

Inspectors Statement: Perry W. Ochsner ASI Fargo FSDO

- N3625Z, MSN: S1194
- Schweizer, Hughes 269C
- Date and Time of Accident: 8/16/2018 @ 10:15 CST

August 16, 2018 at approximately 11:00 CST, Inspector Dustin Jostad and I responded to a request from FLM Vance Emerson to investigate a helicopter crash that occurred 1 mile north of the Kindred, ND airport. The aircraft was on its right side in an uncut wheat field and had been destroyed by fire. The PIC in command (PIC) was on scene and was uninjured with the exception of a small laceration on his left elbow. Inspector Jostad asked the PIC if he required medical treatment to which the PIC responded, "No".

The PIC was the sole occupant of the aircraft. He stated that he had been returning to Fargo after dropping a passenger in McLeod, ND. He was northeast bound flying level at 1000 feet AGL when he heard a loud snap and the aircraft yawed to the right and the rotor lost power. He immediately began a turning auto-rotation towards the wheat field. The PIC noted that the rotor did not respond to engine power application. The PIC stated he "messed up" the auto rotation because he was out of practice and had never done this maneuver to the ground before. The aircraft impacted the ground and tipped up on its nose just before tipping over on the right side. After the aircraft tipped on the right side, it started to burn due to fuel tank rupture. The PIC escaped just before the aircraft was destroyed by fire.

After examining several transmission parts on scene, I found that the lower coupling drive shaft was missing all of its forward splines. The splines gave the appearance of being smeared off due to severe friction or heat. Several suspect parts were collected at the accident site and brought to the FSDO for future inspection.

The aircraft maintenance records were delivered by the aircraft owner for review. During this review it was discovered that Airworthiness Directive (AD) 2017-14-06, Lower Coupling Drive Shaft, had been overflowed by an estimated 44 hours. This AD involves disassembly of the lower coupling drive shaft components to facilitate inspection and lubrication.

Records review indicated that AD93-17-13, had been complied with 9/2013, approximately 127 hours prior to the accident. This AD also involved disassembly of the lower coupling drive shaft components for inspection and lubrication. It was noted that the mechanic had signed off AD93-17-13 with a simple entry, "Complied with AD. No defects". This sign off would indicate the mechanic may not have actually performed the steps required by the AD as the mechanic must reference the "method of compliance".

The interview with the PIC revealed he had not been doing his preflight correctly. The Pilots Operating Handbook (POH) contains a detailed checklist for preflight. Among those items is a "free play" check of the lower coupling drive shaft. The PIC admitted that he had "never heard of this preflight item". I then assembled the broken parts and demonstrated the free play check for the PIC. Once again he said, "I've never done this check as long as I've owned the aircraft". This preflight item may have revealed a lubrication issue with the lower coupling drive shaft.

This accident was caused by the mechanical failure of the lower coupling drive shaft due to lack of lubrication. The lower coupling drive shaft failure is a direct result of non-compliance with AD2017-14-06 which would have provided lubrication and inspection. It is also questionable if the lower coupling drive shaft was properly maintained in 2013. The PIC's incomplete preflight check of the lower coupling drive shaft is a contributing factor to this accident.

The PIC's inability to maintain control of the aircraft during the auto rotation resulted in a hard landing and post-crash fire.

Perry W. Ochsner
Federal Aviation Administration
Fargo, ND

Fox Todd

From: Perry.Ochsner [REDACTED]
Sent: Friday, September 7, 2018 11:42 AM
To: Fox Todd
Subject: Maintenance Docs
Attachments: MX Docs.pdf

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Pilot log book entries and inspection pages.

AD2017-14-06 was effective in mid-August. When the aircraft was brought in for annual in September, it was due in 25 hours. Mr. Nagle's pilot logs show he flew 25 hours between September 2017 and November 2017. Anything after November 2017 is beyond the AD compliance time, which looks like 19.4 hours. Mr. Nagle disclosed that he flew an estimated 25 hours that was not in his pilot logbook. Therefore, we estimate the AD was overflowed by 44.4 hours.

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