

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA24LA257

CARBURETOR TESTING AND EXAMINATION

March 28, 2025

TABLE OF CONTENTS

A. ACCIDENT	3
B. CARBURETOR TESTING AND EXAMINATION	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION	3
1.0 CARBURETOR TESTING	3
2.0 CARBURETOR TEARDOWN EXAMINATION	4

A. ACCIDENT

Location: Zephyrhills, FL

Date: June 8, 2024

Time: 1016 EDT
1416 UTC

Airplane: Piper PA28-235 Registration: N15363

Component: Marvel Schebler Carburetor - P/N: 10-5054 S/N: BZ-10-309

B. CARBURETOR TESTING AND EXAMINATION

IIC Kurt Gibson
NTSB
Washington, D.C.

C. SUMMARY

The carburetor was taken to AvStar Fuel Systems in Jupiter, Florida, for testing and tear-down examination. The examination and testing of the carburetor revealed that there was significant corrosion and loose debris within the carburetor bowl. The debris and corrosion were also found within the main jet boss and the main jet.

D. DETAILS OF THE EXAMINATION

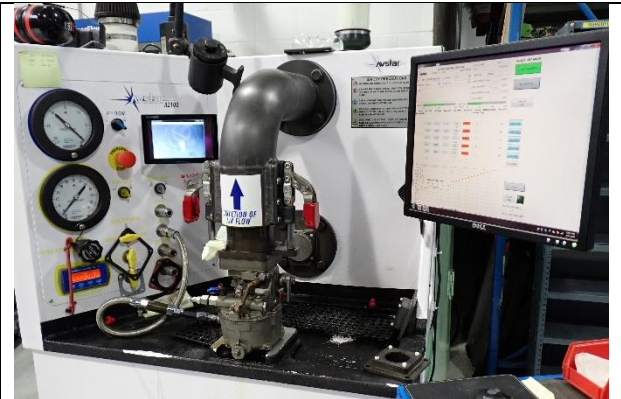
1.0 Carburetor Testing

The carburetor was placed on a test bench, and a static pressure test was performed. The carburetor static pressure test indicated the bowl, floats, and float valve were operating normally. During the carburetor static test, the accelerator pump was tested; the test revealed that the accelerator pump was capable of discharging fluid; however, it was very weak, and the amount of fluid expelled during pump actuation was low.

The carburetor was then placed on a carburetor flow test bench. The carburetor performed normally with a slightly leaner fuel flow when tested at the 1400 PPH air flow test point; however, it would not have prevented normal operation of the engine.



Photograph 1: Carburetor Static Testing



Photograph 2: Carburetor Fuel Flow Testing

2.0 Carburetor Teardown Examination

The carburetor was disassembled, and the internal components were examined. The disassembly revealed that the carburetor bowl contained a significant amount of debris and corrosion, and there were several large, loose particulates within the carburetor bowl. The main fuel nozzle was removed, and it was found that particulates were within the main fuel nozzle and the fuel nozzle well. Debris was also found in the mixture metering sleeve. The accelerator pump displayed normal wear signatures; however, the metal check valve ball was missing within the accelerator pump housing. There were no signs of the metal check valve ball anywhere within the carburetor.

The carburetor floats, and the carburetor float valve displayed normal operating and wear signatures. The fuel inlet screen was removed, and it was observed to be slightly crushed on one end; however, the screen was unobstructed, and there was no debris within the screen.



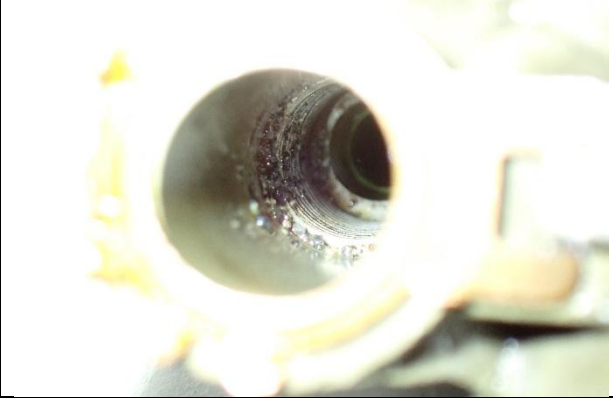
Photograph 3: Carburetor bowl with corrosion and contamination



Photograph 4: Carburetor bowl with corrosion and contamination



Photograph 5: Main metering jet with debris



Photograph 6: Main metering jet housing with debris



Photograph 7: Mixture control housing with debris



Photograph 8: Debris sample with scale



Photograph 9: Debris sample with scale



Photograph 10: Fuel inlet screen

Submitted by:

Kurt Gibson
Aviation Accident Investigator