

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24LA077

COMPONENT EXAMINATION SUMMARY

A. ACCIDENT

Location: Washington, MO
Date: December 30, 2023
Time: 1500 Central Standard Time
Airplane: Bellanca 17-30A

B. COMPONENT EXAMINATION

Investigator	Alexander Lemishko National Transportation Safety Board Denver, Colorado
Party Representative	Phillip Grice Continental Aerospace Technologies Mobile, Alabama

C. SUMMARY

On December 30, 2023, about 1500 central standard time, a Bellanca 17-30A airplane, N678MJ, was substantially damaged when it was involved in an accident near Washington, Missouri. The pilot sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported a loss of engine power during initial climb after takeoff. He executed a forced landing to a grass area about 100 yards north of the runway. The airplane sustained damage to the left wing.

D. DETAILS OF THE EXAMINATION

The throttle and control unit and fuel pump were tested on July 18/19, 2024, at Continental Aerospace Technologies (Mobile, Alabama) under direct oversight of an NTSB investigator.

The components were provided for testing in the sealed carton and unpackaged in the presence of the NTSB investigator.

E. EXAMINATION SUMMARY

1.0 Fuel Pump

Continental Motors - Part No. 646824-7A3 (Serial No. B151A174R)

The fuel pump was installed on a production test bench. The initial test flow rates did not meet the specification requirements. Partial disassembly revealed some debris within the vapor ejector cavity. The debris was removed, and the pump reassembled. The test procedure was completed again, and the pump performed to specification. Under 10x magnification, the debris appeared to be a small piece of rubber material.



Figure 1 - Fuel Pump (as received)



Figure 2 - Fuel Pump (installed on test bench)

ATS3000

Active Test | Test List | Results | PID Engineer | Status: Safe Stop..

TEST DATA | SPECIAL CALC | HELP | DISP 2 | Currently Running: | Press RUN to begin

Test Point	boost pump ()	supply con (PSIA)	discharge f (PPH)	speed refer (RPM)	aneroid cor ("HgA)	supply tem (F)	discharge t (F)	reservoir t (F)	pump speed (RPM)
✓ 2	0	17.58	2.300	0.3	30.072	70.9	72.7	73.8	0.3
X 3	0	15.52	7.360	599.8	30.031	71.1	72.9	73.8	599.8
X 4	0	15.50	222.577	2701.0	30.011	71.9	73.9	74.1	2701.0
X 5	0	15.51	213.425	2700.6	28.830	71.7	73.8	73.9	2700.6
X 6	0	15.55	183.376	2700.6	28.830	71.6	73.9	73.9	2700.6
X 7	0	15.51	167.557	2700.0	28.830	71.6	74.1	74.0	2700.0
X 8	0	15.49	7.260	599.8	28.830	71.0	73.7	74.0	599.8
✓ 9	0	15.49	0.010	0.7	30.052	71.0	73.6	74.0	0.7
✓ 10	0	14.89	0.010	0.6	30.052	71.0	73.5	74.0	0.6

Parameter	Low	Actual	High

Parameter	Low	Actual	High

Figure 3 - Fuel Pump Initial Test Results



Figure 4 - Fuel Pump Debris

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2.0 Throttle and Control Unit

Continental Motors - Part No. 629399A24 (Serial No. A16EA089)

The throttle and control unit was installed on a production test bench. The unit responded normally to throttle inputs. However, the measured test fuel flow rate at each test point exceeded the specification for a production unit.¹ Otherwise, the unit performed as expected and no anomalies were observed.

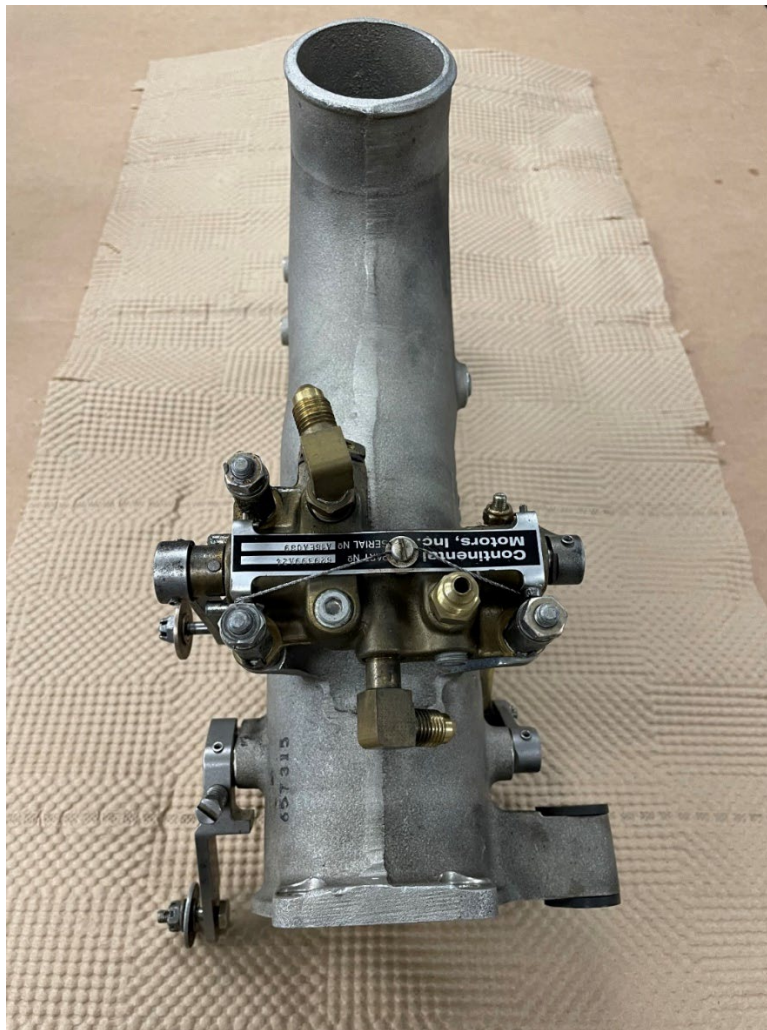


Figure 5 - Throttle and Control Unit (as received)

¹ Fuel flow rates are adjustable on a particular airframe. According to the manufacturer, it is common for in-service units to be adjusted higher than production requirements, especially on low-wing airplanes.



Figure 6 - Throttle Unit (installed on test bench)

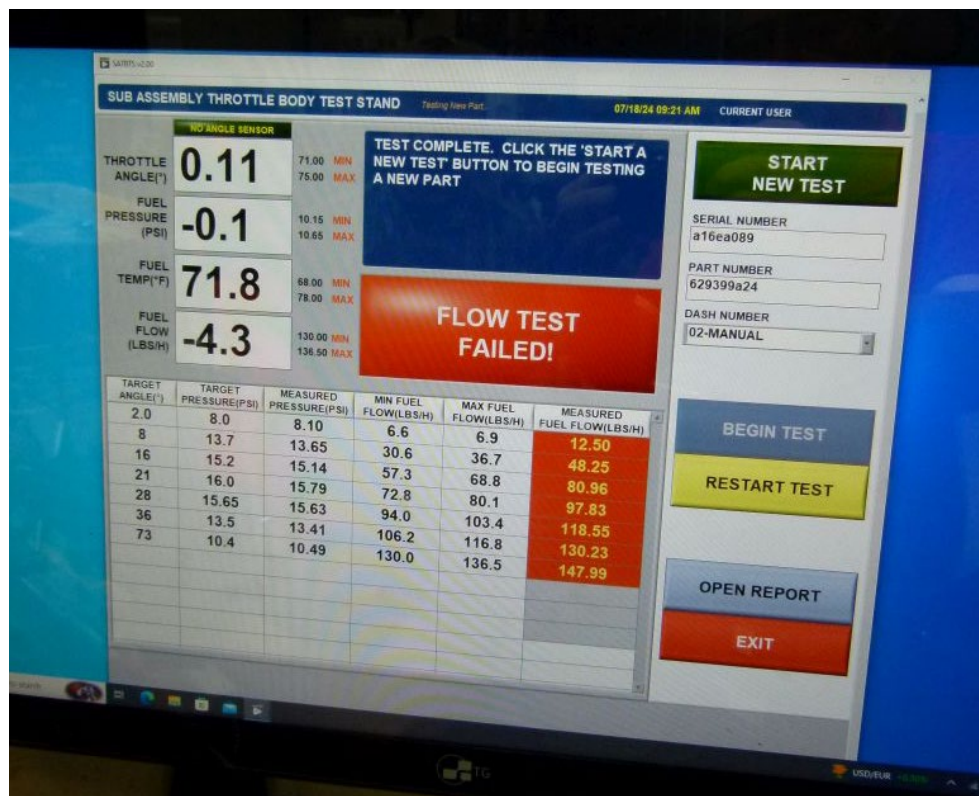


Figure 7 - Throttle Unit Test Results