ENGINE MAINTENANCE RECORDS

Log No. 1

Aircraft Registration No. N555DG

Engine Manufacturer Continental

Model TSIO-520-NB

Serial No. 228473.R

Date installed on aircraft 9/3/13

Time Between Overhauls (TBO) 1600 Hours

If used on multi-engine aircraft:

☐ Right   ☐ Left
## Engine Logbook RH #02

**REG #: PR-GFP Model: TSIO-520NB S/N: 228473R**

### Part II – Register of inspection, maintenance, overhaul.

<table>
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<tr>
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<tbody>
<tr>
<td>TSN: 4399,9 TSO: 66,9 - Start date: 02/23/2015 - Finish date: 03/13/2015</td>
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</tbody>
</table>

1. Installed new vacuum pump P/N: RAP422CW, S/N: DS436, from the right engine S/N: 228473R.

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Accomplished the Annual Maintenance Inspection – valid until 03/13/2016

<table>
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<tbody>
<tr>
<td>TSN: 4424,5 – TSO: 91,5 - Start date: 03/15/2016 - Finish date: 04/01/2016</td>
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Annual Maintenance Inspection and 100Hs inspection – The aircraft is ready to return to service.

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<thead>
<tr>
<th>Page #20/151 – Cia Remasul</th>
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<tbody>
<tr>
<td>TSN: 4424,5 – TSO: 91,5 - Start date: 03/15/2016 - Finish date: 04/01/2016</td>
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Accomplished the Annual Maintenance Inspection – valid until 03/13/2016

<table>
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<tbody>
<tr>
<td>TSN: 4433,2 – TSO: 100,2 - Start date: 10/04/2016 - Finish date: 10/05/2016</td>
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Annual Maintenance Inspection and appendix D – The aircraft is ready to return to service.

<table>
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<tbody>
<tr>
<td>TSN: 4433,2 – TSO: 100,2 - Start date: 10/04/2016 - Finish date: 10/05/2016</td>
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Accomplished the Annual Maintenance Inspection – valid until 10/05/2017
CONTINENTAL TSIO-520-NB Series VII Right S/N 228473-R

Above referenced engine overhauled to new parts limits per FAR 43.2(a)(1)(2) to conform w/Continental SM X-30574A. Applicable AD’s and Service Bulletins C/W at this time. All gears cleaned, polished when required, inspected, magnafluxed, and no cracks found. Finish and dimensional limits within RAM Gear Inspection Specification No. 1818, Rev. K dated 2/08/10. Installed above referenced engine modified to TSIO-520-NB 335 HP per STC SE09104SC-D in right position of Cessna s/n 414A0115. See 337. Installed new RAM camshaft p/n 1058-1A, s/n XC12019 per STC SE09104SC-D. Installed new lifters p/n 658088 (int.) p/n 658077 (exh.). AD 10-11-04 N/A to lifter p/n installed. AD 97-26-17 c/w per installation of overhauled VAR crankshaft p/n 649898, s/n No4CA218 per Continental CSB96-8. C/W ultrasonic inspection per MSB96-10A, due at next overhaul or when crankshaft removed. AD 99-19-01 N/A per crankshaft date of manufacture I/A/W Continental MSB99-3C. AD 2000-23-21 N/A to crankshaft serial number/date of manufacture I/A/W Continental Mandatory Service Bulletin MSB00-5D. Engine assembled with Continental heavy style crankcase p/n 654128-1, s/n L1389128RP. Installed new ECI Titan Nickel cylinders. Installed overhauled prop governor s/n 970020. Installed new Hartzell ScimitarPlus propeller model PHC-C35Y-2UF, s/n EB7675B per STC SA09971SC-D. Propeller balanced per Service Manual with spinner and bulkhead installed. Engine accessories exchanged for overhauled or new units except as noted. Re-used customer's vacuum pump s/n 128993, air conditioner hydraulic pump s/n 8K17RM, landing gear hydraulic pump s/n NSN and tach generator s/n 17144. Installed RAM new turbocharger p/n 2059-1, s/n H-GAL00120. Installed new Hartzell ALV 9610 alternator (weight 12.75 lbs). See weight and balance change entered in P.O.H. Installed General Aviation Modifications, Inc. turboGAM injectors Kt No. GT14D, S/N 23009 per STC SE09286SC. New Slick pressurized magnetos p/n 6320 installed per STC SE4651SW-D and pressurized. Slick Service Bulletin SB3-08A N/A to magneto serial numbers installed. Slick Service Bulletin SB1-12 N/A per S/N. MSB84-8D on magneto timing procedure c/w per timing to STC degree requirements with TDC locator and protractor with pointer. Engine modified to TSIO-520- NB per Continental Service Bulletin M75-6 Rev. 1. Installed modified connecting rods p/n 1162 per STC SE4327SW-D as FAA-PMA approved replacement. Installed RAM FAA-PMA rocker arms p/n 1842-3 and p/n 1842-4. AD 2000-01-16 c/w, see airframe log for details. Installed new Aeropine integral firesleeved fuel, oil and hydraulic hoses meeting TSO-C53A Type D and TSO-C75 Type III. Installed new FAA-PMA oil cooler p/n 8000440, s/n 4082643. Installed RAM FAA-PMA oil cooler baffle p/n 1253-1. C/W AD 78-06-01 per installation of intake tube p/n 642590. C/W AD 89-24-01 R1 per installation of starter adapter p/n 6420854A with current scavenging pump gears. AD 2012-10-13 AND MSB11-48 Starter adapter inspection N/A per p/n installed or manufacture date. Installed .030 inch undersize starter adapter spring p/n S639800M30 per STC SE09846SC. Category 1 thru 3 Continental Service Bulletin Compliance Listing in RAM Manual. Engine serviced with Phillips multi-grade 20W50 Type M mineral oil. See RAM Recommended Oil Grade Maintenance Tip-MT-1 for recommended oils. Installed RAM FAA-PMA spring loaded induction clamps p/n 1170-2. Installed RAM FAA-PMA rocker arm covers p/n 2766-1. Installed RAM FAA-PMA rocker arm cover gaskets p/n 1367-1. Engine ground run on test stand per RAM specifications for 4 hours. Engine pump pressure, idle, mixture, fuel flow, max RPM, manifold pressure, and oil pressure adjusted per RAM Series VII specifications. Engine ground run power test good. All engine systems checked for leaks. Engine approved for return to service for the work performed. Pertinent details on file under Project No. 6849.

RAM Aircraft, Limited Partnership, P.O. Box 5219, Waco, Texas 76708 CRS VA1R551K

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TOTALS—Carry forward to next page
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOTAL TIME IN SERVICE</th>
<th>TOTAL TIME SINCE OVERHAUL</th>
<th>TACH OR RECORDER METER TIME</th>
<th>DESCRIPTION OF WORK PERFORMED—SIGNATURE &amp; CERTIFICATE NO. OF PERSON PERFORMING WORK</th>
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<td><strong>TOTALS</strong> brought forward from previous page</td>
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**TERMO DE ENCERRAMENTO**

Aos 04 dias do mês de FEVEREIRO do ano de 2014, lavra-se o presente TERMO DE ENCERRAMENTO desta caderneta de MOTOR que serviu para escrituração das horas de voo e serviços de manutenção do motor TCM, Modelo TSIO-520-NB. N.º de série 228473R com TSN: 4.365,5 e TSO: 32,5

[Signature]

Ger. Eduardo Ramos Mediero

CANAC 556497/CREA077168-7

**SUB-TOTALS** this page

**TOTALS**—Carry forward to next page
C/W AD72-14-08R1 by leak check of engine compartment flexible hoses. Next due ACTT 3874.9. AD84-26-02 paper induction air filters next due ACTT both engines 4072.5 or condition. AD 16-16-12 is N/A by cylinder serial numbers. C/W AD2000-01-16 Exhaust as follows: Section (B) inspection of both left & right exhaust system, next due hobbs 3052.7, ACTT 3762.7 or 08/03/17, which ever occurs later. Section (C) removed both left & right tailpipes & visually inspected, inspection next due 07/2018. Section (D), next due ACTT 4074.5. C/W Section (E) inspected & pressure tested left & right exhaust system, next due 07/2018. Section (F) is N/A, no multi segmented clamps installed. Section G due 09/2025 or ACTT 6072.5. Changed oil and filter. Cut old filter open to inspect for debris. None found. Installed 12 quarts Aeroshell W100 to sump. Ground run checked. Installed new overboard exhaust pipe lower support clamp. Compression: #1 74/80, #2 76/80, #3 76/80, #4 75/80, #5 72/80, #6 74/80. Replaced alternator out sensor. "I certify that this ENGINE has been inspected in accordance with an ANNUAL inspection per FAR43 appendix D and was determined to be in airworthy condition this date 07/03/17, hobbs time 3002.7, total time 4473.2, TSMO 140.2."

Aircraft Maintenance Specialist, Inc.

07/03/17 N414BL TSIO-520-NB S/N 228473-R Hobbs 3004.0 "RIGHT ENGINE LOG ENTRY"

Removed and replaced air conditioner hydraulic pump with overhauled unit, P/N 24343LAD, S/N 8K16TS, overhauled by Aircraft Accessories of Oklahoma, reference their work order W022815. Ground run checked.

Crystal Air Inc.

8/23/17 N414BL S/N 414A0115 Hobbs 3030.6 Right Engine

At this time changed oil and filter. All work done LAF Cessna 414 MM. I CERTIFY ALL WORK DONE TO BE IN AN AIRWORTHY CONDITION AT THIS TIME.

BRIAN FLIPPO A&P 3784678

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RIGHT ENGINE

Registration
N414BL

Work Order
12955-10-2017

Hobbs
3086.20

Tech
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AFTT
3024.30

Eng Make
Continental

Eng Model
TSIO-520-NB

Eng Serial #
228473-R

Eng TT
4662.70

Eng TSOH
229.70

1. Performed compression check. #1 74-42, #2 77, #3 72, #4 77, #5 92, #6 76
2. Removed, cleaned, inspected, and reinstalled spark plug in cylinders 4 and 6

END

Joe Johnson

841 Ronald Wood Road, Suite B, Windor, GA 30080

2-Nov-17

Date

TOTALS—Carry forward to next page
At this time changed oil and oil filter IAW CSMA 414MM. I CERTIFY ALL WORK DONE TO BE IN AN AIRWORTHY CONDITION AT THIS TIME.

BRIAN FLIPPO A&P 3784678

<table>
<thead>
<tr>
<th>Registration</th>
<th>Work Order</th>
<th>Hobbs</th>
<th>Tech</th>
<th>AFTT</th>
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</thead>
<tbody>
<tr>
<td>N414BL</td>
<td>12975-11-2017</td>
<td>3100.90</td>
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<td>3924.30</td>
</tr>
</tbody>
</table>

Eng Make: Hartzell
Eng Model: TSIO520-NB
Eng Serial #: 222873 R
Eng TT: 4562.70
Eng TSOH: 229.70


END

As work has been performed in accordance with current FAA regulations and applicable maintenance manuals. Details of work performed are on file under work order referenced above. This engine is approved for return to service with regard to work performed.

Thomas Richard Wood II AP 3492599
841 Ronald Wood Road, Suite B, Winder, GA 30680

14-Mar-18


2. Removed, cleaned, inspected, gapped, rotated, reinstalled left engine spark plugs.

END

All work has been performed in accordance with current FAA regulations and applicable maintenance manuals. Details of work performed are on file under work order referenced above. This engine is approved for return to service with regard to work performed.

Joseph A Chinaramo AP 3498679
841 Ronald Wood Road, Suite B, Winder, GA 30680

11-Apr-18


**END**

As work has been performed in accordance with current FAA regulations and applicable maintenance manuals. Details of work performed are on file under work order referenced above. This engine is approved for return to service with regard to work performed.

Joseph A Chinaramo AP 3498679
841 Ronald Wood Road, Suite B, Winder, GA 30680

11-Apr-18

**END**

SUB-TOTALS this page

TOTALS—Carry forward to next page
**RIGHT ENGINE**

- **Registration #**: N414BL
- **AF Serial #**: 414A0115
- **Eng Make**: Continental
- **Eng Model**: TSIO520-NB
- **Eng Serial #**: 228473.8
- **Eng TSOH**: 595.9
- **Work Order #**: 13115

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<td>#1</td>
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</tbody>
</table>

- **Oil Filter Installed**: AA48108-2
- **Oil Qty**: 10 quarts
- **Oil**: Aeroshell W100 Oil
- **Installed new cylinder #1 intake gasket**: T64069

1. Performed an Annual Inspection in accordance with FAR 43 Appendix D.
2. Cleaned, inspected, gapped, rotated, reinstalled spark plugs. Cleaned ignition leads.
4. Performed compression check.

**Search new and recurring Airworthiness Directives using Avanti Tdata. Complied with ADs**

- **Tdata Rev #**: 2018-15

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I certify that this engine has been inspected in accordance with an Annual Inspection per FAA Regulations and applicable maintenance manuals. Details of work performed are on file under work order referenced above. This aircraft is approved to operate with respect to work performed.

**Thomas Richard Wood II**

**AP 34926/9A**

30-Aug-18

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**November 11, 2018**

**Cessna Model 414A N414BL**

**Hourmeter**: 3244.6

**Continental TSIO520 s/n 228473**

**Engine**: 386 SMOH

Change oil, replace filter, take oil analysis. Service with aeroshell 100W oil and one pint of Camguard.

Ground run and leak check satisfactory.

**Chattanooga Aero Service, Inc**

**DX4R144M**
December 12, 2018

Cessna Model 414A N414BL

Hourmeter: 3273.0
Continental TSIO 520 s/n 228473

Engine Time: 414.4 SMOH

Change oil, replace filter. Service with 10qts Phillips 20W50 oil and one pint Camguard. Ground run and leak checked satisfactory.

Chattanooga Aero Service, Inc

DX4R144M

MurfreesboroAviation.com Phone: 615-494-1900 KMBT
Make: Cessna
Model: 414A
S/N: 414A0115
Date: 12/29/18
Engine Log Type: TSIO520NB

Reg. No.: N414BL
Tach Time: 3285.80
S/N: 228473R

Removed Cylinder #1, installed OH assembly CMI 71.4-231-OH SN 77211-14, using gasket set provided w/cylinder from RAM aircraft. RH Exhaust bank installed w/new 628260 gaskets. Installed new 649959 instake gasket on #2 cylinder. All work done IAW Continental and RAM Parts/MX manuals. Ground run leak check ok. Austen Kiser

A&P 3745725

Full Throttle Aviation
2399 Rickenbacker Way
Auburn CA, 95602
530-820-3757
17 January 2019
N. 414BL
TACH: 797.7
RIGHT

1. Performed oil and filter change, installed NEW aa48110-1, SERVICED USING AEROSAHELL 100+
2. Installed all new URH632E spark plugs
3. Installed new hydraulic filter outlet fitting AN833-6
4. Installed overhauled oil sump pan #632876
5. Performed ground run – no defects noted
6. I certify this aircraft and components have been inspected, repaired and maintained in accordance with current manufactures data, guidance and Federal Aviation Regulations and was returned to service only for the work performed
7. Ash Vidal

SUB-TOTALS this page

TOTALS—Carry forward to next page
1. Compressions 1) 70 2) 68 3) 72 4) 75 5) 72 6) 78
2. Performed oil and filter change - removed and inspected filter, installed new AA48108-1, serviced using 100+
3. Adjusted engine to magneto timing to 23°
4. Cleaned spark plugs, reinstalled using new M674 base gaskets, torqued to 25ft lb
5. Cleaned fuel injectors
6. Cleaned fuel screens
7. Cleaned induction air filter
8. Removed propeller heat brush blocks - reinstalled and performed ops check - no defects noted
9. AD's verified through 2020-04
Completed an Annual / 100 hour inspection in accordance with Appendix "D" to Part 43. The aircraft and components were inspected and repaired in accordance with the current rules of the Federal Aviation Regulations and found to be Airworthy and was returned to service only for the work performed.
10. Ash Vidal AP2925590

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