

Boeing 727-100/-200/-200A Limitations

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SELECTED LIMITATIONS

All references to airspeed or Mach Number relate to Indicated Airspeed or Indicated Mach Number, unless otherwise noted. All references to altitude relate to Pressure Altitude, unless otherwise noted.

| | |
|--|-------------------|
| Take-Off and Landing Temperature Limits - (AFM) | |
| - Minimum | -65° F |
| - Maximum | 120° F |
| | |
| Take-Off and Landing Altitude Limits - (AFM) | 8,300 feet |
| Note: If pressure altitude is below -1000 feet, use performance data for -1000 feet. | |
| | |
| Runway Slope Limit - (AFM) | +/- 2% |
| | |
| Crosswind Values - (Take-off and Landing) | |
| The maximum demonstrated crosswind component is 29 knots and is not an AFM limitation. However, a component at or near 26 knots with higher gusts should be considered operationally unacceptable. | |
| | |
| Maximum Tailwind Component for Take-off and Landing | 10 kts |
| | |
| Chine Tires - (AFM) | |
| Must be installed on nose wheels to permit take-off in standing water or slush. | |
| | |
| Maximum Tire Ground Speed | 174 kts / 200 mph |
| If this limit is exceeded, all tires should be inspected for possible tread separation. | |

AIRSPEED LIMITATIONS (AFM)

| | | |
|--|--|---|
| * Maximum Operating Speed | <u>MODE A</u> (and all airplanes not dual Vmo equipped) Vmo: 380 kts. at sea level 389 kts. at 5,000 ft. 398 kts. at 10,000 ft. 404 kts. at 15,000 ft. 409 kts. at 20,000 ft. 411 kts. at 21,500 ft. Mmo: .90 Mach above 21,500 ft. | <u>MODE B</u> When in-flight gross weight exceeds 172,000 pounds or ZFW exceeds 136,000 pounds, operate in Vmo MODE B for the entire flight (AFM). Vmo: 350 kts. at sea level 352 kts. at 5,000 ft. 355 kts. at 10,000 ft. 359 kts. at 15,000 ft. 363 kts. at 20,000 ft. 369 kts. at 25,000 ft. 372 kts. at 26,500 ft. Mmo: .90 Mach above 26,500 ft. |
| Landing Gear Operating (Vlo/Mlo) | Extending: 270 kts. or .83 Mach Retracting: 200 kts. See Note 5. | |
| Landing Gear Extended (Vle/Mle) | 320 kts. or .83 Mach | |
| Wing Flaps Operating and Extended | 2° - 230 kts. 5° - 215 kts. 15° - 205 kts. 25° - 185 kts. 30° - 180 kts. 40° - 170 kts. | |
| ** One or More Leading Edge Devices Extended | 240 kts. | |
| Fuel Dumping | Same as Vmo/Mmo | |
| *** One or Both Yaw Dampers Inoperative | <u>-100 Series</u> 350 kts. at 22,000 ft. and below 340 kts. at 23,000 ft. 320 kts. at 24,000 ft. 300 kts. at 25,000 ft. 280 kts. at 26,000 ft. | <u>-200 Series</u> 350 kts. at 25,000 ft. and below 310 kts. at 26,000 ft. 300 kts. at 27,000 ft. 290 kts. at 28,000 ft. 280 kts. at 29,000 ft. 270 kts. at 30,000 ft. |

NOTES

*1. Maximum Operating Speed

Vmo/Mmo shall not be deliberately exceeded in any regime of flight (climb, cruise or descent). If Mach/Airspeed Warning "cricket" sounds before Vmo/Mmo is indicated, the point at which the warning cricket sounds becomes limiting.

2. Normally observe limiting speed by reference to the Vmo pointer or combined Vmo/Mmo pointer (as applicable) on the Airspeed or Mach/Airspeed indicator.

**3. L.E. Flaps (Amber) Light on After Flaps Retracted

Provided all leading edge devices appear, from visual inspection, to be retracted and airplane flight characteristics are normal, Vmo/Mmo may be considered the limiting speed.

***4. One or Both Yaw Dampers Inoperative

Normal operation above 26,000 feet (-100 series) or 30,000 feet (-200/200A series) is not permitted with one or both yaw dampers inoperative. If failure occurs above the applicable altitude, descend at a speed not to exceed Mach .80 or 280 knots (-100 series), 270 kts (-200/200A series), then observe table limits.

5. Gear Recycle

If necessary to recycle gear after initial gear retraction after take-off, monitor Flap/Speed/Gross Weight schedule during gear retraction.

FUEL TANK CAPACITIES

727-100/-200

Outboard Tanks, No. 1 and No. 3 (Each): Approx. 12,000 lbs

Center Tank, No. 2: Approx. 27,500 lbs

Total Fuel Load: 51,500 lbs

727-200A

Outboard Tanks, No. 1 and No. 3 (Each): 11,926 lbs

Center Tank, No.2: 30,351 lbs

Total Fuel Load: 54,203 lbs

WEIGHT LIMITATIONS

| | -100 Series | -200 Series | -200A Series |
|--|------------------------------|------------------------------|------------------------------|
| Maximum Take-Off Weight This is the maximum allowable gross weight at brake release, just prior to take-off roll. To obtain Maximum Ramp Weight (AFM), add 600 pounds. Maximum Ramp Weight is a structural limit for taxiing. | 160,400 lbs. | 172,400 lbs. | 177,900 lbs. |
| Maximum Landing Weight (AFM) -Flaps 30° -Flaps 40° This is a structural limit. All weight in excess of maximum landing weight must consist of disposable fuel. | 137,500 lbs. 137,500 lbs. | 150,000 lbs. 142,500 lbs. | 150,000 lbs. 142,500 lbs. |
| "Operational" Maximum Zero Fuel Weight The operational zero fuel weight is a result of subtracting 600 lbs. from the FAA Certificated Zero Fuel Weight (AFM) to aid load agents in determining allowable payloads. This 600 lbs. must be added to the zero fuel weight on the OK-85 form to determine the aircraft's actual zero fuel weight. Certificated Zero Fuel Weight is a wing structural limit. All weight in excess must be fuel. | 117,400 lbs. | 135,400 lbs. | 137,400 lbs. |

ANTI-ICE LIMITATIONS

Engine Anti-Ice (AFM)

Engine anti-ice must be on for take-off and initial climb when icing conditions exist or are anticipated.

Warm Weather Operation

Do not operate engine and wing anti-ice in flight at engine powers greater than maximum cruise thrust when the total air temperature is above +10° C. Prolonged operation under these conditions may reduce the hail resistance of the wing leading edges or engine cowl skins.

Window Heat (AFM)

Window heat must be turned on to the No. 1 and No.2 windows for all normal flight operations, and must be turned on 10 minutes prior to take-off.

AUTOPILOT LIMITATIONS

| | |
|---|---|
| Maximum Operating Airspeed/Mach No | Vmo/Mmo |
| Minimum Altitude (AFL) for Engaging Autopilot | 1,100 ft. |
| Minimum Altitude (AFL) for Use of Autopilot During Approach | |
| -ILS coupled approach | |
| IFR weather conditions | 80 ft. |
| VFR weather conditions | 50 ft. |
| -Other approaches | 50 ft. below ceiling or MDA for approach used |
| Engine-out approaches with autopilot engaged are not permitted. | |

FLIGHT CONTROL LIMITATIONS

Flap Operation (AFM)

In flight during normal retraction or extension, flap control handle must remain in 2° gate position until appropriate symmetrical leading edge device position is verified.

The maximum altitude for operation with flaps extended is 20,000 feet.

Do not extend flaps beyond 30° when gross weight exceeds:

- 100 Series - 137,500 lbs
- 200 Series - 143,500 lbs
- 200A Series - 143,500 lbs

POWER PLANT LIMITATIONS (JT8D-1A and -7A)

| Operating Condition | Temperature Limit °C |
|--|----------------------|
| Starting: | |
| At or Below 59° F | 350° |
| Above 59° | 420° |
| Idle: | |
| With no air bleed | 420° |
| Bleed valves open | 480° |
| Maximum Cruise Thrust: | 510° |
| Maximum Continuous & Normal Climb: | 540° |
| Take-Off: | 580° |
| Acceleration: | 580° |
| If EGT reaches 580° to 610° for less than 5 seconds, a Maintenance Hot Inspection is required, over 5 seconds is an engine change. | |

Oil Temperature (AFM)

Maximum for Continuous Operation is 120° C.

Maximum for 15 Minutes is 121° C - 157° C.

Oil Quantity

Minimum oil quantity per engine for dispatch is 4 quarts plus 2 quarts per hour for next flight.

Reverse Thrust

Do not operate thrust reversers in flight (AFM).

With airplane static, do not operate thrust reverser (for ground checking) in excess of 10 seconds; do not exceed 70% N1 RPM and do not repeat cycle sooner than 3 minutes.

Engine Ignition

Engine ignition must be on for take-off and landing (AFM).