

## ***Inspector's Statement***

N6754J PA-28-140

Pilot/CFI: Jose Pinto

Owner: Lightning Aviation

On Monday, August 5, 2019, I arrived at Lightning Aviation in Foley, AL to investigate the forced off-field landing of the above-mentioned aircraft. The aircraft was recovered from a cornfield where it had been forced to land due to a reported engine power loss, two miles south of Fairhope airport.

The aircraft was segregated in the corner of the maintenance hangar operated by Lightning Aviation. The wings had been removed for transport back to Foley Municipal Airport.

The certificated mechanics employed by Lightning Aviation at the direction of the FAA, removed the ignition plugs from the engine. The lower plug of number three cylinder exhibited signs of damage to the electrode of the plug, as if it had been struck and deformed. All other plugs appeared normal. In preparation to remove the number three cylinder, the exhaust manifold was removed. Contained in the exhaust were numerous fragmented pieces identified as a valve face. The number three cylinder was removed first and upon inspection, the exhaust valve stem and small portion of the valve face still remained within the valve guide. It was noted that the number three piston also sustained significant damage in the form of deep nicks and gouges. All other cylinders were subsequently removed and inspected. No other defects were noted with the exception of the number four exhaust valve, which exhibited severe erosion of material thickness of the valve face.

The failed exhaust valve of the number three cylinder, resulting in loss of compression and power, appears to be consistent with the mishap pilot's statement.

The engine installed on the mishap aircraft had 2600 hours at the time of failure. In addition, since January 2019, this aircraft had nine reportable engine problems, identified by pilots. Engine roughness, low rpm, low power, were common reports with the engine. Corrective actions varied despite the recurring nature of poor engine performance. Furthermore, this was the third incident with the flight school aircraft involving engine difficulties and exhaust valve failures, resulting in forced landings and one instance of a fatal accident. A parallel inspection was accomplished by the FAA during this mishap investigation.