

HELP FOR TAKEOFF & LANDING

PURPOSE: The Takeoff and Landing Distance App is used to calculate the Takeoff and Landing distance for a given Aircraft under given conditions.

Calculation is **available ONLY for these 61 Aircraft**

Air Tractor 802-A 1424 SHP	Cirrus SR20	Piper PA-28R-201 Arrow III
Air Tractor 802-A 1173 SHP	Cub Crafter CC11-100	Piper PA-28R-201 Arrow III
Air Tractor 802 PT6A-67AG	Diamond DA20 Katana	Flaps 25
American Legend AL-3C, AL-11C, AL-11J	Diamond DA 20-C1	Piper PA-28R-201T Turbo
Beech Bonanza A36	Diamond DA 40	Arrow III
Beech Bonanza E35	Diamond DA 40D Diesel	Piper PA-28RT-201T Turbo
Beech Bonanza M35	Grumman AA-5B Tiger POH	Arrow IV
Beech Bonanza V35	Rev 4 1983	Piper PA-28RT-201T Turbo
Beechcraft Sierra C24R	Grumman AA-5B-137 1979	Arrow IV Flaps 25
Cessna 150-M	Grumman AG-5B	Piper PA-28-236 Dakota
Cessna 162 Sky Catcher	Gulfstream American	Piper PA-32-301 Saratoga
Cessna 172-A	GA-7/Cougar	2-Blade
Cessna 172-L	Mooney M20J	Piper PA-32-301 Saratoga
Cessna 172-M POH	Mooney M20K	3-Blade
Cessna 172-M 1974	Mooney M20M	Piper PA-32RT-300T Turbo
Cessna 172-N 1979	Piper PA-24-260B Comanche	Lance II
Cessna 172-P	Piper PA-28-140 Cherokee	Piper PA-34-200T Seneca II
Cessna 172-R	Piper PA-28-161 Warrior II	Piper PA-44-180 Seminole
Cessna 172-S	Piper PA-28-181 Archer II	Piper PA-46R-350T Malibu
Cessna 177-RG	Piper PA-28-181 Archer II	Matrix
Cessna 182-R	Flaps 25	Rockwell Commander 114
Cessna Turbo182-T	Piper PA-28R-180 Arrow I	Socata TB 20
Cessna 310-R	Piper PA-28R-200 Arrow II	Socata TB200
Cessna Cardinal	Piper PA-28R-200 Arrow II TO	Socata TBM 850N
	Flaps 25	

When to Use the Takeoff & Landing Distance

The current POH/AFM must be the source for takeoff and landing distance calculations

Use this screen when you want to get an idea of performance based either on current conditions or on conditions that can be specified by the user. The sliders under the variables make a nice tool for viewing the effects of varying takeoff and landing conditions.

To get a feel for how changing conditions will change aircraft performance

The T&L App makes it easy to watch how aircraft performance changes based on changing environment conditions. The sliders really help with this visualization.

NOTE: Unless otherwise stated the calculations are based on level, dry pavement.

Important Note

The modeling techniques used to make these calculations vary based on the performance data supplied by the manufacturer. Some techniques allow more flexibility and speculation than others. For example it is possible to set conditions to extremes that could never exist in real life. In some cases it may even be possible to show the airplane takeoff in a negative distance. The extreme cases and extrapolations make for interesting conversation, but care must be taken to **consult the AFM/POH supplied by the manufacturer** to make sure the results make sense.

How to Use the Takeoff & Landing Distance

To calculate the Takeoff and Landing distances

Touch the button to select an Aircraft

Touch the Station ID (Blue Button) at the top/left of the screen and the Airport Search screen will be presented

Enter a few characters from the Station ID or the Airport name or the Airport City

Select the Airport by touching it

Most airports will have the runways defined.

Calculations for additional runways may be added by clicking on the desired runway button on the right side of the screen

If a runway is selected that does not exist in the database the calculation will be performed with the runway distance set based on the default distance entered on the Options page

Enter the Weather conditions. If the selected Airport has a METAR station the current weather can be obtained by touching the Get WX button.

The Results

The runway ID with runway Length and Width (if available)

Wind H Headwind, calculated based on the wind direction and speed and the runway heading

Wind X Crosswind, calculated based on the wind direction and speed and the runway heading

Tkof/Land Takeoff and Landing Ground Roll

Remaining Runway distance remaining after the Takeoff or Landing Ground Roll

>50' Takeoff or Landing total distance to clear a 50 feet obstacle

These distances are expressed in either Feet or Meters depending on the selected Option.

The current METAR data for the station can be obtained for use in this calculation by touching the Get WX button.

Options

Default Airplane

Touch the button and select the Default Airplane to be displayed when the App starts

Home Airport

Touch the Station ID (Blue Button) button and Select the Airport used when the App starts

Load WX at Start

Turn this switch ON to have the METAR for the Home Airport automatically load when the App starts

Alternate METAR

If the Home Airport does not have a METAR station you can designate a nearby Alternate METAR station to be used for weather information

Use / Don't Use

Use this switch to indicate whether the Alternate METAR station should be used

Default Runway Length

Enter the runways length to be used for runways not defined in the database.

Runway Remain Warn (Yellow)

Enter the distance to be used to determine if the Takeoff or Landing distance should be colored Yellow if less than this distance is available after the takeoff or landing roll

Runway Remain Min (Red)

Enter the distance to be used to determine if the Takeoff or Landing distance should be colored Red if less than this distance is available after the takeoff or landing roll

Begin Takeoff Roll

The point on the runway where the Takeoff Roll Begins

Begin Landing Roll

The point on the runway where the Landing Roll Begins

Dry Grass

Turn this switch ON to set Dry Grass as the default runway surface

Default Dry Grass Takeoff %

Enter a percent of the takeoff distance to add for a Dry Grass runway surface. This number is used if the Dry Grass option is selected and the manufacturer does not supply a number to use.

Default Dry Grass Landing %

Enter a percent of the landing distance to add for a Dry Grass runway surface. This number is used if the Dry Grass option is selected and the manufacturer does not supply a number to use.

Wind Speed

Select either Knots or MPS (Meters per Second) for wind speed measurement

Temperature

Select either Celsius or Fahrenheit

Distance

Select either Feet or Meters for distance measurement. This option is used for both Pressure Altitude and the Takeoff & Landing distances.

Weight

Select either Pounds or Kilograms for weight measurement

The database used in the App contains over 10,000 airports. If you would like to review the list of airports please visit the CFI Tools Airports web page. Not all airports have runways defined.

<http://www.edgemontaviation.com/cfitools/html/Airports.html>

PLEASE NOTE: The source of the METARs used in this App is NOAA's National Weather Service Aviation Weather Center. It can be found here:

<http://aviationweather.gov/adds/metars/>

If the METAR station cannot be found with this site, it will not be available in this App.

Takeoff & Landing Distance Screenshot

iPad

11:17 AM

100%

TAKEOFF & LANDING

Cessna 182-R

Airport

KBOS

General Edward Lawrence Logan Intl, Boston, MA

More

Get Wx

	X	Wind	Tkof/Land	Remaining	
x 150	X	-0.9	743	5257	1694
14	H	3.8	788	4212	1483
5000	X	-3.2	571	3429	1301
x 100	X	-3.2	571	3429	1301
32	H	-3.8	981	4019	1846
5000	X	3.2	710	3290	1619
x 100	X	3.2	710	3290	1619
15L	H	3.2	794	1763	1494
2557	X	-3.8	575	982	1310
x 100	X	-3.8	575	982	1310
33R	H	-3.2	955	1602	1798
2557	X	3.8	692	865	1577
x 100	X	3.8	692	865	1577
15R	H	3.2	794	9289	1494
10083	X	-3.8	575	8508	1310
x 150	X	-3.8	575	8508	1310
33L	H	-3.2	955	9128	1798
10083	X	3.8	692	8391	1577
x 150	X	3.8	692	8391	1577

Runways

Wind Dir. 100



Speed(Kts) 5



Temp(C) 18



PrsAlt(Ft) -160

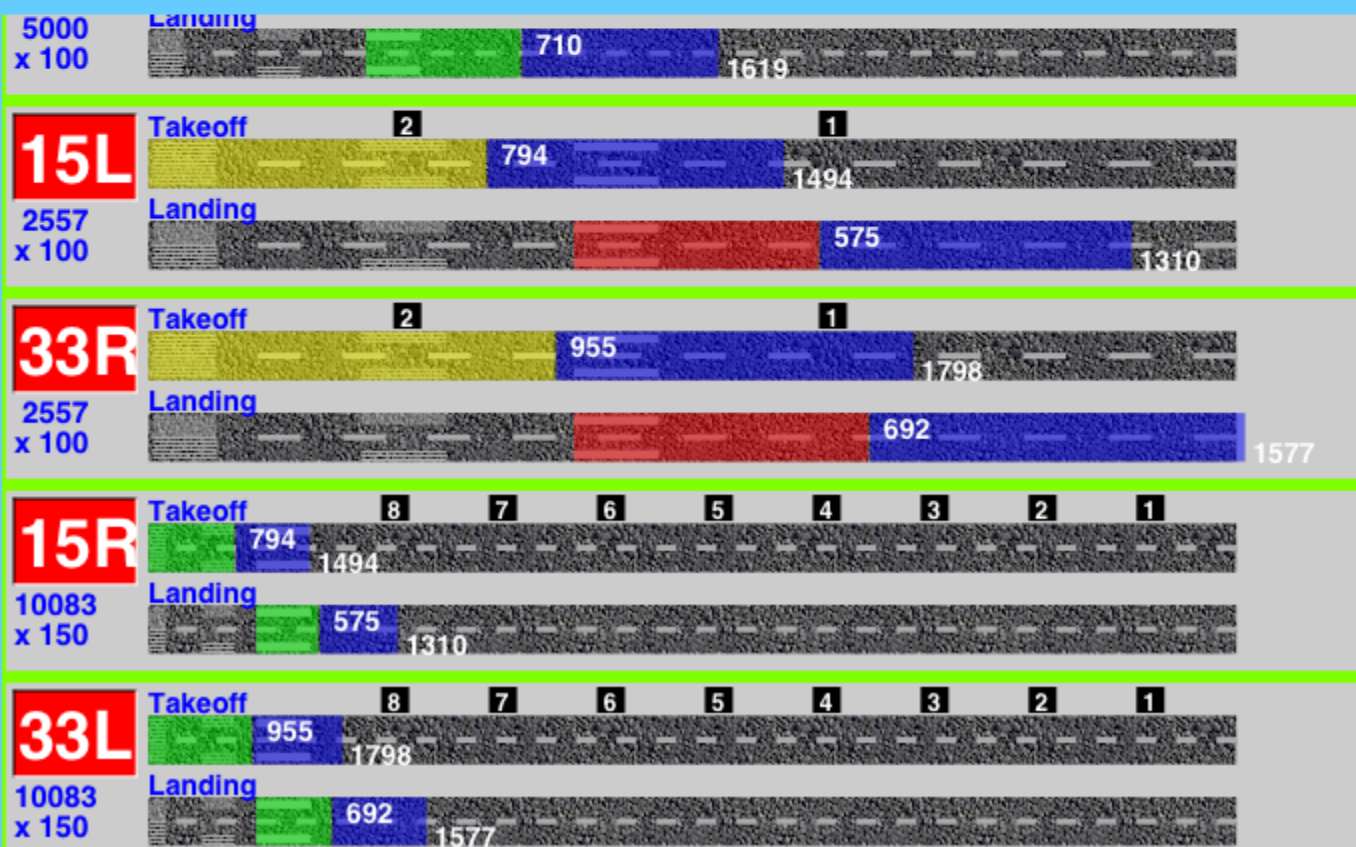


Weight(Lbs) 3100



Dry Grass OFF

- 1/19
- 2/20
- 3/21
- 4/22
- 5/23
- 6/24
- 7/25
- 8/26
- 9/27
- 10/28
- 11/29
- 12/30
- 13/31
- 14/32
- 15/33
- 16/34
- 17/35
- 18/36



Takeoff & Landing Distance with Alternate METAR Screenshot

TAKEOFF & LANDING

Cessna 182-R

Airport **K8W2**

New Market, New Market, VA

Alternate METAR [KLUA] In Use

More

Get Wx

Runways

06	Wind	Tkof/Land	Remaining	>50'
2920 H	-4.3	1132	1788	2139
x 60 X	2.5	767	1153	1723
24	Wind	Tkof/Land	Remaining	>50'
2920 H	4.3	886	2034	1674
x 60 X	-2.5	600	1320	1348

Wind Dir. **210**

Speed(Kts) **5**

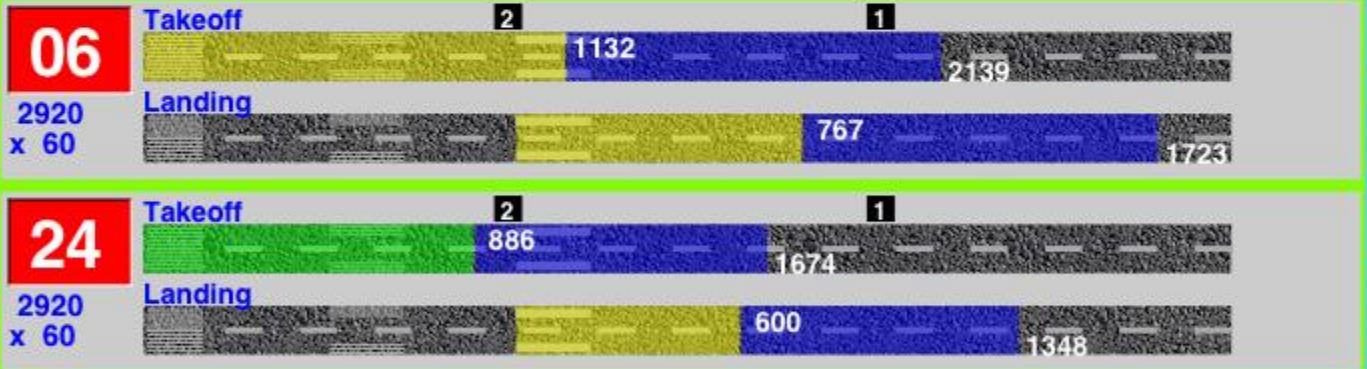
Temp(C) **26**

PrsAlt(Ft) **763**

Weight(Lbs) **3100**

Dry Grass OFF

- 1/19
- 2/20
- 3/21
- 4/22
- 5/23
- 6/24
- 7/25
- 8/26
- 9/27
- 10/28
- 11/29
- 12/30
- 13/31
- 14/32
- 15/33
- 16/34
- 17/35
- 18/36



Takeoff & Landing Distance Options Screenshot

iPad

11:20 AM

100%

Back

TAKEOFF & LANDING OPTIONS

Default Airplane

Beechcraft Bonanza V35

Home Airport:

K8W2

Load Wx at Start:

OFF

Alternate METAR:

KLUA

Use

Don't Use

Default Rwy Length:

3000

Rwy Remain Warn (Yellow)

2000

Rwy Remain Min. (Red)

1000

Begin Takeoff Roll:

0

Begin Landing Roll:

1000

Dry Grass Default

OFF

Dry Grass Takeoff %

15

Dry Grass Landing %

45

* - These percentages are only used if the manufacturer does not supply numbers.

Wind Speed:

Knots

MPS

Distance:

Feet

Meters

Temperature:

C

F

Weight:

Pounds

Kg

Show Ads

OFF

Beechcraft Bonanza V35

Cessna 150M

Cessna 172-L

Cessna 172-M 1974 Owner's Manual

Cessna 172-M POH

Cessna 172-N 1979

Cessna 172-P

Cessna 172-R

Cessna 172-S

Cessna 182-R

Cessna T182-T

Cessna 310R

Cessna Cardinal

Cirrus SR20

Diamond DA 20-C1 Eclipse

Diamond DA20 Gross Weight Increase

Diamond DA-40

Grumman AA-5B Tiger POH Rev 4 1983

Grumman AA5B-137 1979 Owner's Manual

Mooney M20M

Piper PA-28-161 Warrior II

Piper PA-28-181 Archer II

Piper PA-28-236 Dakota