

Wreckage Inspection Notes - 600N, RN0025

Airframe:

- The airframe was resting on the right side. The forward lower fuselage and cockpit structure was extensively damaged. The cabin section lower fuselage was extensively crushed. The NOTAR tailboom was separated from the main fuselage aft of the attachment fitting. The composite tailboom was fragmented midspan. The aft end of the tailboom contained the direct jet thruster, horizontal and vertical stabilizers. The horizontal and vertical stabilizers were impact damaged. The NOTAR fan shroud was crushed and deformed.

Fuel System/Engine:

- Fuel System: The fuel cells were displaced from the fuselage structure and compromised. The aircraft was fitted with an airframe fuel filter. No disassembly of the fuel filters were performed.
- Engine: See Rolls-Royce notes.

Rotors:

- Main: The main rotor strap packs were fractured at the hub. The main rotor blades remained with the pitch housings. All main rotor blades sustained significant damage with the blade spars/skins wrinkled, bent and torn to varying degrees. The blue main rotor blade, PN 369D21102-523, SN 3222 had a curved shaped gouge approximately 2 1/4 inches from the tip, 1 inch wide and 3/4 inch deep.
- NOTAR: Only the aluminum spars remained of the fan blades, the polypropylene plastic was completely separated from the spars. The NOTAR blade spars were bent and some of the spars were contacting the liner.

Drive:

- Main rotor drive continuity from the hub through the main transmission was confirmed. No metallic debris was seen on the main transmission chip detectors. The coupling fingers on the engine driveshaft were fractured at both ends. The NOTAR fan driveshaft Kamatics coupling was fractured at the fingers at the main transmission side, the NOTAR fan interconnect shaft was continuous. The NOTAR transmission rotated normally by hand with drag felt from the damaged fan blade spars contacting the fan liner. The overrunning clutch was actioned by hand and functioned normally.

Controls:

- There were multiple fractures of the flight controls. The anti-torque pedal brackets were fractured from the mounting frame at FS 44.65. The cyclic interconnecting torque tube was fractured. The collective, cyclic and anti-torque controls had multiple fractures in the cockpit area and fractures in the area of the center seat box area. The lateral and longitudinal trim motors were removed. The trim actuators sustained impact damage. The electric trim motors were removed and 28 VDC was applied. The actuators were verified to extend and retract. The rotating swashplate controls were extensively damaged. The rotating cone showed little damage and moved without binding when manipulated by hand. The fan pitch control was manipulated by hand and the blades moved with difficulty due to the deformed fan shroud contacting the fan blade spars.



The NOTAR splitter control mounting was bent and deformed. The thruster cable was fractured in the area of the tailboom separation.

Investigator Comments:

- Drive system fractures were attributed to impact damage.
- Main rotor controls and NOTAR controls fractures attributed to impact damage.
- Drive system and main rotor damage is consistent with normal rotor RPM with the engine running.
- The wreckage inspection failed to identify any fault or malfunction of any helicopter components.