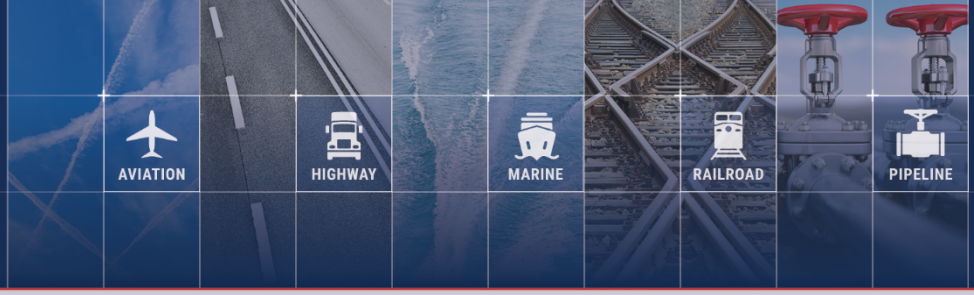

Aviation Investigation Final Report

Location:	Renton, Washington	**Accident Number:**	WPR20LA180
Date & Time:	June 12, 2020, 10:00 Local	**Registration:**	N36339
Aircraft:	Bellanca 7KCAB	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The airplane had recently undergone an annual inspection, and the accident flight was the first flight since being out of maintenance. After making a normal departure and touch-and-go landing, the pilot receiving instruction applied full power. As the airplane reached an altitude of about 400 feet above ground level (agl), the engine abruptly stopped producing (total) power. The airplane could not maintain level altitude and during the subsequent off-airport landing, the airplane was substantially damaged when it collided with a tree.

Postaccident examination revealed that the air induction box contained a piece of bunched up paper that likely restricted the inlet cavity. As part of the annual inspection, a repair person completed a small fiberglass patch and painting on the lower cowling. He could not recall the specific repair on the airplane but said he often placed paper in the induction to prevent debris from entering the engine. After the maintenance, the airplane sat for a day with the lower cowling not fastened but maintenance personnel did not recognize the blockage. They also did not find the paper during the post-maintenance inspections and returned the airplane into service with an unsafe condition.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Maintenance personnel's inadequate post-maintenance inspections that resulted in the total loss of engine power due to a blockage in the air intake.

Findings

Aircraft	Air intake - Inadequate inspection
Personnel issues	(general) - Maintenance personnel

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)

On June 12, 2020, about 1000 Pacific daylight time, a Bellanca 7KCAB Citabria airplane, N36339, was substantially damaged when it was involved in an accident near Renton, Washington. The certified flight instructor (CFI) and pilot receiving instruction sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The airplane had recently undergone an annual inspection and the accident flight was the first flight since being out of maintenance. The operator, Boeing Employees Flying Association, required that a test flight be performed following annual inspections and the CFI was authorized to perform those flights. The CFI elected to take the pilot receiving instruction for the test flight since she was working on obtaining her tailwheel endorsement. The test flight protocol provided an extended checklist including an elongated preflight and runup.

The CFI added 10 gallons of fuel in each wing tank and the engine start and runup were all normal. With the pilot receiving instruction positioned in the front seat, she performed the initial takeoff from runway 16 and they remained in the traffic pattern with the intention of performing touch-and-go takeoff practice and landings. After making an uneventful three-point landing, the pilot receiving instruction applied full throttle and the airplane accelerated reaching an altitude of about 400 feet above ground level (agl). At that time, the engine abruptly stopped producing (total) power, although the propeller continued to rotate. The CFI opted to land on an access road. During the off-airport landing, the airplane sustained substantial damage to both wings and the fuselage when it collided with a tree before coming to rest in a vacant construction company storage area.

The CFI stated that the airplane was too low for him to look at the instruments or perform troubleshooting steps and from the rear seat he did not have good visual access to the engine gauges. The pilot receiving instruction stated that immediately following the power loss, the CFI asked her what was happening. She confirmed that the throttle was fully forward, the mixture was rich, and the fuel selector valve and boost pump were both in the ON position.

During a postaccident examination, investigators discovered the air induction box contained an approximate two by three feet piece of bunched up paper that was white and had a plastic type coating. The paper appeared to have mostly restricted the inlet cavity (see figure 1).

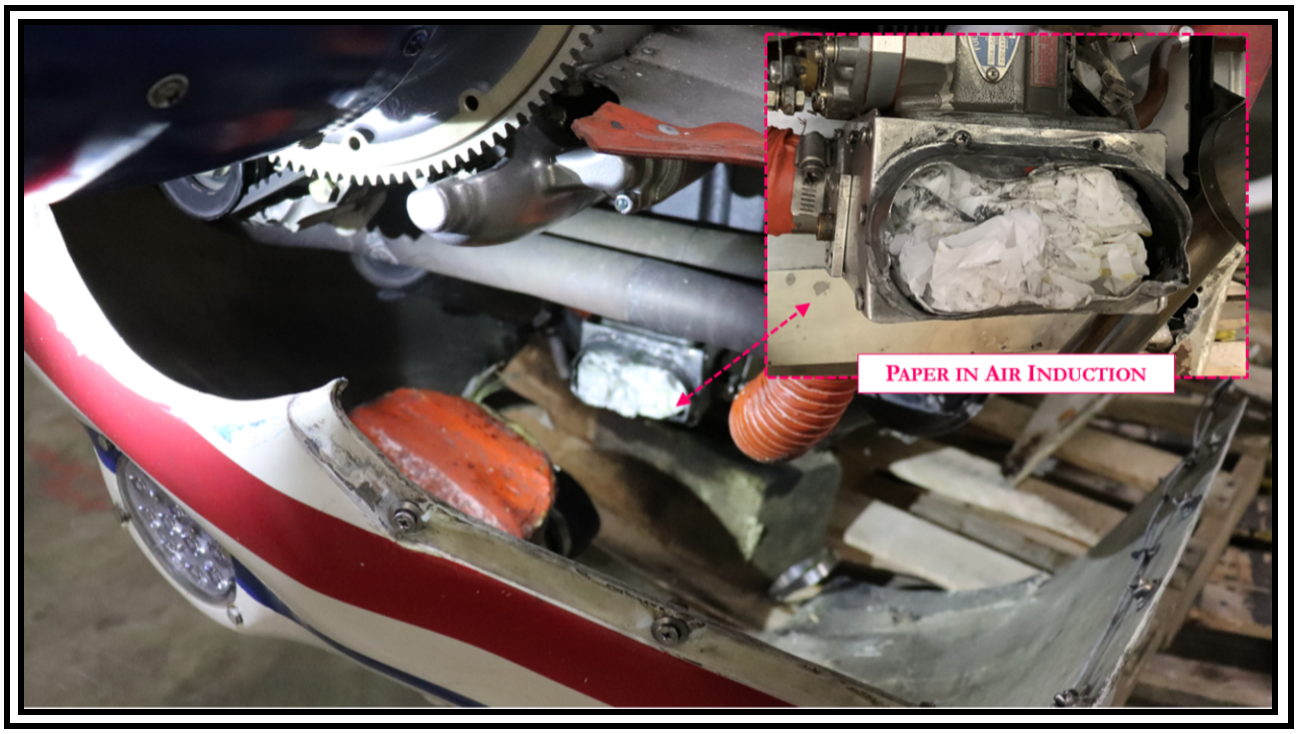

Figure 1: Picture of Air Induction

The lead mechanic who performed the annual inspection before the accident stated that as part of the annual inspection, the airplane needed a repair concerning a hole near the exhaust on the lower cowling. He hired a local repair person he normally uses to complete the fiberglass work and painting. After the maintenance, the airplane sat for a day with the lower cowling/ air filter off.

After the work was completed and the lower cowling was reinstalled, the mechanic completed a final inspection followed by a post-inspection run-up, with no discrepancies noted.

The were no other anomalies found during the postaccident examination.

Pilot Information

Certificate:	Flight instructor	**Age:**	89,Male
Airplane Rating(s):	Single-engine sea; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	None
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	November 17, 2019
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 29, 2020
Flight Time:	7387 hours (Total, all aircraft), 1100 hours (Total, this make and model), 7320 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 22 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	**Age:**	59,Female
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	October 24, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 11, 2020
Flight Time:	293 hours (Total, all aircraft), 46 hours (Total, this make and model), 100 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	**Registration:**	N36339
Model/Series:	7KCAB	**Aircraft Category:**	Airplane
Year of Manufacture:	1973	**Amateur Built:**	
Airworthiness Certificate:	Aerobatic; Normal	**Serial Number:**	388-73
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	June 11, 2020 Annual	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5961 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-320-E2A
Registered Owner:	Boeing Employees Flying Assoc Inc	**Rated Power:**	150 Horsepower
Operator:	Boeing Employees Flying Assoc Inc	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMT,370 ft msl	**Distance from Accident Site:**	
Observation Time:	14:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 3900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	15°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Renton, WA (RNT)	**Type of Flight Plan Filed:**	None
Destination:	Renton, WA (RNT)	**Type of Clearance:**	None
Departure Time:	09:50 Local	**Type of Airspace:**	

Airport Information

Airport:	Renton Municipal Airport RNT	**Runway Surface Type:**	Asphalt;Concrete
Airport Elevation:	32 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	16	**IFR Approach:**	None
Runway Length/Width:	5382 ft / 200 ft	**VFR Approach/Landing:**	Forced landing;Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	47.488334,-122.21221

Administrative Information

Investigator In Charge (IIC):	Keliher, Zoe
Additional Participating Persons:	Bruce Kitelinger; Federal Aviation Administration; Des Moines, WA
Original Publish Date:	May 3, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101432