IOE Questions **6/27/2008**

1. On aircraft with INS, when must the MSU ALIGN lights be extinguished and the NAV mode selected?
   Prior to moving the airplane.

2. Can the INS be aligned and calibrated while the aircraft is moving?
   No. Only when the aircraft is parked.

3. How long must the MSU's be selected to NAV prior to initializing the UNS-1F?
   Minimum 12 seconds

4. What should you do if a red WRN (flashing) light illuminates during the INS alignment process?
   Shut down the affected INU. After 10 minutes attempt another re-align (MSU back to Nav. Requires re-initializing UNS.)

5. What must you do if a (steady) red WRN light illuminates? (INS)
   Shut down INU. If accompanied by Inst. Warn Flags or Lights, switch over the associated instruments, F/D and A/P to a valid INS.

6. Normal INS alignment time is how long? What if it's cold outside?
   10 Minutes. (16 Min or longer if temp below 0 degrees C)

7. When might you select ATT REF on the INS MSU in flight? How does that affect how you would shoot an ILS?
   To extend battery life for the INU. Would fly ILS without A/P or F/D.

8. The INS battery provides power for uninterrupted INS operation for how long?
   15 Minutes.

9. You're outside the airplane. How would you know if the INS's are on battery?
   The ground crew call horn sounds.

10. The MSU BATT light illuminates. What does that mean? What about the AMBER BAT light on the pedestal?
    The Red BATT light comes on when the INS Battery Voltage is insufficient for INS operation. If the battery is discharged, this light will come on during the battery test at turn-on, and remain on until the next turn-on with a charged battery.

11. What are the normal minimum V1 speeds for our aircraft?
114 -7A 118 -7J 123 -GE

12. You are landing in Gander. The ATIS reports the braking action as .13. What can we expect?
Nil because .13 is less than or equal to .16

13. If actual takeoff gross weight exceeds the planned TOGW on the flight plan, the Captain must submit an Irregularity Report. Exceeds by how much?
Differences of 2% or more require an Aircrew Irregularity Report detailing the load discrepancy. (Operations utilizing standard preplanned cargo loads do not require these reports.)

14. How do we know if the plane we are operating requires ballast fuel?
Ops Manual Page 4 (Dec-07-2007) lists table with and without bulk spares. Standard ballast is 20,000 lbs.

15. Max weight to land with 30 flaps and still remain stage III is?
460,000 lbs

16. When must the flight plan include ETPs?
ETP's are required by ETOPS Flight Plan. Also Part 121, enroute limitations for transport category aircraft.

17. Is there ever a weight penalty for using anti-ice on takeoff?
Yes. The penalty is added to the aircraft Takeoff Weight for JT9 aircraft. Ops Manual page 12 has Anti-Ice Corrections for -7A, F & J when the runway analysis shows a difference between Final Segment OCH and the Flap Retract OCH. For GE aircraft, the bottom of the performance page has hits. Weights are taken from Runway and Climb, but are not added to aircraft maximum gross weights. Landing performance charts are available for landings on a wet runway or in icing conditions with nacelle anti-ice in use.

18. When is snow considered to be "dry"?
Snow is considered DRY when OAT is below 30 deg. F (-1 deg. C)

19. The aft fuselage of the aircraft will contact the ground at what degree of nose up pitch?
Aft fuselage contact will occur at 12.5 degrees pitch with the wheels on the runway and the gear struts fully extended.

20. When must we use max power for takeoff?
With any clutter conditions, with an N1 gage is inoperative, when windshear is reported, with 1 or 2 brakes deactivated using Method 2. OAT is less than –51 F (-47 C). Gear down dispatch. 3 engine ferry.

21. There is clutter on the runway. When is a takeoff not authorized?
Antiskid inoperative, Any thrust reverser inoperative, Tailwind, Runways shorter than 9,000 feet, Actual takeoff weight greater than runway clutter limited weight, Clutter reduced V1 below VMCG; Slush, wet snow, or standing water depths greater than ½ inch, Dry snow depth greater than 6 inches.

22. Which manuals are the FO required to carry?
Flight Operations Manual, Airway Manuals.

23. Engine starts must be aborted for numerous reasons. State them.
Start Valve fails to close after ignition switch is positioned off, Start Valve-Open light illuminated; Any unusual noise or vibration, Rapid or excessive EGT rise; No indication of N1 rotation as EGT begins to rise (JT9 Gnd Start 3 minutes - if no N1 indication during that period.) (CF6 if no N1 after 30 seconds of N2 ground idle.)
Engine Fuel Condition Actuator Light: If before start-light not illuminated, If during start light does not extinguish after start lever is positioned to Idle; If after stabilized at idle, if CSD Low Oil Press Light not Extinguished, or engine oil press is not in green band.
Tailpipe Fires; Abnormal fuel flows more than 850-1050, or 600-700 for CF6; Dense Fogging from tailpipe prior to start lever movement; Instantaneous Light-Off.
No EGT within 20 seconds JT9 or 25 seconds CF6.
Fuel shutoff valve light does not extinguish; Sluggish N2 acceleration; Engine fails to accelerate to idle within 90 seconds after start lever movement (JT9); N1 or N2 stop accelerating to idle; N2 Fails to rotate; No Oil pressure within 10 seconds after EGT rise; No Starter disengagement by 50% N2. No oil pressure rise, No fuel flow 20 seconds after start lever movement, If start lever is inadvertently returned to Cutoff;

24. How many start attempts are allowed per engine?
JT9 Max 3 start attempts in 10 minutes per engine.
CF6 Starter 5 Min Continuous.

25. When must nacelle anti-ice be used.
When icing conditions exist, or are anticipated, except during climb and cruise below -40C SAT.

26. You are climbing through FL300 in visible moisture with a SAT of -41. The anti-ice will be on, right?
No. Must be on except during climb and cruise below -40C SAT.

27. You are descending into JFK and the controller requests that you expedite your descent. You are the NFP. While passing 21500', the FP calls for flaps 1. What should you do?
Advise the FP of the max altitude for flap extension: 20,000'

28. How much frost may be on the wing on the aircraft without having to deice?
1/8" of frost is permissible on the underside of the wings, in the vicinity of the fuel tanks.

29. Pratt and Whitney engines have a "Rich" position on the start levers. Do we ever use this?
Yes, if engine has been exposed for several hours at temps below +32F and EGT indicates less than 0. Return to Idle after electrical power has been established from Engine Driven Gen and N2 RPM has reached 50%.

30. Are there any special considerations while taxiing with nacelle anti-ice?
During prolonged ground operations, when OAT is 3 or less in icing conditions, an engine runup (Min 50% N1) is required each 15 minutes to shed any ice buildup.

31. When must fuel heat be used?
Prior to Takeoff if Fuel Temp is +5C or below. Inflight if fuel icing light illuminates or engine fuel temp below +5C.
(+5 - 5: 1 in 30 -5 and below 1 in 10)

32. Why do the EPR gauges fluctuate during fuel heat ops?
Because bleed air is required for heating the fuel.

33. You are at an en-route stop. Should the window heat be turned off?
Not for enroute stops and short turnarounds with OAT below 40F.

34. You are expecting the back course approach to RWY in Gander. Describe how you would set up the radios, course selectors and, flight director.
Tune and ID the radios. Set inbound Front Course on HIS. Use back Beam switch on FD. Back up the class 1 radios with the GPS/TAWS showing a PVOR course.

35. The CA has aborted the take off. What are your duties?
Apply slight forward pressure on the controls. Advise ATC or traffic of the abort. Call for brake cooling chart if CA for FE forgot.

36. How long does it take the brakes to reach peak temperature after an abort?
15 minutes or more

37. We can takeoff with how much frost on the wings?
1/8" of frost is permissible on the underside of the wings, in the vicinity of the fuel tanks.