Condition Inspection Items-N437RP

Date: 9-1-2016

Remove all inspection panels and aircraft interior prior to starting inspection

☑ Cabin side panels (4),
☐ Pressure controller in rear seat bottom,
☐ Baggage compartment panels (6),
☐ Two inspection panels and two flap actuator cover panels on each wing.
☐ Trim servo panels optional if servo tests OK
☐ Winglets (contain wiring and fuel connections)

☐ Airworthiness Directives
☐ Lancair Service Bulletins
☐ Oxygen bottle pressure & masks serviceable (4); check regulator and flow
☐ Halon fire extinguisher-Underside/back of copilot seat-charged and serviceable
☐ Emergency cockpit lighting functional (flashlight, hand-held, instrument panel stick-on)
☐ Gear extension, down-lock & door closing; test-on jacks
☐ MLG door nylon sliders for wear/delamination
☐ Winglet fuel vents-functional
☐ Fuselage drain holes (3), rudder (2), wings/speed brakes (1 each wing)
☐ Emergency survival gear and critical spares in baggage compartment
☐ Emergency door opening tools in glove compartment

Propeller

☐ Run-out and balance
☐ Bearing wear & grease seals

Critical fasteners re-torqued

☐ Fuselage motor mount bolts (5) (40'/lb)
☐ Engine mount bolts (4) (40'/lb) –not checked in 2013
☐ Propeller nuts (6) (80-85'/lb)
☐ Wing spar bolts (2/2) (40'/lb)//30'/lb

Flight Controls

☐ Control system binding/travel limits & stops
☐ Continuity, lubrication and excess free play—each connector/each pivot; end to end
☐ Autopilot servo attachments /assembly bolts & screws/over-center lockouts

Hydraulic Systems

☐ Hydraulic reservoir
☐ Accumulator pre-charge
☐ Brake reservoir
☐ MLG, nose gear and flap actuators for leaks, binding
☐ MLG actuator area for security of hidden bolts/fasteners (mirror required!)
☐ MLG mechanical down locks for proper functioning of lockdown pins
☐ All hoses & tubing fitting ends, especially under rear seat bottom and wheel well area in general
☐ Hydraulic system filter (front side of right wheel bulkhead)

Lubrication:
Wheel bearings-repack & adjust bearing pre-load
MLG rack & pinion gears/steel sliders
Gear door hinges
Nose gear operating linkage
Cabin door hinges & latches

Flight control pivots-check also for tightness and wear
All control system linkage-aileron, elevator, rudder pivots
Flap operating linkage
Flap tracks

Electrical System
Bus Tie functions
Emergency Power relay
#1 & #2 battery load tests
#2 charging system regulator set 0.2 volts below #1 system to "load" the primary system
Battery replacement (one set in 2014 to #1 system); #2 battery set load checked good
Exterior position lighting/strobes
Landing and taxi lights
Cockpit/instrument lighting
Replace 9 volt emergency glare shield light battery (top side of fuse panel; above copilot knees)
Glare shield lighting
Caution and warning lights (6)-lamp test and proper operation of each
Cockpit emergency lights: flashlight between seats/mini on glare shield/hand-held in glove box
Pitot heat and "on" indicator light
Speed brake operation (pilot position only)
Trim-elevator, aileron and rudder all drive to limits/reverse/operate from both sticks

Fuel System
Gascolator cleaned
Fuel tank caps for function and sealing
Wing fuel sumps checked (4)
Selector valve-detents noticeable/off position stops gas flow

Tires & Wheels
Tire tread-reverse/replace tires/tubes
Tires serviced to 65/45/65 PSI
Brake pads-within wear limits
Brake line weep hole in MLG strut clear and clean (no brake fluid leaks)
Nose strut extension: 3” min of polished strut showing (service to 300 PSI, nitrogen, fully extended)
Panel/skin delamination; cracks anywhere (rear fuselage & tail; around pressure vessel)
Windows-cracks or delamination from mounting surfaces

Engine Compartment
All SCEET for cracks & tears
Function of alternate air door and cockpit indicator light
Condition of induction air flex tubes (2)
Condition of wiring & hoses behind engine (multiple opportunities for mischief here!)
Engine checks:
- Lubricate operating controls-all
- Oil cooler air door for proper operation
- Engine mount for cracks…especially at welds (critical item)
- Shim motor mounts to raise engine spinner (as required)
- Compression/80: #1-__; #2-__; #3-__; #4-__; #5-__; #6-__
- Sparkplugs-clean/replace or re-gap (30-36 #/ft tightening torque)
- Fuel Injectors-clean (new o-rings, rubber washer, copper washer, rubber bushing for ea)
- Oil & Filter-replace
- Fuel system calibration IAW SID97-03F
- Boost pump (high/low)
- Replace or overhaul mags @ 500 hours
- Slick Mag inspection – Slick Service Bulletin SB3-08
- Magneto Timing: each at 24 degrees BTDC (Must use protractor on prop spinner)
- Magneto grounding check (L & R)
- Oil lines-condition/leaks/chafing; find the source of ANY oil leaks-fix
- Air seals around upper cowling
- Intake manifold gaskets for leaks
- All intake and turbo feed hose clamps tightened
- Exhaust system-condition & leaks (inc V clamps per SAIB CE-13-45)
- Engine air inlet bypass for free operation and warning light
- Air filter- replace
- Pitot & Static system leak check (last: 11/2014)
- Transponder check (every two years) last: 11/2014
- Radios & Intercom—all functional
- Rear seat intercoms
- ELT-Functional Check/Battery replace as required (next: 2018) (inside tail access panel)

Cabin Air System
- Cabin door pressure seal-no leaks/holds pressure
- Cabin pressurization controller–operation & filter replacement
- Cabin heat, defroster & dump controls

Air Conditioner
- Condenser fans, exhaust scoop and airflow sequencing valves
- Water drain
- Refrigerant leaks, especially rear fuselage area
- Operating pressure check (min of 120 psi, normal day, not running)

Cabin seat belts/shoulder harness/attach points—all functional, good condition

Ground checks (engine running)
- Engine and aircraft instrument controls (operation and limits)
- Magneto Grounding (engine shut down using ignition switch)
- Fuel selector Shut-Off (engine shut down using fuel selector-Off)
- Compass headings (Chelton and Dynon)
- Taxi straight ahead/brakes steer aircraft easily

**Flight Checks**

- Engine gauges (operation and limits)
- Prop governor operation
- @ Take Off power (DA __ '; Temp __F): RPM: ___, MP: ___, FF: ___, Fuel Press: ___ PSI
- In-flight Mags check (L & R) under high power setting
- Emergency nose gear extension speed: ____ KIAS (130 KIAS min)
- Gear manual extension: 18 strokes w/hand pump
- Chelton “fast erect” in-flight
- Autopilot tracking, stability and dampening checks
- Cabin pressure monitoring and alerting system (should alarm at 10,000’)
- Fuel pump warning system (should flag the boost pump not on above 14,000’)
- AOA warning system

**Paperwork**

- Airworthiness certificate
- Operating limitations letter
- Aircraft data plate (fuselage near tail)
- Registration certificate
- Log book entries for proper documentation
- Compass correction card-on instrument panel
- Weight & Balance-available & conforms to equipment installed