HIGHLIGHTS from book

|  |  |
| --- | --- |
| GENERAL AIRCRAFT |  |
| ELECTRICAL |  |
| POWER PLANT AND SYS |  |
| PROPELLER |  |
| FUEL SYS |  |
| FLIGHT CONTROLS |  |
| LANDING GEAR |  |
| ENVIRONMENTAL |  |
| FLIGHT INSTRUMENTS |  |
| AVIONICS |  |

|  |  |
| --- | --- |
| * LENGTH
 | * 35 FT 6.0 IN
 |
| * HEIGHT
 | * 14 FT 2.6 IN
 |
| * WING SPAN
 | * 50 FT 2.9 IN
 |
| * MAX RAMP WEIGHT
 | * 9710 LBS
 |
| * MAX LAND WEIGHT
 | * 9168 LBS
 |
| * VMO and (changes \_\_\_KIAS per \_\_\_ ft above \_\_\_MSL
 | * 227 KIAS, 4 KIAS/1000’ ABOVE 15,500 ft MSL
 |
| * Vyse
 | * 110 KIAS
 |
| * Landing Limitations? (3)
 | * flared landings only
* max sink rate = 600 fpm
* max xwind = 20 kts
 |
| * Min crew with passengers?
 | * AC COMMANDER +
	+ 2nd pilot, IUT, PIU, SNA
 |
| * ELT has \_\_\_\_\_ battery. Transmit for \_\_\_ hours
 | * Self-contained battery
* 48 hrs
 |
| * Rubber door seal pressure provided by\_\_\_\_
 | * Pnuematic air (bleed air? Pg 1-10 workbook)
 |
| * DO NOT OPEN \_\_\_\_\_ WHILE AIRCRAFT PRESSURIZED
 | * Emergency Exit Hatch
 |
| * 4 sources of DC POWER
 | * Battery – 24 V / 42 amp-hr
* Aux Bat – 24 V / 5 amp-hr
* L/R Starter Gen – 28 V/ 250 amp
 |
| * Each Generator Control box provides (5)
 | * Voltage regulation (28.25 +/- 0.8 Vdc)
* Auto paralleling
* OVERvoltage protection (31 Vdc)
* UNDERvoltage protection (18 Vdc)
* REVERSE current protection
 |
| * APU must NOT exceed \_\_\_\_ Vdc and must be capable of delivering CONTINUOUS load of \_\_\_\_ amps and SURGE loads up to \_\_\_\_\_\_ amps for \_\_\_\_\_ second if required
 | * 28 vdc
* 300 amps
* 1000 amps
* 0.1 second
 |
| * APU START requires
 | * 20 V
 |
| * HOT BAT BUS single powered?
 | * L/R fire exting
* Threshold lights
 |
| * HOT BAT BUS Dual powered?
 | * XFEED VALVE
* L/R BOOST PUMP
* L/R FIREWALL SHUTOFF
 |
| * *[no more AC power \_\_ 20170220]*
 |  |
| * *[no more AC power \_\_ 20170220]*
 |
| * GEN malfunction: first indications?
 | * L/R GEN OUT light and
* Flashing FAULT WARN
 |
| * Single Gen failure: steps?
 | * Turn gen off, attempt reset
* Unsuccessful? Turn gen off and perform current limiter check –see page 2-12
 |
| * Dual Gen failure: If both lights on and gen do not reset you are running on \_\_\_\_ power exclusively.
	+ Last for \_\_\_\_ amp hours, as few as \_\_\_\_ minutes
 | * BATTERY POWER
* 42 amp hours for 10 minutes
 |
| * Dual Current Limiter Fail: All equipment still powered?
* Volt meter will read \_\_\_\_ V.
 | * Yes as long as gens good
* 24 V, battery no longer charging
 |
| * Gen fail with OPPOSITE side current limiter: equipment lost?
* Battery is \_\_\_\_\_\_.
 | * Not initially
* Discharging –see page 2-13
 |
| * Gen fail with SAME side current limiter: buses and equipment on fail side working?
* Battery is \_\_\_\_\_\_.
* Results in loss of \_\_\_\_\_, and main \_\_\_\_\_ and \_\_\_\_\_ busses.
 | * NO, INOP
* Not being discharged
* fuel and avionics buses*[no more AC power \_\_ 20170220]*
 |
| * DO NOT RESET THESE CIRCUIT BREAKERS
 | * Subpanel feeder circuit breaker
* Non-essential circuit breaker
 |
| * COMPRESSOR PROGRESSIVE BLEED VALVE:
* Full closed at \_\_\_\_%
* Fully open at \_\_\_\_% and below
 | * 75%
* 62% and below
 |
| * Compression ratio =
 | * 7:1
 |
| * When N1 reads 100%, Gas gen/comp speed=
* When N1 reads 101.5%, Gas gen/comp speed=
 | * 37,500 rpm
* 38,000 rpm
 |
| * Approx. \_\_\_\_% intake air mixed with fuel
 | * 25%
 |
| * \_\_\_\_\_ fuel nozzles (\_\_\_primary and \_\_\_\_ secondary)
* \_\_\_\_ igniter plugs
 | * 14, 10 primary, 4 secondary
* 2 igniter plugs
 |
| * RGB directly connected to \_\_\_\_\_
 | * Power turbine
 |
| * Power turbine at 33,000 rpm, prop spd:
* Power turbine at 28,500 rpm, prop spd:
 | * 2200 rpm
* 1900 rpm
 |
| * OIL fuel heater: begins to bypass at \_\_\_\_\_, full bypass at \_\_\_\_.
 | * 70 DEGREES **F**
* 90 DEGREES **F**
 |
| * STUDY diagram power quadrant fig 3-3 controls pg 3-9
 |
| * Power Lever connected to
 | * Cam box🡪FCU and beta linkages
 |
| * Condition Lever connected to
 | * SCU (starter control unit)
 |
| * Power Lever ranges: What power lever cntrls
	+ A =
	+ B =
	+ REVERSE =
 | * A = N1 ONLY
* B = BLADE ANGLE
* REVERSE = BOTH
 |
| * Study chart on 3-12
	+ Max allowable: AKA \_\_\_\_\_
	+ Oil temp range
	+ Oil P range
	+ On takeoff initially \_\_\_\_ limited as you climb you are \_\_\_\_ limited
	+ Hi/Lo idle for N1 \_\_\_/\_\_\_\_
	+ ITT exceed \_\_\_\_ discontinue start
	+ Gen load 0.5 to 0.75 min N1?
 | * Chart on 3-12
	+ Takeoff = max allowable
	+ 10-99 C
	+ 85-100 psi
	+ Torque, ITT (normal day)
	+ 70-73 / 51-54
	+ 925
	+ (see chart)
 |
| * COLD TEMP LOW ALT = Torque or ITT limited?
* HOT and HIGH = Torque or ITT limited?
 | * TORQUE
* ITT
 |
| * ITT LIMITS (normal range, max continuous, max starting?)
 | * 400-790, 790, 1090 Celsius
 |
| * Blade angles:
	+ Feather
	+ Low pitch
	+ Zero thrust
	+ Reverse
	+ Approx. cruise
 | * 87
* 15
* -5
* -11
* 25-35
 |
| * Normal prop op range
 | * 1800-2200
 |
| * Primary gov fail? If overspeed N2 \_\_\_\_
 | * 2288 +/- 40
 |
| * Prop Gov test switch tests \_\_\_\_\_\_, resets to maintain b/w \_\_\_\_ to \_\_\_\_ rpm
 | * OVERSPEED GOV
* 1900-2100
 |
| * Fuel topping gov prevents rpm exceeding \_\_\_\_
 | * 2332 rpm
 |
| * Auto feather occurs if engine dies if (2)
 | * System armed
* BOTH power leverS above 90% N1
 |
| * With auto feather in armed, retarding 1 or both power levers will disengage auto feather system. T or F
 | * TRUE
 |
| * Below 410 +/- 50 ft lbs=
* Below 260 +/- 50 ft-lbs=
 | * Turns off auto feather sys for opposite engine, denergizes opposite auto feather light
* Auto feather system ACTIVATE
 |
| * LEFT prop \_\_\_\_\_, right prop = \_\_\_\_\_
 | * MASTER – slave
 |
| * If synchrophaser in use and right landing gear extended, this light will illuminate
 | * PROP SYNC – pg 4-10
 |
| * Plus or Minus \_\_\_\_ RPM is the limit of actuator authority
 | * 30 RPM, pg 4-11
 |
| * Prop link fail, either result in (2)
 | * Prop remain at current setting
* Or increase to 2200 rpm
 |
| * 5 fuels approved
* 2 alternates
* AVGAS on for \_\_\_\_\_ use.
 | * JET: A1, B, 4 / JP 5,8
* JET A1 and F42
* 80/87/100LL through 115/145
 |
| * TRANSFER SWITCHES
	+ Pump on at \_\_\_\_ gal
	+ Pump off at \_\_\_ gal or \_\_\_ if other fails
 | * 42 on
* 51 off or 59
 |
| * If fuel transfer fails with fuel in wing tanks, up to \_\_\_ gal can be trapped
* OVERRIDE mode bypasses \_\_\_\_\_ switches and it runs Continuously/Set amount of time?
 | * 28 gallon
* Bypass float switches
* Runs CONTINUOUSLY
 |
| * R/L NO FUEL TRANSFER LIGHT can mean 3 things
 | * 1) Total fuel = Nacelle? – no fuel in wing tanks
* 2) Total fuel > Nacelle? –depends, you need those 28 lbs?
	+ Yes? Try switch to OVERIDE
		- NFT light off = pump good
		- NFT light still on = pump fail, plan for 28 lbs unusable
	+ No? don’t use override, turn pump off, gravity flow starts once nacelle drop to 3/8 full
* 3) Fuel in wings but Nacelle = YELLOW ARC, with no light?
	+ Transfer switch off?
	+ Transfer pump CB out?
	+ 42 gal float switch inop- override it
 |
| * Transfer light warning IF (2)
 | * Pressure switch detect <3 psi
* PUMP TOLD TO RUN
 |
| * Boost pump fail, indications?
 | * FUEL P Light FLICKER
* XFEED LIGHT ON (if in auto)
* Crew close xfeed valve to determine which boost pump has failed
	+ Xfeed or suction decision
		- Xfeed if range not factor, if it is suck it
 |
| * XFEED goes from TANK on one side to \_\_\_\_
* Generally used for \_\_\_\_ fails
* Why do we not fly with xfeed valve open normally?
 | * ENGINE on the other side
* Boost pump fails
* The strongest boostpump will feed both engines and imbalance will occur
 |
| * Steering range with NWS and brakes?
 | * 48 either side
 |
| * DO NOT tow with \_\_\_\_ control lock
 | * RUDDER
 |
| * Elevator trim tab = \_\_\_\_\_\_ action
 | * Anti servo
 |
| * Trim disconnect switch, 2 levels
 | * 1st = disconnect auto pilot and YD
* 2nd = disconnect ELECTRIC TRIM
 |
| * Landing gear, what holds gear in the UP position?
* What prevents coasting and overtravel?
 | * Jackscrew and dynamic braking (pg 7-3)
* Dynamic braking and limit switches
 |
| * WHEELS UP WARNING = 3 signals
 | * Warning Horn, WHEELS UP light, 2 red handle
 |
| * Get the warnings if gears not down and locked and: (2)
 | * Both power levers retarded below 79% N1 rpm
* FLAPS beyond apprch
 |
| * See figure 7-1 pg 7-5workbook for how to silence
 |
| * R SQUAT SWITCHES
 | * “**FLRSTOTS**”
* **F**-light hour meter
* **L**-anding gear circuit
* **R**- ight eng inlet lip boot heat
* **S**- tall warn
* **T**- ransponder
* **O**- peration of some stuff in (AHRS/DCU/GPS)
* **T**- AS/RADAR
* **S**- tall warn heat
 | GROUPS**FLR** = INOP**STO** = DEACTIVATE/INHIBIT**T** = STDBY**S** = GOES TO 14 V |
| * L SQUAT SWITCHES
 | * L- eft engine inlet lip heat = INOP
* E-lectric heater = GND MAX
* A-mbient air solenoid = CLOSE
* P-ressurization controls = INOP
 |
| * LIMIT SWITCHES: location
 | * On landing gear drive train assembly underneath floor of cabin
 |
| * Parking brakes CAN/CANNOT be set using copilot brake pedals
 | * CANNOT
 |
| * Retraction of landing gear automatically centers nose wheel and disengages OR can you move it in flight?
 | * Disengage, no move in flight
 |
| * OUTFLOW VALVE: diff p not exceed \_\_\_ PSID
* Does it have negative P relief?
 | * 4.7
* Yes
 |
| * SAFETY VALVE: diff p not exceed \_\_\_ PSID
* Does it have negative P relief?
 | * 4.9
* Yes
 |
| * “Our friend MANUAL” COOL controlled through INCR/DECR or knob thingy
 | * INCR/DECR, manual = no knob
 |
| * ELECTRIC HEATER LOCKOUT, if these ON (3)
 | * Windshield Heat
* Prop De-ice
* Engine Lip boot heat
 |
| * Oxygen Supply gives \_\_\_\_\_ cubic ft
* Pressure = \_\_\_\_ psi
* Temperature
 | * 49
* 1850 psi +/- 50
* 70
 |
| * Operate windshield on dry glass?
 | * No
 |
| * ICE VANES EXTENDED, what results? (3)
 | * Engine torque DECREASE – around 40-60 ft lbs
* ITT may INCREASE
* Range REDUCED – around 10-12%
 |
| * On deck electrical power to heating elements goes from 28 Vdc to \_\_\_\_ Vdc
 | * 14
 |
| * Except during TO roll, pitot heat SHOULD/SHOULD NOT be used while aircraft on ground
 | * SHOULD NOT
* Overheat possible, lack of cooling airflow
 |
| * STDBY COMPASS can give error if these are activated (5)
 | * Windshield ANTI ICE
* Windshield WIPERS
* AC
* Electric Heat
* Vent blower
 |
| * Alternate static located in \_\_\_\_\_\_, info goes to \_\_\_\_\_ instruments and \_\_\_\_\_ if normal static air source fail.
 | * Rear pressure bulkhead
* Pilot instruments and ESIS
* Pg 9-6
 |
| * ESIS powered by \_\_\_\_\_\_ bus, that bus in emergencies can be powered by \_\_\_\_
* Gets info from AHRS 1 OR 2?
* Has its own ADC?
* Gets other stuff from \_\_\_\_ 1. See page 9-7
 | * ESSENTIAL AV BUS, AUX BATT
* AHRS 1
* YES
* NAV 1
 |
| * AV ESSENTIAL BUS POWERS: CRANE
 | * C-OM 1
* R-TU
* A-UDIO (PILOT)
* N-AV 1
* E-SIS
 |
| * FMS consisted of \_\_\_\_ and \_\_\_\_\_ computer.
* System blends input from \_\_\_\_, \_\_\_\_\_, and\_\_\_\_ to compute present position
 | * CDU and FMS
* VOR, DME, GPS
 |
| * CDU- TUN button allows tune and select for:
 | * COM1
* NAV1 AND NAV2 (receive VOR/LOC freqs only)
* DMEHOLD
* ATC
* ADF
 |
| * FLIGH DIRECTOR (FD) provides \_\_\_ and \_\_\_\_ guidance based on crew inputs on the \_\_\_\_
 | * Pitch and roll
* FGP (Flight Guidance System)
 |
| * Autopilot may be engaged at \_\_\_\_ on dep, \_\_\_\_ at cruise, disengaged by \_\_\_\_ on aprch
 | * 400 AGL dep
* 1000 AGL cruise
* 180 AGL aprch
 |
| * TAS provides/does not provide resolution
 | * DOES NOT
 |
| * Weather radar antenna located on \_\_\_\_\_
* Detect Precip (WX mode) up to \_\_\_\_ NM
* Detect Turb (WX + T) up to \_\_\_\_ NM
* To display RADAR PFD must be in \_\_\_\_ or \_\_\_\_ and RDR \_\_\_\_ selected
 | * Nose of aircraft
* 300
* 50
* 120, 120 map mode, overlay
 |