

## New Focus, Goal for U.S. Helicopter Safety Team

# USHST 2.0

By Steve Sparks

**A**s a regional partner of the International Helicopter Safety Team (IHST), the U.S. Helicopter Safety Team (USHST) is a team of government and industry professionals working to address safety issues in the U.S. civilian helicopter industry. The goal: to better understand the causes of accidents so it can develop best practices for improving overall safety in the helicopter industry.

Recently, the USHST met to develop its strategy for the next several years. The result, USHST 2.0, focuses the team's attention on several areas and on a new goal.

### Increased Focus on Fatal Accidents

Moving forward, the USHST is focusing its attention on reducing fatal accidents. Of course, every accident is worth preventing, and the USHST is dedicated to working toward a civil helicopter community with zero accidents. However, by prioritizing accidents where lives were lost, the USHST is concentrating its prevention efforts on those accidents with the worst outcomes.

By focusing on fatalities, the

USHST is also aligning with the proven methodologies used by the Commercial Aviation Safety Team (CAST) and General Aviation Joint Steering Committee (GAJSC). The work of CAST has been credited with reducing the fatality accident rate of U.S. commercial aviation by 83 percent over the last 10 years — an enviable record, and one that the USHST would love to beat.

### Setting the Target

The USHST is setting as a target a 20 percent reduction in fatal helicopter accidents by 2020. As a benchmark, the USHST is using a fatal accident rate of 0.76 per 100,000 flight hours, which is the average rate for the prior five years that have reliable data derived from the FAA General Aviation Survey. The goal is to reduce fatal helicopter accidents to 0.61 per 100,000 flight hours.

Can we do it? Actually, through 2016, total accidents have decreased significantly since the IHST was formed. The helicopter accident rate has been cut by nearly 50 percent compared to 10 years ago. Additionally, compared to a decade ago,

fatal helicopter accidents are down close to 40 percent and the fatal accident rate continues to trend down.

Government and industry efforts to improve safety have been effective. USHST 2.0 was created to direct additional safety efforts at targeted areas that will have the greatest chance of delivering significant improvements.

The USHST plans to consistently measure fatal accident rate progress while focusing its attention on action items that will keep the accident trends moving in the downward direction. The team will use several “mile markers” as guides to measure progress over the next several years (see figure 1). As of the end of September 2016, the fatal accident rate was 0.55. With several more months of flying to go, we are currently below the end-of-year target of 0.69.

### In It to Win It

In 2016, the USHST completed a comprehensive analysis of U.S. fatal helicopter accidents occurring from 2009 to 2013. Half of the 104 fatal accidents analyzed stemmed from just three types of accidents:

- Loss of control
- Unintended flight into instrument meteorological conditions (IIMC)
- Low-altitude operations.

The USHST decided to focus much of its safety efforts on these three types of accidents. Again, this is not to say that other types of accidents are not worth preventing. However, the USHST has decided to go after these top offenders first. After all, these three types of accidents were responsible for more than 100 deaths, more than the next eight types of accidents combined.

Currently, the USHST is forming several focus groups to develop safety

## USHST.org

Utilizing a data-driven approach to risk management, the USHST conducts safety analysis of past helicopter accidents to prevent similar accidents from happening in the future. But they have more than safety statistics on their website.

The USHST website — [ushst.org](http://ushst.org) — is full of resources to help pilots, operators, and maintenance technicians improve decision-making, control or mitigate hazards, and enhance their safety culture.

If you are researching a specific topic or need resources for a company safety day, check out the USHST resources, including videos, fact sheets, and online tools for:

- Autorotations
- Decision-making
- Flight planning
- Infrastructure
- Maintenance
- Professionalism
- Reel Safety videos
- Risk management
- Survivability
- Technology
- Training
- Visibility and weather

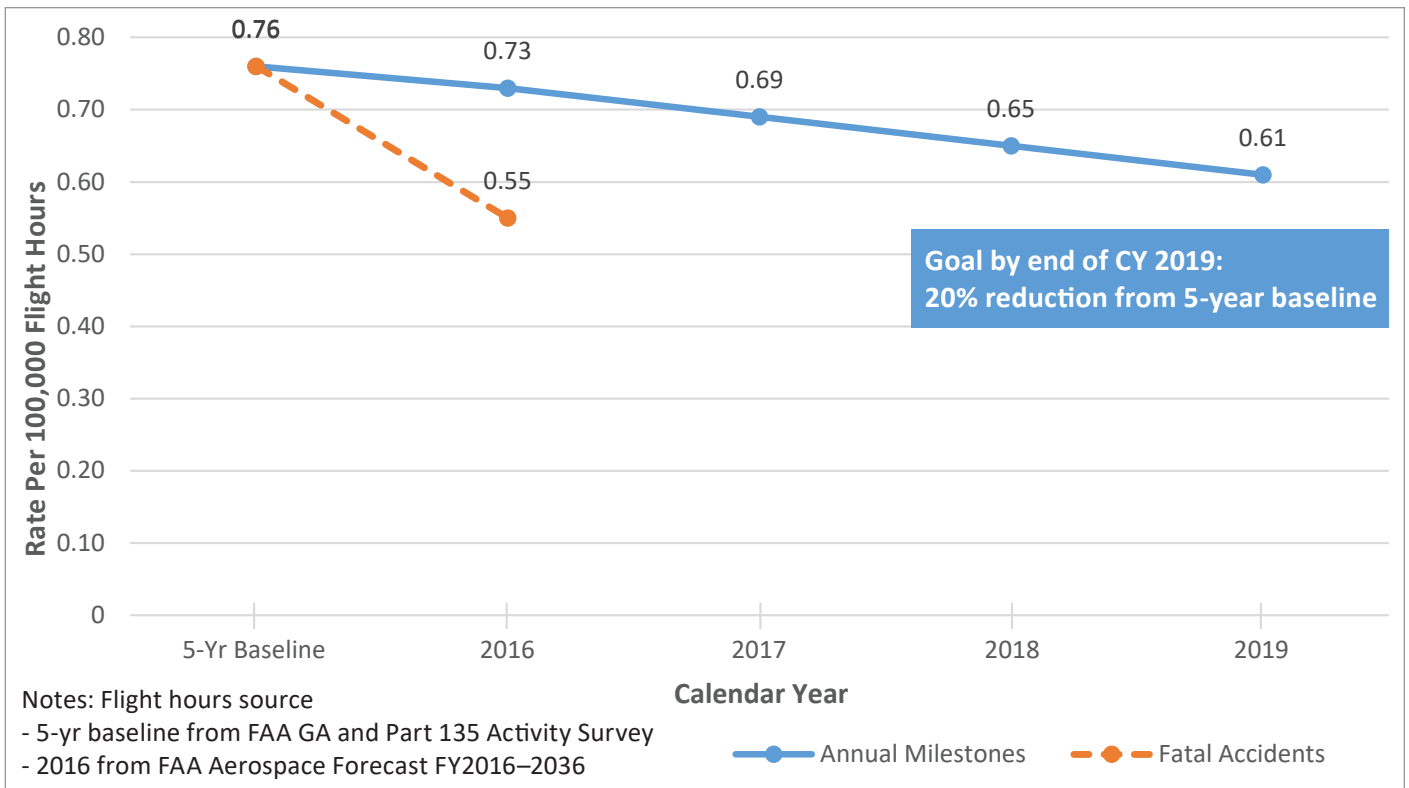


Figure 1. Projected goals for U.S. helicopter fatal accident rates, 2015–20.

recommendations aimed at mitigating these types of fatal accidents. By focusing on these three areas, the USHST plans to make significant progress toward achieving its goal of reducing fatal helicopter accidents by 20 percent by 2020.

### Reaching Out

One reason for the USHST’s data-driven approach is that it enables the team to drive resources toward the areas of the industry that are experiencing the highest number of accidents. Of the accidents analyzed, the segments experiencing the most fatal accidents include:

- Personal/private
- Helicopter air ambulance
- Commercial helicopter operations
- Aerial application.

The USHST has already begun to strengthen its outreach efforts to these helicopter industry segments. Special USHST outreach groups will identify points of contact within these industry segments, involve key people in seminars and industry meetings, and attend conventions and safety gatherings relevant to these identified sectors. Their goal is to engage with

the targeted segment and increase safety awareness, as well as to learn from that community any issues that are impeding improvement of that segment’s safety record.

### Focused Attention

In order to reduce fatal helicopter accidents by 20 percent by 2020, the USHST is focusing its immediate attention on some of the following areas:

- Enhance outreach efforts to specific helicopter industry segments that will deliver targeted advice relevant to that segment’s unique operations, with special emphasis on personal/private flying, commercial operations, aerial agricultural application, and emergency medical services
- Concentrate its efforts in the safety areas involving personal protection equipment, aircraft certification standards, aeronautical decision-making, and safety risk management
- Enhance instrument proficiency in helicopter pilots while stressing the importance of conservative aeronautical decision-making, personal minimums, meaningful

preflight inspections, and adequate flight planning.

### Double Check

As a result of its accident analyses, the USHST has realized that ineffective use of checklists and disregard for following standard operating procedures (SOPs) has directly contributed to a significant spike in fatal helicopter accidents. Many helicopter pilots believe SOPs exist only for those flying large helicopters. Wrong! Every pilot should develop and implement SOPs for all flight operations, regardless of the type of helicopter flown.

Many pilots allow the habit of using a checklist to fade over time. This is unfortunate. Even if you fly the same helicopter every day, using an approved checklist consistently is smart because complacency kills. A properly executed checklist is a resource that improves safety during all phases of flights.

The USHST has also determined that pilots with limited experience in a make and model of aircraft should follow a strict regimen of using checklists. Never assume you know any helicopter like the back of your hand.

Take the extra minutes to do things right and by the book. The USHST promises you'll never regret investing a little extra time checking your aircraft to ensure all systems are a go.

## Planning for Change

Proper preflight planning and good mental preparation pays huge dividends for helicopter pilots, especially when it comes to handling unexpected weather and mechanical issues. Well thought-out tasks prepared for on the ground often yield positive results when decisively executed in flight.

Pilots are encouraged to take immediate action should they encounter unexpected weather. If the weather starts getting crummy, there's a high probability it will only get worse before things get better.

One resource available to help pilots in deteriorating weather conditions is called a "trigger point." According to this philosophy, when pilots find themselves in deteriorating conditions that require them to reduce airspeed by a predetermined amount in relationship to normal cruise speed or to reduce altitude, they have reached a trigger point.

The very act of reaching a trigger point means a pilot should consider abandoning his or her original flight plan. The pilot's next decision is choosing how to break the accident chain: whether to land, change direction, or continue the flight under IFR (instrument flight rules) conditions. An example is a National EMS Pilots Association campaign, which advises pilots: "Down by 30? Turn. Land. Go IFR. But do not continue."

HAI's Land & LIVE campaign is another example. Pilots who are experiencing degraded flight conditions for any reason — fuel, illness, weather, mechanical problems — are encouraged to get their helicopters safely on the ground as quickly as possible. When the flight is not going well, "land the damn helicopter" is HAI President and CEO Matt Zuccaro's sound advice.

## Weather or Not

The USHST is attacking weather-

related accidents from another angle as well: increasing instrument proficiency in helicopter pilots, whether or not they are flying IFR or VFR (visual flight rules).

The notion of "use it or lose it" is certainly true when it comes to maintaining instrument proficiency. Because helicopters are predominantly operated in VFR conditions and as most helicopters are not even IFR certified, instrument flight skills can get rusty quickly.

On average, it takes only 178 seconds — less than 3 minutes — for non-instrument-rated airplane pilots to lose control of their aircraft after inadvertently flying into instrument meteorological conditions. Because helicopters are inherently less stable and often less equipped, one could easily assume that it takes less time for equally qualified helicopter pilots to lose control of their helicopters in similar conditions.

Certainly, IIMC is one of the top three leading causes of accidents. Drawing from the statistics, more than two-thirds of all weather-related helicopter accidents result in at least one fatality, a rate three times as high compared to all other general aviation accidents. So IIMC is not only a leading cause of accidents, those accidents also tend to involve loss of life.

The USHST wants to remind helicopter pilots that they have options for escaping IIMC: climb, descend, land, or reverse course. Descent is often considered most risky, as it involves flying closer to the ground in poor visual conditions. Climbing, reversing course, or making a precautionary landing are likely the safest options if the pilot or aircraft is not instrument certified or cannot commit to instrument flight.

Regardless of technique, maintaining positive aircraft control should be the pilot's highest priority. Pilots who remain calm and make subtle input changes during these hair-raising situations are more likely to maintain positive control compared to those who do not.

If you are already instrument rated, you should on a regular basis maximize your flight time under

simulated instrument conditions with a qualified instructor. If not already instrument rated, make the investment. Instrument training enhances aeronautical decision-making and will vastly improve piloting skills — an investment well worth the time and money.

Bottom line: be prepared for those days when perfect weather conditions suddenly disappear. Invest in your skills and understand what your options are when flying in instrument conditions. And remember, seconds truly count when trying to escape IIMC.

## Taking Action

The USHST has also discovered through its analysis that a lack of adequate preflight planning can lead to hair-raising experiences. Pilots who approach flying using a defensive mentality often experience greater satisfaction in knowing they have thought through various scenarios beforehand and haven't left much to chance.

## Join the Fight

To strengthen its purpose of reducing helicopter accidents, the USHST is calling for more industry experts to join its efforts. Best practices and safety recommendations are only as good as those who help to implement them in the field.

For information on how you can join the USHST for the purpose of saving lives by reducing fatal helicopter accidents, please contact me via email ([steven.sparks@faa.gov](mailto:steven.sparks@faa.gov)). We encourage you to join our team — the stakes are much too high for you to miss out. **R**

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