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Title:

Investigation Report

Number:

VSE MFG010.R0**DETAILS OF REQUEST**

NTSB Investigation Number	ERA24LA223
Unit Type	Fuel Control Unit
Part Number	3244755-22-21-(19-17)
Serial Number	A77831
Investigation Date	12 Feb 2025



Title:

Investigation Report

Number:

VSE MFG010.R0

SUMMARY



Aviation Investigation Preliminary Report

Location:	Lehigh Acres, FL	Accident Number:	ERA24LA223
Date & Time:	May 20, 2024, 10:08 Local	Registration:	N762MC
Aircraft:	BEECHCRAFT TC-12B	Injuries:	2 None
Flight Conducted Under:	Public aircraft		

On May 20, 2024, about 1008 eastern daylight time, a Beechcraft TC-12B airplane, N762MC, was substantially damaged when it was involved in an accident near Lehigh Acres, Florida. The pilot and the copilot were not injured. The airplane was operated as a public aircraft.

The purpose of the flight was to train a new copilot in the right cockpit seat for the Lee County, Florida Mosquito Control District (LCMCD). The flight instructor was in the left cockpit seat.

The LCMCD chief pilot reported the following. After an uneventful training mission, the copilot landed the airplane on runway 32 on or very near the centerline. He reduced power to idle, then lifted the throttles to move them over the gate into beta and reverse. At this point, the airplane quickly veered to the left. The flight instructor intervened and both pilots attempted to turn the airplane to the right and slow it down. Both pilots reported that the airplane seemed to be accelerating as it departed the left side of the runway. The flight instructor attempted to move the condition levers to cutoff; however, the airplane continued into a dry fish pond that was about 5 ft deep. The left main and nose gear collapsed and the airplane came to a stop.

An inspector with the Federal Aviation Administration responded to the accident site and examined the wreckage. There was substantial damage to the left wing, the aft fuselage, and the areas around the nose and left main landing gear. Both propellers were damaged from ground contact.

The wreckage was retained for further examination.

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Aircraft and Owner/Operator Information

Aircraft Make:	BEECHCRAFT	Registration:	N762MC
Model/Series:	TC-12B	Aircraft Category:	Airplane
Amateur Built:			
Operator:	LEE COUNTY MOSQUITO CONTROL DISTRICT	Operating Certificate(s) Held:	None
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	KRSW 27 ft msl	Observation Time:	09:53 Local
Distance from Accident Site:	7 Nautical Miles	Temperature/Dew Point:	28°C / 21°C
Lowest Cloud Condition:	Clear	Wind Speed/Gusts, Direction:	6 knots / , 330°
Lowest Ceiling:	None	Visibility:	10 miles
Altimeter Setting:	29.91 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Punta Gorda, FL (PGD)	Destination:	Lehigh Acres, FL

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Unknown
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	26.63792-81.709922

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Daniel Crawford, FAA/FSDO, Tampa, FL
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.

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ERA24LA223

This information is preliminary and subject to change.

Page 2 of 2

ERA24LA223

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PARTICIPANTS

Frank Lukachinsky Aviation OEM Investigator VSE Aviation
Lydia Nichols Aviation OEM Investigator VSE Aviation
Ben Taylor Production Supervisor VSE Aviation
Ty Winebrenner Aviation Accessory Technician VSE Aviation
Paul Rau Program Manager, FAA Operational Safety Branch (AIR-722)
Ricardo Asensio Sr. Air Safety Investigator Textron Aviation



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VSE MFG010.R0**INSPECTION RESULTS**

1. Boxed unit was removed from secure cabinet and visually inspected for damage to box prior to opening. No damage noted. Reference Images 1A, 1B, 1C, 1D, 1E, 1F.
2. Box was opened, packaging material removed. Unit was observed to be in a plastic bag. Reference Images 2A, 2B, 2C, 2D, 2E.
3. Unit was removed from the bag, photographed, Receiving Inspection was performed to include inducing the unit and acquiring pictures of the outside surfaces. Protective caps present on Air/Fuel fittings. No protective cap on drain fitting. Drive Coupling was present on the drive shaft, no damage noted. A Lee County Mosquito Control District Unserviceable Tag was wired to the unit. Data Plate present. Reference Images 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, 3I, 3J, 3K, 3L.
4. The following were observed prior to unit tested.
 - A. The drive shaft moved freely (no binding) with no visible damage. Reference Image 4A.
 - B. The Idle Speed Stop Adjustment Screw and Throttle Link appear to be Field Adjusted. Reference Image 4B.
 - C. Visually inspected fuel and air fittings, found to be clear, no debris.
 - D. Cut-off lever/shaft appears bent. Reference Image 4C.
 - E. Removed ratio lever covers. Visually inspected for contamination/debris, no contamination/debris present. Retained fluid sample from fuel section. Reference Images 5A, 5B.
 - F. No binding in throttle linkage.
 - G. Throttle linkage attachment hardware was present and removed to facilitate flow bench testing.
5. Summary of Test:

Unit was tested on Test Stand VSETS-009 (Independence, Kansas).
Configured stand and unit IAW Test Specification AETS 14275. Reference Image 6A.
Performed an Air Leak test, no leaks were observed.
Test Point 1.02 Pressurizing Valve Opening measured at 50 PSI.
Test Point 3.01 Nozzle Flow, PPH measured at 460 PPH.
Test Point 4.01 Nozzle Flow, PPH measured at 181 PPH.
Test Point 5.02 Nozzle Flow, PPH measured at 134 PPH.
Test Point 6.01 Nozzle Flow, PPH measured at 322 PPH.
Test Point 7.02 Fuel Cut-Off 7 degrees delayed.
Remaining Test Points within limits.
6. Unit removed from test bench.

Additional Information:

Per VSE Aviation data, the unit was TAR (Test as Received) and Repaired July 2016.

IMAGES

Image 1A



Image 1B



Image 1C



Image 1D



Image 1E



Image 1F

IMAGES

Image 2A



Image 2B

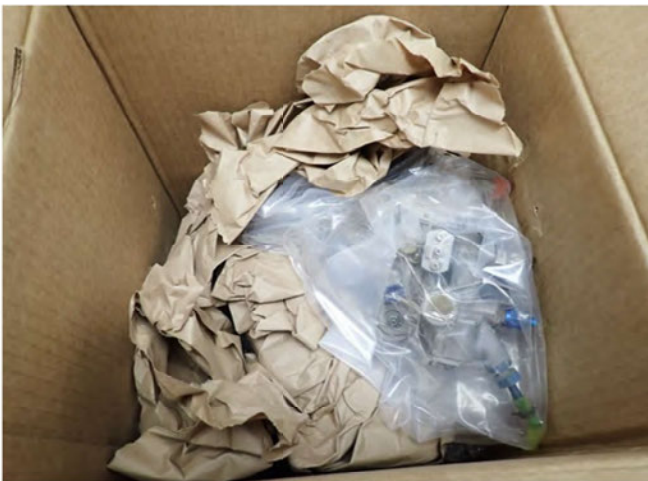


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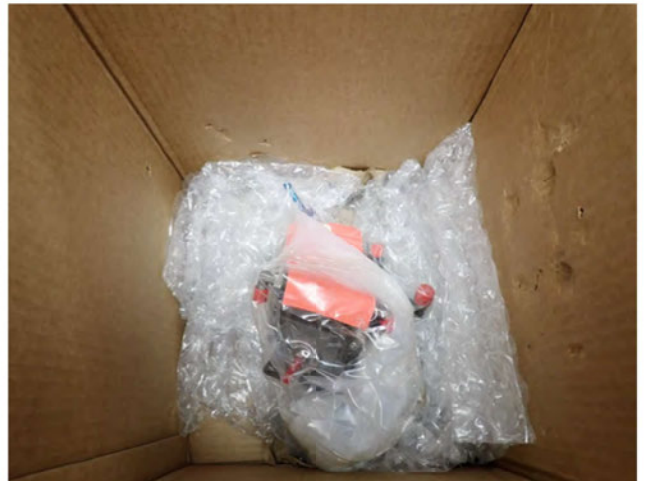


Image 2D



Image 2E

IMAGES

Image 3A



Image 3B

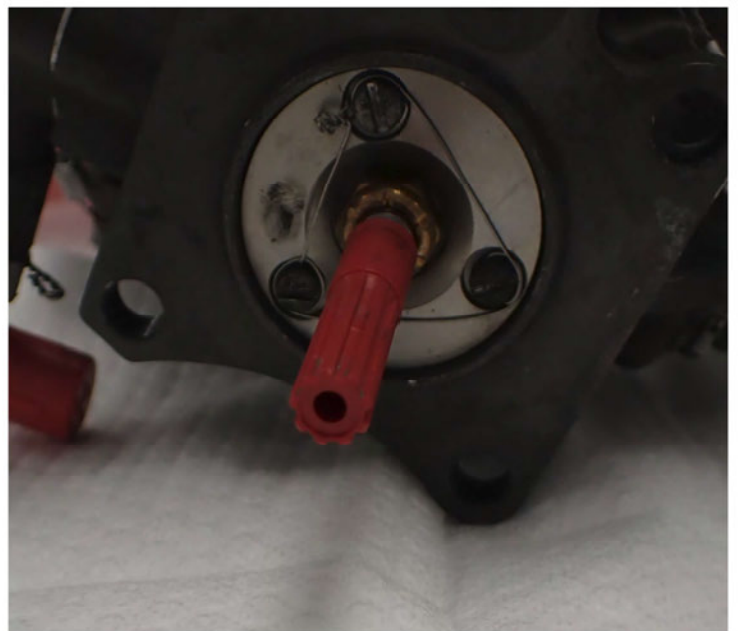


Image 3C

IMAGES

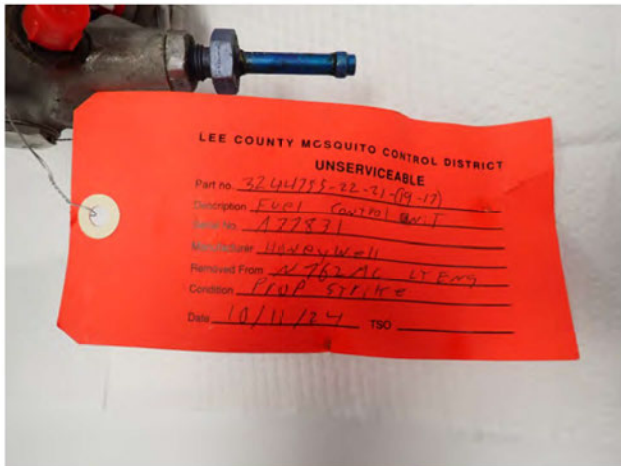


Image 3D



Image 3E



Image 3F



Image 3G

IMAGES

Image 3H



Image 3I



Image 3J



Image 3K

IMAGES

Image 3L

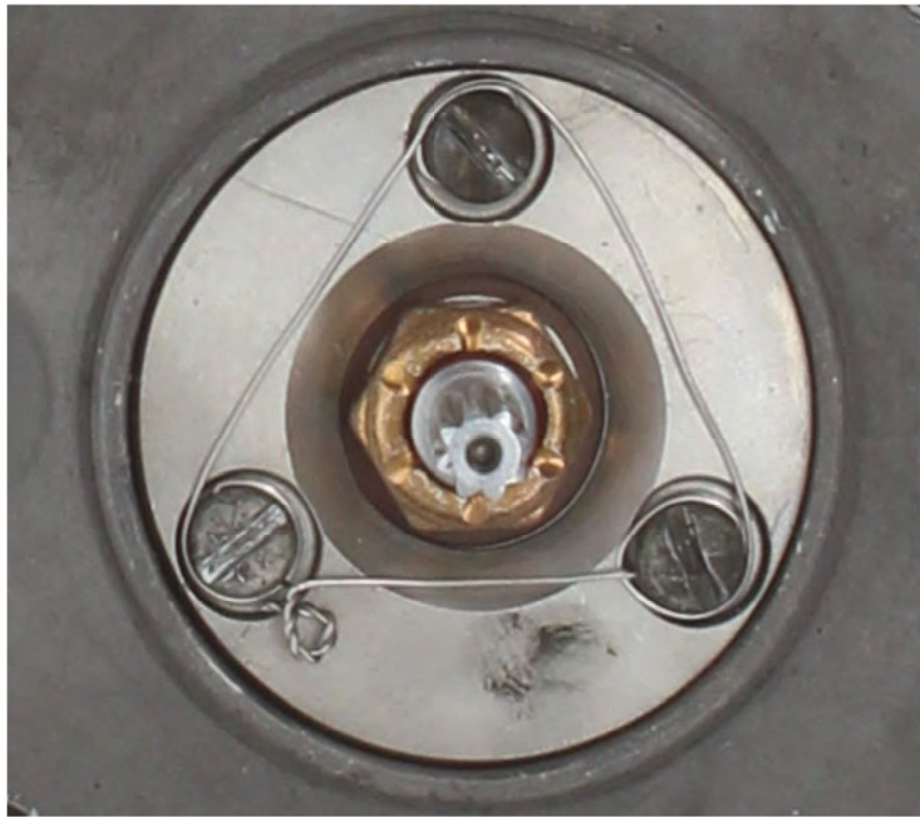
IMAGES

Image 4A

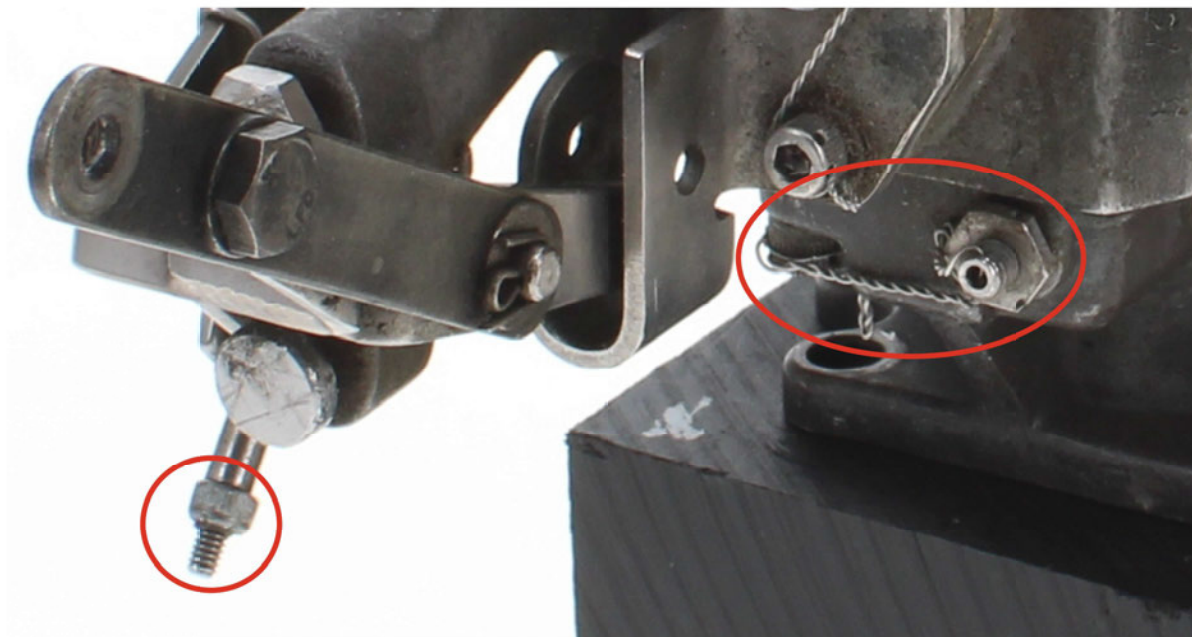
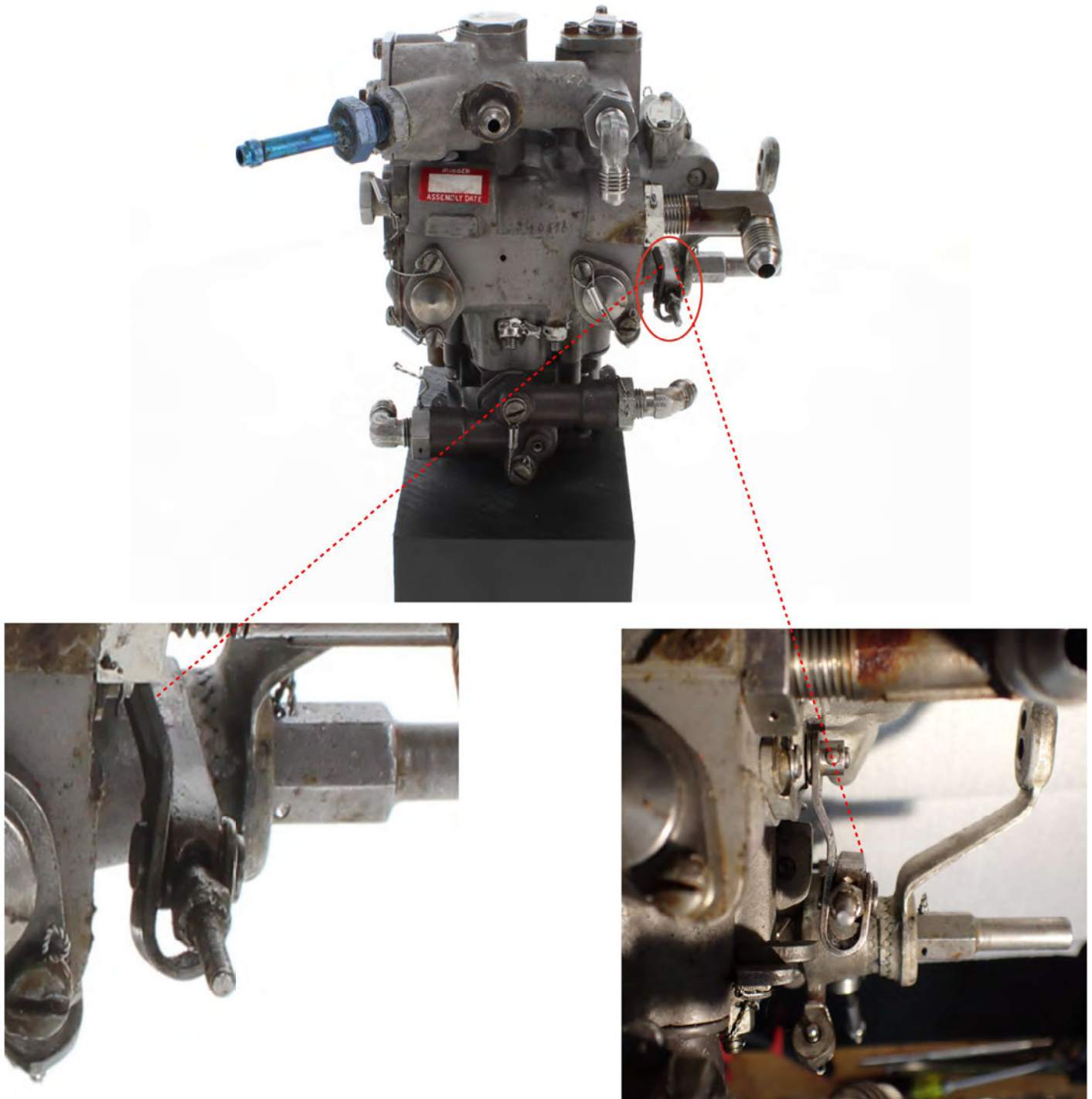
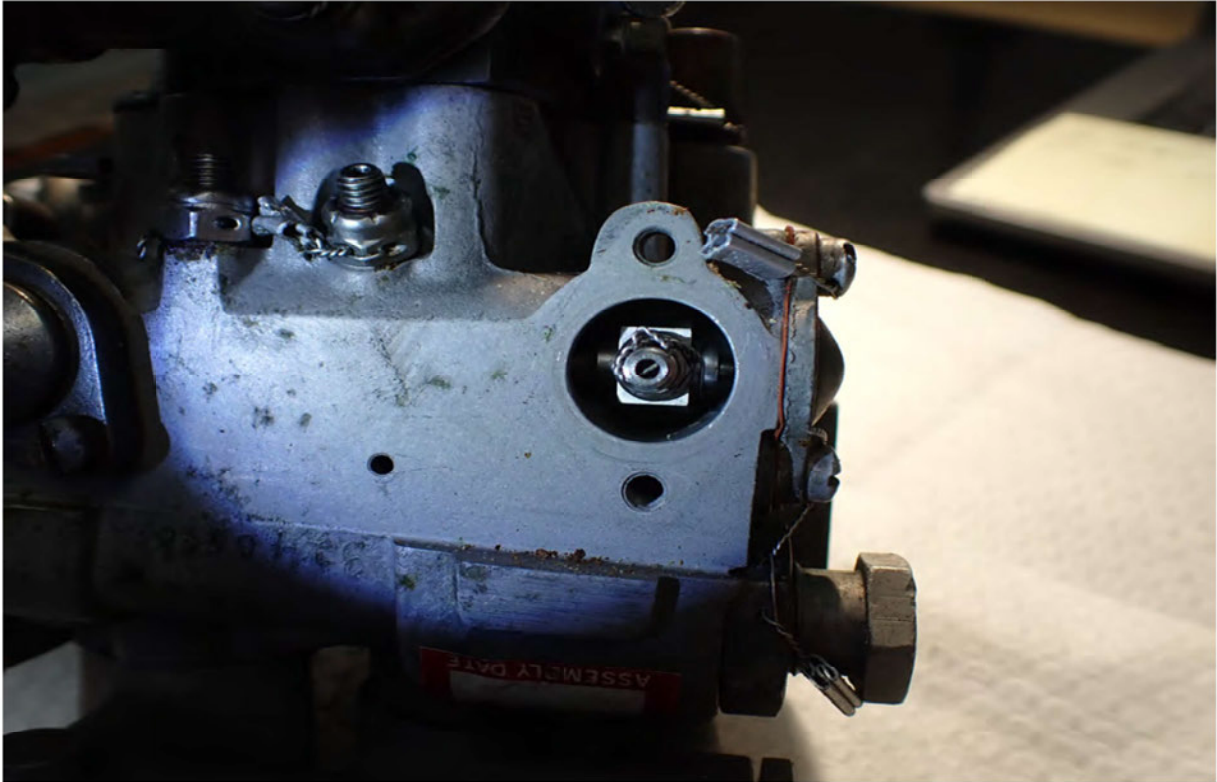
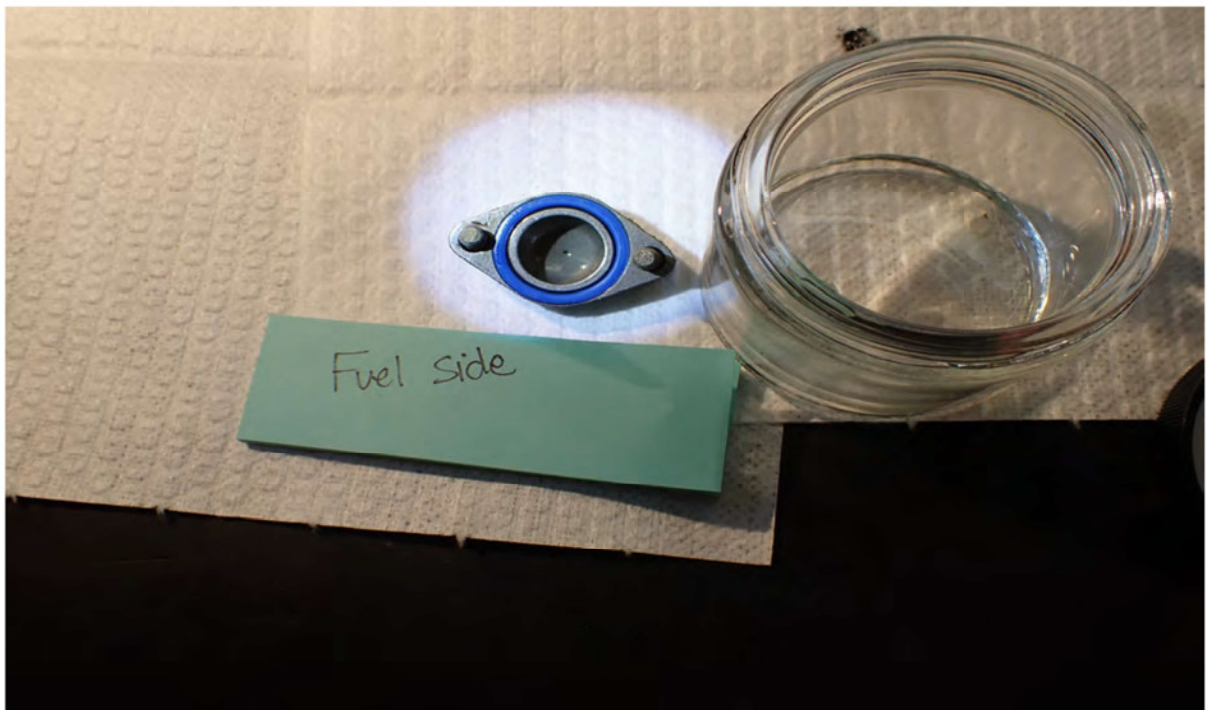
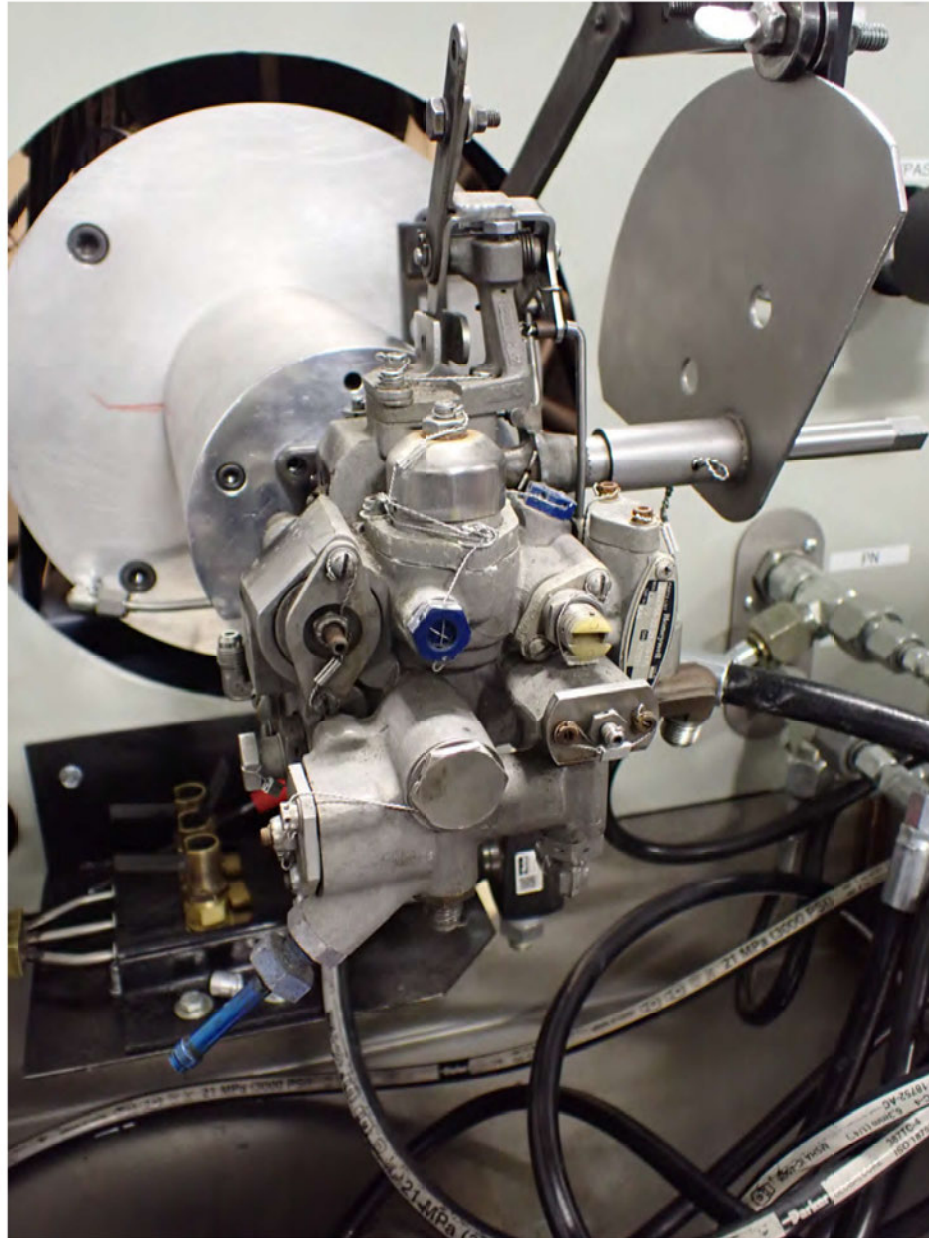


Image 4B

IMAGES**Image 4C**

IMAGES**Image 5A****Image 5B**

IMAGES**Image 6A**



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Lydia Nichols

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-05'00'



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VSE MFG010.R0**DETAILS OF REQUEST**

NTSB Investigation Number	ERA24LA223
Unit Type	Fuel Control Unit
Part Number	3244755-22-18
Serial Number	A62824
Investigation Date	12 Feb 2025



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SUMMARY



Aviation Investigation Preliminary Report

Location:	Lehigh Acres, FL	Accident Number:	ERA24LA223
Date & Time:	May 20, 2024, 10:08 Local	Registration:	N762MC
Aircraft:	BEECHCRAFT TC-12B	Injuries:	2 None
Flight Conducted Under:	Public aircraft		

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The LCMCD chief pilot reported the following. After an uneventful training mission, the copilot landed the airplane on runway 32 on or very near the centerline. He reduced power to idle, then lifted the throttles to move them over the gate into beta and reverse. At this point, the airplane quickly veered to the left. The flight instructor intervened and both pilots attempted to turn the airplane to the right and slow it down. Both pilots reported that the airplane seemed to be accelerating as it departed the left side of the runway. The flight instructor attempted to move the condition levers to cutoff; however, the airplane continued into a dry fish pond that was about 5 ft deep. The left main and nose gear collapsed and the airplane came to a stop.

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The wreckage was retained for further examination.

DRAFT – NOT FOR PUBLIC RELEASE

Aircraft and Owner/Operator Information

Aircraft Make:	BEECHCRAFT	Registration:	N762MC
Model/Series:	TC-12B	Aircraft Category:	Airplane
Amateur Built:			
Operator:	LEE COUNTY MOSQUITO CONTROL DISTRICT	Operating Certificate(s) Held:	None

Operator Designator Code:

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	KRSW, 27 ft msl	Observation Time:	09:53 Local
Distance from Accident Site:	7 Nautical Miles	Temperature/Dew Point:	26°C / 21°C
Lowest Cloud Condition:	Clear	Wind Speed/Gusts, Direction:	5 knots / , 330°
Lowest Ceiling:	None	Visibility:	10 miles
Altimeter Setting:	29.91 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Punta Gorda, FL (PGD)	Destination:	Lehigh Acres, FL

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Unknown
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	26.50792, -81.709922

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Daniel Crawford, FAA/FSDO, Tampa, FL
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.

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VSE MFG010.R0**INSPECTION RESULTS**

1. Boxed unit was removed from secure cabinet and visually inspected for damage to box prior to opening. No damage noted. Reference Images 1A, 1B, 1C, 1D, 1E, 1F.
2. Box was opened, packaging material removed. Unit was observed to be in a plastic bag. Reference Images 2A, 2B, 2C, 2D. Unit was removed from the bag, photographed, Receiving Inspection was performed to include inducing the unit and acquiring pictures of the outside surfaces. Protective caps present on Air/Fuel fittings. Section of drain line attached to the drain fitting. Data Plate present. Drive Coupling was present on the drive shaft (appears torsionally broken). Reference Images 3A, 3B, 3C, 3D, 3E, 3F.
3. The following were observed prior to unit tested:
 - A. Drive body damaged. Reference Images 4A, 4B, 4C, 4D.
 - B. Eccentric Shaft missing. Portion of the threaded section of shaft and nut present in the drive body. Reference Images 5A, 5B.
 - C. Governor Cam Lever Assembly and Governor Spring missing.
 - D. Px port Packing, Preformed missing. Reference Image 6A.
 - E. Po port Packing, Preformed missing. Reference Image 6A.
 - F. Damaged Drive Body mounting screw hole in the Main Body. Reference Image 6A, 6B.
 - G. Removed ratio lever covers. Visually inspected for contamination/debris, none present. Reference Images 7A, 7B, 7C.
 - H. Visually inspected fuel fittings, found to be clear, no debris.
 - I. No binding in throttle linkage.
 - J. Throttle linkage attachment hardware and throttle shaft was present and removed.
4. Removed drive body.
5. Installed slave drive body (with new Preformed Packings) to unit.
6. The following Test Points were conducted to test functionality of the fuel section.

Summary of Test:
Unit was tested on Test Stand VSETS-009 (Independence, Kansas).
Configured stand and unit IAW Test Specification AETS 14275.

Relief Valve Opening:
Test Point 1.01 measured at 1065 PSI.

Pressurizing Valve Opening:
Test Point 1.02 measured at 59 PSI.

Metering Valve Orifice and Bypass Head (P1-P2"HG) Setting:
Test Point 2.01 measured at 195 PPH P1-P2"HG measured at 40
Test Point 2.02 measured at 92 PPH P1-P2"HG measured at 39.5
Test Point 2.03 measured at 584 PPH P1-P2"HG measured at 38 Pc-Py measured at N/A

Low End of Accel, Curve and Throttle Movement Effect:
Test Point 5.01 measured at 90 PPH
Test Point 5.02 measured at 122 PPH (No change in nozzle flow with throttle angle at 30 degrees)

Cut-Off Modulation and Cut-Off Leakage
Test Point 7.01 measured at 160 PPH P1-P2"HG measured at 38.5 0 Nozzle Flow Change
Test Point 7.02 measured at 0 cc/Min. P2 measured at 38.5 PSI P1 pressure measured at 190 PSIG.
No External Leakage
7. Unit removed from Test Stand.
8. Slave drive body removed from unit.

Additional Information:

Per VSE Aviation data, the unit was TAR (Test as Received) and Repaired July 2016.

IMAGES

Image 1A



Image 1B



Image 1C



Image 1D



Image 1E



Image 1F

IMAGES

Image 2A



Image 2B

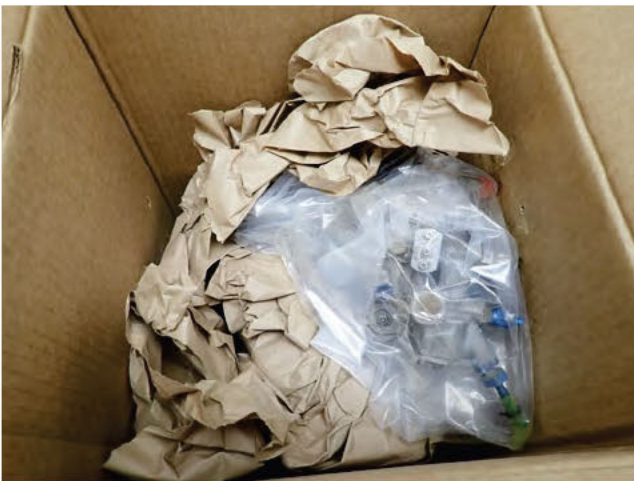


Image 2C



Image 2D

IMAGES



Image 3A



Image 3B



Image 3C



Image 3D



Image 3E



Image 3F

IMAGES

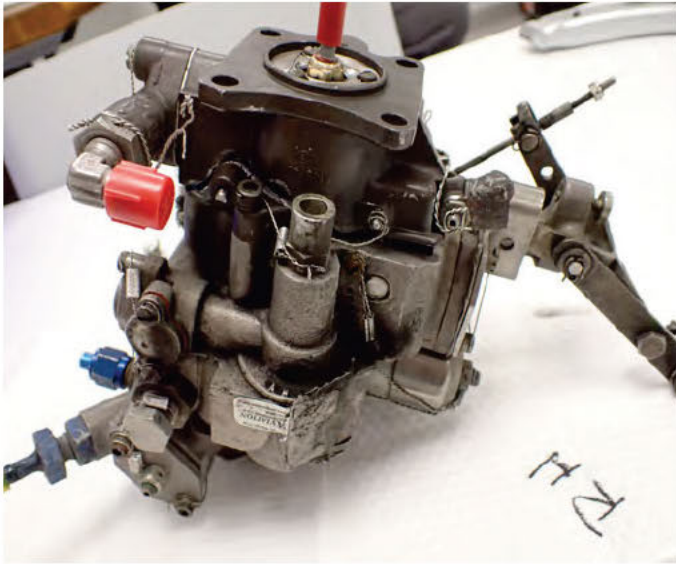


Image 4A

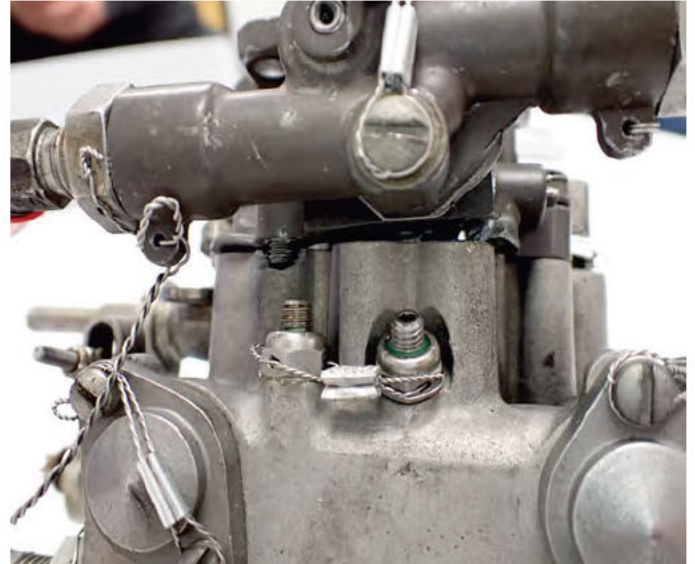


Image 4B



Image 4C

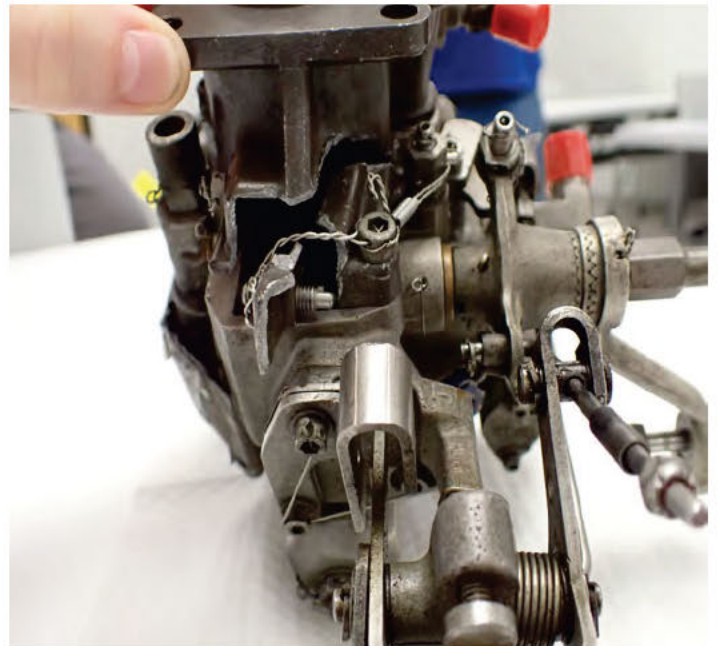


Image 4D

IMAGES



Image 5A



Image 5B

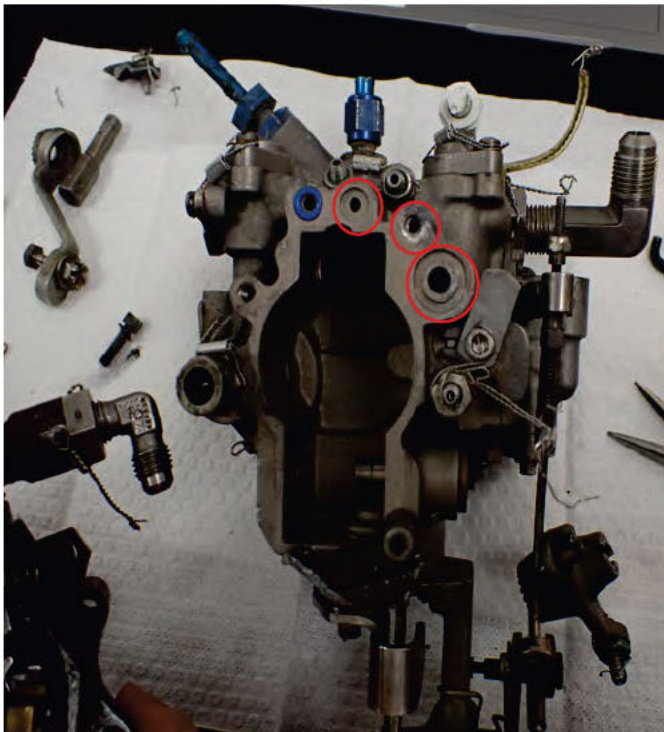


Image 6A

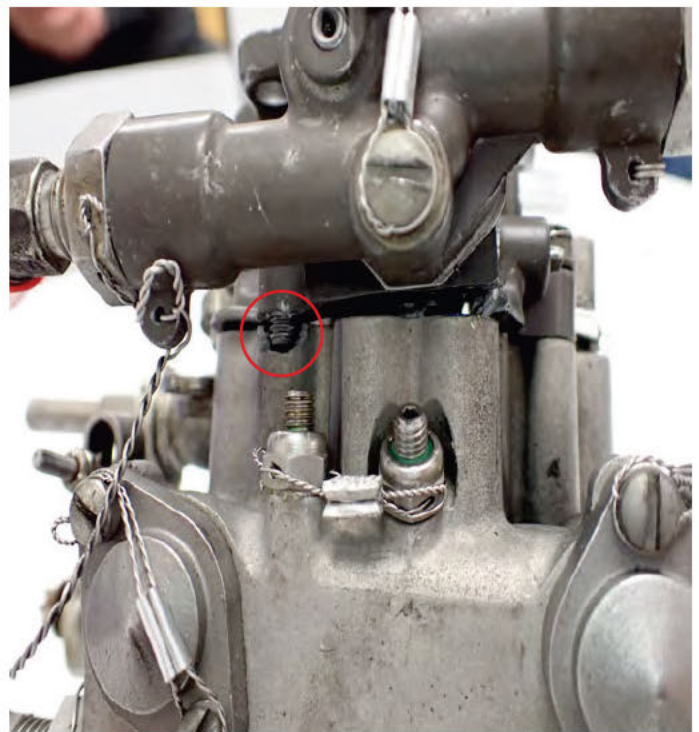


Image 6B

IMAGES

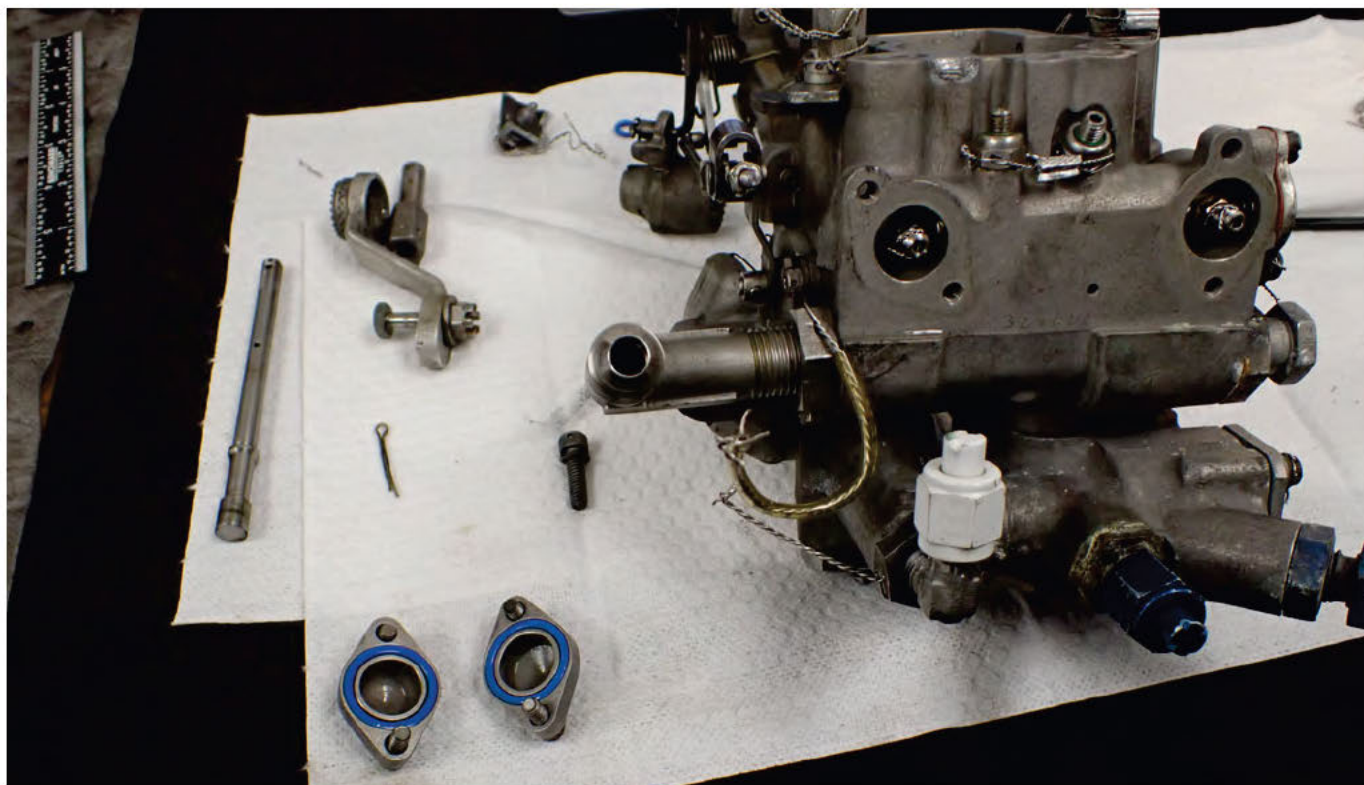


Image 7A

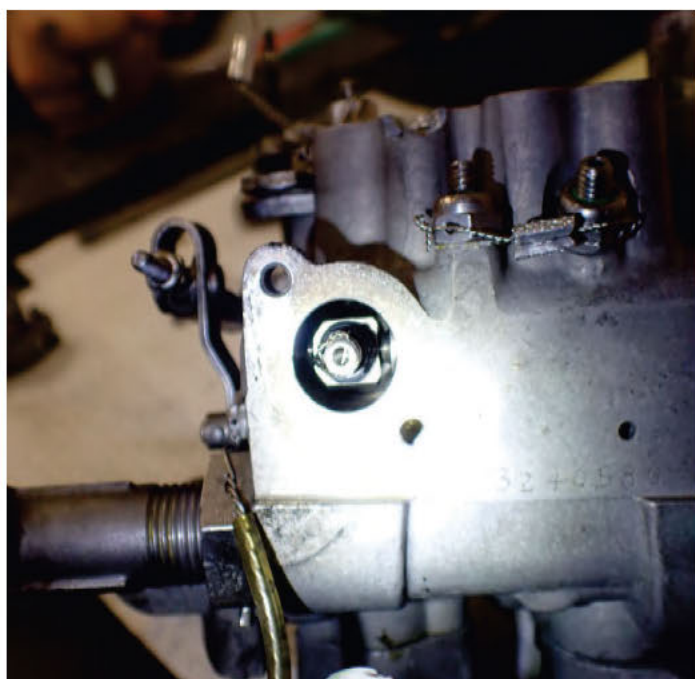


Image 7B



Image 7C



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Lydia Nichols Aviation OEM Investigator VSE Aviation

Lydia Nichols

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