5.0 PERFORMANCE

5.1. INTRODUCTION

The performance tables and diagrams on the following pages have been prepared to illustrate the performance you may expect from your airplane as well as to assist you in precise flight planning. The data presented in these tables and diagrams has been derived from test-flights using an airplane and engine in good operating condition, and was corrected to standard atmospheric conditions (15° C (59° F) and 1013.25 mbar (29.92 in. Hg) at sea level).

The performance tables do not take into account the expertise of the pilot or the maintenance condition of the airplane. The performance illustrated in the tables can be achieved if the indicated procedures are followed and the airplane is in good maintenance condition. Note that the flight duration data does not include a fuel reserve. The fuel consumption during cruise is based on propeller RPM and manifold pressure settings. Some undefined variables such as the operating condition of the engine, contamination of the aircrafts surface, or turbulence could have influences on flight distance and flight duration. For this reason, it is of utmost importance that all available data is used when calculating the required amount of fuel for a flight.

For flight operation without wheel fairings the resulting performance variations is given in %.

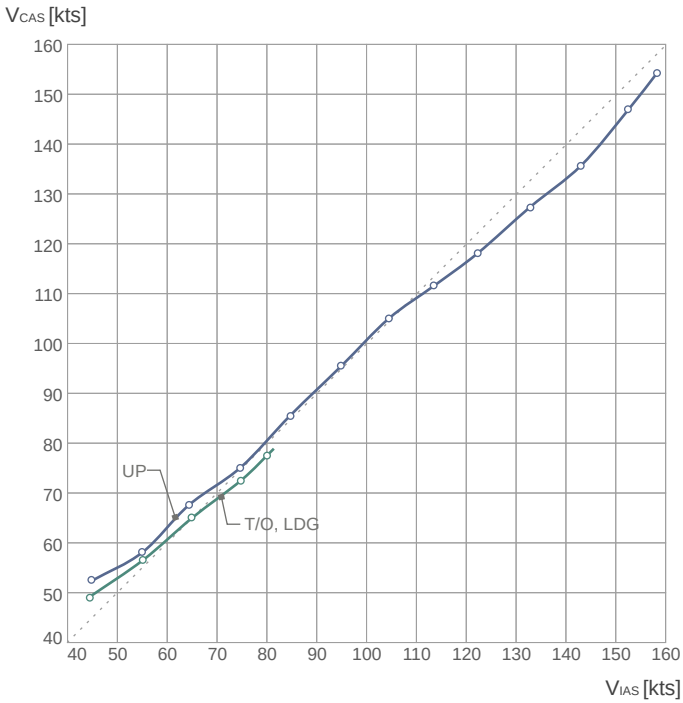
5.2. USE OF PERFORMANCE TABLES AND DIAGRAMS

The performance data is shown in the form of tables and diagrams to illustrate the influence of the different variables. These tables contain sufficiently detailed information to plan any flight with the necessary precision and safety on the conservative side.

5.3. PERFORMANCE TABLE AND DIAGRAMS

5.3.1 AIRSPEED SYSTEM CALIBRATION

Assumes zero indicator error



Example: v_{IAS} = 93 kts equals v_{CAS} = 95 kts

5.3.2 CRUISING PERFORMANCE

Pressure altitude		Standard Temp.		Engine Power in % of maximum continuous power							
				55%				65%			
				RPM	MP	Fuel Flow		RPM	MP	Fuel Flow	
Ft.	M	°C	°F	X100	In.Hg	L/hr	Gal/hr	X100	In.Hg	L/hr	Gal/hr
0	0	15	59	19	24.7	13.6	3.6	20	25.7	15.6	4.1
2000	600	11	52	19	24.0	14.4	3.8	20	24.7	16.0	4.2
4000	1200	7	45	19	23.3	15.6	4.1	21	23.3	16.8	4.4
6000	1800	3	38	20	22.0	16.8	4.4	22	22.7	19.6	5.2
8000	2400	-1	31	21	21.0	18.0	4.8	22	21.7	21.2	5.6
10000	3000	-5	24	22	19.7	19.2	5.1	22.6	20.3*	22.4*	5.9*
12000	3600	-8	17	22.6	18.0*	20.4*	5.4*				
13000	4000	-11	12	22.6	17.0*	21.5*	5.7*				

Pressure altitude		Standard Temp.		75%				85%			
				RPM	MP	Fuel Flow		RPM	MP	Fuel Flow	
Ft.	M	°C	°F	X100	In.Hg	L/hr	Gal/hr	X100	In.Hg	L/hr	Gal/hr
0	0	15	59	21	27.0	18.0	4.8	22.6	27.7	22.0	5.8
2000	600	11	52	22	25.7	18.4	4.9	22.6	26.7	22.4	5.9
4000	1200	7	45	22.6	24.3	19.6	5.2	22.6	25.7*	25.2*	6.7*
6000	1800	3	38	22.6	23.3	23.2	6.1				
8000	2400	-1	31	22.6	22.0*	23.6*	6.2*				

Pressure altitude		Standard Temp.		Maximum Continous Power				Maximum Take-Off Power			
				RPM	MP	Fuel Flow		RPM	MP	Fuel Flow	
Ft.	M	°C	°F	X100	In.Hg	L/hr	Gal/hr	X100	In.Hg	L/hr	Gal/hr
0	0	15	59	22.6	28.3	26.0	6.9	23.8	29.7*	30.0	7.9*
2000	600	11	52	22.6	27.7*	26.8*	7.1*				
4000	1200	7	45	22.6	25.7*	25.2*	6.7*				
6000	1800	3	38								

Fuel flow is given in US-gal.

Data labelled * give a basis for interpolation. These values may not be attained at the stated altitude. To maintain constant performance at non standard temperature gradient:

Raise manifold pressure by 0.7 in.Hg at ISA + 18° F (10° C)
Lower manifold pressure by 0.7 in.Hg at ISA - 18° F (10° C)

NOTE:
To keep engine wear to a minimum, engine operation below 1900 RPM is not recommended.

5.3.3 STALL SPEEDS

Configuration: Idle, most forward center of gravity, max. weight (this is the most adverse configuration)

Stall speeds in kts

Flaps	Bank Angle							
	0°		30°		45°		60°	
	IAS	CAS	IAS	CAS	IAS	CAS	IAS	CAS
UP	41	50	46	53	55	59	69	70
T/O	39	46	44	49	51	54	63	65
LDG 	37	33	41	47	49	52	59	62

Stall speeds in mph

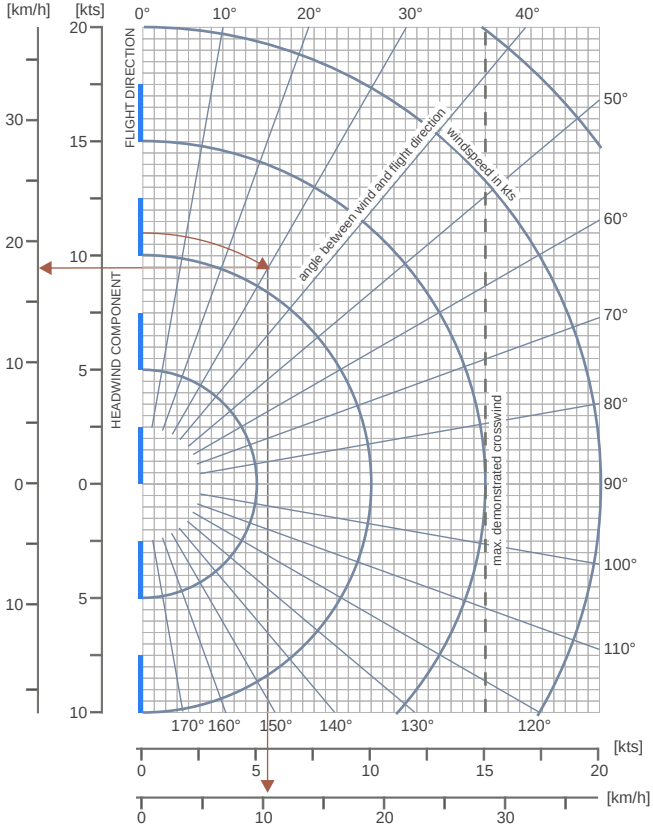
Flaps	Bank Angle							
	0°		30°		45°		60°	
	IAS	CAS	IAS	CAS	IAS	CAS	IAS	CAS
UP	47	57	53	62	63	68	79	81
T/O	45	52	51	56	59	62	72	75
LDG 	43	50	47	54	56	60	68	72

Stall speeds in km/h

Flaps	Bank Angle							
	0°		30°		45°		60°	
	IAS	CAS	IAS	CAS	IAS	CAS	IAS	CAS
UP	76	93	85	99	101	109	127	130
T/O	72	84	81	91	94	100	117	120
LDG 	69	81	76	87	91	96	109	115

5.3.4 WIND COMPONENTS

Maximum demonstrated crosswind component: 15 kts (27 km/h)



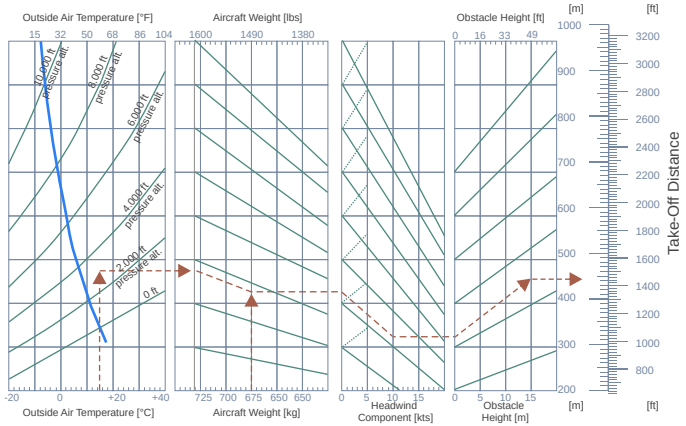
Example:

Wind speed:	11 kts (20 km/h)
Angle between wind direction and flight direction:	30°
Headwind component:	9.5 kts (18 km/h)
Crosswind component:	5.5 kts (10 km/h)

5.3.5 TAKE-OFF DISTANCE

Conditions:

- Maximum take-off power
- Lift-off speed 53 KIAS and speed for climb over obstacle 57 KIAS
- Level runway, paved
- Wing Flaps T/O



Example:

- Pressure altitude:	3000 ft
- Outside temperature:	15° C (59° F)
- Weight :	725 kg(1598 lbs)
- Wind:	10 kts

Result:

- Take-Off roll distance:	312 m (1025 ft)
- Take-Off distance to clear a 15 m (50 ft) obstacle:	434 m (1425 ft)

NOTE:

Poor maintenance condition of the airplane, deviation from the given procedures as well as unfavourable outside conditions (high temperature, rain, unfavourable wind conditions, including cross-wind) could increase the take-off distance considerably.

For take-off from dry, short-cut grass covered runways, the following corrections must be taken into account, compared to paved runways:

- Grass up to 5cm (2in) deep: 10% increase in take-off roll distance;
- Grass 5 to 10cm (2 to 4in) deep: 15% increase in take-off roll distance;
- Grass deeper than 10cm (4in): 25% increase in take-off roll distance.

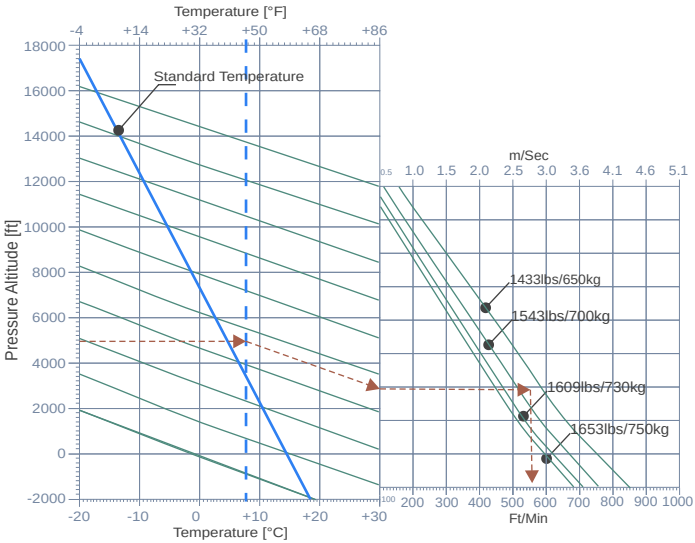
On wet soft grass covered runways with grass deeper than 10cm (4in), the take-off roll distance might be increased by as much as 40%.

This information is provided for guidance purposes only and has not been demonstrated.

The dashed lines in the above diagram (wind component) represents tailwind.

5.3.6 CLIMB PERFORMANCE / SERVICE CEILING

Service Ceiling (in standard conditions):	17600 ft (5365 m)
Best Rate-of-Climb Speed with Wing Flaps T/O:	65 kts / 75 mph / 120 km/h

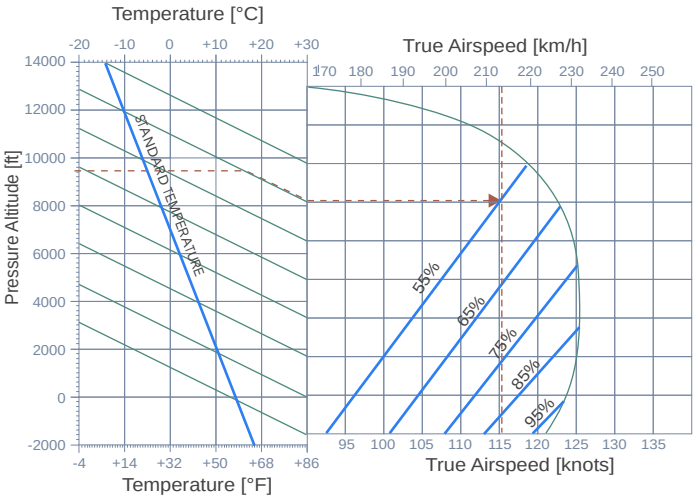


Example:	Pressure Altitude:	5000 ft (1524 m)
	OAT:	46°F(8°C)
	Weight :	1477 lbs (670 kg)
Result:	Climb performance:	554 ft/min (2.82 m/s)

CAUTION:
In case of operation without wheel fairings the climb performance is reduced by approximately 3%.

5.3.8 CRUISING SPEED (TRUE AIRSPEED)

Diagram for true airspeed (TAS) calculation at selected power level.
Flight mass 1653 lbs (750 kg) and Flaps UP.

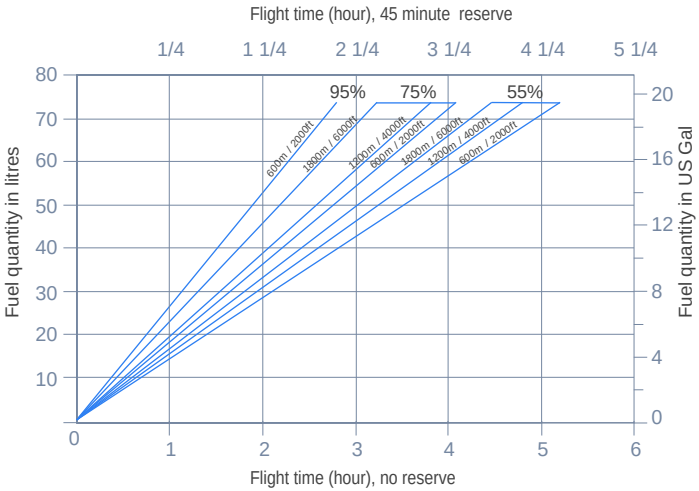


Example:	Pressure altitude:	9500 ft
	Temperature:	57° F (14° C)
	Power setting:	55 %
Result:	True airspeed (TAS):	116 kts (215 km/h)

CAUTION:
In case of operation without wheel fairings the maximum cruising speed is reduced by approximately 5%.

5.3.9 MAXIMUM FLIGHT DURATION

Diagram for calculation of the maximum flight duration depending on fuel availability.

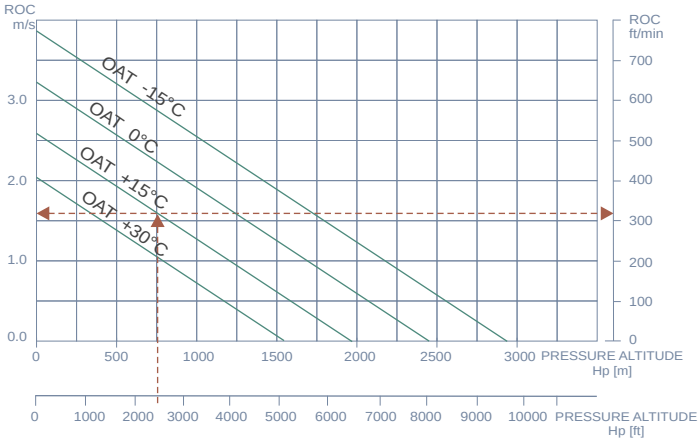


Example:	Fuel quantity:	13.2 US gal (50 liters)
	Pressure Altitude:	6000 ft
	PowerSetting:	75%
Result:	Possible flight time without reserve:	2:11 h:min
	Possible flight time with reserve of 45 mins:	1:26 h:min

5.3.10 CLIMB PERFORMANCE DURING BALKED LANDING

Conditions:

Speed = 57 kts / 66 mph / 106 km/h
Wing Flaps in Landing Position (LDG)
Weight 1653 lbs (750 kg)
most forward center of gravity
max take-off power



Example: Pressure altitude: 2250 ft (685 m)
Outside temperature: 59° F (15° C)

Result: Climb performance during balked landing: 320 ft/min. (1.63 m/sec)

CAUTION:
In case of operation without wheel fairings the climb performance is reduced by approximately 3%.

5.3.11 LANDING DISTANCE

Conditions:
- Throttle: Idle
- Maximum T/O Weight
- Propeller Speed Control Lever: max RPM
- Approach Speed 57 kts / 66 mph / 106 km/h
- Level Runway, paved
- Wing Flaps in Landing position (LDG)
- Standard Setting, MSL

Landing distance over a 15 m (50 ft) obstacle: approx. 1532 ft (467 m)
Landing roll distance: approx. 790 ft (241 m)

Height above MSL	ft. (m)	0 (0)	1000 (305)	2000 (610)	3000 (915)	4000 (1220)	5000 (1524)
Landing Distance	ft. (m)	1490 (454)	1550 (472)	1609 (491)	1669 (509)	1728 (527)	1788 (545)
Landing Roll Distance	ft. (m)	748 (228)	770 (235)	793 (242)	817 (249)	842 (257)	868 (265)

NOTE:

Poor maintenance condition of the airplane, deviation from the given procedures as well as unfavourable outside conditions (high temperature, rain, unfavourable wind conditions, including cross-wind) could increase the landing distance considerably.

For landings on dry, short-cut grass covered runways, the following corrections must be taken into account, compared to paved runways:

- Grass up to 5cm (2in) deep: 5% increase in landing roll distance;
- Grass 5 to 10cm (2 to 4in) deep: 15% increase in landing roll distance;
- Grass deeper than 10cm (4in): 25% increase in landing roll distance.

On wet soft grass covered runways with grass deeper than 10cm (4in), the landing roll distance might be increased by as much as 40%.

This information is provided for guidance purposes only and has not been demonstrated.

5.4. NOISE DATA

a)	Noise limit according to FAR 36, Appendix G:	75.0 dB (A)
	Noise value measured:	63.8 dB (A)
b)	Noise limit according to ICAO Annex 16, Chapter 10:	79.1 dB (A)
	Noise value measured:	71.7dB (A)