



NTSB MEMORANDUM OF RECORD

Lynn Spencer
Aviation Investigator
Eastern Region, Office of Aviation Safety (ERA)
National Transportation Safety Board

Summary of Fuel Metering and Injection Examination at AVstar Fuel Systems, Inc
Date of Examination: June 4, 2019
Overseen by: Tim Monville, Senior Air Safety Investigator, NTSB
Accident Number: ERA19LA149

The following is a summary of the examination overseen by the above-named individual:

- The fuel servo, flow divider, and fuel injector nozzles were shipped to Ken Stachurski of AVstar Fuel Systems, Inc., via UPS Next Day Air, on May 31, 2019, airbill 1ZA3978T0198631705. The packed was delivered on June 3, 2019.
- The box was opened and the components were taken into the facility for operational testing and examination on June 4, 2019. The work was performed by Rene Loew.
- Components Examined:
 - RSA-5AD1 Servo Fuel Injector Assembly
 - Basic Parts List # 2524476-N
 - Parts List 2524450-9
 - Serial Number (S/N) 49869
 - Flow Divider
 - P/N List 2524232-2
 - S/N 66H
 - Fuel Injector Nozzles (4 each)
 - P/N 2524864-2
 - S/N – Not serialized
- The fuel servo was flowed to the “Service Limits” Test Specification¹. The unit passed the tests.
- The pressure sensitivity test was satisfactory.
- Examination of the fuel strainer revealed very slight fiber on the interior.

¹ The Service Limits was referenced to a Service Information Letter RS-75 Rev. 1 dated December 2, 2004. The letter was because Textron Aviation requested a flow schedule change to meet engine requirements.



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- The fuel servo was removed from the test bench and the venturi was removed which revealed slight contamination.
- The regulator section of the fuel servo was removed and the fuel diaphragm stem was satisfactory and the upper nut was in-place. No contamination was noted on the metered or unmetered side of the fuel regulator section, or on the high-pressure or low-pressure sides of the air diaphragm.
- The cover of the flow divider which had been previously removed in the field was removed to verify proper installation. The unit was reassembled in the same orientation as received for operational testing and flowed to the Minimum Fuel Flow Requirements. The unit passed all testing.
- Examination of the fuel injector nozzles revealed all: 1) had their insert, 2) visually appeared clear of obstructions, 3) had a single circumferential machined groove (normal), 4) were marked with "A" of a flat which is required to be opposite of the bleed hole, and 5) had unknown material circumferentially on the midspan of the threads that would thread into the cylinder. Visually, the lower end of the threads of the No. 4 nozzle were damaged.
- All nozzles passed the "Air Flow Test Requirements" and all but the No. 4 nozzle passed the "Fuel Flow Requirements." The No. 4 nozzle .4 PPH less than the minimum specified fuel flow in terms of pph.