U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Chief Counsel

**800 Independence Ave., S.W.
Washington, D.C. 20591**

APR - 4 2016

Bradley K. Donnell
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Re: Whether Installing a Modified Engine on an Existing Aircraft in Accordance with Data Approved by an FAA Designated Engineering Representative and Approved by the Responsible FAA Aircraft Certification Office Requires the Permission of the Holder of the Aircraft's Type Certificate or Supplemental Type Certificate under 14 C.F.R. § 91.403(d).

Dear Mr. Donnell:

This responds to your August 21, 2015 letter requesting a legal interpretation of 14 C.F.R. § 91.403(d), the regulation that prohibits a person from altering an aircraft based on a supplemental type certificate (STC) unless the person has written permission from the holder of the STC. Your question is prompted by allegations from an aircraft manufacturer that your client modified an engine and installed (or caused it to be installed) on an aircraft the manufacturer had produced without the manufacturer's permission in violation of § 91.403(d). The installation of the engine was done as a major alteration to the aircraft and it was done in accordance with technical data approved by the FAA, as required for a major alteration. As explained below, the installation was not based on someone else's STC; accordingly, § 91.403(d) is not in issue because no alteration to the aircraft was made based on an STC, such that it would require an STC holder's written permission. Based on the facts presented to us, the installation was in accord with the FAA's regulations.

You explained that the aircraft at issue is a WACO Model YMF-5 manufactured by the WACO Classic Aircraft Corporation (WACO).[1] You also explained that the original WACO type certificate is now owned by the public, and that the new WACO company obtained an STC (SA1000GL) under which it manufactures the WACO Model YMF aircraft.[2] The Type Certificate Data Sheet (TCDS) for the Model YMF aircraft that was approved on January 28,

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[1] The original Waco Aircraft Company ceased operations in 1947.

[2] Note 7 on Type Certificate Data Sheet No. ATC 542 states: "Ownership of the Type Certificate was transferred to the public domain when the Waco Aircraft Company ceased to exist. The type certificate was cancelled September 30, 1939, and reinstated March 10, 1986. This is the first type certificate data sheet to exist for ATC-542 (issued October 31, 1988, amended May 18, 1993 and October 26, 2010)."

1988, approved two engines: a Jacobs R-755BM or a Jacobs R-755B2, each rated at 275 horsepower.[3] Because the serial number of your client's aircraft is F5-017, and the aircraft specifications (TCDS approved January 28, 1988) list only the 275 horsepower engine for serial numbers 001 through 039, the installation of a different, higher horsepower engine would be at least a major alteration requiring FAA-approved technical data. Based on the information you provided, your client developed the necessary data and obtained the requisite FAA approval for a major alteration.

Even though the modification at issue was not done pursuant to an STC, WACO is alleging your client violated § 91.403(d) by misappropriating an STC. WACO is confusing the STC at issue in the regulation (one that would be used to make modifications to an existing aircraft) with its own STC the company used in conjunction with the original type certificate to obtain FAA approval to produce a modernized version of the original YMF.

The FAA adopted § 91.403(d) in 2006 to codify a 1996 amendment to 49 U.S.C. § 44704, which, in paragraph (b)(3), among other things, provides that: "A person may change an aircraft, aircraft engine, propeller, or appliance based on a supplemental type certificate only if the person requesting the change is the holder of the supplemental type certificate or has permission from the holder to make the change." Section 91.403(d) similarly provides: "A person must not alter an aircraft based on a supplemental type certificate unless the owner or operator of the aircraft is the holder of the supplemental type certificate, or has written permission from the holder."

Your client procured the services of an FAA Designated Engineering Representative (DER) to develop the technical data necessary for FAA approval to install the engine on a WACO aircraft. Additionally, an aerospace engineer in the FAA's Chicago Aircraft Certification Office (ACO) approved the data for the engine installation. Here, the modification of the aircraft was done in accordance with FAA-approved technical data. There was no STC holder for the aircraft modification from whom permission was required. Accordingly, no § 91.403(d) issue is presented. Your client, through its procurement of the FAA-approved data, was the owner of the data, and had the right to use it to modify the aircraft.

WACO believes that because it obtained STC SA100GL,[4] that STC is the STC an aircraft modifier must obtain permission to use for subsequent aircraft modifications. This view is incorrect. Any person may modify an existing aircraft if the modification (major or minor) is done with appropriate data and methods, techniques, and practices. In the case of a major alteration, the regulations require that the work be done in accordance with FAA-approved technical data (*see, e.g.*, 14 C.F.R. § 65.95(a)(1)).

Based on the facts presented to us, your client did not violate § 91.403(d) because your client was not required to obtain permission from the holder of an STC for the aircraft modification it

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[3] The TCDS approved the 275 horsepower configuration for Models F5010 and up. The aircraft at issue is Model F5-017. A subsequent amendment to STC SA1000GL approved the same engines and added two additional engines (Jacobs R-755A2M or Jacobs R-755A2), each rated at 300 horsepower. This amended STC applied to Models F5C040 and up.

[4] STC SA1000GL is the STC it used in conjunction with the original type certificate to modernize the earlier WACO design in order to obtain FAA approval for the aircraft it now builds.

undertook. Your client altered the aircraft in accordance with FAA-approved technical data, and did not alter the aircraft based on another's STC. WACO's STC SA1000GL is not the STC for which § 91.403(d) requires permission from the holder to make the modification at issue.[5]

I hope this information has been helpful. This response was prepared by Edmund Averman, an attorney in the Regulations Division of the FAA's office of the Chief Counsel, and coordinated with the Aircraft Maintenance Division (AFS-300) in the Flight Standards Service. If you have further questions concerning this response, please contact Mr. Averman `at 202-267-3073.

Sincerely,

Lorelei Peter
Assistant Chief Counsel for Regulations, AGC-200

[5] The issue would be different if a person had an older vintage model WACO aircraft and wanted to alter it by modernizing it in accordance with the data in WACO's STC SA1000GL. In that case, the person would need WACO's permission to modify that aircraft based on WACO's STC.

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August 21, 2015

VIA FEDERAL EXPRESS
Lorelei Peter
Deputy Assistant Chief Counsel
For Regulations, AGC-200
Federal Aviation Administration
Office of Chief Counsel
800 Independence Avenue, SW
Washington, DC 20591

Re: Request for Legal Interpretation/Opinion

Dear Ms. Peter:

I recently spoke with Edmund ("Skip") Averman in your office concerning my request for a legal interpretation/opinion, and he suggested that I prepare a letter to you outlining the issues. Therefore, please allow this letter to serve as my request on behalf of my client, Radial Engines, Ltd. ("REL") for a legal interpretation/opinion concerning 14 CFR 21.120, 14 CFR 91.403, 14 CFR Part 43, and Advisory Circular 43.13-2.

STATEMENT OF FACTS

Radial Engines, Ltd. is an aircraft repair station located at 11701 West Forrest Hills Rd., Guthrie, OK, 73044 (Repair Station # RAQR194K). On or about December 12, 2013, REL entered into a contract with Complete Aviation Management ("CAM") of Lantana, Florida. (the "Contract"). (The Contract is attached hereto as Exhibit "1").

Pursuant to the Contract, REL agreed to supply one overhauled Jacobs R-755-A2 radial engine (the "300 HP Engine"), modified with REL's STC'd fuel injection system, one JPI engine monitor, and complete certification paperwork for a WACO Model YMF Aircraft, N number N35HH, serial number F5-017 (the "Aircraft") owned by Anaconda Jet Sales Inc. ("Anaconda"). In exchange, CAM agreed to return its Jacobs R-755-B2 engine (the "275 HP Engine") which was installed on the Aircraft, together with payment for REL's work.

As you may know, the WACO Classic Aircraft Corporation ("WACO") manufactures several aircraft including the WACO-YMF model. However, WACO does not own the Type Certificate (ATC542) for the aircraft it manufactures. That Type Certificate is owned by the general public. However, WACO has acquired a Supplemental Type Certificate ("STC") (SA1000GL) which permits it to manufacture the WACO YMF model aircraft. WACO

manufactures the YMF model aircraft with two different engines, a Jacobs R-755-A2 engine which is 300 horsepower, and a Jacobs R-755-B2 engine which is 275 horsepower.

As set forth above and as outlined in the Contract attached as Exhibit 1, Anaconda owned a WACO YMF-5 aircraft with a R755-B2 engine (275 horsepower) and contracted with REL to provide an overhauled Jacobs R755-A2 radial engine (with 300 horsepower) which was to be installed into the Aircraft by CAM.

In order to complete the work outlined in the Contract, REL hired Bobby N. Minnis, an FAA Designated Engineering Representative ("DER") (DERT-510258-CE). On January 2, 2014, Mr. Minnis executed and filed an FAA Form 8110-3 certifying and approving the data submitted by REL with respect to the installation of a Jacobs R755-A2 engine on the Aircraft (See Form 8110-3 attached hereto as Exhibit "2").

Additionally, REL submitted the Form 8110-3 which Mr. Minnis approved and certified, to Aerospace Engineer, Steven Rosenfeld, the individual in the FAA Chicago Aircraft Certification Office ("ACO") who oversees WACO. On June 22, 2014, Mr. Rosenfeld approved and certified the data previously approved and certified by Mr. Minnis, by placing an approval stamp on the FAA Form 8110-3 executed by Mr. Minnis. The stamp provides "Federal Aviation Administration Chicago Aircraft Certification Office ☒ Accepts DER/DOA/DAS FAA Approval." (*See* Form 8110-3 executed by Mr. Rosenfeld attached as Exhibit "3"). Both Exhibit 2 and Exhibit 3 certify and approve the data for installation of a Jacobs R755-A2 engine in the Aircraft. The only addition to the Form 8110-3 added by Mr. Rosenfeld, was the requirement that a placard be placed "in view of the pilot and close to the RPM Gage" which stated "Do not exceed 2050 RPM's below 2500 feet MSL".

After obtaining the Forms 8110-3's from Minnis, REL, pursuant to its Contract, shipped the overhauled Jacobs R755-A2 engine modified with their STC'd fuel injection system to CAM for installation into Anaconda's Aircraft. (A copy of the work orders and other documents showing the work performed by REL is attached hereto as Exhibit "4"). Upon receipt of the R755-A2 engine from REL, CAM removed the Jacobs R755-B2 engine in the Aircraft and shipped it to REL. CAM then installed the R755-A2 engine in the Aircraft on behalf of Anaconda.

That should have been the end of the story. However, on September 8, 2014, Peter Bowers, the owner of WACO, sent a letter to Anaconda (the "WACO Anaconda Letter") (attached hereto as Exhibit "5"). As you can see, in the letter Mr. Bowers/WACO inappropriately asserts that the work performed by REL on the Aircraft was improper, and states that the Aircraft "has been improperly modified by the installation of the Jacobs R755-A2 engine of 300 HP." Mr. Bowers then erroneously contends that in order for REL to have properly performed its work with respect to the R755-A2 engine, that WACO (as the STC holder) was required to have given REL its permission. Mr. Bowers concludes that "therefore, we are advising you that we consider the engine installation unsafe and the aircraft not airworthy." (*See* WACO Letter attached as Exhibit "5").

WACO then sent a letter to the FAA Aircraft Registration Branch (the "WACO FAA Letter") enclosing the WACO Anaconda Letter, asking that the FAA place the WACO Anaconda Letter into the Aircraft's Airworthiness file. (*See* WACO FAA Letter attached hereto as Exhibit "6"). (collectively the WACO Anaconda Letter and the WACO FAA Letter will be referred to as the "WACO Letters"). As a result, the FAA placed the WACO Letters into the Aircraft's registration file. (*See* copy of Aircraft's Registration file dated June 12, 2015, attached as Exhibit "7").

Additionally, as a result of the WACO Letters, Anaconda hired counsel and began threatening REL with a lawsuit. Specifically, Anaconda asserted that the work performed by REL was improper, and that Anaconda had sustained damages for the cost of the work by REL. In addition, Anaconda claimed loss of use and loss of value of the Aircraft due to the WACO Letters and their placement in the Aircraft's FAA Registration file.

On December 5, 2014, Anaconda's counsel wrote Mr. Bowers/WACO concerning the situation. In his correspondence (attached hereto as Exhibit "8"), he explained that the work performed by REL had been approved by an FAA DER and the FAA ACO who oversees WACO. Counsel asked WACO to immediately retract the WACO Letters. Unfortunately, WACO refused, and its only response was an email from WACO's DAR, Carl Dye, to counsel stating his belief that REL needed approval from WACO to modify WACO's STC (SA1000GL) (*See* email attached as Exhibit "9").

Of course, the truth is that REL did not modify WACO's STC, and therefore was not required to seek permission from WACO to perform its work. In response to the WACO Letters and the claim for damages asserted by Anaconda, REL retained the services of Leslie Sargent, the owner of DGA Enterprises, Inc. d/b/a Sargent Aviation Services, located in Washington, Oklahoma. Mr. Sargent worked for the FAA beginning in 1987 until he retired in January, 2014. During that time, he worked as a General Aviation Principal Maintenance Inspector ("PMI"), an International Maintenance Inspector, an Airworthiness Instructor, and other positions with the FAA. (*See* Mr. Sargent's biography attached as Exhibit "10").

Mr. Sargent reviewed the information provided to him by REL (the same information I am providing to you with this letter) and reached the conclusion that the work performed by REL was appropriate and was performed in satisfaction of all applicable FAA rules and regulations. Mr. Sargent then contacted the FAA Aircraft Registry to request the removal of the WACO Letters from the Aircraft's Registration file. The FAA Aircraft Registration Branch agreed with Mr. Sargent's reasoning and has now removed the WACO Letters from the Aircraft's FAA Registration file. (*See* Blue Ribbon copy of the Aircraft's Registration File dated July 17, 2015 attached as Exhibit "11").

In addition, REL asked that Mr. Sargent prepare a report concerning his examination of the Federal Aviation Regulations ("FAR's") and his conclusion that the regulations were followed by REL. (the "Report"). His Report is attached as Exhibit 12. As you can see from his Report, Mr. Sargent concluded that WACO's reference to 14 CFR 21.120, and 14 CFR 91.403 was in error. These regulations refer to the holder of an STC such as WACO needing to grant specific permission for any person to use the holder's STC when altering an aircraft, engine, or

propeller. However, Mr. Sargent concluded that the FAR's do not prohibit the end user of an STC from further altering the aircraft, engine, or propeller, as long as the alteration is performed in accordance with FAA Rules and Polices. (*See* 14 CFR Part 43 and Advisory Circular 43.13-2 respectively).

Mr. Sargent concluded that in order to obtain approval for the installation of the R755-A2 engine on the Aircraft, REL was simply required to obtain FAA approved data for such alteration, prior to the Aircraft being returned to service. REL complied with this requirement by hiring DER Minnis and obtaining the referenced FAA Form 8110-3's. (*See* Exhibits 2 and 3).

Mr. Sargent concluded that the work performed by REL was an FAA approved alteration of the Aircraft. Consequently, the work performed by REL was proper and did not require WACO's permission as erroneously misrepresented by WACO.

This is where the matter stands now. However, in order to resolve REL's differences with Anaconda and WACO, and in order for REL to continue this type of work without interference by WACO, REL would like to obtain a legal interpretation/opinion from the FAA concerning REL's past actions and its future similar actions.

REL'S REQUEST FOR A LEGAL INTERPRETATION/OPINION

REL requests that the FAA provide it with a legal interpretation/opinion that the process which REL undertook for the approval of the installation of the R755-A2 engine on the Aircraft was proper. Specifically, REL requests that the FAA provide a legal interpretation/opinion of 14 CFR 21.120 and 14 CFR 91.403 stating that REL's sale of a Jacobs R755-A2 radial engine for installation in this Aircraft and for installation in any WACO YMF-5 model aircraft, does not require WACO's permission because such work did not modify WACO's STC, but instead was an FAA approved alteration of the Aircraft. Further, REL requests that the FAA issue a legal opinion/interpretation stating that it is proper procedure for REL to obtain approval and certification for the installation of a Jacobs R755-A2 engine on a WACO YMF-5 model aircraft by obtaining DER approval and certification of the data, and issuance of a Form 8110-3, as was done by REL with Bobby Minnis and Aerospace Engineer, Steven Rosenfeld.

Finally, REL requests that the FAA issue a legal opinion/interpretation advising that WACO's interpretation of the subject FAR's is improper, and therefore the WACO Letters (Exhibits 5 and 6) were improper, and that it was improper for the FAA to have included the WACO Letters in the Aircraft's Registration file.

I realize the facts outlined in this letter are somewhat confusing. Therefore, I am happy to conduct a conference with you to discuss the details, and will be pleased to provide you with any additional information you request. I look forward to hearing from you in the immediate future.

Very truly yours,



Bradley K. Donnell

BKD/bl

cc: Steve Curry
Caleb Curry
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