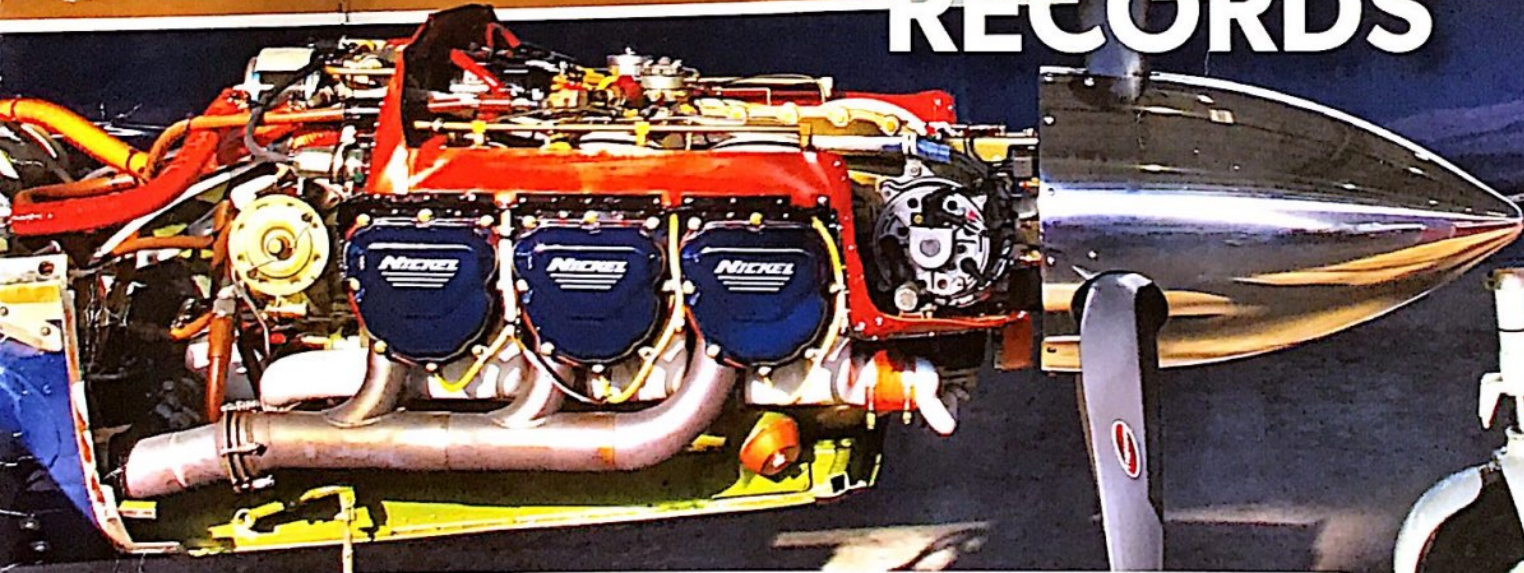


RAM AIRCRAFT
The Engine Specialist
FOR CESSNA, BEECHCRAFT, & CIRRUS AIRCRAFT



INSPECTION

SALES



Aircraft Registration _____
Engine Position *Right* _____
Engine Serial No. *610222* _____



ENGINE MAINTENANCE RECORDS

Log No. _____

Aircraft Registration No. N4215m

Engine Manufacturer Continental

Model GTS10-520-A

Serial No. 610222

Date installed on aircraft 3-3-14

Time Between Overhauls (TBO) 1600 Hours

If used on multi-engine aircraft:

Right

Left

Waco Regional Airport • P.O. Box 5219 • Waco, Texas 76708
Phone: (254) 752-8381 Fax: 254-752-3307
www.ramaircraft.com

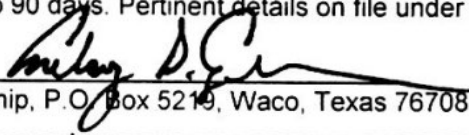
DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATION NO. OF PERSON PERFORMING WORK
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Date	Total Time In Service	Total Time Since Overhaul	Tach or Recording Meter Time
2/22/16	8399.1	0.0	290.7



CONTINENTAL GTSIO-520-N Right Engine S/N 610222

Above referenced engine overhauled to new parts limits per FAR 43.2(a)(1)(2) to conform w/ CMI SM X-30045. 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. L, dated 12-26-2013. Above referenced engine modified per STC SE8338SW-D. Installed new RAM camshaft p/n 2621-1, s/n XGA14005 as direct PMA replacement of Continental camshaft. Installed lifters p/n SA628488 int. p/n SA646277 exh. AD 10-11-04 n/a to lifter p/n installed. Installed overhauled VAR crankshaft p/n 653020 s/n C199202N. Ultrasonic inspection C/W per MSB96-10B, due at next overhaul or when removed. CMI GTSIO-520 series engine crankshaft counterweights, p/n 652833-OH are repaired in accordance with FAA approved procedures per RAM Drawing 2618, Rev. B, dated 10-21-05. Instructions for Continued Airworthiness: Remove p/n 652833-OH counterweights at next engine overhaul and replace with new per TCM SB00-3A, or later FAA approved revision, except if repaired by RAM Aircraft, Limited Partnership per latest FAA approved revision of RAM Drawing 2618. Contact RAM Aircraft, L.P. at 7505 Karl May Drive, Waco TX 76708, or (254)752-8381 for replacement parts or service difficulties. AD 99-19-01 n/a per crankshaft date of manufacture I/A/W TCM MSB99-6A. Engine assembled with overhauled CMI heavy style crankcase p/n 654119-11, s/n R051A024. Installed new CMI steel cylinders. Installed new RAM/FAA/PMA fuel nozzles p/n 2563-19A. TCM Service Bulletin SB06-1A N/A per installation of RAM fuel nozzles. Installed overhauled oil cooler p/n 8000464, s/n 3859445. Engine accessories exchanged for overhauled or new units with exception of tach generator s/n 1268, vacuum pump s/n C4008, and hydraulic pump s/n 2547 which were installed with previous time in service. Installed new Hartzell ALV 9610 alternator (weight 12.75 lbs.) This will require a weight and balance change. C/W TCM CSB 04-5A per Capacitor replacement at overhaul. CSB 02-8 N/A per capacitor with red insulator installed. MSB94-8D on magneto timing procedure c/w per timing to data plate TC degree requirements with TDC locator and protractor with pointer. Engine modified to GTSIO-520-N per Continental Service Bulletin M-75-6 Rev. 1. Installed rocker arms p/n 1654-1 and -2. Starter adapter shaftgear and crankshaft gear inspection, AD 2007-05-15 c/w per TCM Service Bulletin MSB94-4G Part 5 per installation of Service Kit EQ6642 with bushing p/n 654472. Damper backlash inspection per Part 2 due in 100 flight hours. Visual inspection of crankshaft gear and starter adapter shaftgear due per Part 3 in 400 flight hours. Category 1 thru 3 CMI Service Bulletin Compliance Listing in RAM Manual. Relocated turbo oil supply line per RAM Dwg. No. 1224, Rev H, dated 11-18-03 per STC SE8338SW-D. AD 87-04-05 c/w at overhaul. Installed RAM/FAA/PMA spring loaded induction clamps p/n 1170-1. Installed RAM-FAA-PMA rocker box cover gaskets p/n 1366-1. Engine ground run on test stand per RAM specifications for 4 hours. Engine run-in with Aeroshell 100 Mineral oil. See RAM Recommended Oil Grade Maintenance Tip MT-1 for recommended oils. Engine approved for return to service for the work performed. Engine preserved per Service Bulletin SIL99-1 temp. storage up to 90 days. Pertinent details on file under Project No. 7968.


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

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Date	Total Time In Service	Total Time Since Overhaul	Tach or Recording Meter Time
3-3-16	8399.1	0.0	290.7



CONTINENTAL GTSIO-520-N Right Engine S/N 610222

Installed above referenced engine in right position of Cessna S/N 421C1213. Cleaned, inspected and reinstalled existing exhaust. Complied with AD 2001-01-16 by visual inspection per paragraph (b) and (c). Complied with paragraph (e) by visual inspection and pressure test of right exhaust system. Installed overhauled turbocharger p/n 465930-9003, s/n H-SKR00047. Installed overhauled wastegate p/n 481064-9001, s/n ZJO11322. Installed overhauled pressure relief valve p/n 1020-1, s/n 021784. Installed overhauled throttle and control assembly p/n 6423896A7, s/n L189730AR. Installed overhauled governor, s/n 980052. Propeller s/n 812973 flushed and reinstalled. Flushed and re-used lines and hoses. Engine serviced with Aeroshell 100 mineral oil. Engine fuel pressure, fuel flow, maximum RPM, manifold pressure and oil pressure adjusted per Continental and Cessna Manuals. Engine ground run power test good. All engine systems checked for leaks. Engine approved for return to service for work performed. Pertinent details on file under Project No. 7979.

William Robert Per 00319017 IA

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

Date	Total Time In Service	Total Time Since Overhaul	Recording Meter Time
3-21-2016	8409.8	10.7	301.4



Continental GTSIO-520-N Right Engine S/N 610222

On above referenced engine installed new No.4 EGT probe and No.1 CHT probe. Adjusted takeoff RPM and manifold pressure, oil pressure and fuel pump pressure/ flow per Continental and Cessna specifications. Pertinent details on file under Project No. 8005.

Robert Frank

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

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
04-08-2016

Hobbs: 317.7
RIGHT ENGINE LOG

N42ISM
GTSIO 520-N
S/N: 610222
TSMOH: 27.0

- Combined Operation #1 and #2 together and completed each inspection IAW Cessna Progressive Care Maintenance Program.
- Changed the oil and filter by removing the break in oil and servicing with 12 quarts of Aeroshell 100 Plus oil and CH48109 filter. Replaced the crush washer. Took an oil sample.
- Secured a piece of baffle above the #1 cylinder
- Engine was test ran and leak checked then performance ran.
- I certify this engine was inspected IAW Cessna Progressive Care Maintenance Program Operational Check #1, #2 and was in airworthy condition.

Michael Koontz *[Signature]* I/A 3799094

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TOTALS—Carry forward to next page

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
05-31-2016

Hobbs: 343.1
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 610222
TSMOH: 52.4

DATE

- Changed the oil and filter serviced with 12 quarts of Aeroshell 100 Plus oil and CH48109 filter Replaced the crush washer.
- Took an oil sample
- Engine was test ran and leak checked then performance ran

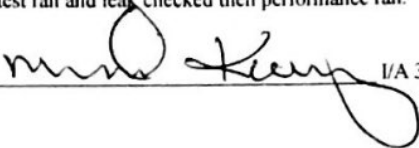
Michael Koontz  I/A 3799094

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
08-04-2016

Hobbs: 364.7
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 610222
TSMOH: 74.0

- Changed the oil and filter serviced with 12 quarts of Aeroshell W100WP oil and CH48109-1 filter.
- Took an oil sample.
- Replaced the #3 EGT probe with new.
- Engine was test ran and leak checked then performance ran.

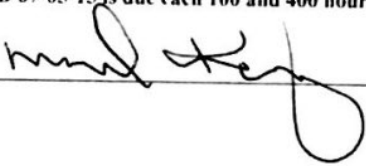
Michael Koontz  I/A 3799094

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
10-10-2016

Hobbs: 383.1
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 610222
TSMOH: 92.4

- Replaced the starter with an overhauled unit from Ram Aircraft. P/N MHJ 4003SR. S/N off H-Q070229 S/N on H-Q070945. Starter was installed with a new o-ring and tested several times then test ran and leak checked.
- Removed the propeller governor and sent to American propellers for bench test. Installed after bench test Checked out to be good. Installed the cable and checked the rigging. P/N DCFS290D9C/T6 S/N: 980052.
- Complied with AD 07-05-15 Starter Adapter Assembly and Crankshaft Gear Inspection By C/W part 2 and Part 3. Of SB MSB 94-4G. Part 2 C/W By measuring the damper gear backlash in four places. All were .03 inches and under the maximum .06 inches. C/W Part 3 by removing the starter adapter and inspecting the adapter gear and crankshaft gear for wear. Both are okay at this time. Installed adapter and starter with new gasket and o-ring. Engine was then test ran and performed a test flight found no leaks. The engine performed normally. Part 2 is due again in 100 hours or at a tach time of 483.1. Part 3 is due again in 400 hours or a tach time of 783.1.
- This AD 07-05-15 is due each 100 and 400 hours TIS, or after a rough running engine has been established.

Michael Koontz  I/A 3799094

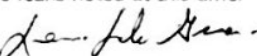
EGA Aviation Inc.
2642 Airport Dr.
N. Las Vegas, NV. 89032
(702) 683-7507
R/H Engine Logbook
WO# 2338

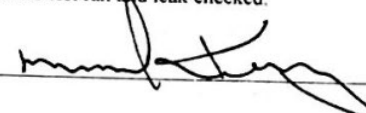
N421SM
Tach: 0389.9


25 Oct. 2016
TTSMO: 0099.2

Trouble shoot R/H alternator inop. Insp. found broken F1 terminal. Installed new F1 terminal and secured. Installed missing cotter pin to inbd. exhaust mount bolt. Found loose case bolt. Tightened nut with new clamp holding prop De-Ice cables. Post maint. run up indicates all ops normal and no leaks noted at this time.

Aircraft returned to service


Lennie John Guerin 21483690 A/P IA

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATION NO. OF PERSON PERFORMING WORK
				TOTALS brought forward from previous page
				<p>GENERAL AVIATION 340 WITHERSPOON WAY EL CAJON CA 92020 11-09-2016</p> <p style="text-align: center;">Hobbs: 393.4 RIGHT ENGINE LOG</p> <p style="text-align: right;">N42ISM GTSIO 520-N S/N: 610222 TSMOH: 107.8</p> <ul style="list-style-type: none"> • Changed the oil and filter with 12 quarts of Aeroshell W100 Plus oil and a CH-48109 filter • Took an oil sample. • Engine was test ran and leak checked. <p>Michael Koontz  I/A 3799094</p>

				<p>GENERAL AVIATION 340 WITHERSPOON WAY EL CAJON CA 92020 01-15-2017</p> <p style="text-align: center;">Hobbs: 405.7 RIGHT ENGINE LOG</p> <p style="text-align: right;">N42ISM GTSIO 520-N S/N: 610222 TSMOH: 115.0</p> <ul style="list-style-type: none"> • Performed Operation #3 and #4 IAW Cessna 421C progressive care program. • Performed a cylinder differential pressure test of cylinders. #1 78 #2 72 #3 78 #4 79 #5 40 #6 70 • Removed Right Engine #5 Cylinder and installed a warrantee cylinder from Ram Aircraft. • Changed the oil and filter to Aeroshell 100 straight mineral oil for break in and CH 48109-1 filter. • Removed Alternator, drive and sent back to Ram for bench test. Returned with no discrepancies. Installed • Back on engine. Test flew the aircraft and the right alternator was still going offline at high RPM. Swapped • alternators and installed a warrantee Drive Gear on the now left alternator and sent the original drive back to Ram. • Replaced the terminal end on the ground wire to the airframe and the AUX wire terminal end. • AD 07-05-15 Starter Adapter Assembly and Crankshaft Gear inspection Part 2 is due. C/W MSB 94-4G part2 By measuring the gear backlash. #1. .03 #2 .03 #3 .03 #4. 03. Next due in 100.0 hours or Hobbs time of 505.7. Part 3 of • MSB 94-4 G is due for inspection every 400 hours and is due again at 783 Hobbs time. • Checked the magneto timing • I certify this Right Engine was inspected IAW Operational 3 and 4 Cessna progressive care Program and was in airworthy condition. <p>Michael Koontz  I/A 3799094</p>
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ENGINE MODEL: GTSIO-520-N
 ENGINE S/N (R): 610222
 REG. NO: N42ISM
 WORK ORDER: 20170220-1M



Hangar One Avionics
 Repair Station No 1HGR058B
 2026 Palomar Airport Road
 Carlsbad, CA 92011
 Phone: 760-929-2270

DATE: 2/24/2017
 A/C TSN:
 ENG TT (R):
 HOBBS: 412

Right Engine Entries

Drained oil and removed filter, cut open filter and found no contaminants, installed new oil filter P/N CH48109-1, new drain plug gasket P/N MS35769-11 and serviced engine with 13 qts of ASW100 "Plus" oil.

Ground run, operational and leak check satisfactory.

This aircraft, airframe, or appliance identified above has been repaired and/or inspected in accordance with current Regulations of the Federal Aviation Administration and Manufacturer data and is approved for return to service.

DATE: 2/24/2017

SIGNED:


 Mike Clingerman
 Certified Repair Station No 1HGR058B

Work Order: 20170220-1M

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SUB-TOTALS this page

TOTALS—Carry forward to next page

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE	TACH OR RECORDING	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATION NO. OF PERSON PERFORMING WORK
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ENGINE MODEL GTSIO-520-N
ENGINE S/N (R) 610222
REG NO N421SM
WORK ORDER 20170724-1M



Hangar One Avionics
Repair Station No 1HGR058B
2026 Palomar Airport Road
Carlsbad, CA 92011
Phone 760-929-2270

DATE 12/12/2017
A/C TSN 4500
ENG TT (R) 85425
HOBBS 434 1

TSMOH: 143.4

Right Engine Entries

Completed Annual Inspection IAW FAR 43 Appendix "D" and the Cessna Inspection Time Limits Chart as a guide.

Right Engine Complied with AD# 2007-05-15 (Backlash of viscous damper and shaft gear) by completing part 2 of TCM MSB94-4G. Compliance with this part of the AD due each 100 hours or annual inspection, whichever occurs first. No discrepancies noted.

CW TCM SB03-3; Borescope revealed normal indications for in-service cylinders. Performed a differential compression check as follows: 1) 76/80, 2) 75/80, 3) 71/80, 4) 74/80, 5) 76/80, 6) 71/80. NOTE: Continental Calibrated Orifice Tool = 48/80

Replaced all spark plugs with new Tempest plugs 12 ea. P/N URHB32E.

Removed all fuel injector nozzles. The nozzle in cylinder #4 fragmented upon removal. Cleaned remaining nozzles in ultrasonic cleaner, then reinstalled those nozzles and one new nozzle P/N 2563-19A, IAW TCM SB 06-1A and RAM Aircraft fuel injector nozzle installation recommendations, utilizing new 6 ea. compression seals P/N 633958-3, 6 ea. seals P/N 640612, 2 ea. compression seals P/N 633958-5, 6 ea. washers P/N X1473, 6 ea. washers P/N 628556, and 12 ea. o-rings P/N 630979-9.

Removed, cleaned, inspected fuel metering screen, then reinstalled utilizing new gasket P/N 649983.

Timed both magnetos to engine utilizing spark advance per engine data plate.

Drained oil and removed filter, cut open filter - found small quantity of ferrous metal in filter pleats. See below for more information. Installed new oil filter P/N CH48109-1, new drain plug gasket P/N MS35769-11, and serviced engine with 13 qts of Aeroshell ASW100 "Plus" oil.

Reset Idle to 750RPM. Idle mixture reset to 20 to 30 Rise at 600RPM and 10 Rise at 1300RPM per the Cessna 421C MM.

Secured flow divider fuel hose at Hydraulic pump "B" nut to prevent chafing.

Secured rigid line from intake manifold and flow divider rigid vent line to prevent chafing.

Removed upper half of collector assembly heat shield, repaired broken mounting bracket, then reinstalled heat shield.

Due to the discovery of ferrous contaminants in the oil filter pleats, the following actions were taken: Removed all lifters from RH Engine for inspection of the cam and lifters, per RAM tech support. Inspected lifters per TCM SID05-1B. Found significant spalling on the #1 exhaust lifter. Found minor spalling on additional 5 lifters, sent pictures and alerted RAM of our findings of all 12 lifters. Rotated crank flange (with prop removed) and inspected #1 exhaust cam lobe per TCM SID05-1B. In reference to page 10 of 12 para (2), found small rough area and determined per TCM SID05-1B that no further action was required. In reference to page 11 of 12 para (3) figure 12, no cracking was found on the cam. Sent pictures and alerted RAM of our findings of the #1 exhaust cam lobe. RAM requested no further inspection of the cam, to replace 6 lifters, and continue service for a recheck of the filter in 10-15 Flight Hours. Replaced 6ea lifters per RAM request using Warranty exchange parts 3ea P/N SA628488 and 3ea P/N SA646277, collapsed remaining 6 lifters and coated face of lifters with 2076675 Molycoat per TCM SID05-1B, reassembled with new pushrod seals P/Ns 630286 and 534610. Installed all new rocker arm retaining clips P/N 501868, cleaned gasket mating surfaces and installed new rocker cover gaskets P/N 655705, all work in accordance with the TCM MM and SID05-1B. Ground run up / leak check satisfactory.

Disassembled, cleaned and reinstalled RH throttle arm assembly on fuel metering unit and rigged properly.

I certify that this ENGINE has been inspected in accordance with an Annual Inspection and was determined to be in airworthy condition --end--

This aircraft, airframe, or appliance identified above has been repaired and/or inspected in accordance with current Regulations of the Federal Aviation Administration and Manufacturer data and is approved for return to service.

DATE: 12/12/2017

SIGNED:

Mike Clingerman
Certified Repair Station No 1HGR058B

Work Order: 20170724-1M

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SUB-TOTALS this page

TOTALS—Carry forward to next page

*Previous
R-Hand Engine
Replaced 7-20-2015*



ENGINE MAINTENANCE RECORDS

Log No. 1

Aircraft Registration No. N876DS

Engine Manufacturer TCM

Model GTS10-520-N

Serial No. 243140-H

Date installed on aircraft 6-8-06

Time Between Overhauls (TBO) 1,600 Hours

If used on multi-engine aircraft:

Right Left

254/752-8381

Waco Regional Airport • P.O. Box 5219 • Waco, Texas 76708

FAX 254-752-3307

1-800-445-9713

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DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
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RAM Aircraft, Limited Partnership • Waco Regional Airport

Engine Previous Total: 4057.0
 Hour Meter: 84.0
 Since Major Overhaul: 00.0
 Propeller Total SMOH: 644.0
 Date: 06-08-06

TCM GTSIO-520-N Right Engine S/N 243140-H

Above referenced engine overhauled to new parts limits per FAR 43.2 (a) (1) (2) to conform w/TCM SM X-30045A and I/A/W STC SE8338SW. 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. F dated 7/6/05. Installed above referenced engine in right position of Cessna S/N 421C1213. Installed new camshaft p/n 653056 s/n Z06AA261. Installed overhauled VAR crankshaft P/N 652832 S/N A835. Ultrasonic inspection C/W per MSB96-10 and is due at next overhaul or when crankshaft removed. TCM GTSIO-520 series engine crankshaft counterweights, P/N 652833-OH are repaired in accordance with FAA approved procedures per RAM Drawing 2618, Rev. B, dated 11-15-05. Instructions for Continued Airworthiness: Remove P/N 652833-OH counterweights at next engine overhaul and replace with new per TCM SB00-3A, or later FAA approved revision, except if repaired by RAM Aircraft, Limited Partnership per latest FAA approved revision of RAM Drawing 2618. Contact RAM Aircraft, L.P. at 7505 Karl May Drive, Waco TX 76708, or (254) 752-8381 for replacement parts or service difficulties. AD 99-19-01 N/A per crankshaft date of manufacture I/A/W TCM CSB99-6A. Engine assembled with new TCM heavy style crankcase P/N 656935-12AI, S/N R05JA428. Installed new ECI cylinders. Cylinder hold-down nuts replaced and torqued per Overhaul Manual Supplement. AD 86-13-04 R3 and AD 93-10-03 (MSB93-12) are N/A per cylinders installed. Re-installed McCauley propeller model 3FF32C501, S/N 812973. Engine accessories exchanged for overhauled or new units except as noted. Re-used customer's prop governor S/N 900097, tach generator, S/N 282 and vacuum pump S/N 7909. Installed new landing gear hydraulic pump S/N 2271 and air conditioner hydraulic pump S/N R020711TS. Installed factory rebuilt turbocharger P/N 465930-9003, S/N JAR00272. Installed new RAM/FAA/PMA fuel nozzles P/N 2563-19A. TCM Service Bulletin SB06-1 N/A per installation of RAM fuel nozzles. MSB94-8A on magneto timing procedure C/W per timing to data plate TC degree requirements with TDC locator and protractor with pointer. Engine modified to GTSIO-520-N per Continental Service Bulletin M-75-6 Rev. 1. Installed RAM/FAA/PMA rocker arms P/N 1654-1 and -2. Cadmium plating of engine hardware and associated lines and fittings per QQ-P-416C Class 2, Type II. AD 2000-01-16 C/W, see airframe log for details. Installed new Aeroquip integral firesleeved fuel, oil and hydraulic hoses meeting TSO-C53A Type D and TSO-C75 Type III. Installed new RAM/FAA/PMA oil cooler P/N 2601-1, S/N 1751010. Exhaust slip joints modified per STC SA4592SW. C/W AD 79-05-09 per installation of new current design oil pressure plunger assy. Starter adapter shaftgear and crankshaft gear inspection, AD 2005-20-04 C/W per TCM Service Bulletin MSB94-4G per installation of Service Kit EQ6642 with bushing P/N 654472. Category 1 thru 3 TCM Service Bulletin Compliance Listing in RAM Manual. Relocated turbo oil supply line per RAM Dwg No. 1224, Rev. H, dated 11-18-03 per STC SE8338SW. Engine serviced with Phillips multi-grade 20W50 Type M mineral oil. See RAM Recommended Oil Grade Maintenance Tip MT-1 for recommended oils. Above referenced engine eligible for 1600 hr TBO per TCM SIL98-9, Rev. A. CSB02-8 N/A per capacitor with red insulator installed. C/W TCM CSB04-5 per capacitor ground stud torque check. AD 82-13-01 (Bendix Magnetos) is N/A per Kelly Aerospace overhauled magnetos installed. Unpainted aluminum alloy engine parts were coated per RAM/FAA/PMA rocker box cover gaskets RAM/FAA/PMA spring loaded induction clamps P/N 1170-1. Installed RAM/FAA/PMA rocker box cover gaskets P/N 1366-1. Engine ground run on test stand per RAM specifications for 3 hours. Engine pump pressure, idle, mixture, fuel flow, max rpm manifold pressure and oil pressure adjusted per TCM SID97-3C. 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. 2714.

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

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TOTALS—Carry forward to next page

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
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TOTALS brought forward from previous page

Make: CESSNA Model: 421C Date: 7/7/2006
 Registration: N876DS Serial #: 421C-1213 Total Hours: 0
 Right Engine Engine Total 0 Tach: 121.9
 Ser #: Hours: TTSMOH:

Change oil and filter. Cut and inspect filter for metal none noted, Install new CH48108-1 oil filter and serviced with 12 qts Aeroshell 100W oil. Engine ground run and leak checked. I certify this engine has been inspected/or repaired in accordance with Federal Aviation Regulations and determined to be in airworthy condition with respect to work performed and is hereby returned to service.

Seth Dunn *[Signature]* A & P: 539111687



RAM Aircraft, Limited Partnership • Waco Regional Airport

Hour Meter: 168.3
 SMOH: 84.3
 Date: 08-07-06

TCM GTSIO-520-N Right Engine S/N 243140-H

On above referenced engine installed overhauled turbo controller p/n 470836-9003, s/n TIR0201P with new gasket. Serviced with 12 qts. Aeroshell 100W oil and new CH48109 oil filter. C/W AD 2000-01-16 para (b) by visual inspection and found to be serviceable at this time. Due again in 50 hours TIS or 30 calendar days, whichever occurs later. Test flight for leak check and proper operation satisfactory. Engine approved for return to service for maintenance performed. Pertinent details are on file under Project No. 2869.

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

Make: CESSNA Model: 421C Date: 8/31/2006
 Registration: N876DS Serial #: 421C-1213 Total Hours: 0
 Right Engine Engine Total 0 Tach: 196.2
 Ser #: Hours: TTSMOH:

Change oil and filters, cut and inspect filter no metal found, Install new CH48108-1 filter and service with 12 qts Aeroshell 100W50 oil engine ground run and leak checked. I certify this engine has been repaired and/or inspected in accordance with current Federal Aviation Regulations and determined to be in airworthy condition with respect to work performed and is hereby returned to service.

Seth Dunn *[Signature]* A & P: 539111687

SUB-TOTALS this page

TOTALS—Carry forward to next page

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
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TOTALS brought forward from previous page

Make:	CESSNA	Model:	421C	Date::	4/13/2007
Registration:	N876DS	Serial #:	421C-1213	Total Hours:	3204.6
Right Engine Ser #:	243140-H	Engine Total Hours:	4342.6	Tach:	392.5
				TTSMOH:	285.6

Perform annual inspection AD's checked thru BW2007-07. Compressions #1 60/80 #2 76/80 #3 76/80 #4 74/80 #5 70/80 #6 72/80, Repair #4 bottom lead, Clean gap and test plugs, Install new RHB32S spark plug #6 Top plug due to cracked ceramic Changed oil cut and inspect filter no metal found install new CH 48111-1 filter and serviced with 12qts Aeroshell 100W oil, C/W AD# 2007-5-15 per TCM MSB94-4G inspection of starter adapter part 2 measured as follows .020, .020, .030, .020 found within limits due again in 100 hrs part 3 due at 400 hours TIS, Wash engine ground run ops and leak checked. I certify this engine has been inspected and/or repaired in accordance with current Federal Aviation Regulations and is determined to be in airworthy condition and is hereby returned to service with respect to work performed

Joseph Brown

IA: 2226812



353 Airport Rd.
Tyler Texas 75704

Date: 5/1/08
HM: 689.7
SMOH: 562.8

N876DS Eng. Log

Performed an annual inspection and accomplished the following:

1. Compression Ck. 1)78 2)78 3)79 4)765)78 6)79 over 80.
2. Changed oil and filter, serviced with Shell 15W50.
3. Repair broke wire on the alternator..
4. Replaced the noise filter on the alternator.
5. C/W AD 2007-05-15 per MSB94-46 part 2 measurements .020 .020 .030 .020.
6. C/W 2000-01-16 par (b) (c) (d) (e)
7. Complete AD list is in the Log Folder.

I certify this engine has been inspected in accordance with an annual inspection and was found to be in airworthy condition.

Rex Johnson
A&P31293141A

Clear Star Aviation

4765 Frank Luke Drive
Addison, TX 75001
(972) 267-2376

Date: 7/24/2008; Aircraft: N876DS; Type: Cessna 421C; S/N: 421C1213; Hobbs: 798.5; Engine 1 Type: GTSIO-520 M1N, S/N: 623572-R; Engine 2, Type: GTSIO-520 M0N, S/N: 243140-H

Engine time and TSMOH Unknown
A general visual inspection of the RH engine was accomplished. The compression was checked with the following results: #1: 72/80, #2: 73/80, #3: 78/80, #4: 72/80, #5: 76/80, #6: 73/80. All of the spark plugs were cleaned, gapped, rotated and tested. One new, customer supplied spark plug, P/N URHB32S, was installed. The magneto timing to the engine was checked in accordance with TCM MSB 94-8C.

THE PREVIOUSLY DESCRIBED WORK WAS PERFORMED AND INSPECTED IN ACCORDNCE WITH CURRENT RULES OF THE FEDERAL AVIATION ADMINISTRATION AND IS APPROVED FOR RETURN TO SERVICE.

SIGNATURE: _____

Russell Martin A&P 2798096 IA

TOTALS—Carry forward to next page

DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
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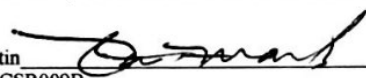
Clear Star Aviation LLC
 4765 Frank Luke Dr., Addison, Texas 75001
 972-267-2376
 FAA CRS 5CSR009B

N876DS Cessna 421C S/N 421C1213 Hobbs 973.1 TT 3756.5
 Engine: TCM GTSIO 520-N S/N 243140-H
 03-02-2009 TSMOH 948.7.
 Work Order: 112026

RH ENGINE: TCM ENGINE: TCM GTSIO-520-N S/N 243140-H

This Engine was inspected in accordance with a 100 hour inspection; FAR Part 43 Appendix D in scope and detail to items applicable to this aircraft, the TCM 100 hour checklist and the Cessna 421C Series Maintenance Manual, P/N D2515-22-13 (AF) and revisions, Chapter 2. The cylinder compression was checked with the following results: #1, 66/80. #3, 66/80. #5, 66/80. #2, 10/80. #4, 65/80. #6, 67/80 psi. The oil and filter was changed and serviced with 13 quarts of Phillips 15W-50 oil and a CH48108-1 filter. An oil sample was collected for analysis by Aviation Oil Analysis of Phoenix, AZ. All spark plugs, P/N XLURHB32S were replaced and installed with new gaskets. Both Magnetos were inspected in accordance with TCM SB643, 500 hour inspection. The points, P/N 10-382584, condensers, P/N 10-400615, and carbon brushes, P/N 10-160844 were replaced. The magnetos were re-installed on the engine with new gaskets, P/N 534750 and timed in accordance with TCM MSB 94-8C. The #2 cylinder, S/N AEC 654966, was removed and re-installed after repair by Sal's Aircraft Cylinders using new gaskets and seals. The #6 exhaust riser P/N 9910295-33 was replaced due to cracking. AD 2007-05-15, Starter adapter inspection, was complied with. ***See attached AD summary for recurring time requirements required by this AD***. See the aircraft log this date for prop governor and tach drive overhauls. The engine controls were inspected in accordance with TCM SB95-2. This engine was ground run to verify performance criteria and inspected for any fluid leaks. All Airworthiness Directives were researched, complied with, recorded and added to the permanent Engine records.

Russell Martin
 FAA CRS 5CSR009B

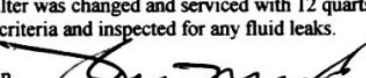


N876DS Cessna 421C S/N 421C1213 Hobbs 997.8 TT 3781.2
 Engine: TCM GTSIO 520-N S/N 243140-H
 03-23-2009 TSMOH 973.4
 Work Order: Owner/Operator

RH ENGINE: TCM ENGINE: TCM GTSIO-520-N S/N 243140-H

The following maintenance was inspected after being performed by the owner/operator. The oil and filter was changed and serviced with 12 quarts of Phillips 15W-50 oil and a CH48108-1 filter. This engine was ground run to verify performance criteria and inspected for any fluid leaks.

Russell Martin
 A&P 2798096 IA



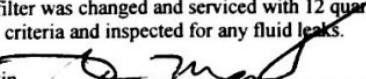
(DP)
 48109-1

N876DS Cessna 421C S/N 421C1213 Hobbs 1027.4 TT 3810.8
 Engine: TCM GTSIO 520-N S/N 243140-H
 04-08-2009 TSMOH 1003.0
 Work Order: Owner/Operator

RH ENGINE: TCM ENGINE: TCM GTSIO-520-N S/N 243140-H

The following maintenance was inspected after being performed by the owner/operator. The oil and filter was changed and serviced with 12 quarts of Phillips 15W-50 oil and a CH48109-1 filter. This engine was ground run to verify performance criteria and inspected for any fluid leaks.

Russell Martin
 A&P 2798096 IA



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DATE	TOTAL TIME IN SERVICE	TOTAL TIME SINCE OVERHAUL	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
				TOTALS brought forward from previous page
5-18-09			1055.6	OIL AND FILTER CHANGE PHILLIPS 20W50 48109-1 FILTER DON FONTANA (DF) (OWNER)
6-18-09			1086.1	OIL AND FILTER CHANGE PHILLIPS 20W50 48109-1 FILTER DON FONTANA (DF) (OWNER)

N876DS Cessna Model: 421C S/N: 1213 Hobbs: 1125.6 Date: 08/03/2009

Installed Chadwick Vibrex 2000 balancing gear serial number 2327 calibration date of 02/03/2009. Performed balance check on #1 Engine McCouley propeller. Initial balance reading was at 0.51 ips at clock angle 6:06. Made weight change to Spinner bulk head, added 24gm at 11:00 with final reading being at 0.13 ips at 6:45. Removed balancing equipment. This Engine, Propeller, and Spinner combination was found to be in an airworthy condition as to the work performed above and is returned to service-END-

Michael P. Satterfield 2791213 A&P; IA
For HeliSquad

SEE BINDERS FOR MAINT BETWEEN 2009. 14



N421SM CESSNA 421C S/N 1213 HOBBS 84.9

Performed The Following Maintenance Actions:

1. Replaced R/H engine cylinder #3 Exhaust Gas Temperature(EGT) probe P/N 081-000039. Performed satisfactory operational test.

This aircraft and/or component has been repaired and inspected in accordance with current Federal Air Regulations and was found to be in an airworthy condition with respect to the work performed and is approved for return to service.

Signed  W.O# 17978 Dated 23/Jan/2015

Erik Lavbourne-Designated Inspector
MARTIN AVIATION, MAINTENANCE
 19300 IKE JONES ROAD, SANTA ANA, CA 92707
 RS CERT.#M8VR406N

Air 88 Inc. dba CROWNAIR
FAA Approved Repair Station #CWNR273K
 3753 John J. Montgomery Dr.
 San Diego, CA 92123

N421SM
1-27-15

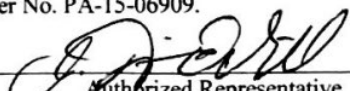
Cessna 421C
Hobbs: 80.3 Hrs

S/N: 421C1213

Maintenance Performed:

- Customer reports R/H engine loses 1" of MAP every 1000' at 8000'. Removed R/H engine cowling and found induction hose split. Removed and replaced induction hose with customer supplied new induction hose P/N 641739. Installed new self-locking nuts on band clamps and torqued. Reinstalled R/H engine cowling.
- Removed L/H engine cowling, inspected induction hose and found it was installed improperly. Removed and reinstalled induction hose properly and torqued and safetied induction manifold mounting hardware. Installed new self-locking nuts on band clamps and torqued. Reinstalled L/H engine cowling.

I certify that with respect to the work performed this aircraft was repaired and inspected in accordance with current Federal Aviation Regulations. Only those items specified in the work order have been inspected and found to be airworthy for return to service. Details of the repair are on file at this Repair Station under Work Order No. PA-15-06909.


 Authorized Representative

February 17th, 2015 N421SM Continental GTSIO-520-N S/N: 243140-H Hobbs: 100.07 Tach: 1040.56

Drained oil. Removed oil filter CH48109-1. Inspected oil filter for contamination. No abnormalities noted. Installed new oil filter CH48109-1. Took oil sample for analysis. Added 12 quarts of Aeroshell W100+. Operational check performed. No abnormalities noted. All work was performed in accordance to all current applicable service manuals. I certify this repair airworthy and return to service.

George Oesterreicher 

I/A 3046974

Air 88 Inc. dba CROWNAIR
FAA Approved Repair Station #CWNR273K
3753 John J. Montgomery Dr.
San Diego, CA 92123

N421SM
2-09-15

Cessna 421C
Hobbs: 94.7 Hrs

S/N: 421C1213

Maintenance Performed:

- Removed and replaced R/H engine #4 EGT probe with customer supplied new P/N 86256-2.

I certify that with respect to the work performed this aircraft was repaired and inspected in accordance with current Federal Aviation Regulations. Only those items specified in the work order have been inspected and found to be airworthy for return to service. Details of the repair are on file at this Repair Station under Work Order No. PA-15-06957.


Authorized Representative

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
03-20-2015

Hobbs 108.0
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 243140-H
TSMOH: 1193.3

- Performed an **Operation 1"** inspection IAW Cessna 421C Progressive care Inspection guide.
- Cleaned engine and cowling.
- Removed and serviced all spark plugs.
- Removed and cleaned the fuel nozzles. Installed with new upper deck seals and o-rings.
- Removed and cleaned the fuel metering unit screen installed with a new gasket.
- Performed a compression check #1. 75 #2. 72 #3. 73 #4. 74 #5. 73 #6. 75.
- Removed and inspected the rocker arms and replaced all rocker cover gaskets.
- Tightened the clamps on engine breather hose.
- Replaced the #2 cylinder EGT probe P/N **081-000039** and CHT probe P/N **08-1000047** with new.
- Set the oil pressure down three full turns.
- Replaced the vacuum pump with an overhaul exchange pump
- Replaced the magnetos with factory overhaul exchange magnetos and new gaskets. Left **MOD # BL-349220-4** S/N **F14JA183R** Right **MOD # BL-349260-7** S/N **F14GA351R**. Magnetos were timed to engine.
- Installed all new magneto drive bushings. P/N **638172**
- Removed the fuel pump and throttle body / metering unit and sent to Western Skyways for bench test and repair. Installed the same unit after repair.
- Rigged the throttle and mixture control levers for proper spring back at both ends of travel.
- Adjusted the idle speed to 750 RPM and idle mixture to 30 RPM rise.
- Performed several engine power runs and adjusted the high end fuel flow to reach red line rigged the power levers to match at all power settings.
- **AD 07-05-15 Starter Adapter Assembly and Crankshaft gear is due. C/W MSB 94-4G Part 2 A. 1 through 18** Inspection / backlash measurement of dampener. All were .06 inches. Next due **100 hours 208.0** Hobbs. C/W **Part 3** IAW **MSB94-4G** due every **400 hours** TIS next due **4512.3** TTAF.
- Engine was test ran and leak checked before test flight.
- I certify this **ENGINE** was inspected IAW an **Operational 1"** inspection per Cessna 421C progressive care inspection guide and was in airworthy condition

Michael Koontz 

I/A 564294175

DATE

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
04-06-2015

Hobbs 124.6
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 243140-H
TSMOH: 1209.9

rk

- Changed the oil and filter with 12 quarts of Aeroshell 100 Plus oil and one Filter. Took and sent an oil sample in for analysis.
- Set up idle speed to 750 RPM and set down the oil pressure ½ turn.
- Test ran and leak checked engine.

Michael Koontz *Michael Koontz* I/A 564294175

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
05-02-2015

Hobbs 149.0
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 243140-H
TSMOH: 1234.2

- Changed the oil and filter with 12 quarts of Aeroshell 100 Plus oil and one Filter. Took and sent an oil sample in for analysis.
- Set up idle speed to 750 RPM and set down the oil pressure ½ turn.
- Test ran and leak checked engine.

Michael Koontz *Michael Koontz* I/A 564294175

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
05-11-2015

Hobbs: 159.3
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 243140-H
TSMOH: 1244.5

- Performed an **Operation #2** Inspection IAW Cessna Progressive Care Maintenance Program
- Replaced the pushrod seals on the #1 and #3 cylinders.
- Loosened up and re-positioned the throttle body down to clear the cowling.
- Adjusted the idle speed up ¼ turn.
- I certify this aircraft was inspected IAW Cessna 421C **Operation #2** Progressive Care Inspection Program And is in airworthy condition.

Michael Koontz *Michael Koontz* I/A 3799094

GENERAL AVIATION
340 WITHERSPOON WAY
EL CAJON CA 92020
05-02-2015

Hobbs 149.0
RIGHT ENGINE LOG

N421SM
GTSIO 520-N
S/N: 243140-H
TSMOH: 1234.2

- Changed the oil and filter with 12 quarts of Aeroshell 100 Plus oil and one Filter. Took and sent an oil sample in for analysis.
- Set up idle speed to 750 RPM and set down the oil pressure ½ turn.
- Test ran and leak checked engine.

Michael Koontz *Michael Koontz* I/A 3799094

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