

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

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

Flap Setting Speeds

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

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

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