

# **USER MANUAL**

## **LANDING DISTANCE CALCULATOR v1.3.2**



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## Introduction

Welcome to the Landing Distance Calculator.

It has been developed to facilitate pilots to calculate normal and non normal landing distances and brake cooling advice quickly for all available flap and brake configurations.

This version includes all KLM Boeing aircraft.

You may use this app completely free of charge. Thanks to a co-operation with [Wings of Support](#) you may, if you wish, make an in app [donation](#) to charity.

It would be appreciated if you could review this app in the [Apple app store](#).

I hope you will enjoy using this app.

Happy landings!

Roland Peeters (Captain 777)

For comments or suggestions please send me an [e-mail](#).

[Disclaimer](#)

## Overview

The Landing Distance Calculator calculates landing distances and brake cooling advice for various aircraft types. It also has an integrated wind calculator and several other features.

The app consists of 5 screens:

- The [main screen](#): displays all input and output, except Flight with Unreliable airspeed.
- The [Flight with Unreliable Airspeed screen](#).
- The [settings screen](#): is used to select units and filter aircraft types.
- The [user manual screen](#): displays the user manual.
- The [donation screen](#): enables the user to make a donation to charity.

The main screen consists of:

- An [input data display box](#) ①
- A [wind calculator box](#) ②
- A [data entry and selection pad / notes pad](#) ③
- A [main output box](#) ④
- An [info box](#) (only available in Portrait mode) ⑤

## Main screen lay-out (Landscape mode)

# LANDING DISTANCE CALCULATOR

<b>Aircraft status</b>	<b>Normal, auto speedbrakes</b> <span>1</span>				<b>WIND CALCULATOR</b> <span>2</span>		
<b>Runway condition</b>	<b>Dry Runway</b>				<b>RUNWAY</b>	<b>WIND</b>	
<b>Landing weight</b>	<b>251 290</b>	<b>kg</b>			<b>HDG (M)</b>	<b>DIR (M)</b>	<b>SPEED</b>
<b>Altitude above sea level</b>	<b>0</b>	<b>ft</b>	<b>QNH</b>	<b>1013</b>	<b>000</b>	<b>000 /</b>	<b>0</b>
<b>Down (-) / Upslope (+)</b>	<b>0.0</b>	<b>%</b>			<b>AIRCRAFT</b>	<b>ACTUAL</b>	<b>MAX</b>
<b>Head (+) / Tailwind (-)</b>	<b>0</b>	<b>kt</b>	<b>WC = 0</b>		<b>HEAD</b>	<b>0</b>	<b>15T</b>
<b>Temperature</b>	<b>15</b>	<b>°C</b>	<b>ISA = 15 °C</b>		<b>CROSS</b>	<b>0</b>	<b>35</b>
<b>Speed above VREF</b>	<b>5</b>	<b>kt</b>	<b>ADJ(AT OFF) = 5</b>		<b>Taxi miles</b>		<b>0.0</b>
<b>Reverse thrust</b>	<b>2 ENG MAX REV</b>				<b>Brakes deactivated</b>		<b>0</b>

<b>Select Aircraft type</b> <span>3</span>	<b>777-300ER</b>				<b>CALCULATED LANDING DISTANCE (m)</b> <span>4</span>		
737-700W	<b>Flaps</b>						
737-800W	<b>Braking configuration</b>	<b>20</b>	<b>25</b>	<b>30</b>			
737-800WSFP1	MAX MANUAL	<b>1 520</b>	<b>1 408</b>	<b>1 348</b>			
737-900W	AUTOBRAKE MAX	<b>2 092</b>	<b>1 907</b>	<b>1 788</b>			
777-200ER	AUTOBRAKE 4	<b>2 720</b>	<b>2 458</b>	<b>2 296</b>			
777-300ER ✓	AUTOBRAKE 3	<b>3 192</b>	<b>2 876</b>	<b>2 677</b>			
	AUTOBRAKE 2	<b>3 463</b>	<b>3 122</b>	<b>2 918</b>			
	AUTOBRAKE 1	<b>3 722</b>	<b>3 361</b>	<b>3 152</b>			

## Main screen lay-out (Portrait mode)

### LANDING DISTANCE CALCULATOR

Aircraft status	Normal, auto speedbrakes		
Runway condition	Dry Runway		
Landing weight	70 000	kg	1
Altitude above sea level	0	ft	QNH 1013
Down (-) / Upslope (+)	0.0	%	
Head (+) / Tailwind (-)	0	kt	WC = 0
Temperature	15	°C	ISA = 15 °C
Speed above VREF	5	kt	ADJ(AT OFF) = 5
Reverse thrust	2 ENG MAX REV		

Enter Landing weight			
7	8	9	⚙
4	5	6	✖
1	2	3	⬇
000	0	MLW	⬅

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
000	000	0
AIRCRAFT	ACTUAL	MAX
HEAD	0	15T
CROSS	0	33
Taxi miles	1	0.0

RTO	
BOS GS (kt)	Cooling Advice
80	
100	25
120	52
140	
160	5
180	

737-800WSFP1	CALCULATED LANDING DISTANCE (m) ⇄	
	Flaps	
Braking configuration	4	
MAX MANUAL	30	40
AUTOBRAKE MAX	1 360	1 300
AUTOBRAKE 3	1 690	1 595
AUTOBRAKE 2	2 345	2 180
AUTOBRAKE 1	2 875	2 700
	3 125	2 965

## Input data display box lay-out

Aircraft status	Normal, auto speedbrakes	
Runway condition	Dry Runway	
Landing weight	251 290	kg
Altitude above sea level	0	ft QNH 1013
Down (-) / Upslope (+)	0.0	%
Head (+) / Tailwind (-)	0	kt WC = 0
Temperature	15	°C ISA = 15 °C
Speed above VREF	5	kt ADJ(AT OFF) = 5
Reverse thrust	2 ENG MAX REV	
Taxi miles		0.0
Brakes deactivated		0

This image shows the Landscape mode lay-out.

In Portrait mode the input data display box is split in 2 parts.

- 1 The dark blue areas contain the description of the data.
- 2 The white areas contain the data selection and entry fields.
- 3 The light blue box contains calculated data ([WC](#), [ISA](#) and [ADJ\(AT OFF\)](#)).

The **active** data entry or field is marked by a **green box** around the field.

Dry Runway	
213 188	kg
0	ft

After tapping the enter key (arrow) at the Brakes deactivated entry field (or Taxi miles entry field when not available) the green box is NOT shown.



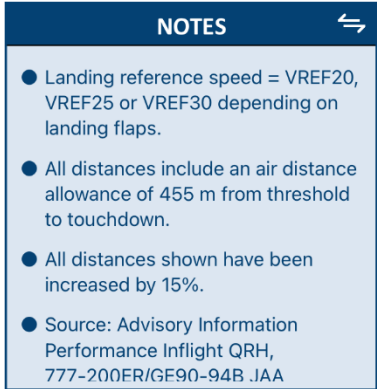


## Wind calculator box lay-out

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
000	000	/ 0
AIRCRAFT	ACTUAL	MAX
HEAD	0	15T
CROSS	0	35

- 1 The top blue area contain the description of the data to be entered.
- 2 The white area contain the data entry fields ([Runway heading](#), [Wind direction](#) and [wind speed](#)).
- 3 The lower blue area contains calculated data:
  - [Head- and tailwind speed and direction \(HEAD or TAIL\)](#)
  - [Crosswind speed and direction \(L or R\)](#)
  - [Maximum tailwind](#)
  - [Maximum crosswind](#)

## The 3 data entry and selection pad / notes pad views

SELECTION VIEW	ENTRY VIEW	NOTES VIEW
		
<p>Displays a list of valid entries for the active selection field.</p> <p>The top blue bar prompts the necessary action, e.g. : “Select Aircraft type”.</p> <p>After tapping a selection the next data field activates automatically.</p>	<p>Displays a keyboard to enable entry of numerical values, a setting key, a backspace and enter key.</p> <p>Also some special keys will be shown depending on the.</p> <p>After tapping the enter key the next data field activates automatically.</p>	<p>Displays:</p> <ul style="list-style-type: none"> <li>• Landing reference speed</li> <li>• Notes in the QRH</li> <li>• Exceedance of MLW</li> <li>• Exceedance of TSLLW (787 only)</li> <li>• Source information</li> </ul>

SELECTION VIEW	ENTRY VIEW	NOTES VIEW
<p>Pops up at these data fields:</p> <ul style="list-style-type: none"> <li>• Aircraft type</li> <li>• Aircraft status</li> <li>• Runway condition</li> <li>• Reverse thrust</li> </ul>	<p>Pops up at these data fields:</p> <ul style="list-style-type: none"> <li>• Landing weight</li> <li>• Altitude above sea level and QNH</li> <li>• Down-/Upslope</li> <li>• Head-/Tailwind</li> <li>• Temperature</li> <li>• Speed above VREF</li> <li>• Runway heading</li> <li>• Wind direction</li> <li>• Wind speed</li> <li>• Taxi miles</li> <li>• (Brakes deactivated)</li> </ul>	<p>Pops up automatically: after tapping the enter key (arrow) at the Brakes deactivated entry field (or when not available Taxi miles field). It indicates completion of a full data entry cycle according the pre-set sequence.</p> <p>Shown manually: after tapping the exchange symbol in Selection view or Entry view.</p>

## Main output box views

### CALCULATED LANDING DISTANCE VIEW

<b>777-300ER</b>	CALCULATED LANDING DISTANCE (m) ⇐		
	Flaps		
Braking configuration	20	25	30
MAX MANUAL	1 520	1 408	1 348
AUTOBRAKE MAX	2 092	1 907	1 788
AUTOBRAKE 4	2 720	2 458	2 296
AUTOBRAKE 3	3 192	2 876	2 677
AUTOBRAKE 2	3 463	3 122	2 918
AUTOBRAKE 1	3 722	3 361	3 152

#### Displays:

- Selected aircraft type
- Available braking configurations
- Available flap configurations
- Calculated landing distances
- Brake cooling advice (colour only)

This is the default view.

### BRAKE COOLING ADVICE VIEW

<b>777-300ER</b>	BRAKE COOLING ADVICE ⇐		
	Flaps		
Braking configuration	20	25	30
MAX MANUAL	MELT ZONE	CAUTION	CAUTION
AUTOBRAKE MAX	CAUTION	71 min	63 min
AUTOBRAKE 4	56 min	44 min	35 min
AUTOBRAKE 3	27 min	12 min	NO PROC
AUTOBRAKE 2	NO PROC	NO PROC	NO PROC
AUTOBRAKE 1	NO PROC	NO PROC	NO PROC

#### Displays:

- Selected aircraft type
- Available braking configurations
- Available flap configurations
- Brake cooling advice (colour and text)

## GO AROUND CLIMB GRADIENT VIEW

<b>737-800WSFP1</b>		<b>GO AROUND CLIMB GRADIENT (%) ↔</b>
		<b>ENGINE INOP - FLAPS 15 - GEAR UP</b>
VREF40	3.33	<ul style="list-style-type: none"> <li>Based on engine bleed for packs on and anti-ice off.</li> <li>With engine bleed for packs off, increase gradient by 0.5%.</li> <li>With engine anti-ice on, decrease gradient by 0.1%.</li> <li>With engine and wing anti-ice on, decrease gradient by 0.3%.</li> <li>When operating in icing conditions during any</li> </ul>
VREF40+5	3.60	
VREF40+10	3.75	
VREF40+15	3.89	
VREF40+20	3.99	
VREF40+25	4.08	
VREF40+30	4.14	

### Displays:

- Selected aircraft type
- Reference speed table
- Go around climb gradients in %
- Notes as listed in the QRH

## APP OR LDG CLIMB LIMIT WEIGHT VIEW

<b>777-300ER</b>		<b>APP OR LDG CLIMB LIMIT WEIGHT (kg) ↔</b>
		<b>APPROACH FLAPS 20 and LANDING FLAPS 30 ↔</b>
BLEED OFF	378 600	<ul style="list-style-type: none"> <li>Based on engine bleed for packs on, except for BLEED OFF.</li> <li>When operating in icing conditions during any part of the flight with forecast landing temperature below 10°C, adjust weight by the amount mentioned at ICING.</li> <li>With WIFI GCS or Gogo radome installed, adjust weight by the amount mentioned at WIFI.</li> <li>Source: Advisory Information Performance</li> </ul>
EAI ON/OFF	377 300	
EAI & WAI ON	375 100	
ICING	-21 950	
WIFI	-159	

### Displays:

- Selected aircraft type
- Anti-ice options and corrections
- Landing Climb Limit Weights
- Notes as listed in the QRH

Notes are formatted to match the output format, so there is some textual difference.

When different landing flap settings are available these are selectable via an additional exchange symbol.

737: View title is LANDING CLIMB LIMIT WEIGHT.

## TIRE SPEED LIMIT LANDING WEIGHT VIEW

<b>787-10</b>		TIRE SPEED LIMIT LANDING WEIGHT (kg) ⇐
		PITCH UP AUTHORITY (Flaps ≤ 18)
TSELLW	269 900	<ul style="list-style-type: none"> <li>Based on 226 knots (260 MPH) tire speed limit with final approach speed that is higher of VREF30+35 and the amber band, with a five knot approach speed additive.</li> <li>Source: Advisory information Performance Inflight QRH, 787-10/GENX-1B76A EASA Category D Brakes, Jan 23, 2020.</li> </ul>

### Displays:

- Selected aircraft type
- Tire Speed Limit Landing Weight
- Notes as listed in the QRH
- Exceedance of TSELLW

## Info box views (only available in portrait mode)

MANEUVRING SPEEDS VIEW	RTO BRAKE COOLING VIEW																																		
<table> <tr> <th>APP</th><th>↔</th></tr> <tr> <td>UP</td><td>258</td></tr> <tr> <td>1</td><td>238</td></tr> <tr> <td>5</td><td>208</td></tr> <tr> <td>10</td><td>198</td></tr> <tr> <td>20</td><td>188</td></tr> <tr> <td>VREF20</td><td>182</td></tr> <tr> <td>VREF25</td><td>179</td></tr> <tr> <td>VREF30</td><td>173</td></tr> </table>	APP	↔	UP	258	1	238	5	208	10	198	20	188	VREF20	182	VREF25	179	VREF30	173	<table> <tr> <th>RTO</th><th>↔</th></tr> <tr> <td>BOS GS (kt)</td><td>Cooling Advice</td></tr> <tr> <td>80</td><td></td></tr> <tr> <td>100</td><td>28</td></tr> <tr> <td>120</td><td>54</td></tr> <tr> <td>140</td><td>74</td></tr> <tr> <td>160</td><td></td></tr> <tr> <td>180</td><td></td></tr> </table>	RTO	↔	BOS GS (kt)	Cooling Advice	80		100	28	120	54	140	74	160		180	
APP	↔																																		
UP	258																																		
1	238																																		
5	208																																		
10	198																																		
20	188																																		
VREF20	182																																		
VREF25	179																																		
VREF30	173																																		
RTO	↔																																		
BOS GS (kt)	Cooling Advice																																		
80																																			
100	28																																		
120	54																																		
140	74																																		
160																																			
180																																			
<p>Displays:</p> <ul style="list-style-type: none"> <li>• Maneuver speeds</li> <li>• VREF speeds</li> </ul> <p>This is the default view.</p>	<p>Displays:</p> <ul style="list-style-type: none"> <li>• RTO (Rejected Takeoff) brake cooling advice.</li> </ul>																																		

## Flight with Unreliable Airspeed view

<b>737-800W</b>		<b>FLIGHT WITH UNRELIABLE AIRSPEED</b>						
		<b>AIRCRAFT WEIGHT = 65 000 kg</b>						
PHASE	ALTITUDE	FLAPS	GEAR	PITCH	%N1	KIAS		V/S
CRUISE	15 000	UP	UP	<b>2.5</b>	<b>72.2</b>	280		0
DESCENT	40 000	UP	UP	<b>0.8</b>	<b>IDLE</b>	.76M		-2 400
DESCENT	30 000	UP	UP	<b>-0.2</b>	<b>IDLE</b>	280		-2 200
DESCENT	20 000	UP	UP	<b>-0.5</b>	<b>IDLE</b>	280		-1 950
DESCENT	10 000	UP	UP	<b>-0.5</b>	<b>IDLE</b>	280		-1 750
DESCENT	0	UP	UP	<b>-0.8</b>	<b>IDLE</b>	280		-1 600
APPROACH	5 000	UP	UP	<b>5.8</b>	<b>59.6</b>	210	VREF40+70	0
APPROACH	5 000	1	UP	<b>5.8</b>	<b>62.1</b>	190	VREF40+50	0
APPROACH	5 000	5	UP	<b>6.2</b>	<b>62.6</b>	170	VREF40+30	0
APPROACH	5 000	15	DOWN	<b>6.0</b>	<b>72.1</b>	160	VREF40+20	0
FINAL	1 500	15	DOWN	<b>2.5</b>	<b>53.6</b>	165	VREF15+10	3° GS
FINAL	1 500	30	DOWN	<b>1.0</b>	<b>58.6</b>	158	VREF30+10	3° GS
FINAL	1 500	40	DOWN	<b>0.0</b>	<b>64.4</b>	150	VREF40+10	3° GS
GO AROUND	10 000	15	UP	<b>12.5</b>	<b>G/A</b>	160		2 150
GO AROUND	5 000	15	UP	<b>14.0</b>	<b>G/A</b>	160		2 450
GO AROUND	0	15	UP	<b>15.5</b>	<b>G/A</b>	160		2 750







# LANDING DISTANCE CALCULATOR

Aircraft status	Normal, auto speedbrakes				WIND CALCULATOR		
Runway condition	Dry Runway				RUNWAY	WIND	
Landing weight	251 290	kg			HDG (M)	DIR (M)	SPEED
Altitude above sea level	0	ft	QNH	1013	000	000	/ 0
Down (-) / Upslope (+)	0.0	%			AIRCRAFT	ACTUAL	MAX
Head (+) / Tailwind (-)	0	kt	WC = 0		HEAD	0	15T
Temperature	15	°C	ISA = 15 °C		CROSS	0	35
Speed above VREF	5	kt	ADJ(AT OFF) = 5		Taxi miles		0.0
Reverse thrust	2 ENG MAX REV				Brakes deactivated		0

Select Aircraft type ⇌	777-300ER			CALCULATED LANDING DISTANCE (m) ⇌			
737-700W	<b>Braking configuration</b>			Flaps			
737-800W				20	25	30	
737-800WSFP1				MAX MANUAL	1 520	1 408	1 348
737-900W				AUTOBRAKE MAX	2 092	1 907	1 788
777-200ER				AUTOBRAKE 4	2 720	2 458	2 296
777-300ER ✓				AUTOBRAKE 3	3 192	2 876	2 677
				AUTOBRAKE 2	3 463	3 122	2 918
	AUTOBRAKE 1	3 722	3 361	3 152			

## Legend

Below is a legend of several symbols that you will see in the app.

	<p>Exchange:</p> <ul style="list-style-type: none"><li>• Changes data entry and selection pad to Notes pad and vice versa.</li><li>• Alters between the available main output box views.</li><li>• Displays the Flight with Unreliable Airspeed screen.</li><li>• Returns to the main screen from the Flight with Unreliable Airspeed screen or from the settings screen.</li><li>• Returns from user manual screen to settings screen.</li></ul>
	<p>Backspace:</p> <ul style="list-style-type: none"><li>• Deletes the last digit in the active data field.</li><li>• If held for 3 seconds resets all input to default except Aircraft type.</li></ul>
	<p>Settings:</p> <ul style="list-style-type: none"><li>• Displays the settings screen.</li></ul>
	<p>Enter:</p> <ul style="list-style-type: none"><li>• Changes the active data field to the next field according a predetermined entry sequence. (Upon typing data or selecting data calculation is instantaneous, so in fact this button only moves to the next area.)</li></ul>

# Input

## Input Overview

Aircraft type

Aircraft status

Runway condition

Landing weight

Altitude above sea level

QNH

Down- / Upslope

Head- / Tailwind

Temperature

Speed above VREF

Reverse thrust

Runway heading

Wind direction

Wind speed

Taxi miles

Brakes deactivated

## Input overview

All input on the main screen is done through the data entry and selection pad in the left lower corner. Through this pad entries and selections can be made.

The visual lay-out of the pad is configured automatically depending on the type of data that needs to be entered or selected.

The top blue bar of the pad shows the action to be taken, e.g. “Select Aircraft type” or “Enter Landing weight”.

The area in which data can be entered or selected is marked by a green box.

Data entry and selection is done in a predetermined sequence. That means that after making a selection or tapping the arrow key the green box moves automatically to the next entry or selection field. This is done to speed up the entry process, however you may also select any field manually and enter or select data in any desired sequence. For this purpose tap the desired field, the green box will move to that field after which the pad configures automatically.

Upon start-up of the app the active field is the Aircraft type selection box.

## Data input fields overview

# LA **INPUT** & DISTANCE CALCULATOR

Aircraft status	Normal, auto speedbrakes		WIND CALCULATOR		
Runway condition	Dry Runway		RUNWAY	WIND	
Landing weight	251 290	kg	HDG (M)	DIR (M)	SPEED
Altitude above sea level	0	ft	QNH	1013	000 / 0
Down (-) / Upslope (+)	0.0	%	AIRCRAFT	ACTUAL	MAX
Head (+) / Tailwind (-)	0	kt	HEAD	0	15T
Temperature	15	°C	CROSS	0	35
Speed above VREF	5	kt	Taxi miles		0.0
Reverse thrust	2 ENG MAX REV		Brakes deactivated		0

Select Aircraft type		CALCULATED LANDING DISTANCE (m)		
737-700W		Flaps		
737-800W		20	25	30
737-800WSFP1		MAX MANUAL	1 520	1 408
		AUTOBRAKE MAX	2 092	1 907
737-900W		AUTOBRAKE 4	2 720	2 458
777-200ER		AUTOBRAKE 3	3 192	2 876
777-300ER	✓	AUTOBRAKE 2	3 463	3 122
		AUTOBRAKE 1	3 722	3 361

## Pre-set data entry and selection sequence

# LANDING DISTANCE CALCULATOR

Aircraft status	Normal, auto brakes	<b>WIND CALCULATOR</b>		
Runway condition	Dry Runway	RUNWAY	WIND	
Landing weight	251 290 kg	HDG (M)	DIR (M)	SPEED
Altitude above sea level	0 ft QNH 1013	000	000	0
Down (-) / Upslope (+)	0.0 %	AIRCRAFT	ACTUAL	MAX
Head (+) / Tailwind (-)	0 kt WC = 0	HEAD	0	15T
Temperature	15 °C ISA = 15 °C	CROSS	0	35
Speed above VREF	5 kt ADJ(AT OFF) = 5	Taxi miles		0.0
Reverse thrust	2 ENG MAX REV	Brakes deactivated		0

Select Aircraft type	
737-700W	
737-800W	
737-800WSFP1	
737-900W	
777-200ER	
777-300ER	✓

777-300ER	CALCULATED LANDING DISTANCE (m)		
	Flaps		
Braking configuration	20	25	30
MAX MANUAL	1 520	1 408	1 348
AUTOBRAKE MAX	2 092	1 907	1 788
AUTOBRAKE 4	2 720	2 458	2 296
AUTOBRAKE 3	3 192	2 876	2 677
AUTOBRAKE 2	3 463	3 122	2 918
AUTOBRAKE 1	3 722	3 361	3 152

Upon **start-up** of the app the aircraft type selection is shown and these **default values** are loaded:

Aircraft type	B777-300ER or previously selected type
Aircraft status	Normal, auto speedbrakes
Runway condition	Dry Runway
Landing weight	MLW (Maximum Landing Weight)
Altitude above sea level	0
QNH	STD (1013 hPa or 29.92 inHg)
Down- / Upslope	0.0
Head- / Tailwind	0
Temperature	ISA (15 °C or 59 °F)
Speed above VREF	5
Reverse thrust	2 ENG MAX REV
Runway heading	000
Wind direction	000
Wind speed	0
Taxi miles	0.0
Brakes deactivated (if applicable)	0

When holding the backspace button for 3 seconds the default values are restored.

## Invalid data

Invalid data means entries or results of which the value is either:

- exceeding an aircraft limitation, e.g. Runway slope 3.0 or Crosswind 50  
– OR –
- not realistic, e.g. QNH 800 or Runway heading 400

The landing distance calculator will allow entry of invalid input and will warn you by the change of text colour into **RED** with a **PINK** background.

**Invalid INPUT will disable OUTPUT.**

Aircraft status	HYD PRESS SYS L+C				WIND CALCULATOR		
Runway condition	Medium Reported Braking Action				RUNWAY	WIND	
Landing weight	251 290	kg			HDG (M)	DIR (M)	SPEED
Altitude above sea level	0	ft	QNH	1013	002	310 / 12G35	
Down (–) / Upslope (+)	2.5	%			AIRCRAFT	ACTUAL	MAX
Head (+) / Tailwind (–)	0	kt	WC = 22		HEAD	21.5	10T
Temperature	15	°C	ISA = 15 °C		CROSS L	27.6	20
Speed above VREF	5	kt	ADJ(AT OFF) = 15		Taxi miles		0.0
Reverse thrust	2 ENG MAX REV				Brakes deactivated		0



The table below shows the values outside which the calculator will regard the input as invalid.

Entry field	Invalid below	Invalid above
Landing weight	Minimum Inflight Weight	Maximum Takeoff Weight
Altitude above sea level	-1 240	Maximum Landing Altitude
QNH	950 hPa / 28.00 inHg	1050 hPa / 31.00 inHg
Down- / Upslope	-2.0	+2.0
Head- / Tailwind	Maximum tailwind	65 kts (not a limitation)
Temperature	-54 °C	+54 °C
Speed above VREF	0	15 (777 / 787) / 20 (737)
Runway heading		360
Wind direction		360

Wind speed with gust speed at or below mean wind speed is regarded as invalid.

The aircraft status selection will become invalid when the aircraft type is changed and the current aircraft status does not match that aircraft type.

The reverse thrust selection will become invalid when the aircraft status is changed to a status that does not allow the current reverse thrust selection, e.g. the combination of 2 ENG MAX REV and ENG SHUTDOWN L, R.

## Aircraft type

When the Aircraft type selection is active the data entry pad will prompt “Select Aircraft type”.

All available aircraft types are listed in the selection box. The aircraft types available are determined by selections in the settings screen.

Aircraft type selection activates the next field: Aircraft condition selection.

## Aircraft status

When the Aircraft status selection is active the data entry pad will prompt "Select Aircraft status".

All normal and non normal aircraft statuses are listed in the selection box.

A check mark is visible behind the current aircraft status.

Aircraft status activates the Runway condition selection.

## Runway condition

When the Runway condition selection is active the data entry pad will prompt “Select Runway condition”.

All runway conditions are listed in the selection box.

A check mark is visible behind the current runway condition.

Runway condition selection activates the Landing weight entry.

## Landing weight

When the Landing weight entry is active the data entry pad will prompt “Enter Landing weight”.

Type the digits to form the landing weight.

The 000 key will paste 000 behind the digits entered provided not more than 3 digits were entered.

The MLW key will replace the existing value with the Maximum Landing Weight.

Landing weight entries above Maximum Landing weight will cause the value turn red; and output will still be displayed.

Landing weight entries below Minimum Inflight weight or above Maximum Takeoff weight will turn red with pink background; and output is disabled.

Tapping the enter key will activate the Altitude above sea level entry.

## Altitude above sea level

When the Altitude above sea level entry is active the data entry pad will prompt “Enter Runway elevation”.

Type the digits to form the runway elevation.

The 000 key will paste 000 behind the digits entered provided not more than 2 digits were entered.

To enter an altitude below sea level the minus (–) key may be pressed before or after entering the digits.

Tapping the enter key will activate the QNH entry.

## QNH

When the QNH entry is active the data entry pad will prompt “Enter QNH”.

Type the digits to form the QNH.

The STD key will replace the existing value with 1013 or 29.92 depending on the pressure setting in the settings screen.

Tapping the enter key will activate the Runway heading entry.

## Runway heading

When the Runway heading entry is active the data entry pad will prompt “Enter Runway heading”.

Type the digits to form the magnetic runway heading.

Tapping the enter key will activate the Wind direction entry.



## Wind direction

When the Wind direction entry is active the data entry pad will prompt “Enter Wind direction”.

Type the digits to form the magnetic wind direction.

The VRB (Variable) key will paste VRB as wind direction value. The logic then is that the wind direction is assumed be 180 degrees of the Runway heading at the previous entry. So VRB / 5 will be regarded as 5 knots tailwind.

Entry of variable wind between 2 wind directions is not supported.

Wind direction entries have NO effect on the calculated landing distances or brake cooling advice.

Tapping the enter key will activate the Wind speed entry.

## Wind speed

When the Wind speed entry is active the data entry pad will prompt “Enter Wind speed”.

Type the digits to form the wind speed.

The G (Gust) key may be used to enter gusting wind. E.g. windspeed 15 knots gusting 25 knots can be entered as 15G25

Wind speed entries have NO effect on the calculated landing distances or brake cooling advice.

Tapping the enter key will activate the Down- / Upslope entry.

## Down- / Upslope

When the Down- / Upslope entry is active the data entry pad will prompt “Enter Runway slope”.

Type the digits to form the slope.

To enter a negative slope the minus (–) key may be pressed before or after entering the digits.

Tapping the enter key will activate the Head- / Tailwind entry.

## Head- / Tailwind

When the Head- / Tailwind entry is active the data entry pad will prompt “Enter Wind”.

Type the digits or use the WC key to form the wind.

The WC (Wind Component) key will paste the value in the light blue box mentioned after “WC =”. This is handy when correct values were entered in the wind calculator.

To enter a tailwind the minus (–) key may be pressed before or after entering the digits.

Tapping the enter key will activate the Temperature entry.

## Temperature

When the Temperature entry is active the data entry pad will prompt “Enter Temperature”.

Type the digits to form the temperature.

The ISA (International Standard Atmosphere) key will paste the value in the light blue box mentioned after “ISA =”.

To enter a negative temperature the minus (–) key may be pressed before or after entering the digits.

Tapping the enter key will activate the Speed above VREF entry.

## Speed above VREF

When the Speed above VREF entry is active the data entry pad will prompt “Enter Speed above VREF”.

Type the digits or use the ADJ (AT OFF) key to form the speed above VREF.

The ADJ (AT OFF) key will paste the value in the light blue box mentioned after “ADJ (AF OFF) =”. This is handy when correct values were entered in the wind calculator and a landing is made with autothrottle OFF. For landings with autothrottle ON Boeing prescribes a 5 knot adjustment.

With aircraft condition Airspeed Unreliable data entry is disabled and the text Speed above VREF will be shown as 

Tapping the exchange symbol will show the [Flight with Unreliable Airspeed](#) screen.

Tapping the enter key will activate the Reverse thrust selection.

## Reverse thrust

When the Reverse thrust selection is active the data entry pad will prompt “Select Reverse thrust”.

All available reverse thrust options are listed in the selection box.

A check mark is visible behind the current reverse thrust option if available.

Reverse thrust selection will activate the Taxi miles entry.

## Taxi miles

When the Taxi miles entry is active the data entry pad will prompt “Enter Taxi miles”.

Type the digits to form the amount of miles that is expected to be taxied after landing.

The Taxi miles entry only has effect on the brake cooling advice.

777/787: Tapping the enter key will activate the Brakes deactivated entry.

737: The Taxi miles entry is regarded as the completion of a full data entry cycle. Upon tapping the enter key the green box will not be visible anymore and the notes pad will replace the data entry pad.



## Brakes deactivated

When the Brakes deactivated entry is active the data entry pad will prompt “Enter Brakes deactivated”.

Type 0, 1 or 2 depending on how many brakes are deactivated.

1 or 2 deactivated brakes have no effect on the landing distance. They will however increase the brake energy in the remaining brakes and will increase the amount of brake cooling needed.

The Brakes deactivated entry is regarded as the completion of a full data entry cycle. Upon tapping the enter key the green box will not be visible anymore and the notes pad will replace the data entry pad.

# Output

## Output overview

Calculated landing distance

Brake cooling advice for landing

Brake cooling advice for RTO

Go-around Climb Gradient

Approach or Landing Climb Limit Weight

Tire Speed Limit Landing Weight

Flight with Unreliable Airspeed

Flap maneuver speeds and VREF

Notes

WC (Wind component)

ISA

ADJ (AT OFF) (Adjustment Autothrottle OFF)

Wind components

Wind limitations

## Output overview

All output is instantly calculated and is shown on 2 screens.

- The main screen
- The Flight with Unreliable Airspeed screen

Screen lay-outs are shown in the next pages.

## Data output lay-out (Landscape mode)

# LA **OUTPUT** DISTANCE CALCULATOR

Aircraft status	Normal, auto speedbrakes			WIND CALCULATOR		
Runway condition	Dry Runway			RUNWAY	WIND	
Landing weight	251 200	kg		HDG (M)	DIR (M)	SPEED
Altitude above sea level	0	ft	QNH 1013	000	000	/ 0
Down (-) / Upslope (+)	0.0	%		AIRCRAFT	ACTUAL	MAX
Head (+) / Tailwind (-)	0	kt	WC = 0	HEAD	0	15T
Temperature	15	°C	ISA -15 °C	CROSS	0	35
Speed above VREF	5	kt	ADJ(AT OFF) = 5	Taxi miles		0.0
Reverse thrust	2 ENG MAX REV			Brakes deactivated		0

Select Aircraft type ⇐	777-300ER			CALCULATED LANDING DISTANCE (m) ⇐		
737-700W	777-300ER			Flaps		
737-800W				20	25	30
737-800WSFP1				Braking configuration		
737-900W				MAX MANUAL	1 520	1 408
777-200ER				AUTOBRAKE MAX	2 092	1 907
777-300ER ✓				AUTOBRAKE 4	2 720	2 458
				AUTOBRAKE 3	3 192	2 876
				AUTOBRAKE 2	3 463	3 122
				AUTOBRAKE 1	3 722	3 361
						3 152

## Data output lay-out (Portrait mode)

OUTPUT

Runway condition	Dry Runway		
Landing weight	251 230	kg	
Altitude above sea level	0	ft	<b>QNH 1013</b>
Down (-) / Upslope (+)	0.0	%	
Head (+) / Tailwind (-)	0	kt	
Temperature	15	°C	
Speed above VREF	5	kt	
Reverse thrust	2 ENG MAX REV		

WC = 0	
ISA = 15 °C	
ADJ(AT OFF) = 5	

Select Aircraft type
737-700W
737-800W
737-800WSFP1
737-900W
777-200ER
777-300ER <input checked="" type="checkbox"/>

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
000	000	/ 0
AIRCRAFT	ACTUAL	MAX
HEAD	0	15T
CROSS	0	35
Taxi miles		0.0
Brakes deactivated		0

RTO	
BOS (kt)	Cooling Advice
80	16
100	49
120	75
140	
160	
180	

777-300ER	CALCULATED LANDING DISTANCE (m) ⇌		
	Flaps		
Braking configuration	20	25	30
MAX MANUAL	1 520	1 408	1 348
AUTOBRAKE MAX	2 092	1 907	1 788
AUTOBRAKE 4	2 720	2 458	2 296
AUTOBRAKE 3	3 192	2 876	2 677
AUTOBRAKE 2	3 463	3 122	2 918
AUTOBRAKE 1	3 722	3 361	3 152

## Data output lay-out for Flight with unreliable airspeed

737-700W		FLIGHT WITH UNRELIABLE AIRSPEED						↔
		AIRCRAFT WEIGHT = 52 000 kg						
PHASE	ALTITUDE	FLAPS	GEAR	PITCH	%N1	KIAS		V/S
CLIMB	40 000	UP	UP	4.1	MAX CLB	.76M		1 100
CLIMB	30 000	UP	UP	4.0	MAX CLB	280		1 900
CLIMB	20 000	UP	UP	6.4	MAX CLB	280		3 100
CLIMB	10 000	UP	UP	8.9	MAX CLB	280		4 050
CLIMB	0	UP	UP	12.2	MAX CLB	280		5 000
CRUISE	40 000	UP	UP	2.7	85.8	.76M		0
CRUISE	35 000	UP	UP	2.1	82.5	280		0
CRUISE	30 000	UP	UP	1.6	81.2	280		0
CRUISE	25 000	UP	UP	1.6	77.6	280		0
CRUISE	20 000	UP	UP	1.6	74.0	280		0
CRUISE	15 000	UP	UP	1.7	70.2	280		0
DESCENT	40 000	UP	UP	-0.3	IDLE	.76M		-2 450
DESCENT	30 000	UP	UP	-1.8	IDLE	280		-2 400
DESCENT	20 000	UP	UP	-1.8	IDLE	280		-2 200
DESCENT	10 000	UP	UP	-1.8	IDLE	280		-1 950
DESCENT	0	UP	UP	-1.8	IDLE	280		-1 750

## Calculated landing distance

The calculated landing distance box contains:

- 1 Braking configuration.
- 2 Flap configuration.
- 3 Landing distances and brake cooling advice (colour)

<b>777-300ER</b>		<b>CALCULATED LANDING DISTANCE (m) ⇌</b>		
		<b>Flaps</b>		
<b>Braking configuration</b>		20	25	30
MAX MANUAL		1 520	1 408	1 348
AUTOBRAKE MAX		2 092	1 907	1 788
AUTOBRAKE 4		2 720	2 458	2 296
AUTOBRAKE 3		3 192	2 876	2 677
AUTOBRAKE 2		3 463	3 122	2 918
AUTOBRAKE 1		3 722	3 361	3 152



<b>787-9</b>		CALCULATED LANDING DISTANCE (m) ⇄	
		Flap position	
Braking configuration	1 ≤ Flaps ≤ 5		
MAX MANUAL	1 838		
AUTOBRAKE MAX	2 323		
AUTOBRAKE 4			
AUTOBRAKE 3			
AUTOBRAKE 2	3 490		
AUTOBRAKE 1			

Note that the text in these boxes has changed to reflect the exact wording in the QRH for FLAPS DRIVE:

**Flap position and (1≤Flaps≤5)**

A cell without a value means that no landing distance is available for this brake configuration. However a brake cooling advice is available.

For aircraft conditions where autobrakes are inoperative this will be shown as depicted.

Note that these cells are white because there is no other flap configuration available for this aircraft condition.

<b>737-800WSFP1</b>		CALCULATED LANDING DISTANCE (m) ⇄		
		Flaps		
Braking configuration		15	30	40
MAX MANUAL		1 948	1 866	1 800
AUTOBRAKE INOP				
AUTOBRAKE INOP				
AUTOBRAKE INOP				
AUTOBRAKE INOP				

<b>737-900W</b>		CALCULATED LANDING DISTANCE (m) ⇄		
		Flaps		
Braking configuration		15	30	
MAX MANUAL		1 345	1 260	
AUTOBRAKE MAX		1 640	1 525	
AUTOBRAKE 3				
AUTOBRAKE 2		3 005	2 720	
AUTOBRAKE 1				



<b>777-300ER</b>	<b>CALCULATED LANDING DISTANCE (m) ⇌</b>		
	<b>Flaps</b>		
<b>Braking configuration</b>	20		<b>30</b>
MAX MANUAL	1 395		1 230
AUTOBRAKE MAX	1 860		1 595
AUTOBRAKE 4			
AUTOBRAKE 3			
AUTOBRAKE 2	3 230		2 695
AUTOBRAKE 1			

**30** will be shown in red colour for the following conditions:

- Aircraft type 777-200ER or 777-300ER – AND –
- Landing weight > Maximum landing weight  
– AND –
- Aircraft condition is ENG SHUTDOWN L, R – OR –
- VREF30 + 5 is above:
  - 160 kts (777-200ER)
  - 170 kts (777-300ER)

The QRH mentions VREF30 + additives  
(wind and gusts, 5 knots minimum)

For the above conditions the QRH may preclude the use of Flaps 30.

## Brake cooling advice for landing

Brake cooling advice for landing is always shown by the background colour in each landing distance field. When the brake cooling advice view is selected the advice is also visible in text format. The advice is for ground cooling only.

The meaning of the colours is:

	<b>MELT ZONE</b>	<b>Fuse plug melt zone</b>
	<b>CAUTION</b>	<b>Caution zone</b>
<b>10</b>	<b>10 min</b>	<b>Brake cooling advice for 10 minutes</b>
	<b>NO PROC</b>	<b>No procedures</b>
		<b>No brake cooling advice available</b>

## Go-around climb gradient

The go-around climb gradient box contains:

- 1 List of reference speeds and increments
- 2 Go-around climb gradient in %
- 3 Aircraft configuration
- 4 Notes (anti-ice corrections and source information)

737-900W		GO AROUND CLIMB GRADIENT (%) ⇌
		ENGINE INOP - FLAPS 15 - GEAR UP
VREF40	4.50	<ul style="list-style-type: none"><li>● Based on engine bleed for packs on and anti-ice off.</li><li>● With engine bleed for packs off, increase gradient by 0.2%.</li><li>● With engine anti-ice on, decrease gradient by 0.1%.</li><li>● With engine and wing anti-ice on, decrease gradient by 0.3%.</li><li>● When operating in icing conditions during any</li></ul>
VREF40+5	4.70	
VREF40+10	4.74	
VREF40+15	4.74	
VREF40+20	4.66	
VREF40+25	4.52	
VREF40+30	4.31	

Go-around climb gradients are available when a valid landing weight is entered.

It is a dispatch requirement to meet a certain minimum go-around climb gradient.

Boeing states:

*For instrument approaches, the expected landing weight must allow a missed approach climb gradient of at least 2.5% or the published gradient, whichever is the greater.*

*For instrument approaches with a decision height above 200 ft a lower than 2.5% missed approach climb gradient may be published. The lowest limit will always be 2.1%, even if a lower than 2.1% minimum missed approach climb gradient is published.*

*2.1% climb gradient is the minimum certified go-around climb gradient for a two-engine airplane.*

Inflight the information gives insight into actual aircraft performance margins.

## Approach or Landing Climb Limit Weight (LCLW)

The landing climb limit weight box contains:

- 1 List of reference speeds and increments
- 2 Landing climb limit weights and corrections
- 3 Aircraft configuration (if applicable: flap options are selectable via ⇌ )
- 4 Notes (anti-ice and WIFI radome corrections and source information)

<b>777-200ER</b>		<b>APP or LDG CLIMB LIMIT WEIGHT (kg) ⇌</b>
		<b>APPROACH FLAPS 20 and LANDING FLAPS 25 or 30</b>
<b>BLEED OFF</b>	<b>316 350</b>	<ul style="list-style-type: none"><li>● Based on engine bleed for packs on, except for BLEED OFF.</li><li>● When operating in icing conditions during a part of the flight with forecast landing temperature below 10°C, adjust weight by the amount mentioned at ICING.</li><li>● With WIFI GCS or Gogo radome installed, adjust weight by the amount mentioned at WIFI.</li><li>● Source: Advisory Information Performance</li></ul>
<b>EAI ON</b>	<b>313 900</b>	
<b>EAI &amp; WAI ON</b>	<b>311 700</b>	
<b>ICING</b>	<b>-20 100</b>	
<b>WIFI</b>	<b>-110</b>	

Landing climb limit weights are available when a valid landing weight is entered.

It is a dispatch requirement to meet a certain landing climb performance.

The legal requirement is:

*In the landing configuration (landing flaps and gear down), the steady gradient of climb may not be less than 3.2%, with the engines at the thrust that is available 8 seconds after initiation of movement of the thrust levers from minimum flight idle to the go-around thrust setting.*

The Landing Climb Limit Weight (LCLW) results show the weights at which these minimum requirements are met.

Inflight the information gives insight into actual aircraft performance margins.

737: QRH only mentions LANDING CLIMB LIMIT WEIGHT.

## Tire Speed Limit Landing Weight (TSLLW)

The landing climb limit weight box contains:

- 1 Tire speed limit landing weight
- 2 Aircraft status
- 3 Notes and source information

<b>787-10</b>		TIRE SPEED LIMIT LANDING WEIGHT (kg) ⇄
		PITCH UP AUTHORITY (Flaps ≤ 18)
TSLW	269 900	<ul style="list-style-type: none"> <li>Based on 226 knots (260 MPH) tire speed limit with final approach speed that is higher of VREF30+35 and the amber band, with a five knot approach speed additive.</li> <li>Source: Advisory information Performance Inflight QRH, 787-10/GENX-1B76A EASA Category D Brakes, Jan 23, 2020.</li> </ul>
	①	

Tire speed limit landing weights are available when these conditions are met:

- A valid landing weight is entered – AND –
- Aircraft type is 787-9 or 787-10 – AND –
- Aircraft status is:
  - Flaps + Slats Fail (Flaps and Slats Up) – OR –
  - FLAPS DRIVE ( $1 \leq \text{Flaps} \leq 5$ ) – OR –
  - PITCH UP AUTHORITY ( $\text{Flaps} \leq 18$ )

In the above cases the QRH will direct to check the TSSLW.



## Flight with Unreliable Airspeed

The Flight with Unreliable Airspeed screen shows:

- 1 Aircraft weight (equals Landing weight on the main screen)  
737: default header message: AIRCRAFT ALTITUDE = S.L.
- 2 Pitch, thrust, speed and V/S information
- 3 A light green marker box (selectable at any line to improve readability)

737-800W		FLIGHT WITH UNRELIABLE AIRSPEED						
		AIRCRAFT WEIGHT = 63 500 kg 1						
PHASE	ALTITUDE	FLAPS	GEAR	PITCH	%N1	KIAS		V/S
CRUISE	15 000	UP	UP	2.4	72.1	280		0
DESCENT	40 000	UP	UP	0.7	IDLE	.76M		-2 350
DESCENT	30 000	UP	UP	-0.5	IDLE	280		-2 200
DESCENT	20 000	UP	UP	-0.6	IDLE	280		-1 950
DESCENT	10 000	UP	UP	-0.6	IDLE	280		-1 750
DESCENT	0	UP	UP	-0.8	IDLE	280		-1 600
APPROACH	5 000	UP	UP	5.7	59.1	209	VREF40+70	0
APPROACH	5 000	1	UP	5.7	61.5	189	VREF40+50	0
APPROACH	5 000	5	UP	6.2	62.0	169	VREF40+30	0

## Flap maneuver speeds and VREF

Flap maneuver speeds and VREF are always in the info box whenever the app is used in portrait mode and APP is selected.

APP	↔
UP	<b>258</b>
1	<b>238</b>
5	<b>208</b>
10	<b>198</b>
20	<b>188</b>
VREF20	<b>182</b>
VREF25	<b>179</b>
VREF30	<b>173</b>

The left column lists the available flap settings for the selected aircraft type.

The right column shows the flap maneuver speeds and VREF.

The weight used for calculation is the weight entered at the Landing weight entry. This is the only input that affects the output. Output is removed for weights below Minimum Inflight Weight and above Maximum Takeoff Weight.

737: Flap 5 and 10 are combined

787: Flap 15, 17 and 18 are not shown.

All speeds are for sea level pressure altitude, except for 787-9 VREF20: 10.000 ft and 787-10 VREF20: 14.000 ft.

## Brake cooling advice for rejected takeoff (RTO)

Brake cooling advice for RTO is always shown by the background colour in the info box whenever the app is used in portrait mode and RTO is selected.

RTO ⇐⇒	
BOS GS (kt)	Cooling Advice
80	
100	28
120	54
140	74
160	
180	

BOS GS (kt): This column lists Brake ON Speeds in knots Ground Speed. According the Boeing tables the brake cooling is determined by entering the brake cooling tables with 15C, sea level.

Cooling Advice: This column lists the Brake Cooling Advice in the event of a rejected takeoff.

The weight used for calculation is the weight entered at the Landing weight entry. This is the only input that affects the output. Output is removed for weights below Minimum Inflight Weight and above Maximum Takeoff Weight.

Brake ON Speed based on Indicated Airspeed is NOT supported.

## Notes

Notes includes:

- Landing reference speed as mentioned in the QRH
- Other remarks mentioned in the QRH
- Source information. This is the footer information on the QRH page.
- If the landing weight > Maximum Landing Weight (MLW) a note in RED colour is included stating the overweight condition and the MLW value.
- If the landing weight > Tires Speed Limit Landing Weight (TSLLW) a note in RED colour is included stating the overweight condition and the TSLLW value.
- Exceedance of the Landing Climb Limit Weight (LCLW) is not shown.

## WC = Wind component

The value is derived from the wind calculator.

It is the Head- / Tailwind component including gusts.

- WC = - 10 means 10 kts tailwind
- WC = 25 means 25 kts headwind

The value may be entered easily with a single tap on the WC button.

The WC button is available when the Head- / Tailwind entry is active.

## ISA

This is the standard temperature at the altitude above sea level (runway elevation).

If the actual temperature happens to be ISA the value may be entered easily with a single tap on the ISA button.

The ISA button is available when the Temperature entry is active.

## **ADJ (AT OFF) = Adjustment (Autothrottle OFF)**

The value is derived from the wind calculator. It uses wind component and wind speed and gusts to calculate the speed adjustment above VREF for landing with autothrottle OFF. The calculation is done in accordance with the Boeing rules.

The value may be entered easily with a single tap on the ADJ (AT OFF) button.

The ADJ (AT OFF) button is available when the Speed above VREF entry is active.

For landings with autothrottle ON a speed adjustment of 5 kts should be used.

# Wind components

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
002	310	/ 10G25
AIRCRAFT	ACTUAL	MAX
HEAD	15.4	15T
CROSS L	19.7	35

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
002	310	/ 10G25
AIRCRAFT	ACTUAL	MAX
HEAD	15.4	10T
CROSS L	19.7	17

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
030	240	/ 12
AIRCRAFT	ACTUAL	MAX
TAIL	10.4	15T
CROSS L	6	20

The wind components are displayed at the left lower corner of the wind calculator.

The available information is:

- Head- or tailwind
  - Headwind is GREEN
    - WHITE (within limits)
    - RED/PINK background (outside limits)
  - Tailwind is
    - WHITE (within limits)
    - RED/PINK background (outside limits)
- Crosswind direction (L or R)
- Crosswind component
  - Crosswind is
    - GREEN (within limits)
    - RED/PINK background (outside limits)



## Wind limitations

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
002	310	/ 10G25
AIRCRAFT	ACTUAL	MAX
HEAD	15.4	15T
CROSS L	19.7	35

The wind limitations are displayed at the right lower corner of the wind calculator.

The available information is:

- Maximum tailwind
- Maximum crosswind

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
002	310	/ 10G25
AIRCRAFT	ACTUAL	MAX
HEAD	15.4	10T
CROSS L	19.7	17

Factors taken into account for these limitations are:

- Aircraft type
- Aircraft status
  - Reduction of crosswind limits for certain aircraft conditions, e.g. FLIGHT CONTROLS
- Runway conditions
- Reverse thrust
  - 5 kts reduction of max. crosswind in case of asymmetrical reverse on wet and contaminated runways

WIND CALCULATOR		
RUNWAY	WIND	
HDG (M)	DIR (M)	SPEED
030	240	/ 12
AIRCRAFT	ACTUAL	MAX
TAIL	10.4	15T
CROSS L	6	20


B737: Autoland tailwind restrictions are NOT accounted for.

B787: EEC MODE in ALTERNATE tailwind restriction is NOT accounted for.

## Settings


The settings screen consists of:

- 1 A unit selection area ([Weight](#), [Distance](#), [Pressure](#), [Temperature](#))
- 2 An [aircraft type selection box](#)
- 3 A link to the [donation screen](#)
- 4 A link to the [user manual screen](#)
- 5 An exchange button
- 6 A selector which switches on or off the keyboard click sound
- 7 Version number of the app

The settings can be accessed through the  symbol on the data entry pad.

When tapping the exchange button the main screen view is restored.

## Settings screen lay-out

**4**

# SETTINGS

**5** ⇌

### UNITS **1**

Weight kg lbs Pressure hPa inHg Sound on off


Distance m ft Temperature °C °F App version 1.3.1 **7**

### OTHER **6**

### AIRCRAFT

Select	Type	Engines	Certification	Brakes <b>2</b>
<input checked="" type="checkbox"/>	737-700W	CFM56-7B22	JAA	Category M Brakes
<input checked="" type="checkbox"/>	737-800W	CFM56-7B24	JAA	Category N Brakes
<input checked="" type="checkbox"/>	737-800WSFP1	CFM56-7B24	JAA	Category N Brakes
<input checked="" type="checkbox"/>	737-900W	CFM56-7B26	JAA	Category O Brakes
<input checked="" type="checkbox"/>	777-200ER	GE90-94B	JAA	Category A Brakes
<input checked="" type="checkbox"/>	777-300ER	GE90-115BL	JAA	Category B Brakes
<input checked="" type="checkbox"/>	787-9	GENX-1B74-75	EASA	Category C Brakes
<input checked="" type="checkbox"/>	787-10	GENX-1B76A	EASA	Category D Brakes

If you like this app please consider to make a donation to Wings of Support. Then you will help children to get a better life. Thank you! Roland Peeters

**3**   
Click to donate

## Weight

Changes the landing weight unit.

Selectable values are kg (kilogram) and lbs (pounds).

The landing weight entry field unit is changed accordingly.

## Distance

Changes the landing distance unit.

Selectable values are m (meters) and ft (feet).

The calculated landing distance unit is changed accordingly.

## Pressure

Changes the QNH unit.

Selectable values are hPa (hectopascal) and inHg (inches mercury)

## Temperature

Changes the temperature setting.

Selectable values are degrees Celsius (°C) and degrees Fahrenheit (°F)

## Aircraft

The section below AIRCRAFT shows a table with aircraft types that are within the app's database.

The left column contains checkboxes. Only aircraft that are checked are visible in the aircraft type selection pad on the main screen.

You may uncheck the boxes for aircraft that you do not use.

It is not possible to:

- deselect all aircraft types. At least 1 type must be selected.
- deselect the aircraft type that was last selected on the main screen.
- If you want to deselect that aircraft type:
  - go to the main screen.
  - select an aircraft type that you do not want to delete.
  - go back to the settings page to deselect the aircraft type.



The list of aircraft matches the current KLM Boeing fleet.

Please note that not only the aircraft type but also the type/model of the engines, the certification basis and type of brakes is included in this table. If your airline also has similar aircraft types please check carefully if the engines, certification and brakes are identical; if not the calculation results will be different. Please refer to [Updates](#) for more information.

## Donation

The donation screen is shown as a pop-up over the settings screen.

It becomes visible after tapping the Wings of Support logo.

When tapping outside the pop-up area the settings screen is restored.

3 buttons allow to select an amount of € 5, € 10 or a custom amount. ①

The active amount is highlighted in orange colour.

Payment by iDeal or credit card is done by tapping the Donate button. ②

Alternatively you may donate directly via the Wings of Support website. ③

Apple does NOT get a share of this payment and 100% of the money will go directly to Wings of Support. For more information about this charity organization please visit [wingsofsupport.org/en](https://wingsofsupport.org/en)



## Donation screen lay-out



# SETTINGS



### UNITS

Select	Type
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	7
<input checked="" type="checkbox"/>	787-10

GENX-1B76A	EASA	Category D Brakes
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## Donate to Wings of Support

Your donation will go directly to charity. Please choose or enter an amount below and click Donate. Thank you!

€5

€10

€ Enter <sup>1</sup>

Donate <sup>2</sup>

[Donate using Website](#) <sup>3</sup>

If you like this app please consider to make a donation to Wings of Support. Then you will help children to get a better life. Thank you! Roland Peeters



Click to donate

## User manual

The user manual screen displays a PDF file and a navigator in the right upper corner **1**. The exchange button links back to the settings screen.



## Updates

This version of the app contains data for the whole KLM Royal Dutch Airlines Boeing fleet. On request the app could be made suitable for other airlines, other aircraft types and variants. For this please send me an [e-mail](#).

The data in this app is extracted digitally from the QRH; so no manual entry of data has been done. The notes pad in the left hand lower corner of the main screen specifies the source of the data, including the date. This way you can verify if it matches your QRH. When new updates become available I will pursue to publish an update of the app in the app store.

When at start-up of the app an internet connection is available an automatic notification is displayed in case a new version is available in the App store.

My experience has learned that since the certification of the aircraft the landing distances itself are not likely to change and that updates mostly concern other aspects of the landing distance tables.

For latest news on upcoming updates please visit [landingdistancecalculator.com](http://landingdistancecalculator.com).

The next chapter shows the [revision history](#) of this app.

# Revision history

## v1.0 (21-09-2021)

- First release

## v1.1 (21-10-2021)

- 777-200ER and 777-300ER FUEL QTY LOW, manual speedbrakes double distance correction for manual speedbrakes fixed.
- Changed colours for both day and night modes to reduce contrast and increase readability.
- Invalid input now disables output.
- Landing weight input now valid up to Maximum Take-off Weight. Landing weights above Maximum Landing Weight which do not exceed Maximum Take-off Weight are now shown in RED.
- Changed the keypad click sound to the iOS default sound.
- Fixed donation payment issue.
- Added a function that resets all input to default if the Backspace button is held for 3 seconds.
- Fixed taxi miles entry issue.
- Updated user manual.
- Other minor bug fixes.

## v1.1.1 (3-11-2021)

- Fixed Vref ADJ(AT OFF) issue for gusty winds.
- Introduced possibly to turn off keyboard click in settings.

### v1.1.2 (12-11-2021)

- Fixed issue with maximum tailwind for B737.
- Settings page: corrected engine, certification and brakes data for B737-700W.
- Updated user manual.

### v1.2 (1-1-2022)

- Added portrait mode.
- Added RTO brake cooling advice.
- Notes regarding landing weight exceedances are shown in red colour.
- Minor bug fixes.
- Updated user manual.

### v1.2.1 (3-1-2022)

- Fixed a bug in the RTO brake cooling info box.
- Updated user manual.

### v1.2.2 (5-1-2022)

- Fixed another bug in the RTO brake cooling info box.
- Updated user manual.

### v1.3 (3-2-2022) Major update

- Added an automatic notification if a new version is available in the App store.

- Enabled Fahrenheit settings option.
- Added Landing Climb Limit Weight.
- Added Go-around Climb Gradient.
- Added Tire Speed Limit Landing Weight for 787.
- Added Flight with Unreliable Airspeed tables.
- Added Flap Manoeuvring Speeds.
- Other small app improvements.
- Updated user manual.

#### v1.3.1 (28-4-2022)

- 777 and 787: Landing Climb Limit Weight now titled Approach or Landing Climb Limit Weight.
- 737: Adjusted Airspeed Unreliable values to match QRH update of 28 April 2022.
- App version number shown on settings page
- Other small app improvements.

#### v1.3.2 (4-5-2022)

- Minor bug fix.
- Updated user manual.



## Credits

Roland Peeters (Creation & Design)

Joris Zadelhof (Wings of Support)

Sucharu Hasija (iOS implementation)

Rens van Broekhuijsen and other pilots (Testing)

## Disclaimer

This tool has not been approved for operational use.

Pilots should always refer to approved sources.

By using this app you agree to use it at own risk.