

NATIONAL TRANSPORTATION SAFETY BOARD

OFFICE OF AVIATION SAFETY
WASHINGTON, D.C. 20594

February 15, 2020

POWERPLANTS GROUP FIELD NOTES

NTSB ID No.: WPR19LA157

A: ACCIDENT

Location: Jerome County Airport, Jerome, Idaho

Date: May 14, 2019

Time: 0919 mountain daylight time

Aircraft: Vought F4U-7, N965CV

B: POWERPLANTS GROUP

Investigator: Gordon J. Hookey
National Transportation Safety Board
Washington, D.C.

C: SUMMARY

On May 14, 2019, about 0919 mountain daylight time, a tailwheel-equipped Vought F4U-7 airplane, N965CV, was substantially damaged during a runway excursion following an aborted takeoff at Jerome County Airport (JER), Jerome, Idaho. The commercial pilot sustained minor injuries. The airplane was registered to BA 1945 LLC., and operated by the pilot under the provisions of Title 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight, which was originating at the time of the accident.

The pilot reported that following an uneventful engine runup, he taxied onto runway 08 (5,001-feet long by 75-feet wide) and performed a last minute power check, before starting his takeoff roll. The pilot stated that the airplane accelerated normally, however, after he had passed the mid-point on the runway, he felt a vibration followed by the airplane decelerating, and a sudden engine “cough.” The pilot reduced power and applied the brakes to abort the takeoff. Subsequently, the airplane exited the right side of the runway, and impacted a dirt berm and fence, before it came to rest upright.

The carburetor was sent to Vintage Carburetors, Tehachapi for testing and disassembly in the presence of an NTSB investigator on February 15, 2020.

D: DETAILS OF INVESTIGATION

The carburetor was shipped to Vintage Carburetors, Inc., Tehachapi, California for testing and disassembly. The box was received at Vintage sealed. (Photo No. 1) The box was opened in the presence of an NTSB investigator. (Photo No. 2)



Photo No. 1: Box containing carburetor as received at Vintage Carburetor prior to opening.



Photo No. 2: Carburetor after the box was opened.

The carburetor was removed from the box and placed on a work bench for a visual examination. The carburetor's data plate indicated it was a Stromberg Injection Carburetor Model Number PR58E2, Serial Number 817626, Parts List Number 391399-2. (Photo No. 3)



Photo No. 3: Close up view of carburetor's data plate.

The visual examination of the carburetor showed that it did not have any physical damage to the exterior. (Photos Nos. 4, 5, 6, 7, and 8)



Photo No. 4: Exterior view of carburetor.



Photo No. 5: Exterior view of carburetor.

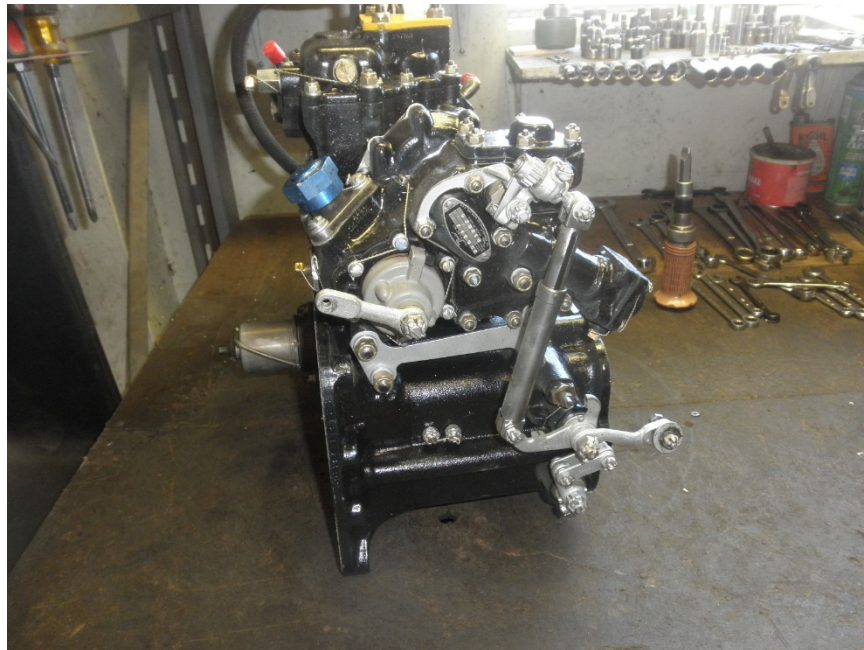


Photo No. 6: Exterior view of carburetor.

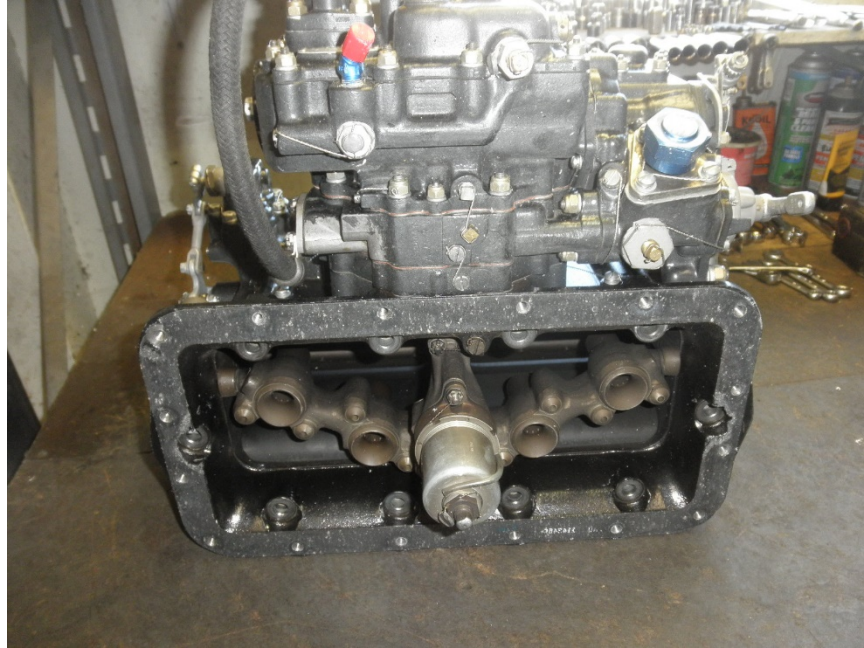


Photo No. 7: Exterior view of carburetor.



Photo No. 8: Exterior view of carburetor.

The throttle linkage moved freely and without restriction. The automixture control was in place on the carburetor. When it was removed, it was noted that the O-ring was in place and intact. However, the O-ring was dry and was cut. (Photo No. 9)



Photo No. 9: Automixture control showing O-ring that was dry was in place.

The carburetor was installed on a Stromberg Carburetor Flow Bench. All of the gages had stickers indicating their calibration was still valid. The test fluid was naphtha. It was noted that there was a loop of safety wire on each end of the boost rack. (Photos Nos. 10 and 11) According to Vintage Carburetor, the safety wire on the boost rack was not normal. The throttle plates idle gap was greater than the required 0.015 inches.



Photo No. 10: Close up view of loop of safety wire around end of boost rack.



Photo No. 11: Close up view of loop of safety wire around end of boost rack.

The carburetor was tested as received in accordance with the acceptance test procedure. The test was then repeated to determine if there was any shift of initial results. The results are as follows:

Test point	1st test (pph)	Tolerance (pph)	2nd test (pph)
3	345	-	Not tested
4	Idle cut off	0-6	Idle cut off
5	330	319-332	332
6	300	268-278	298
7	415	387-402	415
8	490	468-487	490
9	615	588-611	615
10	520	487-507	515
11	675	665-692	680
12	800	825-858	795
13	905	979-1019	935
14	1090	1184-1232	1110
15	990	1080-1124	1020
16	1610	1777-1848	1700

At test points Nos. 13 to 16, when the control was shifted between autolean and autorich, the flow increased 30 pph (905-935), 20 pph (1090-1110), 30 pph (990-1020) and 90 pph (1610-1700), respectively. According to Vintage Carburetor, the excessive lean flow at the high flow settings could cause detonation.

The automatic mixture control unit was tested. The results of the test were:

Density	0.0743	0.0611	0.0408
Low (Rich) Limit	26.95	31.8	35.3
High (Lean) Limit	29.45	32.2	35.7
Results	28.00	31.835.0	

Following the completion of the tests, the carburetor was removed from the flow bench and transferred to a work bench and disassembled. The enrichment valve diaphragm was intact, but it was noted to be stiff. (Photo No. 12) According to Vintage Carburetor, the stiff enrichment valve diaphragm would cause the fuel flow at the higher settings to be lower than required. The main fuel diaphragm, air diaphragm, and the center balance diaphragm were all in place and intact. Photos Nos. 13, 14, and 15)



Photo No. 12: The enrichment valve showing that it was intact.



Photo No. 13: Main fuel diaphragm showing that it was intact.

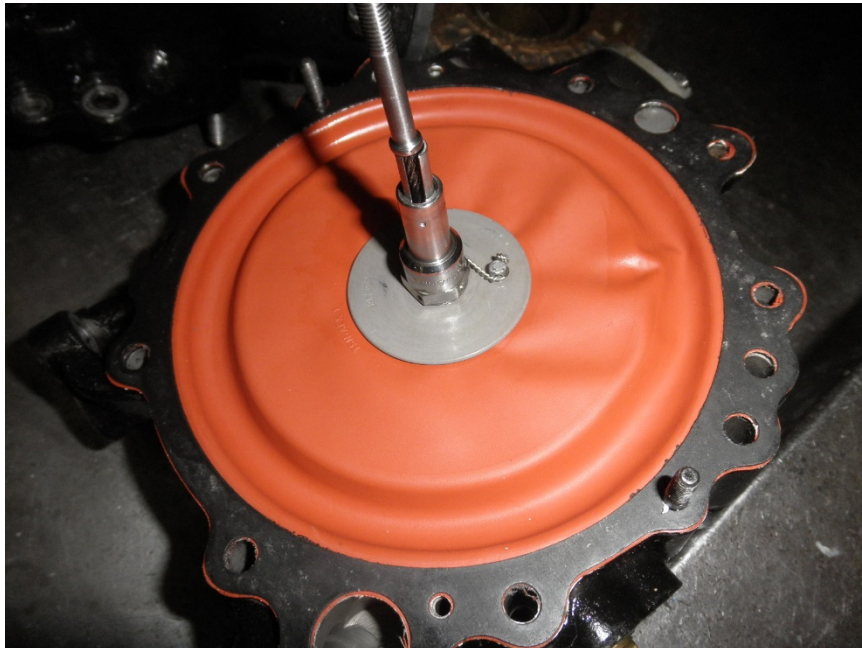


Photo No. 14: Air diaphragm showing that it was intact.



Photo No. 15: Center balance diaphragm showing that it was intact.

The carburetor was reassembled with the nuts and bolts only finger tight. The carburetor was then placed in a large plastic bag that was then placed in a box that was sealed. The box was labeled for return to the Investigator-in-Charge. (Photos Nos. 16, 17, and 18)



Photo No. 16: Carburetor placed back in the box.



Photo No. 17: Box sealed with carburetor inside.



Photo No. 18: Shipping label on box to return it to the IIC.