

Inspector Statement

Stanley J. Routh

Date: November 2, 2020

Amended: July 14, 2021 (Added A/C TT / Hobbs data and clarified information re: P/C Link in the Flight control continuity observations section / Cyclic Control)

Bell Helicopter 206B3 Jet Ranger (N716VL) Accident Investigation Page 1 of 3

A/C TT 6960.4 Hobbs 532.6

On Monday, October 26, 2020, I arrived at Oakdale Yacht Club (520 Shore Drive) in Oakdale, NY to conduct a visual inspection of a Bell 206B3, N716VL, S/N 4203 subsequent to an accident that occurred on Wednesday afternoon, October 21, 2020. The aircraft reported encountering instrument meteorological conditions and made a hard landing in Jones Beach Bay. The aircraft was substantially damaged. The pilot survived the accident and was able to exit the aircraft with the assistance of area boaters. He was transported to an area hospital with injuries reported as minor. The aircraft was located in shallow water, which hampered recovery efforts. At the time of the accident, the aircraft was upright and leaning approximately twenty degrees to the left. At the time of removal, the aircraft was on its left side. The salvage crew reported it to be sunken into the mud and nearly fully submerged. The aircraft was recovered from the bay on October 26, 2020 and relocated to Oakdale for inspection.

I began a visual inspection of the aircraft and took photographs of the entire structure. I noted that there was damage present to the airframe that was not apparent from early photographs of aircraft at accident scene immediately after the accident. Salvage crew reported additional damage occurred during difficult removal operation. Observations from inspection are as follows:

Inspected cockpit area and noted the following:

--Fuel Shut-off valve set to OFF – Remaining fuel quantity unknown.

--Pilot restraint intact – no apparent damage.

--No damage noted on instrument panel from possible impact with pilot.

--Altimeter reads 345 feet @ 30.25 In. Hg.

--Remaining instrumentation reading static or zero / power off indications.

--Pilot's seat and seat pan area have crush damage.

-- Engine control has continuity

-- Flight control continuity observed as follows:

Cyclic Control—continuity verified intact, with exception—1 each M/R Blade P/C Link partially missing. This was verified as present (broken into two sections but connected at upper and lower attach points) after accident via accident scene photos. The upper section of this P/C link was separated from the aircraft during salvage operation per salvage crew statement. Remaining controls are stiff and travel limited due to accident damage on the main deck (transmission broke free from rear restraint) and crushing of the control rod vertical mid tunnel (“broom closet”). No evidence of pre-accident cyclic control limitations/malfunctions.

Collective Control—Continuity interrupted at collective link to collective lever attach point at base of control rod vertical mid tunnel. Link aft end exhibited signs of sudden overstress failure as a result of accident damage. Link aft bearing remained in place within the lever assembly. All other collective controls intact with no evidence of any pre-accident condition that could induce collective control limitations/malfunctions.

Anti-Torque (Tail Rotor) Control –Continuity interrupted due to post impact tail section departure from tailboom assembly, approximately 1 ½ feet forward of T/R Gearbox mount. This section contained the vertical fin, T/R gearbox, T/R Hub & Blade assembly, and a section of T/R P/C control rod. The pitch change mechanism was intact and functional as verified by grabbing P/C control rod in the tail section, moving fore and aft and observing corresponding blade pitch adjustments. The T/R P/C controls were verified intact moving forward on the main airframe until the bottom of the control rod vertical mid tunnel. The lower bearing on the vertical T/R Control tube separated from the tube at its connection at the bellcrank connection point. The bearing remained connected to the bellcrank. The threaded portion of the bearing exhibited signs of sudden overstress failure as a result of accident damage. All other Tail Rotor controls intact with no evidence of any pre-accident condition that could induce anti-torque control limitations/malfunctions.

Drive Train information:

--T/R drive shafting complete and in place. The shaft segment at the T/R gearbox has a splined sliding adapter which slid off gearbox splines when tail section separated from tailboom. The remainder of the T/R drive shaft continuity is normal / functional to its connection with the engine drive in the engine compartment.

--M/R drive shaft is a Kaflex model that suffered heavy damage during impact. Evidence of sudden overload failure resulting in separation from main transmission assembly occurred when excessive movement was encountered as a result of rear transmission restraint failure on impact. There is no evidence of any pre-accident condition that could induce a drivetrain failure.

Rotor Blade info:

--Main Rotor blades were both attached to M/R Hub assembly. One blade had a large segment, approximately 9 feet, which separated and was recovered approximately 100 feet from the main accident site. It appears to have sheared due to impact with the water.

--T/R blades were both attached to T/R hub assembly on the T/R gearbox output shaft. One blade was minimally damaged while the other was heavily distorted due to impact with the tailboom and/or water.

Fuselage Assembly:

--Forward Section displayed heavy damage from a high-energy impact with the water combined with a rotational component. The landing gear skid tubes separated from the crosstubes. The cabin is buckled and large tears in primary honeycomb structure of aircraft belly and transmission deck were evident near primary production seams. Both cockpit and cabin doors were separated from the fuselage. The center box structure (Flight control Tunnel) is crushed and distorted, and the windshield center post was heavily distorted.

--Intermediate Section is buckled and distorted with sheet metal and honeycomb structural tearing. The baggage compartment door was still on the fuselage but heavily warped and out of alignment.

--Tailboom Section was largely intact with minor buckling evident in several locations along its full monocoque structure. The failure that led to tail section separation is approximately 1 ½ feet forward of T/R Gearbox mount, which is nearly even with the blade tip path of both the M/R blade and the T/R blades.

Engine Assembly:

The engine assembly inspection did not reveal any items of note or concern.

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by Stanley Routh
Date: 2021.07.14
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ASI-Airworthiness

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