N4729L

Piston Engine 100-Hour Inspection (Carburetor equipped engine)

Visual Documentation:

- *Overall Engine Damage (cylinder damage, crankcase damage, pre-impact fire, etc.)*
- *Engine Mount(s) Condition*
- *Engine Accessories (what is separated, what is still attached, and are they 100% secure to their mount?)*
- *Verify all fuel/oil lines are secure*
- *Verify Throttle/Mixture/Carb heat/Propeller Governor control positions on the engine and obtain continuity to the cockpit controls (if able)*
- *Verify engine oil level (if the engine/oil supply tank is level)* 5 2 1/2 5 now

Remove Items Prior to Rotating Crankshaft:

- *Disconnect all spark plug wire ignition leads (top and bottom)*
- *Remove and label all top spark plugs (label which cylinder they came from)*
- *Inspect spark plug electrode for mechanical damage. Damaged electrodes could be an indicator of foreign object ingestion or internal mechanical malfunction of the engine.*
- *Remove the vacuum pump (if equipped) and document the drive coupling prior to crankshaft movement.*
- *Remove propeller if needed to facilitate crankshaft rotation (Lycoming's are timed using the starter ring gear, so be mindful of this if you want to obtain engine to magneto timing. Mark flywheel/crankshaft flange orientation with sharpie for reference)*
- *Disconnect the magneto P-leads*
- *Remove all cylinder rocker box covers*

Internal Continuity:

- *Examine all cylinders with a borescope (if able).*
- *Rotate the crankshaft in the direction of normal rotation by hand using the propeller or a hand tool attached to an accessory drive pad. If you are unable to rotate the crankshaft successfully, remove all engine accessories that are attached to the engine and try again. If you are still unable to rotate the crankshaft, it is possible you will need to remove cylinders and the accessory case to examine the issue further. Ultimately this could result in you completely disassembling the engine. Be mindful of preserving any potential internal fracture surfaces. Continued attempts to rotate the crankshaft may obliterate or alter evidence.*
- *While rotating the crankshaft, verify all pistons are moving within the cylinders and each of the accessory gears are moving.*
- *While rotating the crankshaft, observe the rocker arm movement on all cylinders for the intake and exhaust (should be equal movement up and down). Any asymmetrical movement could be an indicator of worn camshaft lobes requiring further examination.*
- *Obtain "THUMB" compression and suction on all cylinders by placing thumb lightly over the top sparkplug hole and rotating the crankshaft through by hand. Make sure your thumb is over the spark plug holes lightly and not sticking inside them.*
- *If you do not obtain thumb compression on a cylinder, you may need to stake the valve. Following visual inspection of the valve springs, rocker arms, etc., you'll need to use a dead blow hammer and hit the portion of the rocker arm that is connected to the valve stem/springs.*
- *While rotating the engine crankshaft, verify spark on all ignition harness leads if magnetos are impulse coupler equipped. If there is damage to the leads, cut the harness at the damaged area, and obtain spark to that point. If no spark is produced, further examination of the magneto may be necessary. Depending on the magneto or ignition system, removal and further testing may be needed.*
- *If both magnetos remained attached to their mounts, verify engine to magneto timing if able.*

Induction / Exhaust System:

- *Document the air intake tubes/ air filter-screen for overall condition, damage, blockages, and leaks.*
- *Document the exhaust system for overall condition, damage, ductile bending. Also be sure to inspect the exhaust gas path for possible oil film, soot. Attempt to inspect internal exhaust baffles to see if they are in place (they can separate and restrict air flow, thus reducing engine performance).*

Accessories:

Ignition System / Magnetos:

- *If you are unable to obtain spark on the ignition leads, remove the magnetos and ignition harness once magneto to engine timing has been determined, if able.*
- *Examine the magneto drive shaft and associated gears for security/damage/wear.*
- *Rotate the magneto drive shaft in direction of normal operation, and if equipped, note how the impulse coupling works. If the magneto is not equipped with an impulse coupling, you may need to use a hand drill to rotate the drive shaft. If the magnetos do not produce spark, examine them further by removing the harness cap and partially disassembling the magneto to verify the internal component condition.*
- *Document the ignition harness. Check for impact or any preexisting damage.*
- *Document all of the spark plugs (top and bottom). This includes coloration within the electrode area, electrode wear and gap. Inspect for mechanical damage at the electrode.*
- *For those engine equipped with an electronic ignition system, typically the timing/ref sensor is located on the forward part of the engine at the crankshaft. It varies per system. In order to test this, you'll most likely need to remove the entire system after documenting the installation and send it to the manufacturer.*

Carburetor:

- *Verify fuel lines to the carburetor are secure.*
- *Remove carburetor from the engine (if still attached)*
- *Actuate the throttle arm from stop to stop and verify that the accelerator pump functions (if equipped).*
- *Verify the mixture arm moves stop to stop (if equipped). Also, it is fairly typical on Stromberg carburetors to either not have a mixture arm or it'll be safety wired full rich.*
- *Remove the fuel inlet screen and verify it is free of debris.*
- *Disassemble the carburetor*
- *Note the condition of the floats, needle valve, needle valve seat, float bowl*
- *Inspect for visible contaminants and water within float bowl. Utilize water finding paste as needed.*
- *Check the fuel primer system (lines/plunger) for leaks and general function.*
- *Verify the fuel pump and fuel lines to and from it are secure (if equipped. Some engines have a low pressure fuel pump to supply fuel to the carburetor. These usually work with an arm which rides on the camshaft.)*

Miscellaneous Accessories / Systems:

- *Remove oil filter and cut open to examine the internal oil filter element. Note any metallic debris, etc. Also note that Tempest oil filters have a built in magnet to collect metallic debris.*
- *If the engine is not equipped with an oil filter, it should have an oil screen located within the system. Remove the screen and inspect for metallic debris.*

DISCREPANCY SHEET

AIRCRAFT: C-150 CLOCK TIME:

N NUMBER: 47294 DATE: 5-12-2020

DISCREPANCY	CORRECTIVE ACTION	HRS	MECI
(1) Engine Mount Broken from Nose gear Separation			
(2) Induction Spider Manifold Broken - Carb Broken off from Impact.			
(3) Carb heat Valve Positioned "ON" - Possibly from Impact Damage.			
(4) Bore Scoped All Cylinders found excessive oil On Valve Face on #1, #3 (x)			
(5) Carburetor Completely Dry. No evidence of fuel or Moisture, gaskets Dry. No fuel smell.			
(6) Removed Main Fuel Low point Drain, No fuel found.			
	TOTAL HOURS		

Qty	Part Number	Description	Price	Amount
			Total Parts	$0.00

Name: Joshua Lindberg, NTSB	Invoice # 7013
Street:	Date 05/13/20
City, State:	Reg # N4729U
email: [redacted]	S/N 15061177
Make/Model: Cessna 150E	Tach 197.2

#	SERVICE INSTRUCTIONS	HOURS	LABOR
	Services performed 05/12/20:		
1	Performed "Piston Engine 100-Hour Inspection		
	(Carburetor equipped engine)" per NTSB and FAA		
	documentation and guidance.		
	[redacted]:	6.00	[redacted]

OUTSIDE REPAIRS

Total Outside Repairs	$0.00

Please remit to: **AEROMARK, INC.**
10015 Vought Lane
McKinney, TX 75071
972-346-2026
[redacted]

LABOR	[redacted]
PARTS	$0.00
OUTSIDE	$0.00
SHIPPING	$0.00
TAX	$0.00
FUEL	$0.00
TOTAL	[redacted]

FUEL GAL: | GRADE: | PRICE:

AEROMARK is located at Aero Country Airport (T31)