Do … or Do Not. There is No Try.

Star Wars, Yoda, and Helicopter Safety

By Scott T. Tyrrell (IHST team member)

In the epic movie, *The Empire Strikes Back*, Luke Skywalker is standing motionless on the edge of a swamp as his X-wing fighter sinks even deeper into the muck. Yoda, the Jedi Grand Master, encourages Luke to use "the force" to lift the aircraft out of the swamp, but Luke remains non-responsive. To his mentor, Luke weakly replies, "Ok … I'll give it a try." Yoda responds to Luke with an impatient tone, "No. Try not! Do … or do not. There is no try."

The difference between trying and doing often results in fatal helicopter accidents. During fiscal year 2013 (Oct. 2012 to Sept. 2013), the U.S. helicopter industry suffered one of its worst spans for accidents during the past three decades. With 162 accidents and 37 fatal accidents resulting in 74 fatalities, there is serious cause for concern.

In early 2013, the International Helicopter Safety Team (IHST) launched the U.S. Helicopter Safety Team (USHST) to focus solely on U.S. helicopter safety. With this unprecedented increase in helicopter accidents, the U.S. team will concentrate on interventions in key industry sectors. The "top five" industry sectors for fatal accidents during fiscal year 2013 (FY2013) were Commercial (16%), Personal/Private (16%), Helicopter Emergency Medical Services (HEMS) (14%), Utilities Patrol & Construction (11%) and Law Enforcement (8%).

When we think about what Yoda said to Luke, we can very easily break down helicopter accidents into intervention recommendations as "Do" and standard problem statements as "Do Not." And when we analyze the fatal helicopter accidents during the year, we focus on three major occurrence categories that make up 58 percent of the accidents and are leading indicators in the accident chain: strikes, visibility, and loss of control.

Strikes

In the category of strikes, we can very simply state: "Do" maintain obstacle clearance in ALL phases of flight and "Do Not" take unnecessary risks by flying the helicopter in a low altitude environment.

Flying in an unfamiliar area with potential obstacles or hazards is dangerous and potentially a fatal mistake. Low altitude flight should only take place when the requirements of the flight absolutely necessitate it and sufficient preflight planning has been accomplished to identify known hazards. Low level flight comes with added risk of unmarked hazards, including wires. Approximately 24 percent of FY2013 fatal helicopter accidents included a wire strike occurrence in the accident investigation. (An excellent video that may provide the knowledge and skills to avoid a wire strike is Surviving the Wires Environment.)

FAA FAR Part 91.119 (d) allows for helicopters to deviate from the minimum safe altitude requirements as an exception only when the operation is conducted without hazard to persons or property on the surface. This exception should be just that: an exception and not the rule.

Altitude in helicopters provides helicopter pilots with obstacle clearance and also greater time and more landing options when performing an autorotation maneuver during a forced landing.

Visibility

In the category of Visibility, helicopter pilots should obtain weather forecasts prior to their flight. This is challenging due to the fact that accurate weather forecasting tools are not as abundant in remote areas where helicopters often operate. The issue of unforecasted weather continues to trap helicopter pilots and was identified in eight fatal helicopter accidents totaling 24 fatalities (a third of all fatalities). The en route decision point for a pilot to deviate the aircraft's course, return to base, or land, needs to be accomplished prior to the degraded weather becoming detrimental to safe flight. The ability for a pilot to recognize deteriorating conditions is critical. (This knowledge is available via a video entitled Degraded Visual Environment (DVE).)

Back to Yoda's advice: "Do" maintain VFR conditions and "Do Not" continue a flight into marginal weather conditions. (An excellent video that brings a level of importance to this serious issue is AOPA's 178 Seconds to Live!) This video reflects the time to an accident in a fixed wing aircraft when encountering IIMC. Some experienced helicopter pilots believe that the time to an accident would be dramatically reduced in a helicopter. In addition, the HEMS Tool is another excellent weather tool for helicopter pilots.

Loss of Control

The simple rules for Loss of Control are: "Do" fly the aircraft according to the Rotorcraft Flight Manual and "Do Not" fly the aircraft outside the approved flight envelope which will result in exceeding operating limits, loss of tail rotor authority or a condition which creates an unsafe attitude.

Mentors

Regardless of a person's position within the helicopter industry, line pilot, chief pilot, or even the CEO, it is always good advice to have a mentor. Every Luke Skywalker needs a Yoda. As an accident investigator, I firmly believe that the most devastating tragedy of an aircraft accident happens if we fail to learn something. Having a mentor can prevent that failure because of sound advice and wisdom coming from a person speaking from knowledge and experience in the industry. The best mentors will hold a pilot accountable and this commitment will save lives. Finally, once a mentor is found, pilots should respect them for the time they are investing and most importantly for their professional and personal reputation they are putting on the line on your behalf. Do Not let them down!

Who serves as your mentor or accountability team? Choose wisely and when it comes to safety, always remember … "Try not! Do … or do not. There is no try."

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URL Source Listing:

International Helicopter Safety Team (IHST): *http://ihst.org/*

Surviving the Wires Environment:
http://www.rotor.com/Publications/HAIVideosLibrary/SurvivingtheWiresEnvironment.aspx

Degraded Visual Environment (DVE): *http://easa.europa.eu/essi/ehest/2011/07/video/*

178 Seconds to Live!: *http://www.aopa.org/AOPA-Live.aspx?watch=%7bCCA30EA1-A94D-4E45-ABCD-3AD4074403E0%7d*

ADDS HEMS Tool*: http://weather.aero/tools/desktopapps/hemstool*