T-6 KNOW IT ALL

Engine
1. What is the flat rated shaft horsepower output of the PT6A-68 engine?
   - 1100 SHP
2. What are the two sections of the T-6’s engine?
3. Gas generation section and the power turbine section
4. What components make up the gas generator section of the engine? (aft half)
   - 4 Stage Axial Flow Compressor
   - Single-Stage centrifugal flow compressor
   - Combustion Chamber
   - Single-Stage Compressor Turbine
5. What components make up the Power Turbine section?
   - 2 Stage Axial Flow Power Turbine
   - Reduction Gearbox
6. Briefly describe the flow of air into and through the engine?
   - Air enters the intake cowling beneath the prop and flows first through an inertial separator. It then turns 180 deg and passes through a 4 stage axial compressor and a single stage centrifugal compressor. From there, it enters the combustion chamber, is mixed with fuel and is lit. The expanding air first passes over the compressor turbine, making the engine self-sustaining, and then passes over the two power turbines before passing through the exhaust ports and diverted rearward by the exhaust stacks.

Oil System
1. What is the capacity of the oil system?
   - 18.5 quarts
2. What components does the oil system supply filtered oil to?
   - Engine Bearings
   - Reduction Gears
   - Accessory Drives
   - Propeller
3. What are the components of the oil system?
   - Pressure System
   - Scavenge System
   - Cooling System
   - Breather System
4. When must oil be checked and where to get an accurate reading?
   - Within 30 minutes of engine shutdown and using the dipstick, not the sight gauge.
5. Describe when you might see either an OIL PX master caution and/or OIL PX master warning?

<table>
<thead>
<tr>
<th>PCL Position</th>
<th>Oil Pressure Condition</th>
<th>Time Delay</th>
<th>Annunciator</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDLE &lt;2&gt;</td>
<td>Oil Pressure between 15 and 40 psi</td>
<td>None</td>
<td>Amber OIL PX</td>
</tr>
<tr>
<td>IDLE &lt;2&gt;</td>
<td>Oil Pressure between 15 and 40 psi</td>
<td>5 seconds or more</td>
<td>Amber OIL PX, Red OIL PX</td>
</tr>
<tr>
<td>IDLE &lt;1&gt; &lt;2&gt;</td>
<td>Oil Pressure 15 psi or below</td>
<td>None</td>
<td>Red OIL PX</td>
</tr>
<tr>
<td>Above IDLE &lt;2&gt;</td>
<td>Oil Pressure between 40 and 90 psi</td>
<td>10 Seconds</td>
<td>Amber OIL PX</td>
</tr>
<tr>
<td>Above IDLE &lt;1&gt; &lt;2&gt;</td>
<td>Oil Pressure to 40 psi or below</td>
<td>None</td>
<td>Red OIL PX</td>
</tr>
</tbody>
</table>
6. The engine oil pressure indicator may display oil pressures up to __ psi with the engine shut down due to the design of the oil pressure transmitter.
   - 4

7. Caution: For most accurate results, check oil level how many long after shutdown?
   - 15-20 minutes

8. Caution: What is the only acceptable method for getting a correct indication of oil level?
   - Dipstick – NOT SIGHTING WINDOW

9. Note: T/F Due to the sensitivity of the SCU, a single, momentary illumination of the amber OIL PX annunciator while maneuvering indicates a system malfunction.
   - False

**Reduction Gear Box**

1. What is the function of the reduction gearbox?
   - To reduce the power turbine output of 30,000 RPM to propeller operation speed off 2000 RPM

2. The Reduction Gear Box reduces shaft output speed from ______ RPM to a propeller operating speed of ______ RPM.
   - Over 30,000, 2,000

3. What drives the RGB?
   - Hot Gases impinging on the 2-Stage Power Turbine

4. What does a red CHIP annunciator indicate?
   - Contaminated oil

5. T or F: the RGB is mechanically connected to the gas generator section of the engine?
   - False – No Mechanical Connection to the Gas Generator Section

6. What accessories are mounted on the reduction gearbox?
   - Prop interface unit (PIU), torque probe, Permanent magnetic alternator (PMA) (on top), and the air conditioning compressor (belt driven) (on right side)

7. A chip detector is mounted in the RGB to detect ferrous material in the ____.
   - oil

**Propeller**

1. The propeller system is designed to maintain a constant speed of _____ during most flight conditions?
   - 2000 RPM (100% Np)

2. What is the unit on the primary engine data display that indicates prop speed?
   - Np

3. At 100% indicated torque, the engine is producing approx _____ foot pounds of torque at the prop shaft?
   - 2,900 ft-lbs

4. What are the three basic conditions of propeller pitch?
   - Feathered
   - low pitch (flat or fine)
   - high pitch (coarse)

5. Approximately what is the blade angle of the propeller at low pitch?
   - 15deg

6. Normally, propeller governing is automatically set by the ____ and ____.
   - PMU and PIU
7. What happens to the prop if there is an engine failure with the PCL out of the Cut-Off position?
   - The prop will slowly begin to feather due to loss of oil pressure but MAY NOT fully feather.
8. Power for the feather dump solenoid valve is provided through which circuit breaker?
   - PROP SYS
9. How is the pitch of the prop controlled?
   - The PMU controls prop RPM by varying blade angle with oil pressure through the PIU. Pressurized oil forces the piston forward to decrease pitch toward fine. With a reduction in pressure the blades turn towards coarse pitch.
10. With the PMU functioning, the __________ will modulate oil pressure to the prop pitch change piston to limit Np to 106%, while electronic governor will keep Np at 100%.
    - mechanical overspeed governor
11. If PMU is not functioning, the __________ will modulate oil pressure to maintain Np at or below 100+/−2%.
    - flyweight overspeed governor (checked in hammerhead)
12. What will happen if the PROP SYS CB is pulled, the PMU is off, and the PCL is placed in CUT-OFF?
    - The prop will not rapidly feather and may not fully feather until after landing

Start and Ignition
1. During an auto start or normal operations with the ignition set to NORM, the ____ will energize and de-energize the igniters as required.
   - PMU
2. Power for the START control is provided through a circuit breaker placarded START, located on the ______ bus circuit breaker panel in the front cockpit.
   - Battery
3. During an auto start or normal operation with the IGNITION switch set to ________, the PMU will energize and de-energize the igniters as required.
   - NORM
4. Power for the IGNITION system is provided through a circuit breaker, placarded IGN, located on the ______ bus circuit breaker panel in the front cockpit.
   - Battery
5. T/F If the IGN SEL EICAS message remains continuously illuminated, notify maintenance personnel after the mission.
   True

Power Control Lever (PCL)
1. The ____ PCL is connected to the Fuel Management Unit (FMU) both electrically and mechanically with a flexible cable.
   - Front
2. T/F When the PCL is moved forward to idle during engine start, two roller bearings lock in place on the front side of a rocker cam detent to secure a gate.
   - True (this is what makes the two audible clicks when pushing the PCL up @ 60%)
3. T/F During ground ops and after the engine is started, if the PCL is inadvertently moved to cutoff and the engine is shutting down, attempt to relight the engine by moving the PCL to idle
   - False – DO NOT try to relight the engine in the above situation, SEVERE engine damage could occur
Power Management Unit (PMU)

1. What is the primary source of power for the PMU?
   - The PMA

2. What sort of power does the PMA provide?
   - 32 VAC, and PMU converts that to DC power

3. When does the PMU automatically switch to 28 VDC from the battery bus?
   - When prop RPM drops below 40-50% Np
   - When the PMA fails

4. The aircraft weight on wheels switch on the main gear struts controls what for the PMU?
   - PMU In Flight and Ground Mode

5. In ground mode, what is idle? Flight mode?
   - 60% N1
   - 67% N1

6. Above ______ feet MSL the PMU raises N1 to maintain Np above 80% to avoid stress on the propeller during spins.
   - 10,000’ MSL

7. Relation of PCL position to power setting is ______ with the PMU operating.
   - Linear

8. In what situations will the PMU automatically abort the start?
   - light off has not occurred within 10 seconds of selecting AUTO/RESET
   - ITT exceeds 940 deg C for 2 seconds, 870 for 4 sec, or 840 for 19 seconds
   - N1 acceleration rate to idle is 50% less than normal

9. Is the automatic shutdown feature provided by the PMU available in flight mode?
   - No

10. You can expect your IOAT and ITT data to be invalid as well as an EDM FAIL displayed on the EICAS if the PMU is activated when the IOAT is within what range?
    - 96 – 121 degrees Celsius

11. The PMU will go offline when the IOAT exceeds _____?
    - 121 degrees Celsius

12. With the PCL set to ST READY, when you place the starter switch to AUTO/RESET, the PMU will automatically activate what?
    - Starter
    - Boost pump
    - Igniters

13. At what N1 in the start sequence will the PMU deenergize the starter and igniters and turn off the boost pump, provided that fuel px is greater than 10 psi?
    - Approximately 50% N1

14. When may you advance the PCL to IDLE during engine start?
    - Any time N1 is at or above 60%

15. When is a manual abort necessary during engine starts?
    - PMU is inoperative
    - PCL has been moved out of the ST READY position

16. How can an AUTO engine start be manually aborted?
    - Retard PCL back to OFF
    - reselect AUTO/RESET on the starter switch

17. What does illumination of both the PMU FAIL and PMU STATUS annunciators indicate?
    - PMU system is in manual mode (faults prevent the PMU from setting the requested power or respecting engine limits, or pilot switches PMU OFF)

18. What does a PMU STATUS annunciation one minute after landing indicate?
Fault conditions that are not serious enough to revert the system to manual mode are encountered in flight.

19. When the PMU is in manual mode, the PCL schedules fuel directly to the engine through the FMU, and the pilot must be careful to ensure what is not exceeded?
   - N1
   - Temperature
   - Torque

20. With the PMU in the manual mode, what must the pilot be careful to avoid?
   - Hot Start

21. What does a PMU STATUS annunciation in flight indicate? What does it mean?
   - A fault in either of, or a mismatch between the weight-on-wheels switches
   - The PMU will not revert to ground mode upon landing.
   - Landing distance will be longer than normal

22. Does the PMU provide engine protection during airstarts?
   - No, ITT, Torque limit, and N1 protection is not available.

Fire Warning

1. T/F Flattening, twisting, kinking, or denting of the fire warning loop will not affect test or flight operation.
   - True

2. Power for FIRE 1 is provided through a CB placarded FIRE 1 located on the ______ bus CB panel in the front cockpit.
   - Battery

3. Power for FIRE 2 is provided through a CB placarded FIRE 2 located on the ______ bus CB in the front cockpit.
   - Generator

Firewall Shutoff Handle

1. What does pulling the firewall shutoff handle accomplish?
   - Cut off fuel flow and hydraulic fluid flow to the engine, and cut off bleed air flow from the engine.

2. Can the valves closed by actuating the firewall shutoff handle be reset? How?
   - Yes, by pushing the handle down.

Fuel System

1. What is the primary method of refueling the T-6?
   - Single-point pressure refueling

2. How much fuel is provided through the single point refueling?
   - 1100 pounds

3. How much more fuel is available with over the wing refueling?
   - 100 pounds

4. Within how many pounds does the auto balance system keep the wing tanks?
   - 20 pounds

5. When does the red FUEL PX annunciator illuminate?
   - When the low pressure switch indicates less than 10 psi fuel pressure

6. How many pounds of fuel remain in a wing when the associated FUEL LO annunciator illuminates?
   - 110 pounds

7. What does illumination of the FUEL BAL annunciator indicate?
- That the auto balance system has shut off
8. When will the FUEL BAL annunciator illuminate?
   - If indicated fuel balance exceeds 30 pounds for 2 minutes
   - Fuel probe failure
9. What does FP FAIL indicate?
   - Failure of a fuel probe
10. Should you attempt to manually balance your fuel load if your EICAS is indicating an FP FAIL?
    - No
11. Will automatic fuel balancing be available with fuel probe failure?
    - No
12. What should you do if the FUEL PX annunciator illuminates and the boost pump activates during inverted flight?
    - Cease inverted maneuvers and notify maintenance after the flight.
13. When does FUEL PX illuminate? Where?
    - <10 psi in the motive flow supply line
14. When does the L/R FUEL LO light illuminate?
    - 110# optical sensor
15. Three times the boost pump light will illuminate?
    - When switch is turned on
    - Automatically by the low px switch as long as PCL is above idle
    - Whenever starter is activated (automatically or manually)
16. What is the purpose of the electric boost pump?
    - Provides fuel for engine start
    - Serves as back-up to the engine driven low pressure pump
17. What happens if the engine driven high pressure pump fails?
    - The engine will fail due to fuel starvation and cannot be restarted

**Electrical System**
1. How many volts does the Starter Generator produce? Amperage?
   - 28 VDC
   - 300 amps
2. How much voltage does the generator need to supply to charge the battery?
   - 25 volts
3. When the generator is not providing power for the electrical system what is?
   - 24 VDC/42 AMP Battery (battery does not power air conditioning)
4. If the red GEN annunciator illuminates, the battery will take over powering what equipment?
   - Everything except the air conditioner, which will automatically be shed
5. Power for the GEN is provided through the GEN SW CB located on the front cockpit _____ bus.
   - Generator
6. If the red BAT annunciator illuminates, you can expect to lose what items?
   - None (as long as the BUS TIE is CLOSED (in NORM position))
7. When testing the Auxiliary Battery, ensure that the test light remains illuminated for a minimum of how long?
   - 5 seconds
8. The Auxiliary Battery produces how many VOLTS/AMPS?
   - 24 VDC/5 AMP hour
9. What items are powered by the Auxiliary Battery?
   - Standby Instruments, Standby instrument lights, UHF backup, Fire 1.
10. Do not connect external power if the battery voltage is below what?
    - 22.0 volts
11. How is the aircraft protected from overvoltage/undervoltage from an external power source?
- A voltage sensor detects voltage level and if it changes to a certain extent, the external power will be disconnected from the aircraft electrical system.

12. In the event of generator failure, the battery should provide power for approximately how long? Under what conditions?
- 30 minutes
- BUS TIE is open and minimal radio communications

13. If needed, the auxiliary battery should provide power for approximately how long?
- 30 minutes

14. If the generator or generator bus fails, items on the generator bus will not be powered if the BUS TIE switch is in what position?
- OPEN

**Brakes**

1. How many wheel brake applications remain after loss of normal hydraulic pressure?
- Unlimited – wheel brakes are independent

2. What is the corrective action if brake pressure appears to fade during application or brakes are not responding as expected?
- Fully release brakes then re-apply (both crewmembers must release).

3. If landing with a complete brake failure, what should you consider/do when thinking of a field to land?
- Crash Crew Available/Familiar Field
- Longest and perhaps widest runway available
- Use Landing Flaps to land at slowest possible speed
- Plan a FIRM landing to dissipate airspeed
- Burn as much gas without causing another emergency to be as light as possible

**Hydraulics**

1. What is the capacity of the hydraulic system?
- Approximately 5 quarts

2. What is the range of the hydraulic pressure relief valve?
- 3250-3500psi

3. What is normal hydraulic pressure?
- 3000 + 120 psi

4. Once the hydraulic pressure exceeds _____ the system can power its components.
- 1800 psi

5. What does and amber HYDR FL LO annunciator indicate?
- reservoir level is below approximately 1 qt.

6. With the HYDR FL LO light illuminated, can the gear and flaps still be lowered using the main system?
- Yes

7. When does the amber EHYD PX LO annunciator illuminate?
- When emergency accumulator pressure drops below 2400 +/– 150 psi

8. What prevents hydraulic fluid from the emergency system from flowing back into the main system?
- Check valve

9. What prevents a leak in the emergency system from depleting the main hydraulic system?
- Hydraulic fuse

10. What is the flow limit for the hydraulic fuse between the emergency and main hydraulic system?
- .25 gpm

11. What cockpit indication will you have if hydraulic pressure is low?
- The gauge will turn turn from white to amber below 1800 psi (only indication you’ll have)
12. What provides power for the HYD SYS?
- Through a CB placarded HYD SYS located on the battery bus CB in the front cockpit

**Landing Gear**

1. The landing gear is a retractable _______-type which is electrically controlled and hydraulically operated.
   - Tricycle
2. The landing gear system is ___________ actuated and ___________ sequenced to extend and retract the landing gear and main gear doors.
   - Hydraulically
   - Electrically
3. If the gear handle is difficult to raise to the UP position what do you do?
   - Return the gear handle to the DOWN position. Do not use the downlock override handle.
4. If you have a failure of the weight-on-wheels micro-switch, use of the downlock override button will allow the gear handle to be raised, but will that retract the landing gear?
   - No
5. How long does normal gear extension and retraction take?
   - 6 seconds
6. T/F The gear handle is a mechanical switch requiring no electrical power to operate.
   - False (electric switch – emergency landing gear handle must be used if electrical power is not available).
7. T/F To emergency extend the gear, electrical power must be available.
   - False (mechanical)
8. Can the gear be retracted if the emergency extension handle is used to extend the gear?
   - No
9. What does a normal gear extension look like on the landing gear control unit?
   - 2 red lights as the main gear doors open and red light in the handle
   - 3 red lights as the nose gear starts moving down
   - 3 green lights with nose gear red light extinguishing as the gear reaches down and locked
   - 2 red lights extinguish as the main gear doors close and the gear handle light extinguishes
10. What does the normal gear extension look like on the landing gear control unit?
    - 3 green lights for the gear, and 2 Red Lights for Main Gear Doors and Handle light is RED
    - As gear retracts Gear Lights Show 3 Red, main gear door lights off and Handle light is RED
    - Once gear is up only 2 Red Main Gear door lights show and Handle Light remains RED
    - Once gear doors are closed all lights are off on the Landing Gear Control Unit
11. If the emergency gear extension is used, what indication will you see on the landing gear control unit?
    - 3 green, 2 red (gear door lights), and red landing gear handle light
12. When does the red light in the gear handle illuminate?
    - Any other red light illuminated on the control unit
    - PCL approaching IDLE with the gear handle UP (regardless of airspeed or position of main gear)
13. In what situations will you hear the aural gear tone?
    - Gear handle is not down with weight on wheels
    - Gear is not indicating down and locked with the flaps set to LDG (regardless of gear door position, power setting, or airspeed)
    - Gear handle not DOWN (regardless of actual gear position) with the PCL below a mid-range (app. 87% N1) position, airspeed below 120 KIAS, and flaps set to UP or T/O
14. In what situations can you silence the gear horn?
    - Only in the last situation listed above
Nose Wheel Steering (NWS)
1. Is it a tighter turn radius made with the NWS off or on?
   NSW off – using just power full rudder and differential braking
2. The nose wheel steering should only be used at what airspeeds? Why?
   - Ramp speeds only (in other words, at a safe taxi speed)
   - May cause directional control problems due to increased sensitivity
3. What does the NWS actuator due to the gear nose gear while in the air and when the nose gear is not up and locked?
   - Automatically centers the nose wheel

Flaps
1. The aircraft has hydraulically operated, electrically controlled, four segment ______ flaps.
   - Split
2. When would the normal flap operation and position indicators be unavailable?
   - Battery bus failure
   - Auxiliary battery is the only source of electrical power
3. When would the emergency flap operation be unavailable?
   - Auxiliary battery is the only source of electrical power
4. What will happen to the flaps if power to the flap control circuit is lost (loss of power to the battery bus or FLAP CONT circuit breaker has opened)?
   - The flaps will retract to the UP position
   - Flap indication will be unreliable
5. How would you know inside the cockpit that the flap indicator is not receiving power and therefore is giving an unreliable indication?
   - The position pointer will move to a position counterclockwise of the UP position (the indicator will point above the “UP” position)
6. Can the flaps be extended using emergency extension if the AUX Batt is the only source of electrical power?
   - No
7. Can the flaps be retracted if they have been extended using the emergency extension?
   - No (not until serviced by maintenance)

Speed Brake
1. When will the speed brake automatically retract?
   - PCL moved to MAX
   - The flaps are extended
2. Will the speedbrake extend if the flaps are extended?
   - No
3. Power for the Speed Brake is through a CB on the ________ bus CB panel in the front cockpit.
   - Generator

Flight Controls
1. Will power to trim actuators continue to be interrupted after you release the trim interrupt button?
   - No (only works while the button is depressed)
2. Besides interrupting power to the trim actuators, pressing the trim interrupt button also disengages what?
   - Trim aid device (TAD)
3. What is the purpose of the bobweight installed on the front control stick?
   - Increases stick forces as G-load increases (improves control feel and helps prevent overstressing the airframe)
4. After setting T/O trim, the TAD will make no further inputs until what point?
5. T/F If operating correctly, the TAD will keep the aircraft yaw trimmed up properly, requiring no input from the pilot.
   - False

6. What does the gust lock do?
   - Locks the rudder and ailerons in a neutral position
   - Locks the elevator in a nose down position

**Canopy**

1. For protection from birdstrike, the windscreen and front windscreen is designed to withstand the impact of a 4lb bird at speeds up to _______ knot.
   - 270

2. T/F If the canopy locking handle will not rotate fully forward until the mechanism locks, use of abrupt or excessive force may be necessary to lock the canopy closed.
   - False (“avoid applying abrupt and/or excessive force to the canopy locking handle at all times”, that’s the reason so many are jacked up now)

3. T/F Pulling the CFS handles in either cockpit will operate the CFS explosives in both cockpits.
   - False (only detonates in the respective cockpit)

4. How much pressure is needed to pull the CFS handle in either cockpit or externally?
   - 15 - 25 pounds

5. When do you get the Red CANOPY Warning on the EICAS?
   - When the canopy latch mechanism and microswitches do not indicate the canopy is in the closed and locked position.

6. Can you eject if you have a “floating” canopy?
   - Yes, but you are not supposed to do so

**Ejection Seats**

1. RESPECT THE SEAT!!!!!!!!!!!!

2. The ejection seats in the T-6 are capable of providing safe escape from the aircraft at what altitudes and at what airspeed?
   - 0 feet up to 35,000 feet
   - 0 speed up to 370 KIAS

3. What is the purpose of the manual override (MOR) handle on the right side of each seat?
   - Initiates seat/pilot separation if the automatic system fails or if seat/pilot separation is desired above 14,000 feet MSL

**Emergency Oxygen System**

1. What is the duration of the emergency oxygen system supply?
   - 10 minutes, or until seat/pilot separation.

2. What two ways can the emergency oxygen system be activated?
   - automatically during ejection, or by pulling the green ring while in the cockpit.

3. What pressure is the emergency oxygen cylinder charged to normally?
   - 1800 psi at 70 degrees F (“red your dead” or black is good)

4. If it is necessary to pull the green ring, descent below what altitude should be initiated?
   - Below 10,000 feet cabin altitude or 10,000 feet MSL (if cabin pressure is lost)
   - Should occur within 10 minutes

5. Can the emergency oxygen be shut off once it has been activated?
   - No (only after 10 minutes or if you drop the mask)

6. Where is the shoulder harness control lever located?
   - Left side of the seat bucket

**ISS**
1. What position should the ISS mode selector be placed in during crew entry to and exit from the cockpit?
   - Solo
2. With the ISS in both, which seat will eject first?
   - Rear cockpit (.37 seconds later the front cockpit seat will eject)
3. Does it matter who pulls the handle first?
   - No
4. T/F With the ISS set to BOTH, activation of the second seat will only occur if that seat is not pinned.
   - False

SEAWARS
1. SEAWARS is designed to release within ____ seconds after being immersed in salt water.
   - 2

Environmental Control System (ECS)
1. What uses Engine Bleed Air?
   - Canopy pressurization seal
   - Anti-G system
   - Cockpit heating and defogging
   - Pressurization
   - OBOGS
2. Bleed air from the left side P3 port is for what?
   - OBOGS
3. Bleed air from the right side P3 port is for what?
   - Canopy Seal
   - Anti-G
   - Heating/Defogging
   - Pressurization
4. To prevent bleed air from entering the cockpit, what two switches must be in the OFF position?
   - BLEED AIR INFLOW
   - DEFOG
5. When will the DUCT TEMP annunciator illuminate?
   - Bleed air temp exceeds 300 degrees F
6. Placing the DEFOG switch to ON does what 3 things?
   - Opens up the defog valve
   - Sets the inflow valve to high
   - Activates the air conditioning compressor
7. How do you defog the canopy?
   - Set Vent Control Lever to CANOPY and air will be routed to the windshield DEFOG outlets in both cockpits.
8. Will the Canopy/Defogging System work clear the windshield during an icing condition?
   - NO, it may not
9. How does the operation of canopy defog affect ITT?
   - It increases ITT for a given PCL setting due to higher bleed air load on the engine.
10. If operating correctly, the pressurization system will maintain a differential pressure of what?
    - 3.6 +/- 0.2 psi
11. When would you get an amber CKPT ALT annunciator?
    - Cockpit pressure altitude rises above 19,000 feet
12. When would you get the red CKPT PX annunciator?
    - Cockpit differential pressure exceeds 3.9 to 4.0 psi
13. The pressurization system will begin pressurizing at approximately what altitude?
   - 8,000 feet MSL

14. With the air conditioning on, does it impact engine/aircraft performance?
   - Air conditioning operation is negligible – A/C may be on for all phases of flight

**Instruments**
1. Under normal conditions, where does the Back-Up Flight Instrument (BFI) receive power?
   - Battery bus
2. In the event of electrical failure, the standby instruments can be powered by what?
   - Aux battery

**MISCELLANEOUS**
1. Power for all avionics and radio systems in both cockpits (except for the backup UHF control head and UHF transceiver) is supplied through which switch?
   - AVIONICS MASTER
2. How many VHF radios are on the aircraft?
   - 2
3. How many frequencies can be set into the UHF memory pages?
   - 20
4. How many antennas are on the aircraft?
   - 12
5. What side of the aircraft has the primary pitot/static system?
   - Right Side
6. Taxi should be delayed until ___ message is extinguished.
   - IRS DEGD
7. What does the Engine Data Manager (EDM) do?
   - Monitors engine performance and illuminates appropriate EICAS display.
8. Optimum approach airspeed will decrease approximately 3 knots for every _____ pounds of fuel.
   - 400
9. What is full scale deflection of the CDI when the GPS is in EN ROUTE mode? APR ARM? APR ACT?
   - 5 NM
   - 1 NM
   - 0.3 NM
10. Does the ILS equipment include reverse sensing capability? What does that mean if you are executing a localizer back course?
    - No
    - You must set the published front course to get normal (“fly-to”) CDI displacement
11. To be used for navigation, the GPS must be on and functioning properly in which cockpit?
    - Front
12. When will the GPS automatically sequence from EN ROUTE mode to APR ARM mode?
    - Within 30 nm of an airport with a non-precision approach loaded in the active flight plan
13. When will the GPS automatically sequence from APR ARM mode to APR ACT mode?
    - At 2 nm from the FAF
14. What does the GPS APR button on the EHSI and EADI do?
    - It will deselect APR ARM mode and return the GPS to APR ARM mode (return the CDI sensitivity to +/- 1 nm)

**Pitot Static**
1. Where is the primary pitot system probe located? What system does it provide data to?
   - Right wing
   - Air Data Computer
2. The secondary pitot tube provides pressures to what system(s)?
   - EDM
   - Standby altimeter
   - Standby airspeed indicator

**Inertial Reference System (IRS)**

1. IRS is installed to provide what?
   - Aircraft Attitude (pitch, roll, heading, turn and slip indication, accelerations, velocity)
   - Position
   - Time
   - Provides stand alone inertial navigation position when stand alone GPS navigation is not possible.

2. What does the IRS use to begin its alignment?
   - GPS

3. T/F You should taxi with IRS DEGD message is extinguished.
   - False, Taxi should be delayed until IRS DEGD is extinguished

**Air Data Computer (ADC)**

1. The ADC uses pitot/static air inputs and calculates what?
   - Airspeed
   - Altitude
   - Climb Rate

**Total Air Temperature (TAT)**

1. The TAT probe is located where?
   - Underside of Left Wing

2. The TAT probe provides air temperature input to the _______.
   - ADC

3. Why is it important to avoid sustained ground operations with the PROBES ANTI-ICE switch on?
   - The TAT probe can overheat which in turn will prevent accurate TAT information to the ADC

**Angle of Attack System**

1. What does the red radial on the AOA gage indicate? How many units?
   - stall AOA
   - 18 units

2. What does the green arc indicate? Units?
   - Normal approach speed ("on-speed" AOA)
   - 10 to 11 units

3. What does the white diamond indicate? Units?
   - Maximum endurance (Diamonds are Forever)
   - 8.8 units

4. What does the white triangle indicate? Units?
   - Maximum range
   - 4.9

5. What is the difference between maximum range and maximum endurance?
   - Max range – greatest amount of flying distance per pound of fuel remaining
   - Max endurance – greatest amount of flying time per pound of fuel remaining

6. What does the amber donut (circle) indicate on the AOA indexer?
   - Optimum angle of attack range for landing (app. 1.3 times the stall speed)
7. What does the lower red chevron on the AOA indexer indicate?
   - That the angle of attack is too low (fast approach speed)
8. What does the upper green chevron on the AOA indexer indicate?
   - That the angle of attack is too high (slow approach speed)
9. When does the stick shaker activate? At what AOA?
   - App. 5 to 10 knots above stall speed
   - 15.5 units

Emergency Locater Transmitter (ELT)
1. What VHF frequency will the ELT transmit on if activated?
   - 121.5
2. The ELT battery allows the ELT to transmit for how long?
   - 50 hours

Standby VHF Control Head
1. T/F The Standby VHF Control Head is independent of the rest of the avionics system.
   - True
2. In the event of total display failure, pushing and holding the frequency selector knob for ___ seconds tunes the transceiver frequency to 121.5 MHz.
   - 7

Lighting System
1. Where are the landing and taxi lights located?
   - Landing light - left side
   - Taxi Light - right side
2. Which side is the green navigation light located?
   - Right
3. Which side is the red navigation light located?
   - Left

Lamp Test
1. What illuminates when testing the Lamp Test?
   - LAMP TEST on EICAS
   - Master Caution
   - Master Warning
   - Fire Annunciators
   - Landing Gear Control Handle and Gear Lights
   - Transmit Lights on Audio Control Panel
   - FDR Lights

OBOGS
1. What is the duration limit of the OBOGS?
   - None
2. Where does the OBOGS get the oxygen from?
   - From conditioned bleed air by pressure swing absorption using a molecular sieve.
3. If an OBOGS failure occurs, how is breathing ambient air possible through the mask?
   - The anti-suffocation valve
4. Where does the OBOGS get its power?
   - The hot battery bus
5. How long does the OBOGS sensor warm-up period last?
   - Approx 3 minutes
6. When will the OBOGS TEMP annunciator illuminate?
   - 200 F or greater in the OBOGS ducting

7. What action should be taken with the OBOGS if cockpit smoke and fumes are present, hypoxia symptoms occur, or a loss of cabin pressurization occurs?
   - Gang load regulator

8. Will the OBOGS be operative with one supply lever turned off and one turned on?
   - Yes

9. T or F: When placed to MAX, the OBOGS will provide 100% oxygen.
   - False (about 95% depending on altitude)

10. What does the BIT button do?
    - Used to activate the initiated OBOGS BIT any time after engine start AND the 3 minute warm-up. It verifies that the OBOGS sensor and OBOGS FAIL warning are operating properly.

**Baggage Compartment**
1. Up to ___ pounds of baggage may be stowed in the baggage compartment.
   - 80

**Servicing**
1. What are the external ground power requirements?
   - 28 to 28.5 VDC
   - 1000 to 1500 AMPs

2. What is the Main Gear tire pressure? Nose Wheel tire pressure?
   - Main 225 +- 5 psi
   - Nose 120 +- 5 psi

3. If possible, move aircraft to a hangar when winds above ___ knots are expected.
   - 80
Normal Procedures

Before Exterior Inspection
1. To preclude inadvertent seat firing, ensure what?
   - Both ejection seat handle safety pins are installed
   - warning streamer is free and clear of handle
2. Describe what happens when the front seat ejection handle is pulled if the ISS is in BOTH and the rear seat is pinned?
   - the rear seat will eject, followed by the front seat
3. With the starter switch in AUTO or MANUAL, what happens when electrical power is applied to the aircraft?
   - the prop will begin to rotate immediately upon power application.
4. For AUX BAT TEST, switch should be held forward for a minimum of?
   - 5 seconds
5. T/F When testing items on the Aux battery, Fire 1 is a challenge and response item.
   - True
6. What is the minimum battery voltage for a battery start?
   - 23.5 volts (VDC)
7. What items do you check when confirming that the ejection seat is good?
   - CFS attach bolt, parachute risers inertia reel, inertia retraction device lock release plunger, lap belt, leg restraint lines, MOR handle, oxygen hoses, SSK, seat oxygen supply
8. Caution – Failure to stow the gust lock completely may prevent what?
   - Flight controls from operating normally

Exterior Inspection
1. What things are you looking for when checking the main gear?
   - No hydraulic leaks, no external damage, tire condition (no red cord and general condition), strut extension (2 in), doors secure, Landing gear lock pin and flag removed, no wheel damage, landing light condition, brake wear indicator (should protrude)
2. If the brake wear indicator is not protruding, what else can be done to brake wear indicator to protrude as it should?
   - Reset the parking brake and re-check
3. What items are you checking for in the single point refueling door?
   - Refueling cap secure, pre-check valves down, fuel filter indicator in, maintenance fuel shutoff valve (with the flow line)
4. What are you checking in the engine compartment?
   - Oil filler cap secure, hot battery bus CB all in, general condition
5. What is the min strut extension of the nose gear?
   - 2.5 inches

Cockpit
1. T/F There is a checklist for securing the rear cockpit when flying solo.
   - True
2. What are some typical EICAS messages which may illuminate on initial application of power?
- GEN, IAC2 FAIL, OBOGS FAIL, L PHT INOP, R PHT INOP, TAD OFF, ADC FAIL, FUEL PX, OIL PX, CANOPY, PMU FAIL, HYD FL LO, TAD FAIL

3. Do not connect external power if battery voltage is below what voltage?
   - 22.0 volts

4. What lights are you looking for when doing LAMPS check?
   - MASTER WARN
   - MASTER CAUTION
   - Red Gear Handle
   - Red and Green Gear Handle Lights
   - FDR Lights
   - Fire Lights
   - COM1 COM 2
   - LAMP TEST on EICAS

5. Can you accept an a/c as long as both firelights in either cockpit work?
   - No (all 4 MUST check good), unless the cockpit is not occupied (i.e. solo flight)

6. If you don’t ensure that the parking brake is properly set, what will happen?
   - a/c will creep upon engine start

7. When checking the operation of the PROBES ANTI-ICE and BOOST PUMP switches, what are you looking for?
   - ANTI ICE EICAS Message
   - BOOST PUMP EICAS Message
   - Decrease in amperage (will see higher decrease with PROBES ANTI-ICE)

**Engine Start**

1. Besides performing the proper challenge and response prior to engine start, you should also ensure what prior to engaging the starter?
   - IOAT < 80° C

2. When may you advance the PCL to IDLE during engine start?
   - Anytime N₁ is at or above 60%

3. During High IOAT procedures, place the STARTER switch in MANUAL for a maximum of how long?
   - 20 seconds

4. Is the start sequence is considered an engine duty cycle.
   - Yes

5. Failure to ensure the ST READY EICAS advisory remains illuminated for 3 seconds prior to engine start may result in _______ ________ from the start being in manual mode.
   - Engine damage

6. Caution – If the ST READY light goes out once the start sequence has been initiated, you should immediately?
   - Terminate the start

7. How do you terminate the engine start sequence?
   - STARTER SW to AUTO/RESET or PCL to OFF

8. With the PMU STATUS light illuminated during engine start, what will not be available?
   - PMU auto abort function
9. T/F Engine sounds associated with compressor instability during start are acceptable as long as PMU allows the start to continue.
   - True
10. Aural tones will be inaudible during engine start any time N1 is below what?
    - 50%
11. Advance the PCL past ____ clicks, then back to IDLE at or above 60% N1.
    - 2
12. What may happen to the engine during ground ops if the PCL is inadvertently moved to CUTOFF and while the engine is shutting down you attempt to relight the engine by moving the PCL to idle.
    - Severe damage to the engine could occur

**Before Taxi**

1. After turning on the GEN switch, allow for approximately how long before turning on the AVIONICS MASTER SWITCH to allow battery amperage to stabilize.
   - 10 seconds
2. When checking the AOA system and checking AOA LOW, what are you checking?
   - AOA Indexer Amber Donut Illuminates
   - Red Chevron Deactivate
   - AOA Indicator indicates 10.5 + .4 Units
3. When checking the AOA system and checking AOA HIGH, what are you checking?
   - AOA Indexer Green Chevron Illuminates
   - Stick Shaker Activates
   - AOA Indicators indicates 18.0 + .4 Units and Text changes to Red
4. When turning on the TRIM AID, what two things are you looking for?
   - TAD FAIL annunciator goes out
   - Check Yaw/Rudder trim set in green range (T/O)
5. What are you looking for when checking Flight Instruments?
   - Pitch, roll, heading, and vertical speed indicators and no flags
6. Prior to pulling ejection seat safety pin ensure what?
   - Safety streamer is free and clear of ejection seat handle

**Taxi**

1. What propeller operating range is prohibited to prevent ground resonance?
   - 62-80% Np
2. For a minimum radius turn, you should do what?
   - Disengage the nose wheel steering

**Overspeed Governor Check**

1. Any fault discovered in this check is reason for what?
   - Ground Abort
2. When turning PMU Switch OFF, verify IDLE N1 stabilizes between what?
   - 60 to 70% N1
3. T/F Power should be set to attain 30% Torque during the Overspeed Governor Check.
   - False (100% \(N_p\))
4. $N_p$ should remain within what range when performing the Overspeed Governor Check?
   - 100+/− 2%

5. When turning the PMU switch back to NORM what are you verifying?
   - Verify PMU Fail message extinguishes
   - $N_p$ returns to 46 to 50% $N_p$
   - $N_1$ returns to 60 to 61% $N_1$

**Lineup Check**
1. What is the earliest point at which the Lineup Check should be accomplished?
   - After receiving T/O or Line UP and Wait clearance

2. Prolonged use of Pitot and AOA heat while on the ground will damage what?
   - The Pitot and AOA heating elements

**Takeoff**
1. How long should you wait before takeoff behind a larger type aircraft or helicopter?
   - Two minutes

2. For a static Runup, allow the Torque to stabilize at what range prior to brake release?
   - 30%

3. At rotate initiate rotation to __ to __ deg pitch attitude.
   - 14 to 16

4. If gusty winds are present, increase rotation speed by what?
   - $\frac{1}{2}$ the Gust Factor up to 10 Knots

5. For an Instrument Take-off normal takeoff procedures are followed, but what may be turned off if distracting during instrument conditions.
   - Anti-Collision/Strobe Lights
   - Landing Light
   - Taxi Light

**After Takeoff**
1. What is the range of desired climb airspeed?
   - 140-180 KIAS

2. Charted Climb performance is based on what airspeed?
   - 140 KIAS

3. If obstacle clearance or noise abatement are not factors, what indicated airspeeds will give you better forward visibility?
   - 160-180

4. The gear may be raised when?
   - Positive Rate of Climb has been established

**Climb Check**
1. With the canopy defog ON and a high power setting, what indication is likely to occur?
   - DUCT TEMP annunciator

2. If cockpit pressurization reads anything other than 3.6 +/-2 psi above 18,069 MSL, what do you do?
   - Notify Maintenance

**Operations Check**
1. When should Ops Checks be performed during flight?
   - At initial level-off
- About every 15 minutes

**Pre-stalling, Spinning, and Aerobatic Check**
1. You should check that the fuel is balanced within what range prior to any stalls, spins, or aerobatics?
   - 50 pounds

**Descent**
1. What is the dash one recommended enroute descent airspeed range?
   - 200 – 250 KIAS

**Holding**
1. What is the recommended holding speed and configuration?
   - 125 to 150 KIAS
   - Clean

**Instrument Approaches**
1. What is the target descent rate for and airspeed for a penetration descent?
   - 2000 to 4000 fpm
   - 200-250 KIAS
2. Inside the FAF, what is the minimum airspeed to fly (takeoff flaps)
   - 110 KIAS, 105 KIAS when departing MDA or DH
3. Minimum recommended speed prior to final approach on Circling Appch is ______.
   - 115 KIAS
4. On Missed Approach, set PCL to MAX and set pitch attitude to what?
   - 10-15 deg nose up

**Before Landing**
1. How do you check the brakes?
   - Verify positive pressure by actuating the brakes

**Normal Landing**
1. For Heavyweight conditions (landing with higher loads of gas), approach speed will be greater than your normal speeds. Fly base and final with no less than an “____ ____” AOA indication.
   - AOA
2. Excessive pitch near the ground can result in what?
   - Ventral Fin hitting the ground/Tail Strike
3. If nose wheel shimmy occurs during landing roll, what should you do?
   - Apply back stick pressure to relieve the weight on the nose wheel
4. N1 will automatically reduce from flight idle (67%) to ground idle (60%), approximately___ seconds after touchdown.
   - 4
5. With gusty winds, you should increase threshold and touchdown speeds by what?
   - 50% of the gust increment up to 10 knots

**Maximum Braking**
1. How do you achieve maximum braking effectiveness?
   - a steady application of brakes –or- a smooth, single application, increasing as airspeed decreases
   - T/F Braking should be continued at the first sign of directional control problems.
   - False

**After Landing**
1. After landing and situation develops where you have overheated brakes (most likely from max braking), do not taxi where?
- Taxi into or park in a congested area until the brakes have had a sufficient time to cool. DO NOT set the Parking Brake.

**Engine Shutdown Checklist**

1. The ITT should be stabilized at idle for at least how long prior to engine shutdown?
   - 1 minute

2. Why do we deactivate the OBOGS regulators during the engine shutdown checklist?
   - to prevent draining the aircraft battery

3. If a PMU fault is detected, the PMU STATUS message will illuminate when after touchdown?
   - 1 minute
**Intro**

1. **What are Critical Action items?**
   - Items, if not carefully and expeditiously executed may result in serious injury or death and/or damage to equipment. Commit these to MEMORY.

2. **Define Land as soon as Possible.**
   - An emergency shall be declared and a landing accomplished at the nearest suitable landing area considering the severity of the emergency, weather conditions, field facilities, ambient lighting, and command guidance.

3. **Define Land as Soon as Practical.**
   - Emergency condition is less urgent and, although the mission is to be terminated, the degree of the emergency is such that an immediate landing may not be necessary.

4. **What does the term “reset” mean in section 3 of the Dash 1?**
   - Action of resetting a circuit breaker that is already open.

**Ground Emergencies**

1. **In what situations should you manually abort an engine start?**
   - ITT rate appears likely to exceed 1000 deg C (hot start)
   - normal N1 increase is halted (hung start)
   - no rise of ITT 10 sec after fuel flow indications (no start)
   - BAT BUS annunciator illuminates during the start sequence
   - PCL is moved or the ST READY light annunciator extinguishes

2. **Can you attempt subsequent starts if a start is aborted while using external power?**
   - No

3. **T/F If the PMU aborts repeated starts, keep trying until the engine starts.**
   - False (indicative of an engine malfunction)

4. **What steps should be taken if a battery start was aborted?**
   - notify maintenance
   - connect external power
   - motor the engine

5. **In what 4 situations should the emergency engine shutdown on the ground boldface be accomplished?**
   - engine fire
   - chip light
   - prop strike
   - aircraft likely to depart prepared surface
   - Not limited to these situations

6. **Does each internal CFS handle activate the charges for both transparencies or the respective transparency?**
   - Respective transparency

**Takeoff Emergencies**

1. **After a stop which required maximum braking and if overheated brakes are expected, what should you do?**
Do not taxi or park in a congested area until brakes have had time to cool down.
- Do not set the parking brake

2. If a raised barrier is already in place and your current speed indicates you cannot stop short of it what should you do?
   - Steer around it to include departing the prepared surface if necessary
   - Eject if necessary

3. If you blow a tire on t/o and the decision is made to continue, what actions should be taken?
   - Do not change the position of the gear and flaps
   - Fly a straight-in approach
   - Land on side of the runway with the good tire – put bad tire (drag) towards the middle of the runway

4. If you experience an engine failure immediately after takeoff with insufficient runway remaining to execute the boldface, what should you do?
   - Eject

5. If you lose your engine immediately after T/O, the pilot flying should select _____ to use the increased drag or the not yet feathered propeller to select OFF to reduce the sink rate.
   - IDLE

**In-Flight Emergencies**

1. Initial indications of engine failure/flameout are what?
   - Loss of power
   - Loss of airspeed
   - Rapid Decay in N1, Torque, and ITT
   - Propeller movement toward feather due to loss of oil pressure
   - N1 will indicate 0% within 5 seconds – airspeed dependent
     - N1 does not indicate speeds below 8%
   - As prop moves toward feather, it may still be windmilling at a reduced RPM

2. What are Secondary indication of engine failure/flameout?
   - Rapidly decreasing ITT
   - Lower than normal Oil Pressure

3. Your initial reaction to any engine related malfunction at a low altitude should be what?
   - Trade excess airspeed for altitude

4. Zoom capability at 200 knots should provide you with at least how much altitude gain?
   - 603 – 915 feet (higher if the engine is still producing thrust)

5. What are the procedures for a zoom climb above 150 KIAS?
   - 2 G pull-up to 20 degrees nose high until reaching 20 KIAS above glide speed, then initiate a 0 to 0.5 G pushover to capture glide speed
   - Below 150 KIAS the benefits of a zoom glide are nil

6. Do not delay the decision to eject below what altitude?
   - 2,000 feet AGL

7. In what 3 situations is an airstart not warranted?
   - Fire
   - Mechanical (Frozen Engine, Fod)

8. If an airstart is successful, how long will it take for you to have usable power?
   - 40 seconds

9. What is the airstart envelope?
   - 125-200 KIAS Sea Level to 15000ft MSL
   - 135-200 KIAS 15,001 to 20,000 ft MSL

10. How much altitude can you expect to lose while performing an airstart?
    - 1,200 feet at 125 KIAS glide speed
11. How long should it take for the prop to unfeather once the PROP SYS circuit breaker has been pulled?
   - 15 – 20 seconds
12. What is the primary reason for reducing the PCL to mid range if experiencing an uncommanded power change, loss of power, or uncommanded prop feather?
   - Minimizes the potential of engine overtorque and/or overtemp when the PMU is turned off
13. When is the Np considered stable below 40%?
   - No upward change for 3 seconds
14. With an Uncommanded Power Loss/Prop Sleeve Touchdown, if Np indicator is displaying Red X’s, switching the PMU to _____ and back _____ will reset the PMU and should restore Np indication.
   - NORM, OFF
15. With the engine still running, if your descent rate while stabilized at 125 KIAS is greater than 1500 ft/min, what should you do?
   - Increase torque to achieve between 1350 and 1500 ft/min rate of descent
16. What if engine power is insufficient to achieve the desired 1350 to 1500 ft/min descent rate?
   - PCL – OFF (pick up 125 knot glide with feathered prop)
17. If it is necessary to shut down the engine after completing the Uncommanded Power change/Loss of power/Uncommanded Prop Feather Boldface, what should you do to ensure that the prop will feather?
   - Reset the PROP SYS circuit breaker
18. What is the major difference between a compressor stall and an uncommanded power change/loss/prop feather?
   - Loud bangs
   - Backfires
   - Engine sputtering
   - Flames and/or smoke coming from the exhaust stacks
19. What is the recommended minimum altitude for ejection if in uncontrolled flight?
   - 6,000 feet AGL
20. If an inverted or power-on departure from controlled flight is experienced, what action should you take?
   - Land as soon as conditions permit - Suspect engine damage.
21. T/F If you get a fire light in flight, you should immediately shut the engine down
   - False (just the light is not confirmed)
22. If after reducing the PCL towards IDLE, a fire light goes out, what problem should you suspect?
   - Bleed air leak
23. If only one fire loop annunciator is illuminated and the other loop tests good, what should you suspect?
   - False fire indication
24. After experiencing a fire light in flight, how do you confirm that you actually have a fire?
25. Smoke, flames, engine vibration, unusual sounds, high ITT, and fluctuating fluids - also known as FEVER indications
26. With the battery and generator off, how do you extend the landing gear?
   - Emergency gear extension
27. What should you do if you can determine the source of the smoke and fumes (i.e. the faulty component)?
   - Turn off the defective unit
   - Pull the respective circuit breaker
28. OBOGS will be _________ once the main battery is depleted or with battery failure.
   - Inoperative
29. If weather permits, how should you recover the aircraft following an electrical fire?
- VFR recovery without electrical power

30. If PMU failure is accompanied by uncommanded power changes other than anticipated changes, do not reset ____.
   - PMU

31. If the PMU fails, automatic limiting of what will be lost?
   - Torque
   - ITT
   - N1

32. How will a failed PMU affect your landing?
   - Expect increased landing ground roll due to the fact Ground Idle will not be available.

33. If the PMU STATUS caution illuminates after landing, why don’t you reset the PMU?
   - It assists maintenance in troubleshooting the issue

34. If you have a PMU FAULT in flight, can it be reset?
   - No, it is problem with the Weight on Wheels Switch – A reset is not going to be possible.

35. With any engine related malfunction to include CHIP light, OIL PX light, FUEL PX light, compressor stall, etc, what should your immediate reaction be?
   - Turn
   - Climb or Accelerate
   - Clean
   - Check
   - BIP

36. If the generator fails and cannot be restored, electrical load must be ______ to provide maximum endurance on remaining battery power.
   - Reduced

37. Backup flight instrument and VHF tuning via the standby VHF will be powered for approx ____ minutes by the auxiliary battery.
   - 30

38. If the BFI fails and does not return to its normal working state, what are you supposed to do?
   - Land as Soon as Practical

39. If engine fuel feed drops below 10 psi and the boost pump fails to engage, the ______ ____ will illuminate.
   - FUEL PX

40. Unless a greater emergency exists, do not reset the ______ ______ circuit breaker if open.
   - BOOST PUMP

41. Automatic fuel balancing system maintains the fuel load in each wing to within ____ pounds.
   - 20

42. Do not attempt to manually balance fuel load if ____ caution is illuminated
   - FP FAIL

43. If you have a fuel imbalance, which way do you place the MANUAL FUEL BAL switch?
   - To the low tank

44. If a fuel imbalance remains constant or increases, consider fuel in the wing that is not feeding to be trapped. Subtract trapped fuel from the total fuel to get ________ fuel.
   - Usable

45. If you are leaking fuel from a wing, which direction do you put the MANUAL FUEL BA switch?
   - To Non-Leaking tank

46. If you have a full lateral fuel imbalance you do have sufficient lateral authority to land and control the aircraft; but does this assumption include crosswinds?
   - No

47. What do you do if fuel state cannot be verified due to a Fuel Probe Malfunction?
   - Land as soon as possible.
48. In most instances, if you experience a hydraulic malfunction, your immediate action should be what?
   - Slow down and configure (assuming distance to a suitable field is not a problem)
49. What is the min airspeed you will fly during a controllability check?
   - Don’t stall aircraft or slow to the point that full stick or rudder is required to maintain control and never go slower than 90 KIAS.
50. If flap system damage is known/suspected, do not do what?
   - Reposition the flaps
51. Fly no slower than min control airspeed plus how many knot on final after a controllability check?
   - 20 KIAS
52. With a suspected rudder trim push rod failure and a crosswind component that exceeds ___ knots, directional control on final approach may be extremely difficult.
   - 5
53. It is possible to experience hypoxia if OBOGS has malfunctioned and cabin altitude is above _____ feet.
   - 10,000
54. If hypoxia is experienced or suspected what do you do?
   - Land as soon as possible.
55. When breathing under emergency oxygen, what can happen to your COMMS with ATC and other crewmember?
   - It can be difficult due to the high pressure.
56. Can the emergency oxygen system be shut off?
   - No, it will last for approx 10 minutes
57. What might white dust or powder be indicative of in the oxygen mask?
   - Zeolite Dust from the OBOGS
58. DUCT TEMP EICAS caution indicates what?
   - Environmental system duct has exceeded 300 deg Fahrenheit
59. If you have cockpit overpressurizaton descend below what altitude?
   - 18,000 ft MSL

Ejection
1. What is the minimum recommended altitude for controlled ejection? Uncontrolled?
   - Controlled - 2000’ AGL
   - Uncontrolled - 6000’ AGL
2. What airspeed is recommended by the checklist for ejection?
   - 125-180 KIAS
3. The ejection seat is capable of ejections up to what sink rate?
   - 10,000 fpm

Landing Emergencies
1. What power setting should you set for a PEL or practice ELP to simulate zero thrust?
   - 4-6% torque.
2. Where do you aim to touchdown on the runway during emergency landing patterns?
   - 1/3 down the runway.
3. When is it an option to land on an unprepared surface?
   - When an ejection is not possible.
   - Ejection Seat Malfunction
4. If engine power is insufficient to produce a rate of descent less than 1500 ft/min set PCL to ____.
   - OFF
5. If PEL is being performed with IDLE power, add how many feet to high, low, and base key?
6. Do not to set the boost pump and ignition switches to ON for what conditions?
- Engine malfunctions such as oil system, chip light, fire, or FOD.

7. What should you do if the engine fails during a precautionary emergency landing?
- Transition to the Forced Landing.

8. Where is High Key (generic)?
- 2500-3000' AGL (recommended)
- 1/3\textsuperscript{rd} point on runway

9. If landing on an unprepared surface or ditching, you should plan to land in what configuration?
- Clean

10. What constitutes safe gear-down indications?
- Any combination of 3 green position lights in either cockpit regardless of gear warning horn or red position lights
- Either AOA indexer is illuminated
- Landing and/or taxi lights switched on and illuminated
- RDO/tower flyby or another aircraft confirms gear visually down
- IF the main gear indicate down & locked and the inboard gear doors are fully closed (no red lights), the nose gear can be assumed to be down and locked.

11. What is the most preferred method of landing if only an unsafe gear indication can be achieved?
- Clean

12. Allowing the nose to forcefully hit the ground may cause structural damage rendering the ____ system inoperative and/or making the canopy difficult to impossible to open.
- CFS

**Limitations**

1. Green and white markings on engine instruments indicate what?
- Safe and normal range of operation

2. Oil level must be serviced within ___ minutes of engine shutdown.
- 30

3. For most accurate results, check oil level ___ to ___ minutes after shutdown.
- 15 to 20

4. Normal Oil Level is between ____ and _______.
- ADD and MAX HOT

5. What is the maximum steady torque? Transient?
- 100%
- 131 (20 seconds)

- 820°C
- 750°C
- 1000°C (5 seconds)
- 870°C (20 seconds)

7. What is the maximum N1 for T/O? Transient?
- 104%
- 104%

8. What is the minimum N1 with power at Idle?
- 60% to 61% on ground
- 67% Min flight

- 100%
- 46 to 50%
- 100+/-2%
10. What is the maximum transient Np?
   - 102% (20 seconds)
   - 110% (in emergency)
11. What is the normal operating range for oil pressure? During aero/spins (transient)?
   - 90-120 psi
   - 40-130 psi or 15-40 psi (5 seconds)
12. What is the maximum oil pressure for engine start?
   - 200 psi
13. What is the normal operating range for oil temperature? Transient?
   - 10-105°C
   - 106-110°C (10 minutes)
14. What is the minimum oil temperature for engine start?
   - -40°C
15. What are the limitations of the generator amps in-flight? Voltage?
   - +50 to -2 amps
   - 28.0 to 28.5 Volts (if voltage is outside this range, notify maintenance)
16. What is the maximum IOAT for engine start?
   - 80 degrees C
17. What is the propeller overspeed limit?
   - 110% Np
18. What is the maximum allowable airspeed in the T-6?
   - 316 KIAS/0.67 Mach
19. What is the maximum airspeed with the gear and/or flaps extended?
   - 150 KIAS
20. What is the maximum airspeed for flying through turbulence? Recommended?
   - 207 KIAS
   - 180 KIAS
21. What is the operating maneuvering speed (Vo) for the T-6? What is its significance? Rudder?
   - 227 KIAS
   - Speed above which full or abrupt control movement can result in structural damage to the aircraft.
   - 150 KIAS
22. Zero G-loading should be limited to what?
   - 5 seconds
23. What is the time limit for inverted flight?
   - 15 seconds
24. With a clean configuration, what are the symmetric G-limits? Asymmetric?
   - +7.0 to -3.5 G’s
   - +4.7 to -1.0 G’s
25. With the gear and flaps extended, what are the symmetric G-limits? Asymmetric?
   - +2.5 to 0.0 G’s
   - +2 to 0.0 G’s
26. For uncoordinated rolling maneuvers initiated at _____ G, the maximum bank angle change is 180 degrees.
   - -1
27. Max Ramp Weight
   - 6950 pounds
28. Max Takeoff Weight
   - 6900 pounds
29. Max Landing Weight
   - 6900 pounds
30. Maximum Zero Fuel Weight
   - 5850 pounds
31. Maximum Weight in baggage compartment
   - 80 pounds
32. T/F Nosewheel Steering can be used during takeoff.
   - False
33. T/F Canopy defog can be On or Off for takeoff and landing.
   - False  Defog must be Off for takeoff and landing
34. What is the maximum rate of descent at touchdown? G’s?
   - 780 ft/min
   - 5.1 Gs
35. What is the crosswind limitation for a dry runway? Wet? Icy?
   - 25 knots
   - 10 knots
   - 5 knots
36. What is the maximum tailwind for takeoff?
   - 10 knots
37. Taxi over arresting cables at what speed?
   - As slow as possible.
38. Do not taxi over arresting cables with what open?
   - Main Gear Doors
39. What are the icing restrictions for the T-6?
   - Transit through 5,000 ft band of light rime icing
   - Sustained operation in icing conditions is prohibited
40. Maneuvers with ice accumulation are restricted to ____ degrees bank angle and __ to ___Gs
   - 30, 0 to 2Gs
41. With ice accumulation, approach speed must be increased by ___ knots.
   - 10
42. Aerobatics are prohibited if the indicated fuel quantity is below what?
   - 150 pounds per side
43. What is the maximum lateral fuel imbalance?
   - 50 pounds
44. Engine operation with only the Engine Driven High Pressure fuel pump without both the electric
   boost pump and the engine driven low pressure fuel pump is limited to __ hours.
   - 10
45. Ground Ops are limited to ambient temps of _____ to ________.
   - -23 deg C to +43 deg C
46. Cockpit pressurization schedule limit is _____ to ____ psi.
   - 3.6 to .2
47. CKPT PX warning illuminates at ___ to ___ psi.
   - 3.9 to 4.0
48. The canopy should not be opened when surface winds exceed what?
   - 40 knots
49. Ejection seats must never be operated with the ________ open.
   - Canopy
50. When ejecting over mountainous terrain exceeding _______ ft MSL, the MOR handle should be
    used to manually separate from the seat and deploy the parachute.
   - 8000
Flight Characteristics

1. Lowering the speed brake at high airspeeds will produce a slight pitch in which direction?
   - Up
2. Which way does the elevator automatically trim during Speed brake operation?
   - Nose Down
3. Can you normally extend the flaps and speed brake simultaneously?
   - No
4. What is the purpose of the bob weight in the elevator control system?
   - To provide feedback to the pilot at an increased level
5. What are the four factors that act as a function of the Trim Aid?
   - Engine torque, indicated airspeed, pressure altitude, and pitch rate
6. What are the four factors that effect glide performance?
   - Airspeed, aircraft configuration (gear and flaps), angle of bank, and coordinated or uncoordinated flight.
7. Best glide speed in a clean configuration is approximately _____?
   - 125 KIAS
8. At best glide, what can you expect your sink rate to be?
   - 1350 ft/min
9. In an engine out situation, how can the flaps be lowered?
   - Normally, after the landing gear has been extended using the emergency system.
10. What power setting approximates the performance of an aircraft with a feathered prop?
    - 4-6%
11. What is the margin of artificial stall warning during a power-off unaccelerated condition?
    - 5-10 knots above stall speed
12. When does natural stall warning occur during power off conditions?
    - 3 knots above stall speed
13. Above what torque setting might full right rudder and full right aileron not prevent a left roll off at stall?
    - 60%
14. Does speed brake extension effect stall characteristics?
    - No
15. What are the correct steps for stall recovery?
    - Reduce angle of attack, Advance PCL, Roll wings level, Increase back pressure
      - MAX, RELAX, ROLL

OUT OF CONTROL FLIGHT

1. What are Poststall Gyrations?
   - Motions about one or more axes immediately following a stall and prior to the incipient spin.
2. What is an Incipient Spin
   - Spin like motion that occurs between a poststall gyrations and a fully developed spin is called an incipient spin
3. When in a confirmed steady-state spin, will anti-spin recovery or the neutral-idle recovery method recover with the least amount of altitude loss?
   - Anti-Spin
4. Spin entry greater than ___ degrees nose high may result in low oil pressure and engine damage.
   - 50
5. What will the airspeed stabilize at for a steady erect spin? Inverted Spin?
   - Erect 120-135 KIAS
   - Inverted 40 KIAS
6. During a spin, oil pressure may decrease below ___ psi with idle power.
   - 40
7. In an erect steady state spin, the will pitch to approximately ____ below the horizon with pitch attitude becoming oscillatory.
   - 60 deg
8. In an erect steady state spin, what will be the altitude loss per turn?
   - 400-500 feet
9. Airspeed will increase up to how fast in a progressive spin?
   - 175 KIAS
10. Spirals are similar to spins, but airspeed is increasing through _____ KIAS with a Spiral.
    - 160

MORE RANDOM INFO
1. What is critical altitude?
   - Altitude where 100% torque is no longer available with PCL at max
2. Is there a time limit for operation at max power (PCL fully forward)?
   - No
3. What is maximum climb power?
   - Amount of power available during climb above critical altitude. The setting is the PCL position which yields an ITT 13 deg C below max power ITT at critical altitude - not to exceed 807 deg C.
4. What is maximum cruise power?
   - Amount of power available during cruise above critical altitude. This setting is the PCL position which yields an ITT 40 deg C below observed max ITT at critical altitude – not to exceed 780 deg C.
5. What is the runway condition reading or RCR for a dry runway? Wet? Icy?
   - DRY 23
   - WET 12
   - ICY 5
6. What is maximum abort speed?
   - maximum speed at which an abort may be started and the aircraft stopped within the remaining runway length.
7. What allowances or assumptions go into maximum abort speed?
   - 3-second reaction at max abort speed to recognize decision to abort and select idle power, and 3 second period to apply the brakes after idle power is selected.
8. Speed may increase up to ___ knots during the 6 second period. (3 sec reaction/3 sec period to apply brakes)
   - 20
9. What is maximum braking speed?
   - maximum speed from which the aircraft can be brought to a stop without exceeding the maximum design energy absorption capability of the brakes (3.96 million foot-pounds total).
10. Increase takeoff speeds by ____% of the gust increment up to a maximum increase of 10 knots.
    - 50
11. If the minimum torque value is not met at 60 KIAS, what should you do?
12. What is critical altitude?
   - Altitude where 100% torque is no longer available with PCL at max
13. Is there a time limit for operation at max power (PCL fully forward)?
    - No
14. What is maximum climb power?
    - Amount of power available during climb above critical altitude. The setting is the PCL position which yields an ITT 13 deg C below max power ITT at critical altitude - not to exceed 807 deg C.
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20. What is maximum braking speed?
   - maximum speed from which the aircraft can be brought to a stop without exceeding the maximum design energy absorption capability of the brakes (3.96 million foot-pounds total).

21. Increase takeoff speeds by ____% of the gust increment up to a maximum increase of 10 knots.
   - 50

22. If the minimum torque value is not met at 60 KIAS, what should you do?
   - Abort the takeoff