Boeing 737-300 / -400 Limitations

Compiled by Matt Zagoren

WEIGHT LIMITS

Takeoff Weight

The takeoff weight (weight at brake release or at start of takeoff roll) is limited by the most restrictive of the following:

- Maximum Climb Limited Takeoff - based on the aircraft's engine-out climb capability at a given density altitude
- Maximum Runway Limited Takeoff Weight - determined by the ability of the aircraft to accelerate to takeoff speed on a given runway.
- Maximum Certificated Takeoff Weight - the weight set by the manufacturer as the highest allowable under any conditions
- Obstacle Clearance, Enroute, and Landing Limitations
- Tire Speed and Brake Energy Limit Weights

Landing Weight

Maximum landing weight is limited by the most restrictive of the following requirements:

- Maximum Landing Weight (Runway Length plus Obstacle, and including Limitations for Inoperative Equipment)
- Maximum Landing Weight (Climb Limited)
- Maximum Certified Landing Weight

CERTIFICATE WEIGHT LIMITS

Maximum Taxi Weight:	Weight, Pounds
737-300	135,500
737-300LR	139,000
737-400	143,000
Maximum Takeoff Weight:	
737-300	135,000
737-300LR	138,500
737-400	142,500
Maximum Landing Weight:	
737-300	114,000
737-400	121,000
Maximum Zero Fuel Weight:	
737-300	106,500
737-400	113,000

OPERATION LIMITS

Maximum 90° crosswind component:	29 knots (AFM)
Maximum 90° crosswind component for CAT II/IIIa approaches:	10 knots (AFM)
Maximum 90° crosswind component, for landing when visibility is less than 3/4 mile or RVR 4000, runway is less than 7,000 feet in length, and runway is wet or contaminated:	10 knots (AFM
Maximum takeoff and landing tailwind component:	10 knots (AFM)
Maximum runway slope:	+2.0%, -2.0%
Flight maneuvering load acceleration limits: --- Flaps Up: --- Flaps Down:	 +2.5g to -1.0g +2.0g to 0.0g
Maximum operating altitude:	37,000 feet
Maximum takeoff and landing altitude:	8,400 feet
Maximum flap extension altitude:	20,000 feet
Maximum flight operating latitude:	73° North 60° South

SPEED LIMITS

Airspeed and Mach Number Limits

Maximum operating airspeed:	Vmo Pointer
Maximum operating mach number:	.82 (Mmo)
Turbulent airspeed:	280 knots/.70M
Maximum speed with Mach Trim INOP:	.74M
Maximum gear extension speed:	270 knots/.82M
Maximum gear extended speed:	320 knots/.82M
Maximum gear retraction speed:	235 knots

Maximum Flap Operating Speeds

Flaps	737-300	737-400
1	230 knots	250 knots
2	230 knots	250 knots
5	225 knots	250 knots
10	210 knots	215 knots
15	195 knots	205 knots
25	190 knots	190 knots
30	185 knots	185 knots
40	158 knots	162 knots

Window Heat Inoperative Speed Limit

With any window heat inoperative, the maximum speed below 10,000 feet and at an altitude where birds are likely to be encountered is 250 knots.

ICE & RAIN PROTECTION

Wing Anti-Ice Operation

- Wing anti-ice must be OFF for takeoff and must not be turned on prior to reaching 400 feet AFE. (AFM)
- Do not operate wing anti-ice on the ground. (AFM)

Operation In or Near Moderate To Heavy Rain, Hail, or Sleet

When flight in moderate or heavy rain, hail, or sleet is encountered or anticipated, engine start switches must be set to FLT and a minimum 45% N1 must be maintained except on short final when landing is assured.

FUEL

Fuel Quantity

Maximum Fuel Quantity (at a density of 6.7 lbs/gallon):

Each wing tank:	10,000 lbs
Center tank:	15,500 lbs
737-300 Aux Tank (if installed):	2,800 lbs
737-400 Aux Tank (if installed):	3,300 lbs

Fuel Imbalance

Maximum allowable fuel imbalance between tanks 1 & 2 is 1000 lbs.

Fuel Usage

Use center fuel tank to depletion followed by main tank fuel; however, a maximum of 1,000 lbs may be retained in center tank provided the effects of balance have been considered.

FLIGHT CONTROLS

Speedbrake Usage

Speedbrakes should not be deployed in flight at radio altitudes less than 1,000 feet AFE.

AUTO FLIGHT SYSTEM

Autopilot

- Do not engage autopilot below 1200 feet AFE during takeoff. (AFM)
- Single Channel - The autopilot shall not remain engaged below 50 feet.
- Dual Channel - The autopilot may be used for autoland.