



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

January 27, 2022

WRECKAGE EXAMINATION SUMMARY

WPR22LA081

This document contains 11 embedded photos.

A. ACCIDENT

Location:	Scottsdale, Arizona
Date:	January 17, 2022
Aircraft:	Piper PA-28, N5276W
NTSB Investigator-in-Charge:	Andrew Swick
FAA Inspector-in-Charge:	Daniel W. Meeker-Scottsdale FSDO

On January 17, 2022, about 2256 mountain standard time, a Piper PA-28 airplane, N5276W, was substantially damaged when it was involved in an accident near Scottsdale, Arizona. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, about halfway through the night cross-country flight, he noticed the engine oil pressure gauge was reading lower than it had been during the flight. Although the engine was running fine, he started to look at the possibilities of gliding to an airport if needed. The pilot decided that he was not in an emergency situation but altered his intended flight path over a mountainous area, to overfly a southbound highway. After passing the highway and nearing the Sky Ranch at Carefree (18AZ), Carefree, Arizona, the oil pressure dropped to near zero and the pilot started to make plans for an emergency landing. He attempted to get the lights turned on at 18AZ but was unsuccessful. He decided to continue the flight to Falcon Field (FFZ), Mesa, Arizona, which was about 25 miles southeast of his position. Near Fountain Hills, Arizona, the engine noise started to change, followed by a loss of engine power. He said the engine oil pressure gauge indicated zero and he subsequently added full power as he was looking for a place to land. Soon afterwards, the engine made “horrible noises” and quit. The pilot landed the airplane on a narrow-graveled road between a chain linked fence and a water canal, impacting the fence with the right wing.

The airplane was relocated to a secure facility for further examination.



Figure 1-Accident site, forward right view of the wreckage.



Figure 2-Accident site, view of the right wing and fuselage.

B. EXAMINATION SUMMARY

The follow-up examination of the airplane was conducted on January 27, 2022, at the facilities of Air Transport, Phoenix, Arizona. The postaccident examination of the engine revealed the separation of the No. 2 connecting rod from the crankshaft. The crankshaft connecting rod journal and connecting rod bearing showed thermal distress and material deformation. Mechanical damage was noted in the No. 1 and 2 cylinder internal bay areas. The dipstick indicated no oil and only residual dark-black oil was contained in engine crankcase and oil sump. The internal crankcase surfaces, internal components and cylinder overhead components were black in color. The No. 3 cylinder combustion chamber and the No. 3 exhaust stack had a sooty oily residue. The No. 3 piston head had heavy dark sooty deposits and the oil-control ring was stuck in the piston groove. The lower cowling, lower side of the firewall and the lower and forward side of the crankcase was wet with oil. The crankshaft front seal was removed, and the seal appeared to be cut at about the 2 O'clock position, and the spring remained in one piece.

C. DETAILS OF THE INVESTIGATION

1.0 Follow-up Airframe Examination

The wings and the left horizontal stabilizer were removed to facilitate the relocation of the wreckage from the accident site. No fuel was found during the recovery of the wreckage. The airframe and engine were positioned on stands during the examination. The nose landing gear was bent to one side.

The left horizontal stabilizer and left elevator was crushed from the rear. A circular indentation was noted on the trailing edge of the elevator. The left side of the aft fuselage, adjacent to the tail cone was buckled inwards. The tail tie down loop was bent to the right. The rudder had a circular indentation and buckling on its trailing edge near the top.



Figure 3-Main wreckage, empennage.

The left wing had impact damage at the tip fairing and buckling near the aileron. The left flap was undamaged and in the retracted position. The left aileron remained attached to the wing and had impact damage from the lower side. The left main landing gear remained attached to the wing and was undamaged. The wing tank was intact and not breached. The wing tank cap remained attached, and the seals were undamaged. Tank drains and vent were unremarkable.



Figure 4-Main wreckage, left wing.

The right wing spar attach points separated from wing and remained attached to the airframe spar attach points. The right wing had a circular impact damage and accordion crushing outboard of the wing tank. The wing spar was bent aft about 6 inches. Buckling was noted near the inboard aileron attachment area. The aileron remained attached to the wing and was buckled on the inboard side. The right flap was found in the retracted position. The inboard trailing edge of the flap had crush damage. The right main landing gear remained attached to the wing and was undamaged. The aft wing root had impact damage. The wing tank was not breached. The wing tank cap remained attached, and the cap seals were undamaged. Tank drains and vent were unremarkable.



Figure 5-Main wreckage, right wing.

The fuel strainer was undamaged, and the bowl was removed. The inlet screen was clear and undamaged. The bowl was filled with a blue colored fuel and no water was detected in the bottom of the bowl. Electric boost pump was undamaged, and fuel was present in the pump and the lines. The inlet screen was clear and undamaged. Fuel selector was found in the “OFF” position and worked normally.



Figure 6-Fuel strainer bowl.

Flight control continuity was established through a cable overload separation for the right aileron. The left aileron cable was cut during recovery efforts. The rudder and stabilator control cables remained intact and undamaged.

2.0 Engine Examination

The upper and lower engine cowling was removed and undamaged. Residual oil was noted in the lower cowling and the lower side of the firewall. No oil was indicated on the dipstick. The lower and forward side of the engine crankcase had an oily residue. The starter cable was not attached to the starter. Hardware for this attachment was not found. The propeller was rotated by hand and could only rotate about 270-degrees before coming to an abrupt stop. The magneto impulse coupling engaged, and the vacuum drive coupler rotated during the propeller movement. The propeller and the starter ring gear was removed from the engine.



Figure 7-Main wreckage, engine.

The crankshaft oil seal area was wet with oil. The oil dipstick indicated no oil, and the oil sump was undamaged and contained no oil. The crankcase breather hose was oil soaked.

The cylinder rocker covers were removed, and the overhead components were covered in a dark oily residue. During the crankshaft rotation, all rocker assemblies moved normally. The oil suction screen was removed, and small blackened bearing material was found on the screen. The small quantity (~1/2 ounce) of oil that dripped from the suction screen port was black and thick.

The No. 1 cylinder was removed from the engine. The internal crankcase surfaces, internal components were black in color. The No. 2 connecting rod separated from the crankshaft. The crankshaft No. 2 connecting rod journal and connecting rod bearing showed thermal distress and material deformation. Mechanical damage was noted at the No. 1 and 2 cylinder bay areas.

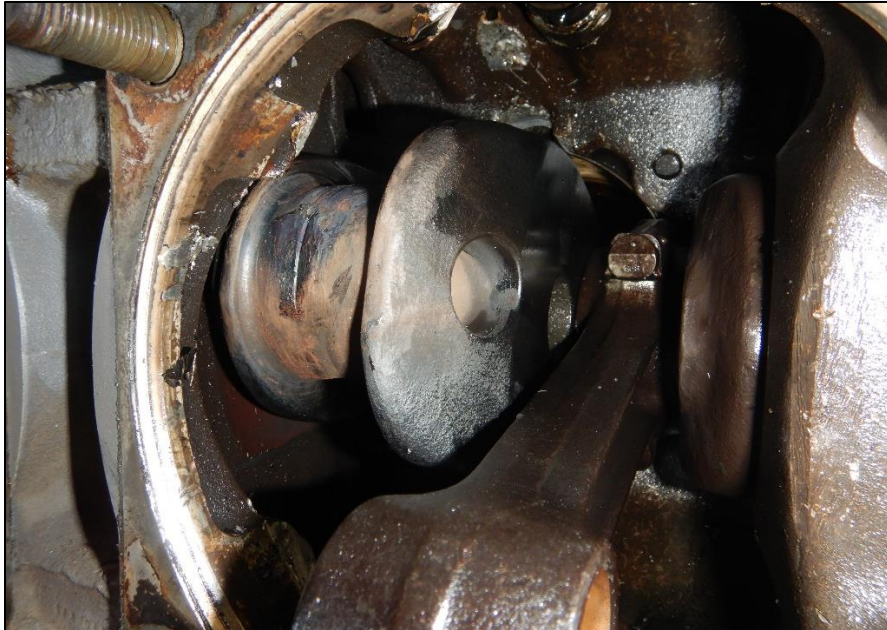


Figure 8-No. 1 and 2 crankshaft connecting rod journal, view from No. 1 cylinder bay.



Figure 9-No. 2 connecting rod and bearing material.

The No. 3 cylinder was removed from the engine. The No. 3 cylinder combustion chamber and the No. 3 exhaust stack had a sooty oily residue. The No. 3 piston head had heavy dark sooty deposits and the oil-control ring was stuck in its ring groove.



Figure 10-No. 3 Cylinder combustion chamber, piston head and rings.

The remaining cylinders were examined with a lighted boroscope and revealed normal combustion deposits and were undamaged.

Crankshaft oil seal area was wet with oil. The oil seal retainers were removed and the split-style seal was removed with little effort. The crankshaft front oil seal was removed and pliable. A solid-style oil seal spring was found assembled on the split-style seal which remained in one piece.

Submitted by: Andrew Swick