Falcon 50

Flash Cards

Memory Items

Falcon 50

Memory Items

ALL ENGINES OUT

1. C and D Buses – OFF
2. Communications – VHF/ATC 1
3. Airplane – ESTABLISH WITHIN AIRSTART ENVELOPE (See IN FLIGHT RELIGHT ENVELOPE, CAE Operating Handbook)
4. Battery Load – REDUCE TO 50 AMPS/Battery
5. Airstarts – ATTEMPT (See Procedure Pages E-11/12/14)

Falcon 50

Memory Items

ENGINE FIRE

S1. Warning Horn – SILENCE

2. Power Lever – CUTOFF

3. FIRE PULL – PULLED

4. Airspeed – BELOW 250 KIAS

5. Fire Extinguisher ENG – POSITION 1

If Fire Persists:

6. Fire Extinguisher ENG – POSITION 2

Falcon 50

Memory Items

APU FIRE

S1. Warning Horn – SILENCE

2. APU MASTER – DEPRESSED

3. FIRE APU Switch – POSITION 1

Falcon 50

Memory Items

INADVERTENT FLIGHT THRUST REVERSAL

1. Engine 2 – IDLE
2. Thrust Reverser NORM/STOW Switch – STOW
3. Reduce Airspeed – 230 KIAS (OR LESS)

Falcon 50

Memory Items

AIR CONDITIONING SMOKE

1. Crew Oxygen Masks – DONNED - 100% + EMERGENCY
2. Smoke Goggles – DONNED - VENT VALVE OPEN
3. Microphone Selector – MASK AND C'PIT – TESTED
4. No Smoking Sign – ON

Falcon 50

Memory Items

AIR CONDITIONING SMOKE (Cont'd.)

5. PASSENGER OXYGEN Controller – OVERRIDE
6. Passenger Masks – DONNED - CHECKED

Falcon 50

Memory Items

SMOKE REMOVAL

1. Crew Oxygen Masks – DONNED - 100% + EMERGENCY
2. Smoke Goggles – DONNED - VENT VALVE OPEN
3. Microphone Selector – MASK AND C'PIT - TESTED
4. No Smoking Light Pushbutton – ON

Falcon 50

Memory Items

SMOKE REMOVAL (Cont'd.)

5. Crew Air Gaspers – OPEN

Only if no Flame in Cabin:

6. PASSENGER OXYGEN Controller – OVERRIDE
7. Passenger Masks – DONNED – CHECKED
8. Passenger Cabin Air Gaspers – OPEN

Falcon 50

Memory Items

RAPID DEPRESSURIZATION

S1. WARNING HORN – SILENCE

2. Crew Oxygen Masks – DONNED - 100%
3. Microphone Selector – MASK AND C'PIT - TESTED
4. Fasten Belts and No Smoking – ON
5. PASSENGER OXYGEN Controller – OVERRIDE
6. Passenger Masks – DONNED – CHECKED
7. Emergency Descent – INITIATED

Falcon 50

Memory Items

EMERGENCY DESCENT

1. Autopilot – DISENGAGED
2. Power Levers – IDLE
3. Airbrake Handle – POSITION 2
4. Descent Airspeed – V_{MO}/M_{MO} (SMOOTH AIR CONDITIONS)
5. ATC Transponder – MAYDAY CODE

Falcon 50

Memory Items

AFT COMPARTMENT FIRE

S1. Warning Horn – SILENCE

2. Bleed Air HP and PRV (all 4 switches) – OFF
3. Anti-ice ENG 2 Switch – OFF
4. BAT 1 and BAT 2 Switches – OFF/LIGHTS ON
5. Hydraulic STBY PUMP Switch – OFF

If Fire Persists:

6. FIRE AFT COMP Switch – POSITION 1

Falcon 50

Memory Items

BAGGAGE COMPARTMENT FIRE

S1. Warning Horn – SILENCE

2. BLEED AIR BAG Switch – OFF
3. FIRE BAG COMP Switch – POSITION 1
4. OMEGA – OFF

Falcon 50

Memory Items

ELECTRICAL SMOKE OR FIRE

1. Crew Oxygen Masks – DONNED - 100% + EMERGENCY
2. Smoke Goggles – DONNED - VENT VALVE OPEN
3. Microphone Selector – MASK AND C'PIT – TESTED
4. No Smoking Sign – ON

Falcon 50

Memory Items

ELECTRICAL SMOKE OR FIRE (Cont'd.)

Only if no Flame in Cabin:

5. PASSENGER OXYGEN Controller – OVERRIDE
6. Passenger Masks – DONNED - CHECKED

Falcon 50

Memory Items

THREE GENERATORS INOP

1. C and D busses – OFF
2. BUS TIE Switch – FLIGHT NORMAL
3. Each Generator – NO MORE THAN 2 RESETS EACH

Falcon 50

Memory Items

LOSS OF BOTH HYDRAULIC SYSTEMS

1. Autopilot and Yaw Damper – DISENGAGED
2. Airspeed – Below 260 KIAS/0.76M

Falcon 50

Memory Items

UNRELIABLE AIRSPEEDS AT HIGH ALTITUDE

1. Autopilot – DISENGAGE
2. Yaw Damper – DISENGAGE
3. Large displacements and rapid movements of control surfaces – AVOID
4. Wings – LEVEL
5. Altitude – STABILIZE, using standby altimeter, if necessary:
   - Pitch – BETWEEN 1° and 4° nose up
   - Power – SMOOTHLY FULL FORWARD

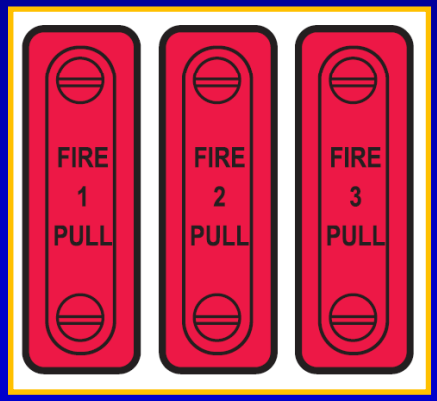
WARNING: Inappropriate flight director guidance may be activated. Do not follow corresponding FD.

Annunciators

Engine

Falcon 50

Annunciators – Engine



- Illumination of respective engine red FIRE PULL handle light indicates an over temperature in the associated engine nacelle

Falcon 50

Annunciators – Engine

- Illumination of red FIRE APU light indicates an over temperature in APU

Falcon 50

Annunciators – Engine

- Illumination of the red REV UNLOCK light indicates that the thrust reverser power lever is fully stowed (down) or the Emergency Stow switch is in stow, and any of the following conditions exist: either thrust reverser door is not stowed, the reverser actuator is not fully retracted, or the S latch solenoid is powered or stuck in the actuated position

Falcon 50

Annunciators – Engine

- Illumination of the amber TRANSIT light indicates that the engine No. 2 thrust reverser is maneuvering: (neither fully stowed nor fully open)

Falcon 50

Annunciators – Engine

- Illumination of the green DEPLOYED light indicates that the engine No. 2 thrust reverser is deployed (information given simultaneously by the two target door-extended micro switches)

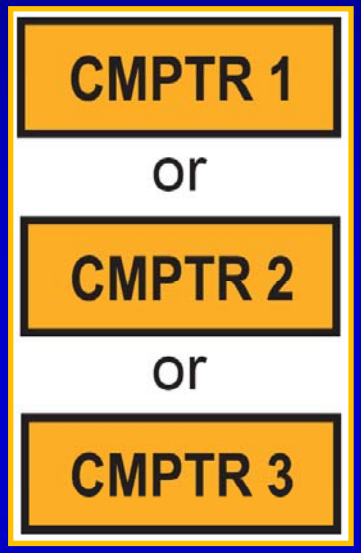
Falcon 50

Annunciators – Engine

- Illuminates anytime the inlet door microswitch is open
- Illumination of the red ENG 2 FAIL light on the ground indicates the No. 2 power lever is greater than 84° FCU and the No. 2 engine power is not more than 85% N_1

Falcon 50

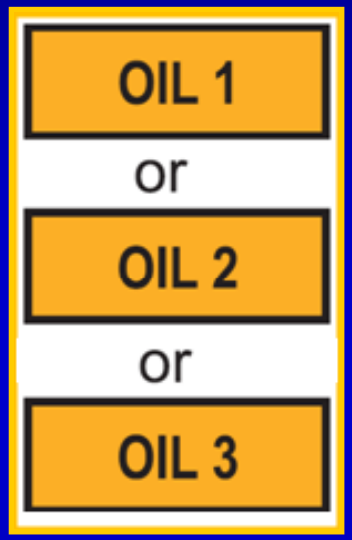
Annunciators – Engine



- Illumination of one of the three amber CMPTR light indicates the control switch of the respective computer is off, or the corresponding computer has failed (electrical power supply failure or incorrect data)

Falcon 50

Annunciators – Engine



- Illumination of one of the three OIL lights indicates the oil pressure of the respective engine is < 25 PSI or a metal chip (s) are on the metal chip detector

Air Conditioning and Pressurization

Falcon 50

Annunciators – Air Conditioning and Pressurization

- Illuminates and the warning horn sounds if cabin altitude is ≥ 10,000 ft.
- Illuminates and the warning horn does not sound if any of the following is not closed and latched:
  - the cabin entry door
  - the baggage compartment door
  - the aft compartment door
  - the lavatory service door (forward lavatory only)

Falcon 50

Annunciators – Air Conditioning and Pressurization

- Illumination of the red FIRE AFT COMP light indicates an over temperature in the aft compartment

Falcon 50

Annunciators – Air Conditioning and Pressurization

- Illumination of the red FIRE BAG COMP light indicates an over temperature in the baggage compartment

Falcon 50

Annunciators – Air Conditioning and Pressurization

- Indicates overheat in one of the engine bleed air lines

Falcon 50

Annunciators – Air Conditioning and Pressurization

- Indicates a high temperature in cabin or cockpit distribution ducts

Falcon 50

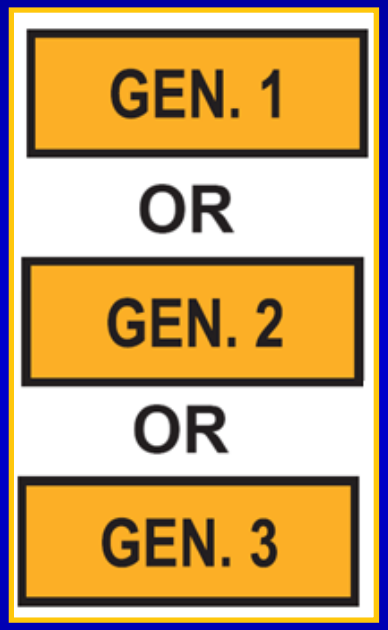
Annunciators – Air Conditioning and Pressurization

- With a power lever above 54° FCU, indicates APU BLEED VALVE is OPEN when it should be closed

Electrical

Falcon 50

Annunciators – Electrical



- Illuminates to indicate that the corresponding reverse current relay is open and the generator is not connected to its respective Main BUS

Falcon 50

Annunciators – Electrical

- Illumination of either amber BAT 1 or BAT 2 light indicates the corresponding battery is not connected to its respective main bus

Falcon 50

Annunciators – Electrical

- Illumination indicates either or both batteries have an internal temperature of 150°C or more

Falcon 50

Annunciators – Electrical

- Illumination indicates the 26V voltage or frequency of the respective pilot or copilot 26V bus is out of tolerance
- On aircraft with modification M1703, the lights indicate the respective inverter has sent a fault (or failed) signal to the warning light

Falcon 50

Annunciators – Electrical

- Amber light indicates the main BUS TIED rotary selector is in the tied position

Falcon 50

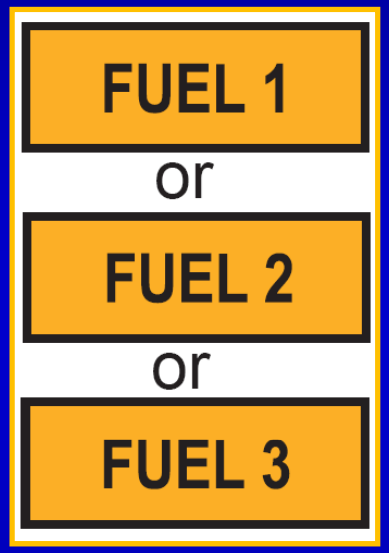
Annunciators – Electrical

- Illuminates if emergency lighting control switch is OFF and 28 VDC is available. In ON or ARMED, the light is extinguished

Fuel

Falcon 50

Annunciators – Fuel



- Illuminates when the fuel pressure in the supply line from the feeder tank to the associated engine is low (< 5.5 PSI ± .5 PSI)

Falcon 50

Annunciators – Fuel

- Illumination of the amber fuel XFR light on the fuel system panel indicates the respective system (1, 2, or 3) transfer pump output pressure has dropped below 5.5 PSI

Falcon 50

Annunciators – Fuel

- One of the three air vent valves may be open. (Refueling panel lever switch up, gravity refuel switch on, or vent valve out of closed position.)
- Refueling door may be open, consider airspeed
- D Bus may not be powered
- Defueling valve may be open

Falcon 50

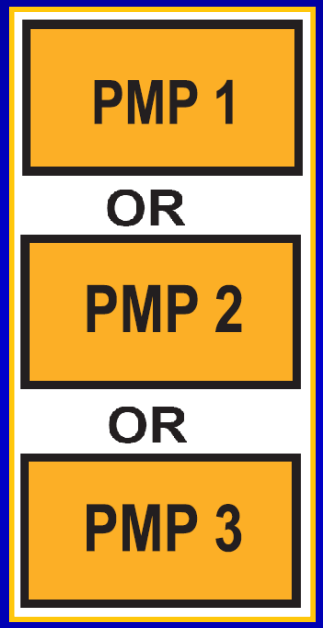
Annunciators – Fuel

- Indicates the fuel level in one or more of the feeder tanks has been < 300 lbs for a period of at least 15 seconds

Hydraulics

Falcon 50

Annunciators – Hydraulics



- Indicates that the pressure delivered by the respective hydraulic pump is < 1,500 PSI

Falcon 50

Annunciators – Hydraulics

- **Illuminates if:**
  - **Electric STAND-BY PUMP has operated for more than 60 consecutive seconds**
  - **Or the STAND-BY PUMP manual selector in the aft compartment is set to GROUND TEST**

Falcon 50

Annunciators – Hydraulics

- Indicates bleed air pressure in system 1 or system 2 hydraulic reservoir is < 16 PSI

Landing Gear

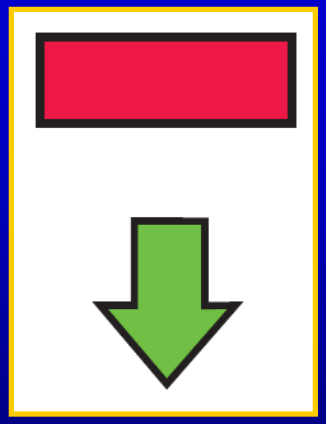
Falcon 50

Annunciators – Landing Gear

- L or R annunciator illuminates and fire warning horn sounds to indicate overheat of the respective wheel well

Falcon 50

Annunciators – Landing Gear

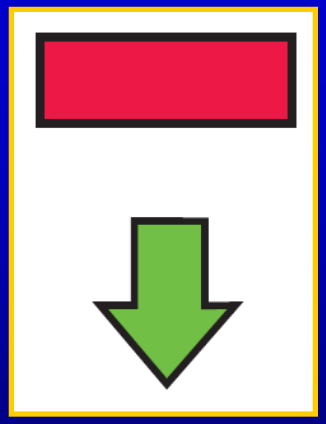


- Indicates that:
  - The left and right red lights illuminate when the respective landing gear door is not closed and locked
  - The center red light indicates the nose gear is neither up and locked nor down and locked

Falcon 50

Annunciators – Landing Gear

- Illumination of a green arrow indicates that the corresponding Landing Gear is down and locked



Falcon 50

Annunciators – Landing Gear

- Each annunciator will illuminate when System #1 hydraulic pressure is applied to the respective (L or R) #1 brake actuators
- Will not illuminate if electrical power for the ANTI-SKID system is not available

Falcon 50

Annunciators – Landing Gear

- Illuminates steady when:
  - Either L or R brake unit is subjected to #2 system hydraulic pressure (with the #2 braking system or PARK BRAKE)

- It flashes when:
  - PARK BRAKE accumulator pressure drops below 1,200 PSI

Falcon 50

Annunciators – Landing Gear

- Illuminates when LANDING LIGHTS switch is turned on. Indicates power is available to LANDING LIGHTS

Falcon 50

Annunciators – Landing Gear

- Flashes if the following occurs:
  - Landing gear handle is UP and one or more gear are not UPLOCKED
  - Landing gear handle is DOWN and one or more gear are not DOWNLOCKED

Falcon 50

Annunciators – Landing Gear

- Flashes if the following occurs (Cont.):
  - Speed is < 160 KTS, one or more power levers are in low power setting, AND the control handle is in the UP position
  - The FLAPS are > 22° and the LANDING GEAR is not DOWN. An non-cancelable horn also sounds.

Flight Controls

Falcon 50

Annunciators – Flight Controls

- Illumination indicates AUTOPILOT failure or disengagement (accompanied by a cancellable horn)

Falcon 50

Annunciators – Flight Controls

- Illuminates if AP Trim Coupler system has failed

Falcon 50

Annunciators – Flight Controls

- Illuminates if the horizontal stabilizer position does not agree with the position commanded by the AUTOPILOT

Falcon 50

Annunciators – Flight Controls

- Illuminates if the MACH TRIM is inoperative or OFF

Falcon 50

Annunciators – Flight Controls

- Indicates a speed disagreement between the speed information from the ADC and the position of the elevator or aileron arthur Q UNIT

Falcon 50

Annunciators – Flight Controls

- Advisory light indicates the EMERGENCY AILERON trim is not in the neutral position

Falcon 50

Annunciators – Flight Controls

- Illuminates if aircraft on ground and any power lever is >84° FCU and any of the following conditions exist:
  - Flaps > 22°
  - Slats Not Extended
  - Horizontal Stabilizer Outside of -3° to -7° Range
  - Airbrakes Not Retracted
  - Autopilot ON
  - With SB F50-0240: Pressure in #2 Brake System

Abort Takeoff Before V_1 !

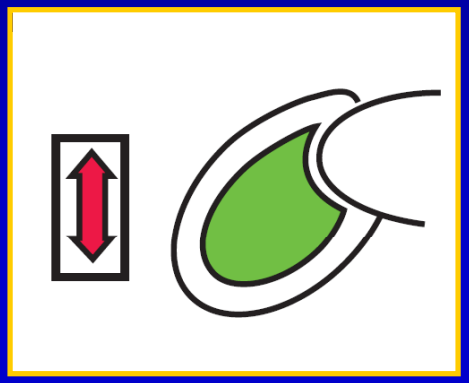
Falcon 50

Annunciators – Flight Controls

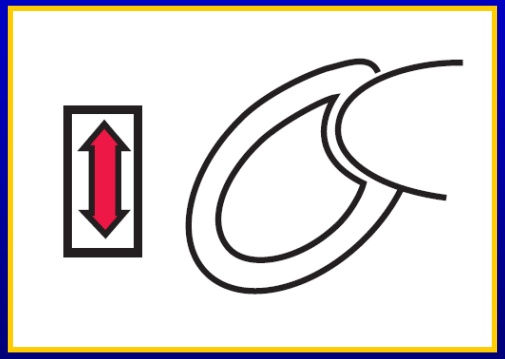
- Illuminates whenever aircraft airspeed > 270 kts and Auto Slat system not disarmed (possible untimely slat extension)
  - The aircraft with SB F50-166 installed may illuminate if either stall warning system fails in the ground mode during flight

Falcon 50

Annunciators – Flight Controls



- Indicates Slat in Transit during cruise



- Indicates Slat system malfunctions during approach

Falcon 50

Annunciators – Flight Controls

- Illuminates and the FLAP CONTROL CB pops when an asymmetric condition is detected between left and right wing flaps

Falcon 50

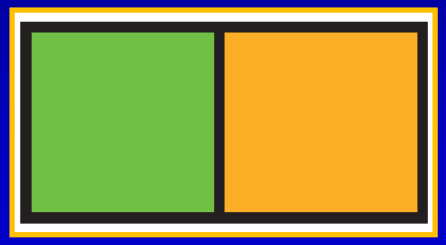
Annunciators – Flight Controls

- Indicates at least one or more of the six airbrake panels are not retracted

Ice and Rain

Falcon 50

Annunciators – Ice and Rain



ENG 1
or
ENG 2
or
ENG 3

- Illuminates AMBER when respective ANTI ICE switch is ON and pressure is < 4 PSI
- Illuminates GREEN when respective ANTI ICE switch is ON and pressure is > 4 PSI
- Illuminates AMBER when respective ANTI ICE switch is OFF and pressure is > 4 PSI

Falcon 50

Annunciators – Ice and Rain

- Illuminates AMBER when AIRFRAME ANTI ICE switch is NORM or STBY and pressure is < 4 PSI
- Illuminates GREEN when AIRFRAME ANTI ICE switch is NORM or STBY and pressure is > 4 PSI
- Illuminates AMBER when AIRFRAME ANTI ICE switch is OFF and pressure is > 4 PSI

Falcon 50

Annunciators – Ice and Rain

- Indicates automatic transfer of windshield heat regulation from the failed side to the operative side

Falcon 50

Annunciators – Ice and Rain

- Illumination indicates that the electrical current flow to the associated left or right pitot or static port heating elements is incorrect

Avionics

Falcon 50

Annunciators – Avionics

- It indicates an internal failure or loss of power to the respective Air Data Computer (ADC)

Operational Limitations

Falcon 50

Limitations – General

Minimum Crew:

- Pilot and co-pilot

Falcon 50

Limitations – General

Baggage Compartment Limitation:

- 2,205 Lbs

Falcon 50

Limitations – Weights

What is the Maximum Takeoff Weight?

- **40,780 Lbs**

Falcon 50

Limitations – Weights

What is the Maximum Landing Weight?

- 35,715 Lbs

Falcon 50

Limitations – Weights

What is the Maximum Zero Fuel Weight?

- **25,570 Lbs**

Falcon 50

Limitations – Weights

What is the Minimum Flight Weight?

- 18,959 Lbs

Falcon 50

Limitations – Speeds

What is V_A (Maneuvering Speed)?

- 210 KIAS

Falcon 50

Limitations – Speeds

Maximum Slats/Flaps Extended (V_{FE}) for:

- **Slats Extended: 200 KIAS**
- **Slats Extended + 20° Flaps: 190 KIAS**
- **Slats Extended + 48° Flaps: 175 KIAS**

Falcon 50

Limitations – Speeds

What is the Maximum Landing Gear Operating Speed (V_{LO}/M_{LO})?

- **190 KIAS/0.70M**

Falcon 50

Limitations – Speeds

What is the Maximum Landing Gear Extended Speed (V_{LE}/M_{LE})?

- 220 KIAS/0.75M

Falcon 50

Limitations – Speeds

What is V_{MCA} (Minimum Control - Air)?

- **82.5 KIAS**

Falcon 50

Limitations – Speeds

What is the Maximum Operating Speed (V_{MO})?

- SL to 10,000 Ft: Linear Increase From 350 – 370 KIAS
- 10,000 to 24,000 Ft: 370 KIAS
- Above 24,000 Ft: 0.86M

Falcon 50

Limitations – Speeds

What is Maximum Airspeed With the AUTO SLAT light on?

- **270 KIAS**

Falcon 50

Limitations – Speeds

What is Maximum Airspeed With a Cracked Windshield?

- 230 KIAS

Falcon 50

Limitations – Speeds

What is Maximum Direct Vision Window Opening Speed?

- 180 KIAS

Falcon 50

Limitations – Speeds

What is the Maximum Speed with Thrust Reverser Deployed In Flight?

- 230 KIAS

Falcon 50

Limitations – Speeds

What is the Maximum Tire Ground Speed?

- 180 KTS

Falcon 50

Limitations – Speeds

What is the Maximum Windshield Wiper Operating Speed?

- **205 KIAS**

Takeoff & Landing

Falcon 50

Takeoff & Landing

What are Minimum & Maximum Airport Pressure Altitudes for Takeoff and Landing?

- **-1,000/+14,000 Ft**

Falcon 50

Takeoff & Landing

What is the Maximum Water/Slush on the Runway?

- Maximum of 0.5 inch equivalent water depth recommended
- Unpaved Runways must be dry

Falcon 50

Takeoff & Landing

Maximum Crosswind - Demonstrated?

- **23 Kts**

Falcon 50

Takeoff & Landing

Engine Fuel Control Computers Must:

- **Be Operational For Takeoff Except For Authorized Maintenance Flights (Per AFM)**

Falcon 50

Takeoff & Landing

What is the Maximum Runway Slope?

- **± 2.5%**

Falcon 50

Takeoff & Landing

Maximum Tailwind Component?

- **10 Kts**

Falcon 50

Takeoff & Landing

What is the Maximum Load Factor in Flight for Flaps UP?

- -1.0 to +2.6G

Falcon 50

Takeoff & Landing

What is the Maximum Load Factor in Flight for Flaps DOWN?

- **0.0 to +2.0G**

Enroute Operational Limits

Falcon 50

Enroute Operational Limits

What is the Maximum Calibrated Operating Altitude?

- **49,000 Ft**
- **45,000 Ft (w/o SB F50-163)**

Falcon 50

Enroute Operational Limits

What is the Maximum Altitude With Slats or Flaps Extended?

- **20,000 Ft**

Falcon 50

Enroute Operational Limits

The Maximum Altitude for Standby Hydraulic Pump Operation Is:

- **45,000 Ft**

Avionics

Falcon 50

Takeoff & Landing

Autopilot (Collins APS-80 and APS-85)

- **Minimum Engaged Altitude, Enroute: 1,000 Ft AGL**
- **Minimum Engaged Altitude, (Approach):**
  - **Radio Altimeter Operative: 50 Ft AGL**
  - **Radio Altimeter Inoperative: 100 Ft AGL**

The autopilot must be OFF for takeoff and landing.

Electrical

Falcon 50

Electrical

What is the Maximum Generator Output?

- Transient: 350 Amps (1 Minute Max)
- Up to 39,000 Ft: 300 Amps
- > 39,000 Ft: 250 Amps

Falcon 50

Electrical

What is the Maximum Battery Temperature?

- **AMBER light (WARM) – At or above 120°F**
- **RED light (HOT) – At or above 150°F**
- ***RED light (HOT) – At or above 160°F (A/C with SB F50-295 or M2245)***

Falcon 50

Electrical

What Is Maximum Voltage of the DC System?

- 32 Volts

Falcon 50

Electrical

What is Maximum Inverter Output (Each)?

- 750 VA

Falcon 50

Electrical

What is the Maximum APU Generator Output?

- **Transient (1 Minute Maximum): 350 Amps**
- **Stabilized: 300 Amps**

Pressurization

Falcon 50

Pressurization

What is the Maximum Differential Pressure?

- 9.1 PSI

What is the Maximum Differential Pressure for the Airplanes Incorporating SB F50-163?

- 9.5 PSI

Flight Controls

Falcon 50

Flight Controls

Airbrakes Extension Is Not Recommended Within:

- 500 Ft AGL

Note: For aircraft under Canadian registration, extension of the airbrakes within 500 Ft AGL is NOT PERMITTED.

Falcon 50

Flight Controls

Flaps:

- In flight, extend slat flaps handle to the next detent only after cessation of movement to the previous detent
- Do not extend Flaps if the SLAT GREEN light is off

Fuel

Falcon 50

Fuel

The total usable fuel quantity is:

Left Wing	Wing Center Section	Right Wing
3,748 LBS	2,750 LBS	3,748 LBS
Left Feeder Tank	**Center Feeder Tank**	**Right Feeder Tank**
1,404 LBS	2,460 LBS	1,404 LBS
Total System 1	**Total System 2**	**Total System 3**
5,152 LBS	5,210 LBS	5,152 LBS

Total Quantity:

15,514 LBS

Falcon 50

Fuel

What is the Maximum Fuel Asymmetry For Flight?

No limitation

Falcon 50

Fuel

Fuel Quantity Indicators:

- **The TOTAL/REAR switch should normally be left in the REAR position**

Falcon 50

Fuel

Fuel Transfer:

- **TRANSFER PUMPS should be turned OFF when no fuel is in wing tanks**

Falcon 50

Fuel

Overwing Fueling:

- **Do not pour un-diluted additives into an empty tank**

Falcon 50

Fuel

Transfer Intercom and Crossfeed Systems:

- **These systems should be deactivated for takeoff, approach and landings**

Falcon 50

Fuel

What is the Maximum Single-point Refueling Pressure?

- **50 PSI**

Hydraulics

Falcon 50

Hydraulics

What are the Approved Hydraulic Fluids?

- **Those Conforming to MIL-H-5606 Specifications (NATO Codes H515 or H520)**
- ***Maximum Speed:***
  If either or both HYDRAULIC SYSTEMS are inoperative – 260 Kts or 0.76 M

Ice & Rain

Falcon 50

Ice & Rain

When Must All Anti-Ice Systems Be Turned ON?

- **When operating in Visible Moisture AND**
- **TAT is +10°C or below**

The Wing Anti-Ice System MUST NOT Be Used On the Ground* EXCEPT *For Maintenance Checks

- **Engine/Wing Anti-Ice MUST be OFF when TAT > +10°C**

Powerplant & APU

Falcon 50

Powerplant & APU

Which Engine Parameter Is Used For Setting Thrust?

- N_1

Falcon 50

Powerplant & APU

Maximum N_1 and N_2

	N_1	N_2
Takeoff – Maximum Continuous	101.5%	100%
Transient (5 seconds max.)	105%	105%
Transient (1 Minute max.)	103%	103%

100% N_1 = 21,000 RPM

100% N_2 = 29,989 RPM

Falcon 50

Powerplant & APU

Thrust Ratings (Uninstalled-Sea Level-ISA) Honeywell TFE731-3-C Engine

- **Takeoff: 3,700 Lbs**
- **Maximum Continuous: 3,700 Lbs**

Falcon 50

Powerplant & APU

Inter-stage Turbine Temperature (ITT) Limits:

- Ground/Air Start – Normal: 907°C
- Ground/Air Start – 10 Second Transient: 917°C
- Ground/Air Start – 5 Second Transient: 977°C
- Takeoff – Normal: 907°C
  (5 Minutes Maximum)
- Takeoff – Transient): 917°C
  (10 Seconds Maximum)
- Maximum Continuous: 885°C (for the TFE731-3D-1C)
  For the TFE731-3-1C, 849°C after 30 minutes

Falcon 50

Powerplant & APU

Oil Pressure:

- Maximum for takeoff, Continuous or Idle 46 PSI
- Minimum Takeoff or Continuous, 38 PSI
- Minimum for Idle, 25 PSI
- Maximum Transient, 55 PSI (< 3 minutes)

Falcon 50

Powerplant & APU

Oil Temperature:

- Sea Level to FL300 – 127ºC MAX
- Above FL300 – 140ºC MAX
- Transient (All Altitudes 2 Min MAX) – 149ºC MAX
- Minimum – -40ºC
- Minimum for Power above Idle – +30ºC