

## What does “Zero” look like?

*By Scott T. Tyrrell (USHST team member)*

The U.S. helicopter industry has many unique safety programs - - “Vision ZERO,” “Target Zero,” “Destination Zero,” “Safety First,” and many others. The key to the success of a safety program - - especially one with a goal of zero - - is to implement it as a vital component to an organizational culture.

### **Nulli Secundus**

I saw this firsthand in the U.S. Air Force. My career field was avionics maintenance and I started it with F-16 aircraft at Hill Air Force Base in Utah and ended it with C-130H aircraft at the 136<sup>th</sup> Airlift Wing of the Texas Air National Guard. I’m proud to have played a small role in the incredible safety record of the 136<sup>th</sup> Airlift Wing. Just recently, it surpassed 168,000 hours of accident free flying. Their last “Class A” accident took place on June 5, 1965 - - nearly 50 years ago. This is a testament to the dedication of the aircrews and maintenance personnel who have safely flown and maintained their C-130Hs in more than 7,000 flight hours in combat in Afghanistan and Iraq and with relief missions for Hurricanes Katrina, Rita, Wilma, Gustav and Ike. The secret to their success is keeping safety first and foremost in all phases of operation. The creed of the 136<sup>th</sup> Airlift Wing is "Nulli Secundus" - Second to None!

### **Fatal Focus**

The United States Helicopter Safety Team ([www.USHST.org](http://www.USHST.org)) is working to ensure that the safety record of the U.S. civil helicopter industry also is second to none. This year, the group is re-emphasizing its focus on reducing fatal accidents. The helicopter industries at the “top” of this category are Aerial Application, Personal/Private, Emergency Medical Services and Utilities Patrol/Construction.

The issue of helicopter fatalities came to the forefront because Fiscal Year 2013 was one of the worst years for fatal accidents in more than 30 years. As a result, in

January 2014, the NTSB identified “Helicopter Operations” on its *Most Wanted* list of safety improvements. Ironically, Fiscal Year 2014 followed as one of the safest years for civil helicopter operations.

A colleague and I were reflecting on the 2014 achievement and he remarked that although we reached an incredible rate of success, “We aren’t that good!” His blunt remark was immediately followed by an example of an accident that almost happened.

### **Dumb Luck**

A commercial helicopter pilot and passenger departed an airport in a piston-driven helicopter on a short 30 NM flight to return the helicopter following some maintenance work. Shortly after take-off, the helicopter encountered ground fog. The pilot immediately contacted air traffic control and communicated his situation. The controller asked the pilot to “IDENT” to initiate the request for assistance. The pilot responded, “unable” as the helicopter’s transponder was inoperative. The controller asked the pilot to provide his altitude. The helicopter pilot replied once again, “unable” as the altimeter was inoperative. The pilot then determined his location using his smartphone. Unfortunately, while determining his position, the situation became much worse. The low fuel light illuminated indicating that the pilot had three gallons, or approximately 10 minutes of fuel remaining. The pilot began an immediate descent into the clouds and to his disbelief, a case of dumb luck occurred when the helicopter broke out of the clouds and landed safely in a field with no damage to the aircraft or occupants.

This incident is a poster child for poor aeronautical decision making and provides many examples of what not to do. The Helicopter Association International launched a Land & Live campaign in early 2014 which emphasizes the fact that helicopter pilots have a unique feature that most fixed-wing pilots do not. They have the capability to perform an immediate precautionary landing to the ground.

An equally important part of the Land & Live program is the decision by a helicopter pilot NOT to take off in the first place. Had the pilot from the incident took

the time for a weather brief, he would have learned that forecasted and reported weather conditions were prime for fog en route and had been for hours.

## **Multi Vision**

These are the simple tasks that can push us to the goal of zero accidents. As for which program works best, my simple answer is that the sum of all parts is greater than the whole. Do them all.

Will we ever get to zero? Yes, I believe that as we each promote aviation safety in our respective fields of responsibility that we will have an incremental “positive” impact on accident statistics. With each accident avoided, another success story will be told and we will continue to build the safest general aviation industry in the world.

We can eventually get there with a collaborative effort with all eyes on the target. Just as in flying a helicopter, the control inputs of the collective, cyclic, and tail rotor pedals are directed towards the mixing unit and that is essentially where the collaborative effort of aviation safety takes place. The benefits of the mixing unit in controlled flight are similar to the many facets of the helicopter industry and the multiple inputs of operators, manufacturers, associations and governmental agencies. From the look of it, the vision of zero is an “all in” endeavor with all of our eyes on the prize.

*Scott Tyrrell is a Continued Operations Safety Specialist and Accident Investigator in the FAA Rotorcraft Directorate. His previous experience includes over 20+ years in aircraft maintenance including extensive knowledge of C-130 aircraft maintenance, as a former Aircraft Maintenance officer. His last assignment was the Commander of the 136<sup>th</sup> Mission Support Group, Texas Air National Guard.*



USHST  
**iFLYSAFE**



