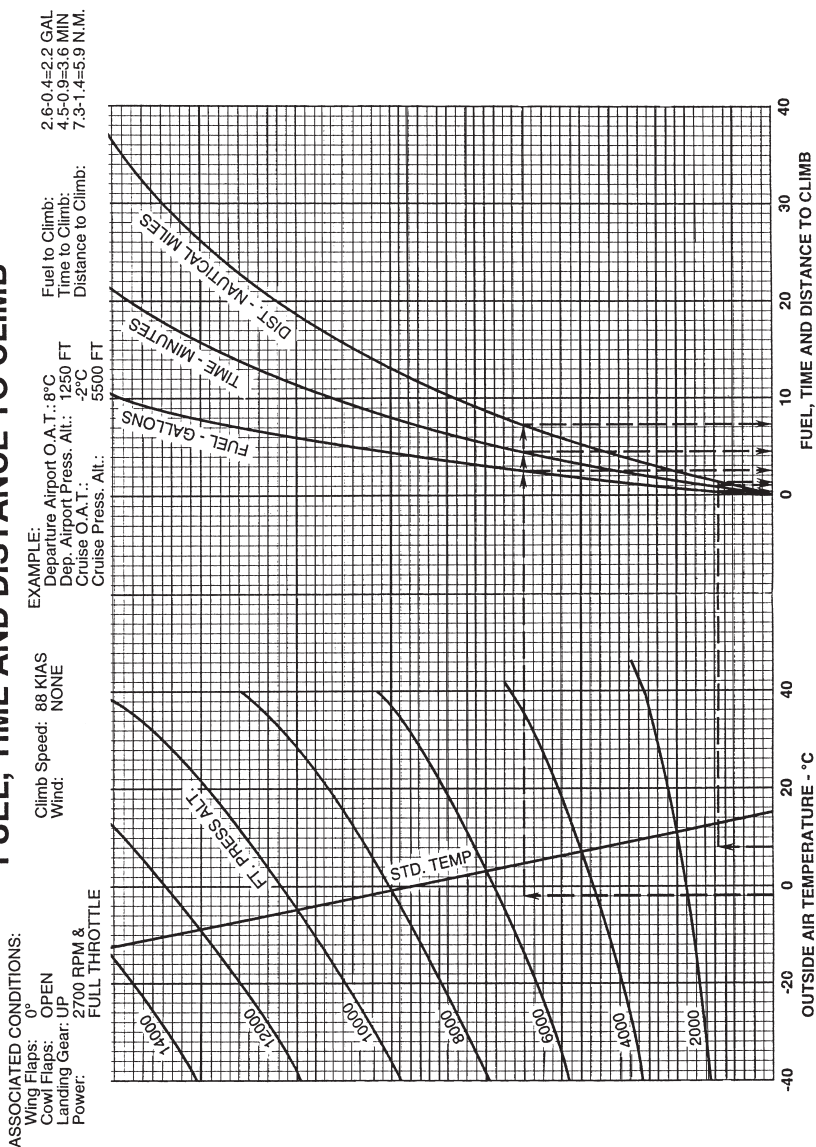


Climb Performance - One Engine Operating - Gear Up

Figure 5-21



**FUEL, TIME AND DISTANCE TO CLIMB**



Fuel, Time And Distance To Climb

Figure 5-23

FUEL AND POWER SETTING TABLE

Press. Alt. Feet	Std. Alt. Temp. °C	99 BHP– 55% Rated Power Approx. Fuel Flow 8.7 G.P.H.* RPM AND MAN. PRESS.			117 BHP– 65% Rated Power Approx. Fuel Flow 10.2 G.P.H.* RPM AND MAN. PRESS.			135 BHP– 75% Rated Power Approx. Fuel Flow 11.7 G.P.H.* RPM AND MAN. PRESS.			Press. Alt. Feet			
		2100	2200	2300	2400	2100	2200	2300	2400	2200		2300	2400	2500
SL	15	22.3	21.7	21.1	20.6	24.9	24.2	23.5	22.9	26.7	26.0	25.2	24.6	SL
1000	13	22.0	21.3	20.8	20.3	24.6	23.8	23.2	22.6	26.3	25.6	24.9	24.3	1000
2000	11	21.7	21.0	20.5	20.0	24.2	23.5	22.9	22.3	25.9	25.3	24.6	24.0	2000
3000	9	21.3	20.7	20.2	19.8	23.9	23.2	22.6	22.0	25.6	25.0	24.4	23.7	3000
4000	7	21.1	20.5	20.0	19.5	23.5	22.8	22.3	21.8	FT	24.7	24.1	23.5	4000
5000	5	20.8	20.2	19.7	19.2	23.2	22.5	22.0	21.5	—	FT	23.8	23.2	5000
6000	3	20.5	19.9	19.4	19.0	22.9	22.2	21.7	21.3	—	—	FT	22.9	6000
7000	1	20.2	19.7	19.2	18.7	FT	21.9	21.5	21.0	—	—	—	FT	7000
8000	-1	20.0	19.4	18.9	18.5	—	FT	21.2	20.8	—	—	—	—	8000
9000	-3	19.7	19.1	18.7	18.2	—	—	FT	20.6	—	—	—	—	9000
10,000	-5	19.5	18.9	18.4	18.0	—	—	—	FT	—	—	—	—	10,000
11,000	-7	19.2	18.7	18.2	17.8	—	—	—	—	—	—	—	—	11,000
12,000	-9	FT	18.4	18.0	17.6	—	—	—	—	—	—	—	—	12,000
13,000	-11	—	FT	FT	17.4	—	—	—	—	—	—	—	—	13,000
14,000	-13	—	—	—	FT	—	—	—	—	—	—	—	—	14,000

NOTE: To maintain constant power, add approximately 1% Manifold Pressure for each 8°C above standard. Subtract approximately 1% for each 8°C below standard.

\*PERFORMANCE CRUISE POWER

Fuel & Power Setting Table  
Figure 5-25

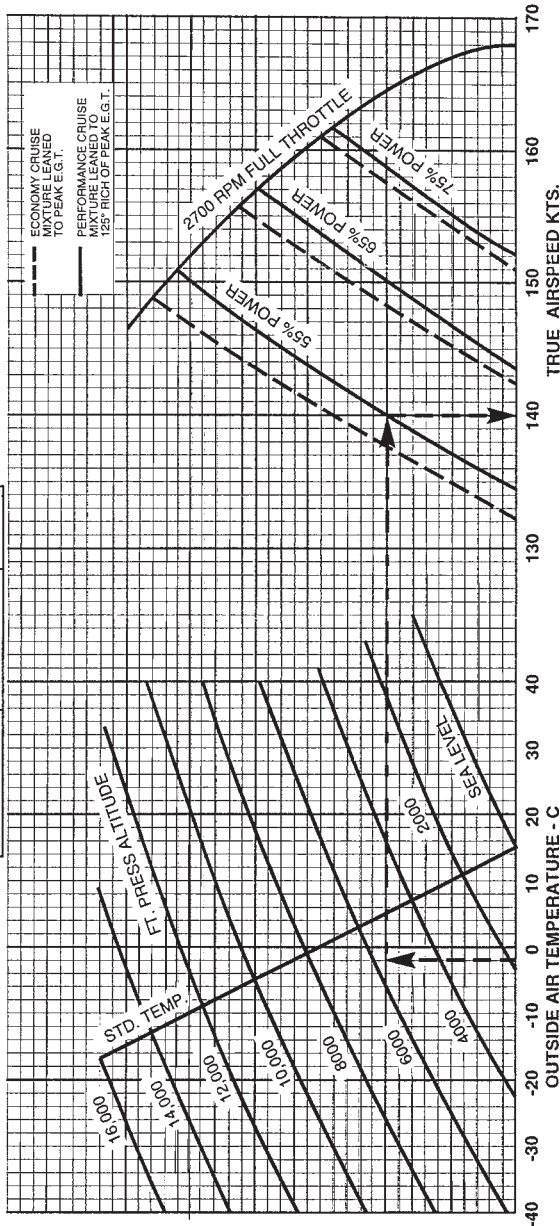


# SPEED POWER

ASSOCIATED CONDITIONS:  
 Cowling Flaps: CLOSED  
 Landing Gear: Up  
 Wing Flaps: 0°  
 Mid Cruise Weight: 3480 LBS

	APPROX. FUEL FLOW	%	
PERF. CRUISE	14.0 GPH	ECON CRUISE	
17.4 GPH		14.0 GPH	55
20.4 GPH		16.6 GPH	65
23.3 GPH		19.2 GPH	75

EXAMPLE:  
 Cruise OAT: -2°C  
 Cruise pressure altitude: 5500 FT  
 Cruise power: 55 %  
 Cruise speed: 140 KTAS



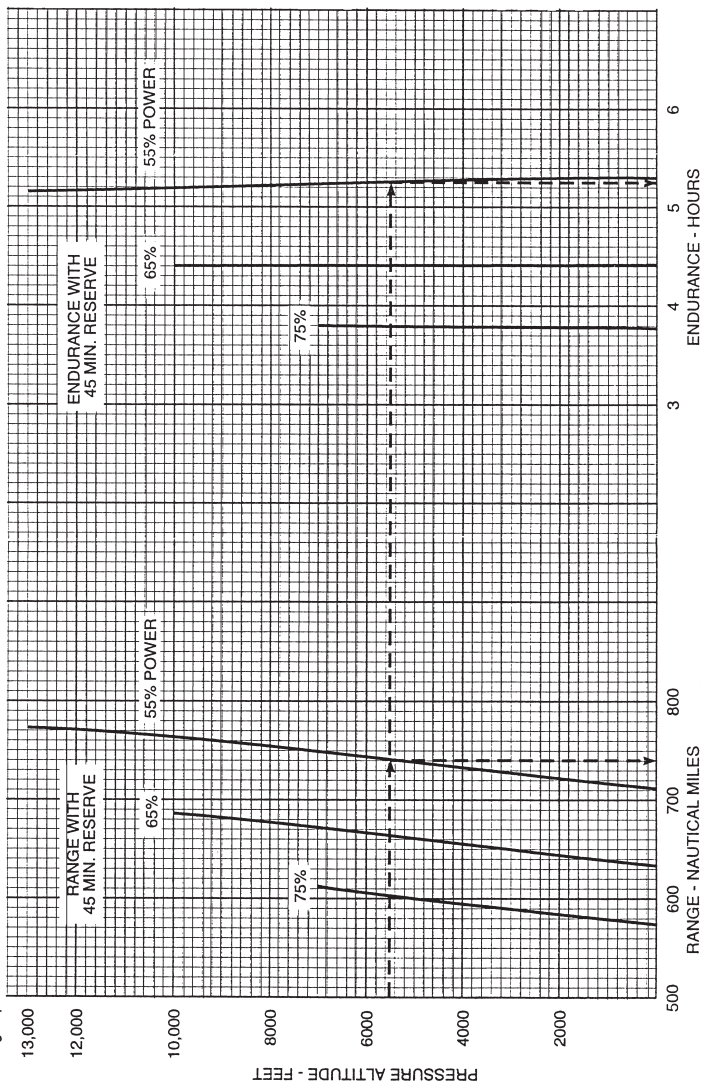
Speed Power  
Figure 5-27

**STANDARD TEMPERATURE RANGE AND ENDURANCE - PERFORMANCE CRUISE**

**ASSOCIATED CONDITIONS:**  
 Usable Fuel: 108 GAL  
 Weight: 3800 LBS  
 Landing Gear: UP  
 Cowl Flaps: CLOSED  
 Wing Flaps: 0°

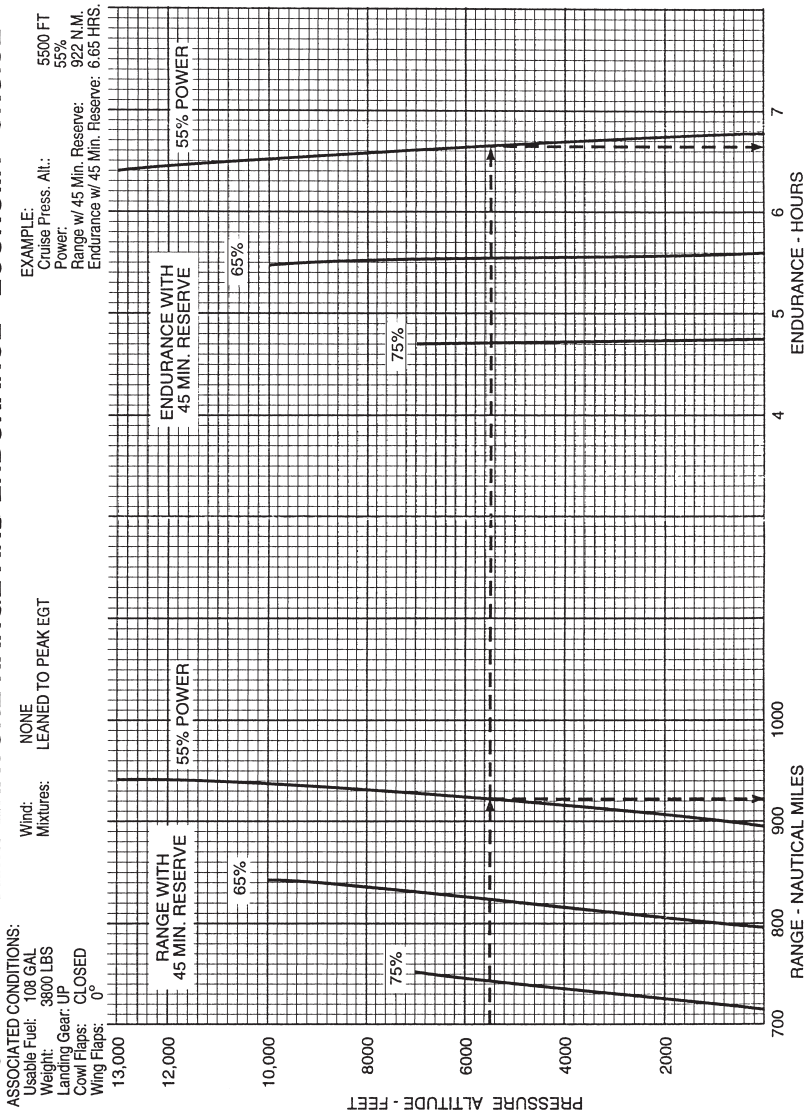
**Wind:** NONE  
**Mixtures:** LEANED TO 125°F RICH OF PEAK EG

**EXAMPLE:**  
 Cruise Altitude: 5,500 FT  
 Power: 55%  
 Range w/45 Min. Reserve: 741 N.M.  
 Endurance w/45 Min. Reserve: 5.25 HRS.



Standard Temperature Range And Endurance - Performance Cruise  
Figure 5-29

**STANDARD TEMPERATURE RANGE AND ENDURANCE - ECONOMY CRUISE**



Standard Temperature Range And Endurance - Economy Cruise  
Figure 5-31

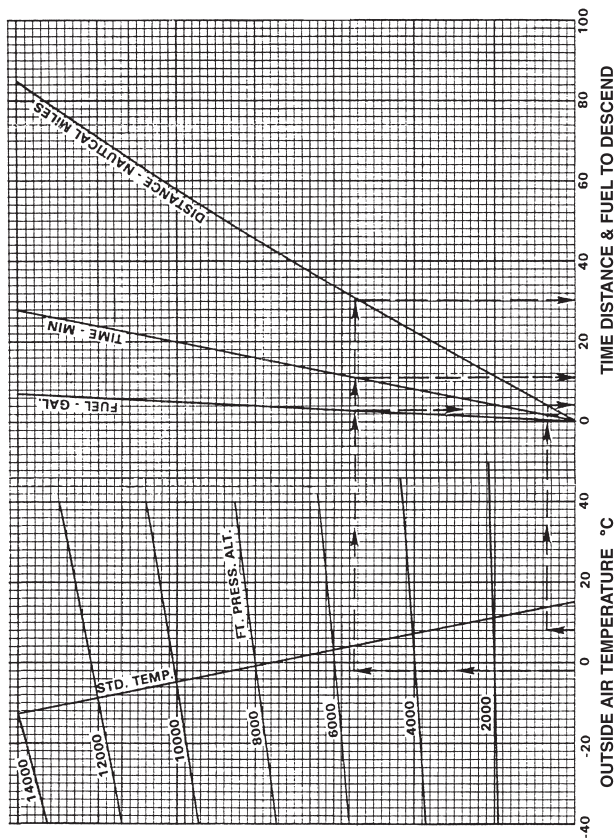
# FUEL, TIME AND DISTANCE TO DESCEND

ASSOCIATED CONDITIONS:  
 Airspeed: 165 KIAS  
 Descent: 500 FPM  
 Both Engines: 2400 RPM &  
 THROTTLE AS REQUIRED  
 TO MAINTAIN AIRSPEED  
 AND DESCENT RATE

Wing Flaps: 0°  
 Cowl Flaps: CLOSED  
 Landing Gear: UP  
 Wind: NONE

EXAMPLE:

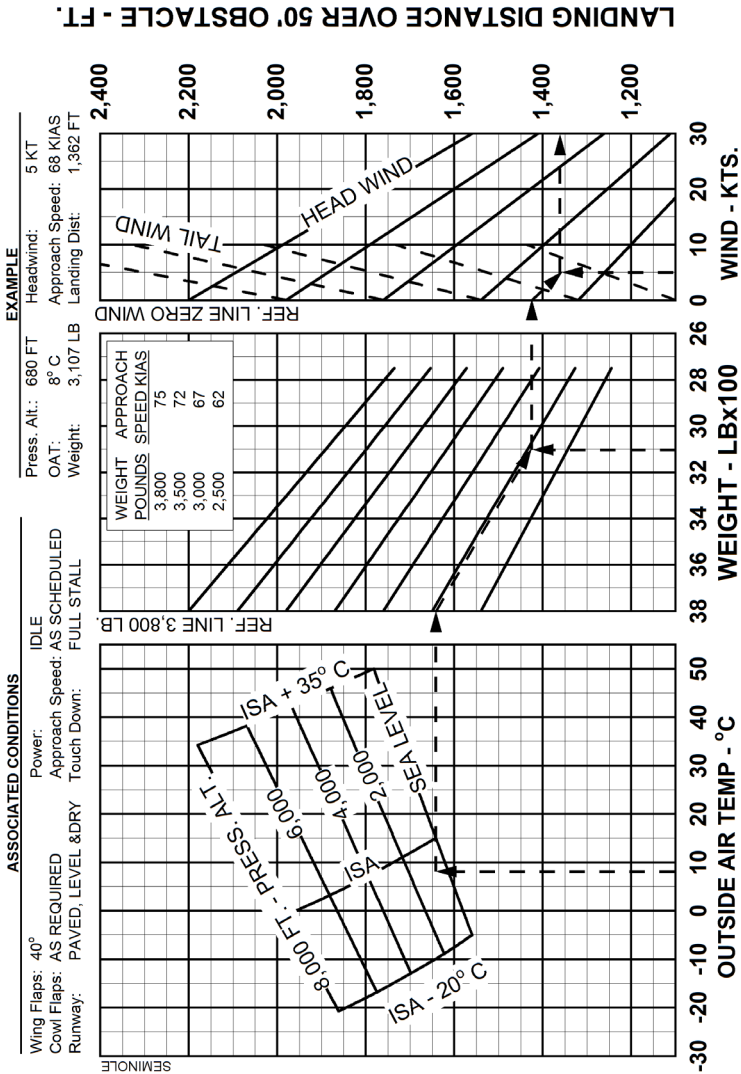
Cruise O.A.T.: -2°C  
 Cruise Altitude: 5500 FT  
 Destination Airport O.A.T.: 8°C  
 Destination Airport Altitude: 680 FT  
 Fuel to Descend: 3 - 1 = 2 GAL  
 Time to Descend: 9 - 2 = 7 MIN  
 Distance to Descend: 30 - 4 = 26 N.M.



Fuel, Time And Distance To Descend

Figure 5-33

**LANDING DISTANCE OVER 50 FT. OBSTACLE - SHORT FIELD EFFORT**  
Scimitar Blade Propellers (see Section 1.7)

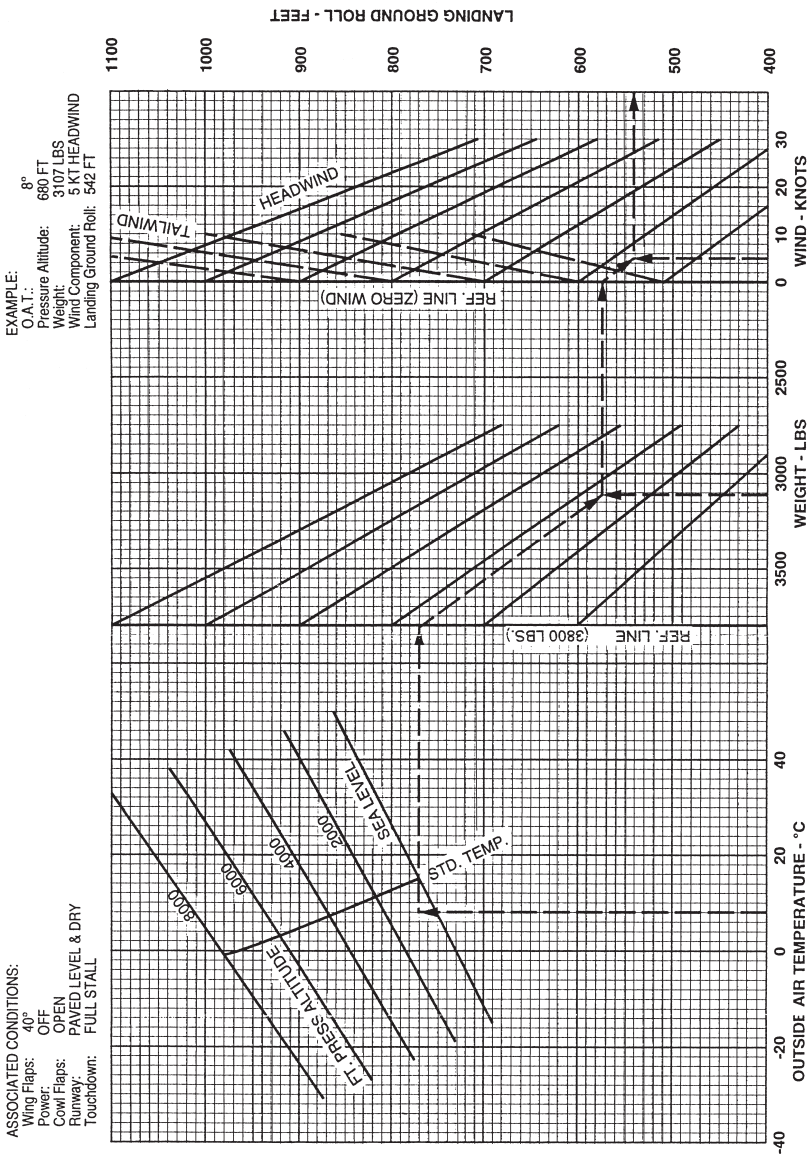


Landing Distance Over 50 Ft. Obstacle - Short Field Effort

Figure 5-35a



LANDING GROUND ROLL — SHORT FIELD EFFORT



Landing Ground Roll - Short Field Effort

Figure 5-37