

CESSNA PERFORMANCE TAKEOFF DISTANCE

MAXIMUM WEIGHT 2950 LBS

EXAMPLE PROBLEM
 PRESSURE ALTITUDE: 2000 FT.
 TEMPERATURE: 21° C
 WIND: 15KTS HEADWIND
 GROSS WEIGHT: 2950 LBS

CONSIDERATIONS

PAY ATTENTION TO THE AIRCRAFT CONDITIONS AND NOTES. THIS CHART IS VALID FOR FLAPS 20, 2600 RPM, WITH COWL FLAPS OPEN ON A DRY, PAVED, LEVEL RUNWAY. THIS IS PERFORMANCE FOR TAKEOFF OVER A 50' OBSTACLE. THE COLUMN TO THE LEFT UNDER EACH TEMPERATURE RANGE REPRESENTS THE GROUND ROLL DISTANCE. REALIZE THAT THERE ARE A LOT OF VARIABLES IN PERFORMANCE NUMBERS AND YOU ARE NOT A PERFECT PILOT. ADD SAFETY MARGIN TO ENSURE YOU OPERATE SAFELY. 500' IS A GOOD START.

STUDY TECHNIQUE

FOLLOW ALONG WITH THE PRACTICE PROBLEM FIRST. AFTER YOU FEEL COMFORTABLE WITH HOW THE TABLE WORKS, DO SOME PRACTICE PROBLEMS ON YOUR OWN. IF YOU ARE FLYING A CESSNA OR ANOTHER AIRPLANE WITH CHARTS LIKE THIS, YOU NEED TO BE VERY FAMILIAR WITH THEM. IF YOU FLY AN AIRPLANE WITHOUT THESE CHARTS, BE FAMILIAR ENOUGH TO COMFORTABLY ANSWER QUESTIONS ON YOUR WRITTEN TEST.

CONDITIONS:
 Flaps 20°
 2600 RPM and Full Throttle Prior to Brake Release
 Cowl Flaps Open
 Paved, Level, Dry Runway
 Zero Wind

4. OTHER FACTORS
 DEPENDING ON YOUR MODEL,
 THE NOTES SECTION WILL VARY.
 IN THIS EXAMPLE, WE MUST
 FACTOR IN THE DIFFERENT WINDS.

- NOTES:**
- Maximum performance technique as specified in Section 4.
 - Prior to takeoff from fields above 5000 feet elevation, the mixture should be leaned to give maximum power in a full throttle, static runup.
 - Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
 - Where distance value has been deleted, climb performance after lift-off is less than 150 fpm at takeoff speed.
 - For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WE SEE THAT A 15KT HEADWIND DECREASES DISTANCE BY JUST UNDER 15%

$1740 * .85 = 1479 \text{ FEET}$

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
2950	49	57	S.L.	635	1220	680	1305	730	1395	780	1490	835	1590
			1000	690	1280	730	1365	830	1530	850	1635	910	1745
	2000	57	1000	755	1485	810	1505	870	1680	900	1800	995	1925
			2000	815	1545	890	1725	950	1850	1020	1985	1090	2130
	3000	57	2000	890	1725	970	1905	1030	2030	1120	2205	1195	2370
			3000	970	1815	1065	2115	1110	2235	1200	2460	1315	2655
	6000	1090	2185	1175	2360	1290	2655	1350	2775	1490	3145	---	---
				7000	1200	2450	1290	2655	1350	2775	1490	3145	---
8000	1325	2765	1425	3015	1530	3300	---	---	---	---	---	---	
			---	---	---	---	---	---	---	---	---	---	

1. START WITH WEIGHT
 THIS CHART ONLY HAS THE MAX. TAKEOFF WEIGHT LISTED, WHICH IS THE MOST CONSERVATIVE VALUE. OTHER CHARTS MAY HAVE MULTIPLE WEIGHT VALUES OR A CONVERSION FACTOR FOR LOWER WEIGHTS.

2. GO TO PRESSURE ALTITUDE
 IN THIS CASE, OUR PRESSURE ALTITUDE IS 2,000 FEET.

3. SELECT TEMPERATURE
 THERE ARE TEMPERATURE COLUMNS FOR 20° AND 30°. BECAUSE OUR VALUE OF 21° IS IN BETWEEN, WE MUST INTERPOLATE.

DIRECTLY ACROSS

INTERPOLATE

1740