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PERFORMANCE

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SECTION 5

PERFORMANCE

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SECTION 5 PERFORMANCE

5.1 GENERAL

This section contains the required FAA performance information applicable to this aircraft. Additional information is provided for flight planning purposes.

Performance information associated with those optional systems and equipment which require handbook supplements is provided by Section 9 (Supplements).

5.3 INTRODUCTION - PERFORMANCE AND FLIGHT PLANNING

The performance information presented in this section is based on measured Flight Test Data corrected to I.C.A.O. standard day conditions and analytically expanded for the various parameters of weight, altitude, temperature, etc.

The performance charts are unfactored and do not make any allowance for varying degrees of pilot proficiency or mechanical deterioration of the aircraft. This performance, however, can be duplicated by following the stated procedures in a properly maintained airplane.

Effects of conditions not considered on the charts must be evaluated by the pilot, such as the effect of soft or grass runway surface on takeoff and landing performance, or the effect of winds aloft on cruise and range performance. Endurance can be grossly affected by improper leaning procedures, and inflight fuel flow and quantity checks are recommended.

REMEMBER! To get chart performance, follow the chart procedures.

The information provided by paragraph 5.5 (Flight Planning Example) outlines a detailed flight plan using the performance charts in this section. Each chart includes its own example to show how it is used.

WARNING

Performance information derived by extrapolation beyond the limits shown on the charts should not be used for flight planning purposes.

5.5 FLIGHT PLANNING EXAMPLE

(a) Aircraft Loading

The first step in planning the flight is to calculate the airplane weight and center of gravity by utilizing the information provided by Section 6 (Weight and Balance) of this handbook.

The basic empty weight for the airplane as licensed at the factory has been entered in Figure 6-5. If any alterations to the airplane have been made effecting weight and balance, reference to the aircraft logbook and Weight and Balance Record (Figure 6-7) should be made to determine the current basic empty weight of the airplane.

Make use of the Weight and Balance Loading Form (Figure 6-11) and C.G. Range and Weight graph (Figure 6-15) to determine the total weight of the airplane and the center of gravity position.

The landing weight cannot be determined until the weight of the fuel to be used has been established [refer to item (g)(1)].

(1) Basic Empty Weight	3304 lbs.
(2) Occupants (1 x 170 lbs.)	170 lbs.
(3) Baggage and Cargo	15 lbs.
(4) Fuel (6 lb./gal. x 80)	480 lbs.
(5) Takeoff Weight	3969 lbs.
(6) Landing Weight	
(a)(5) minus (g)(1), (3969 lbs. minus 193.8 lbs.)	
	3775.2 lbs.

The takeoff and landing weights are below the maximums and the weight and balance calculations have determined that the C.G. position is within the approved limits.

(b) Takeoff and Landing

Apply the departure airport conditions and takeoff weight to the appropriate Takeoff Performance and Accelerate and Stop Distance graphs (Figures 5-11 thru 5-17) to determine the length of runway necessary for the takeoff and/or the barrier distance.

The landing distance calculations are performed in the same manner using the existing conditions at the destination airport and, when established, the landing weight.

The conditions and calculations for the example flight are listed below. The takeoff and landing distances required for the example flight have fallen well below the available runway lengths.

	Departure Airport	Destination Airport
(1) Pressure Altitude	2000 ft.	3000 ft.
(2) Temperature	21°C	22°C
(3) Wind Component	9 KTS (Headwind)	10 KTS (Headwind)
(4) Runway Length Available	7400 ft.	9000 ft.
(5) Runway Required (Normal Procedure, Std. Brakes)		
Takeoff	1650 ft.*	
Accelerate and Stop	3032 ft.**	
Landing		2260 ft.***

NOTE

The remainder of the performance charts used in this flight plan example assume a no wind condition. The effect of winds aloft must be considered by the pilot when computing climb, cruise and descent performance.

* reference Figure 5-15
** reference Figure 5-11
*** reference Figure 5-75

(c) Climb

The desired cruise pressure altitude and corresponding cruise outside air temperature values are the first variables to be considered in determining the climb components from the Fuel, Time and Distance to Climb graph (Figure 5-39). After the fuel, time and distance for the cruise pressure altitude and outside air temperature values have been established, apply the existing conditions at the departure field to the graph (Figure 5-39). Now, subtract the values obtained from the graph for the field of departure conditions from those for the cruise pressure altitude.

The remaining values are the true fuel, time and distance components for the climb segment of the flight plan corrected for field pressure altitude and temperature.

The following values were determined from the above instructions in the flight planning example.

(1) Cruise Pressure Altitude	10,000 ft.
(2) Cruise OAT	-4°C
(3) Time to Climb (8 min. minus 1.5 min.)	6.5 min.*
(4) Distance to Climb (14 naut. miles minus 2.5 naut. miles)	11.5 naut. miles*
(5) Fuel to Climb (7 gal. minus 1 gal.)	6 gal.*

* reference Figure 5-39

(d) Descent

The descent data will be determined prior to the cruise data to provide the descent distance for establishing the total cruise distance.

Utilizing the cruise pressure altitude and OAT, determine the basic fuel, time and distance for descent (Figure 5-69). These figures must be adjusted for the field pressure altitude and temperature at the destination airport. To find the necessary adjustment values, use the existing pressure altitude and temperature conditions at the destination airport as variables to find the fuel, time and distance values from the graph (Figure 5-69). Now, subtract the values obtained from the field conditions from the values obtained from the cruise conditions to find the true fuel, time and distance values needed for the flight plan.

The values obtained by proper utilization of the graphs for the descent segment of the example are shown below.

- | | |
|-------------------------|-----------------|
| (1) Time to Descend | |
| (10 min. minus 3 min.) | 7 min.* |
| (2) Distance to Descend | |
| (26 naut. miles minus | |
| 8 naut. miles) | 18 naut. miles* |
| (3) Fuel to Descend | |
| (3.4 gal. minus 1 gal.) | 2.4 gal.* |

* reference Figure 5-69

(e) Cruise

Using the total distance to be traveled during the flight, subtract the previously calculated distance to climb and distance to descend to establish the total cruise distance. Refer to the Power Setting Tables when selecting the cruise power setting. The established pressure altitude and temperature values and the selected cruise power should now be utilized to determine the true airspeed from the Speed Power graph (Figure 5-53).

Calculate the cruise fuel for the cruise power setting from the information provided on Figures 5-43 thru 5-51.

The cruise time is found by dividing the cruise distance by the cruise speed and the cruise fuel is found by multiplying the cruise fuel flow by the cruise time.

The cruise calculations established for the cruise segment of the flight planning example are as follows:

(1) Total Distance	394 miles
(2) Cruise Distance	
(e)(1) minus (c)(4) minus (d)(2),	
(394 naut. miles minus 11.5 naut.	
miles minus 18 naut. miles)	364 naut. miles
(3) Cruise Power - Economy	2500 RPM
(4) Cruise Speed	152 KTS TAS*
(5) Cruise Fuel Consumption	10.0 GPH**
(6) Cruise Time	
(e)(2) divided by (e)(4), (364 naut.	
miles divided by 152 KTS)	2.39 hrs.
(7) Cruise Fuel	
(e)(5) multiplied by (e)(6), (10.0	
GPH multiplied by 2.39 hrs.)	23.9 gal.

* reference Figure 5-53

** reference Figures 5-43 thru 5-51

(f) Total Flight Time

The total flight time is determined by adding the time to climb, the time to descend and the cruise time. Remember! The time values taken from the climb and descent graphs are in minutes and must be converted to hours before adding them to the cruise time.

The following flight time is required for the flight planning example.

- (1) Total Flight Time
- (c)(3) plus (d)(1) plus (e)(6),
(0.11 hrs. plus 0.12 hrs. plus 2.39 hrs.)2.62 hrs.

(g) Total Fuel Required

Determine the total fuel required by adding the fuel to climb, the fuel to descend and the cruise fuel. When the total fuel (in gallons) is determined, multiply this value by 6 lb. / gal. to determine the total fuel weight used for the flight.

The total fuel calculations for the example flight plan are shown below.

- (1) Total Fuel Required
- (c)(5) plus (d)(3) plus (e)(7),
(6 gal. plus 2.4 gal. plus 23.9 gal.)32.3 gal.
(32.3 gal. multiplied by 6 lb./gal.)193.8 lbs.

5.7 PERFORMANCE GRAPHS

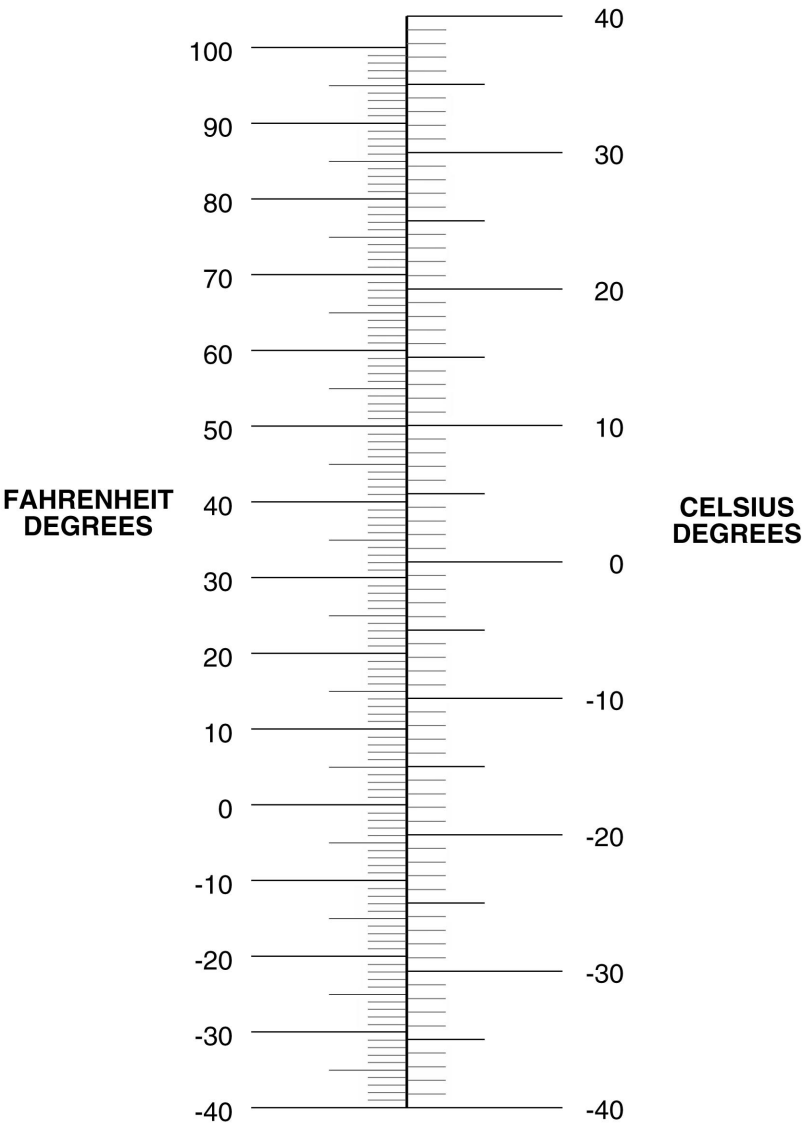
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5.7 PERFORMANCE GRAPHS (continued)

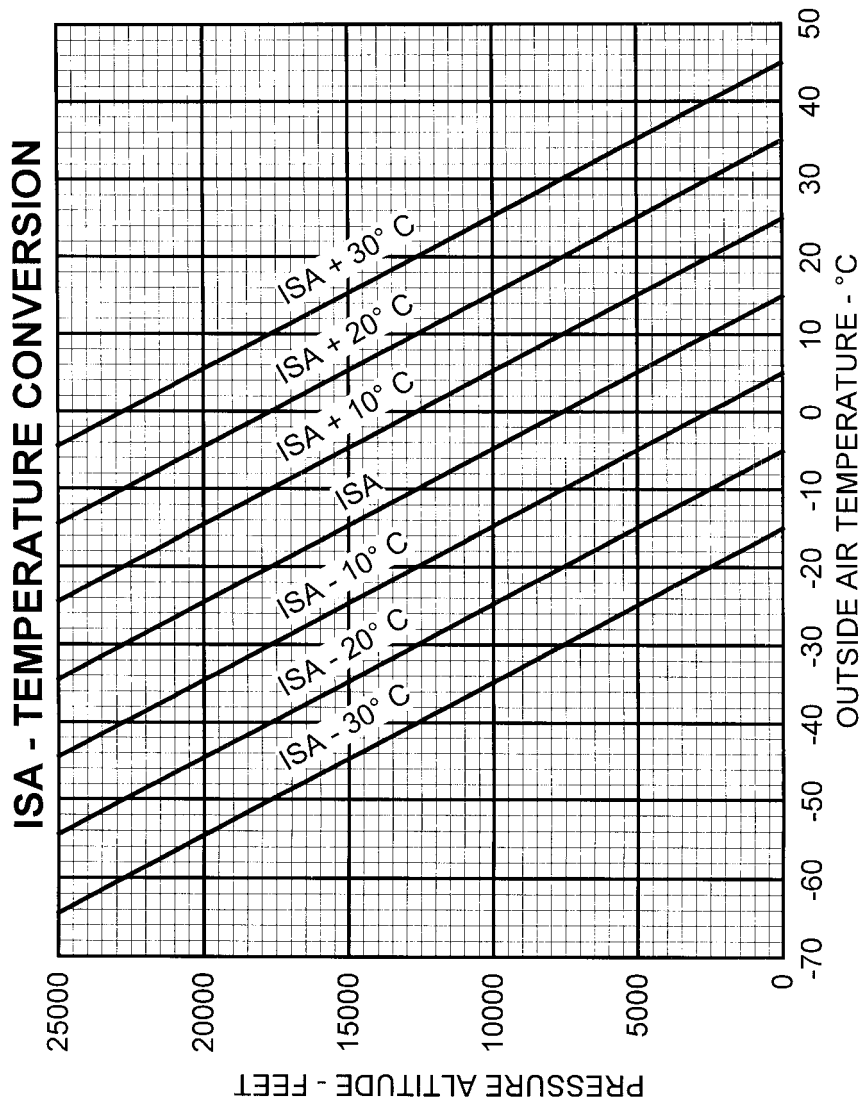
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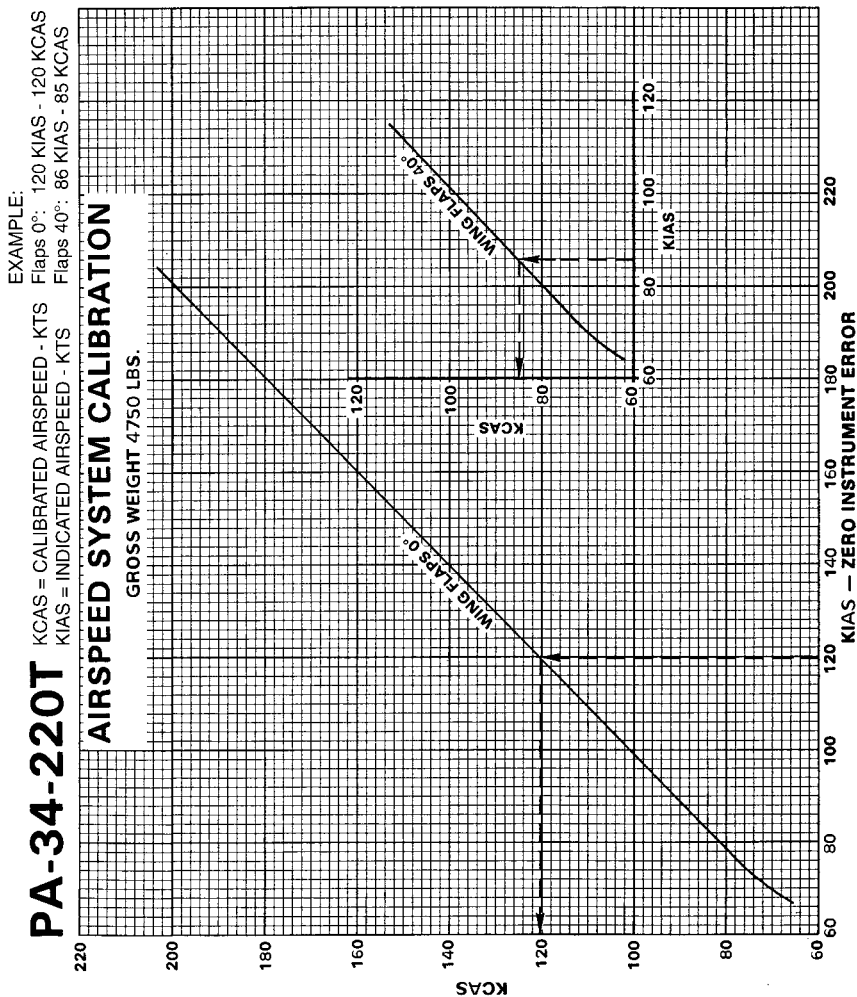
TEMPERATURE CONVERSION

Figure 5-1



ISA TEMPERATURE CONVERSION

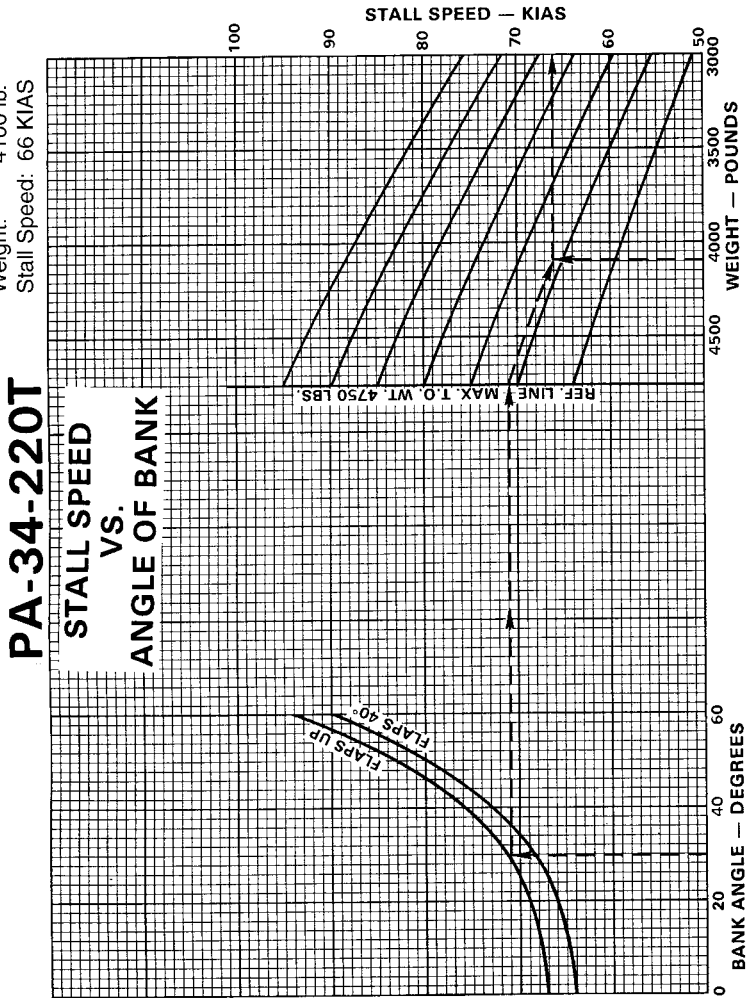
Figure 5-3



AIRSPEED CALIBRATION

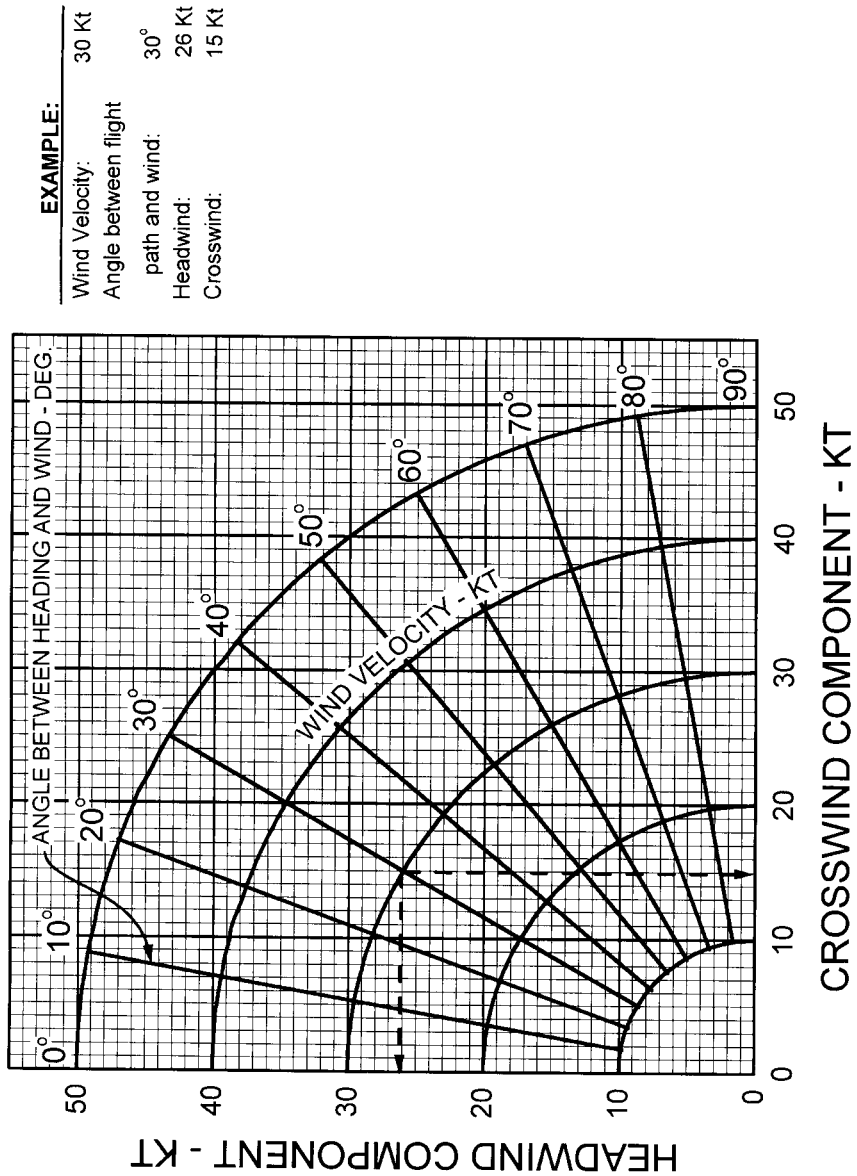
Figure 5-5

EXAMPLE:
Bank Angle: 30°
Flaps: UP
Weight: 4100 lb.
Stall Speed: 66 KIAS



STALL SPEED VS. ANGLE OF BANK

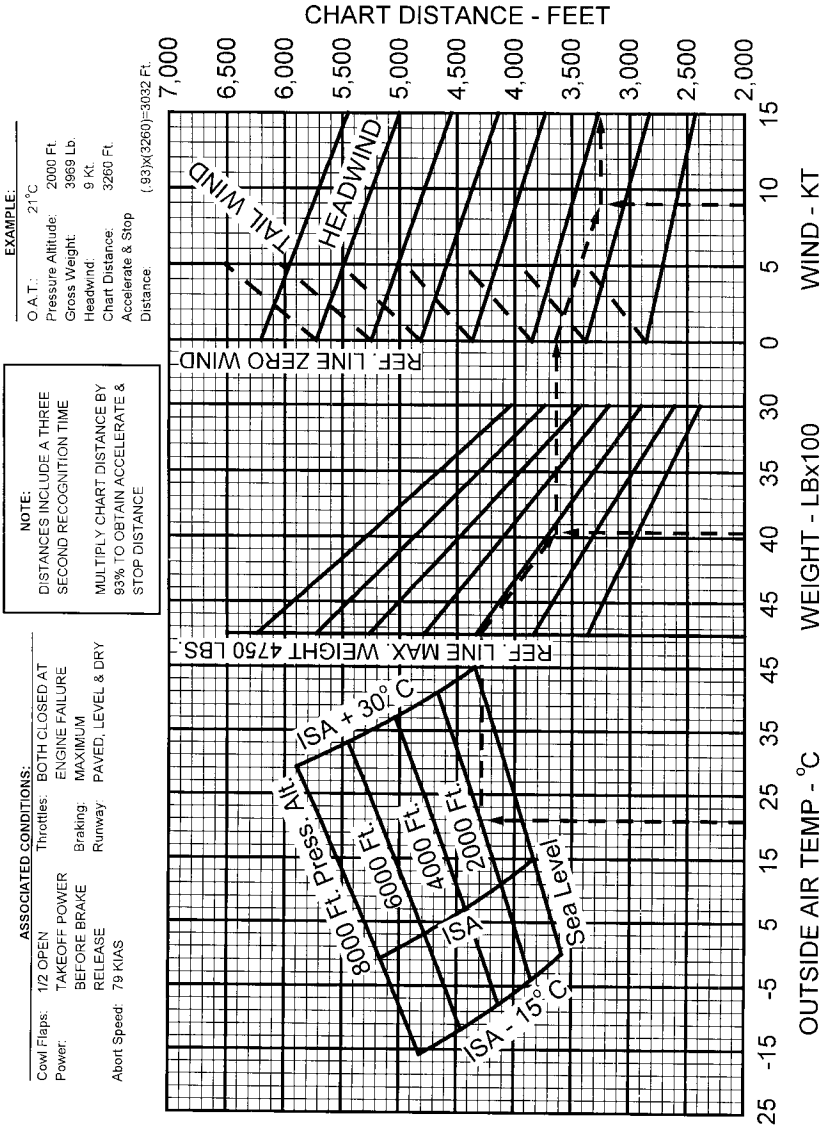
Figure 5-7



WIND COMPONENTS

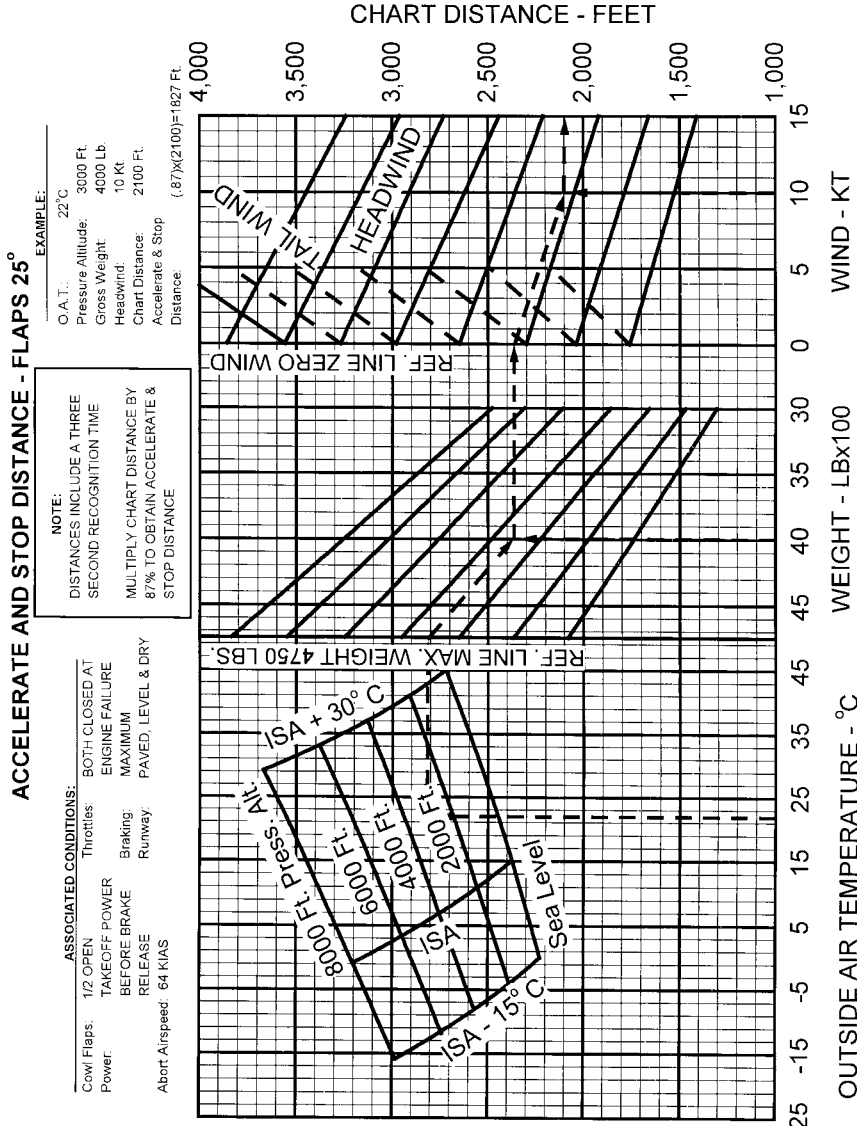
Figure 5-9

ACCELERATE AND STOP DISTANCE - FLAPS UP



ACCELERATE AND STOP DISTANCE - 0° FLAPS

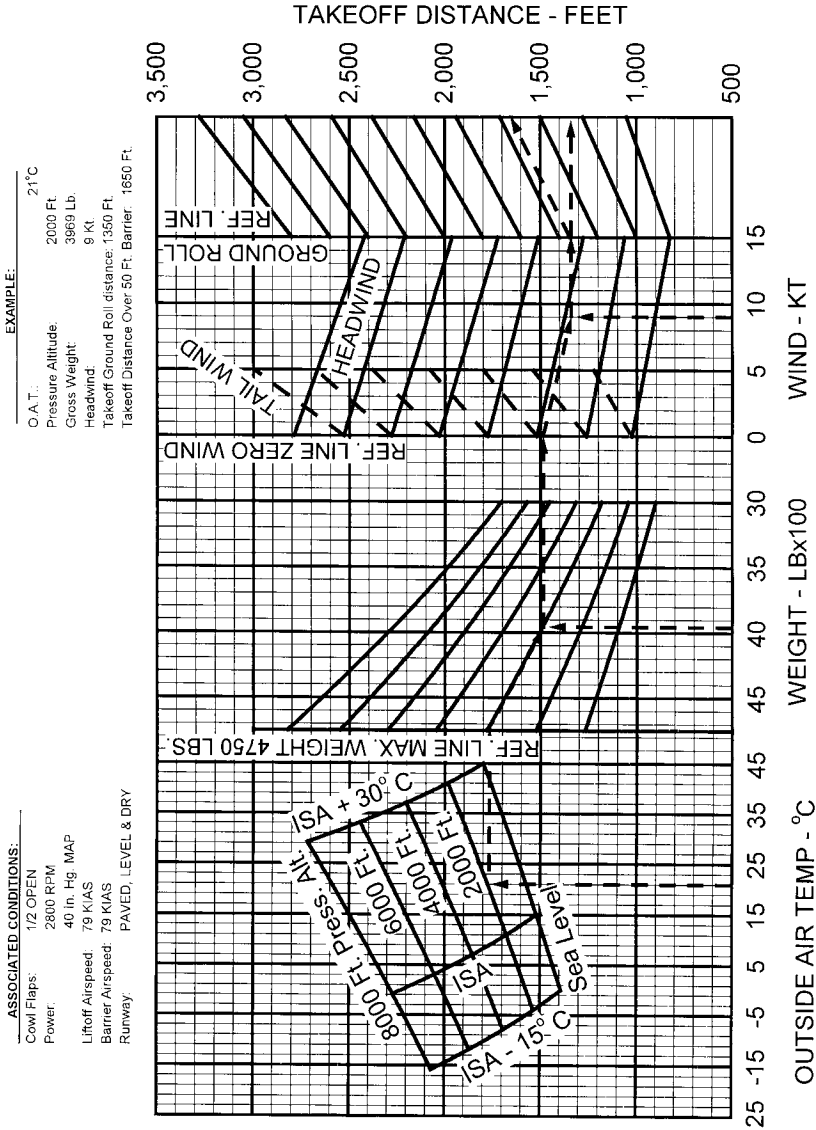
Figure 5-11



ACCELERATE AND STOP DISTANCE - 25° FLAPS

Figure 5-13

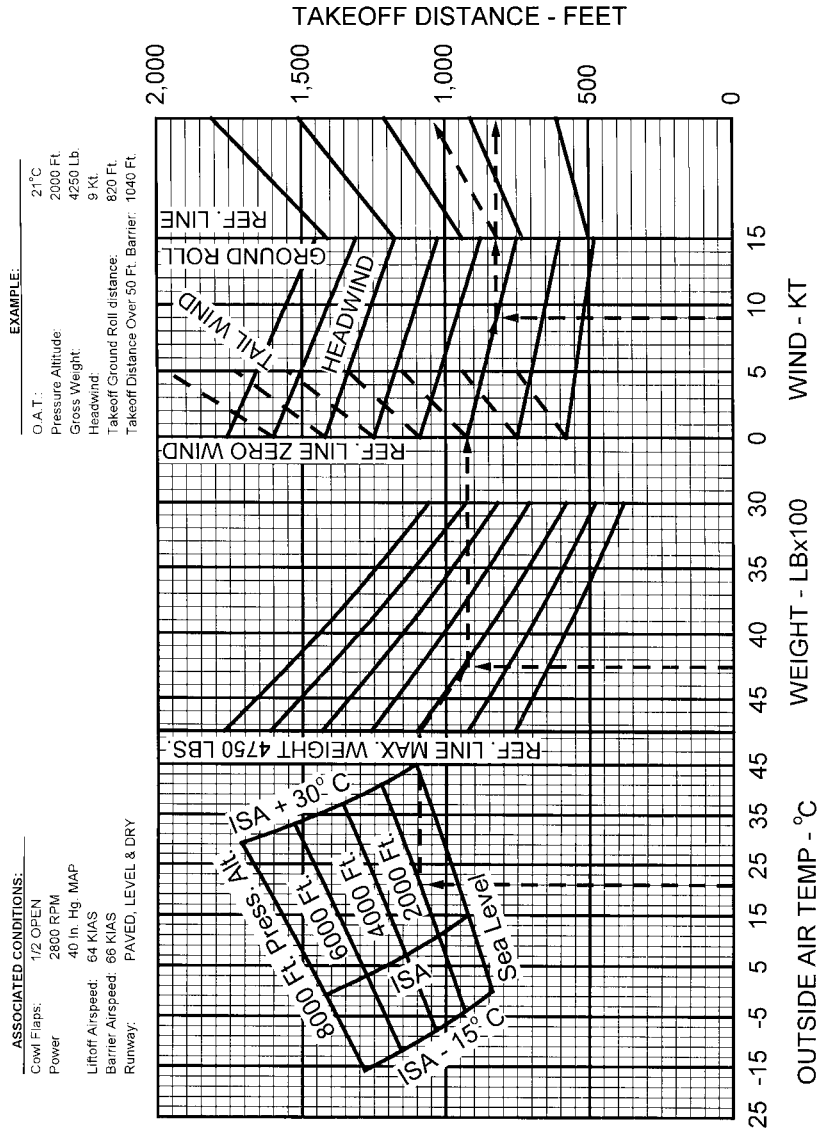
NORMAL PROCEDURE TAKEOFF - FLAPS UP



NORMAL PROCEDURE TAKEOFF - 0° FLAPS

Figure 5-15

MAXIMUM EFFORT TAKEOFF - FLAPS 25°

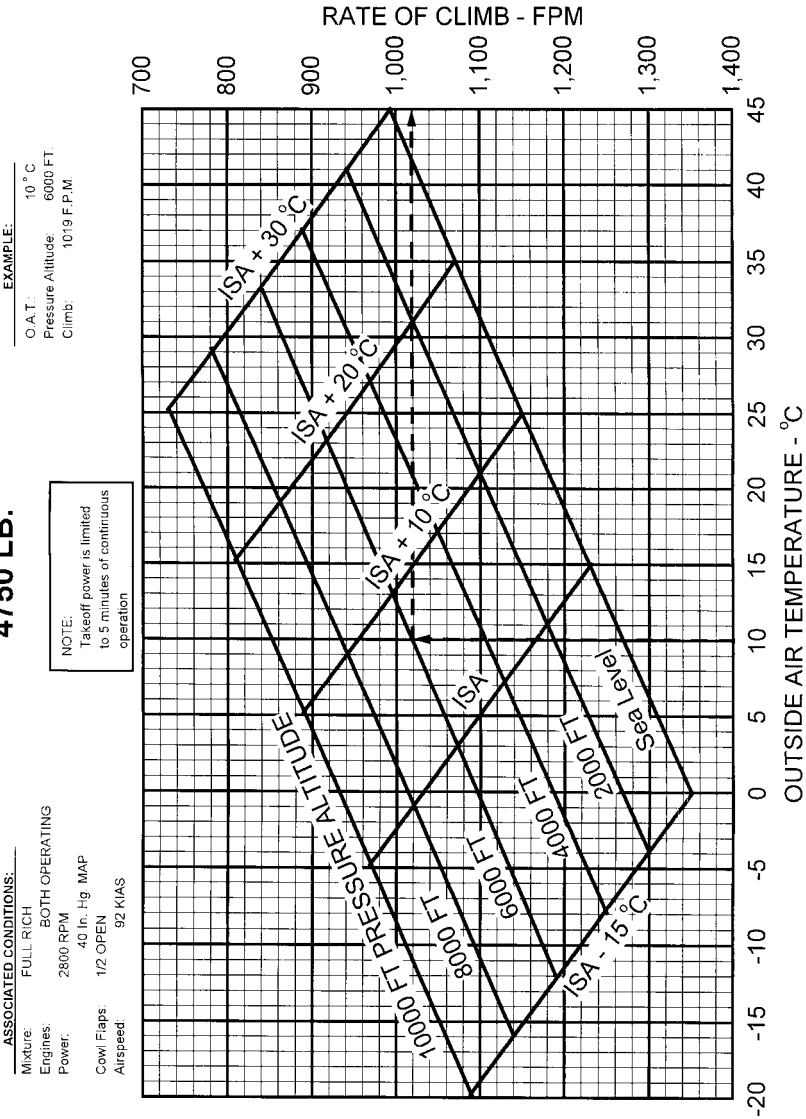


MAXIMUM EFFORT TAKEOFF - 25° FLAPS

Figure 5-17

TAKEOFF CLIMB PERFORMANCE - GEAR DOWN, FLAPS UP

4750 LB.



TAKEOFF CLIMB PERFORMANCE - GEAR EXTENDED - 4750 LB.

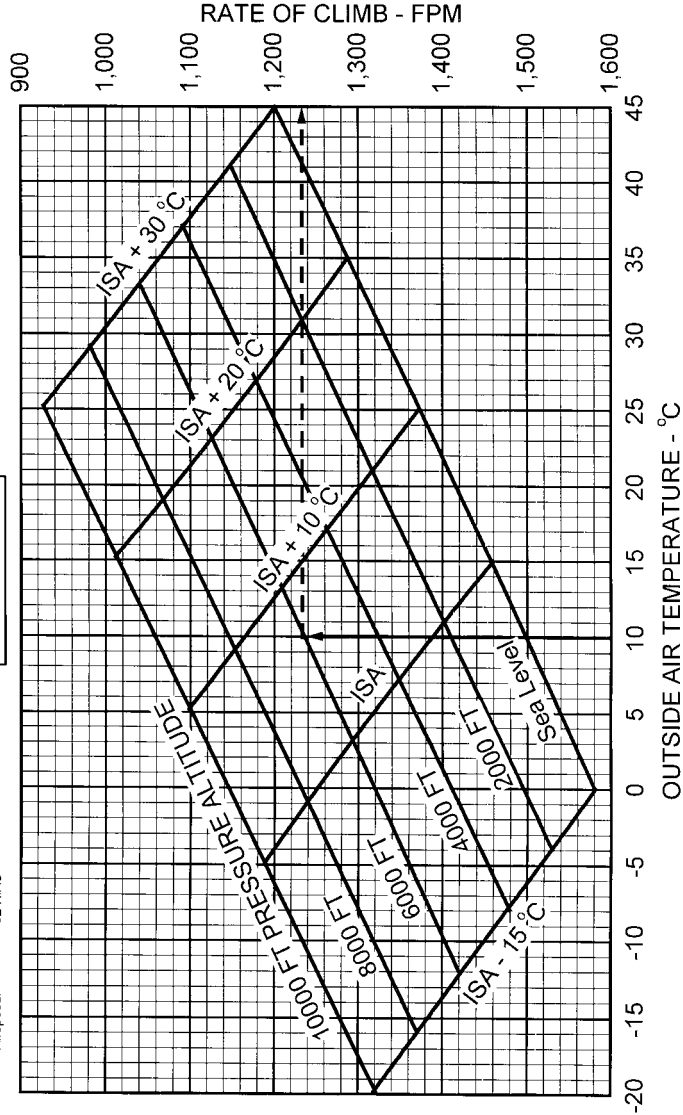
Figure 5-19

TAKEOFF CLIMB PERFORMANCE - GEAR DOWN, FLAPS UP
4300 LB.

ASSOCIATED CONDITIONS:
Mixture: FULL RICH
Engines: BOTH OPERATING
Power: 2800 RPM
40 In. Hg MAP
Cowl Flaps: 1/2 OPEN
Airspeed: 52 KIAS

EXAMPLE:
O.A.T.: 10 °C
Pressure Altitude: 8000 FT.
Climb: 1233 F.P.M.

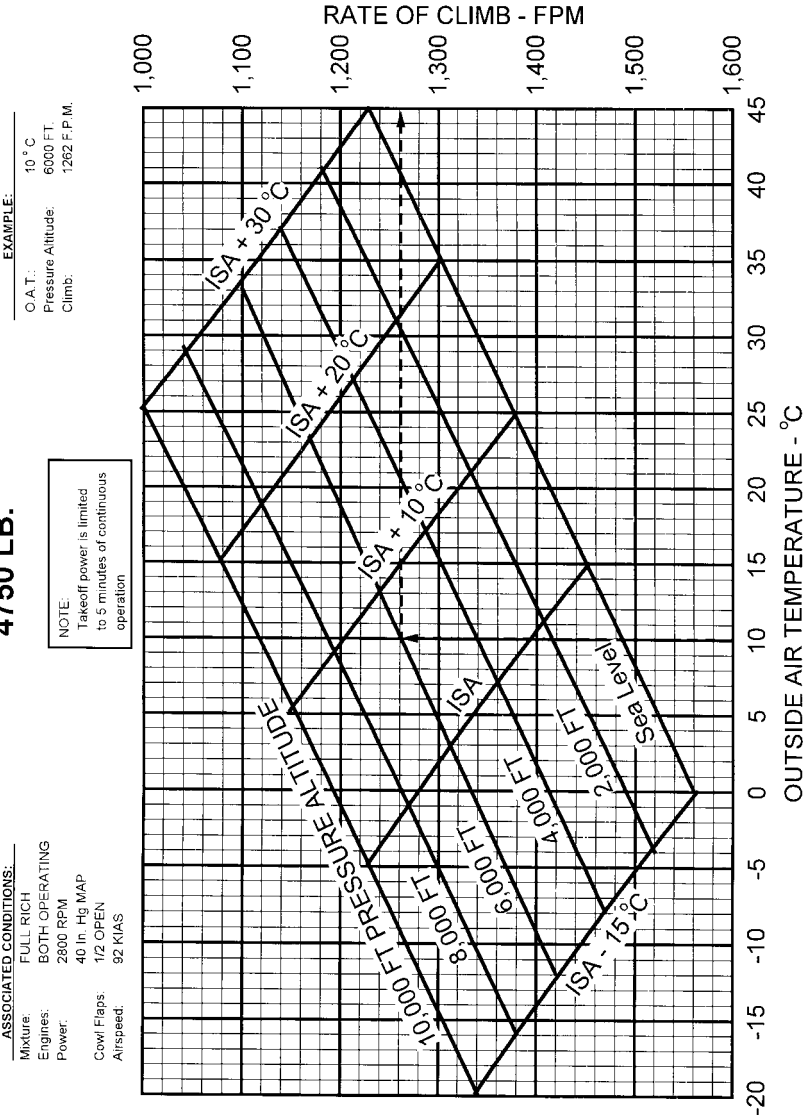
NOTE:
Takeoff power is limited
to 5 minutes of continuous
operation



TAKEOFF CLIMB PERFORMANCE - GEAR EXTENDED - 4300 LB.

Figure 5-21

TAKEOFF CLIMB PERFORMANCE - GEAR UP, FLAPS UP
4750 LB.



TAKEOFF CLIMB PERFORMANCE - GEAR RETRACTED - 4750 LB.

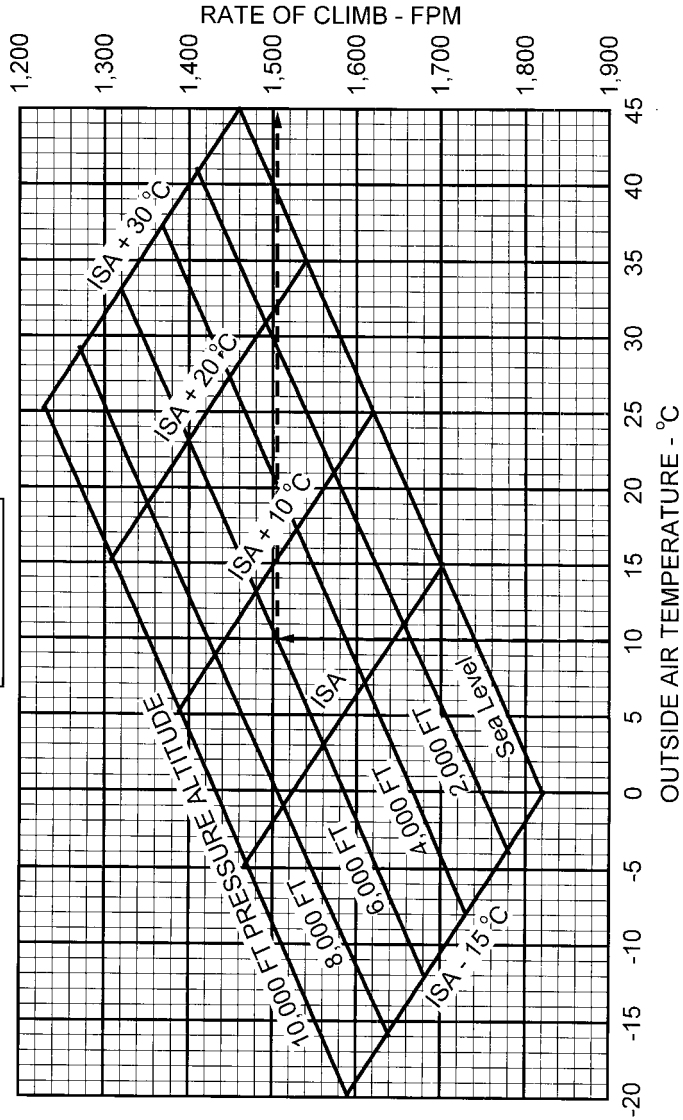
Figure 5-23

TAKEOFF CLIMB PERFORMANCE - GEAR UP, FLAPS UP
4300 LB.

ASSOCIATED CONDITIONS:
Mixture: FULL RICH
Engines: BOTH OPERATING
Power: 2800 RPM
40 in. Hg MAP
Cowl Flaps: 1/2 OPEN
Airspeed: 92 KIAS

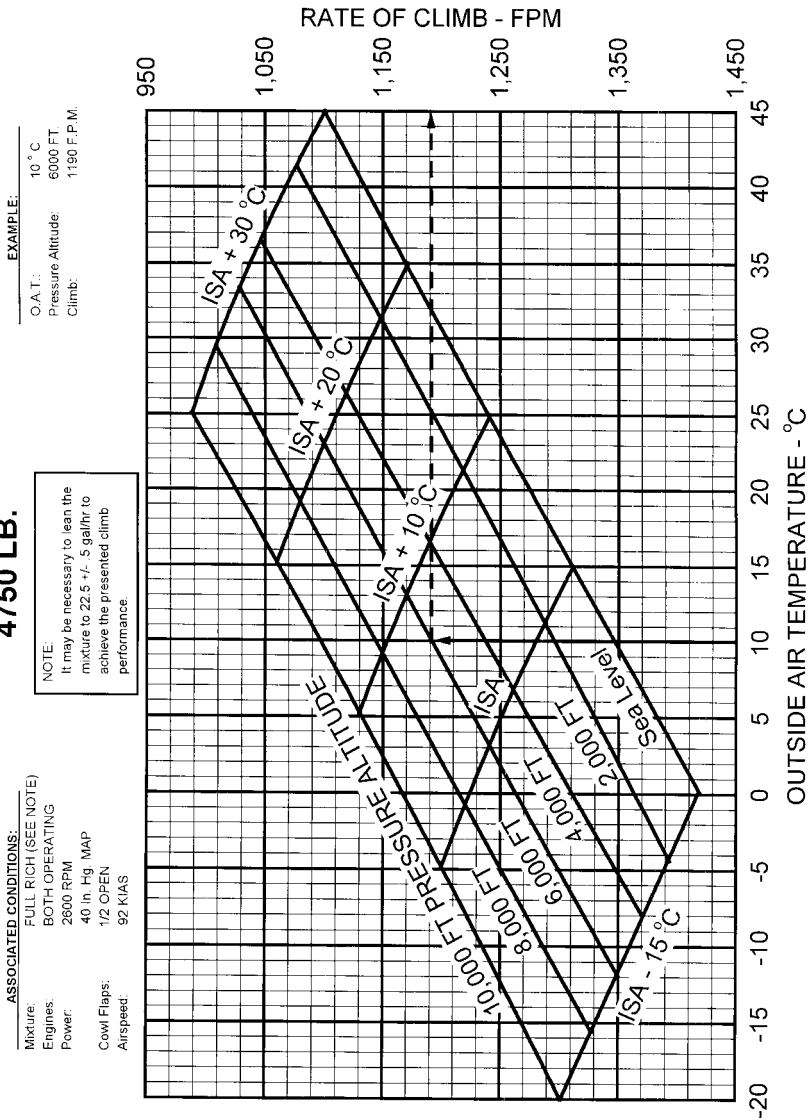
EXAMPLE:
O.A.T.: 10 °C
Pressure Altitude: 6000 FT.
Climb: 1505 F.P.M.

NOTE:
Takeoff power is limited
to 5 minutes of continuous
operation



TAKEOFF CLIMB PERFORMANCE - GEAR RETRACTED - 4300 LB.
Figure 5-25

MCP CLIMB PERFORMANCE - GEAR UP, FLAPS UP
4750 LB.



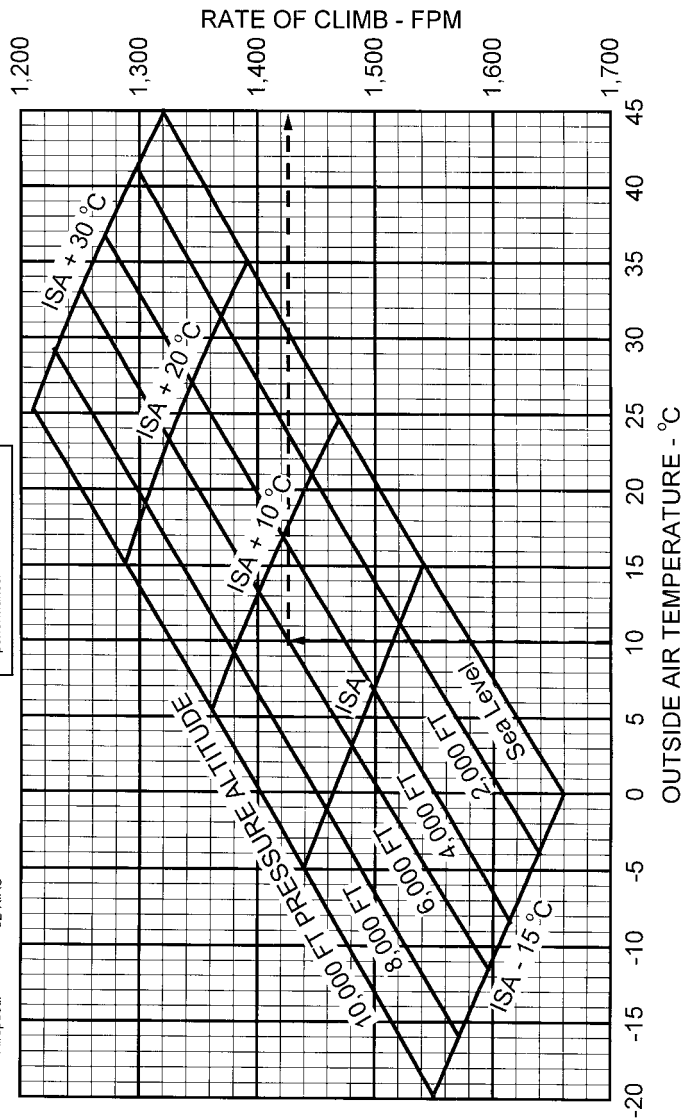
MCP CLIMB PERFORMANCE - GEAR RETRACTED - 4750 LB.

Figure 5-27

MCP CLIMB PERFORMANCE - GEAR UP, FLAPS UP 4300 LB.

ASSOCIATED CONDITIONS:		EXAMPLE:	
Mixture:	FULL RICH (SEE NOTE)	O.A.T.:	10 ° C
Engines:	BOTH OPERATING	Pressure Altitude:	6000 FT.
Power:	2600 RPM	Climb:	1427 F.P.M.
Cowl Flaps:	40 In. Hg. MAP		
Airspeed:	1/2 OPEN		
	92 KIAS		

NOTE:
It may be necessary to lean the mixture to 22.5 +/- .5 gal/hr to achieve the presented climb performance.



MCP CLIMB PERFORMANCE - GEAR RETRACTED - 4300 LB.

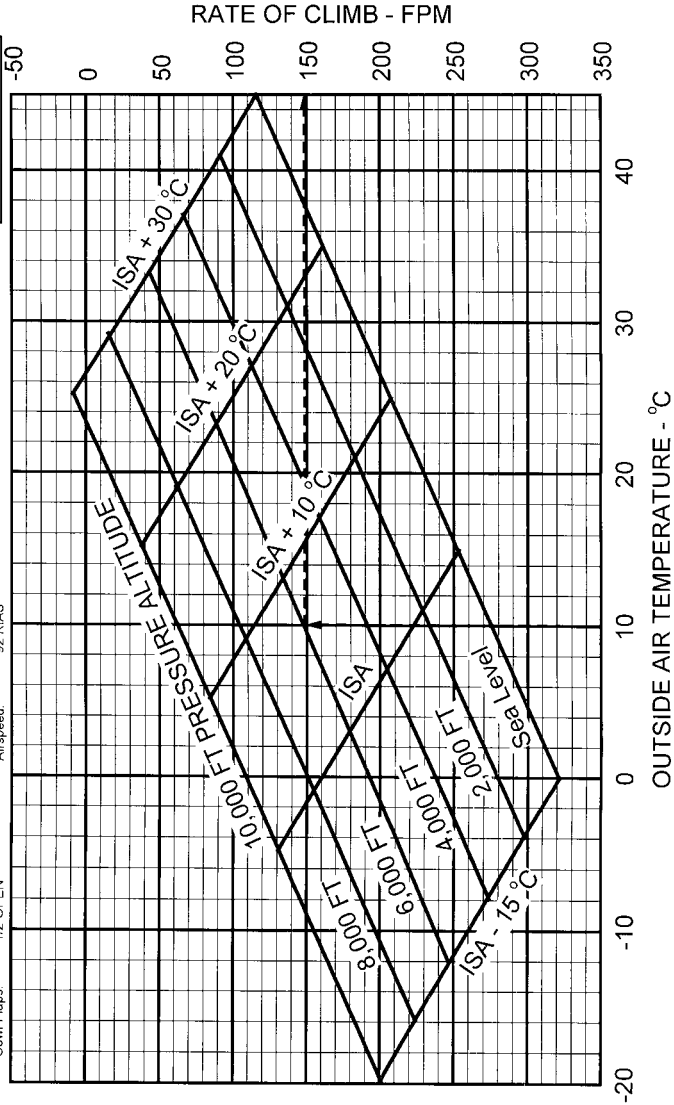
Figure 5-29

TAKEOFF CLIMB PERFORMANCE - GEAR UP, FLAPS UP
SINGLE ENGINE - 4750 LB.

NOTE:
2° to 3° bank towards
the operative engine
Takeoff power is limited
to 5 minutes of continuous
operation

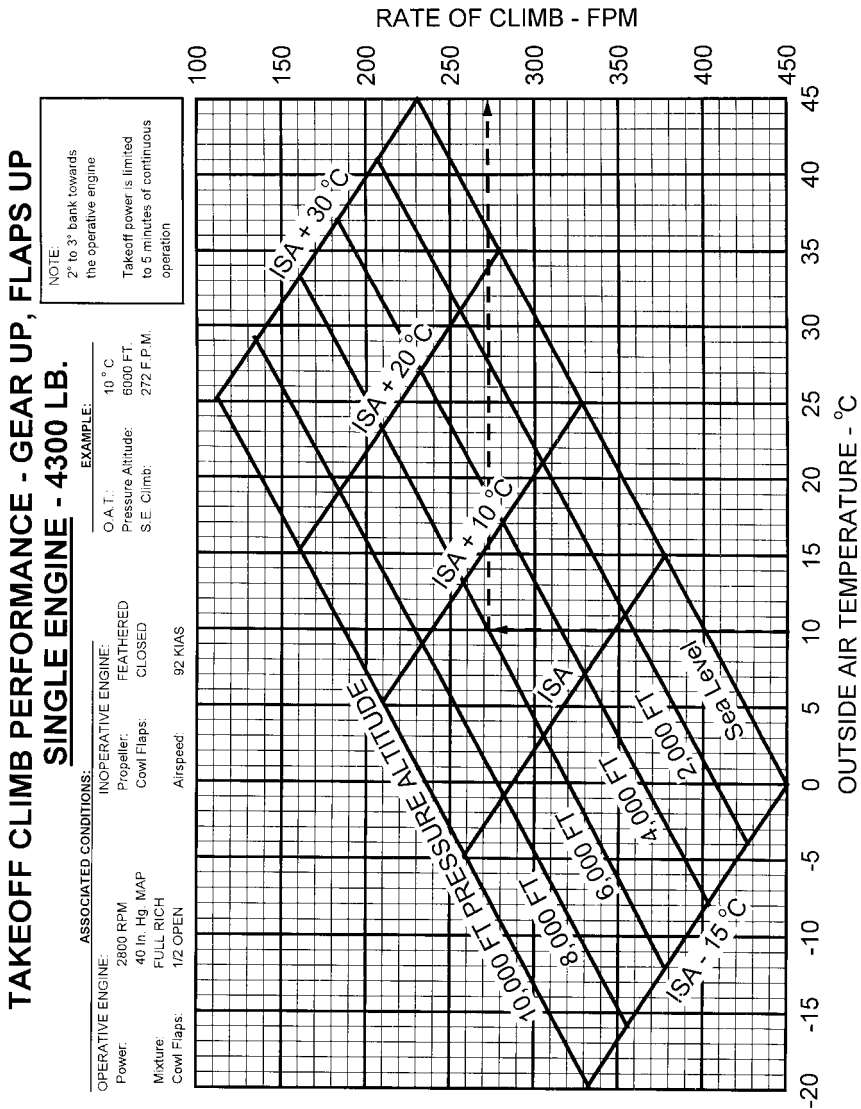
ASSOCIATED CONDITIONS:			
OPERATIVE ENGINE:		INOPERATIVE ENGINE:	
Power:	2800 RPM	Propeller:	FEATHERED
Mixture:	40 in. Hg MAP	Cowl Flaps:	CLOSED
Cowl Flaps:	FULL RICH	Airspeed:	92 KIAS
	1/2 OPEN		

EXAMPLE:	
Q.A.T.:	10 ° C
Pressure Altitude:	6000 FT.
S.E. Climb:	149 F.P.M.



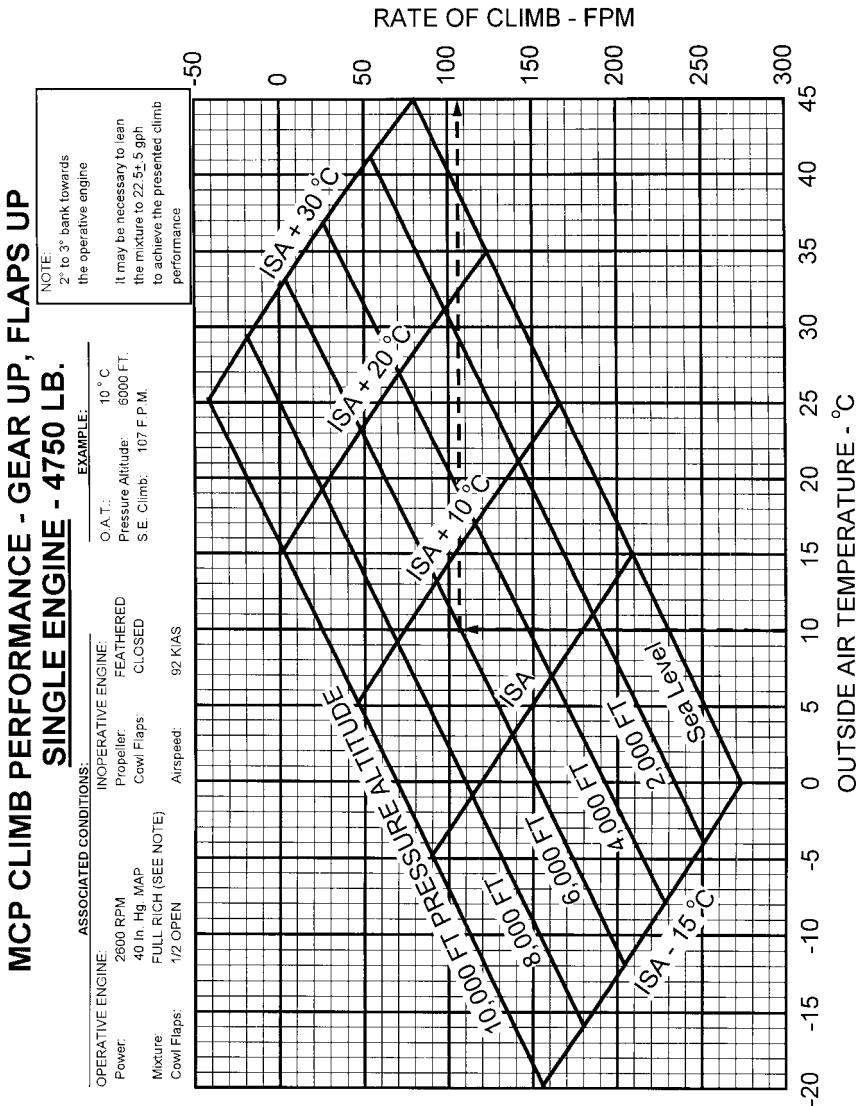
TAKEOFF CLIMB PERFORMANCE - GEAR RETRACTED -
SINGLE ENGINE - 4750 LB.

Figure 5-31



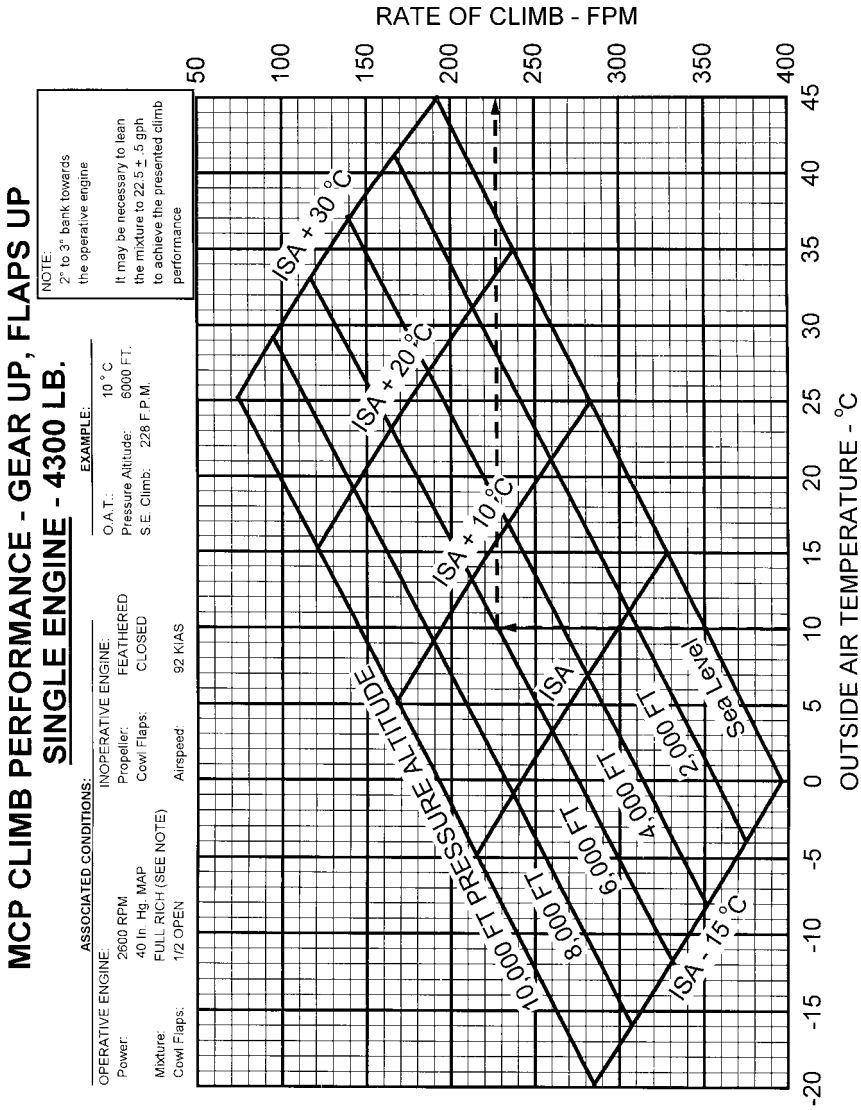
TAKEOFF CLIMB PERFORMANCE - GEAR RETRACTED -
SINGLE ENGINE - 4300 LB.

Figure 5-33



MCP CLIMB PERFORMANCE - GEAR RETRACTED -
SINGLE ENGINE - 4750 LB.

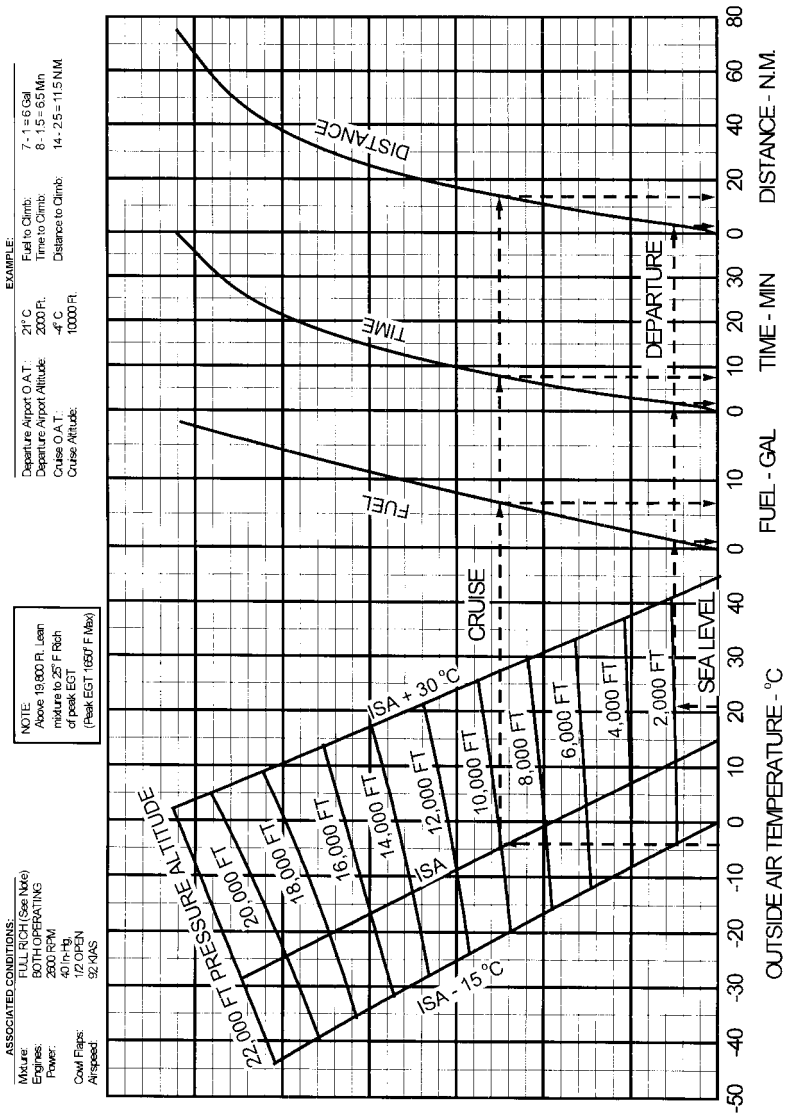
Figure 5-35



MCP CLIMB PERFORMANCE - GEAR RETRACTED -
SINGLE ENGINE - 4300 LB.

Figure 5-37

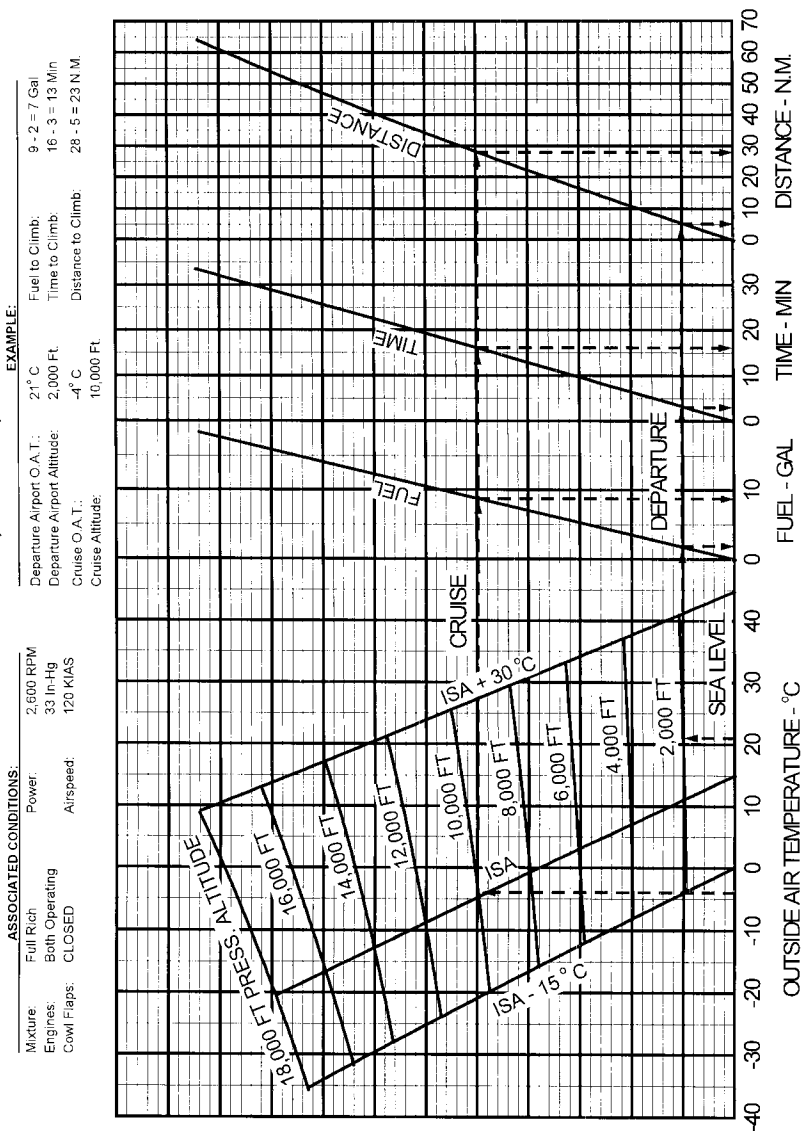
FUEL, TIME, AND DISTANCE TO CLIMB
MCP CLIMB - GEAR UP, FLAPS UP, 4750 LB.



FUEL, TIME, AND DISTANCE TO MCP CLIMB - 4750 LB.

Figure 5-39

FUEL, TIME, AND DISTANCE TO CLIMB
CRUISE CLIMB - GEAR UP, FLAPS UP, 4750 LB



FUEL, TIME, AND DISTANCE TO CRUISE CLIMB - 4750 LB.

Figure 5-41

POWER SETTING TABLE (I.S.A. - 15° C)
T.C.M. TSIO-360K SERIES
PA-34-220T

Press Alt.	Outside Air Temp.	Economy Cruise Power			Recommended Cruise Power			Maximum Cruise Power	
		°F	°C	2400	2500	2600	2400	2500	2600
S.L.	32.0	0.0		28.0	27.2	26.3	32.8	31.6	30.9
2000	24.9	-4.0		27.3	26.6	25.8	32.4	31.3	30.5
4000	17.7	-7.9		26.7	26.0	25.2	32.0	30.9	30.0
6000	10.6	-11.9		26.1	25.4	24.7	31.6	30.6	29.6
8000	3.5	-15.8		25.5	24.8	24.2	31.2	30.2	29.1
10000	-3.7	-19.8		24.9	24.2	23.7	30.8	29.9	28.9
12000	-10.8	-23.8		24.2	23.6	23.1	30.5	29.5	28.6
14000	-17.9	-27.7		24.0	23.4	22.9		29.2	28.4
16000	-25.1	-31.7		23.8	23.2	22.7		28.8	28.2
18000	-32.2	-35.7		23.6	23.0	22.5			27.9
20000	-39.3	-39.6			22.8	22.3			27.7
22000	-46.5	-43.6				22.1			
24000	-53.6	-47.5				21.9			
25000	-57.2	-49.5				21.8			
Mixture		25° F Rich of Peak EGT Peak EGT 1650° F Max.							
Approx. Fuel Flow per Engine GPH		EGT 1525° F							
Approx. Fuel Flow per Engine GPH		9.9	10.0	10.2	13.1	13.4	13.5	14.8	15.0

NOTE: For temperatures colder than ISA-15° C reduce M.P. given in this table by 0.3" for each 5° C

EXAMPLE:

Cruise Altitude: 10000 ft.
Cruise Power: Economy
Engine Speed: 2500 rpm

Mixture Setting: 25° F rich of peak EGT
Manifold Press.: 24.2 In Hg
Approx Fuel Flow: 10 GPH

POWER SETTING TABLE - ISA -15°C

Figure 5-43

POWER SETTING TABLE (I.S.A.)
T.C.M. TSIO-360K SERIES
PA-34-220T

Press Alt.	Outside Air Temp.		Economy Cruise Power			Recommended Cruise Power			Maximum Cruise Power		
	°F	°C	2400	2500	2600	2400	2500	2600	2500	2600	
Feet											
S.L.	59.0	15.0	28.9	28.0	27.2	33.8	32.7	31.8	34.2	33.2	
2000	51.9	11.0	28.3	27.4	26.6	33.4	32.3	31.4	33.9	32.9	
4000	44.7	7.1	27.6	26.8	26.1	33.1	32.0	31.0	33.6	32.6	
6000	37.6	3.1	27.0	26.3	25.5	32.7	31.7	30.6	33.3	32.3	
8000	30.5	-0.8	26.4	25.7	25.0	32.4	31.3	30.2	33.0	31.9	
10000	23.3	-4.8	25.8	25.1	24.4	32.0	31.0	30.0	32.7	31.8	
12000	16.2	-8.8	25.2	24.5	23.9	31.7	30.7	29.8	32.4	31.8	
14000	9.1	-12.7	25.0	24.3	23.7		30.4	29.6	32.1	31.7	
16000	1.9	-16.7	24.8	24.1	23.5		30.0	29.4		31.7	
18000	-5.2	-20.7	24.6	23.9	23.3			29.2		31.6	
20000	-12.3	-24.6		23.7	23.1			29.0			
22000	-19.5	-28.6			22.9						
24000	-26.6	-32.5			22.7						
25000	-30.2	-34.5			22.6						
Mixture			← 25° F Rich of Peak EGT → Peak EGT 1650° F Max.								EGT 1525° F
Approx. Fuel Flow per Engine GPH			9.9	10.0	10.2	13.1	13.4	13.5	14.8	15.0	

EXAMPLE:

Cruise Altitude: 10000 ft.
Cruise Power: Economy
Engine Speed: 2500 rpm

Mixture Setting: 25° F rich of peak EGT
Manifold Press.: 25.1 In Hg
Approx Fuel Flow: 10 GPH

POWER SETTING TABLE - ISA

Figure 5-45

POWER SETTING TABLE (I.S.A. + 10° C)
T.C.M. TSIO-360K SERIES
PA-34-220T

Press Alt.	Outside Air Temp.		Economy Cruise Power			Recommended Cruise Power			Maximum Cruise Power	
	°F	°C	2400	2500	2600	2400	2500	2600	2500	2600
Feet										
S.L.	77.0	25.0	29.5	28.6	27.8	34.4	33.4	32.5	34.9	33.8
2000	69.9	21.0	28.9	28.0	27.2	34.1	33.1	32.1	34.6	33.6
4000	62.7	17.1	28.3	27.5	26.7	33.8	32.8	31.7	34.4	33.3
6000	55.6	13.1	27.7	26.9	26.1	33.5	32.4	31.3	34.1	33.1
8000	48.5	9.2	27.1	26.3	25.5	33.2	32.1	31.0	33.8	32.8
10000	41.3	5.2	26.5	25.7	25.0	32.9	31.8	30.8	33.6	32.6
12000	34.2	1.2	25.8	25.1	24.4		31.5	30.7	33.3	32.6
14000	27.1	-2.7	25.6	24.9	24.2		31.2	30.6		32.5
16000	19.9	-6.7	25.4	24.7	24.0					
18000	12.8	-10.7		24.5	23.8					
20000	5.7	-14.6		24.3	23.6					
22000	-1.5	-18.6			23.4					
Mixture			25° F Rich of Peak EGT ----->-----<----- Peak EGT 1650° F Max.							
Approx. Fuel Flow per Engine GPH			9.9	10.0	10.2	13.1	13.4	13.5	14.8	15.0

EXAMPLE:

Cruise Altitude:	10000 ft.	Mixture Setting:	25° F rich of peak EGT
Cruise Power:	Economy	Manifold Press.:	25.7 In Hg
Engine Speed:	2500 rpm	Approx Fuel Flow:	10 GPH

POWER SETTING TABLE - ISA +10°C
Figure 5-47

POWER SETTING TABLE (I.S.A. + 20° C)
T.C.M. TSIO-360K SERIES
PA-34-220T

Press Alt.	Outside Air Temp.		Economy Cruise Power			Recommended Cruise Power			Maximum Cruise Power	
	°F	°C	2400	2500	2600	2400	2500	2600	2500	2600
S.L.	95.0	35.0	30.2	29.3	28.4	35.1	34.1	32.9	35.6	34.2
2000	87.9	31.0	29.6	28.7	27.8	34.9	33.8	32.7	35.3	34.1
4000	80.7	27.1	29.0	28.1	27.3	34.6	33.5	32.5	35.1	34.0
6000	73.6	23.1	28.4	27.5	26.7	34.3	33.3	32.3	34.9	33.9
8000	66.5	19.2	27.8	27.0	26.2	34.1	33.0	32.0	34.7	33.7
10000	59.3	15.2	27.1	26.4	25.6	33.8	32.7	31.8	34.5	33.6
12000	52.2	11.2	26.5	25.8	25.0		32.4	31.6	34.3	33.5
14000	45.1	7.3	26.3	25.6	24.8		32.1	31.4		33.4
16000	37.9	3.3	26.1	25.4	24.6			31.2		33.3
18000	30.8	-0.7		25.2	24.4			30.9		
20000	23.7	-4.6			24.2					
Mixture			25° F Rich of Peak EGT ←————→ Peak EGT 1650° F Max.							
Approx. Fuel Flow per Engine GPH			9.9	10.0	10.2	13.1	13.4	13.5	14.8	15.0

EXAMPLE:

Cruise Altitude:	10000 ft.	Mixture Setting:	25° F rich of peak EGT
Cruise Power:	Economy	Manifold Press.:	26.4 In Hg
Engine Speed:	2500 rpm	Approx Fuel Flow:	10 GPH

POWER SETTING TABLE - ISA +20°C
Figure 5-49

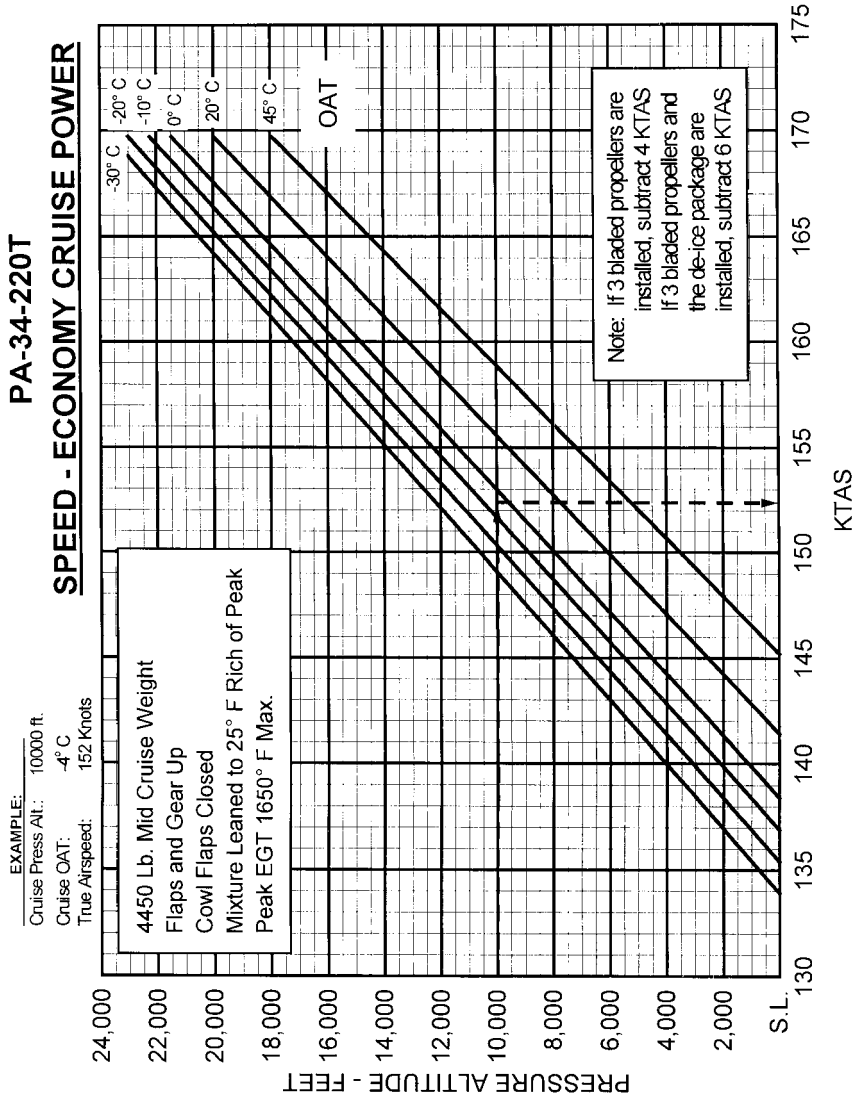
POWER SETTING TABLE (I.S.A. + 30° C)
T.C.M. TSIO-360K SERIES
PA-34-220T

Press Alt.	Outside Air Temp.		Economy Cruise Power		Recommended Cruise Power		Maximum Cruise Power	
	°F	°C	2400	2500	2600	2400	2500	2600
Feet								
S.L.	113.0	45.0		29.9	29.0			
2000	105.9	41.0	30.3	29.3	28.4	35.8	34.9	33.6
4000	98.7	37.1	29.7	28.8	27.9	35.6	34.6	33.4
6000	91.6	33.1	29.1	28.2	27.3	35.4	34.3	33.2
8000	84.5	29.2	28.5	27.6	26.8	35.2	34.1	33.1
10000	77.3	25.2	27.9	27.1	26.2	34.9	33.8	32.9
12000	70.2	21.2	27.3	26.5	25.7		33.5	32.7
14000	63.1	17.3	27.1	26.3	25.5		33.3	32.5
16000	55.9	13.3		26.1	25.3			32.3
18000	48.8	9.3		25.9	25.1			32.2
20000	41.7	5.4			24.9			
Mixture			25° F Rich of Peak EGT —————> Peak EGT 1650° F Max.					
Approx. Fuel Flow per Engine GPH			9.9	10.0	10.2	13.1	13.4	13.5
							14.8	15.0
								EGT 1525° F

EXAMPLE:

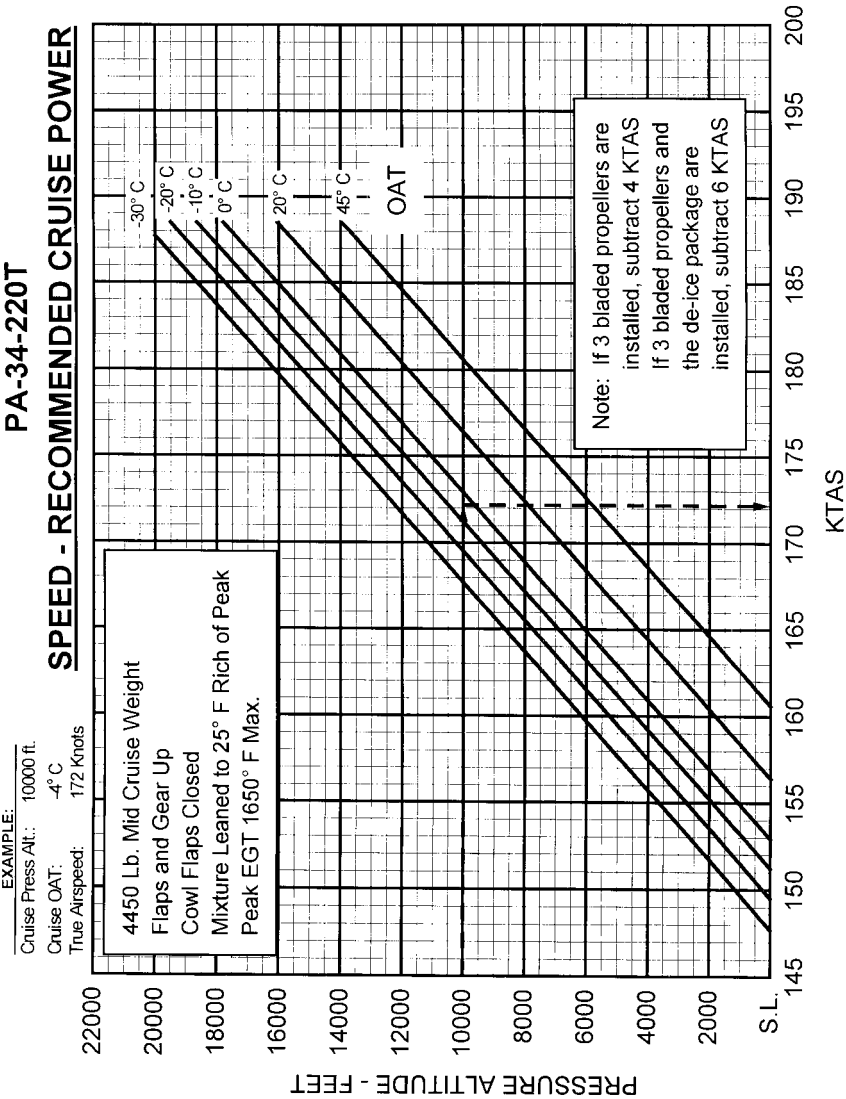
Cruise Altitude:	10000 ft.	Mixture Setting:	25° F rich of peak EGT
Cruise Power:	Economy	Manifold Press.:	27.1 In Hg
Engine Speed:	2500 rpm	Approx Fuel Flow:	10 GPH

POWER SETTING TABLE - ISA +30°C
Figure 5-51



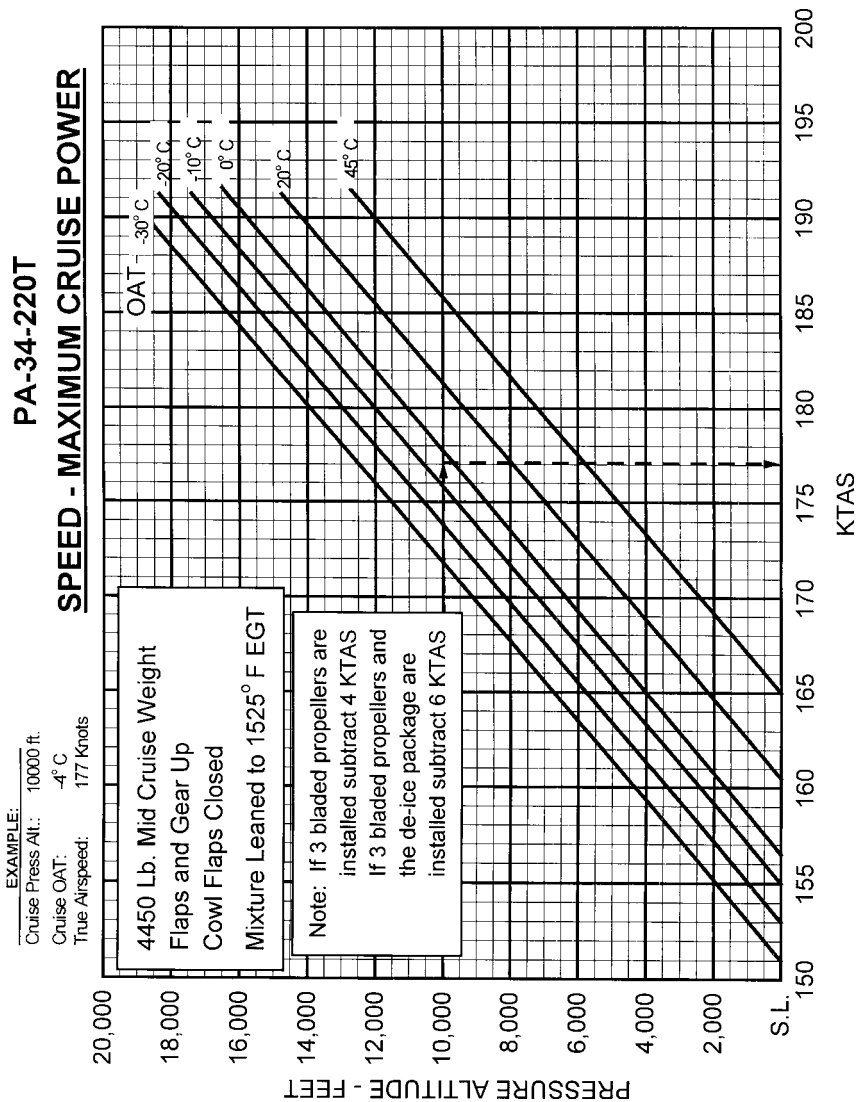
SPEED - ECONOMY CRUISE POWER

Figure 5-53



SPEED - RECOMMENDED CRUISE POWER

Figure 5-55

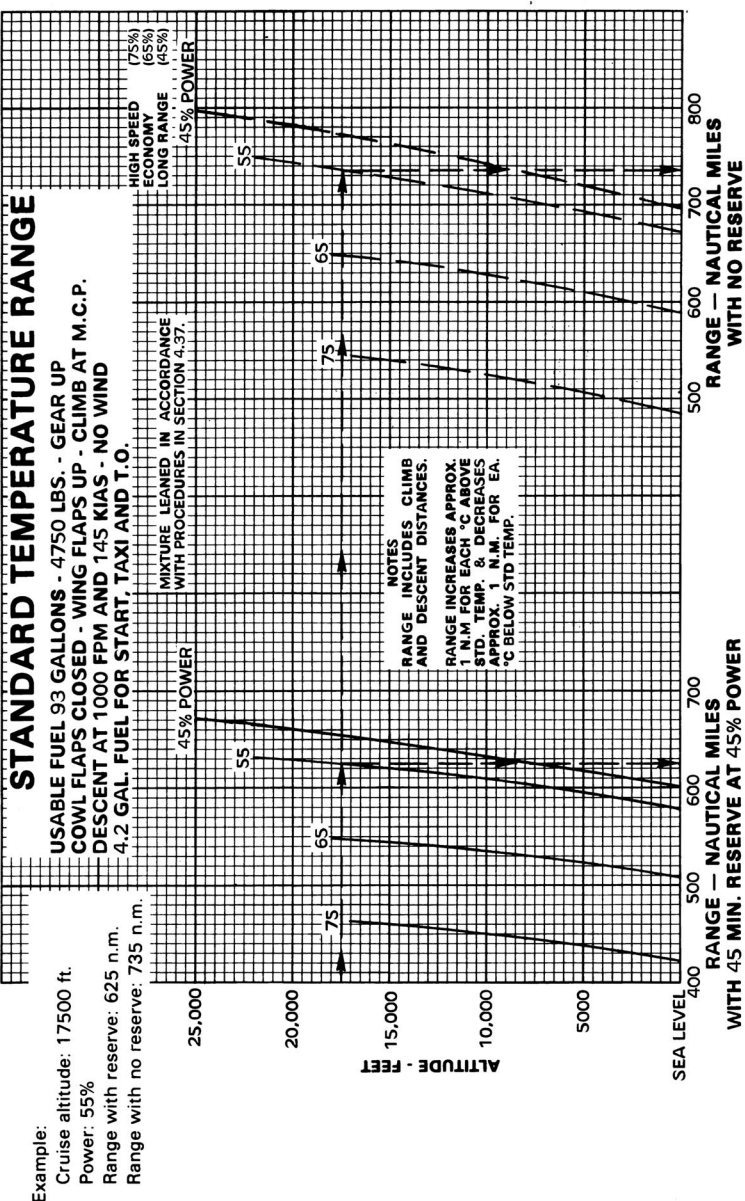


SPEED - MAXIMUM CRUISE POWER

Figure 5-57

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PA-34-220T



STANDARD TEMPERATURE RANGE - 93 GALLONS USABLE

Figure 5-59

STANDARD TEMPERATURE RANGE (WITH RESERVES) - 123 GALLONS USABLE

EXAMPLE:

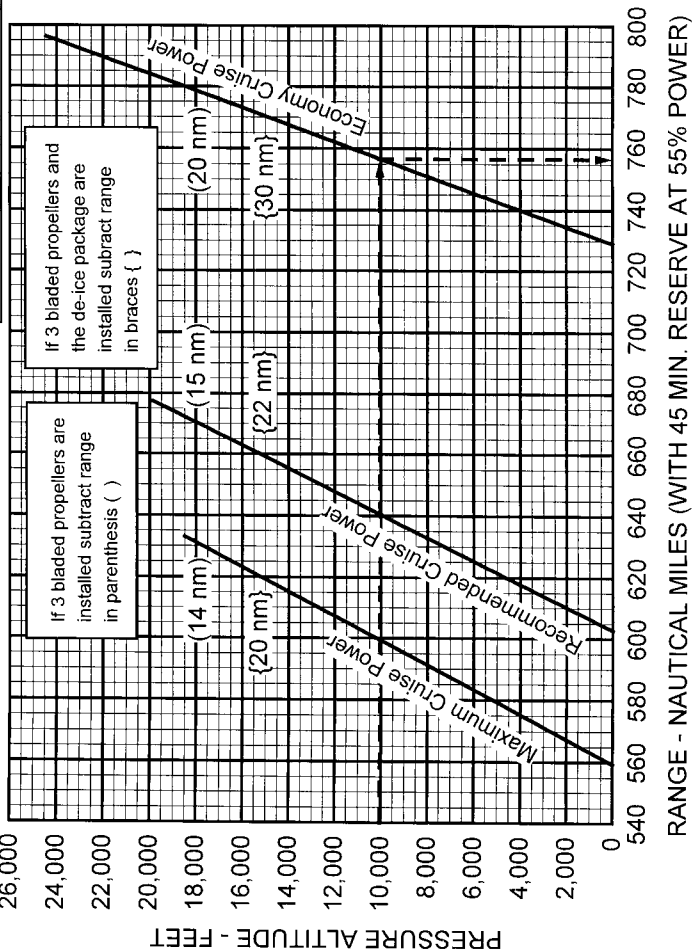
Cruise Altitude: 10,000 Ft
Power: Economy Cruise
Range: 756 n.m.

ASSOCIATED CONDITIONS:

Takeoff Weight: 4,750 Lb.
Climb: MCP and 92 KIAS
Descent: 1,000 FPM and 142 KIAS
Wing: None
Gear and Gear: None
Cowl Flaps: CLOSED
Mixture: SEE POWER TABLE

NOTE:

(1) Range includes climb and descent distances
(2) Range increases approx 6 n.m. for each 10° C above std. temp. and decreases 6 n.m. for each 10° C below std. temp.



STANDARD TEMPERATURE RANGE - 123 GALLONS USABLE -
(WITH RESERVES)

Figure 5-61

STANDARD TEMPERATURE RANGE (WITHOUT RESERVES) - 123 GALLONS USABLE

ASSOCIATED CONDITIONS:

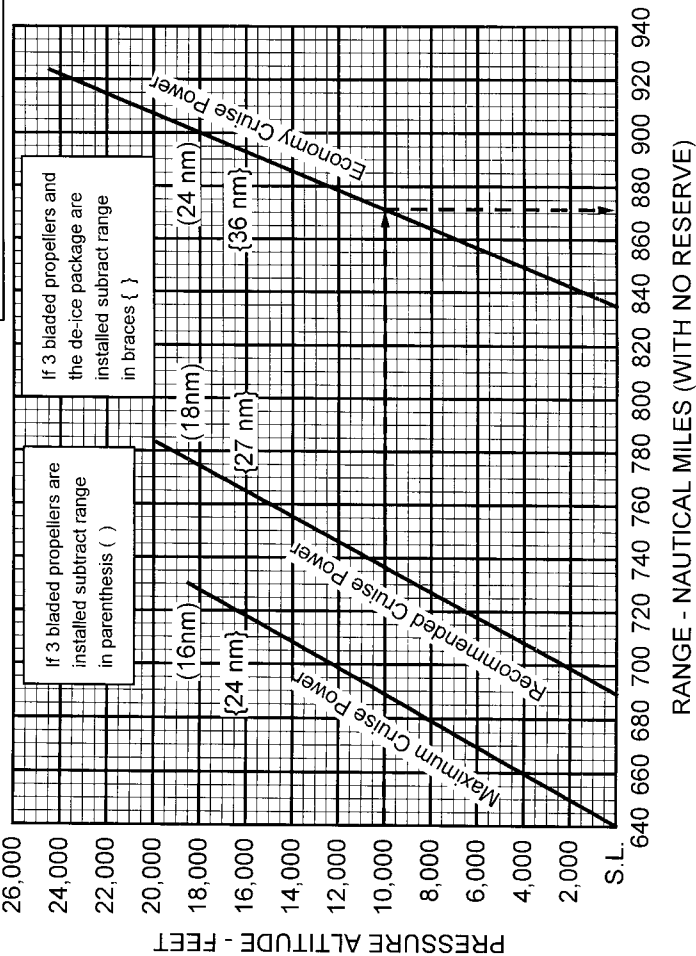
Takeoff Weight: 15,000 Lb.
 Cruise Altitude: 10,000 Ft.
 Descent: 100 FPM and 145 KIAS
 Wind: None
 Flaps and Gear: UP
 Cow Flaps: CLOSED
 Mixture: SEE POWER TABLE

EXAMPLE:

Cruise Altitude: 10,000 Ft.
 Power: Economy Cruise
 Range: 871 n.m.

NOTE:

(1) Range includes climb and descent distances
 5 n.m. for each 10° C above std. temp. and decreases 5 n.m. for each 10° C below std. temp.

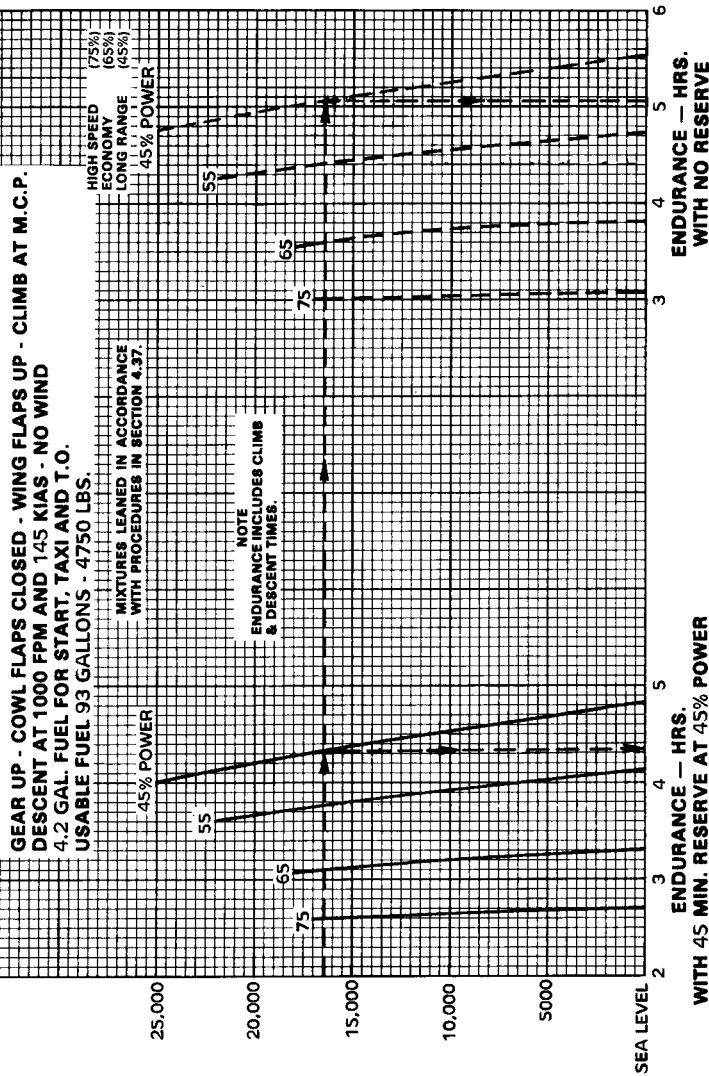


STANDARD TEMPERATURE RANGE - 123 GALLONS USABLE -
(WITHOUT RESERVES)

Figure 5-63

PA-34-220T
ENDURANCE

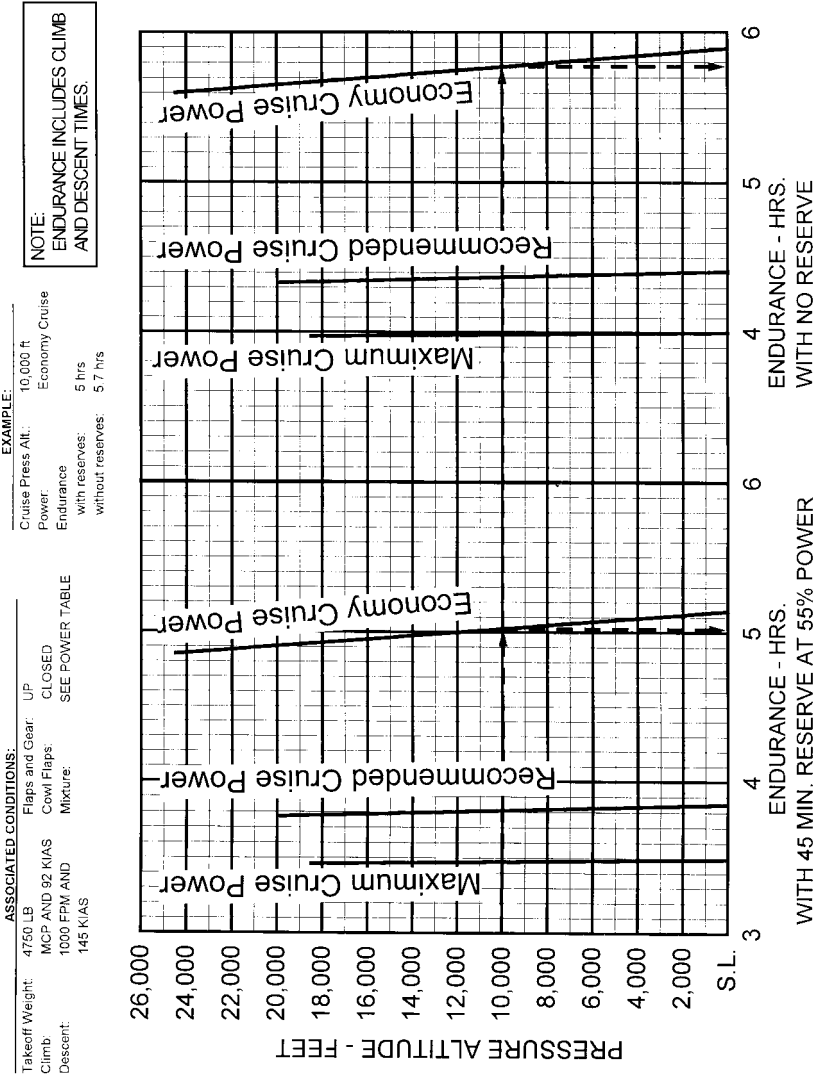
Example:
Cruise altitude: 16500 ft.
Power: 45%
Endurance with reserve: 4.33 hrs.
Endurance with no reserve: 5.08 hrs.



ENDURANCE - 93 GALLONS USABLE

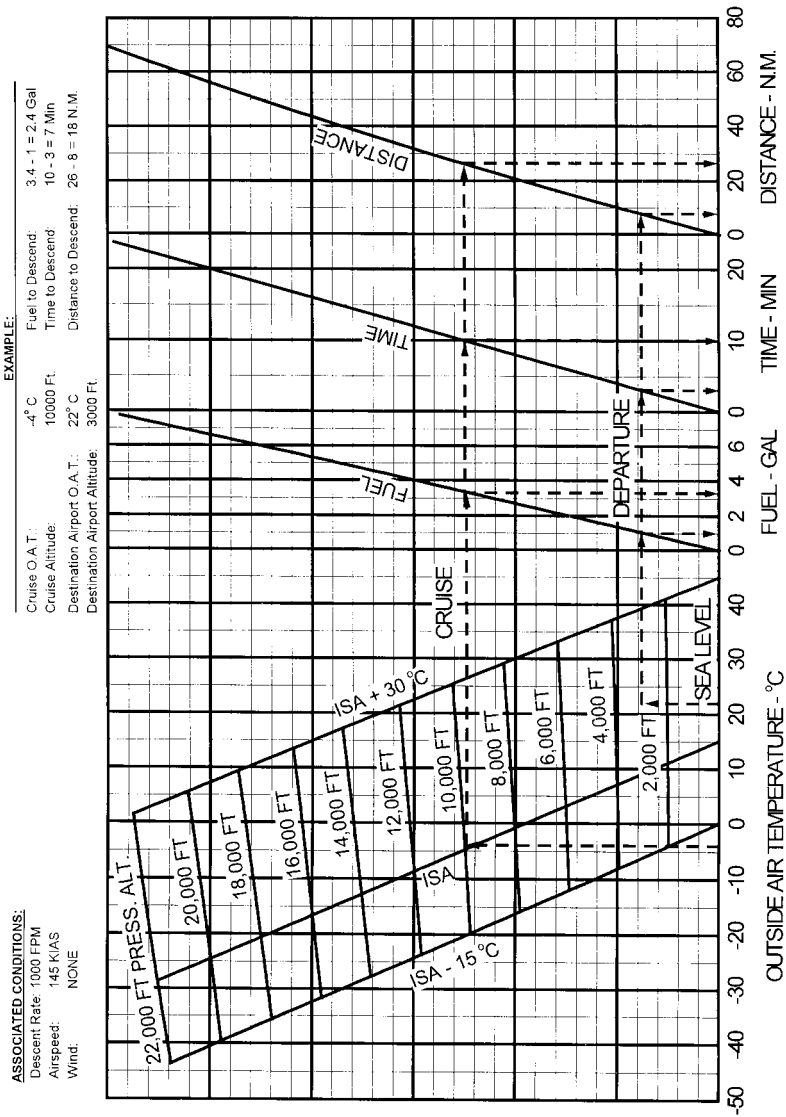
Figure 5-65

ENDURANCE - 123 GALLONS USABLE



ENDURANCE - 123 GALLONS USABLE
Figure 5-67

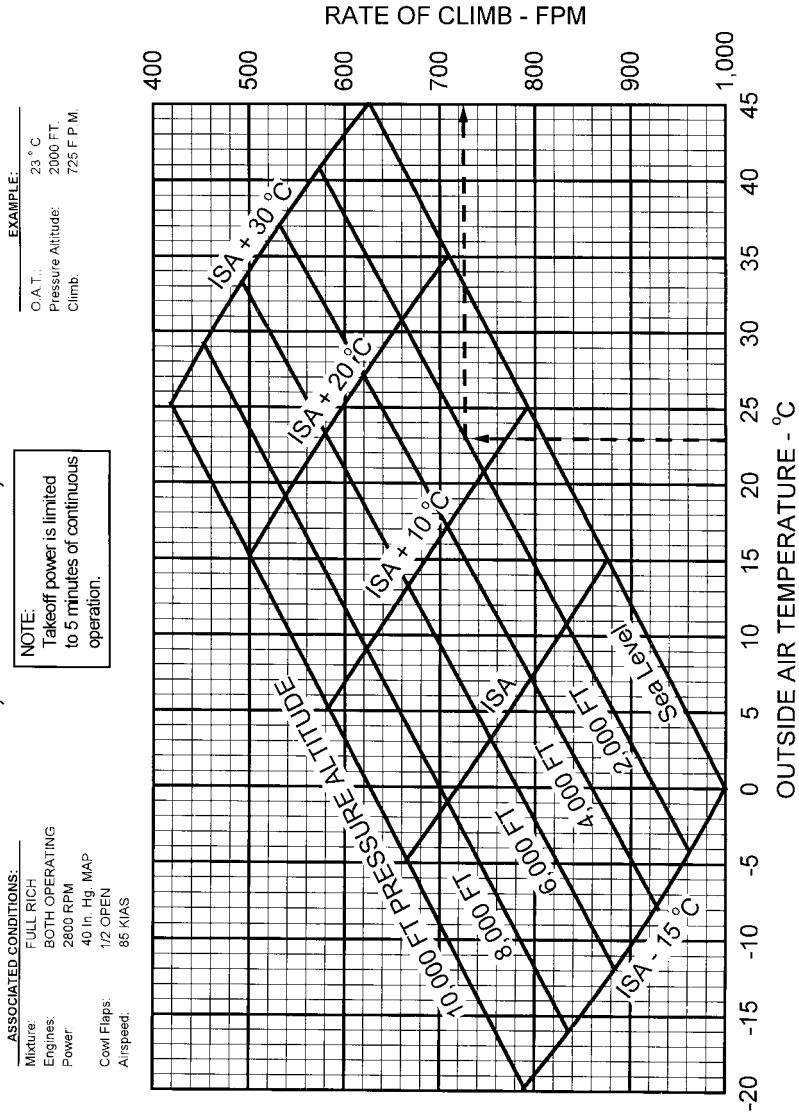
FUEL, TIME, AND DISTANCE TO DESCEND
GEAR UP, FLAPS UP



FUEL, TIME, AND DISTANCE TO DESCEND

Figure 5-69

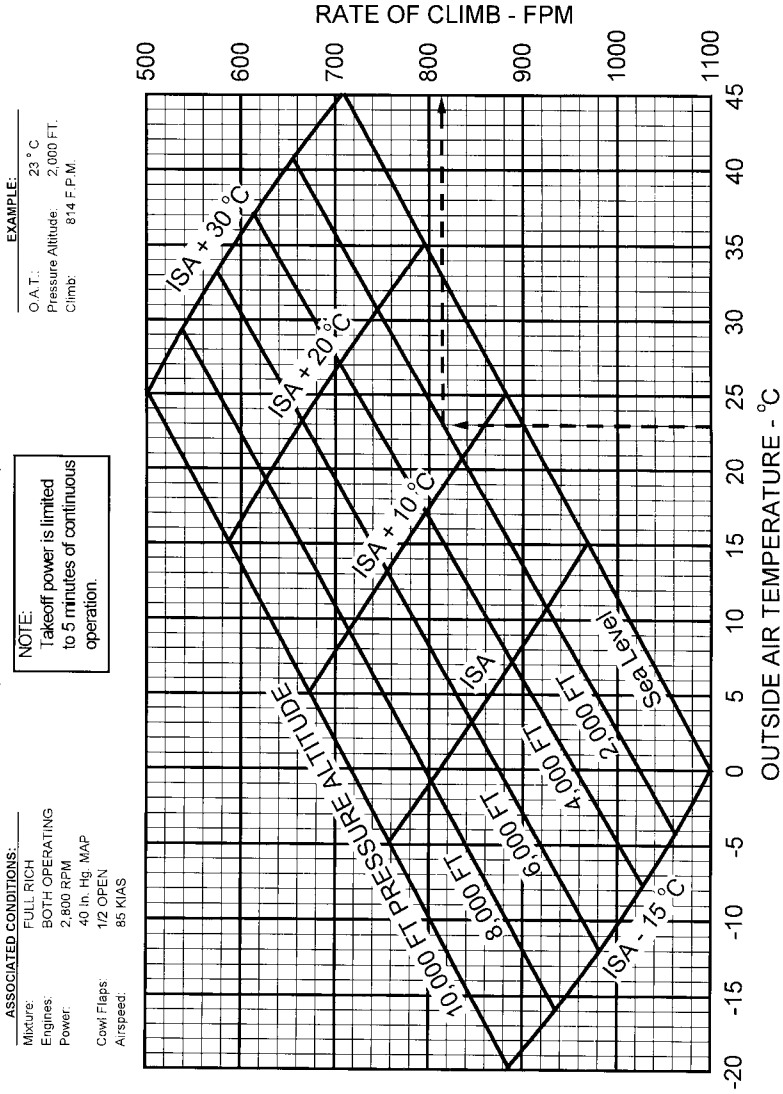
**BALKED LANDING CLIMB PERFORMANCE
4513 LB, GEAR DOWN, FLAPS 40°**



BALKED LANDING CLIMB PERFORMANCE - 4513 LB.

Figure 5-71

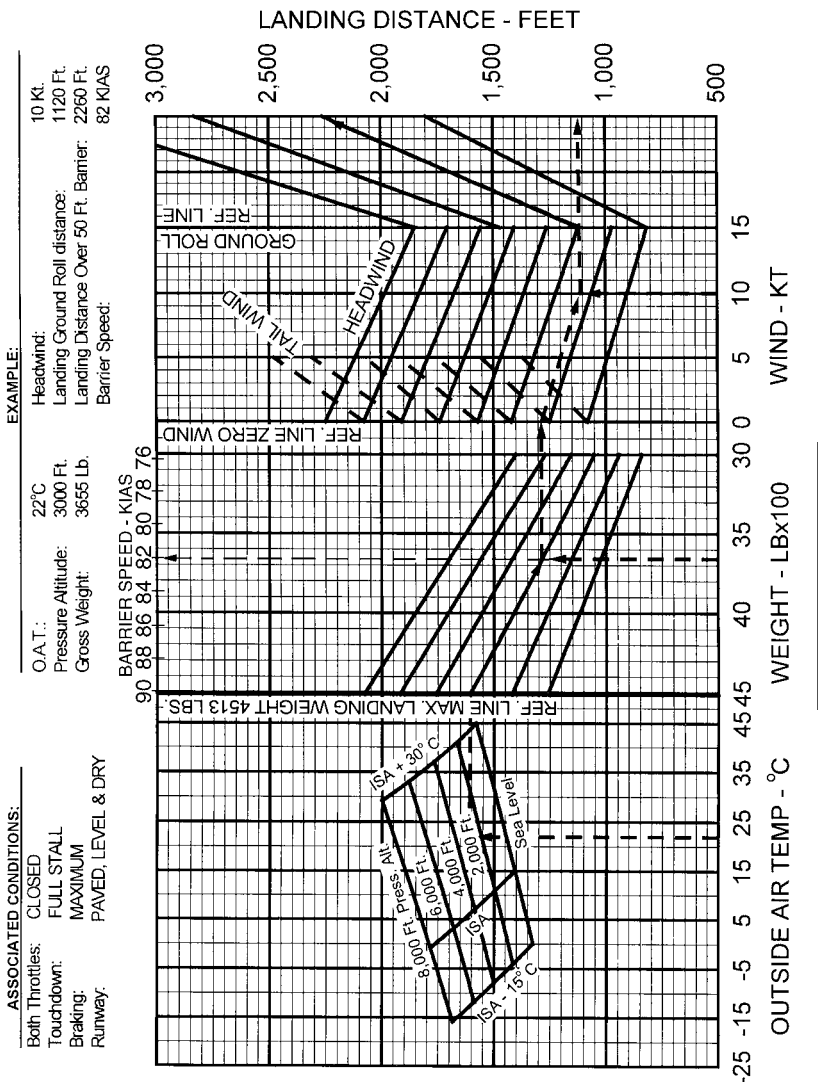
BALKED LANDING CLIMB PERFORMANCE
4300 LB, GEAR DOWN, FLAPS 40°



BALKED LANDING CLIMB PERFORMANCE - 4300 LB.

Figure 5-73

NORMAL PROCEDURE LANDING - FLAPS 40°



LANDING DISTANCE - NORMAL PROCEDURE

Figure 5-75

PIPER AIRCRAFT CORPORATION
PA-34-220T, SENECA III

SHORT FIELD EFFORT LANDING - FLAPS 40°

