NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

January 28-29, 2018

ON SCENE OBSERVATIONS

WPR18FA074

This document contains 9 embedded photos.

A. ACCIDENT

Location:	Pomeroy, WA
Date:	January 27, 2018
Aircraft:	Hughes 369D, Registration N369TH, Serial #1000830D
NTSB IIC:	Samantha Link

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

The on scene examination of helicopter was conducted on January 28-29, 2018. The wreckage was located in a valley about 10 miles northwest Pomeroy, Washington.

D. DETAILS OF THE INVESTIGATION

1.0 Scene Overview

The helicopter was found in a small northeast to southwest running ravine about six miles to the west of the refueling location. The main wreckage came to rest on its right side at the bottom of the ravine with the nose of the helicopter facing towards the north. Immediately adjacent to the main wreckage were impact marks, consistent with two skid marks, along the lower portion of the western ravine wall; the right skid was fracture separated in this area. The cabin area was mostly intact although the right side and lower fuselage sustained crush damage. The main rotor head was intact and one main rotor blade was wrapped around it. The four remaining main rotor blades were fracture separated and were found near the main wreckage except for the blade tips, which were scattered to the south. The tailboom was fracture separated about 2.5 feet forward of the empennage, and the empennage came to rest just north of the cabin area. The tail rotor assembly and tail rotor transmission were found just north of the main wreckage slightly up the western ravine wall. One tail rotor blade was undamaged, and the second tail rotor blade sustained damage to the blade tip. Continuing further north was a net that was mostly

closed at the bottom of the ravine, followed by a second half-opened net about six feet north and slightly up the western ravine wall. About 5 feet further north was a piece of tail rotor skin, and about 15 feet north, and partially up the eastern ravine wall, was a main rotor blade tip cap.

2.0 Airframe

- All windshields (lower, center, and upper) were fractured, broken, or missing
- The lower fuselage exhibited upward and inward crushing on the right side
- The pilot floor and support bulkhead were bent and distorted
- The doors were not present and appeared to have been removed prior to the flight
- Cabin:
    - The helicopter was setup for left-hand command.
        - The right-side controls had been removed prior to the flight
    - The cyclic and collective exhibited extensive impact damage
        - Control continuity to the fuel control and governor could not be confirmed onsite due to the extensive damage to the collective and throttle.
    - Several circuit breakers were found extended
    - The Hobbs indicated 1395.4 hours
    - The right seat support structure exhibited downward and sideward crushing
    - The left seat support exhibited slight seat pan crushing
- The canted frame and lower bulkhead located behind the pilot/copilot seats (Station 78.50) were bent and distorted
- The lower wire strike protection assembly was found separated from the lower fuselage and imbedded in the ground near its attach point on the lower fuselage
- The aft fuselage was primarily intact
- The forward engine air inlet fairings were buckled and fractured
- The left engine access door was operational
    - The right engine access door was not accessible due to the helicopter resting on its right side
- The tailboom was fractured forward of the canted Station 273.90 frame ring, as were the tail rotor drive shaft, tail rotor control rod, and electrical conduit.
- The aft section of the tailboom, including the vertical and horizontal stabilizer, was located just north of the main wreckage
    - The vertical stabilizer was primarily intact
    - The tail stinger did not exhibit impact related damage
    - The right side of the horizontal stabilizer was bent downward about 45 degrees and the skin was ruptured just outboard of the attachment to the vertical stabilizer.
        - The right tip plate exhibited deformation on the aft outer surface.
    - The left side of the horizontal stabilizer was dented and deformed about mid-span.
        - The position light was intact

    - The tail rotor assembly, including the tail rotor transmission, was located north up the ravine from the main wreckage.
- The left skid tube and fore/aft struts appeared undamaged
- The right skid was separated from the lower fuselage and located slightly uphill to the west of the main wreckage
    - The forward strut was fractured about mid-span and the aft strut appeared fractured near the lower fuselage.
- The main rotor blades exhibited damage consistent with being driven under power at impact.
    - One rotor blade was observed wrapped around the main rotor hub
    - Two of the five main rotor blades were fractured and found south of the main wreckage, up the western ravine wall
        - One was a significant distance from the main wreckage
    - The remaining blades exhibited bending and warping
- The tail rotor drive shaft was fractured in several locations – at the tailboom fracture, toward the forward end of the tail rotor drive shaft, aft of the tailboom fracture, and at the tail rotor transmission.
    - The forward fracture surface exhibited a clean-edge cut around the entire circumference
    - The fracture at the tail rotor transmission occurred at the flex coupling
    - About a 1.5-foot section of the tail rotor drive shaft was located near the main wreckage on the eastern side of the ravine
        - It exhibited rotational scoring near a mid-span bend and deformation
    - Rotational scoring was observed in multiple locations along the tail rotor drive shaft
- The tail rotor assembly was relatively intact
    - The tail rotor blades appeared discolored from exhaust
        - It could not be rubbed off
    - The blades were relatively intact
        - One blade exhibited damage to the tip of the blade. The tip weight was missing, and a portion of the tip was curled and damaged
        - The tail rotor hub and pitch control assemblies were unremarkable
        - The tail rotor transmission was separated from the tail rotor drive shaft at the flex coupling
        - The tail rotor control rod was fractured at the tailboom fracture
- There were several cones with nets inside found throughout the main wreckage.
    - One cone was found flattened and empty under the forward main wreckage
    - There was one cone that was distorted with the netting mostly removed on the ground near the right side of the helicopter.
        - Most of the net weights remained installed in the corner holders
- Two guns were observed on scene
    - One gun was found open with live cartridge in it
        - There was no cone attached

- A second gun was found outside the wreckage near the tailboom fracture
    - The gun was closed with an empty cartridge. A cone with a net was attached
    - The gun/cone assembly exhibited impact related damage and they could not be separated
- The odor of jet fuel was present at the accident site

3.0 Engine

- The engine remained secure within the engine compartment
    - There were no obvious signs of impact damage or pre-impact malfunction or failure
- Control continuity to the engine from the cockpit could not be established due to impact related damage.
- All pneumatic engine control fittings (b-nuts) were checked by hand for torque and found to be at least hand tight
- The main rotor exhibited evidence of engine power being delivered at impact
- The engine side of the tail rotor drive shaft exhibited evidence of continued rotational flailing

4.0 On Scene Photos

Figure 1: Overall Scene looking South

Figure 2: Main Wreckage looking South

Figure 3: Left side of Helicopter

Figure 4: Overall Scene looking North

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Figure 5: Top Side of Helicopter with Ground Scars

Figure 6: The Two Net Guns

Figure 7: Net Closest to Main Wreckage

Figure 8: Extended Weight from Net Closest to Main Wreckage

Figure 9: Northernmost Net

END.

Submitted by: Samantha Link