



Rotonda West, FL 33947

Old
February 26, 2024

To: Greg Mahler

Venice, FL 34293

Subject: Maintenance of Lancair 360, SN 660-320-440, N150G

Thank you for the opportunity to support the maintenance of your aircraft. During the course of the work performed, I identified maintenance items to be aware of as you continue to fly your Lancair. This list is a compendium of current and past items that, as yet, have not been addressed in order to have a single reference for open items.

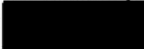
Recommendations for future action, at your discretion:

- 1) Minor cracks & delamination on landing gear doors. Re-bonding should be accomplished when possible.
- 2) "Toe" alignment testing showed each main wheel at 1 degree of "toe out". Axle shims for this adjustment should be added in the near future. Delta retraction testing will not be required with this modification.
- 3) The abrasion tape protecting the instrument panel glare shield on the left side has worn through and the strut is beginning to abrade the glare shield.
- 4) Fuel Control servo throttle arm is contacting the lower cowl. A blister will need to be fabricated to accommodate appropriate clearance for the control arm. This modification will drive repainting of the lower cowl.
- 5) Fuel tank fill ports are missing "Fuel Quantity" placards.
- 6) Left flap has 3 locations where the paint is missing. (One upper surface and two lower surfaces.)
- 7) Lower fuselage skin has some heat damage just aft of the engine exhaust pipes. The damage areas should be repaired and an ablative material added to protect the skin in the future.
- 8) Fuel drain line has a loose security clamp at the right lower engine mount.
- 9) The screws securing the outer wing tip light lenses need to be stainless steel, counter-sunk and mylar washers added.
- 10) We have discussed moving the oil cooler to a location aft of the engine plenum. This is a major modification and may require moderate down-time due to parts fabrication and in-process procurement. If we employ a NACA duct the modification will drive repainting of the lower cowl.
- 11) We have discussed adding a louvered panel to the left lower cowl, aft of the engine plenum. This is a major modification and may require moderate down-time due to parts fabrication. It will drive repainting of the lower cowl.
- 12) We have discussed adding a cooling plenum to the engine compartment. This is a major modification and may require significant down-time due to fabrication of unique major assemblies, parts procurement and system integration.
- 13) We have discussed adding a co-pilot brake pedal system. This is a major modification and may require significant down-time due to fabrication of unique major assemblies, parts procurement and system integration. There may not be physically enough room to incorporate the brake pedals due to the fuel system components mounted to the aft firewall in front of the existing rudder pedals.
- 14) Two of the upper cowl trailing edge CamLoc receptacles are broken and need to be replaced. Not a flight safety issue.

Recommendations for ongoing watch items:

- 1) The Avionics power source wiring spade connector insulation is burnt due to overheating at some point. The part hasn't shown signs of continued overheating. We can continue to watch this or change out the spade connector and continue to watch.
- 2) Forward canopy seal is wearing at the ends. Suggest replacement if air leaks are detected.
- 3) The right wing root lower interface shows evidence of fuel intrusion (blue stains). This may be from spillage during refueling or evidence of a minor leak.
- 4) Noted minor oil on nose tire and hangar floor. We can assess the engine bay for minor oil leaks next time the cowl is off.
- 5) Noted the presence of a very small amount of hydraulic fluid on the cockpit floor below the center console. We should clean the area and monitor this and hydraulic fluid levels as you continue to fly.

I will gladly avail myself to assist you in completing any of the tasks outlined above. Thank you again for trusting your aircraft's maintenance to Tailwind Aviation.


Terry L. Sickler
Tailwind Aviation
Airframe & Powerplant Technician
Cert #: 



[REDACTED]
Rotonda West, FL 33947
[REDACTED]

Oct 17, 2023

To: Greg Mahler

[REDACTED] Venice, FL 34293

Subject: Maintenance of Lancair 360, SN 660-320-440, N510G

Thank you for the opportunity to help you with the maintenance of your aircraft. During the course of the work performed, I identified a few maintenance recommendations and watch items to be aware of as you continue to fly your Lancair.

Recommendations for future action, at your discretion:

- ✓ 1) The cover for the inboard port of the cabin air valve has come loose – Replaced with appropriate part.
- ✓ 2) The center attachment screw for the right-side air baffle is missing – Replaced.
- 3) The spade connector for the power input to the Avionics Master Switch was disconnected – re-connected. The connector insulation is burnt due to overheating. Additional analysis/troubleshooting is needed to determine why the circuit is overheating.
- 4) The primary/alternate engine air intake control operates backward. The panel mounted control is full out for normal setting and pushed in for alternate air.

Recommendations for ongoing watch items:

- 1) No further observations.

I will gladly avail myself to assist you in completing any of the tasks outlined above. Thank you again for trusting your aircraft's maintenance to Tailwind Aviation.

Terry L. Sickler
Tailwind Aviation
Airframe & Powerplant Technician
Cert # [REDACTED]



[REDACTED]
Rotonda West, FL 33947
[REDACTED]

Dec 14, 2023

To: Greg Mahler

[REDACTED] Venice, FL 34293

Subject: Lancair 360, SN 660-320-440, N510G

Thank you for the opportunity to inspect your aircraft. I believe it to be well maintained and in a safe condition for flight. During the course of the inspection, I identified a few maintenance recommendations and watch items to be aware of as you continue to fly your Lancair. These items include the unresolved findings from previous maintenance actions so that you have a composite list as of this date.

Recommendations for future action, at your discretion:

- 1) Minor cracks & delamination on main gear doors.
- 2) The main tires both have previously shown excessive wear on the inboard edge. The landing gear axle should be re-aligned. 2 degree camber adjustment axle shims were installed when the Grove system was mounted. Subsequent "toe" alignment testing show each main wheel at 1 degree of "toe out". Axle shims for this adjustment have been received and can be added in the near future. Delta retraction testing will not be required with this modification.
- 3) The left flap is deployed about 3/8" when the flap selector is full up. This condition needs to be re-rigged to zero. You also reported an induced roll tendency when flaps were left partially deployed at higher speeds. When we make changes to this control, it will need to be test flown.
- 4) The abrasion tape protecting the instrument panel glare shield on the left side has worn through and the strut is beginning to abrade the glare shield.
- 5) Aileron, Flap, Elevator and Elevator Trim Tab gap tape is deteriorated. New gap seals have been received and can be installed at your discretion.
- 6) Seven camloc fasteners employed on the upper cowl are missing and one of the camloc receptacles is broken. Additionally, due to the relative tightness of the installation, the camlocs are damaging the lower cowling interfaces, a valve cover and the forward right aluminum engine baffling. I have replaced the two CamLocs that were contacting the baffling and valve cover with stainless steel countersunk machine screws/washers and nut plates. I also have new CamLocs of different sizes to establish fit for ordering replacements.
- 7) Fuel Control servo throttle arm is contacting the lower cowling. A blister will need to be fabricated to accommodate appropriate clearance for the control arm.
- 8) Fuel tank fill ports are missing "Fuel Quantity" placards.
- 9) Left flap has 3 locations where the paint is missing.
- 10) Lower fuselage skin has some heat damage just aft of the engine exhaust pipes. Suggest that the damage areas be repaired and an ablative material be added to protect the skin in the future.
- 11) Fuel drain line has a loose security clamp at the right lower engine mount.
- 12) Cabin heat SCAT duct has holes worn in it. We have discussed removal of this duct in the future.
- 13) Forward canopy seal is wearing at the ends. Suggest replacement if air leaks are detected.
- 14) The speed tape on the right wing interface joint has been damaged on the underside. Replacement is recommended.
- 15) The screws securing the outer wing tip light lenses need to be stainless steel, counter-sunk and mylar washers added.
- 16) We have discussed removal of the cabin heat muff and ducting. This is a minor modification and should not require much down-time.

- 17) We have discussed moving the oil cooler to a location aft of the engine plenum. This is a major modification and may require moderate down-time due to parts fabrication and procurement.
- 18) We have discussed adding louvered panels to the lower cowl, aft of the engine plenum. This is a major modification and may require moderate down-time due to parts fabrication. Also, it may drive re-painting of the lower cowl.
- 19) We have discussed adding a cooling plenum to the engine compartment. This is a major modification and may require significant down-time due to fabrication of unique major assemblies, parts procurement and system integration.
- 20) We have discussed adding a co-pilot brake pedal system. This is a major modification and may require significant down-time due to fabrication of unique major assemblies, parts procurement and system integration. There may not be physically enough room to incorporate the brake pedals due to the fuel system components mounted to the aft firewall in front of the existing rudder pedals.

Recommendations for ongoing watch items:

- 1) The left aileron seems loose and exhibits a slight flutter in flight. It was not possible to adjust the linkage. The movement is very slight and is associated with normal play within the various aileron belcrank bearings. I suspect that the slight in-flight movement exists in both ailerons.
- 2) The Avionics power source wiring spade connector insulation is burnt due to overheating at some point. The part hasn't shown signs of continued overheating. We can continue to watch this or change out the spade connector and continue to watch.

I will gladly avail myself to assist you in completing any of the tasks outlined above. Thank you again for trusting your aircraft's maintenance to Tailwind Aviation.

[REDACTED]
Terry L. Sickler
Tailwind Aviation
Airframe & Powerplant Technician
Cert #: [REDACTED]

Equipment List for Lancair 360, Serial Number 660-320-404, N150G

Last Update: 1/30/24

Item Description	Qty	Model/Part No.	Manufacturer	Serial#	Notes
ADSB Transceiver	1 ea				
Air/Oil Separator	1 ea				?? Amp, Int. Reg?
Alternator, Primary	1 ea				?? Amp, Int. Reg?
Alternator, Secondary	1 ea				
Alternator Drive Belt	1 ea				
Audio Panel	1 ea	GMA 340	Garmin	NA	
Auto Pilot, Flat Pack	1 ea	DIIVSVG FP	TruTrak	NA	Installed 9/06
Auto Pilot, Pitch Servo	1 ea	DSP-B	TruTrak	208438	Installed 9/06
Auto Pilot, Roll Servo	1 ea	DSB-B	TruTrak	208591	Installed 9/06
Axle, Main	2 ea	5020	Grove	NA	500x5, Installed 11/23, Spacer # 5710
Battery, Main	1 ea				
Bearing, Main Axle	1 ea				
Brake Disks	2 ea	020-26	Grove	NA	Installed 11/23
Brake Linings	2 ea			NA	
Brake Master Cylinder (L)	1 ea				
Brake Master Cylinder (R)	1 ea				
Bulb, Nav Light	1 ea				
Caliper, Brake	1 ea	31-3A	Grove	NA	Installed 11/23
Cabin Heat Muff	1 ea				
Cyl Head Temp Gauge	1 ea				
Elect Flt Instr Sys (EFIS)-Pilot	1 ea	MFD-HX	Grand Rapids	1006	w/ encoder
Elect Flt Instr Sys (EFIS)-CoPilot	1 ea	MFD-HX	Grand Rapids		w/ encoder
Emergency Locator Transmitter	1 ea	E-01	ACK	57659	
ELT Battery	8 ea	MN1300	Duracell	NA	Batt Change Due 12/2035
Engine	1 ea	O-360 A1A	Lycoming	L-3004-36	4 cyl, 180 hp, OH-6/2015, 626.7 Tach
Engine Information System	1 ea	M4000-44S61F	Grand Rapids	18288	Installed 9/06
Exhaust System	1 ea	3/4	Snowline		Installed 8/06
Flap Motor, Electric	1 ea				
Filter, Air	1 ea	RU-5288	K&N	NA	Installed 1/24
Filter, Fuel, Primary	1 ea	1090079	Airflow Performance	NA	
Filter, Fuel, Intra-Tank	1 ea				
Filter, Oil	1 ea	AA48103-2	Tempest	NA	
Fuel Controller	1 ea	054EX	Airflow Performance		
Fuel Flow Divider	1 ea	3090009	Airflow Performance	AP-	
Fuel Injector Nozzle	4 ea	1090152	Airflow Performance	NA	0.028
Fuel Pump, Eng Driven	1 ea	LW-15473	Airflow Performance		
Fuel Boost Pump, Electric	2 ea	3090050	Airflow Performance		12V, 2.5-4.5 PSI, 30 gph
Fuel Quantity Gauge (L/R)	1 ea	D1-211-5078	Mitchell	1614	Installed 3/22
GPS/Com Receiver	1 ea	GNS 430W, PN 011-01060-00	Garmin	23423023	Mod Level 19
Intercom	1 ea				
Lord Mount, Engine	4 ea	J-7402-1		NA	Installed 5/22
Magneto, Electronic, LH	1 ea	Series 114	E-MAG		Timing: 25 BTDC, Installed 7/19
Magneto, Electronic, RH	1 ea	Series 114	E-MAG		Timing: 25 BTDC, Installed 7/19
Nav Light, Green	1 ea				
Nav Light, Red	1 ea				
Oil Cooler	1 ea		Stewart Warner		xx? Row
Power Pack, Hydraulic	1 ea	642666	Lancair		12V, Installed 9/18
Propeller	1 ea	HC-F2YR-1BF-EXP	Hartzell		Blades- 7666A-4
Prop Extension	1 ea				
Radio, VHF Comm/ Nav (#2)	1 ea	SL30	Garmin		
Radio, SIRIUS XM	1 ea				
Seal, Spark Plug Washer	8 ea				
Seat Belt/Harness	2 ea		Crow	NA	4 point
Smoke System	1 ea	Universal 3 gal. Kit	Smoke System Helper	NA	Installed 10/2023
Spark Plugs	8 ea	BR8ES	NGK	NA	14mm, Long Reach, Gap-.032, Torque-20 ft-lb
Spinner Dome	1 ea				
Spinner Backplate	1 ea				
Spinner Bulkhead	1 ea				
Starter	1 ea				
Strobe Light	2 ea				
Strobe Light Power Supply	1 ea				
Switch, Dual, Aux Fuel Pump	1 ea	XFR-12/24-J	Pillar Point Avionics		
Tire, Nose	1 ea				
Tires, Main	2 ea	11x4.00-5 8PR	Aero Classic	NA	4.00 x 5, Tubeless
Torque Plate, Brake	2 ea	020-040	Grove	NA	Installed 11/23
Transponder, Encoding	1 ea	GTX 327	Garmin		
Tube, Main Tires	2 ea				4.00 x 5
Vacuum Pump	1 ea				
Wheels, Main	2 ea	56-3A	Grove	NA	500x5, Installed 11/23
Wheel, Nose	1 ea		Matco	NA	