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Subject: CEN22FA053

Contact: Bell Helicopter

The NTSB IIC and Mona Polson, air safety investigator, from Bell Helicopter, traveled to the Bell Helicopter Training Academy in Fort Worth, TX, on February 2, 2022. The purpose of this trip was to replicate two emergency procedures in the Bell 206B Flight Training Device (FTD) (non-motion simulator). Assisting during the flight simulator work was the Bell Helicopter Training Academy flight safety officer, Harry Vergis.

For the accident pilot, Jeffrey Henke, his named was researched in the Bell Helicopter Training Academy database, and no training records were listed for his name.

The following inputs were created in the flight simulator:

- Near the accident site of Perry, OK, showing rolling prairie grass.
- 5 knot winds with no gusts, coming from 180°
- Clear skies.
- 47°F outside air temperature.
- 1,090 ft MSL accident site elevation.

Harry sat in the right seat, Mike was in the left seat, and Mona was at the control station with the station operator. There is no hydraulic system warning light or pressure gauge in the actual helicopter or the simulator.

1. Cyclic hardover. The flight simulator was programmed to perform a left cyclic hardover (via a left hydraulic servo failure - cyclic). Harry brought the helicopter to a 40 ft AGL hover, facing the south, and the failure was initiated by the station operator. Harry was able to successfully land the helicopter from a hover to the ground without losing control. During the hardover sequence, the cyclic wanted to maneuver to the forward

left position on its own. Resistance could be felt with the cyclic. The collective servo still functioned normally, and no feedback was felt with the collective. Harry was able to successfully perform the emergency procedure.

2. Complete loss of hydraulic pressure. The flight simulator was programmed to perform a complete loss of hydraulic pressure. Harry brought the helicopter to a 40 ft AGL hover, facing the south, and the failure was initiated by the station operator. Harry was able to successfully land the helicopter from a hover to the ground without losing control. During the complete loss of hydraulic pressure sequence, Harry had to use additional control inputs to counter the feedback from the system. Resistance could be felt with the cyclic and collective. Harry was able to successfully perform the emergency procedure.

Nothing Follows