



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Safety

Harrisburg Flight Standards District Office

New Cumberland, PA

Fax:

Inspector Statement

This Inspector examined the wreckage of N411HU, a 2003 Schweizer 269D Mod A, Serial Number 0040A, registered to Chesapeake Copters LLC, [REDACTED] Kingsville, MD. The wreckage was examined on July 18, 2018, at Capital City Airport (KCCY) Hangar 608, New Cumberland, PA.

All Fuselage Stations (FS), Waterlines (WL), Buttlines Left and Right (BLL, BLR respectively), and Blade Stations (Blade Sta.) are approximate measurements.

The aircraft was in an upright position resting on its fixed skid landing gear. All major components are accounted for except as noted below. The main rotor blades were destroyed and the blade roots were removed from the main rotor hub at the accident site for transport. The skid type landing gear appeared displaced with the landing gear dampers broken at the upper mounts.

The structure of the nose, FS 15.15 0 to 40.0, while mostly intact, sustained considerable damage. Damage to the skin and associated stringers/stiffeners appeared to be consistent with a nose down attitude, right side impact, with a subsequent left hand roll. The left, right, and center windscreens and both chin bubbles were broken.

The crew/passenger compartment exterior, FS 40.0 to 92.0, sustained considerable damage. Both greenhouses were broken. The left hand doorframe, approximately FS 65.0 WL 50.0 BLR 34.0, is broken. The right and left hand doors were not installed and unaccounted for. The interior of the crew/passenger compartment remained mostly intact. The crew/passenger restraints remained attached. Positions of gauges, switches, circuit breakers, etc. appeared unremarkable.

The transition section, FS 92.0 to 183.45 sustained severe damage. Associated skin and stringers, on the right hand side, FS 92.0 to 116.0, WL 0.0 to 50.0, BLR 24.0 to 34.0 sustained substantial damage. Extensive substantial damage was observed to the left hand side of the transition section at FS 92.0 WL 45.0 and FS 92.0 WL 0.0. The engine remained attached to the airframe.

The tailboom section, FS 183.5 to 283.5, appeared intact with a significant dent at FS 260 BLR 6.0 WL 42.0 otherwise the tailboom structure and tail rotor driveshaft appeared intact. The vertical stabilizer remained attached to the tailboom with paint transfer, on the lower half, from the tail rotor blades. The horizontal stabilizers remained attached to the tailboom with the left hand stabilizer suffering apparent impact damage. The tail rotor gearbox was firmly attached to its tailboom mounting frame. Tail rotor blade leading edges were damaged from impact. Blade SN S3166 was fractured outboard of the root fitting with paint transfer on the tail rotor yoke. The tail rotor gearbox and tail rotor swashplate operated smoothly when rotated by hand. There was no damage noted to the tail rotor pitch change mechanism. The tail rotor blades were manipulated by hand and control linkages and mechanisms responded appropriately with no binding noted.

The main rotor pylon area fairing sustained severe damage. The main rotor transmission remained attached to the airframe with what appeared to be stress cracks in the skin adjacent to mount points. The forward and aft flight control rods remained connected to the stationary swashplate. The cyclic and collective rod assembly, P/N 269D8605-5 was fractured approximately six inches below the upper mount. The collective levers remained attached.

The main rotor hub exhibited excessive lead-lag damage. The pitch housings, dampers, and striker plates exhibited varying degrees of visible damage. The main rotor blades were completely destroyed with multiple instances of wrinkling, chordwise tears, and trailing edge delamination consistent with sudden stoppage under power. Two of the three main rotor dampers were pulled out from their housings.

The main transmission and drivetrain showed no visible damage to the main transmission. Drive continuity of the main transmission was verified by rotating the tail rotor driveshaft by hand. The transmission rotated smoothly with corresponding rotation of the main rotor head and tail rotor gearbox. The tail rotor driveshaft appeared undamaged. The overrunning clutch was functioned by hand and operated normally. All drive belts appeared intact.

The aircraft was configured with dual flight controls. Control continuity of the collective and cyclic was verified from the controls at both seats in the cockpit to their respective attach point at the swashplate with the exception of the fractured rod assembly previously mentioned. Anti-torque control continuity was confirmed, with positive results, from the controls at both seats in the cockpit to their respective attach point at the tail rotor blades. "Hand" resistance was applied to each tail rotor blade by holding the tail rotor blades as the left and right anti torque pedals were manipulated by hand, at both seats in the cockpit, through their full range of motion against their respective stops. The resulting corresponding pitch in the tail rotor blades appeared to be consistent with the pedal movements mentioned above with no binding noted.

The aircraft was equipped with a Rolls-Royce (Allison) 250-C20W turboshaft engine, SN: CAE 8455096. The engine and engine mounts exhibited no visible damage. The throttle linkage to the engine fuel control linkage functioned normally. The engine output driveshaft aft flexible coupling was completely destroyed consistent with main transmission sudden stoppage.

Damage to the main rotor hub and main rotor blades is consistent with the rotors being driven by the engine. All damage appears to be sudden stoppage and impact related as a result of the mishap sequence. The wreckage examination failed to identify any discrepancy or malfunction of the airframe, or its related components, that would have contributed to the mishap.

A review of the airframe/engine/accessory component times for compliance with the applicable manufacturer's recommended overhauls or replacement times was found to be satisfactory. No discrepancies were noted.

A review of the Airworthiness Directives (AD) for the airframe, engine, and associated accessories against the current ADs were found to be satisfactory. No discrepancies were noted in required compliance.

A review of the Instructions for Continued Airworthiness pertinent to applicable major alterations as depicted in the FAA Aircraft Registry Electronic Data Reporting System was found to be in compliance. No discrepancies were noted.



Harold W. Haase
Aviation Safety Inspector A/W