

Timothy W. Monville
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Date: September 19, 2023

Subject: ERA23LA162, Record of Conversation/Interview

Contact: Frank E. Sousa

Mr. Frank Sousa was texted a message on September 19, 2023, at 1018 EDT. He was texted at [REDACTED] He returned the call the same day at 1051 EDT. His e-mail address is [REDACTED]

He was advised by e-mail when sending this document for review that it will not be released to the public until the investigation is finished and when published, any personal identifiable information (PII) such as cell phone number, e-mail address, address, pilot certificate number, etc., will be redacted and not viewable in the released document.

At the beginning of the interview he was advised that the NTSB is a federal agency mandated by Congress to investigate aircraft accidents, and NTSB has no authority to take any action against any individual. He was also informed that the purpose of an NTSB investigation is for safety only, and any person NTSB talks with has the right to representation; he agreed to the interview without representation.

He was asked the following questions –

What reference source did you use to perform the magneto 500-Hour inspection?

The Bendix maintenance manual¹. Every annual/100 hours the magneto to engine timing is to be checked. If during the check the magneto to engine timing drifts, that means the magneto internal timing has changed. With respect to the 500-Hour inspection of the 2000 series magneto that he performed, he checked the internal parts, and checked the airworthiness of the parts. He cleaned and re-used the parts if they were ok². If new contact assemblies were used, the magneto timing

¹ With his response he provide a complete copy of the Continental Ignition Systems D-2000/D-3000 Series High Tension Magneto Service Support Manual, Publication X42003-3, dated August 2011.

² According to the engine logbook entry, he, "...cleaned, tested (measured) and reused all parts – internally timed magneto and timed magneto to engine."

will change about 1°. He was very well familiar with magnetos having taught at 2 different trade schools. He also taught at East Coast Aero-Tech. If the magneto to engine timing changes more than 1° something mechanically is wrong. With respect to the 2,000 series magneto, he told the owner to get a 3,000 series. The pilot told him that the 2,000 series magneto had been overhauled³. As a result at the 500-Hour inspection he took the magneto apart, cleaned the parts and reassembled it using the parts that were removed.

What did he clean the cam with?

CRC makes it. He used something similar to WD40 Specialist Contact cleaner to clean the cam. He put "Bendix Cam Lube" on the bumper of the cam. During a follow-up conversation of September 25, 2023, at 1204 EDT in which it was suggested that he not use contact cleaner on the cam he advised that he only wiped the cam down using a clean cloth. He used the contact cleaner on the contact assemblies.

Did you put the cam in a bath of hot oil after cleaning?

No.

How did you clean the felt?

He used 100 low lead fuel and squeezed the felt to remove the fuel. He then re-lubricated it using a heavy weight engine oil and STP that were mixed together. During a follow-up conversation of September 25, 2023, at 1204 EDT it was suggested that he use the correct oil to lubricate the felt, he advised he would.

Did he replace the 100% replacement parts specified in the D-2000/D-3000 Series Service Support Manual?

He replaced all locking mechanical parts. He added that he does a lot of magneto overhauls. If there was a change in the magneto to engine timing that would show up in the run-up.

Do you recall the condition of either cam follower?

They were fine, otherwise he would not have put them back in.

Did you notice any magneto to engine timing drift between the next two (2) annual inspections after the 500-Hour magneto inspection was performed?

No, none at all. He did notice a drift before the 500-Hour magneto inspection was performed.

The phone call ended at 1114 EDT.

On September 20, 2023, Mr. Sousa was sent an e-mail asking for pictures of the products used to perform the 500-Hour inspection of the magneto. He texted one picture on September 25, 2023 of

³ According to the engine logbook entry, a "factory overhauled magneto" was installed on December 31, 1979. The tachometer time then was 180 hours.

supplies he used for an “annual/100 hour” inspection, some of which are used when performing a 500-Hour magneto inspection (Figure 1).



Figure 1: Photograph from Frank E. Sousa. View of the items used at an “annual/100 hour” inspection, some of which are used when performing a 500-Hour Magneto Inspection.

The digest was e-mailed to him for review on September 19, 2023. He replied the same day at 2016 EDT with. “Good evening Timothy, The transcript is essentially correct. I do not claim to have overhauled the magneto; rather a 500 hour service - cleaning , measuring, timing, but reusing the original parts where possible. Section 6.2 of the following manual is what I use as a guide. I maintain that the annual/100 hr mag-to-engine timing/point condition check is the most telling of magneto condition along with an actual run-up mag check. Frank.” The FINAL digest was e-mailed to him for final review on September 25, 2023. He replied on October 2, 2023 at 2041 EDT with a comment that was incorporated into the digest. The FINAL digest was e-mailed to him on October 3, 2023.

Timothy W. Monville
Sr. Air Safety Investigator
OAS-Eastern Region Aviation

Date: September 21, 2023

Subject: ERA23LA162, Record of Conversation/Interview

Contact: Ted W. Hanes

Mr. Ted W. Hanes was contacted by phone on September 21, 2023 at 0858 EDT. He was called at [REDACTED] He provided an e-mail address of [REDACTED]

He was advised by e-mail when sending this document for review that it will not be released to the public until the investigation is finished and when published, any personal identifiable information (PII) such as cell phone number, e-mail address, address, pilot certificate number, etc., will be redacted and not viewable in the released document.

At the beginning of the interview he was advised that the NTSB is a federal agency mandated by Congress to investigate aircraft accidents, and NTSB has no authority to take any action against any individual. He was also informed that the purpose of an NTSB investigation is for safety only, and any person NTSB talks with has the right to representation; he agreed to the interview without representation.

Mr. Hanes was contacted as he had signed off the airplane's (N13612) last annual inspection. It was signed off on December 12, 2022, at tachometer time 1635.0.

He provided a certificate number of [REDACTED]

He was asked the following questions –

How long have you been an airframe and powerplant mechanic?
Since 1994.

How long have you had your inspection authorization (IA)?
Since 1998.

NTSB Questions Continued–

What is the name of your company?

Above & Beyond Aircraft Maintenance, Inc.

Was there any drift of the magneto to engine timing from the specified values when he did the airplane's last annual inspection?

Not that he could recall. He did not recall the exact value when checking it. On the single drive dual magneto, if the timing is off on one you have to split the difference when timing the magneto to the engine. He recalled there was not much time on the magneto since the 500-Hour inspection had been performed¹.

Do you have a Work Order associated with the last annual inspection?

Yes, it is 5231. They use a checklist based on 14 *CFR* Part 43 Appendix D for inspections. He reviewed the work order while on the phone and it did not cite what the magneto to engine timing was at the start of the inspection.

Did you take the cover of the magneto off?

Uh, no, not that I can remember.

The phone call ended at 0916 EDT.

The digest was e-mailed to him for review on September 21, 2023 and again on October 2, 2023. He replied on October 2, 2023, at 1058 EDT with, "no changes. Ted." The FINAL digest was e-mailed to him on October 2, 2023.

¹ Per the maintenance records, at the time of the airplane's last annual inspection, the magneto had accrued 1,455 hours and nearly 43 years since it was last overhauled, and about 93 hours and over 3 years since the last 500-hour service was performed.