1974 Piper PA-40 Arapaho

1270 Total Time Airframe/Engine

15 SMOH both engines and propellers in 2018

Lycoming (L)IO-320-B1A

Condition Inspection due August 2021

Original Engines Installed

Original Airframe and Engine Logbooks

**History**

The PA-40 Arapaho was designed to be the follow-on aircraft to the PA-39 Twin-Commanche.

The Arapaho differences include leading edge cuffs both inside and outside both nacelles which lower Vmc and stall speeds by approximately 10-15 kts., a single 60 gallon bladder in each wing, 6 inch taller main landing gear, a completely redesigned hydraulic landing gear operating system, strakes on both sides of the rear fuselage as well as above and below the rear fuselage, a redesigned windshield that extends further rearward at the top of the fuselage, redesigned dual pane side windows, as well as other minor changes.

The aircraft has similar cruise speeds to a PA-39 but much lower approach speeds as well as much better pitch authority in the flare which contributes to much nicer landing characteristics.

This aircraft is serial number 3 and is the *last remaining Arapaho* out of 3 built.

**Airframe**

This is the logbook entry from the first inspection after the aircraft was purchased from Purdue University in 2018 detailing the extensive amount of work that was completed. Since then, all the flight instruments have been overhauled and yellow tagged and the instrument panel has been powder coated and re silk-screened. The paint and interior are original.

November 20, 2018 Piper PA-40 Serial Number 40-7400003 ACTT 1255.04

1. Removed left engine, IO-320-B1A, s/n L-4877-55A, for major overhaul. Reinstalled overhauled engine with all new Lord engine mounts p/n J-9613-19, new engine mount bolts and nuts, all new flexible Type D hoses forward of the firewall mfg. by PHT Inc. under invoice 604979 and all new air ducting.

2. Removed right engine, LIO-320-B1A, s/n L-290-66A for major overhaul. Reinstalled overhauled engine with all new Lord engine mounts p/n J-9613-19, new engine mount bolts and nuts, all new flexible Type D hoses forward of the firewall mfg. by PHT Inc. under invoice 604979 and all new air ducting.

3. Installed overhauled left propeller Hartzell HC-E2YL-2BS s/n BG1342E. Propeller overhauled by Byam propeller under w.o. 39749.

4. Installed overhauled right propeller Hartzell HC-E2YL-2BLSF s/n DP219. Propeller overhauled by Byam propeller under w.o. 39748.

5. Removed both horizontal stabilizers to inspect for corrosion. Installed new AN175C32A corrosion resistant steel bolts IAW AD 74-13-03. 3 year/500 hours bolt inspection no longer required.

6. Checked all control cable tensions, no adjustments required. Lubricated all flight controls.

7. Rerouted aileron/rudder interconnect cable due to improper routing.

8. Removed both ailerons and inspected forward ribs IAW AD 79-20-10 and S.L. 850. No defects noted. Next inspection due 1355.04 ACTT.

9. Removed both ailerons and inspected both aileron spars at outboard hinge attachments IAW AD 77-08-01 and S.B. 787. No defects noted. Next inspection due 1355.04 ACTT.

10. Replaced all tires with new AirTrac 6:00x6 tires and new McCreary leakguard tubes.

11. Inspected and repacked all wheel bearings, no defects noted.

12. Drained all brake fluid and bled both brake systems. Inspected all brake pads and discs within limits.

13. Replaced nose gear left and right bolts p/n 22066.

14. Retorqued all main gear trunnion attachment plate bolts.

15. Greased main and nose gear linkages and oiled all pivot points.

16. Flushed landing gear hydraulic fluid. Performed normal landing gear retraction and extension and emergency extension procedures. No defects noted.

17. Checked all wing attachment bolt torques. All bolts torqued properly.

18. Installed new left and right landing light lenses p/n 20348-00/01 supplied by Knots2U.

19. Installed new vacuum regulator filters p/n RAB3-5-1 and main vacuum filter p/n RA1J7-1.

20. Installed new forward instrument panel mounts.

21. Cleaned and lubricated flap, rudder and stabilizer trim jackscrews.

22. Installed used serviceable overhead stabilizer trim crank.

23. Flushed both fuel tanks and operationally checked both electric fuel pumps and crossfeed system. No contamination noted. No defects noted. Both pumps flow 35+ gph.

24. Operationally checked all exterior lights. No defects noted.

25. Checked vertical and horizontal stabilizer attachment fitting torques. No adjustments required.

26. Installed new Gill 7035-28 sealed battery s/n G0300755224.

27. Installed new fuel cap o-rings p/n MS25988/1-010 and MS25988-1-388.

28. Deactivated and placarded combustion heater inoperative pending overhaul. Capped fuel fitting at fuel injector servo.

29. Reinstalled KX175B s/n 8627 after repair by Lafayette Avionics. Operational check OK.

30. Complied with A.D. 75-27-08 by inspection of horizontal stabilizer attachment brackets for overlapping rivets with skin rivets. No overlapping rivets.

31. Complied with A.D. 94-13-10 by inspection of horizontal stabilizer for looseness. No looseness noted. Next due at ACTT 1355.04.

32. Inspected vertical stabilizer for cracks IAW A.D. 76-18-05. No cracks noted.

33. Checked pilots side control column aft collar screws for looseness and re-safetied.

34. Inspected left and right spar lower spar caps IAW A.D. 83-19-03. No chafing noted. Modified seal plates IAW S.B. 751.

35. Installed used serviceable lift detector p/n C52207 in left wing.

36. Installed used serviceable Safe-Flight stall warning horn in cockpit.

37. Complied with A.D. 74-16-08 and S.L. 679 by inspection of aft vertical fin spar attachment bulkhead. No cracks noted. Next due at ACTT 1355.04.

38. Installed 2 new Donaldson air filters p/n P617053.

39. Installed used serviceable nose gear door actuator assembly p/n 23880-00.

40. Removed left engine mount p/n 23561-000 and installed used serviceable engine mount p/n 23561-000 from ASOD Inc. under invoice number 36679.

41. Deactivated and placarded transponder inoperative pending successful completion of transponder check required by FAR 91.413.

42. Installed new ELT battery p/n BP-1035. ELT check OK IAW FAR 91.207 (d). Battery expires Oct. 2020.

43. Placarded both VOR receivers inoperative due to VOR indicators not installed.

AD compliance summary:

2015-24-05 Installed placard IAW Piper S.B. 1266 dated December 16, 2014

2006-12-07 N/A Not Installed

2006-03-08 N/A Not Installed

2005-01-19 N/A Not Installed

2004-25-16R1 N/A Heater disabled and fuel line capped

99-14-01 C/W by installation of “Icing Information AD” in cockpit

98-21-21R1 N/A Not Installed

97-01-01R1 N/A Not Installed

94-13-01 C/W by inspection. Next due at 1355.04 ACTT

85-02-05R1 C/W by installation of “Parking Brake” placard

83-19-03 C/W by inspection IAW Piper S.B. 751 dated May 24, 1983. No damage noted.

83-10-01 N/A Not Installed as noted

82-23-01R1 N/A Robertson STOL kit not installed

79-20-10 C/W by visual inspection IAW Piper S.L. 850 dated April 18, 1979. Next due at 1355.04 ACTT

79-12-08 C/W Piper S.L. 851 dated August 31, 1978, Part A. No fuel leakage noted. Next due at 1305.04 ACTT

78-12-07 N/A valve not installed

77-13-21 N/A Not Installed

77-09-10 C/W by inspection. No defect noted

77-08-01 C/W by inspection IAW Piper S.B. 787. No cracks noted. Next due at 1355.04 ACTT

76-18-05 C/W by inspection IAW Piper S.L. 777 dated June 16, 1976. No cracks noted

75-27-08 C/W by inspection. No overlapping or penetrating rivets noted

74-16-08 C/W by inspection IAW Piper S.L. 679 dated January 21, 1974. No crack noted

74-13-03 C/W by installation of AN175C32A corrosion resistant bolts IAW Piper S.L. 772 dated February 16, 1976.

71-12-05 N/A trim switch P/N Not Installed

70-22-02 N/A Not Installed

All of the above work was accomplished IAW Piper aircraft service manual, Lycoming direct drive engines overhaul manual, AC 43.13-1B, and AC 43.13-2A as applicable.

I certify this aircraft has been inspected IAW with an Annual inspection and was determined to be in an airworthy condition.

Thomas M. Rhines 2635721IA November 20, 2018

**Engines**

These are the logbook entries from the overhaul of both engines showing the extensive amount of work completed.

November 20, 2018 Lycoming IO-320-B1A s/n L-4877-55A Engine TSMOH 0.0

Engine major overhaul this date due to high calendar time since overhaul.

1. All steel parts inspected and repaired as necessary by Aircraft Engine and Accessories Inc. of Dallas, Texas under customer number 18251.

2. Crankcase inspected and repaired as necessary by Crankcase Services Inc. of Sand Springs, OK under work order number 29131.

3. Fuel injection system overhauled by Aircraft Carburetor and Injection Service of Texas under work order number 7367.

4. All cylinders overhauled by Sal’s Cylinders Inc. of Prosper, Texas under work order numbers S-5704-(1-4).

5. Magneto’s, starter and alternator overhauled by Select Aircraft Services of Lancaster, Texas under work order numbers 10631-00, 10632-00, 10634-00, 10635-00.

6. Oil cooler overhauled by Pacific Oil Cooler Service Inc. under W.O. number 127983.

7. Engine reassembled with the following NEW parts:

Main bearings SL11020-M03 and SL13884A-M03, rod bearings SL61662A-M03, AEL19600 Vernatherm, AEL19646 crank gear, AEL 74996 idler gear, AEL75072 FP idler gear, AEL61544 fuel pump plunger, SL-STD2213 crank bolt, SL1082-B pressure relief ball, SL61084 pressure relief spring, 4-AEL76220 through bolts, 8-SL78027 rod bolts, 8-SL12186 rod nuts, SL78528 oil pump body/gear/shaft kit, all new SL383-B and SL-STD2090 cylinder hold down nuts, all new gaskets, seals, induction hoses and drain back hoses, 8-UREM40E sparkplugs, Champion M2364 ignition harness, 4-SL75089 pistons, 4-ST203 ring sets, 4-AEL14077-1 piston pins, 4-AEL19001 exhaust valves, 4-74230 exhaust guides, 4-61681 intake guides, 8-AEL11795 valve springs, 8-AEL11800 valve springs and all new valve keepers and exhaust studs.

8. Engine reassembled with the following overhauled parts:

Crankshaft p/n 75008, s/n 32981 M-.003 certified by Aircraft Engine and Accessories under W.O. number 189810, Camshaft p/n 76098, 4-78030 connecting rods, 8-72877 tappet bodies, 8-78290 hydraulic units, 4-69444 and 4-74636 rocker arms, fuel pump p/n 40296 s/n 02YK01, Rapco vacuum pump p/n 211CC s/n 181324, magnetos p/n S4LN-21 s/n A46143 and A46147, alternator p/n ALX-8403 s/n B000013, starter p/n MZ4222 and s/n LM000162, propeller governor p/n F-6-3A and s/n 2080T, oil cooler p/n 8526250 and s/n 72D-424, RSA-5AD1 fuel servo s/n 35528, Flow divider s/n 492B.

9. Installed Type D oil line and installed new steel fitting at front of crankcase for propeller operation IAW Lycoming service instruction 1435.

10. Serviced engine with 7 qts. Aeroshell 100 mineral oil and 48110 filter.

11. Compression check performed. 1-78/80 2-76/80 3-79/80 4-77/80

AD Compliance summary:

2017-16-11 N/A Not Installed

2015-19-07 C/W at engine overhaul IAW Lycoming MSB 342G dated August 29, 2013 and supplements.

2012-03-06 N/A Not Installed

2010-07-08 N/A Not Installed

2009-26-12 N/A Not Installed

2009-02-03 C/W at fuel servo overhaul

2007-04-19R1 N/A Not Installed

2006-12-07 N/A Not Installed

2004-10-14 C/W at engine overhaul IAW Lycoming MSB 475C, dated January 30, 2003

2003-14-03 N/A Not Installed

98-17-11 N/A-engine serial number not listed

98-02-08 N/A-fixed pitch propeller not installed

97-15-11 N/A-new piston pins installed at overhaul

96-23-03 N/A-overhauled fuel pump installed at engine overhaul

96-09-10 N/A-new oil pump kit installed at engine overhaul

95-26-02 N/A-aircraft N number not listed

92-12-05 N/A-new piston pins installed at engine overhaul

90-04-06R1 C/W at engine overhaul by compliance with paragraph C and appendix 2 of AD. Hose replacement due at next overhaul

87-10-06R1 N/A-engine serial number not listed

80-06-05 N/A-Slick magnetos not installed

79-04-05 N/A-fuel servo serial number not listed

78-23-10 N/A-fuel servo part number not listed

75-09-15 C/W at engine overhaul by overhaul of fuel flow divider

75-08-09 N/A-engine serial number not listed

73-23-01 N/A-new piston pins installed at overhaul

73-10-02 N/A-fuel servo overhauled at engine overhaul

All A.D. notes older than 73-10-02 N/A due to manufacture date of engine

I certify this engine has been overhauled IAW Lycoming Direct Drive overhaul manual, applicable Lycoming service instructions, AC 43.13 1B and 2B as applicable.

Engine test run and leak checked satisfactorily. All indications normal.

I certify that this engine has been inspected IAW a 100 hour inspection and is in an airworthy condition.

Thomas M. Rhines 2635721IA November 20, 2018

November 20, 2018 Lycoming LIO-320-B1A s/n L-290-66A Engine TSMOH 0.0

Engine major overhaul this date due to high calendar time since overhaul.

1. All steel parts inspected and repaired as necessary by Aircraft Engine and Accessories Inc. of Dallas, Texas under customer number 18251.

2. Crankcase inspected and repaired as necessary by Crankcase Services Inc. of Sand Springs, OK under work order number 29132.

3. Fuel injection system overhauled by Aircraft Carburetor and Injection Service of Texas under work order number 7366.

4. All cylinders overhauled by Sal’s Cylinders Inc. of Prosper, Texas.

5. Magneto’s, starter and alternator overhauled by Select Aircraft Services of Lancaster, Texas under work order numbers 10629-00, 10630-00, 10633-00, 10636-00.

6. Oil cooler overhauled by Pacific Oil Cooler Service Inc. under W.O. number 127984.

7. Engine reassembled with the following NEW parts:

Main bearings standard SL11020 and SL13884A, rod bearings standard SL61662A, AEL19600 Vernatherm, AEL 74996 idler gear, AEL75072 FP idler gear, AEL61544 fuel pump plunger, SL-STD2213 crank bolt, SL1082-B pressure relief ball, SL61084 pressure relief spring, 4-AEL76220 through bolts, 8-SL78027 rod bolts, 8-SL12186 rod nuts, SL18109A-S oil pump impeller kit, all new SL383-B and SL-STD2090 cylinder hold down nuts, all new gaskets, seals, induction hoses and drain back hoses, 8-UREM40E sparkplugs, Champion M2112 ignition harness, 4-SL75089 pistons, 4-ST203 ring sets, 4-AEL14077-1 piston pins, 4-AEL19001 exhaust valves, 4-74230 exhaust guides, 4-61681 intake guides, 8-AEL11795 valve springs, 8-AEL11800 valve springs and all new valve keepers and exhaust studs.

8. Engine reassembled with the following overhauled parts:

Crankshaft p/n LW10495, s/n A69325 standard dimensions certified by Aircraft Engine and Accessories under W.O. number 189966, Camshaft p/n LW10566, 4-78030 connecting rods, 8-72877 tappet bodies, 8-78290 hydraulic units, 4-69444 and 4-74636 rocker arms, fuel pump p/n 40296 s/n 02UF01, Rapco vacuum pump p/n 212CW s/n 179117, magnetos p/n S4RN-21 s/n A04580 and A04587, alternator p/n ALX-8403 s/n F000062, starter p/n MZ4220R and s/n 5M000011, propeller governor p/n F-6-3AL and s/n C543T, oil cooler p/n 8526250 and s/n 72D-432, RSA-5AD1 fuel servo p/n 2524328-9 and s/n 27152, Flow divider p/n 2524327-2 s/n 484B.

9. Installed Type D oil line and installed new steel fitting at front of crankcase for propeller operation IAW Lycoming service instruction 1435.

10. Serviced engine with 7 qts. Aeroshell 100 mineral oil and 48110 filter.

11. Compression check performed. 1-75/80 2-78/80 3-76/80 4-79/80

AD Compliance summary:

2015-19-07 C/W at engine overhaul IAW Lycoming MSB 342G dated August 29, 2013 and supplements.

2012-03-06 N/A Not Installed 2010-07-08 N/A Not Installed 2009-26-12 N/A Not Installed 2009-02-03 C/W at fuel servo overhaul 2007-04-19R1 N/A Not Installed

2006-12-07 N/A Not Installed

 2004-10-14 C/W at engine overhaul IAW Lycoming MSB 475C, dated January 30, 2003

2003-14-03 N/A Not Installed 98-02-08 N/A-fixed pitch propeller not installed

97-15-11 N/A-new piston pins installed at overhaul 96-23-03 N/A-overhauled fuel pump installed at engine overhaul 96-09-10 N/A-new oil pump kit installed at engine overhaul

92-12-05 N/A-new piston pins installed at engine overhaul

90-04-06R1 C/W at engine overhaul by compliance with paragraph C and appendix 2 of AD. Hose replacement due at next overhaul

87-10-06R1 N/A-engine serial number not listed

79-04-05 N/A-fuel servo serial number not listed

78-23-10 N/A-fuel servo part number not listed

75-08-09 N/A-engine serial number not listed

73-10-02 N/A-fuel servo overhauled at engine overhaul

All A.D. notes older than 73-10-02 N/A due to manufacture date of engine

I certify this engine has been overhauled IAW Lycoming Direct Drive overhaul manual, applicable Lycoming service instructions, AC 43.13 1B and 2B as applicable.

Engine test run and leak checked satisfactorily. All indications normal.

I certify that this engine has been inspected IAW a 100 hour inspection and is in an airworthy condition.

Thomas M. Rhines 2635721IA November 20, 2018

**Propellers**

Both propellers were overhauled by Byam Propeller Service in 2018. The right propeller has two NEW blades purchased from Hartzell Propeller.

**Certification**

This Arapaho was the only Arapaho out of 3 built that had a standard airworthiness certificate. Currently, it is registered as an experimental-exhibition. It has had a conformity inspection by the FAA and meets the TCDS for the PA-40.

***Serious Inquiries and Offers Only***