

# FALCON 50 LIMITATIONS

## AUTHORIZED LIMITATIONS

- Day and night VFR, if permitted by flight regulations of the country over which the airplane is flying.
- IFR and automatic approaches to Cat. I weather minimums.
- Extended overwater and uninhabited terrain.
- Icing conditions.

## MAXIMUM PASSENGERS

- Maximum number of passenger seats ..... 19
- Max. no. passengers for flight above 45,000 ft ..... 12 (for airplanes incorporating SB F50-163, maximum altitude 49,000 ft)

## MINIMUM CREW

- Two Pilots (one pilot and one copilot)

## DIMENSIONS

- Wing span ..... 61'10"
- Height ..... 22'10"
- Length ..... 60'9"
- Turning radius
  - Steering Engaged ..... 44'3"
  - Steering Disconnected ..... 36'7"

## WEIGHT LIMITATIONS

- |                             | W/O SB 161 | SB 161     |
|-----------------------------|------------|------------|
| • Max. Ramp weight          | 38,800 lbs | 40,780 lbs |
| • Max. Takeoff              | 38,800 lbs | 40,780 lbs |
| • Unpaved Runway Operations |            | 33,070 lbs |
| • Max. Landing weight       |            | 35,715 lbs |
| • Unpaved Runway Operations |            | 33,070 lbs |
| • Max. Zero fuel weight     |            | 25,570 lbs |
| • Minimum Flight weight     |            | 18,959 lbs |

## LOADING

- Baggage compartment – 2,205 lbs., not to exceed a floor loading of 123lbs/ft<sup>2</sup>

## CENTER OF GRAVITY

- Datum is 25% of mean aerodynamic chord (MAC)

## MEAN AERODYNAMIC CHORD

- MAC length ..... 111.77 inches
- Zero % MAC ..... FS+354.89 in.

## RUNWAY CONDITIONS

- Runway slope (uphill and downhill) ..... ± 2.5%
- Runway surface ..... Hard surface
- Runway surface (SB F50-071-R1) ..... Unpaved Surface

## WIND COMPONENT

- Tail wind component ..... 10 kts
- Demonstrated Crosswind component ..... 23 kts

## TAKEOFF AND LANDING (ALTITUDE)

- Airport pressure altitude ..... -1,000 ft thru +10,000ft
- Airport pressure altitude (SB154) ..... 10,000 ft thru +14,000ft

## PRESSURIZATION

- Max. differential (without SB 163) ..... 9.1 psi
- Max. differential (with SB 163) ..... 9.5 psi

## ENROUTE LIMITATIONS

- Max. operating altitude (w/o SB 163) ..... 45,000 ft
- Max. operating altitude (SB163) ..... 49,000 ft

## MAXIMUM OPERATING SPEEDS (VMO / MMO)

- At Sea Level ..... 350 KIAS
- SL to 10,000 ft ..... Linearly to 350 to 370 KIAS
- 10,000 ft to 24,000 ft ..... 370 KIAS
- Above 24,000 ft ..... 0.86 M

## LANDING GEAR

- Max. landing gear **operating** speed: V<sub>LO</sub>/M<sub>LO</sub>
  - V<sub>LO</sub>/M<sub>MO</sub> ..... 190 KIAS / 0.70 M
- Max. landing gear **extended** speed: V<sub>LE</sub>/M<sub>LE</sub>
  - V<sub>LE</sub>/M<sub>LE</sub> ..... 220 KIAS / 0.75 M
- Brake Kinetic Energy Limit
  - Normal RTO Stop ..... 14,697 kJ
  - Maximum RTO Stop ..... 18,249 kJ
- Nose wheel must be equipped with chinned tires.
- Anti-Skid ..... Must be operative.
- Tire Speed (ground speed) ..... 180 kts

## MISCELLANEOUS SPEED LIMITS

- Maneuvering speed (V<sub>A</sub>) ..... 210 KIAS
- Min. control speed in the AIR: (V<sub>MCA</sub>) ..... 82.5 KIAS
- Windshield wiper operating speed ..... 205 KIAS
- DV window opening speed ..... 180 KIAS
- Stall speed – caution, do not intentionally fly the airplane slower than the initial stall warning onset
- Cracked Windshield ..... 230 KIAS
- Turbulent air penetration ..... 280 KIAS / 0.76 M

## MANEUVERING FLIGHT LOAD FACTORS

- Flaps Up ..... +2.6g to -1.0g
- Flaps down ..... +2.0g to 0g

## LIGHTING

- Landing Light ..... 15 minutes ON/45 minutes OFF
- Taxi Light ..... No limit – OFF after gear retraction

## HYDRAULIC SYSTEM

- Maximum altitude for the Stand-by pump operation  
45,000 ft
- Hydraulic fluid ..... MIL-H-5606 (NATO H515 or H520)
- If either or both hydraulic systems are inoperative,  
maximum airspeed ..... 260 KIAS / 0.76M

## THRUST REVERSER

- Thrust reverser is approved for ground use only.
- Thrust reverser must not be used for taxiing in reverse
- Max N1 during thrust reverse use ..... 93% N1
- On Landing - do not attempt a go-around after selecting thrust reverse.
- Thrust Reverser deployed in-flight ..... 230 KIAS
- Full thrust reverse is usable to a complete stop.
- Recommend 30 seconds maximum continuous usage and 4.5 minutes between consecutive uses.

## ANTI-ICE:

- Icing conditions exist when OAT is less than 10°C with visible moisture on the ground and TAT 10°C in-flight
- Eng and Wing Anti-ice must not be used with OAT above 10°C (OAT ground and TAT in-flight)
- Caution: use of the Wing Anti-Ice on ground limited to testing only for short duration to ensure the ITT rise as a result of valve opening with switch activation.

