

## Boeing 737-500



The Boeing 737 series is the world's most popular aircraft family. The shortened B737-500 variant has a capacity of a maximum of 140 people. The specific B737-500 modeled in Aerofly FS 2 is based on an aircraft with the classic “steam gauge” cockpit, retrofit high-bypass CFM56 engines for better fuel economy and retrofit cockpit devices such as a Universal FMS to allow modern navigation.

### Flight Plan Editing in the CDU

The flight management system of the exact 737-500 that we are simulating is a retrofit and therefore is identical to the ones found in the Learjet 45 and Q400. The interface to the flight management system (FMS) is called a control display unit (CDU). The CDU is the device that pilot interact with in the cockpit, the computers performing all the calculations are called flight management computers (FMC).

We added a tutorial on how to create a flight plan in the 737, Learjet 45 and Q400:[Universal UNS-1](#)



## V Speeds and Ranges

What are the v-speeds?

### Take Off Speeds

Boeing 737-500 Take-Off Speeds			
Take-off Weight	737-500 18.5K		
/1000kg	V1	Vr	V2
70			
65			
60	147	147	152
55	140	140	146
50	132	132	139
45	123	123	132
40	113	114	124
35	104	104	117
	ISA Vmcg=106		
Typical wet v1=dry V1-10kts			

### Landing Speeds

Boeing 737-500 Landing Speeds			
Landing Weight	737-500 18.5K		
	Flaps		
/1000kg	40	30	15
70			
65			
60	140	144	154
55	134	139	148

<b>Boeing 737-500 Landing Speeds</b>			
<b>Landing Weight</b>	<b>737-500 18.5K</b>		
	<b>Flaps</b>		
<b>/1000kg</b>	<b>40</b>	<b>30</b>	<b>15</b>
<b>50</b>	128	133	141
<b>45</b>	122	125	135
<b>40</b>	114	117	125
<b>35</b>	107	109	116

**Flap Setting Speeds**

<b>Boeing 737-500 Landing Flap-Speed Schedule</b>			
<b>Flap Position</b>	<b>Up to 53070kgs</b>	<b>Above 53070kgs</b>	<b>Above 62823kgs</b>
<b>Flaps UP</b>	210	220	230
<b>Flaps 1</b>	190	200	210
<b>Flaps 5</b>	180	190	200
<b>Flaps 10</b>	170	180	190
<b>Flaps 15</b>	150	160	170
<b>Flaps 25</b>	140	150	160
<b>Flaps 30</b>	Final Approach Speed		
<b>Flaps 40</b>	Final Approach Speed		

**Flight Notes**

**Speed, Height, Distance Conversion**

- Level flight deceleration allow 10kts/nm & 1kt/sec (deceleration is faster at lower weights)
- Descending deceleration allow 5kts/nm & 0.5kt/sec
- Idle descent allow 3nm/1000'

**Approach Profile Planning**

- Aim for 250kts, 10,000ft by 30nm out
- Aim for 210kts, On ILS at 12nm

**Cruise N1**

- $N1 = (2 \times Alt/1000) + 10$  eg at FL350 = 70+10 = 80% N1 **or**  $FF = (IAS*10)/2 - 200$  eg 250kts = 2500/2 - 200 = 1050 kg/hr/engine

**N1's & Pitch Attitudes**

<b>Phase of Flight</b>		
	<b>%N1</b>	<b>Attitude (Nose Up)</b>
<b>Level Flight</b>		
<b>250kts</b>	65	4
<b>210kts</b>	60	6
<b>Flap 1 190kts</b>	60	6
<b>Flap 5 180kts</b>	62	7
<b>Gear Down, Flap 15, 150kts</b>	70	8

<b>Phase of Flight</b>		
	<b>%N1</b>	<b>Attitude (Nose Up)</b>
<b>Level Flight</b>		
<b>Gear Down and On Glideslope</b>		
<b>Flap 15 150kts</b>	52	4.5
<b>Flap 25 140kts</b>	52	4
<b>Flap 30, Vref + 5</b>	55	2.5
<b>Flap 40, Vref + 5</b>	62	1

### Climb Speeds

If ECON info not available, use 250KIAS until 10,000ft then 280KIAS/M0.74 thereafter

- **Best Angle = V2 + 80**
- **Best Rate = V2 + 120**

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