

5.3.11 LANDING DISTANCES

Conditions:

- Power lever. both IDLE
- Flaps. LDG, APP or UP
- Runway. dry, paved, level
- Approach speed V_{REF}

The following factors are to be applied to the computed landing distance for the noted condition:

- Headwind: Decrease by 10% for each 14 kt (7.2 m/s) headwind.
- Tailwind: Increase by 10% for each 3 kt (1.5 m/s) tailwind.
- Paved runway, wet: Increase by 15%.
- Grass runway, dry, 5 cm (2 in) long: Increase the ground roll by 10%.
- Grass runway, dry, 5 cm (2 in) to 10 cm (3.9 in) long: Increase the ground roll by 15%.
- Grass runway, dry, longer than 10 cm (3.9 in): Increase the ground roll at least by 25%.
- Grass runway, wet or soft runway: Increase the ground roll by 10%.
- Downhill slope: Increase the ground roll by 9% for each 1% (1 m per 100 m or 1 ft per 100 ft) of slope.

WARNING

For a safe landing the available runway length must be at least equal to the landing distance over a 50 ft (15 m) obstacle.

WARNING

Poor maintenance condition of the airplane, deviation from the given procedures, uneven runway, as well as unfavorable external factors (rain, unfavorable wind conditions, including cross-wind) will increase the landing distance.

CAUTION

The factors in the above corrections are typical values. On wet ground or wet soft grass covered runways the landing distance may become significantly longer than stated above. In any case the pilot must allow for the condition of the runway to ensure a safe landing.

The above corrections for runway slope should be used with caution since published runway slope data is usually the net slope from one end of the runway to the other. Runways may have positions at their length at greater or lesser slopes than published slope, lengthening (or shortening) the landing roll estimated with these tables.

NOTE

The effect of 50% of the headwind component and 150% of the tailwind component is already incorporated in the head- and tailwind factors.

Landing Distance - Flaps LDG - 1999 kg / 4407 lb								
Weight:	1999 kg / 4407 lb				Flaps: LDG			
V _{REF} :	86 KIAS				Power: IDLE			
Runway: dry, paved, level								
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	370	380	400	410	440	500	386
	15 m / 50 ft	620	640	660	680	730	820	645
1000 305	Ground Roll	380	400	410	420	470	520	398
	15 m / 50 ft	640	660	680	700	760	860	661
2000 610	Ground Roll	400	410	420	440	490	550	407
	15 m / 50 ft	660	680	700	720	800	900	678
3000 914	Ground Roll	410	430	440	460	520	580	420
	15 m / 50 ft	680	700	720	750	840	940	695
4000 1219	Ground Roll	430	440	460	480	540	610	434
	15 m / 50 ft	700	720	750	790	890	990	713
5000 1524	Ground Roll	440	460	470	510	580		445
	15 m / 50 ft	720	750	770	830	930		732
6000 1829	Ground Roll	460	480	490	540	610		459
	15 m / 50 ft	750	770	790	870	970		751
7000 2134	Ground Roll	480	500	510	580	650		477
	15 m / 50 ft	780	800	830	920	1030		778
8000 2438	Ground Roll	510	530	550	630	700		506
	15 m / 50 ft	820	850	880	990	1110		816
9000 2743	Ground Roll	550	570	610	680	760		541
	15 m / 50 ft	870	900	950	1070	1190		860
10000 3048	Ground Roll	590	620	660	750			582
	15 m / 50 ft	930	960	1030	1160			911
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

Landing Distance - Flaps LDG - 1900 kg / 4189 lb								
Weight:	1900 kg / 4189 lb				Flaps: LDG			
V _{REF} :	84 KIAS				Power: IDLE			
Runway: dry, paved, level								
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	350	370	380	390	420	480	369
	15 m / 50 ft	600	610	630	650	700	780	618
1000 305	Ground Roll	370	380	390	410	450	500	381
	15 m / 50 ft	610	630	650	670	730	820	634
2000 610	Ground Roll	380	390	410	420	470	530	390
	15 m / 50 ft	630	650	670	690	770	860	650
3000 914	Ground Roll	390	410	420	440	500	550	402
	15 m / 50 ft	650	670	690	720	810	900	667
4000 1219	Ground Roll	410	420	440	460	520	580	415
	15 m / 50 ft	670	690	710	760	850	950	684
5000 1524	Ground Roll	420	440	450	490	550		426
	15 m / 50 ft	700	720	740	800	890		702
6000 1829	Ground Roll	440	450	470	520	580		439
	15 m / 50 ft	720	740	760	840	940		720
7000 2134	Ground Roll	460	480	490	550	620		456
	15 m / 50 ft	750	770	800	890	990		749
8000 2438	Ground Roll	490	510	530	600	670		484
	15 m / 50 ft	790	820	850	960	1070		786
9000 2743	Ground Roll	530	550	580	660	730		519
	15 m / 50 ft	840	870	920	1030	1150		831
10000 3048	Ground Roll	570	590	640	720			561
	15 m / 50 ft	900	930	1000	1120			882
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

Landing Distance - Flaps LDG - 1700 kg / 3748 lb								
Weight:	1700 kg / 3748 lb				Flaps: LDG			
V _{REF} :	84 KIAS				Power: IDLE			
Runway: dry, paved, level								
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	320	330	340	360	380	430	335
	15 m / 50 ft	550	570	590	600	650	730	575
1000 305	Ground Roll	330	350	360	370	400	460	345
	15 m / 50 ft	570	590	600	620	680	760	589
2000 610	Ground Roll	350	360	370	380	430	480	356
	15 m / 50 ft	590	610	620	640	710	800	603
3000 914	Ground Roll	360	370	380	400	450	500	364
	15 m / 50 ft	610	630	640	670	750	840	619
4000 1219	Ground Roll	370	380	400	420	470	530	376
	15 m / 50 ft	630	640	660	700	790	880	635
5000 1524	Ground Roll	380	400	410	440	500		388
	15 m / 50 ft	640	670	680	740	830		651
6000 1829	Ground Roll	400	410	430	470	530		397
	15 m / 50 ft	670	690	710	770	870		668
7000 2134	Ground Roll	420	430	450	500	560		416
	15 m / 50 ft	690	720	740	820	920		691
8000 2438	Ground Roll	450	460	480	550	610		441
	15 m / 50 ft	730	760	790	890	990		729
9000 2743	Ground Roll	490	500	530	600	680		477
	15 m / 50 ft	780	810	860	960	1070		773
10000 3048	Ground Roll	530	550	600	670			521
	15 m / 50 ft	840	870	930	1050			826
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

Landing Distance - Abnormal Flap Position - 1999 kg / 4407 lb								
Weight:	1999 kg / 4407 lb				Flaps: APP or UP			
V _{REF} :	92 KIAS				Power: IDLE			
Runway: dry, paved, level								
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	510	530	540	560	610	680	529
	15 m / 50 ft	860	880	910	930	1010	1130	892
1000 305	Ground Roll	530	540	560	580	640	720	546
	15 m / 50 ft	880	910	940	960	1050	1180	913
2000 610	Ground Roll	540	560	580	600	670	760	562
	15 m / 50 ft	910	940	970	990	1110	1240	936
3000 914	Ground Roll	560	580	600	630	710	790	577
	15 m / 50 ft	940	970	990	1030	1160	1300	961
4000 1219	Ground Roll	580	610	630	660	750	840	595
	15 m / 50 ft	970	1000	1030	1090	1220	1360	984
5000 1524	Ground Roll	600	630	650	700	790		612
	15 m / 50 ft	1000	1030	1060	1140	1280		1011
6000 1829	Ground Roll	630	650	670	740	830		631
	15 m / 50 ft	1030	1060	1100	1200	1340		1037
7000 2134	Ground Roll	660	680	700	790	880		656
	15 m / 50 ft	1080	1110	1140	1280	1430		1078
8000 2438	Ground Roll	700	730	760	860	960		695
	15 m / 50 ft	1140	1170	1220	1370	1530		1133
9000 2743	Ground Roll	750	780	830	930	1040		742
	15 m / 50 ft	1210	1250	1320	1490	1660		1196
10000 3048	Ground Roll	810	840	910	1020			795
	15 m / 50 ft	1300	1340	1440	1610			1273
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

Landing Distance - Abnormal Flap Position - 1900 kg / 4189 lb

Weight:		1900 kg / 4189 lb			Flaps: APP or UP			
V_{REF}:		86 KIAS			Power: IDLE			
		Runway: dry, paved, level						
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	490	500	520	540	580	650	508
	15 m / 50 ft	820	840	870	890	960	1070	849
1000 305	Ground Roll	500	520	540	560	610	690	522
	15 m / 50 ft	840	870	890	920	1010	1120	871
2000 610	Ground Roll	520	540	560	580	650	720	538
	15 m / 50 ft	870	890	920	950	1060	1180	893
3000 914	Ground Roll	540	560	580	600	680	760	552
	15 m / 50 ft	890	920	950	980	1110	1240	917
4000 1219	Ground Roll	560	580	600	640	710	800	569
	15 m / 50 ft	920	950	980	1040	1160	1300	940
5000 1524	Ground Roll	580	600	620	670	750		587
	15 m / 50 ft	950	980	1010	1090	1220		963
6000 1829	Ground Roll	600	620	640	710	790		603
	15 m / 50 ft	980	1010	1050	1140	1280		990
7000 2134	Ground Roll	630	650	680	760	850		630
	15 m / 50 ft	1030	1060	1090	1220	1360		1027
8000 2438	Ground Roll	670	700	730	820	920		669
	15 m / 50 ft	1090	1120	1170	1310	1470		1082
9000 2743	Ground Roll	730	750	800	900	1010		714
	15 m / 50 ft	1160	1200	1270	1420	1590		1147
10000 3048	Ground Roll	790	810	880	990			769
	15 m / 50 ft	1250	1280	1380	1550			1224
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

Landing Distance - Abnormal Flap Position - 1700 kg / 3748 lb								
Weight:	1700 kg / 3748 lb				Flaps: APP or UP			
V _{REF} :	86 KIAS				Power: IDLE			
Runway: dry, paved, level								
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	440	460	470	490	530	590	461
	15 m / 50 ft	750	770	800	820	880	980	781
1000 305	Ground Roll	460	470	490	510	560	620	475
	15 m / 50 ft	770	800	820	840	920	1030	799
2000 610	Ground Roll	470	490	510	520	590	660	490
	15 m / 50 ft	800	820	850	870	970	1080	819
3000 914	Ground Roll	490	510	530	550	620	690	503
	15 m / 50 ft	820	850	870	900	1020	1130	840
4000 1219	Ground Roll	510	530	540	580	650	730	518
	15 m / 50 ft	850	870	900	950	1070	1190	861
5000 1524	Ground Roll	530	550	570	610	690		532
	15 m / 50 ft	870	900	930	1000	1120		885
6000 1829	Ground Roll	550	570	590	640	720		549
	15 m / 50 ft	900	930	960	1050	1180		907
7000 2134	Ground Roll	580	600	620	690	770		575
	15 m / 50 ft	940	970	1000	1120	1250		942
8000 2438	Ground Roll	620	640	670	750	840		611
	15 m / 50 ft	1000	1030	1080	1210	1350		998
9000 2743	Ground Roll	670	690	740	830	930		659
	15 m / 50 ft	1070	1110	1170	1320	1470		1061
10000 3048	Ground Roll	730	760	820	920			714
	15 m / 50 ft	1160	1200	1290	1440			1141
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								