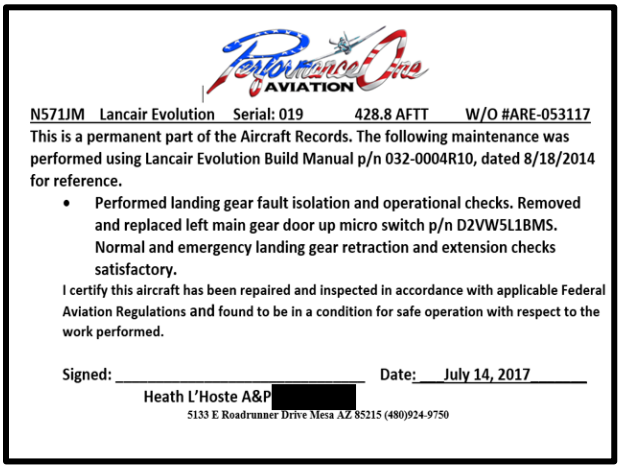
RECORDS

The airplane's maintenance records were obtained from the following sources: the pilot's fiancé, the wreckage, information from the FAA, and Performance One, a maintenance facility that regularly maintained the airplane.

Performance One provided documents of the maintenance they performed on the airplane since for 2017. The most recent squawk sheets that listed the discrepancies were not written by the pilot but were reportedly his verbal requests. Next to each listed discrepancy was a mechanic's description of the action taken to rectify the discrepancy and the initials of the mechanic and inspector that performed and inspected the work.

The records indicate that on May 31, the pilot had the maintenance facility replace the door seal motors and the fuel flow transducer. The work order, ARE-053117, indicated that the pilot had complained that the door and canopy seals would not stay inflated and that the fuel flow indication was unreliable. The next maintenance performed was between July 7-12 (totaling 4 hours of labor), where the pilot wanted the oxygen system leak tested and wanted the wing tape replaced with silicon.

The July 14 logbook entry found in the wreckage and provided by Performance One were identical but the signatures appeared to signed at different time (i.e., not an identical copy). The work order was the same ARE-053117, and the aircraft total time AFTT was noted to be 428.8 hours. The entry stated:
Performed landing gear fault isolation and operational checks. Removed and replaced left main gear door up micro switch p/n D2VW5L1BMS. Normal and emergency landing gear retraction and extension checks satisfactory.



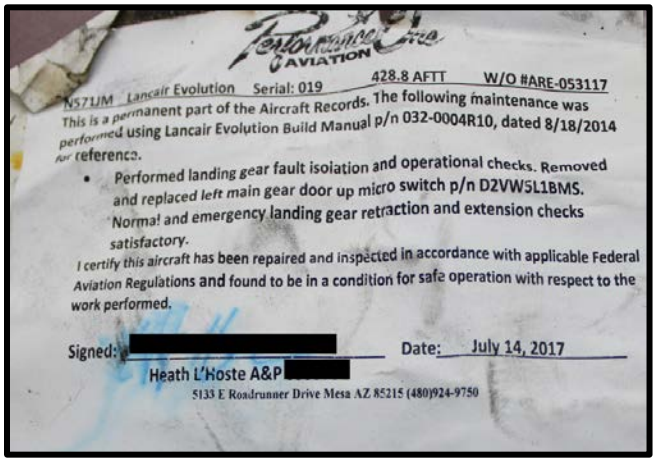
N571JM Lancair Evolution Serial: 019 428.8 AFTT W/O #ARE-053117
This is a permanent part of the Aircraft Records. The following maintenance was performed using Lancair Evolution Build Manual p/n 032-0004R10, dated 8/18/2014 for reference.

- Performed landing gear fault isolation and operational checks. Removed and replaced left main gear door up micro switch p/n D2VW5L1BMS. Normal and emergency landing gear retraction and extension checks satisfactory.

I certify this aircraft has been repaired and inspected in accordance with applicable Federal Aviation Regulations and found to be in a condition for safe operation with respect to the work performed.

Signed: _____ Date: July 14, 2017
Heath L'Hoste A&P [redacted]
5133 E Roadrunner Drive Mesa AZ 85215 (480)924-9750

Picture 1: July 14th Record



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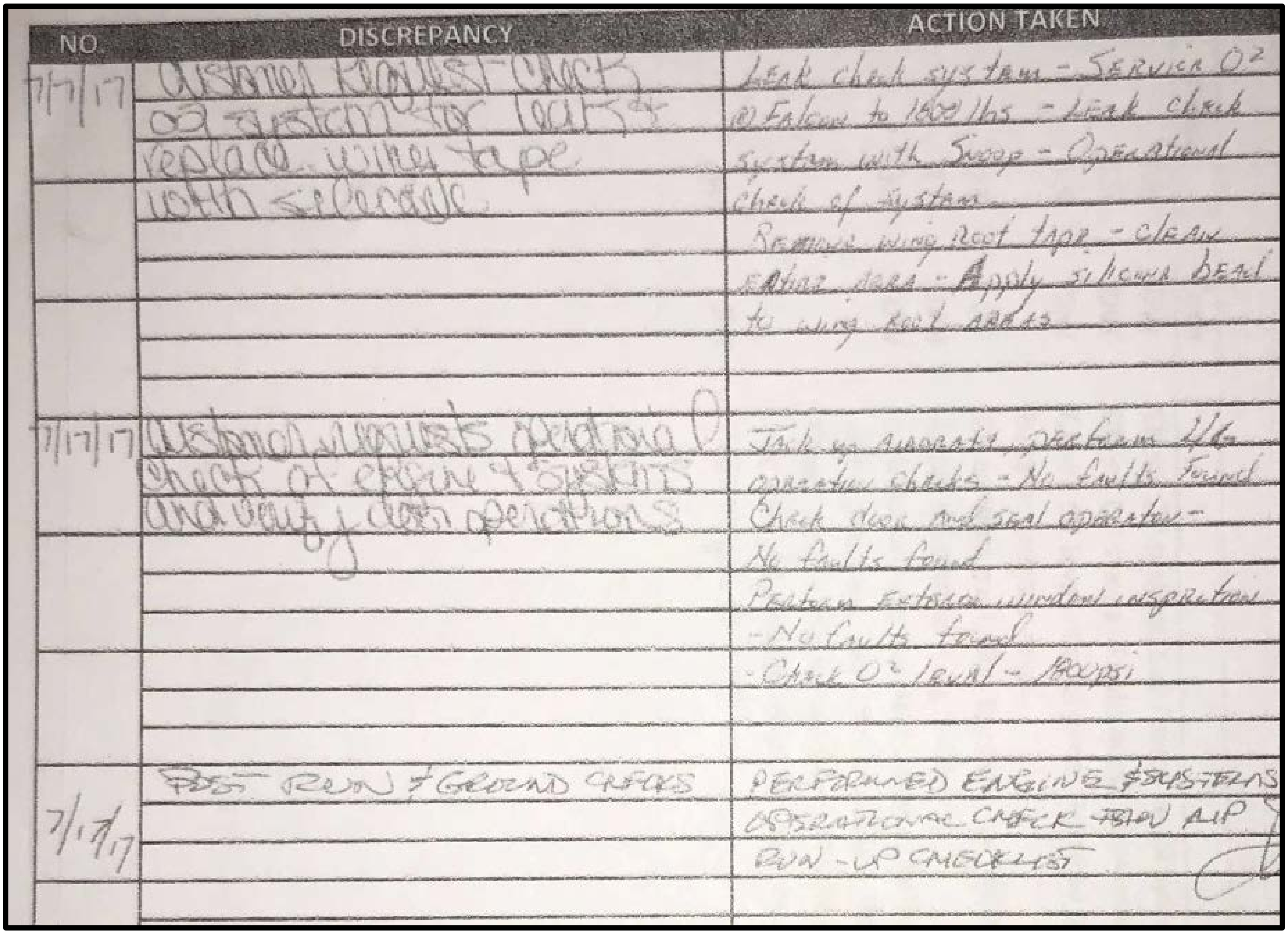
Signed: [redacted] Date: July 14, 2017
Heath L'Hoste A&P [redacted]
5133 E Roadrunner Drive Mesa AZ 85215 (480)924-9750

Picture 2: July 14th Record in Airplane

The records further indicated that on July 17 the pilot requested that the facility perform an "operational check of the engines and systems and verify door operations." The action taken listed that the mechanic, who was also the president of the company, performed a landing gear operational check and found no anomalies. It further stated that the he checked the door and seal operation and no discrepancies were found; the oxygen level was noted as 1,800 psi. The typed description of the labor additionally noted that they connected the battery charger. The next entry was in different handwriting and dated the same July 17th date. The remarks were that a mechanic performed a "engine and systems operational check."

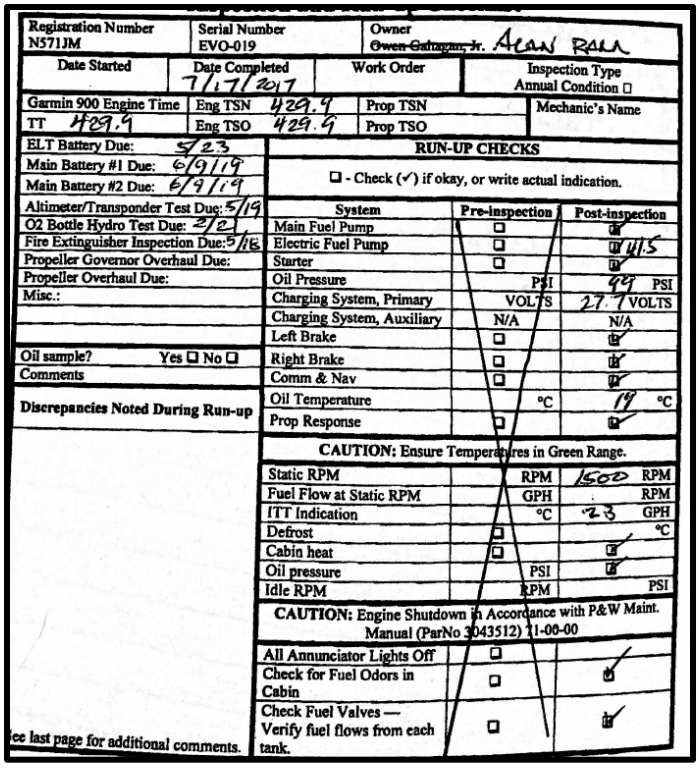


NO.	DISCREPANCY	ACTION TAKEN
7/7/17	Customer request check O2 system for leaks & replace wing tape with silicone	Leak check system - Service O² @ Falcon to 1800 lbs - Leak check system with Snoop - Operational check of system. Remove wing root tape - clean entire area - Apply silicone seal to wing root areas
7/17/17	Customer requests perform operational check of engine & systems and verify door operations	Jack up aircraft, perform L/G operation checks - No faults found. Check door and seal operation - No faults found. Perform exterior window inspection - No faults found. - Check O² level - 1800psi
7/17/17	POST RUN & GROUND CHECKS	PERFORMED ENGINE & SYSTEMS OPERATIONAL CHECK PER A/P RUN-UP CHECKLIST

Picture 3: July 17th Squawks

Date	Hours	Tech	Description
7/7/2017	1.0	DW	Check O2 system. Call Falcon to fill system. Check connection with snoop.
7/10/2017	1.0	DW	Check O2 status - Looks good. Turn on system to check.
7/11/2017	1.5	DW	Check O2 level - Looks good. Reinstall pressure bucket and upholstery. Load personal items back in baggage area.
7/12/2017	0.5	LV	Clean wing root. Run tape line for silicone.
7/12/2017	1.5	DW	Apply silicone to wing roots.
7/17/2017	3.5	DW	Jack up aircraft. Connect battery charger. Perform gear swings: 3 standard, 1 emergency, and 1 standard. Wait for cool down, then 1 emergency swing and 2 standard. Check O2 level. Check door and seal operation. Window check. Lower aircraft. Check strut levels. Move to taxi area. Meet with Allen. Go over work performed.
7/17/2017	0.5	SW	Perform ARE post run.

Picture 4: July 17th Squawks Typed



Registration Number	Serial Number	Owner
N571JM	EVO-019	~~Owen Gahagan, Jr.~~ Alan Rall

Date Started	Date Completed	Work Order	Inspection Type
	7/17/2017		Annual Condition ☐

Garmin 900 Engine Time	Eng TSN	Prop TSN	Mechanic's Name
TT 429.9	Eng TSO 429.9	Prop TSO	

ELT Battery Due: 5/23
Main Battery #1 Due: 6/9/19
Main Battery #2 Due: 6/9/19
Altimeter/Transponder Test Due: 5/19
O2 Bottle Hydro Test Due: 2/21
Fire Extinguisher Inspection Due: 5/18
Propeller Governor Overhaul Due:
Propeller Overhaul Due:
Misc.:

Oil sample? Yes ☐ No ☐
Comments

Discrepancies Noted During Run-up

ee last page for additional comments.

RUN-UP CHECKS

☐ - Check (✓) if okay, or write actual indication.

System	Pre-inspection	Post-inspection
Main Fuel Pump	☐	☑
Electric Fuel Pump	☐	☑ 41.5
Starter	☐	☑
Oil Pressure	PSI	99 PSI
Charging System, Primary	VOLTS	27.7 VOLTS
Charging System, Auxiliary	N/A	N/A
Left Brake	☐	☑
Right Brake	☐	☑
Comm & Nav	☐	☑
Oil Temperature	°C	19 °C
Prop Response	☐	☑

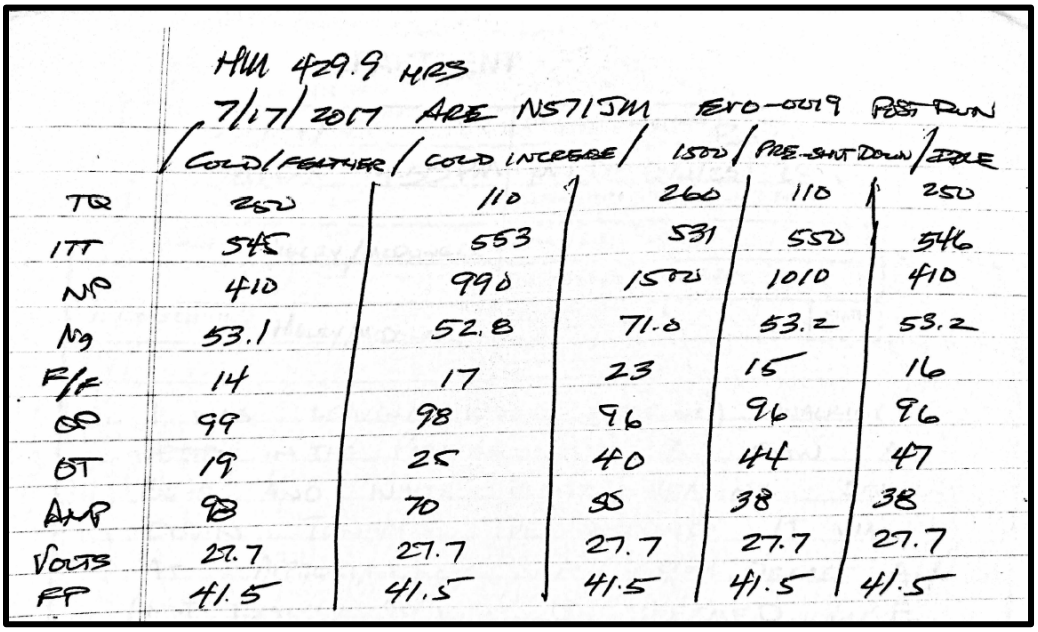
CAUTION: Ensure Temperatures in Green Range.

Static RPM	RPM	1500 RPM
Fuel Flow at Static RPM	GPH	RPM
ITT Indication	°C	23 GPH
Defrost	☐	°C
Cabin heat	☐	☑
Oil pressure	PSI	☑
Idle RPM	RPM	PSI

CAUTION: Engine Shutdown in Accordance with P&W Maint. Manual (ParNo 3043512) 71-00-00

All Annunciator Lights Off	☐	
Check for Fuel Odors in Cabin	☐	☑
Check Fuel Valves — Verify fuel flows from each tank.	☐	☑

Picture 5: July 17th Post Inspection



HMR 429.9 HRS
7/17/2017 ARE N571JM EVO-019 POST RUN

	COLD/FEATHER	COLD INCREASE	1500	PRE-SHT DOWN	IDLE
TQ	250	110	260	110	250
ITT	545	553	531	550	546
NP	410	990	1502	1010	410
Ng	53.1	52.8	71.0	53.2	53.2
F/F	14	17	23	15	16
OP	99	98	96	96	96
OT	19	25	40	44	47
AMP	98	70	95	38	38
VOLTS	27.7	27.7	27.7	27.7	27.7
FP	41.5	41.5	41.5	41.5	41.5

Picture 6: July 17th Post Inspection Notes

The July 17 logbook entry provided by Performance One noted an AFTT of 429.9 hours and reference work order ARE-053117. The entry stated: Performed charging system fault isolation inspections and checks. No faults found. Top charged main batteries. Operational ground checks performed with no malfunctions or defects noted.

The entry was signed by the Performance One owner.

Performance One AVIATION

N571JM Lancair Evolution Serial: 019 429.9 AFTT W/O #ARE-053117

This is a permanent part of the Aircraft Records. The following maintenance was performed using Lancair Evolution Build Manual p/n 032-0004R10, dated 8/18/2014 for reference.

- Performed charging system fault isolation inspections and checks. No faults found. Top charged main batteries. Operational ground checks performed with no malfunctions or defects noted.

I certify this aircraft has been repaired and inspected in accordance with applicable Federal Aviation Regulations and found to be in a condition for safe operation with respect to the work performed.

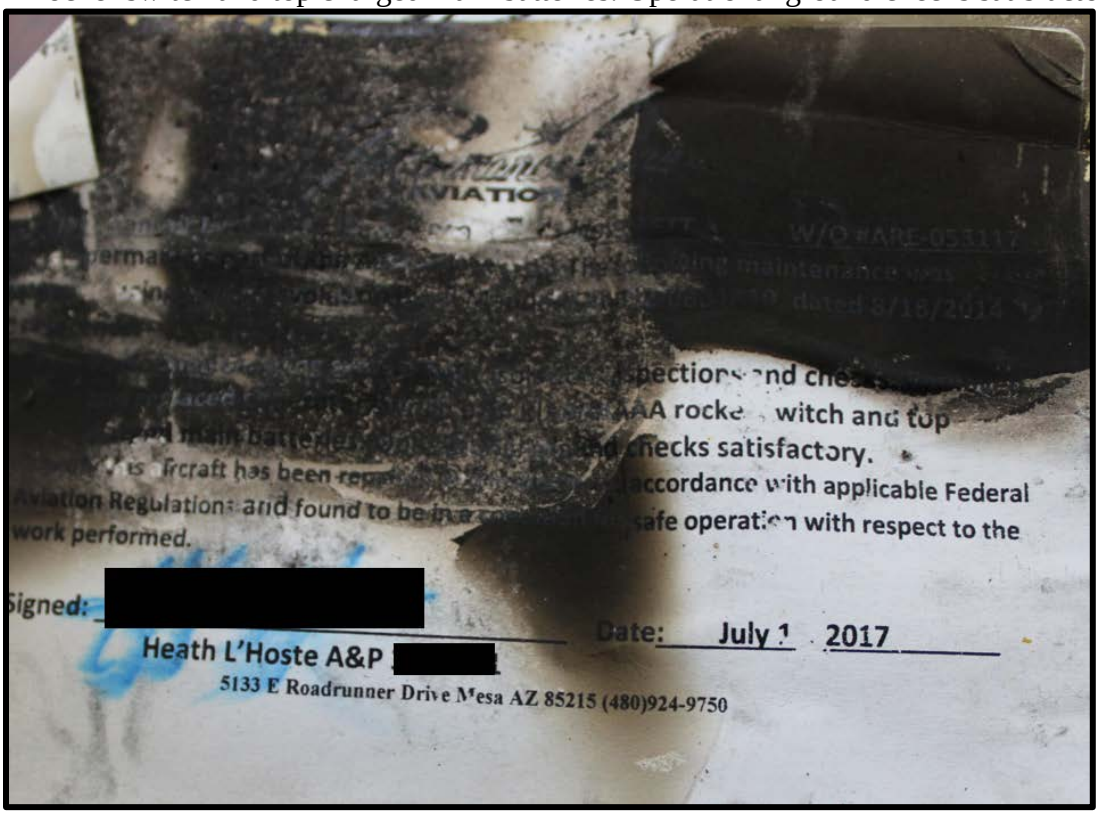
Signed: _____ Date: July 17, 2017

Steven A. Wilbur A&P [redacted]

5133 E Roadrunner Drive Mesa AZ 85215 (480)924-9750

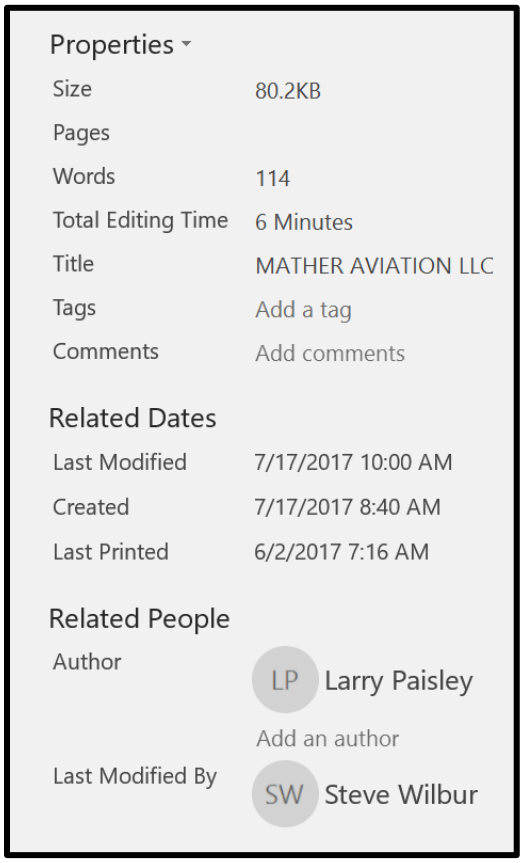
Picture 7: July 17th Record

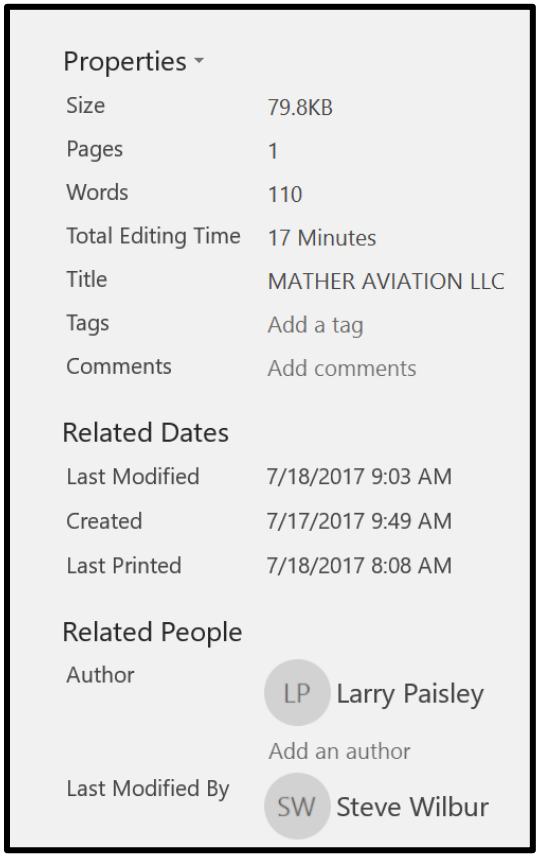
A logbook entry found in the wreckage but not provided by Performance One did not have a readable date aside from July 2017, but contained a AFTT of 429.9 hours under the same work order number ARE-053117. The entry stated:
Performed charging system fault isolation inspection and checks. Removed and replaced generator switch p/n K1ABAAAAA rocker switch and top charged main batteries. Operational ground checks satisfactory.



Picture 8: Burned Record in Wreckage

Performance One provided the Safety Board two different logbook entries which were separated into different Microsoft Word files. The July 14 entry was shown to have last been modified July 17 at 10:00 am, with a total editing time of 6 minutes. The July 17 entry contained a last modified entry of July 18 at 9:03 am, with a total editing time of 17 minutes.





Picture 9: Record Edits

AIRFRAME LOGBOOK NOTES

Empty Weight 2,868 lbs
Date of Manufacturer 8/10/2011 Builder: Owen Gahagan
Flight Test at A/C TT 40 hours 2/24/2012Vso 64 Vx 85 Vy 105 @ Weight 4246 CG 130-
Both batteries replaced at 254.9 Hobbs 2/4/2015
6/9/2016-@ Hobbs 354.8 removed batteries p/n RG24-20 and replaced w/ serial 40809042 and 40811962
Boroscope Insp @ TT 376.2 on 5/9/2017 and Dallas Airmotive
Last INSP on 5/9/2017-Conditional INSP

-Item 66 and 67 main battery left and right- inspect for security of mounting and condition.

Post Ru-up Check- item 9 Aircraft Batteries-Fully Charged, clean the battery exterior surfaces, and clean the battery cables. Check the batteries for evidence of leakage.

6/23/2017 @ TT 424.1 Composite approach (Matthew Branam) "Clearanced rudder cross over tube from contacting back of instrument panel and connectors."
2/1/2016-Squawk Sheet item 5- Instrument panel radio chassis contacting rudder pedal cross overtube.
Corrective action "replaced RH panel support with stronger version and moved attach point for better support."

ENGINE LOGBOOK NOTES

New engine 6/17/2010 installed new w/ zero time on 8/11/2011.
5/9/2017 @ TT 376.2 W/O#JHE-050917 Conditional INSP and complied with PWC PT6A-135A Maint. Manual P/N# 3043512 ch. 72-00-00 table 601 minor, routine, 100 hour insp and service.

Hand written flow check list:

"As stated" FLOW (italics is hand written print on check list.)
-CIRCUIT BREAKERS
-FUEL….. FULLEST

-GEAR DUMP ……VERTICAL
-MANUAL OVERRIDE ……AFT & PINNED
-CONDITION…..CUTOFF
-PROP FEATHER
-POWER ….IDLE

Ng …. ..UP ARROW
OIL PRESSURE…..UP ARROW
IGNITION = ON
Ng > 14 PERCENT
FUEL FLOW….ON
ITT…..MAX 880 START

-ELT….ARMED
-HYD. PUMP CIRCUIT BREAKER
-VERIFY FLAPS
-GEAR HANDLE TEST
-BATTS ON
-PRESS TO TEST

On Monday we know it has 18 v and slow level charge and soak ran for 10-15 min tops.

PILOT'S OPERATING HANDBOOK AND AIRPLANE FLIGHT MANUAL

The manual that the pilot used for the airplane stated that the airplane's stall speed was 76 KIAS and stall speed in the landing configuration was 61 KIAS. Both speeds contained asterisks that stated the speeds should be verified with flight testing.

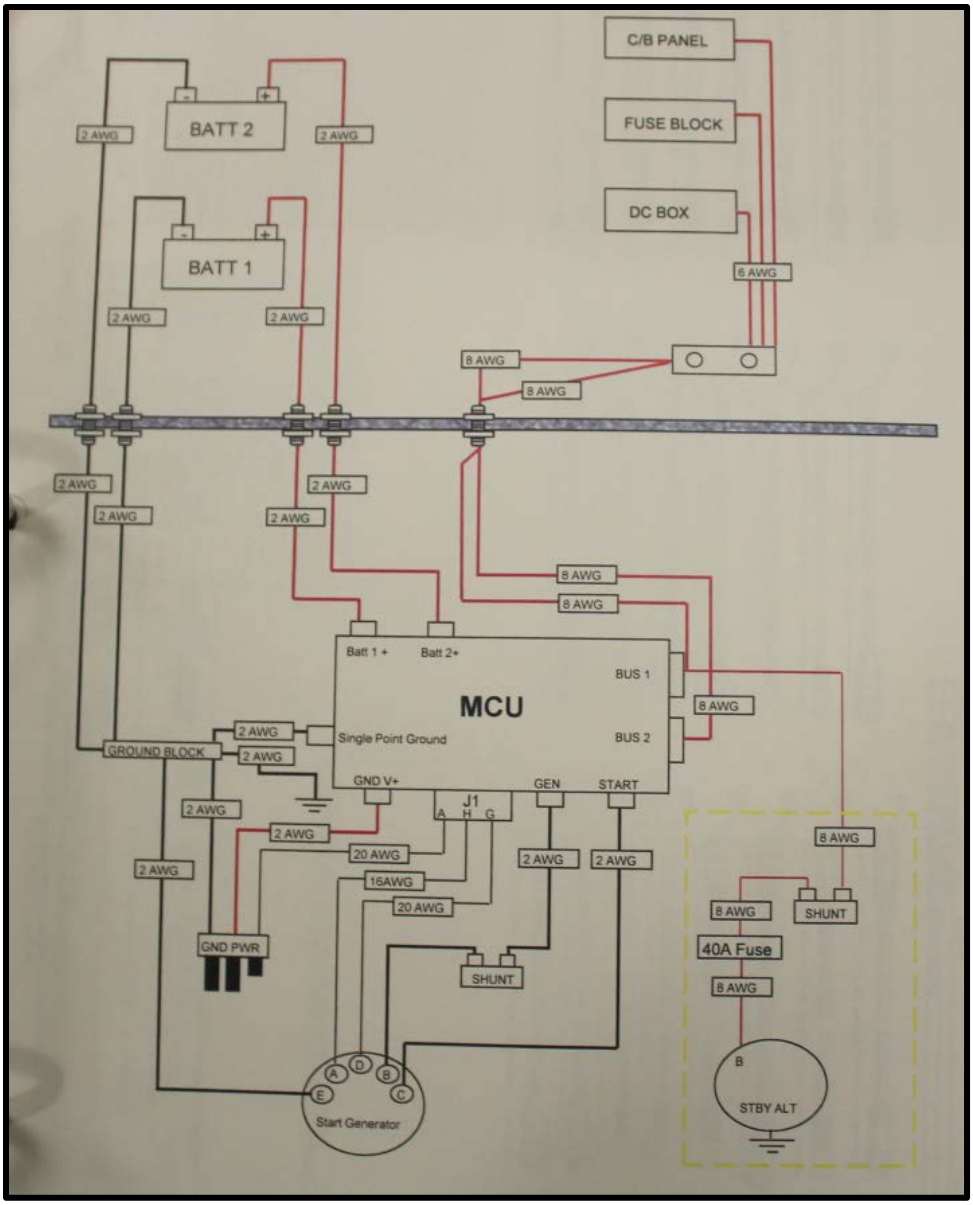
The manual's after-start procedures required that the generator switch be turned "ON," and the pilot checking for a minimum of 28 volts. The before landing checklist states that the landing gear should be extended below 150 knots indicated airspeed (KIAS) and the landing flaps extended below 140 KIAS. The minimum speeds listed for the traffic pattern were as follows: Downwind 100 KIAS; Base 90 KIAS; Final 85 KIAS.

The emergency procedures from a generator failure listed the following checklist:
1. Ammeter: Check
2. Generator Switch: OFF
3. Electrical Load: Reduce
4. Generator Circuit Breaker: Check and Reset
5. Generator: ON

If generator operation is not restored
6. Generator Switch: OFF
Land at nearest suitable airport

The following caution was listed under the checklist: with generator inoperative, battery power should last approximately 30 minutes with all non-essential equipment off. When possible, turn battery switches OFF to conserve power and then ON for landing. If total electrical failure is experienced, it will be necessary to perform an Emergency Gear Extension and landing without flaps.

The training manual contained the same checklist, but the caution stated: With the generator inoperative, battery power should last approximately 45 minutes with all unnecessary electrical equipment downloaded. When possible, turn the battery switches OFF to conserve electrical power and back ON for landing. If total electrical failure is experienced, it will be necessary to perform an Emergency Gear Extension and land without flaps.



17	8	K1ABAAAAAA		Switch, Rocker, STD BLK, ON-NONE-OFF, SPST, Non-Lit, Otto
18	2	K1ABEAAAAA		Switch, Rocker, STD BLK, (ON)-OFF-(ON), SPDT, Non-Lit, Otto
19	1	K1ABBAAAAA		Switch, Rocker, STD BLK, ON-NONE-ON, SPDT, Non-Lit, Otto