Chapter 4
Required Knowledge Areas

CONTENTS

REQUIRED KNOWLEDGE AREAS (RKA)

The required knowledge areas represent what each pilot should know and understand prior to completion of training. These are divided into subject matter areas following the course curriculum and will assist with the study process. Although this list contains the most critical areas of concentration, it is only a basic guide and not intended to replace a comprehensive study of the course materials.

AIRCRAFT GENERAL

1. The Aft compartment is not pressurized.
2. Power sources for the DC system include the aircraft batteries, APU generator, external power and the engine driven generators.
3. On quick-turns, the baggage compartment door may not close if left open for more than 20 minutes.
4. The total usable fuel quantity of the Falcon 50 is 15,513 pounds.
5. The Baggage compartment light illuminates when the compartment door is opened.
6. Engine oil should be checked as part of the exterior inspection prior to every flight.
7. There are 2 over-wing emergency exits which can be opened from inside or outside the aircraft.
8. Low Pressure air is supplied any time the engines or APU are running.
9. There are 3 methods to extend the landing gear: Normal, Emergency Pull Handle, and Free Fall.
10. Nose steering is disengaged when the nose strut expands (Weight off wheels).
11. Flight Controls are powered by both hydraulic systems
12. In the event of total hydraulic loss, the aircraft can be controlled manually.

ELECTRICAL

1. DC electrical power to the aircraft is provided by batteries, APU generator, GPU and engine driven generators.
2. External power cannot be used to charge the batteries.
3. Battery Number 2 will supply the RH Main Bus in the event that the Number 3 Generator is not connected to the bus and the Bus Tie is in the Flight Normal position.
4. Red circuit breakers are powered from both primary busses.
5. Engine ignition is not powered from the battery bus.
6. Voltage exceeding 32 volts will trip a generator switch.
7. The bus tie relay receives power from both the left and right main busses.
8. Amperage exceeding 375 amps will trip a generator switch.
9. When external power is connected and the DC power selector is selected to EXT POWER, both battery lights and all three generator lights will illuminate. The BUS TIED light will also illuminate if the Bus Tie switch is in the tied position.
10. Both batteries are isolated when External power is selected.
11. GEN 1 and GEN 2 will supply electrical power to the main LH DC bus.
12. Service lighting, pressure refueling, fire extinguishing and APU door closing are directly supplied from the Battery bus.

13. The generator Control Unit (GCU) will reduce generator output to 27.5 volts for 3 minutes after engine and APU starts.
14. Illumination of a generator light on the failure warning panel indicates the respective generator is disconnected from the main bus.
15. When a generator switch trips, move the generator switch to ON in order to reset the generator.
16. When a battery reverse current relay opens due to a reverse current of 250 amps, the associated BAT switch will trip and the BAT light will illuminate.
17. The minimum battery voltage to start an engine is 22 volts.
18. The battery RCR requires 8-11 volts to remain closed.

LIGHTING

1. The Emergency Lighting switch positions are OFF, ON, ARMED.
2. With the switch positioned to ARMED, the Emergency lights automatically illuminate when power is lost to both Main busses.
3. After a total electrical failure, the emergency lights remain on for approximately 15 minutes.
4. Both the Fuselage and the Wingtip strobes turn on with the Anticollision light switch in the ALL position.
5. During ground operations, the Landing Lights are limited to 15 minutes ON followed by 45 minutes OFF.
6. The cockpit dome, rear compartment, baggage compartment and nose cone service lights are directly connected to the battery bus.
7. The emergency lights include the Dome lights, passenger DOOR OPEN signs, emergency EXIT flood lights, EXIT signs and underwing lighting.

MASTER WARNING

1. Fire warnings include both a RED light and an aural tone.
2. When accompanied by an aural warning, the red CABIN light indicates a Cabin altitude greater than 10,000'.
3. When not accompanied by an aural warning, the red CABIN light indicates a monitored door is not closed and locked.
4. The Cabin Pressure, Fire and Gear (with flaps ≤20°) audible tones can be silenced.

FUEL

1. An engine fuel shutoff valve is controlled by the respective FIRE PULL handle.
2. All the fuel tanks are pressurized by Secondary bleed air from Engines 1 and 2.
3. The fuel isolation shutoff valves can be operated by using a special wrench.
4. Failure of a Transfer pump is indicated by illumination of the respective XFR light.
5. The regulation fuel level in each feeder tank is 609 pounds.
6. The LO FUEL light indicates less than 300 pounds of fuel in any feeder tank.
7. Illumination of the FUEL 1, 2, or 3 light on the annunciator panel indicates failure of the respective boost pump.
8. After refueling with the automatic shutoff switch set to HI, the left and right feeders have 1,404 pounds and the center tank will have 2,460 pounds.
9. The fuel boost pumps are turned on prior to engine start and off after engine shut down.
10. The red STOP FUELING light illuminates when the refueling door is opened and the fuel tank vents are not yet open.

AUXILIARY POWER UNIT

1. The minimum battery voltage for starting the APU is 23 volts.
2. The APU BLEED warning light will illuminate if the APU bleed air valve is not fully closed and the APU is shutdown.
3. If the APU fails to shut down when the STOP/LOP switch is pushed, an acceptable alternate shut down procedure for the APU is to push the Master switch.
4. If the APU computer senses an over speed of 110%, the APU will shut down.
5. The APU drives a DC starter-generator capable of supplying the aircraft's DC distribution system with 300 amps at 28.5 volts in continuous operation.
6. The APU is certified for ground use only

POWERPLANT

1. Takeoff thrust setting parameters for the TFE 731 engine are based on N1 rpm.
2. The Air Start position of the ignition switch provides continuous ignition.
3. The purpose of the Planetary Gear system is to reduce the high rpm of the LP turbine to the design Fan speed.
4. If the fuel computer input to the Surge Bleed Valve fails, the surge bleed valve assumes the 1/3 open position.
5. If the ENG 2 FAIL light illuminates continuously during takeoff, it indicates that the S-Duct access door is open or engine power is low.
6. Illumination of the OIL 1, 2, or 3 light on the Master Warning panel indicates low oil pressure or the presence of metal chips.
7. The Number 2 throttle must be in the idle position in order to actuate the thrust reverser.

FIRE PROTECTION

1. A total of three fire bottles are dedicated to the three engine fire extinguishing systems.
2. The pre-charge pressure on the three engine fire extinguisher bottles should be 800 psi.
3. Selection of position 1 on the Baggage compartment fire extinguisher switch causes one extinguishing bottle to discharge.
4. If the optional APU is installed, it will have its own fire extinguisher and detection loop.
5. Selection of position 1 on the AFT compartment fire extinguisher switch causes 2 bottles to discharge
6. The engine fire extinguishing switches in the Number 2 position is powered by the Battery Bus.
7. On a loop protected system(all except the baggage compartment) when the fire is extinguished, the audible warning and associated fire light will also extinguish.

PNEUMATICS

1. HP 1 and HP 3 bleed air valves open when the Airframe anti-ice valve is selected to ON.
2. If the BLEED OVHT light on the failure warning panel illuminates, turning off the affected bleed switch will cause the light to initially blink.
3. Engines 1 and 2 supply both secondary low pressure and secondary high pressure bleed air.
4. The PRV provides air to the air conditioning system from Engine 2 when the engines are at low power settings.
5. Secondary LP air is used for fuel tank and hydraulic reservoir pressurization.
6. Secondary HP air is used to power the jet pump for the outflow valves

ICE AND RAIN

1. If the pilot's windshield temperature probe fails, it is automatically controlled by means of the co-pilot windshield temperature probe.
2. The MAX position of the Pilot and Co-pilot windshield heat switches may only be used in flight and if ice continues to build with the switch in NORM.
3. Illumination of the L. Pitot light on the annunciator panel indicates a malfunction of the left pitot anti-icing system.
4. Other than for test purposes, ground operation of the airframe anti-ice is not authorized and may lead to damage of the Slats.
5. When in AUTO, the HP 1 and HP 3 bleed valves will open when Airframe anti-ice is selected on.
6. During flight the airframe is selected ON but the green and amber lights fail to illuminate due to a malfunctioning pressure switch. Valve movement can be verified by monitoring the ITT rise on Engines 1 and 3.

AIR CONDITIONING

1. With the CABIN and CREW BLEED switches in AUTO, the aircraft on the ground and a power lever angle below 54°, the cabin and crew conditioning valves are positioned to full open.
2. With the CABIN AND CREW BLEED switches in AUTO on the ground when takeoff power is applied(power lever angle above 54°) the cabin and crew conditioning valves will close.
3. Once airborne, the cabin and crew conditioning valves will become fully open in approximately 3 minutes.
4. All the engines and the APU will provide bleed air for the air conditioning system.
5. A situation in which there is excessive air conditioning duct temperature will be indicated by a COND'G OVHT light.
6. The Air Conditioning Smoke checklist requires the temperature controllers to be placed to MANUAL and FULL COLD in order to close the HOT valves, which shuts off air to the jet pumps, thereby preventing smoke from being recirculated into the cabin.
7. Excessive air conditioning duct temperature may be corrected by selecting MANUAL and then selection COLD on the air conditioning valve.

PRESSURIZATION

1. The red CABIN light on the master warning panel and an audible tone will activate when the cabin altitude reaches 10,000' ± 500'.
2. If the PRESSURIZATION switch is moved to the DUMP position, the cabin altitude will rapidly rise to 12,500' if the aircraft is above that altitude.
3. Electrical power to open the electro pneumatic valve when DUMP is selected comes from the A bus.
4. When using the automatic pressure controller, the manual control knob should be positioned at the DN end in the GREEN index.
5. The electro-pneumatic (LH) outflow valve is primary in the automatic mode.
6. With the aircraft at FL250, setting the altitude on the automatic pressurization controller to field elevation will not cause the cabin to depressurize.

HYDRAULICS

1. Hydraulic power to the primary flight controls is provided by both hydraulic systems.
2. Illumination of the PMP 1, 2, or 3 lights on the hydraulic panel indicates loss of the respective engine-driven pump.
3. The ST PMP light will illuminate if the standby hydraulic pump runs continuously for more than 60 seconds OR if the electrical pump selector valve is in the GROUND TEST position.
4. Loss of hydraulic tank pressurization will cause possible cavitation of the hydraulic pumps above 20,000'.
5. Normal hydraulic system pressure is 3,000 psi.
6. Illumination of the TK P1 or TK P2 light on the hydraulic panel indicates a loss of the respective hydraulic reservoir pressure.
7. If the Number 3 engine-driven hydraulic pump fails while the aircraft is in flight and the STBY pump is in the AUTO position, the standby pump will automatically activate when airbrakes are selected to either position 1 or 2.
8. The STBY PUMP normally operates at a pressure range of 1,500-2,150 psi.

LANDING GEAR AND BRAKES

1. A parking brake accumulator pressure below 1,200 psi is indicated by a flashing #2PBK light with the parking brake selected OFF.
2. Under normal operating conditions, braking with antiskid is provided with the brake selector switch in the Number 1…On position.
3. If the Number 1 hydraulic system is not available, gear extension is accomplished by pulling the emergency gear pull handle and then the D-Rings.
4. The intermediate detent on the parking brake handle is used for aircraft deceleration after touchdown on an emergency landing with a dual hydraulic failure.
5. The landing gear is hydraulically powered by the Number 1 hydraulic system.
6. If the landing gear warning horn cannot be silenced, at least one gear is not down and locked and the flaps are selected to 48°.

FLIGHT CONTROLS

1. Hydraulic power for normal slat operation is provided by the Number 1 hydraulic system.
2. Pitch trim is accomplished by moving the horizontal stabilizer which is driven by two independent electric motors.
3. Emergency aileron trim actuates only the left aileron and will cause the AIL ZERO light to illuminate on the Failure Warning Panel.
4. Position 1 of the airbrake handle extends just the center airbrake panel on each wing
5. The T/O CONFIG light will illuminate on the ground with any power lever above 82°PLA and one of the four slats not extended, flaps beyond 22°, one of the four inboard airbrakes not stowed, the stabilizer trim is out of the takeoff range, parking brake set or #2 brakes selected, and autopilot engaged.
6. Activation of the EMERG SLATS switch will extend the outboard slats only.

AVIONICS

1. Illumination of the AP TRIM light is not a possible indication of an air data computer failure.
2. NAV page 1 of the Universal FMS displays the FROM, TO and NEXT flight plan waypoints.
3. To provide both lateral and vertical guidance, the flight director uses the APPR mode.
4. The auto-slats system is not affected when the dual isolation valves are closed.
5. The flight director ½ BANK mode restricts the roll limit to 12.5°.
6. The lowest precipitation intensity color displayed on the weather radar is green.
7. The roll knob of the autopilot limits the bank angle to 32°.
8. The DTO button on the Universal FMS allows the aircraft to proceed from its present position direct to a flight plan waypoint.
9. Selection of the GO AROUND button on the control yoke commands the flight director to wings level, 14° pitch up, and causes the autopilot to disengage.
10. The Pilot's altimeter normally provides the signal for the altitude alerter.

OXYGEN

1. With the oxygen controller switch selected to NORMAL, the cabin masks will automatically drop at a cabin altitude of 10,500'.
2. The oxygen controller will operate either the passenger masks or the therapeutic masks.
3. The nominal pressure of the oxygen bottle is 1,850 psi.
4. Oxygen is supplied at 28 psi in the FIRST AID position.
5. If the passenger oxygen controller is set to the OVERRIDE position, the system pressure will go to 70 psi and will drop the masks.
6. The oxygen controller which controls the passenger and therapeutic masks is located on the co-pilots side console.

LIMITATIONS
GENERAL LIMITATIONS

1. The landing gear operating speed (VLO) is 190 knots.
2. The maximum tailwind component 10 knots.
3. The maximum Zero Fuel Weight is 25,570 pounds.
4. The maximum demonstrated crosswind component is 23 knots.
5. The maximum slats extension speed is 200 knots.
6. Mmo above 24,000' is 0.86 Mach.
7. The thrust reverser is approved for ground use only.
8. The aircraft maximum landing weight is 35,715 pounds.

LIMITATIONS
ENGINE LIMITATIONS

1. Takeoff N1 is limited to 101.5 %
2. During ground start, light-off to idle is limited to 50 seconds maximum.
3. The minimum oil temperature for takeoff is 30°C.
4. The maximum transient oil pressure is 55 psi for 3 minutes.
5. The maximum allowable starting ITT for the -3 engine is 907°C.
6. The minimum oil pressure at idle is 25 psi.

LIMITATIONS
SYSTEM LIMITATIONS

1. The maximum permitted speed for Slats + Flaps 48° is 175 knots.
2. The maximum generator amperage above FL390 is 250 amps.
3. The maximum speed for Slats + Flaps 20° is 190 knots.
4. The maximum generator amperage up to FL390 is 300 amps.
5. The DC distribution system maximum voltage is 32 volts.

MINIMUM EQUIPMENT LIST (MEL)

1. A precondition for departure with the FUELING caution light inoperative is to ensure the fueling panel access door is closed.
2. The yaw damper may be inoperative provided the airspeed does not exceed 0.78 Mach.
3. One GEN Caution Light may be inoperative provided: the voltmeter and ammeter of the associated DC generating system are operative.
4. A maximum of 3 static discharge wicks may be damaged or missing provided not more than 2 are missing on each wing, horizontal or vertical tail units.

EMERGENCY PROCEDURES

1. ENGINE FIRE
2. APU FIRE
3. AFT COMPARTMENT FIRE
4. WHEEL WELL OVERHEAT
5. AIR CONDITIONING SMOKE
6. ELECTRICAL SMOKE OR FIRE
7. SMOKE IN THE BAGGAGE COMPARTMENT
8. SMOKE REMOVAL
9. ALL ENGINES OUT CONDITION
10. THRUST REVERSE DEPLOYMENT IN FLIGHT
11. LOSS OF BOTH HYDRAULIC SYSTEMS
12. FAILURE OF ALL THREE GENERATORS
13. AUTOPILOT NOSEDOWN HARDOVER
14. UNRELIABLE AIRSPEEDS AT HIGH ALTITUDE
15. RAPID DEPRESSURIZATION
16. EMERGENCY DESCENT

SPECIAL REQUIREMENTS FOR GLASS COCKPIT AIRCRAFT
EFIS

1. DCP failure
2. ADC failure
3. EADI display failure
4. EHSI failure
5. Failure Monitor Flags (red)
6. Comparison Flags (amber)
7. Attitude Failure
8. Heading Failure
9. MPU failure
10. Radio Altimeter failure
11. Flight Director failure
12. Attitude Comparison failure
13. Heading Comparison
14. IAS Comparison Monitor
15. LOC OR GS Comparison
16. RA Comparison monitor

FLIGHT MANAGEMENT SYSTEMS FMS OR OPTIONAL EQUIPMENT

1. The Flight Management System navigates by using a blend of GPS, VOR/DME, DME 2 or DME 3.
2. If the GPS signal is lost during over-water operations, the FMS will revert to IRS Blending.
3. In the FMS database, a step-down fix between the FAF and MAP is never coded.
4. A NO LINK or discontinuity exists when a SID transition fix is not on the entered flight plan.
5. The Direct To function can be used to go direct to any waypoint entered in the flight plan.
6. If the aircraft is equipped with a third attitude heading source (AHRS) and the Number 1 IRS fails, the procedure is to select AHRS as backup.
7. To setup the FMS to fly an ILS approach, tune the ILS frequency into NAV 1 and/or NAV 2.
8. If the FMS MSG light on the annunciator panel illuminates, the message can be retrieved by pressing the MSG button on the FMS.
9. A waypoint can be changed to a “FLY OVER” waypoint in the flight plan by highlighting the waypoint and selecting “OVRFLY” on the right line select keys.
10. GPS position, if available is the recommended position to initialize the FMS.
11. During over-land navigation and after the loss of GPS, the FMS will use DME 2 or DME 3.
12. The Flight Management System will automatically insert a Holding Pattern, if it is part of a missed approach.
13. A NO LINK/GAP preceding an approach must be manually sequenced.
14. FMS screen brightness can be changed by pressing the ON-OFF/DIM switch then holding R-1(Bright) or R-2(Dim) until the desired brightness is achieved.
15. On an FMS approach, the APP (approach) light will illuminate 2 NM from the final approach fix.

PERFORMANCE, FLIGHT PLANNING AND MONITORING PERFORMANCE

1. Takeoff Field Length
2. Takeoff thrust and maximum continuous thrust
3. Engine failure after V1 climb profile
4. Engine out driftdown procedure
5. SLATS only operations
6. Maximum Allowable Takeoff Weight
7. Takeoff Safety Height
8. Determine Fuel, Time and Speed
9. Gross vs Net Climb gradient
10. Holding fuel
11. During a normal takeoff with Slats + Flaps 20°, when the Captain calls for Slat and Flap retraction, the Co-pilot should place the selector handle to clean one increment at a time while confirming proper retraction indications.
12. Final segment speed 1.5 Vs.
13. Accelerate-Stop distance
14. Flaps/Slats retraction speeds
15. Approach Climb Gradient
16. Landing Climb Gradient

PERFORMANCE, FLIGHT PLANNING AND MONITORING FLIGHT PLANNING

1. Takeoff Thrust setting with/without anti-ice protection
2. Takeoff speeds and BFL Slats + 20° flaps
3. Takeoff speeds and BFL Slats only
4. Maximum climb trust
5. High altitude cruise level
6. Cruise 0.75 Mach/ 0.80 Mach
7. Holding speed
8. Landing Data

PERFORMANCE, FLIGHT PLANNING AND MONITORING FLIGHT MONITORING

1. Climb time, fuel, distance
2. N1 cruise flight
3. Fuel flow cruise flight
4. Maximum aircraft weight for high altitude cruise level
5. Engine out drift down
6. Landing field length
7. Landing distance
8. VREF

LOAD BALANCE AND SERVICING WEIGHT AND BALANCE

1. Origin of Moments
2. % MAC
3. Calculate CG
4. Maximum ramp weight
5. Maximum landing weight
6. Maximum baggage compartment weights (Zone I, II, III) and floor loading
7. Payload
8. Zero fuel weight limitations (Zone 1,2,3,4)
9. Aircraft tipping prevention
10. Normal sequence of fuel consumption
11. Weight shift computation
12. Maximum fuel loading based on weight restriction

LOAD BALANCE AND SERVICING SERVICING ON GROUND

1. Brake wear check
2. Authorized anti-icing fluids
3. Check engine oil level 10-60 minutes after shutdown.
4. When the aircraft is parked in cold weather, draining the fuel sumps within 15-30 minutes after completion of fueling will allow water to drain out of the tanks before it can refreeze.

TRAINING AREAS OF SPECIAL EMPHASIS

Referenced from the Operational Suitability Manual – DGT148650

TASEp ID	TASEp DESCRIPTION
Tp-001-HDLG	**Windshear maneuver** Training organizations and operators should insure that all crewmembers are familiar with procedures for recognizing, avoiding and escaping from severe weather situations, including low-altitude windshear.
Tp-001-AVCS	**FMS training** If level "C" training is specified due to FMS installation, training must be "hands on" instruction with an approved training device, simulator, or the airplane. If an airplane is used for the training process, it must be emphasized that as much training as possible should be accomplished in a static, "powered-up" aircraft to minimize exposure to a "heads down" environment while the aircraft is in operation.
Tp-001-AVCS	**Cockpit displays training** If level "C" training is specified due to EFIS to EFIS or EFIS to Electromechanical cockpit instrumentation, training must be "hands on" instruction emphasizing all normal, abnormal, and reversionary modes.
Tp-001-WTHR	**Hazardous weather / winter operations** Proper precautions and procedures regarding hazardous weather/winter operations, such as proper use of wing/tail de-ice, antiskid braking characteristics when stopping on slippery runways, use of procedures described in the wind shear training aid, hazards associated with rejecting take-offs near V1 on slippery runways, and other such topics, are appropriate for emphasis in training programs.
Tp-005-HDLG	**"No flaps" approaches** Demonstration of "no flaps" approaches.
Tp-006-WTHR	**S-Duct anti-icing** In icing conditions S-Duct still needs to be anti-iced, even in case of engine 2 failure.
Tp-055-NADP	**NADP - Use of close-in NADP Limitations, Operating Procedures and Performance** Crew must be trained using the Dassault Aviation Limitations, Operating Procedures, and Performance (close-in NADP).
Tp-056-NADP	**NADP - Special operation procedures / Task sharing [F50/F50EX/F900/F2000EX EASy/F7X variants]** Crew should be made aware that the Dassault Aviation Limitations, Operating Procedures, and Performances for close-in NADP – and only this one – supersedes normal Standard Operating Procedures (SOPs). Crew training should emphasize on the task sharing described in Dassault Aviation Limitations, Operating Procedures, and Performance, in particular for the thrust reduction at 400 feet AAL which is to be performed by the PNF under the authority of the PF.
Tp-057-NADP	**Steep Approach Landing [F50/F900 variants]** Flight training (as PF or PNF) may be conducted in a MF50, F50EX, MF900, F900C or F900EX Level C or D Full Flight Simulator or in the aircraft, with a Type Rating Instructor (TRI) and must address the following: • Briefing prior to the simulator session, or during the flight preparation, to include: Dassault Aviation Limitations, Operating Procedures and Performance with special emphasis on increased landing distance, and transition from a glide path reference system to a visual glide path indicating system. • Phases of the steep approach, to include: stabilized approach concept as a key success for steep approach landing, appropriate slats / flaps configuration, approach speed, and flare initiation. The crew should become proficient on the task sharing described in the Special Procedure for steep approach, in particular regarding go-around. Both pilots shall be trained in the procedure as PF and PNF, as applicable.

Chapter 5
Appendix

CONTENTS

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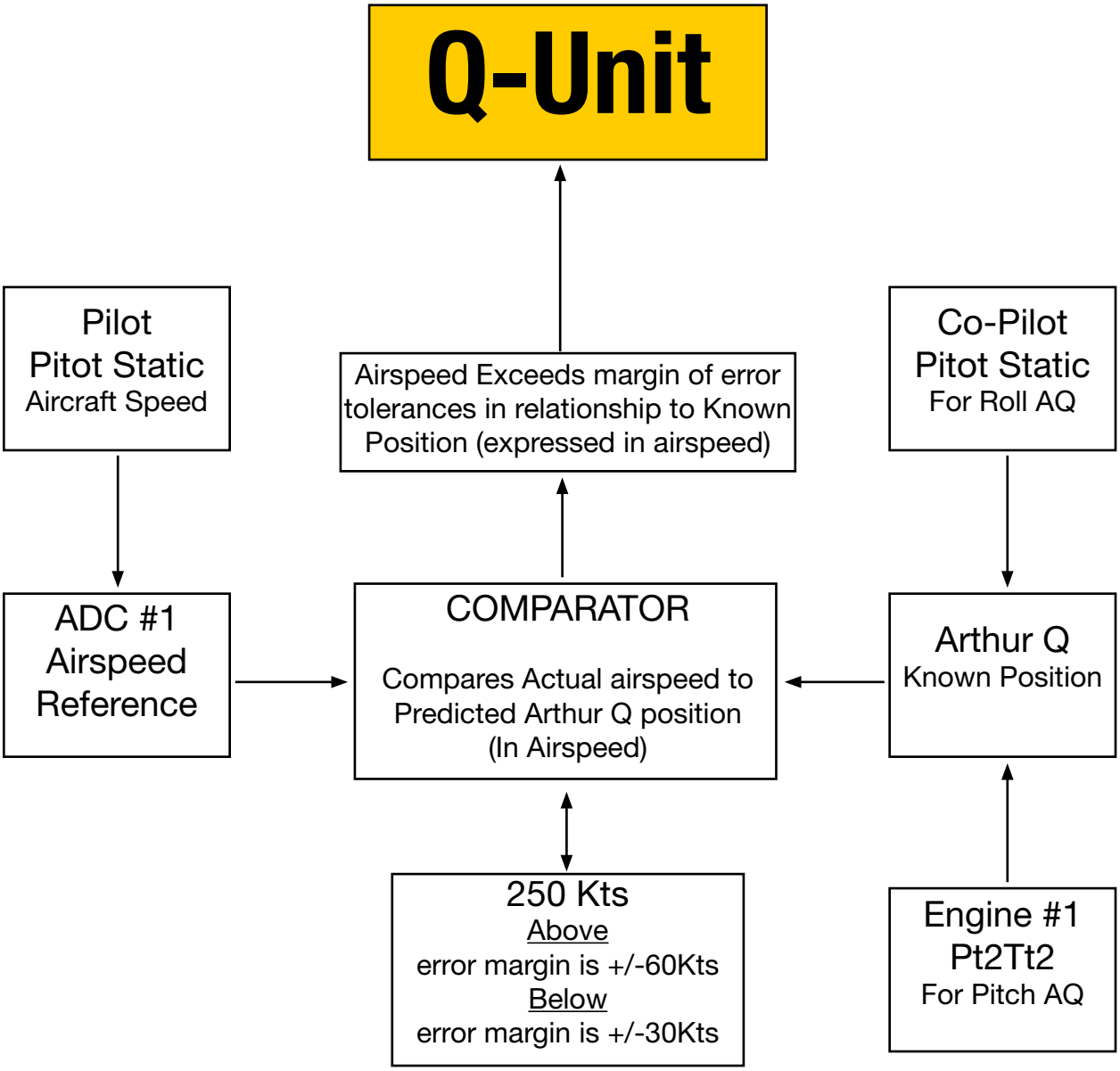
Q-Unit
Pilot
Pitot Static
Aircraft Speed
Airspeed Exceeds margin of error tolerances in relationship to Known Position (expressed in airspeed)
Co-Pilot
Pitot Static
For Roll AQ
ADC #1
Airspeed
Reference
COMPARATOR
Compares Actual airspeed to Predicted Arthur Q position (In Airspeed)
Arthur Q
Known Position
250 Kts
Above
error margin is +/-60Kts
Below
error margin is +/-30Kts
Engine #1
Pt2Tt2
For Pitch AQ

ANTI-ICE CHECK			
Switch	**Action**	**ITT**	**Light(s)**
APU BLEED	**OFF**		VERIFY OFF
Air Frame	**NORM**	1 & 3 Increase	On
Air Frame	**STBY**	1 & 3 Decrease slightly then recover	On
Air Frame	**OFF**	1 & 3 Decrease	Off
PRV	**OFF**	2 Decrease	
ENG 1-2-3	**ON**	1-2-3 Increase	On
ENG 1-2-3	**OFF**	1-2-3 Decrease	Off
PRV	**AUTO**	2 Increase and stabilizes	

Notes:
1. Accomplish in min time to avoid wing overheating
2. APU bleed must be OFF for Test
3. Accomplish at least once per day

THRUST REVERSER CHECK			
Control	**Action**	**Light**	**Light**
#2 ENGINE T/R	**PULL UP to deploy**	Transit	Deployed
T/R EMER STOW	**GUARD UP/STOW**	Transit	
	F/O Tap Captain's Hand		
#2 ENGINE T/R	**PUSH DOWN**		
T/R EMER STOW	**Close Guard**		

AUTO PILOT DISENGAGEMENT CHECK		
Functional Check (AP engaged)	HDG Mode 1. Rotate HDG knob 2. Move AP Pitch knob 3. Move AP Roll knob	 -Yoke follows HDG bug -Yoke moves fore/aft -Yoke rolls left/right
Functional Check Caution: If AP disengages. DO NOT USE	Move Yoke Fore and aft, left and right	-Control resistance -AP can be over-ridden -Stab trim actuates in opposite direction as pressure -AP does not disengage
Check Disengagement (Captain)	1. Go-Around 2. Trim Up or DN Yoke 3 Yoke AP disconnect 4. EMER Stab Trim 5. AP on OFF SW	 -AP disengages -AP light flashes -Aural Warning
Check Disengagement F/O	1. Go-Around 2. Trim Up or DN Yoke 3. Yoke AP disconnect	-AP disengages -AP light flashes -Aural Warning

Notes:
Upon Completion, verify Stab trim is set for takeoff.

FALCON 50 EMPHASIS ITEMS

Prestart

1.	Fire Warning	Tested	(N-10, #9a)
2.	Emergency Stabilizer Trim	Check	(N-13, #63)
3.	Stabilizer Trim	Checked / Set for T.O.	(N-13, #64)
4.	TO CONFIG / ENG 2 FAIL Lights	Tested	(N-13, #65)
5.	No. 2 Stall	Tested	(N-13, #74)
6.	Autopilot Disengagement	Checked / Disengaged	(N-13, #76)

After Start

7.	No. 1 Stall	Tested	(N-16, #18)
8.	APU Shutdown	Per Manufacturer	(N-16, #24)
9.	Anti-ice	Cycled / Set for T.O.	(N-16, #26)
10.	Antiskid	Tested	(N-16, #28)
11.	APU Master (With Zero RPM)	Pushed	(N-17, #38)

Taxi

12.	Thrust Reverser	Checked / Stowed	(N-17, #5)

Before Takeoff

13.	FRATS (Flaps/Runway/Airbrakes/Trims/Speeds)	Set for takeoff	(N-17, #6)

Landing

14.	Antiskid	Tested	(N-21, #3)
15.	Test / Stall (Acft without SB166) Test / Stall (Acft w/SB 166)	Stall 1 / Stall 2 Tested Auto Slat Light Out	(N-21, #5)

FALCON 50 PHASE I MEMORY ITEMS

ENGINE FIRE IN FLIGHT

1.
2.
3.
4.

IF THE FIRE PERSISTS:

5.

ENGINE FIRE ON THE GROUND

1.
2.
3.
4.
5.
6.
7.
8.

TAIL PIPE FIRE

1.
2.
3.

AFT COMPARTMENT FIRE

1.
2.
3.
4.

IF THE FIRE PERSISTS:

5.

APU FIRE

1.
2.

AIR CONDITIONING SMOKE

1 .
2.
3.
4.
5.
6.

ELECTRICAL SMOKE OR FIRE

1.
2.
3.
4.

ONLY IF NO FLAME IN CABIN:

5.
6.

SMOKE REMOVAL

1.
2.
3.
4.
5.

ONLY IF NO FLAME IN CABIN:

6.
7.
8.

LOSS OF BOTH HYDRAULIC SYSTEMS

1.
2.

THRUST REV DEPL IN FLIGHT

1.
2.
3.

FAILURE OF ALL THREE GENERATORS

1.

NOTE: Auto pilot will disengage

2.
3.

SMOKE IN BAG COMPARTMENT

1.
2.
3.

ALL ENGINES OUT CONDITION

1.
2.
3.
4.
5.

RAPID DECOMPRESSION

1.
2.
3.
4.
   a.
5.

EMERGENCY DESCENT

1.
2.
3.
4.
5.

UNRELIABLE AIRSPEED AT HIGH ALTITUDE

1.
2.
3.
4.
5.
   a.
   b.

HORIZONTAL STABILIZER RUNAWAY TRIM

1.
2.

STALL RECOVERY

1.
2.
3.
4.
5.
6.

UNUSUAL ATTITUDE RECOVERY

NOSE UP

1.
2.
3.
4.

When aircraft comes close to the horizon:

5.
6.

NOSE DOWN

1.
2.
3.
4.
5.

When aircraft comes close to the horizon:

6.
7.

EMERGENCY EVACUATION

1.
2.
3.

PRACTICE PERFORMANCE WORKSHEET

1. Departure Airport Data →

Identifier	
Field Elevation	(Ft.)
Pressure Altitude	(Ft.)
Temperature	(^{O}C)

2. Runway Data and Calculations →

		Page
Active Runway		
Length	(Ft.)	p. 2-15
Slope	(%)	
Wind	(Kts)	
Rwy Wind Component	(Kts)	p. 2-15
Cross Wind Component	(Kts)	p. 2-15

3. Enter any Climb Gradient →

Climb Gradient	(%)

4. Determine the configuration (Slats + Flaps 20 or Slats only) that provides the maximum allowable takeoff gross weight:

Slats + Flaps

	Max Weight	Page
Structural Limit	(lbs)	
Limited by Climb	(lbs)	p. 4-13
Limited by Runway	(lbs)	p. 4-10
Limited by Vmbe	N/A	
Limited by Climb Gradient	(lbs)	p. 4-14

Slats Only

	Max Weight	Page
Structural Limit	(lbs)	
Limited by Climb	(lbs)	p. 5-11
Limited by Runway	(lbs)	p. 5-6
Limited by Vmbe	(lbs)	p. 5-8
Limited by Climb Gradient	(lbs)	p. 5-12

5. Using the configuration and weight that provides the maximum allowable takeoff gross weight, determine the following takeoff data. Complete only for the optimum configuration (S+20 <u>or</u> Slats only).

Slats + Flaps 20

	Max Weight	Page
V_1	(Kts)	p. 4-11
$V_{r/V2}$	(Kts)	p. 4-12
V_{fr}	(Kts)	$V_{r/2}$+15
$V_{se/1.5vs}$	(Kts)	p. 6-3
Rotation Angle	(Deg)	p. 4-12
Takeoff Distance	(Ft)	p. 4-10

Slats Only

	Max Weight	Page
V_1	(Kts)	p. 5-9
$V_{r/V2}$	(Kts)	p. 5-10
V_{fr}	(Kts)	$V_{r/2}$+25
$V_{se/1.5vs}$	(Kts)	p. 6-3
Rotation Angle	(Deg)	p. 5-10
Takeoff Distance	(Ft)	p. 5-6

PRACTICE WEIGHT AND BALANCE SHEET

	Weights	- Moments	+ Moments
Basic Empty Weight			
Empty Weight			
Pilot			
Copilot			
3rd Crew			
Coat-Rack (Max 230 lbs)			
Galley (Max 180 lbs)			
Passenger 1			
Passenger 2			
Passenger 3			
Passenger 4			
RH Comp (Max 90 lbs)			
LH Comp (Max 180 lbs)			
Passenger 5			
Passenger 6			
Passenger 7			
Passenger 8			
Lavatory Water			
Baggage I (Max 680 lbs)			
Baggage II (Max 760 lbs)			
Baggage III (Max 760 lbs)			
Total			
Zero Fuel Weight			
% CG Position	%		
Check ZFW Within Limits: See Weight and Balance Diagram	% OF MAC=25+TOTAL MOMENTS/AC WEIGHT*100/MAC MAC=111.77”		
Fuel			
Take Off Weight			
% CG Position	%		
Check CG within Limits:			

FALCON 50 START ACTIONS

Captain	Captain Action	First Officer
Callout	Accomplish for each engine	Action/ Callout
Observe	Boost Pump ON Gen SW ON BUS TIE TIED DC PWR SET Eng Computer ON Start SW GND ST	Observe
"Starting #___"	Starter Pushbutton PRESS	Start Clock
"N2"	N2 increasing	
	Oil Pressure Indication	"Oil Pressure"
"N1"	N1 increasing	
	N2 = 12-15% N1 = indication THROTTLE TO IDLE IGN light illuminates	"Ignition"
"Fuel Flow"	FF 200-300pph	
"Light Off"	ITT rise	
	50% N2 IGN and GEN lights out	"IGN cutout"
	Engine stabilized in Idle Eng. Ind. in limits HYD PNL (PMP, QTY, PRS) MFWP check lights IGN light out	Observe

Notes:

1. See limitations section for appropriate engine parameters.
2. After all engines are started only Four lights should be illuminated on the MFWP.
3 .If Parking brake is set only one light should be illuminated on the hydraulic panel.

REALIGNMENT OF THE UNIVERSAL FMS

After slewing/freezing/repositioning of the aircraft position in the simulator, the following procedure is a quick way to realign the FMS.

1. Select page 2 of the NAV page.

2. On the left side of the page you will see displayed:

FMS1 POS
N …….
W …….

3. Press the line select button to the left of the lat/long coordinates.

4. There will be lat/long coordinates displayed on the right side of the page as such:

N …….
W …….
GPS POS

5. Press the line select button to the right of the lat/long coordinates. The words GPS POS underneath the coordinates will go from a smaller font to a larger font. In addition, the latitude coordinate will then become highlighted. Once GPS POS goes to the larger font, press the line select button to the right of GPS POS.

6. The word ACCEPT will be highlighted on the bottom left of the page. Press the line select button to the left of the word ACCEPT.

7. Your FMS once again knows its location.

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Acronyms

A/I	Anti-Ice
AAL	Above Airport Level
A	Above
ACT	Attitude Compensated Tilt
ADC	Air Data Computer
ADF	Automatic Direction Finder
ADI	Attitude Director Indicator
ADS	Air Data System
AFIS	Airborne Flight Information System
AFM	Airplane Flight Manual
AFU	Artificial Feel Unit
AGL	Above Ground Level
AHS	Attitude Heading reference System
AM	Amplitude Modulation
AMSL	Above Main Sea Level
AOA	Angle Of Attack
AP	AutoPilot
APP	Approach
APPR	APPRoach
APT	AirPorT
APU	Auxiliary Power Unit
ARP	Air Data Reference Panel
ARTCC	Air Route Traffic Control Center
ASEL	Altitude preSELect
ASOS	Automatic Surface Observation System
ATA	Air Transport Association
ATC	Air Traffic Control
ATIS	Airport Traffic Information System
ATT	ATTitude
BASC	Bleed Air Supply Computer
BFO	Beat Frequency Oscillator
BRG	BeaRinG
B-RNAV	Basic - aRea NAVigation
BLW	BeloW
C/B	Circuit Breaker
CAT	CATegory
CCP	Cursor Control Panel
CCW	Counter Clock Wise
CDI	Course Deviation Indicator
CDU	Control Display Unit
CFIT	Controlled Flight Into Terrain
CG	Center of Gravity
CHG	CHanGe
CKD	ChecKeD
CKPT	CocKPiT
CL	CheckList
CLR	CLeaR

CMC	Centralized Maintenance Computer
CMCF	Central Maintenance Computer Function
CMPTR	CoMPuTeR
COND	CONDitioning
CPL	CouPLe
CRS	CouRSe
CRZ	Cruise
CTC	Computed Terrain Clearance
CVR	Cockpit Voice Recorder
CW	ClockWise
DCP	Display Control Panel
DDI	Drift Down Index
DEEC	Digital Electronic Engine Control
DEST	DESTination
DFDR	Digital Flight Data Recorder
DGR	DeGRaded
DIR	DireCT
DISC	DISConnect
DIST	DISTance
DL	Data Loader
DN	DowN
DTG	Distance To Go
DTK	Desired TracK
ECL	Electronic CheckList
ECTM	Engine Condition Trend Monitoring
ECU	Environmental Control Unit (cold air units)
EFIS	Electronic Flight Instrument System
EGPWS	Enhanced Ground Proximity Warning System
EPU	Estimated Position Uncertainty
ET	Elapse Time
ETA	Estimated Time to Arrival
ETE	Estimated Time Enroute
EVMC	Engine Vibration Monitor Computer
FCP	Flight Control Panel
FCS	Flight control system
FD	Flight Director
FGP	Flight Guidance Panel
FLC	Flight Level Change
FMA	Flight Mode Annunciator
FMS	Flight Management System
FP	Flight Plan
FPLN	Flight PLaN
FPM	Feet Per Minute
FQ	Fuel Quantity (Total fuel gauged)
FR	Fuel Remaining
FSS	Flight Service Station
GA	Go Around
GASA	Go Around Safety Altitude

GCU	Generator Control Unit
GDC	Global Data Center
GEN	GENerator (Electrical)
GND	GrouND
GNSSU	Global Navigation Satellite System Unit
GPS	Global Positioning System
GPU	Ground Power Unit
GPWS	Ground Proximity Warning System
GS	Glide Slope
GW	Gross Weight
H	Holding pattern
HDG	HeaDinG
HMU	Hydro Mechanical Unit
HP	High Pressure (bleed air port)
HSI	Horizontal Situation Indicator
IAF	Initial Approach Fix
IAS	Indicated Air Speed
ICAO	International Civil Aviation Organization
IGN	Igniters
IM	Inner Marker
INOP	INOPerative
IRS	Inertial Reference System
IRU	Inertial Reference Unit
ISA	International Standard Atmosphere
ITT	Interstage Turbine Temperature
KCAS	Knots Calibrated Air Speed
KIAS	Knots Indicated Air Speed
LD	Landing Distance
LED	Luminescent Electronic Diode
LFL	Landing Field Length
LH	Left Hand
LNAV	Lateral NAVigation
LP	Low Pressure (bleed air port)
LRC	Long Range Cruise
LPV	Localizer Performance with Vertical Guidance
LV	Lower side band and Voice mode
LVL	LeVeL
LVTO	Low Visibility Take Off
MAG	MAGnetic
MAPT	Missed Approach Point
MC	Max Cruise
MCL	Max Cruise Limit
MDA	Minimum Descent Altitude
MFW	Minimum Flight Weight
MI	Mach Indicated
MLE	Maximum Landing gear Extended speed
MLO	Maximum Landing gear Operating
MLW	Maximum Landing Weight

MMEL	Master Minimum Equipment List
MKR	Marker
MRW	Maximum Ramp Weight
MSA	Minimum Safe Altitude
MSG	MeSsaGe
MSL	Mean Sea Level
MTC	Minimum Terrain Clearance
MTOW	Maximum Take-off weight
MW	Management Window
MW	Monitor Warning
MZFW	Maximum zero fuel weight
NOTAM	NOTice to AirMen
NWS	Nose Wheel Steering
O	Orbit
OM	Outer Marker
OVHD	OVerHeaD
OVHT	OVerHeaT
OVRD	OVeRriDe
P	Procedure turn
P/B/D	Place / Bearing / Distance waypoint definition
P/B/P/B	Place / Bearing / Place / Bearing waypoint definition
PAX	Passengers
PCB	Printed Circuit Board
PDC	Pre-Departure Clearance
PF	Pilot Flying
PIC	Pilot In Command
PLA	Power Lever Angle
PNF	Pilot Not Flying
PPOS	Present POSition
PRAIM	Predictive Receiver Autonomous Integrity Monitoring
PRS	PReSsure
Ps	static Pressure
PS	Power Supply
Pt	total Pressure
PTT	Push-To-Talk
QFE	Atmospheric pressure at aerodrome elevation (or a runway threshold)
QNE	The barometric pressure used for the standard altimeter setting (29.92 inches Hg.)
QNH	The barometric pressure as reported by a particular station.
QTY	QuanTitY
R	Radial
RA	Radio Altimeter
RA	Resolution Advisory
RAIM	Receiver Autonomous Integrity Monitoring
RH	Right Hand
RNAV	aRea NAVigation system
RNG	RaNGe
RNP	Required Navigation Performance

RCP	Reversionary Control Panel
RSS	Radio Sensor System
RVSM	Reduced Vertical Separation Minimum
SA	Safe Altitude
SAT	Static Air Temperature
SFD	Secondary Flight Display (MEGGIT)
SG	Symbol Generator
SIC	Second In Command
SID	Standard Instrument Departure
SPD	SPeeD
SPS	Speed Protection System
SQ	SQuelch
SRC	SouRCe
STAR	Standard Terminal Arrival Route
STAT	STATus
STBY	STandBY
STC	Sensitivity Time Control
STD	STandarD
SUA	Special Use Airspace
SYNC	SYNChronization
TA	Terrain Awareness or Traffic Advisory
TA/RA	Traffic Advisory / Resolution Advisory
TAS	True AirSpeed
TAT	Total Air Temperature
TAWS	Terrain Awareness & Warning System
TBD	To Be Defined
TCAS	Traffic Collision Avoidance System
TCS	Touch Control Steering
TDZE	Touch Down Zone Elevation
TEMP	TEMPerature
TGT	TarGeT
TO	Take-Off
TOC	Top Of Climb
TOD	Top Of Descent
TOLD	Take-Off Landing Data
TOSA	Take-Off Safety Altitude
TRB	TuRBulence
TRK	TRacK
TTG	Time To Go
TWR	ToWeR
UTC	Universal Coordinated Time
UV	Upper side band and Voice mode
VAPP	Approach speed
VBC	Virtual Backplane Concept
VDR VHF	Digital Radio
VFR	Flaps-slats Retraction speed
V1	Takeoff Decision speed
V2	Takeoff Safety speed

VFT	Final Take-off Speed
VGP VNAV	Glide Path
VIDL VOR/ILS/VHF	Data Link
VMCA	Minimum Control speed (velocity) in the Air
VMCG	Minimum Control speed (velocity) on the Ground
VMCL	Minimum Control speed (velocity) during Landing and approach
VNAV	Vertical NAVigation
VNE	Never Exceed speed
VPTH	Vertical PaTH
VR	Rotation Speed
VS	Vertical Speed
VTA	Vertical Track Alert
WAAS/LAAS	Wide Area Augmentation System/Local Area Augmentation System
WOW	Weight On Wheels
WPT	WayPoinT
WX	Weather radar
WXR	Weather Radar System
XFR	TransFeR
YD	Yaw Damper