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ON THE COVER: Bernhard Stachelberger shot this Air Zermatt Bell 429 during a winching operation near the Saas-Fee resort in the Swiss Alps. Stachelberger is a helicopter pilot as well as a talented photographer—he was a category winner in the 2017 ROTOR Photo Contest. This cover-worthy image earned him an Honorable Mention in this year's contest.



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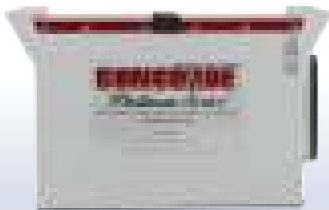
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Mark Bennett worked for McDonnell Douglas Helicopter/Boeing for a decade, then in 1999

cofounded an aerospace-only marketing agency. With 30 years of photography and design experience serving the aerospace and defense industries, he founded AeroMark Images to shoot and write for both industry and media.



Jen Boyer

Jen Boyer is a 20-year journalism and public relations professional in the aviation industry, having

worked for flight schools, OEMs, and operators. She holds a rotorcraft commercial instrument license with CFI and CFII ratings. Jen now runs her own public relations and communications firm.



Keith Cianfrani

Keith Cianfrani is a retired US Army aviator, commercial pilot, and the owner of Aviation Safety

Consultants, LLC. Keith is an auditor for the IS-BAO and HAI-APS programs and a member of the International Society of Air Safety Investigators. He also works with the FAA and HAI on helicopter flight-data monitoring research.



Cade Clark

HAI's VP of government affairs, Cade Clark has directed association advocacy programs

for nearly 20 years. Growing up, he worked at an FBO where Cade learned to fly, washed planes, got in the mechanics' way, idolized the old-timers and their stories, and deepened his love for all things general aviation.



Chris DeJoy

Chris DeJoy joined HAI as its editor this past October. Previously, she worked more than

35 years as a staff managing editor and freelance editor for various trade magazines and websites as well as government contractors. In her free time, Chris enjoys—what else—reading.



David Jack Kenny

David Jack Kenny is a fixed-wing ATP with commercial privileges for helicopter. He also holds degrees in

statistics. From 2008 through 2017, he worked for AOPA's Air Safety Institute, where he authored eight editions of its *Joseph T. Nall Report* and nearly 500 articles. He'd rather be flying.



Gina Kvitkovich

Gina Kvitkovich joined HAI as director of publications and media in 2011 after decades of honing

her skills in writing, editing, and publishing. As editor of ROTOR, she is responsible for every error in the magazine that you're reading—and for some of the good stuff as well.



Chris Martino

Chris Martino has been HAI's vice president of operations since 2015. Chris

represents the industry in the full scope of initiatives related to safety, regulations, international affairs, flight operations, and technology. Prior to HAI, he served for 30 years in the US Coast Guard, achieving the rank of captain and serving as the service's chief of aviation forces.



Zac Noble

Zac Noble joined HAI as its deputy director of flight operations and technical services after 11 years of flying

in the air medical sector. A US Army veteran, Zac's aviation career spans more than 35 years. He is a dual-rated ATP, a dual-rated CFII, and an A&P with IA privileges.



Terry Palmer

With more than 25 years of experience in aviation safety and training, Terry Palmer has received many

awards, including the 2010 HAI Salute to Excellence Safety Award. She serves on the HAI Training and Safety Working Groups and is working with SAFE Structure Designs and Southern Utah University on helicopter maintenance training initiatives.



Victoria Pender

Victoria Pender joined the HAI Foundation as foundation coordinator in January 2019 after graduating

from North Carolina State University in May 2018. She previously interned with the National Association of State Departments of Agriculture.



Dan Reed

Dan Reed is an award-winning journalist and author who has covered aircraft

manufacturing, aviation, and airlines for more than 30 years. Currently, he's a freelancer for *Forbes* and other publications, writes books, and operates his own communications consulting firm. Dan is based in Fort Worth, Texas.



John Shea

John Shea joined HAI as director of government affairs in 2019. He came to HAI from the National

Association of State Aviation Officials (NASAO), where he was interim president in 2018 and lead government affairs representative since 2017. Previously, as a legislative staffer, John advised multiple members of Congress on transportation policy.



Dan Sweet

Dan Sweet joined HAI as director of communications and public relations in 2017. He previously

served in the US Navy as a photojournalist. After leaving the Navy, he worked for Oregon-based Columbia Helicopters, performing public relations, communications, and trade show management work for more than 22 years.



Matt Zuccaro

Matt Zuccaro recently retired as president and CEO of HAI. He holds ATP and CFII ratings for helicopters

and airplanes. His 50-year career in aviation began as a US Army helicopter pilot in Vietnam. Matt's priority is safety in both his executive and operational assignments. His wife, Doreen, has been his copilot for the past 50 years.

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By Jack Matiasевич

Finding Your Passion (Again)

Some life hacks to reignite your fire.



An accomplished, driven aviator, Jack Matiasевич has been incident- and accident-free for over 11,500 hours. For the past 26 years, Jack has developed his skills in the utility, aerial firefighting, air ambulance, agriculture, and construction sectors. First exposed to flying by his aviator grandmother, Jack is the assistant chief pilot for Southern California Edison and was elected to the HAI Board of Directors in 2018.

I SHOULD HAVE BEEN A DENTIST, BUT I LOVE BEING A HELICOPTER PILOT. At times I do think about other career options I could have taken. For example, as a dentist, I could use my manual dexterity and precision within the tight confines of a patient's mouth. I would just need to practice my one-way conversations, where I keep asking questions while jamming patients' mouths with instruments.

Like many of you reading this, I fell in love with aviation in my youth. I remember being distracted from my high school job of cleaning a dental office by the sound of a helicopter air ambulance landing at the hospital pad just across the street. I would rush out to look up and admire the beauty and simplicity of the approach. The helicopter was magnificent, gorgeous, yet powerful and loud—I loved it. Even now, as I watch a helicopter simply hover, it blows my mind.

That passion has never left me. Being a helicopter pilot is amazing, challenging, technical, and rewarding in so many ways—whether the mission involves dousing a fast-moving vegetation fire, executing a nighttime cliff rescue, or using a longline all day to help build a power line.


As assistant chief pilot for Southern California Edison, I spend more time flying a desk than an aircraft. But making this change was a conscious decision. My priorities have shifted, and different career challenges, goals, and opportunities have arisen. What gave me the confidence to make the change? I used a few life hacks to avoid falling into the trap of career complacency.

To keep your career vibrant, first see if you need to redefine your passion. Don't rely on what motivated you earlier in your career to motivate you now. I'm no longer that high school kid—I have different perspectives, skill sets, and values. Many people experience a shift in values over time, from the *accumulation* of money, titles, and promotions to the *contribution* of time, energy, and effort to others. Shift your focus from getting to giving, and your passion may follow.

Second, remember why you chose this career in the first place. I have three children, and watching them grow physically and mentally is an incredible gift. The awe and wonder children possess can be contagious if you let it. Helping aspiring aviators can have a similar effect. Your efforts may not only feed their passion; they may reignite your own.

Third, hang out with passionate people. I'm fortunate to have a few folks in my life who are genuine firecrackers. If I'm feeling less than 100% before seeing them, afterward I'm reinvigorated, encouraged to achieve my goals. If you're feeling down, talk to someone who can get you excited about the future.

Finally, take action. Evaluate where you need to make changes. Are you feeling unbalanced or unequal? Identify the necessary steps for action. Just keep in mind that it's important to differentiate between impulsive actions and well-thought-out, strategic maneuvers. This is especially important because our feelings follow our actions.

If you don't feel like exercising, go for a run anyway and you'll feel better afterward. If you don't feel like writing, just start with one paragraph and that may get you through writer's block. If you don't want to brush your teeth, don't go to the dentist—wait, that doesn't make any sense. Enough with the advice—for now, I'll stick to being a helicopter pilot. 

Aloha,





ANNOUNCING CANDIDATES FOR ELECTION TO THE HAI BOARD OF DIRECTORS

The following candidates for the HAI Board of Directors were nominated in accordance with the HAI By-Laws. Candidates elected to the HAI Board of Directors will serve a three-year term, beginning July 1, 2020.

Candidate for the ONE Government Service Seat

Adam Hammond

Tennessee Valley Authority Helicopter Services
Knoxville, Tennessee, USA

Candidates for the THREE Commercial Seats

<p>Gordy Cox Redding Air Service Inc. Redding, California, USA</p>	<p>Rick Kenin Boston MedFlight Bedford, Massachusetts, USA</p>	<p>Michael Mower Southern Utah University Aviation & Iron County Sheriff's Air Operations Cedar City, Utah, USA</p>
<p>Randy Rowles Helicopter Institute Inc. Fort Worth, Texas, USA</p>	<p>Mark Schlaefli Sundance Helicopters Inc. Las Vegas, Nevada, USA</p>	<p>Nicole L. Vandelaar Novictor Helicopters Honolulu, Hawaii, USA</p>

Visit rotor.org/election to learn more about the election, including a message from each candidate and their resume or CV. Each candidate will also speak at the HAI Annual Membership Meeting & Breakfast at HAI HELI-EXPO 2020 in Anaheim.

VOTING FOR THE HAI BOARD OF DIRECTORS

<p>Who can vote?</p>	<p>The designated member representatives of HAI Helicopter Operator members are eligible to vote in Board of Director elections.</p>
<p>Where can I vote?</p>	<p>Designated member representatives can vote:</p> <p>ONLINE: Check your email for an online ballot that was sent from roxanne.fox@rotor.org. If you haven't yet received any voting materials via email, please contact roxanne.fox@rotor.org.</p> <p>IN PERSON: Membership representatives may vote in person at the HAI Annual Membership Meeting & Breakfast at HAI HELI-EXPO 2020: Tue., Jan. 28, 8:00 AM – 10:00 AM Ballroom CDE Anaheim Convention Center</p> <p>Voting will continue at the HAI Membership Counter in the Registration Areas of Hall E of the Anaheim Convention Center from 11:00 AM until 3:00 PM, at which time voting will close.</p> <p>Election results will be announced at the Salute to Excellence Awards luncheon, Wed., Jan. 29.</p>



By Jim Viola

Tell Me What You Want

My first priority: listening to you, the member.



Jim Viola is HAI's president and CEO. After a career as a US Army aviator, he joined the FAA, where he served as director of General Aviation Safety Assurance before joining HAI. A dual-rated pilot, Jim holds ATP ratings in both airplanes and helicopters and is a CFII. Jim can be contacted at president@rotor.org.

I'M ABSOLUTELY ECSTATIC TO HAVE BEEN SELECTED by your board to be the next HAI president and CEO. The selection process on your behalf was very fair, and it challenged me to do plenty of research on associations and what we should do for our members. Almost everything I read was about making sure we're focused on member benefits.

My first priority will be to assess the value that HAI provides its members. Having been an HAI member for more than 10 years, I know many previous chairmen. I plan to reach out to them to see what member initiatives they believe are valuable and important.

I also want to hear from you, the HAI member. Send me a note at president@rotor.org about:

- The three things you enjoy the most about your HAI membership
- The three things you feel are useless or don't like about your HAI membership
- The three things HAI could do to grow the membership.

Please note: if HAI is able to give you the new member benefits or services you suggested, then please recruit three new members who will also enjoy those things. The best marketing we can have is members who are enthusiastic about the value they receive from HAI.

I gave the HAI Board of Directors some metrics about what I'm planning to do in my first 90 days on the job. You can hold me to those as well. I want to review the association's mission, vision, and strategy to make sure they align with members' expectations. To do that, I will survey the membership and staff for ideas on how to grow the association. I also want to ensure that HAI is truly international, representing the best interests of our members around the world.


Additionally, I'll look at any structural changes that may be needed to enhance HAI operations, while ensuring the proper staff makeup to enable us to implement any changes to the association's mission, vision, and strategic direction. I'm looking to develop a list of the three things we could change ASAP to demonstrate rapid improvement in how we meet your expectations—and as I mentioned earlier, I need your input on those.

One year from now, I want to finalize HAI's mission, vision, and strategy, including any possible rebranding that may be necessary to ensure that we're inclusive with the future of aviation rather than excluding potential members by using the word "helicopter."

By getting the human pilot out of the aircraft, vertical takeoff and landing (VTOL) vehicles and operations are rapidly improving safety in missions that were historically accomplished by helicopters. We need to bring that technology and remote piloting to all low-level surveillance flights and operations that statistically have a high risk of flight into wires, towers, and terrain.

This mix of manned and unmanned VTOL aircraft is being used by the US military and others, and HAI, as an association, needs to embrace that philosophy. Each of us should reach out and try to recruit the key players and operators in this sector to join us in what will become an association for anyone who operates VTOL aircraft.

If you have any recommendations for a rebranding of HAI, please send them my way. Of course, if you think that's a crazy idea, tell me that, too. Then, let's open a discussion on the pros and cons of what you think we should do for the good of the association.

I'm happy to be here to serve the needs of the HAI membership. Please help me understand how best to do that. 

Thanks,

A handwritten signature in blue ink that reads "Jim Viola".



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By Chris Van Buiten

Designing Urban VTOL Safety

Volume of flights demands new safety standards.



Chris Van Buiten is vice president of Sikorsky Innovations for Sikorsky, a Lockheed Martin Company. This group is responsible for maturing next-generation technologies and products in areas such as autonomy and high-speed flight. Chris joined Sikorsky in 1989 and has been engaged in the conceptual and preliminary design of products, including the Collier Award-winning S-92 helicopter and the UH-60M Black Hawk.

We should view the challenge of creating a future with thousands of city-center VTOL rooftop operations with the appropriate mix of excitement and reverence.

TODAY, THE INTERSECTION OF AUTONOMY AND ELECTRIC propulsion has created the potential for a new class of short-range urban mobility solutions to move people in our increasingly congested city centers. We should view the challenge of creating a future with thousands of city-center VTOL (vertical takeoff and landing) rooftop operations with the appropriate mix of excitement and reverence.

Some industry forecasts predict global VTOL activity to reach 150 million flight hours per year. While significant technology and infrastructure obstacles remain, we can address them. But to achieve the vision of cityscapes humming with VTOL aircraft, the emerging electric VTOL, or eVTOL, community must take on the responsibility for safety that comes with this mission.

We should start to address aviation's future by looking at its history. Helicopter operations in the center of New York City in the 1970s ended in part because the safety level at the time didn't support the usage rate: while aircraft safety was adequate for a small number of operations, it was inadequate to support the demands of a busier system.

The FAA faced a similar challenge in the past few decades as the number of global airline operations climbed tenfold. The airlines' safety level had to mature concurrently with their operation in order to stay ahead of the demand curve. The ability of the regulatory community and aviation industry to safely support this expansion in airline operations was impressive; now, the urban mobility community must be prepared to do the same.

To glimpse the magnitude of this undertaking, consider current helicopter safety standards. Sikorsky's S-92 helicopter, for example, received the 2002 Collier Trophy from the US National Aeronautic Association for its spectrum of safety features. In the 15 years since its introduction, the S-92 has earned an impressive fatal-accident rate of nearly one per million flight hours. This is made possible by the helicopter's certification to the toughest regulatory standards.

A few examples underscore the rigor required to prepare for high-tempo commercial aviation operations. Flaw-tolerant design requires dynamic components to be purposely compromised prior to fatigue testing to ensure safe continued operation. High-intensity radiated fields (HIRF) testing requires aircraft to be intentionally exposed to significant electromagnetic radiation to ensure system integrity. The list goes on.

Yet, if the S-92 were to be deployed in a fully mature urban eVTOL market that demanded 150 million flight hours of operation per year, its outstanding safety rate could result in approximately 150 fatal accidents per year. A fatal accident nearly every other day is clearly unacceptable!

Perhaps we could assume that, in a mature eVTOL market, people would accept one fatal accident a year. But this frequency would require an approximate target accident rate of one per 100 million flight hours—100 times better than that of the current state-of-the-art S-92.

A 100-fold improvement in safety will be possible if the eVTOL community embraces the most exacting design, manufacturing, testing, and regulatory standards. Additionally, the community must successfully deploy electric propulsion and autonomy to drive out the leading causes of today's helicopter accidents, such as controlled flight into terrain.

The concept of pushing for lower standards to ease introduction is risky. An early provider who lowers the safety bar will damage and maybe end the market for us all. Enterprises without the appetite to achieve the required level of safety should consider other ventures.

We have an *exceptional* opportunity to serve the public with new eVTOL technology. Let's assume the responsibility that comes with that challenge. [✉](#)

Congratulations to the 2020 Awards Honorees

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Gary Wiltrout

Chief Pilot (ret.), Salmon River Helicopters

ADVOCATING FOR YOU

A NEW DECADE, A NEW YEAR, A NEW ISSUE OF ROTOR, and a new way of presenting the advocacy message for HAI members—one that will help you better understand:

- WHAT legislation is on the horizon that will affect general aviation and the helicopter and drone industries
- WHY that legislation will affect you and your business
- HOW HAI supports our members through information and advocacy.

In the new approach to Advocating for You, Cade Clark, HAI vice president of government affairs, and John Shea, HAI director of government affairs, will cover critical legislation, updates to previously reported bills, any applicable calls to action (and how to contact Congress), and our grassroots outreach and member visits. They'll also be providing more coverage of legislation and government affairs issues occurring around the world. Throughout, the HAI Government Affairs Department will provide its insider perspective into the legislative machine.

HAI has also launched its new members-only Legislative Action Center, rotor.org/initiatives/advocacy. Visit the center often for greater insight into current legislation, tools that make it easier for you to take action, and helpful resources such as updates on appropriations and elections.

We hope this new reporting format provides better value to you. Let us know what you think at advocacy@rotor.org!

HAI Members

HAI is here for you! Contact advocacy@rotor.org with your legislative challenges.

LEGISLATIVE SPOTLIGHT

H.R. 5423, Aircraft Noise Reduction Act (ANRA)

What's in the Bill. Rep. Joe Neguse (D-CO-2) recently introduced this bill, which would give general aviation (GA) airports the authority to impose certain operational restrictions relating to noise concerns, such as limiting the number and type of aircraft that could operate and setting curfews or specific hours in which they could fly.

Background. In 1990, Congress enacted the Airport Noise and Capacity Act (ANCA), which provided a process for scrutinizing noise and other access restrictions managed by the FAA. ANCA and other laws and regulations currently in place have proven to be successful over the past 30 years in allowing the public to have input on aircraft operations, and for airports, air carriers, and GA operators to thrive in the safest, most-efficient national airspace system in the world.

In addition, H.R. 5423 would overturn a current regulation that requires airports that receive federal funding to accept all aviation operations that are compliant with FAA regulations. Under the new bill,

airports could restrict or limit operations for entire classes of aircraft.

What the Bill Would Do.

H.R. 5423 would dismantle the national system of airports while undermining ANCA and nearly a century of precedent. It would undercut the utility and safety of thousands of airports across the United States and reverse course on a basic principle of US aviation: the need to regulate aviation matters at the federal level, which Congress has recognized since the 1920s.

Thumbs Up or Down? HAI is strongly opposed to this legislation. We've sent a joint letter, signed by HAI and other industry groups, to the congressional committees of jurisdiction outlining our opposition. In the meantime, we'll continue to track the bill's progress.



Continued on page 16

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LEGISLATIVE UPDATES

Major Victory in FY2020 Appropriations

Congress recently passed legislation funding the US government for FY 2020. In the legislation, lawmakers fully funded the new aviation technician and pilot workforce grant programs that HAI had successfully lobbied to be included in the FAA Reauthorization Act of 2018.

During the appropriations process, the House provided full funding for the program while the Senate appropriated half the amount. HAI worked in concert with other interested organizations to advocate for full funding. We're very pleased to report that the aviation technician and pilot workforce development program is now fully funded at \$10 million.

Under the program, grants of up to \$500,000 may be used to:

- Establish new educational programs that teach technical skills used in aviation maintenance, including purchasing equipment or improving existing programs
- Establish scholarships or apprenticeships for individuals pursuing work in the aviation maintenance industry
- Support outreach about careers in the aviation maintenance industry to primary, secondary, and postsecondary school students or to communities underrepresented in the industry
- Support educational opportunities related to aviation maintenance in economically disadvantaged geographic areas
- Support transition to careers in aviation maintenance, including for members of the US armed forces
- Otherwise enhance aviation maintenance technical education or the aviation maintenance industry workforce.

The FAA hasn't yet released information about the grant application process. However, to encourage the aviation community to work together, all grants must be supported by an aviation business or union, a school, or a government agency.

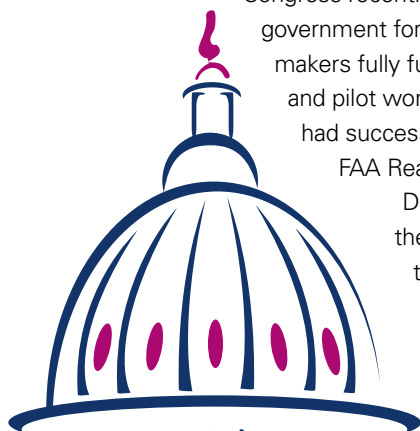
Public Aircraft and Logging Flight Times

HAI advocated in support of Sec. 517 of the FAA Reauthorization Act of 2018. This provision states that the FAA administrator shall issue regulations modifying 14 CFR 61.51(j)(4) to include aircraft under the direct operational control of forestry and fire protection agencies as public aircraft eligible for logging flight times.

The implications of Sec. 517 are important for pilots who are currently flying public aircraft but are unable to log their flight time. While the legislative text is straightforward and a win for our industry, which has long pushed for this change, the FAA hasn't yet prioritized the task of writing the regulation that will implement the language in the reauthorization bill.

HAI has been in regular communication with the committees of jurisdiction as well as other congressional offices regarding the FAA's implementation of Sec. 517. The House Transportation Infrastructure Committee recently held a hearing on the progress of implementing provisions from the reauthorization bill. A question was submitted to FAA inquiring about the status of Sec. 517, but a response hasn't yet been provided.

HAI will continue to work with Congress to ensure this issue is addressed and implementation is prioritized with the FAA.



Visit HAI's new
Legislative Action Center
rotor.org/initiatives/advocacy



Online Silent Auction

www.biddingforgood.com/HAI

Bidding Opens Jan. 20



OUTSIDE THE BELTWAY

WE RECENTLY ATTENDED THE National Conference of State Legislatures Capitol Forum in Phoenix, Arizona, an event that brings together numerous US state legislators to discuss policies and legislative concepts. It's an ideal place for HAI staff to have in-depth conversations about the initiatives that states plan to explore in 2020.

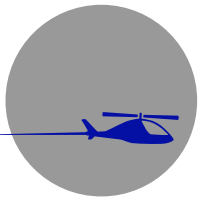
While we were in Phoenix, and on a trip to Dallas, we also met with HAI members (see photos). Whenever we meet with state legislators, manufacturers, operators, or chambers of commerce, a common topic we hear is the helicopter industry's struggles to train and retain enough pilots and mechanics/engineers.

Luckily, we have a bright spot to point to in workforce development: the Utah Rotor Pathway Program.

This statewide initiative by government, industry, and educa-

tors has been showing some successes, such as opening a rotor-specific aviation education program—aptly named the Aviators—in the new Cedar Valley High School, in Eagle Mountain, Utah.

Industry partners are setting up work-based learning opportunities for Cedar Valley students, and the Pathway Program is looking to bring aboard another high school partner in August of this year.



UTAH ROTOR PATHWAY



At the US Drug Enforcement Administration's Phoenix hangar, Cade visited with (left) Steven Blatus, assistant special agent in charge, and (right) Gary Hill, special agent in charge.

HAI believes the Utah program can be a template for similar initiatives in other states. Throughout our recent travels, we've found great enthusiasm for the concept, with numerous potential partners wanting to replicate the program and its successes.

HAI is exploring these opportunities and looking for additional partners. If you're interested in learning more about the Utah Rotor Pathway Program and setting up a similar initiative in your state, please contact us at advocacy@rotor.org!

— Cade Clark and John Shea



David Dolanar (left), director of business development at MD Helicopters, gave John (right) and Cade a tour of MD's assembly plant in Mesa, Arizona.

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The HAI Foundation is a 501(c)(3) nonprofit organization; your donations are tax deductible as far as federal law permits. Questions? Contact Allison McKay, vice president, at allison.mckay@rotor.org or 703-302-8476.

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ROTORWASH

INDUSTRY DATA, TOPICS, ADVICE, HAPPENINGS, ISSUES AND NEWS TO KEEP THE ROTORS TURNING

HAI BRIEFS

Helicopter Foundation International Changes Name

HELICOPTER FOUNDATION INTERNATIONAL (HFI), HAI's charitable arm, is undergoing a name change that more closely identifies the nonprofit organization's role in supporting HAI missions. Effective Jan. 13, 2020, the name officially changed to the HAI Foundation.

"For many years, not everyone realized that HFI is directly connected to HAI, its parent organization," says HAI President and CEO Jim Viola, who also serves in this role for the foundation. "This name change ties the two organizations more closely together, but the foundation's mission and goals have not changed."

The tax-exempt foundation also shares the same Board of Directors as HAI, with the goal of "preserving and promoting the rich heritage of vertical aviation while



supporting the next generation of pilots and aviation maintenance technicians." To achieve that goal, the foundation provides programs in three mission areas: education, safety, and historic preservation.

Most recently, the foundation has focused attention on the helicopter pilot and aviation maintenance technician shortage. It commissioned the HFI-University of North Dakota study, which was the first to

document the labor shortage in the helicopter industry. Since that study was released, the foundation has been active in workforce development, holding industry forums and career roundtables addressing the issue.

The foundation has also worked closely with HAI's Government Affairs Department, helping to initiate the Utah Rotor Pathway Program and providing information and guidance to other states interested in establishing similar educational programs. The foundation also annually awards 19 scholarships for student pilots and aviation maintenance technicians.

All donations to the HAI Foundation, a 501(c)(3) organization, are tax deductible in the United States. HAI HELI-EXPO 2020 offers several ways to become a donor, >



Turns out our folks just love Chinooks! Dave Horrax's photo of Columbia Helicopters' snowy CH-47, which we shared on HAI's Instagram, was our most popular recent social media post, with 13,324 views and 805 likes.

HAI ON SOCIAL

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ONE QUESTION

MANY ANSWERS

What are the top reasons other than pay that helicopter industry pros stay with an employer?

People join and stay with a company for many reasons and, according to the latest research, money isn't at the top of the list. ROTOR surveyed our readers and asked them to reveal (anonymously) the nonfinancial reasons they choose an employer (respondents could provide more than one answer).

1

Supportive, Trustworthy Management

(29% of respondents)

"Management that treats the employee with respect, gives clear direction, provides proper equipment/facilities, and encourages open and honest communication."

2

Work-Life Balance

(23% of respondents)

"Some flexibility that allows for a happy family life."

"Benefits that reduce stress at home and with family so you can concentrate on work."

3

Company Culture

(23% of respondents)

"You have to believe in the mission your company/program is performing. If their goals are something you don't believe in, you won't give 100%."

"Finding a company with the same values related to safety, education, efficiency, etc., that I have."

4

Stable Location, Schedule

(23% of respondents)

"Geographical stability after moving so often in the military."

"I'm a prior Coast Guard pilot and moved eight times in 20 years."

"I enjoy the stability of my schedule (six on / six off)."



► including a scholarship golf tournament (visit rotor.org/golf to register for this year's Jan. 26 tournament) and an online silent auction (visit biddingforgood.com/hai Jan. 20–30). You can also make a donation at rotor.org/donate to fund the foundation's programs in education, safety, and historic preservation.

HAI BRIEFS

HAI Committees Change Names, Gain Email Voting Option

THE HAI BOARD OF DIRECTORS is initiating a series of adjustments intended to bring the association in line with the best practices of similar organizations. One such change is meant to conform to general trade association standards: altering the

name of HAI's "committees" to "working groups."

Within the structure of many associations, committees are formed by the board and comprise only board members, whereas working groups consist of other, nonboard members who perform board-directed tasks. This change, which takes effect immediately, in no way diminishes the much-appreciated efforts of HAI's working group members.

HAI Working Group Meetings at HAI HELI-EXPO 2020

Anaheim Convention Center

Mon., Jan. 27

Technical and Maintenance

8:00 AM – 4:00 PM | Room 303A

Helicopter Tour Operators

1:00 PM – 3:00 PM | Room 303B

Tue., Jan. 28

Air Medical Services

1:00 PM – 3:00 PM | Room 303B

Training

1:00 PM – 3:00 PM | Room 303A

Wed., Jan. 29

Safety

8:00 AM – 9:00 AM | Room 304AB

Flight Operations

8:00 AM – 12:00 PM | Room 303A

Government Service

9:00 AM – 11:00 AM | Room 303C

Fly Neighborly / Environmental

1:30 PM – 4:30 PM | Room 303C

Unmanned Aircraft Systems

1:30 PM – 4:30 PM | Room 303B

Restricted and Experimental Category Aircraft

2:00 PM – 4:00 PM | Room 303A

Utilities, Patrol, and Construction

2:00 PM – 4:00 PM | Room 210AB


Thu., Jan. 30, 2020

Aerial Firefighting and Natural Resources

8:00 AM – 9:30 AM | Room 303A

Each HAI working group will continue to address the subjects for which it was created, and each will continue to function using its established structure and leadership. The groups assist the board in shaping the association's policy positions; identifying industrywide practices; and providing programs that enhance safety, encourage professionalism, and foster economic viability while promoting the unique contributions vertical flight offers society.

Additionally, the HAI board has agreed to allow working group members to vote by email. This will allow them to remain close to home while participating in regular working group meetings. While at least one meeting of each group will be held every year at HAI HELI-EXPO®, subsequent meetings may take place during other events or when necessary.

For more information on HAI's 12 working groups and their missions and members, visit rotor.org/about/working-groups. All HAI working groups will be holding public meetings in Anaheim during HAI HELI-EXPO 2020 (please see the list above). HAI members interested in seeing how HAI working groups address industry issues—or in joining with them to create solutions—are welcome to attend. 



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By Dan Reed

HeliOffshore Brings Safety Innovation to Offshore Operators

Competitors share data to target improved safety.



Gretchen Haskins

Gretchen Haskins knows best safety practices when she sees them. The CEO of HeliOffshore Ltd. in London, UK, is an aviation industry leader in safety performance improvement and an internationally recognized expert in human factors. She has served on the board of the UK Civil Aviation Authority as group director of safety, guiding aviation safety in the United Kingdom, including airlines, aerodromes, air traffic, airworthiness, and personnel. Haskins’s aviation background includes having flown jet and piston aircraft in the US Air Force.

Haskins has led HeliOffshore since its founding in 2014 by five major helicopter operators. The organization now has 118 members that work collaboratively to improve offshore helicopter safety around the world.

ROTOR MAGAZINE: HeliOffshore is known for its dedication to global offshore helicopter safety. Your organization has become an example of companies—competitors—coming together to cooperate on safety issues. How hard has it been to create the necessary trust and cooperation around the idea of managing safety issues as an industrywide cooperative endeavor?

HASKINS: We were fortunate right from the start to get the CEOs of five major helicopter operators to come together and say, effectively, “We’re not going to compete on safety.” Thanks to that early, strong support for the concept, HeliOffshore has been able to create almost a safety management system for the entire industry, not just individual companies.

We started our work based on one primary question: “How would you form a collaboration to ensure that NO lives will be lost in helicopters, or certainly in

offshore helicopter operations?”

It’s not a question of how this or that operator eliminates deaths in offshore operations but how the entire group does so.

ROTOR: But that sounds easier said than done.

HASKINS: Right. Well, we had to get our arms around what the broad threats facing the industry are, not just the threats individual operators see, because none of the individual operators are big enough, really, to have large enough data sets to allow them to see the full picture.

But we had a good example to follow from the fixed-wing world, which has several organizations, like the Flight Safety Foundation, ICAO, and the various airline trade groups, which all use broad data from across the industry to detect trends that may not be—and probably aren’t—visible at the single-operator level. So we borrowed from those established approaches. That had never really been done in the vertical flight world.

ROTOR: Any examples from the fixed-wing world that were especially helpful?



HASKINS: The FAA, with its CAST [Commercial Aviation Safety Team] program, set a goal years ago of reducing fatalities among US airlines by 80%, and they achieved that goal. They did it through collaboration, data sharing, and really getting the whole supply chain—from little parts suppliers to big component manufacturers to the aircraft makers, plus the FAA and other national and regional regulators—involved in sharing all their data. For the first time, we could do a good analysis of a data set large enough to detect trends that might not be noticeable by, or understandable to, one operator analyzing just their own data.

ROTOR: What's an example of that working for offshore helicopter operators now?

HASKINS: One of the biggest causes of fatalities in helicopters is CFIT, controlled flight into terrain—which in our case can mean water just as easily as it can mean land—or into structures on an offshore drilling platform, towers, or what have you.

Before our efforts, individual operators really didn't know anything about what other operators were experiencing and whether they were experiencing similar issues. Previously, we had some training on that, but it really wasn't tailored well for helicopter flight.

We knew we wanted to be able to detect and avoid obstacles better than we had been. Several organizations collaborated on how we might do something specifically tailored to help offshore helicopter flight in that regard.

We looked at a lot of data from lots of operators to determine what the common issues are, and then we worked with the manufacturers. And now the result is that, in early 2020, the first upgraded



terrain-avoidance systems for offshore helicopter operations will begin operation on an AW139 helicopter. Other manufacturers and models will be adding that capability very soon.

Now, pilots offshore will get 8 to 30 seconds of additional warning time before a crash would occur. That's a huge advantage. It's like having parking sensors on your car so you don't back into another vehicle you can't see or didn't notice.

ROTOR: Getting competing companies with different cultures to work together must be a challenge.

HASKINS: It's not easy, but I think everyone involved has come to see that the purpose outweighs the obstacles.

Naturally, everyone wants to make sure their data is safe and will remain protected and confidential. So we adopted a memorandum of understanding on how we would protect that data.

We've gotten lots of good support from people throughout the industry, including the oil and gas companies, whose money ultimately pays for this, to finance and build our systems.

Once we really started sharing data, our

members realized they were working on many of the same things. Not only could they save money by collaborating, but we'd be getting a much better and broader set of data to analyze by sharing. And it's working.

ROTOR: How is this approach to enhancing safety in offshore helicopter operations better than the traditional approach?

HASKINS: By having a strategy with accident-prevention goals, we've moved from compliance-based thinking on safety to safety innovation thinking.

Our actions aren't linked to just complying with the regulations but to having the achievement of real innovations as a value and a goal across the industry.

And we're being careful to use the data we're getting to define sequentially what problem areas we'll address. We'll identify a problem that's impacting all our members and work on an innovative solution that we can turn into a new best practice that can be widely adopted. Then we'll move on to another problem we've identified.

We can't solve every problem at once, but we're attacking them systematically with the goal of making real differences. 🔄

5 Best Practices for Minimizing Your Helicopter's Noise


1 During level flight, accelerations are quieter than decelerations, and straight flight is quieter than turning flight. These proven techniques for operating your aircraft enable pilots to fly more quietly and reduce annoyance from noise. The continued growth of helicopter aviation requires the acceptance and support of people who live and work in your communities and who are affected by helicopter noise.

2 If turning, remember that turning away from the advancing blade (especially when decelerating) is quieter than turning into the advancing blade, and level turns are quieter than descending turns. Make a daily effort to lessen the noise impact of your aircraft on the neighborhoods below your flight path. The helicopter industry's future financial prosperity depends on your ability to fly neighborly and minimize helicopter noise impacts. Helicopter noise, and the opposition to helicopter operations it often creates, is slowing the growth of the industry.

3 During a descent, straight-in flight is quieter than turning flight, and steeper approaches are quieter than shallow approaches. Don't give people living in noise-affected areas more reasons to oppose helicopter operations, and don't provide the noise-affected population with justification to restrict your ability to provide important services to the communities you serve and to impact your livelihood as an aviation professional.

4 If decelerating, remember that level-flight decelerations are quieter than descending or turning-flight decelerations. Fly neighborly every day, always mindful of how you can reduce the noise you are creating. The public is watching and will hold you accountable for the way you operate your aircraft. Because of social media, it's easy for noise-affected groups to circulate audio and video of your activities—and reach millions.

5 While maneuvering, smooth and gentle control inputs are quieter than rapid control inputs. Fly neighborly and represent your industry responsibly. One careless pilot makes us all look bad. To a noise-affected community, one unnecessarily low-flying helicopter can represent all of us. How you operate your aircraft reflects on all who fly helicopters.



The external sound produced by a helicopter is made up of acoustical sources from the main rotor, the tail rotor, the engine(s), and drive systems. While this may sound like music to the ears of someone in the helicopter industry, it can be, and often is, extremely annoying to the general public. HAI suggests you incorporate established Fly Neighborly protocols into your flight operations each and every day. At left are five best practices for minimizing your helicopter's noise footprint.

Fly Neighborly

The Fly Neighborly program was officially launched by HAI in February 1982 and has since gained US and international acceptance. Fly Neighborly training was developed by HAI's Fly Neighborly / Environmental Committee (now Working Group) and provides helicopter operators with noise abatement procedures and situational awareness tools that can be used to significantly enhance operations. Fly Neighborly training is available on the FAA Safety Team website at <https://go.usa.gov/xQPCW>.

HELICOPTEREVENTS

2020

JAN. 27–30 / EXHIBITS OPEN

JAN. 28–30

HAI HELI-EXPO 2020



Helicopter Association International
Anaheim, California, USA
heliexpo.rotor.org

FEB. 11–16

Singapore Airshow 2020

Singapore
singaporeairshow.com/trade

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MAR. 5–7

2020 International Women in Aviation Conference

Women in Aviation International
Lake Buena Vista, Florida, USA
wai.org/events/2020-international
-women-aviation-conference

MAY 4–7

AUVSI XPONENTIAL 2020

The Association for Unmanned Vehicle
Systems International
Boston, Massachusetts, USA
xponential.org/xponential2020

Visit HAI at Booth #1601

MAY 27–28

HAI Helicopter Air Medical Safety Conference

Helicopter Association International
Alexandria, Virginia, USA
rotor.org/amsc

JUN. 10

2020 White Plains Regional Forum

National Business Aviation Association
White Plains, New York, USA
nbaa.org/events/2020-white-plains
-regional-forum

JUL. 20–25

APSCON 2020

Airborne Public Safety Association
Houston, Texas, USA
publicsafetyaviation.org/events/apsccon
-2020-houston-tx/apsccon-2020-exhibit/
apsccon-2020-exhibit
-exhibit-at-apsccon-2020

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OCT. 6–8

2020 NBAA Business Aviation Convention & Exhibition

National Business Aviation Association
Orlando, Florida, USA
nbaa.org/events/2020-nbaa-business
-aviation-convention-exhibition

NOV. 2–4

Air Medical Transport Conference

The Association of Air Medical Services
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aams.org/events/amtc

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COPILOT: JOHN DOTY

PARAMEDIC: CHARLES HALCOME

HOIST OPERATOR: WARREN LABETH

RESCUE SPECIALIST: PETER CALLINA

BRISTOW GROUP | SIKORSKY S-92 (SAR CONFIGURATION)

CAPTAIN: RICHARD BEERY

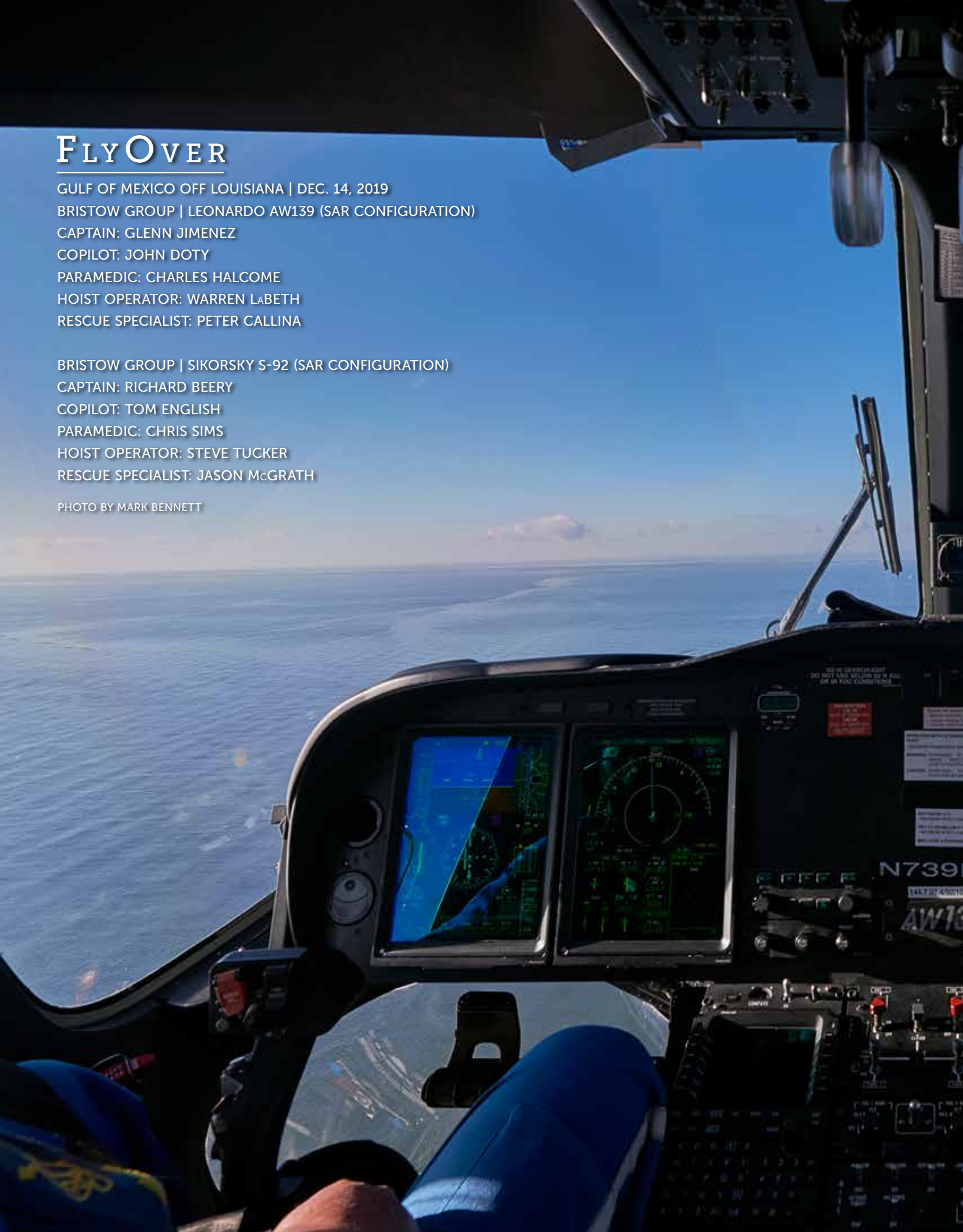
COPILOT: TOM ENGLISH

PARAMEDIC: CHRIS SIMS

HOIST OPERATOR: STEVE TUCKER

RESCUE SPECIALIST: JASON McGRATH

PHOTO BY MARK BENNETT







The Return of Single-Engine IFR Helicopters

By Jen Boyer

Bell and
Leonardo
bring IFR-
capable
aircraft to
market.

THIS PAST SUMMER, OUR INDUSTRY welcomed back an old friend, one that hadn't been seen in the US market since 1999: the single-engine helicopter certificated for flight under IFR conditions (SE-IFR). In July 2019, Leonardo received an FAA supplemental type certificate (STC) for the first SE-IFR helicopter in more than two decades, the TH-119. Less than a month later, Bell received an STC for its 407 GXi to operate under instrument flight rules.

It's no coincidence that both of these exciting new entrants arrived so recently. These first certifications are the culmination of decades of work behind the scenes, in both technology and regulation. The paths the two manufacturers took to certification, however, are vastly different.

SE-IFR: A History

To truly understand the SE-IFR issue, it's important to understand how we got here.

Helicopter flight rules for instrument conditions made their first appearance in the 1970s. At the time, single-engine rotorcraft conducted IFR flights regularly, well before the advent of GPS, glass cockpits, and digital autopilot systems. The rules these helicopters were certificated under, found in Appendix B of 14 CFR Part 27, Airworthiness Standards: Normal Category Rotorcraft, hadn't changed significantly since the early 1980s.

In 1999, the FAA issued AC 27-1B, Certification of Normal Category Rotorcraft. This document, which was a total revision of AC 27-1A, issued in 1997, dictated the extinction of SE-IFR rotorcraft.

AC 27-1B in essence incorporated into Part 27 numerical safety analysis methods as a way of determining OEM compliance in meeting safety standards. The advisory circular (AC) required helicopter manufacturers to prove that critical aircraft systems had an "extremely improbable" failure rate of one in 1 billion. In other words, OEMs had to demonstrate that these systems would incur only one failure in 1 billion hours of runtime. Any critical onboard system that couldn't meet this failure rate was required to be duplicated, with redundancy providing an additional safety margin.

Overnight, single-engine IFR helicopters became cost and weight prohibitive.

In 2003, AC-1B was revised again, raising the bar even higher. This time, the AC defined loss of function of attitude, airspeed, or barometric altitude instruments, or conditions that would cause those instruments to issue hazardously misleading readings, as individually "catastrophic" when

operating in instrument conditions. Industry interpretation of this change was that triple-redundant systems would now be required.

At the same time the 2003 AC was issued, Part 23 single-engine airplane manufacturers received relief from these new requirements: SE-IFR airplanes were required to meet a probability of one in 1 million before being subject to duplicate systems. In response, new aircraft came on the scene, like the Cirrus SR-series, that deployed the latest GPS, glass cockpits, and autopilot technology. This relief wasn't extended to the helicopter industry, however, in part because the latter was still a long way off from meeting even this lower probability requirement.

"There are several reasons why regulation changes for small light airplanes couldn't be extended to helicopters at the time," says Harold Summers, director of flight operations and technical services at HAI. "Helicopters aren't inherently stable like airplanes. There also was a great deal of work needed to prove that the aircraft could be safely flown in IFR conditions without all the redundancies. The advanced, lighter technology for helicopters hadn't yet caught up."

More accidents (194), and resulting fatalities (326), occurred from 2001 to 2013 from pilots being ill-equipped for MVFR and IIMC conditions than would have occurred from the expected failure rates of SE-IFR helicopter systems.

Industry Asks for Change

In 2015, with support from partner associations, the helicopter industry petitioned the FAA to consider reducing certification barriers for SE-IFR helicopters. In the 16 years since the publication of AC 27-1B, a number of important technologies, including WAAS (wide area augmentation systems), GPS, cell phones, tablets, and flight planning apps, had been introduced, all available in affordable, lightweight, consumer-friendly packages. The industry was finally in a position to meet the same one in 1 million standard as light airplanes.

In the summer of 2015, HAI, AHS International (rebranded in 2018 as the Vertical Flight Society, or VFS), the General Aviation Manufacturers Association, and the Aircraft Electronics Association published the *14 CFR 27 Single-Engine IFR Certification Proposal*, an association and industry white paper (bit.ly/SE-IFR). The proposal explicitly linked improving helicopter safety to facilitating an economically viable certification plan for SE-IFR helicopters and expanding IFR operations.

The paper referenced worldwide helicopter accidents



Bell 407 GXi
Max cruise speed: 133 kts
Max range: 330 nm (127.8 US gal., no reserve fuel, at sea level)
Useful load: 2,550 lbs
Seating: Max 7

The IFR-capable Bell 407 GXi is available in models suitable for US military training as well as civilian purchase.

related to flights in marginal VFR (MVFR) and inadvertent entry into instrument meteorological conditions (IIMC). The authors argued that more accidents (194), and resulting fatalities (326), occurred from 2001 to 2013 from pilots being ill-equipped for MVFR and IIMC conditions than would have occurred from the expected failure rates of SE-IFR helicopter systems.

“The lack of SE-IFR helicopters developed a dangerous culture in our industry,” explains Paul Schaaf, former HAI vice president of operations and the HAI lead for the white paper. “Pilots needed to get their instrument rating to get a job, but very few used it again if they flew single-engine operations. Few companies kept their pilots’ instrument skills strong. Add to that the pressures to get the job done if there’s any chance of VFR, and it’s a recipe for disaster.

“We argued that the probability of IIMC and controlled flight into terrain was higher than any probability of equipment failure,” Schaaf continues. “By allowing SE-IFR helicopters, we could save lives.”

The white paper addressed six key concerns with the FAA’s certification standards for SE-IFR helicopters:

- Use one in 1 million as the failure rate that would require redundant systems in lighter SE helicopters rather than the original FAA standard rate of one in 1 billion

- Allow generic high-intensity radiated field (HIRF) testing based on established construction techniques (ambiguities in the then-current Part 27 language required testing on a case-by-case basis each time a new piece of equipment was added)
- Allow a single hydraulic system when aircraft can be shown through rigorous testing to be flyable without hydraulics
- Reduce the requirement for three navigation communication systems to two
- Reduce the requirement for dual pitot-static systems to one
- Allow a battery to be considered as a second electrical generation system.

In 2017, the FAA released policy statement PS-ASW-27-15, Safety Continuum for Part 27 Normal Category Rotorcraft Systems and Equipment, which adopted some of the processes and concepts recommended in the white paper. With the publication of the Safety Continuum, the FAA officially recognized that safety and risk must be balanced across a wide spectrum of aircraft and operations, specifically calling out aircraft weight and propulsion type, whether passengers are flown for hire, and societal expectations as major factors in airworthiness decisions.

The FAA saw the Safety Continuum as a way to “facilitate

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a more rapid incorporation of advances in technology for systems and equipment by recognizing a balanced approach between the risk and safety benefits [of] installing such technology.”

Through the FAA’s Safety Continuum process, helicopter manufacturers received relief in failure probabilities and can now request waivers from the AC 27-1B requirements by submitting issue papers. After close review, the FAA can decide whether to issue the waivers.

Two Paths to Certification

Despite all the changes in certification brought about by the FAA’s policy revisions, the world’s first SE-IFR helicopter approved for production in 20 years, the Leonardo TH-119, was certified using the 1999 AC 27-1B standards.

Leonardo’s history gave it an advantage. The TH-119 was designed to meet a customer’s request in the early 2000s for a skid-equipped, single-engine version of the twin-engine AW109. The master plan for the TH-119 included a

second generator, dual hydraulics, a second pitot-static system, and a three-axis automatic flight control system with dual stage.

Leonardo didn’t need to design an SE-IFR helicopter from scratch; the company just needed a customer to justify the expense of taking an aircraft through the certification process. Enter the US Navy and its call for the TH-73, a new SE-IFR training helicopter and the catalyst for the US certification of the first two SE-IFR helicopters in 20 years.

“When we submitted the TH-119 for IFR certification, it met the original FAR 27 with no waivers,” says Andy Gappy, Leonardo TH-119 campaign manager. “We had actually been working on it for quite some time. When the US Navy canceled the TH-57 program in 2012, we started looking at our aircraft and identified the 119. We could have certified it years ago, but the holdback was technology and the customer. We were waiting on what specifically the navy required, pacing ourselves with the navy, and developing the project over four years to meet their requirements.”

Leonardo described its certification process with the FAA as seamless, with the OEM working with the agency throughout design and certification. “Having the FAA involved every step of the way helped a lot. They’ll give you recommendations for tweaks, and that can be very helpful,” Gappy says.

Leonardo’s resulting STC for SE-IFR makes the TH-119 available to the civil industry, as well, as both a new helicopter and a retrofit. Leonardo has since seen considerable interest from customers seeking both versions.

Bell took a slightly different tack in its bid for the TH-73 contract. Building its SE-IFR helicopter off the design for the single-engine 407, the maker sought relief from the FAA in two areas: dual hydraulics and HIRF susceptibility. After considerable testing and documentation, the OEM received waivers for both.

“We’re overall very happy with the outcome and pleased with the FAA’s involvement,” says Eric Sinusas, Bell’s program director for light aircraft.

“The Safety Continuum has potentially strengthened safety,” adds John Bouma, Bell’s director of civil certification. “I hope that making safety technologies easier to certify, accessible,



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Leonardo TH-119

Max cruise speed: 131 kts

Max range: 515 nm (1,516 lbs of usable fuel, no reserve fuel, at 5,000 feet)

Useful load: 2,756 lbs

Seating: 6/7

and less expensive to install overall will significantly increase safety. It's an excellent example of bridging regulation with advanced technology."

Like Leonardo's TH-119, the IFR-capable Bell 407 GXi is available for civilian purchase as both a new aircraft and a retrofit kit, with more concrete time lines and details to be unveiled at HAI HELI-EXPO 2020. Bell reports customer interest is very strong.

Other OEM Plans for SE-IFR

While not developing directly for the US Navy contract, other manufacturers are looking at how they can exploit the new market niche. Kurt Robinson, president of Robinson Helicopter Co., says the manufacturer is looking to add an SE-IFR-capable aircraft to its line of small, affordable helicopters. "We're excited about this direction and think it's very much in the realm of possibilities at Robinson in the next three to five years," says Robinson.

At MD Helicopters, Steve Suttles, vice president, military/commercial sales and marketing, says SE-IFR isn't a "must-have" feature for the majority of commercial utility or general flight operations. "Based on our research and experience, our commercial operators with a significant IFR requirement are better and more affordably served with a light twin-engine

aircraft, like the IFR-capable MD 902," says Suttles. "That said, MD Helicopters is certainly interested in offering IFR capability in our sought-after single-engine aircraft, should that capability be required by a qualified fleet customer."

Kopter Group's clean-sheet design, the SH09, is ideally positioned for SE-IFR, and the manufacturer plans to market it as such, says Cecile Vion-Lanctuit, head of communications and marketing for the OEM. The aircraft's baseline version includes the Garmin G3000H integrated flight deck and offers standard safety and redundancy features typical of FAA Part 29 rotorcraft, such as dual hydraulic and electrical systems, easing the development of the IFR-optional kit.

New Challenges

After a 20-year absence, SE-IFR helicopters are once again available in the US market. Their return is certainly a win for the industry and the FAA. The industry submitted concerns, and the FAA listened, eventually developing a policy that allowed for a more nuanced approach to aircraft certification. Best of all, operators and pilots now have more, safer choices of aircraft to fly.

Yet there are still issues to overcome for our industry to take full advantage of the safety benefits of SE-IFR flight.

"IFR is paramount to safety, especially with fully capable

Leonardo's TH-119 in July 2019 became the first SE-IFR helicopter in 20 years to be approved for production.

IFR aircraft. Now that the industry has access to this tool again on a more affordable level, the industry must embrace it," says Tom Judge, executive director of LifeFlight of Maine, chair of the US Helicopter Safety Team Infrastructure Work Group, and former chair of the Association of Air Medical Services board. "The fixed-wing world is 20 years ahead of the helicopter world in terms of IFR flight, and if the helicopter world is going to survive, it needs to catch up."

Industry experts argue that the key to success is full industry acceptance of, and even preference for, IFR operations, from training to operator policy. Having an IFR-capable aircraft does no good if the pilot isn't IFR rated, current, and confident.

"The industry needs to embrace IFR and ensure pilots are trained, current, and proficient to take full advantage of this technology and save lives," says VFS Executive Director Mike Hirschberg. "Dual-engine IFR aircraft crash today because pilots aren't comfortable with IFR and so choose to fly VFR and lose."


The US National Airspace System will also require transformation to accommodate helicopter IFR operations. IFR helicopters have been such a small piece of overall traffic, they currently fly airplane routes (though the FAA and ICAO are currently designing and implementing IFR helicopter-only routes; see "File IFR and Fly TK Routes," Fall 2019 ROTOR, bit.ly/FlyTKRoutes). There are considerable opportunities to develop helicopter IFR routes that permit more aircraft, especially with

increased drone and air taxi traffic on the horizon.

"In New York, for example, the FAA shoehorns helicopters into the airplane system, and they can get quite the runaround in those crowded routes," Schaaf says. "The industry and FAA can work together to develop low-level helicopter IFR routes there and around the country to allow for increased helicopter IFR traffic. ADS-B allows more aircraft to fly with decreased workload for the pilot.

"The technology is here, and now [so is] the aircraft," Schaaf continues. "There's a great opportunity for the industry to participate in creating a usable IFR system to support our aircraft."

As SE-IFR aircraft move the industry toward increased IFR operations, the industry is sure to experience change and growing pains. "Our hope is that in 10 years, the whole industry culture has changed where SE-IFR is natural and filing IFR or requesting a pop-up clearance when the weather deteriorates is second nature," says Hirschberg. "No one will feel the pressure to push it in marginal VFR, and we'll experience a significant increase in safety as a result."

HAI's Summers echoes that sentiment. "This is a great example of cross-industry collaboration and the FAA's willingness to work with us on a solution. It will be interesting to see how it evolves. Single-engine IFR isn't going to be an instantaneous success. The industry needs to be committed to supporting IFR operations and the required training; otherwise, we won't see the safety results we want." 



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By Gina Kvitkovich

Zuccaro Retires as HAI President and CEO

Tenure marked by financial growth and safety advocacy.

IT'S THE END OF AN ERA AT HAI, as the association bids farewell to its sixth president, Matthew S. Zuccaro. Matt officially retired on Jan. 15, 2020, although he will still attend HAI HELI-EXPO 2020 as a consultant for the HAI Board of Directors.

Matt joined the HAI professional staff in November 2005, after a long career as a pilot, operator, and aviation executive, including a stint as chairman of the HAI Board of Directors in 1991 (turn to p. 40 for more on Matt's career prior to 2005). As president and CEO, he was responsible for executing the vision of the HAI Board of Directors and overseeing the day-to-day operations of the association.

Since 2005, under Matt's leadership, the association has grown HAI HELI-EXPO® into the world's largest helicopter trade show. When

HAI outgrew its headquarters, Matt led the effort to purchase a four-story office building in Alexandria, Virginia, where the association is headquartered today. Both moves were part of a strategy to provide the association with a stable financial foundation that would underwrite its membership services.

During Matt's tenure, HAI has been a forceful advocate for its members on regulatory and legislative issues. When topics such as veterans' flight-training benefits, air traffic control privatization, user fees, and the safe integration of drones into the airspace were debated, Matt and his team were there—frequently as the only ones representing the helicopter industry's concerns.

HAI has also actively worked across the entire aviation spectrum to improve safety in helicopter operations. From brokering the successful launch of ADS-B services in the Gulf of Mexico in 2009, to



In his role as HAI president and CEO, Matt wore many hats. Clockwise from top left, Matt's Summer 2013 ROTOR column urging pilots facing deteriorating flight conditions to "Land the Damn Helicopter!" sparked a safety movement, Land & LIVE; a promoter of general aviation (GA), Matt addressed OshKosh attendees on EAA Radio in 2013; Matt frequently traveled to Capitol Hill to advocate on behalf of HAI members; a pilot with ATP ratings in both helicopters and airplanes, Matt is at home in the cockpit; Matt spoke out against the privatization of US air traffic control on a 2017 panel with his colleagues who head other GA associations, including from left, Mark Baker of the Aircraft Owners and Pilots Association, Jack Pelton of the Experimental Aircraft Association, Ed Bolen of the National Business Aviation Association, Pete Bunce of the General Aviation Manufacturers Association, and to Matt's left, Marty Hiller, then president of the National Air Transportation Association.

serving as the industry co-chair of the International Helicopter Safety Foundation, to providing safety tools, education, and resources for pilots, operators, and mechanics and engineers, Matt has left no doubt that safety is a core value for HAI.

In 2013, Matt wrote a column for ROTOR magazine wondering why more helicopter pilots facing deteriorating flight conditions don't take advantage of their aircrafts' unique ability to land just about anywhere. The resulting safety initiative, Land & LIVE, has been adopted by groups around the world, reminding pilots that sometimes the safest thing to do is "Land the Damn Helicopter!"

In addition to advocating for safety within the helicopter industry, Matt also championed the international civil helicopter industry and its contributions to our communities. One of his first initiatives at HAI was to recognize the tremendous contributions made by the

helicopter industry in helping New Orleans and surrounding areas cope with the devastation left by Hurricane Katrina in August 2005. Helicopter operators, pilots, mechanics and engineers, and support personnel pitched in to help those caught in this catastrophic storm, operating under emergency conditions and without incurring a single accident or incident. HAI documented how they helped in Katrina, in part to show what our industry does every day, around the world.

"The HAI board and staff are proud to have worked with Matt over these past 15 years," says HAI Chair Jan Becker. "The aviation world of 2020 is very different from the one of 2005, and Matt played a big part in keeping the helicopter industry safe and relevant. His contributions to the financial stability of the association have been substantial, and I know that I am joined by his many friends and colleagues in the industry when I wish him all the best in his retirement." 

HAI Accomplishments Under Zuccaro's Leadership

- 2005 IHST.** HAI, along with the American Helicopter Society, hosts the first International Helicopter Safety Symposium, leading to the establishment of the International Helicopter Safety Team, an international consortium of volunteers who apply modern, data-driven solutions to improving helicopter industry safety.
- 2005 Katrina Video.** HAI documents the helicopter industry's efforts to help New Orleans and surrounding areas cope with the devastation left by Hurricane Katrina.
- 2007 ADS-B Pilot Program.** HAI brokers deal with FAA and Helicopter Safety Advisory Conference operators and platform owners to provide ADS-B operations in the Gulf of Mexico.
- 2009 ADS-B Gulf Operations.** ADS-B operations in the Gulf begin, dramatically increasing the level of safety in the region.
- 2011 FRAT.** HAI Risk Assessment Tool launches with flight module and later including a maintenance module.
- 2013 Rotor Safety Challenge.** HAI launches annual program of free safety education sessions at HAI HELI-EXPO, providing continuing education to thousands of pilots, mechanics/engineers, and others.
- 2013 Land & LIVE.** Matt writes "Land the Damn Helicopter" column in ROTOR, launching the Land & LIVE Program to encourage and support the increased use of precautionary landings.
- 2016 HAI-APS.** First five operators accredited under the HAI Accreditation Program of Safety (HAI-APS), which offers HAI members mission-specific standards.
- 2017 HAI Online Academy.** HAI launches 24/7 online education program, providing helicopter professionals with accessible, affordable professional development.
- 2018 HFI-UND Study.** Helicopter Foundation International, HAI's charitable arm, releases helicopter industry staffing study conducted by the University of North Dakota, providing first documentation of long-rumored shortages of skilled pilots and mechanics/engineers.
- 2018 ATC Privatization.** HAI joins with other general aviation organizations in successful effort to stop privatization of US air traffic control.
- 2018 Veterans' Flight-Training Benefits.** HAI blocks efforts by Congress to reduce the use of veterans' benefits to pay for flight training.
- 2018 Representing Manned Aviation to Congress.** Matt testifies as only representative of manned aviation to US Senate hearing on UAS integration, ensuring congressional support for FAA authority over NAS and for the integration, not segregation, of new aircraft into the NAS.
- 2018 Utah Rotor Pathway Program.** HAI coordinates development of the Utah Rotor Pathway Program, the first statewide partnership between government, industry, and educators to provide rotor-specific education and training opportunities, providing a model for future workforce development programs around the United States.
- 2019 HAI Aviation Reporting Program.** HAI launches HARP, its online aviation report tool, providing helicopter pilots and operators with a one-stop portal to reach a variety of reporting tools, including those of the NTSB, NASA-AARS, FAA, and USDA.

The Aviation Industry on Matt's Legacy

TWO OF THE things I always respected about Matt were his passion and his consistency. I never had to wonder where Matt stood on an issue. He always put the helicopter industry, its safety, the welfare of its members (pilots, aircrew, maintenance, operations, etc.), and its overall success first.

– Rick Sherlock
Former president and CEO, Association of Air Medical Services and MedEvac Foundation International

MATT WAS A strong and effective leader within the general aviation community, with unmatched operational experience and a total commitment to the helicopter industry.

– Ed Bolen
President and CEO, National Business Aviation Association

WE HIRED MATT when I was chairman of HAI, and I think it was one of the best decisions we ever made. With Matt at the helm, HAI has now become a voice to be reckoned with in shaping Washington, D.C., policies.

– Tim Wahlberg
President, Wahlberg Aviation Services, and former HAI chairman

FROM SERVING OUR country to supporting safety improvements that will make this industry safer than ever, it has been a pleasure to work alongside Matt.

– Mark Baker
President and CEO, Aircraft Owners and Pilots Association

MATT HAS BEEN a tireless advocate for the interests of the helicopter industry who used his experience and expertise to be an effective safety champion.

– Sally Veith
Executive director, Air Medical Operators Association

What a Ride!!!

By Matt Zuccaro

AS MANY OF YOU KNOW, AFTER 50-PLUS YEARS in the helicopter industry, including 15 years as HAI president and CEO, I'm retiring. I've been given more opportunities and experiences than I could've imagined when I started my career in aviation.

My tenure as president and CEO of HAI has been the highlight of my working life. Leading this association offered me the opportunity to pay back the industry that has provided me with a rewarding and fulfilling career.

I appreciated the chance to serve the international helicopter community and enhance safety by serving as the chairman of the International Helicopter Safety Foundation and through such programs as Land & LIVE and, as I like to call it, "Land the Damn Helicopter!" Once I received an email from a young air ambulance pilot informing me that he had landed the damn helicopter, saving the lives of his passengers and himself. It doesn't get any better than that.

It's been my privilege and honor to have worked with the staff of HAI. These dedicated professionals are passionate about serving the members of HAI every day, mindful of the association's mission to "keep the rotors turning." HAI members should take comfort in knowing this team is working on their behalf.

In conjunction with HAI's international outreach, I had the joy of meeting the wonderful people who make up the international helicopter community. This has been one of the most rewarding experiences for me. It's apparent that we face the same issues and concerns, and through collaboration we can share solutions to our common challenges.

A source of motivation for me as HAI president and CEO was interacting with the next generation of aviation professionals, such as student pilots, maintenance technicians, and flight instructors. To hear the enthusiasm and passion in their voices, see the sparkle in their eyes, and witness their quest for knowledge is an experience to cherish.

If I learned anything during my time at HAI, it was that those in the helicopter industry are survivors. The diversity of the aircraft and the people bodes well for our ability to sustain a high level of safety, operational efficiency, and economic viability.

I take great pride in the fact that most missions we perform save lives and serve the greater good of society. What other industry can acknowledge such activities that benefit the worldwide community? As I look into the future of vertical flight, I see exciting opportunities, expanded capabilities, and increased value to society.

Some have asked me about my industry activities going forward. I plan to return to something I truly enjoyed prior to my HAI tenure: I'll be offering consulting services in my continuing effort to pay back the industry that has been so good to me. My contact info won't change; I can still be reached at tailrotor@aol.com or on my cell, 914-645-2039.

In closing, I want to sincerely thank each one of you for your support, assistance, and friendship. It has meant more to me than you can know. Retirement will allow me to return home to New York, spend quality time with my family, and slow down so I can smell the roses.

I'm looking forward to continuing this fantastic ride, just at a slower speed.

Fly safe, fly neighborly. See you at HAI HELI-EXPO 2020 in Anaheim. 🌐

Best regards,



Matt with some of the people he's met on his ride: from the top, Matt and the late Sen. John McCain of Arizona; with helicopter pilot (and actor) Harrison Ford; with aerobatic pilot Chuck Aaron; with aviation educators John and Martha King.



Matt Zuccaro

Helicopter Pilot, Veteran, Safety Advocate

Matt Zuccaro was born in New York City into a large, close-knit family. He would often accompany his father to his work in operations at Idlewild Airport, which later became JFK International. It was there Matt first dreamed of flying.

At age 14, Matt became a Civil Air Patrol cadet. One day in 1965, he met another young cadet, Doreen Keefe, and the rest, as they say, is history.

As the war in Vietnam was escalating, Matt decided to quit college and join the US army in 1968—in part because he knew the army was desperate for helicopter pilots. It was the quickest way into the cockpit. After training at Fort Rucker in Alabama—a long way from the streets of New York City—in July 1969, Matt was deployed to Vietnam—a place even farther away from home.

During his year in Vietnam, Matt served with the 7/17th Air Cavalry, flying Hueys in and out of combat. For his service, Matt received 2 Distinguished Flying Crosses, 4 Bronze Stars, 1 Air Medal for Valor, and 19 Air Medals. Matt returned to the US in 1970, and he and Doreen were married three weeks later.

Over the next 50 years, Matt and Doreen raised two children, Steven and Wendy, and saw their family grow, as spouses and grandchildren joined the clan. Matt never misses an opportunity to thank Doreen, whom

he describes as his copilot, for her love and support throughout his career.

After leaving the army in 1971, Matt's first civilian job was as a charter pilot and flight instructor for a New York City company. In those days, operators often took on any mission that came up. From helicopter air ambulance and air tours to aerial photography and power-line patrol, Matt saw it all.

When he returned to civilian life, Matt also rejoined the Civil Air Patrol, where he was for many years a fixed-wing instructor and check pilot. He is still a member.

Over the next 35 years, Matt held pilot and executive management positions with

companies such as Union Carbide and charter, aircraft management, and maintenance organizations. At Resorts International Airlines, working closely with the FAA, he established the first and only dedicated IFR helicopter airline, flying from New York City to Atlantic City, New Jersey, and Hartford, Connecticut.

Matt also worked for the Port Authority of New York and New Jersey, where he was one of two pilots to land on top of the World Trade Center heliport. He also was airport operations supervisor at JFK International Airport—the same job his father held when he introduced Matt to aviation all those years ago.

During this time, Matt was active in various industry groups. He was a founding member of the Eastern Region Helicopter Council and, since the early 1980s, a member of Helicopter Association International, where he served on the Affiliate, Safety, and Fly Neighborly Committees. Matt was first elected to the HAI Board of Directors in 1987 and served as chairman in 1991.

Most of all, in his career, Matt put safety first. A recipient of HAI's Pilot Safety Award for 10,000 accident- and violation-free flight hours, he has been a vocal advocate for a helicopter industry with zero accidents.



Matt lands on top of one of the World Trade Center towers while conducting initial proving runs for establishing the rooftop heliport.





Clockwise from the left: Matt in the 1970s, when he worked for the Port Authority of New York and New Jersey; Matt with two coworkers at Island Helicopters, his first job as a civilian pilot; Doreen and Matt with their two grandchildren, Lizzie and Jon; a Resorts International Airlines flight over Manhattan; Matt conducting an inspection of an offshore rig, as part of his consulting work; Matt with son, Steven; wife, Doreen; and daughter, Wendy, at HAI HELI-EXPO 1990 in Anaheim; Matt and Doreen's wedding day; Matt flying by the World Trade Center.





Viola Assumes Leadership of HAI

By Gina Kvitkovich

Sets course for international growth and increased member services.

JAMES A. VIOLA ASSUMED THE LEADERSHIP of HAI on Jan. 16, 2020. As the president and CEO of the association, the seventh since its founding in 1948, Jim is responsible for carrying out the Board of Directors' vision while overseeing the professional staff and day-to-day operations.

Jim comes to HAI after careers in the US Army, where he first learned to fly, and the FAA. In both organizations, he rose from the ranks to positions of authority. "I like to get things done, to influence things, instead of just sitting back and saying, 'Well, I wish that hadn't happened,'" says Jim.

US Army and FAA Careers

Jim's first solo under powered flight may have occurred

during army flight training at Fort Rucker, Alabama, but he also remembers fashioning cardboard wings and jumping off his friend's garage roof as a child. Perhaps that experience also sparked his concern for aviation safety.

Jim grew up in Dunmore, Pennsylvania. After graduation, the high school track star attended college at nearby East Stroudsburg University. While still in school, Jim enlisted in the US Army Reserves, where his experience in basic training encouraged him to enroll in the US Army Reserve Officers' Training Corps.

Jim was an infantry officer when he saw an ad in the *Army Times* looking for second lieutenants who wanted to go to flight school. He jumped at the chance. After flight school and assignments in South Korea and with the 82nd Airborne,

Jim volunteered for the elite 160th Special Operations Aviation Regiment. In one of many deployments, he was sent to Somalia in 1993 (and later served as the army's representative on the set of *Black Hawk Down*, the Hollywood film about the Battle of Mogadishu).

Jim concluded his army career at the rank of colonel with a stint at the Pentagon as the division chief of Army Aviation, Current Operations. Along the way, he picked up three advanced degrees, including a master's in international relations from Auburn University and a master's in strategic studies from the US Army War College.

Jim retired from the US Army in 2008, intent on a job in civil aviation. His goal was to set up a flight school, but he couldn't pass up the opportunity to stay in the federal government and joined the FAA as an aviation safety inspector (ASI). Over the next several years, he rose steadily through the FAA's Flight Standards Service, which sets, oversees, and enforces certification standards for US airmen and operators. He concluded his FAA service as the director of General Aviation Safety Assurance, responsible for overseeing safety in the US GA community.

In this post, Jim led a staff responsible for more than 2,500 FAA employees with 78 offices around the United States. During his tenure in the job, Jim attempted to address one of the aviation community's biggest complaints: the perceived lack of standardization in FSDO operations.

"When you come to a FSDO with an issue, you shouldn't get that FSDO's answer; you should get the FAA's answer—which should be explained and enforced in the same way across the country. Where you ask the question or where you apply for the certificate shouldn't matter," he says. Jim encouraged the FSDOs to develop shared resources, in part to create operational efficiencies and in part to develop connections between what industry wags call "the individually owned and operated" FSDOs.

In his personal life, Jim is close to his two daughters, Danielle and Shauna, and their families, including his "3.5 grandchildren"—two boys, one girl, and one on the way. He is also an active community volunteer. He is the D.C.-area representative for his university, and he regularly flies for Operation Flying Heroes, an organization that uses an OH-6 and R44 to fly combat-wounded veterans and their families. The mission is to get the service member, whose last helicopter flight was probably a medical evacuation, back in the air and to introduce their young family members to aviation.

Lifelong Aviator

A lifelong aviator, Jim holds ATP ratings for

both helicopters and airplanes and is a dual-rated CFII. He has more than 6,000 hours of flight time, including 1,100 hours in night-vision goggles, and still flies regularly.

"If I can fly once a week, at least, that's great. If I haven't flown in a month, then I'm miserable," he says.

Jim runs a partnership in a Grumman AG-5B Tiger that he hangsars at the Montgomery County Airpark (KGAI) in Gaithersburg, Maryland, near his home in Alexandria, Virginia. "Both of my partners are working on their instrument tickets, so providing instrument instruction to them keeps me sharp. I also fly an R44 out of that airport; the owner lets me fly it whenever I want in



exchange for being his safety pilot / flight instructor.”

Jim has flown more than 70 types of fixed-wing and rotary aircraft, including the following helicopter models: the Hughes TH-55 Osage, Bell UH-1 Iroquois, Bell OH-58 Kiowa (both Alpha and Charlie models), Bell AH-1 Cobra, Hughes OH-6 Cayuse, MD Helicopters MD530, Boeing CH-47 Chinook, and Sikorsky UH-60 Black Hawk.

“Inside the FAA as an ASI I quickly realized that in order to achieve some of the changes that I thought were necessary, doing it one pilot at a time was not going to work.”

Ask Jim for his favorite, and he immediately says, “The front seat in the Cobra is a great ride, especially because you got the side stick controls. Unlike most helicopters, where you

have the rotor over your head, the Cobra’s front seat is way in front of the aircraft’s center of gravity, so you’re just out there. I love the front seat in a Cobra.”

But Jim can’t stop there. “If you want to ride a motorcycle, then you get the MD 530, five blades and plenty of horsepower. You feel like you can just strap it on your back, and you can get in and out of tight spots. If it’s a really nasty, bad-weather day, then you can get in a Chinook and go IFR high and far, especially with the MH-47’s air-to-air refueling capability, where I could get gas on the go at 110 knots.”

Solving Problems for People

During Jim’s career, he has consistently gravitated to positions of leadership. “I was always very interested in being a teacher. In fact, that’s originally what I thought I’d go to college for. I really enjoy being a flight instructor, which I was certified for as a civilian, not in the military. Being able to have someone walk in with zero knowledge and then seeing them do a solo and then get a rating—it’s very rewarding.”

Military service also had its teaching moments. “As a military officer, a lot of responsibility for education comes with the job. Being a commander is really about teaching your soldiers and pilots how to do the right things and do them well. Prior to the FAA, I had planned to become a designated pilot examiner, which again is really about the training and certification of pilots and helping that pilot maintain his or her proficiencies.

“But inside the FAA as an ASI I quickly realized that to achieve some of the changes that I thought were necessary, doing it one pilot at a time was not going to work,” Jim says. “So that’s when I decided to focus on moving up in the organization to get to positions that would deliver a wider sphere of influence.

“Working at the Pentagon was challenging, but it was very educational for me to go to the highest level of my organization and see how it operates. I basically did the same thing at the FAA, starting out as an ASI and then working my way back to headquarters. In each case, I then did my best to support the folks in the field, using my knowledge of how both

The advertisement features a background image of a golf course at sunset. At the top left, a blue banner contains the text "Tee up for HAI HELI-EXPO 2020!". To the right is the logo for the Helicopter Association International Foundation, which consists of a stylized globe icon and the text "Helicopter Association International Foundation". Below this, a large blue banner reads "HAI Foundation Scholarship Golf Tournament". Underneath, the event details are listed: "Sunday, Jan. 26, 2020", "Oak Creek Golf Club • Irvine, CA", and "Register online at rotor.org/golf". A central graphic shows a helicopter silhouette with "2020 HAI HELI-EXPO BY HELICOPTER ASSOCIATION INTERNATIONAL" written below it. A yellow banner at the bottom of the central section contains the text: "Multiple sponsorships available. All sponsors will be recognized at the tournament and on the HAI Foundation website: haifoundation.org". In the bottom left corner, a white circular callout says "Contact sales@rotor.org to learn more.". In the bottom right corner, there is a small circular logo for the Helicopter Association International Foundation.

field and headquarters work.”

An individual member of HAI since 2008, Jim intends to use the same approach now that he’s the association’s president and CEO. “What I plan on now is to take my knowledge of working at the highest levels of US aviation and then expanding that to the international level. How can HAI, as an association, best represent the membership around the world and be proactive to where the industry is going?”

In fact, Jim has a few ideas on the future direction of the industry. “First, I think we need to do better with the integration of drone operators. In my view, we want to as soon as possible have unmanned vehicles do all of our dirty, dull, and dangerous work, so we don’t put humans in jeopardy. And because the US aviation rules have been fairly restrictive, there is a lot we can learn from the drone industries in other countries.”

There is also the challenge posed by the rapid changes in aviation. “The world has changed a lot in the last 10 years, and it’s going

to change more in the next 10,” says Jim. “General aviation is increasingly incorporating all sorts of aircraft that aren’t strictly helicopters, including drones and autonomous vehicles. I favor an approach where we gather under our umbrella not just helicopters, but all the aircraft that fit our operational profile: everything that operates at low altitudes, is capable of vertical takeoff and landing, and is not restricted to airports.”

Another big issue concerns the attempts to weaken the FAA’s authority over the US airspace. “That would be very bad because that’s one thing that we do so well in the United States and why we have the safest skies in the world. If we had to administer airspace on a state-by-state basis, it would be a nightmare. And that’s why HAI has been such a strong opponent of these proposals for local control of airspace.”


Vision for HAI

As part of the selection process, Jim presented to the Board of Directors a vision for HAI’s

future. They obviously liked what they saw, but Jim says that vision needs to be developed further before it can be turned into a strategic plan for the organization.

“I put this vision together as part of the recruitment process. It was a great exercise for me as a candidate and for the board. Now I need to go back to the staff and members to ensure that this is a vision that is actionable and, most importantly, reflects what the members want and need. To succeed, it has to be a shared vision for the entire organization.”

When asked if he has a specific message for HAI members, Jim says, “I’d really like to know what keeps them up at night. How can HAI help them? That’s our job as an association, to take the weight off of our members. They can concentrate on what they need to do, knowing that we have a handle on the issue and HAI is going to work for them.”

Jim welcomes feedback from the members; feel free to start a conversation by sending your message to him at president@rotor.org. 



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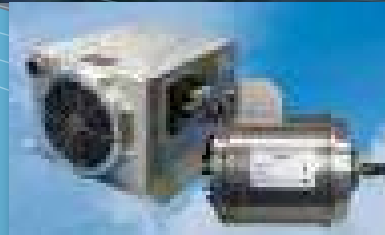


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ROTOR

8TH Annual Photo Contest Winners

Great photos of helicopters? We got 'em.

A SERIES OF STRIKING PHOTOGRAPHS THAT REFLECT THE BEAUTY, power, and whimsy of the vertical lift community have been selected as winners of HAI's eighth-annual ROTOR Magazine Photo Contest.

In addition to being featured in this issue, the grand-prize winner and four category winners will be displayed at HAI HELI-EXPO 2020 in Anaheim, California. The winners also receive a cash prize (\$500 for the grand prize and \$100 to each category winner).

Thank you to the hundreds of photographers from around the world who entered the contest. Special recognition goes to this year's Honorable Mention, Bernhard Stachelberger of Vienna, Austria, whose photo graces the front cover of this issue.

Reviewing the photos submitted for the contest is one of the more fun "tasks" that we do here at the magazine. The only thing better than looking at these aircraft would be to take one for a ride.

The ROTOR Photo Contest will reopen on Aug. 1, 2020; start taking your winning shots now, and submit at contest.rotor.org!





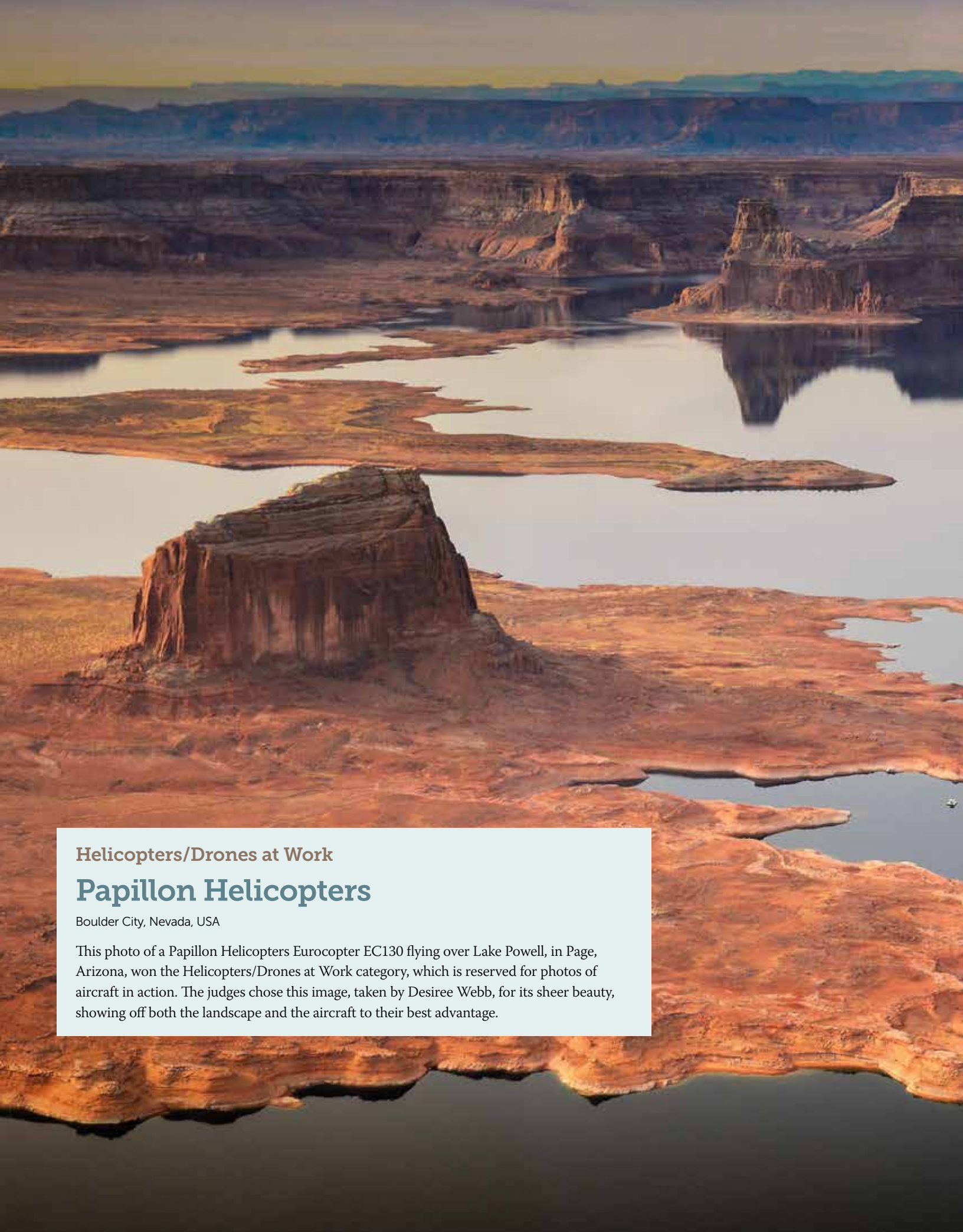
Grand Prize

Fabio Piacenza

Venegono Superiore, Lombardy, Italy

This superbly composed shot took this year's Grand Prize as the top photo submitted in the 2020 ROTOR Magazine Photo Contest. The moody atmospheric and soft curves of nature contrast beautifully with the Eurocopter AS332 Super Puma, highlighted as it emerges from the white mist near the former Mollis Air Base in Switzerland.

One of the judges, also a professional aviation photographer, gave Fabio Piacenza the best compliment one photographer can give another, saying, "I wish I had taken that photo."



Helicopters/Drones at Work

Papillon Helicopters

Boulder City, Nevada, USA

This photo of a Papillon Helicopters Eurocopter EC130 flying over Lake Powell, in Page, Arizona, won the Helicopters/Drones at Work category, which is reserved for photos of aircraft in action. The judges chose this image, taken by Desiree Webb, for its sheer beauty, showing off both the landscape and the aircraft to their best advantage.







Helicopters/Drones in the Military

Ron Kellenaers

Horst, Limburg, the Netherlands

Ron Kellenaers shot this photo of a Royal Netherlands Air Force Eurocopter AS532 Cougar, which won the Helicopters/Drones in the Military category, as it picked up troop members at a training area in the Netherlands.

Like the best photos, Kellenaers's image conveys a wonderful immediacy that puts the viewer right there. You can almost feel the grit in your eyes, blown up by the rotor downwash.



People and Their Helicopters/Drones

James DeBry

Cedar City, Utah, USA

This photo, which won the People and Their Helicopters/Drones category, was taken at the hangar of Southern Utah University's (SUU) College of Aerospace Sciences and Technology.

James DeBry and his colleagues at SUU worked to create this playful image as part of the Tetris Challenge. That meme, which began with law enforcement and military groups, shows personnel, supplies, and equipment unpacked and arranged in a grid pattern. The photo also depicts, as DeBry notes, "just about everything a person needs to become a helicopter pilot."



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Helicopter/Drone Digitally Enhanced Photos

Jacob Straube

Honolulu, Hawaii, USA

For his winning entry in the Helicopter/Drone Digitally Enhanced Photos category, Jacob Straube, who runs Straube's Aircraft Service's Hawaii location, took a series of 13 images in the Temsco Helicopters maintenance hangar in Juneau, Alaska, and then combined them.

The judges appreciated his photoediting skills as well as the story Straube tells about a day in the life of an A&P. Straube is a Photo Contest repeat winner, having also won the Digitally Enhanced category in 2018.







Living
with

ADS-B

Your questions
about the new
FAA regulation
answered.

By Chris Martino

IT'S 2020, AND THE JAN. 1 ADS-B IMPLEMENTATION date we've been talking about since 2010 has finally come and gone.

I know what you may be thinking: "not another ADS-B article." Well, it's not my intention to lay out another history of ADS-B or describe what you need to equip. There are countless articles and website resources about those topics (see, for example, from Fall 2018 ROTOR, "ADS-B: It's Crunch Time," bit.ly/2Qa6a1U).

But if you're like many members who've contacted HAI, you may still have questions about the new rule. Let's try to address the most common ones here.

What if I fly through ADS-B Out rule airspace without the proper equipment?

I can't speak for the FAA, but I suspect that if you fly without the proper equipment, you'll have to answer to someone at the agency and that some type of enforcement action will certainly be a potential outcome. However, if you didn't *willfully* violate the new regulation, the FAA might choose to issue you a compliance action instead. Under the FAA's Compliance Program and the just culture that underlies it, you may be able to avoid being assessed a violation by agreeing

to the terms of the compliance action, such as completing retraining or counseling, perhaps at some cost to you. (See a related story from Fall 2018 ROTOR, "After the Violation of an FAR," bit.ly/FARViolation.)

What if I need to operate in an area covered by ADS-B Out but I don't have the equipment installed or it's inoperative?

You may be able to get an exception from the FAA, called a deviation, to operate without ADS-B equipment under certain conditions and at certain times of day. To learn more about deviations and how to request one, check out the FAA's Statement of Policy for Authorizations to Operators of Aircraft that are Not Equipped with Automatic Dependent Surveillance-Broadcast Out Equipment (bit.ly/FAA_Policy). This document, published in April 2019, does a very good job of clearly explaining the policy and laying out much of its background.

The FAA's authority to grant ADS-B Out deviations is described under Title 14 CFR 91.225(g), which states that deviation requests must be made to the "ATC [air traffic control] facility having jurisdiction over the concerned airspace." Section 91.255(g) also specifies a couple of submission

time lines based on your circumstances.

The first time line is for aircraft with inoperative ADS-B Out equipment: you've installed it on your aircraft, but for some reason it's not working that day. In those situations, for operation "to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made or both, the request may be made at any time."

The second time line applies to aircraft that aren't equipped with ADS-B Out capability. A deviation to operate an unequipped aircraft may be requested but must be made at least one hour "before the proposed operation." Also, these requests may not be submitted more than 24 hours prior to the proposed flight.

How do I submit a request for deviation?

The tool established by the FAA that allows you to make deviation requests is the ADS-B Deviation Authorization Pre-Flight Tool (ADAPT). The tool is Web-based and can be found on the FAA's website at faa.gov/nextgen/equipadsb/adapt.

All civil aircraft operators can use ADAPT, but the design of the tool was based on the projected needs of Part 91 operators. What this means is that the tool can be used by, for

The FAA has very clearly stated that the ADS-B Deviation Authorization Pre-Flight Tool (ADAPT) wasn't designed to enable operators to skirt ADS-B Out requirements.

example, a Part 135 operator, but it's not intended for routine or otherwise scheduled operations. The FAA has very clearly stated that ADAPT wasn't designed to enable operators to skirt ADS-B Out requirements.

This all sounds complicated. How does ADAPT work?

It's really not so bad. When you enter ADAPT, your first step will be to input your flight information in the Flight Information Entry section of the tool. You'll recognize the section, as it looks very much like the old FAA flight plan we used for years.

The information you enter will be used in an initial analysis to determine whether you even need a deviation. If it's determined that you do, you'll be directed to the next Web page, where you'll enter additional details about your intended flight before you submit your request to the FAA for consideration.

One important note: you must make sure the email address you provide is correct. That's critical because the FAA's official approval of your request will be delivered ONLY to that email address.

What should I expect to hear back from the FAA?

Once you've submitted your deviation request, you'll get one of three responses from the FAA: approved, denied, or pending.

For an approved request, you'll receive an email that provides the approval, plain and simple. Make sure you keep this correspondence, as it's the official record of the request and approval.

If you receive a denied response, it simply means the flight couldn't be approved as requested. Unfortunately, the FAA won't be able to specify in the notice exactly why your request was denied. It may be possible to gain approval of the deviation by resubmitting your request using a different flight route, time of flight, and so on, that may be acceptable to the ATC facility with approval authority. In other circumstances, such as an inoperative transponder

with altitude encoding (which should be installed for an ADAPT approval), the system may automatically deny the request every time.

Finally, if you receive a pending response, it's just letting you know that some degree of manual review is necessary on the FAA's part. This could be for several reasons. The bottom line for the submitter is that it will just take a little more time to receive a more definitive response.

It's also important to note that ADAPT has been in development for quite some time, and the FAA smartly leveraged several industry professionals and associations to build and test



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an effective tool and to ensure its smooth launch. Our industry was an active participant in the development of the ADAPT program, a testament to the FAA's continued commitment to sustaining strong partnerships with the aviation community. Finally, if you have ideas for improving the system, the agency has a feedback tool on its website.

What resources does the FAA have that could help me better understand and comply with ADS-B Out?

The ADAPT website offers several resources to walk you through the submission process, including a tutorial video and a user guide. In addition, the agency has assumed a very proactive outreach position,

making itself available to answer questions and closely partnering with aviation groups. You'll also see FAA ADS-B representatives at aviation industry events, including HAI HELI-EXPO 2020 in Anaheim. In fact, FAA representatives will lead an ADS-B update at Expo on Tue., Jan. 28, from 1:00 pm to 2:00 pm at the Anaheim Convention Center.

The point is, there are several great resources to help you through your ADS-B transition, and I highly recommend you familiarize yourself with them. At HAI, we've learned that the more you work with regulatory issues, the less complex they become. I think you'll find the same to be true of ADAPT.

Safe flight! 

Additional Resources

At HAI HELI-EXPO 2020

FAA ADS-B Update, Tue., Jan. 28,
1:00 PM – 2:00 PM, Room 204A, Anaheim
Convention Center

FAA representatives will provide updates on industry equipment and observations about the first few weeks of flight operations under the ADS-B Out rule. They will also discuss the FAA's long-range plans for ADS-B.

From the FAA

- For background on the ADS-B policy:
bit.ly/FAA_Policy
- To submit a request for deviation:
faa.gov/nextgen/equipadsb/adapt
- For frequently asked questions:
faa.gov/nextgen/programs/adsb/faq
- For videos, articles, regulations, and technical documents:
faa.gov/nextgen/equipadsb/resources
- For information on the FAA Compliance Program:
faa.gov/about/initiatives/cp

From ROTOR magazine

- "ADS-B: It's Crunch Time,"
Fall 2018 ROTOR:
bit.ly/2Qa6a1U
- "Why I Equipped with ADS-B In,"
Fall 2018 ROTOR:
bit.ly/WhyADSBI
- "After the Violation of an FAR,"
Fall 2018 ROTOR:
bit.ly/FARViolation





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Best Practices for Preflight Inspection and Cargo Security

By Keith M. Cianfrani, MAS, CISM, CFI

It's a basic task for pilots—and a fundamental part of flight safety.

THE US HELICOPTER SAFETY TEAM (USHST) HAS reviewed 123 fatal accidents that occurred between 2009 and 2013 to find common causal factors and develop recommendations for reducing those risks. The resulting recommendations for safety improvements are called Helicopter Safety Enhancements (H-SE) (learn more at ushst.org).

One of these enhancements is H-SE #28, Helicopter Final Walk-Around and Security of External Cargo. This enhancement resulted from several fatal accidents where the pilots' failure to conduct a proper preflight inspection and walk-around were causal factors. You would think that this is Helicopter 101, but pilots are still killing themselves and others by not properly addressing this task.

H-SE #28 derives directly from 14 CFR 91.7, which states, "The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight." An adequate preflight inspection and final walk-around are key to fulfilling this responsibility. Postflight inspection can also help to identify issues prior to the next flight.


Better guidance on how and why to conduct a proper preflight and walk-around, as well as increased attention to their importance, may mitigate such events in the future. Therefore, the USHST, with the help of helicopter operators, safety professionals, aircraft manufacturers, and the HAI Safety Working Group, has developed guidance to reinforce the basic pilot skills used in conducting these inspections (see p. 64).

The list is not all inclusive, and each recommendation can be expanded per pilot preference. Going back to basics may sound elementary, but refocusing on these basic tasks will help reduce helicopter accidents and save lives.

3 Steps to Safe Flight

- 1 Thorough preflight inspection
- 2 Complete final walk-around
- 3 Full postflight inspection





Recommended Practices for Helicopter Preflight Inspection, Final Walk-Around, and Postflight Inspection

- ❑ **No Rushing.** Allow adequate time to conduct mission planning and preflight inspections. Don't rush these flight-critical tasks.
- ❑ **No Distractions.** Enforce a "no distraction" policy during preflight inspections. This includes unnecessary conversations, eating or drinking, or using technology devices for purposes not directly related to the preflight inspection.
- ❑ **No Interruptions.** Avoid interruptions during a preflight inspection. If interrupted during a preflight, before resuming the inspection, go back at least two steps before the interruption occurred. If you can't recall where that is, start from the beginning.
- ❑ **Formal Checklist.** Refer to a printed or electronic checklist during preflight inspections, noting steps completed or items of concern.
- ❑ **Preflight Kit.** Prepare and make available a preflight kit that includes all materials needed to ensure a complete inspection, including flashlights, gloves, printed or electronic copies of the preflight inspection checklist, and any other tools or materials needed to assess the aircraft, including work stands or ladders. Include the preflight kit in your tool control program.
- ❑ **FRAT.** Update your flight risk assessment tool (FRAT) score to reflect any items of concern discovered during the preflight inspection. Operators, add a section to your FRAT that prompts pilots to include preflight items.
- ❑ **Pilot Briefing.** The pilot in command, not just ground-operation personnel, must conduct a preflight briefing for passengers.
- ❑ **Solid Footing.** Watch out when stepping on aircraft surfaces, even nonskid ones, particularly when they're wet. Always use two points of contact.

- Secure Aircraft.** Conduct a thorough assessment of all readily accessible areas during preflight inspections. Ensure that panels, cargo, and passenger doors are secured. During adverse weather or environmental conditions, take extra care to ensure these checks are completed.
- Rotor Clearance.** Ensure that both main and tail rotor covers and tie-downs are removed and securely stowed. Verify that blade-tip paths are clear of potential obstacles. Before you manually move a rotor blade, provide an audible alert so that other personnel can maintain a safe distance.
- Ground-Handling Wheels.** Remove and securely stow ground-handling wheels.
- Fuel Cap.** Always check that fuel caps are securely fastened.
- Fuel Level.** Use a trusted method, such as a dipstick, to visually verify your fuel level. Don't use the aircraft fuel gauge as your sole method of verifying fuel levels.
- Red Flag.** Place a clear warning indicator, such as a red cover, over the cyclic or seat of the aircraft awaiting a preflight inspection. Pilots may remove it only after completing a thorough preflight and final walk-around inspection. Verify that flight control covers or other warning devices don't indicate a grounding condition.
- Flight Controls.** Verify that all red flags are removed and that flight controls are in the correct position and setting before starting the aircraft. Pay particular attention to the throttle setting to prevent a hot start.
- Personal Items.** Ensure that all personnel secure headgear and other personal items when on the flight line.
- Final Walk-around.** After completing the preflight inspection, conduct a final walk-around before getting into the aircraft. A pilot or trained crew member should always be the last person to get into the aircraft.
- Final Rotor Check.** Before starting the aircraft, perform a final visual confirmation that the main and tail rotors are untied and tip paths are clear of any obstacles.
- Postflight Inspection.** Conduct a postflight inspection of aircraft, looking for fluids, unusual wear, or damage to aircraft. [🔗](#)



FLIGHT PATH

QUICK FACTS

Melissa Wnorowski

Mays Landing,
New Jersey, USA

CURRENT JOB

Air ambulance pilot
for Air Methods

FIRST AVIATION JOB

Flying Robinson R44 fair tours.
It was a fun job, and the
experience operating in tight
LZs continues to serve me well.

FAVORITE HELICOPTER

The one I currently fly,
the EC135 P2+ [also known as
the EC135 P2i]



"I know I picked the right career when I'm as happy to start my seven days on as I am to start my seven days off."

How did you decide helicopter aviation was the career for you?

I fell in love with helicopters the first time I saw one hover. I was 23 and working as a dog musher in Alaska. An AStar filled with sled dogs headed to the ice fields spooled up, lifted off, and that was it. I knew I had to do it.

Tell us about your first helicopter ride.

My first flight in a helicopter was my first trip up to the glacier camp where the dogsled tours took place. Jen Casillo [now at Era Helicopters] was the pilot, and I'll never forget how easy she made flying look or how incredible the Alaskan scenery was. By the time we landed, my face hurt from smiling.

How did you get to where you are now?

I took the civilian path, financed most of my training with a Sallie Mae loan, and learned to fly in Robbies. After completing my CFII, I flew fair tours, did a little flight instruction, inspected power lines, flew tours in New York City, and flew charters in the Northeast.

What are your career goals?

My main goal is to have a long career during which I never hurt anyone and I learn continuously. Hopefully, I'll retire from the program I currently fly for.

What advice would you give someone pursuing your path?

If you're of average financial means and are considering paying your way through flight school, you better be sure you really want it. Those first few years after you finish training are tough. Knock out your certs and ratings as fast as you can, network as much as possible, and be prepared to weather a few lean years without luxuries like health insurance.

With hard work, flexibility, sound judgment, and good luck, it'll all pay off and you'll be able to make a great living doing what you love.

Who inspires or has inspired you?

My mom. She is brilliant, perpetually motivated, and tough as nails.

What still excites you about helicopters?

The noise, the downwash, a great sunset, and the fact that every flight is an opportunity to do my best.

What challenges you about helicopters?

The 2:00 am calls to an accident scene. Staying motivated and sharp when a few days roll by without a flight.



What do you think is the biggest threat to the helicopter industry?

Operators who cut corners on maintenance and pilot training to increase their profit margins. These shortsighted practices have contributed to so many tragedies.

Complete this sentence: I know I picked the right career when ...

I'm as happy to start my seven days on as I am to start my seven days off.

Why is the EC135 P2+ your favorite helicopter?

The Bell 407 and MD Helicopters MD 500 were both great fun and have special places in my heart, but to me nothing beats having two engines and an autopilot. 🌀

Foundation Scholarship Winner Pursues Dream of Community Service

Student pilot hopes to fly for Honolulu Fire Department one day.

MELISSA COOPER WAS INSPIRED to join the aviation industry after watching recruiting videos from the US Coast Guard (USCG) and realizing the aircraft and pilots depicted were an essential part of her community's public safety efforts. But the Kailua-Kona, Hawaii, resident learned she was too short for the USCG flight training program.

Melissa didn't let that hold her back, however. In May 2017, she continued to pursue her dream of flying by obtaining her private pilot's license. Today, she's working toward her commercial license with the help of the HAI Foundation's Commercial Pilot Rating Scholarship, which she won in 2019.

Currently, as a Coast Guard reserve officer, Melissa serves as the civil aviation subject matter expert to the Joint Rescue Coordination Center Honolulu, where she

supports the center's aeronautical search-and-rescue efforts. She's also earning the flight hours needed to work for other potential employers, such as US Customs and Border Protection, the FAA, or emergency medical services organizations. Melissa would like to continue serving her community after she receives her commercial pilot's license by flying for the Honolulu Fire Department.

Her advice to others hoping to become helicopter pilots is to take some time getting to know the industry first. "Take an introductory flight and sit in on some ground-school lessons. Make sure it's truly what you want to do and that you're a committed student.

"Flight training is fun but also challenging and very expensive," Melissa continues. "Have a plan for your aviation goals." [🔗](#)



"Flight training is fun but also challenging and very expensive. Have a plan for your aviation goals."

RECENT ACCIDENTS & INCIDENTS

THE ROTORCRAFT ACCIDENTS AND INCIDENTS LISTED BELOW OCCURRED between Oct. 1 and Dec. 31, 2019. The accident details shown below are preliminary information, subject to change, and may contain errors. All information was obtained through the official websites listed below, where you can learn more details about each event.

Australia – Australian Transport Safety Bureau (ATSB):

bit.ly/ATSBpub

Britain – Air Accident Investigation Branch (AAIB):

bit.ly/AAIBUK

Canada – Transportation Safety Board of Canada (TSBC):

bit.ly/TSBCanada

New Zealand – Transport Accident Investigation Commission (TAIC):

bit.ly/NewZealandTAIC

United States – National Transportation Safety Board (NTSB):

bit.ly/NTSBrep

Robinson R22

Overton, NV, USA

Oct. 17, 2019 | NTSB GAA20CA035

Injuries unknown | General aviation flight

No description available.

Bell 47G

King City, CA, USA

Oct. 18, 2019 | NTSB GAA20CA034

Injuries unknown | Agricultural flight

No description available.

Robinson R44

Tarasenkove, Poltava, Ukraine

Oct. 21, 2019 | NTSB GAA20WA047

0 injuries, 1 fatality | Noncommercial flight

No description available.

Robinson R44

Las Vegas, NV, USA

Oct. 23, 2019 | NTSB WPR20FA013

0 injuries, 2 fatalities | Personal flight

Helicopter sustained substantial damage after impacting terrain for undetermined reasons.

Robinson R22

Hebbronville, TX, USA

Oct. 23, 2019 | NTSB CEN20FA012A

0 injuries, 2 fatalities | Aerial mustering flight

Two Robinson R22 helicopters collided mid-air during an aerial mustering operation.

Note: This aircraft and the next were involved in the same accident. For each aircraft involved in an accident, the NTSB creates separate accident reports that address the different perspectives involved and lessons learned.

Robinson R22

Hebbronville, TX, USA

Oct. 23, 2019 | NTSB CEN20FA012B

1 injury, 0 fatalities | Aerial mustering flight

Two Robinson R22 helicopters collided mid-air during an aerial mustering operation.

Enstrom 280F

Jordan Valley, OR, USA

Oct. 25, 2019 | NTSB WPR20FA016

1 fatality, 1 injury | Personal flight

Helicopter impacted terrain for undetermined reasons.

October 2019

Robinson R44

Carlsbad, CA, USA

Oct. 2, 2019 | NTSB GAA20CA002

Injuries unknown, fatalities unknown | Flight type unknown

No description available.

Bell OH-58A

Fort Meade, FL, USA

Oct. 3, 2019 | NTSB ERA20LA004

0 injuries, 0 fatalities | Airborne law enforcement flight

Helicopter impacted gypsum pond following abrupt shift of weight during rescue attempt.

Bell 206

Ivanhoe, NSW, Australia

Oct. 9, 2019 | ATSB 201907387

0 injuries, 0 fatalities | Private flight

Helicopter sustained damage after wire strike on a power line.

Bell 412

Port Said City, PTS, Egypt

Oct. 11, 2019 | NTSB WPR20WA010

0 injuries, 0 fatalities | Flight type unknown

Helicopter impacted water after loss of control for unknown reasons.

Hiller UH-12E

Susanville, CA, USA

Oct. 13, 2019 | NTSB WPR20LA007

1 injury, 0 fatalities | Agricultural flight

Helicopter impacted tree and then terrain after loss of engine power.

Sikorsky S-92A

Gloucestershire, GLS, United Kingdom

Oct. 14, 2019 | NTSB GAA20WA093

0 injuries, 0 fatalities | Noncommercial flight

No description available.

Bell 206B

New Salem, NC, USA

Oct. 17, 2019 | NTSB ERA20FA012

1 injury, 0 fatalities | Agricultural flight

Helicopter was substantially damaged and impacted terrain following wire strike.

Sikorsky S-92

Port Harcourt, Nigeria
Oct. 25, 2019 | NTSB WPR20WA023
0 injuries, 0 fatalities | Flight type unknown

Helicopter experienced loss of engine power for unknown reasons.

Robinson R66

Alexandria, LA, USA
Oct. 28, 2019 | NTSB GAA20CA052
Injuries unknown | General aviation flight

No description available.

November 2019

Mosquito Aviation XE

Seffner, FL, USA
Nov. 2, 2019 | NTSB ERA20LA037
1 injury, 0 fatalities | Personal flight

Helicopter impacted terrain after a main rotor blade struck the tail during landing.

Robinson R22

Smoketown, PA, USA
Nov. 4, 2019 | NTSB GAA20CA060
Injuries unknown | General aviation flight

No description available.

Bell 47G

Groveland, FL, USA
Nov. 7, 2019 | NTSB GAA20CA062
Injuries unknown | General aviation flight

No description available.

Sikorsky S-58JT

Lebanon, IN, USA
Nov. 10, 2019 | NTSB GAA20CA063
Injuries unknown | General aviation flight

No description available.

Robinson R44

Tunis, Tunisia
Nov. 11, 2019 | NTSB WPR20WA021
0 injuries, 1 fatality | Commercial flight

No description available.

M  **RE**
R **A** **N** **G** **E**
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RECENT ACCIDENTS & INCIDENTS

Agusta A109

Salt Lake City, UT, USA
Nov. 12, 2019 | NTSB WPR20LA029
0 injuries, 0 fatalities | Air medical flight

Helicopter completed successful emergency landing after loss of control midflight.

Bell 214B

Pechey, QLD, Australia
Nov. 13, 2019 | ATSB AB-2019-046
1 injury, 0 fatalities | Firefighting flight

Helicopter impacted terrain after loss of rotor RPM during a water drop.

Agusta A109

Penobscot, ME, USA
Nov. 16, 2019 | NTSB ENG20IA005
0 injuries, 0 fatalities | Air medical flight

Helicopter completed successful emergency landing after experiencing severe vibrations.

Robinson R66

Abrau-Dyurso, KDA, Russia
Nov. 30, 2019 | NTSB ANC20WA008
0 injuries, 1 fatality | Flight type unknown

No description available.

December 2019

Bell UH-1H

Williamtown, NSW, Australia
Dec. 7, 2019 | ATSB AO-2019-070
1 injury, 0 fatalities | Firefighting flight

Helicopter landed hard during precautionary landing.

Robinson R44

Warren, NSW, Australia
Dec. 7, 2019 | ATSB 201908683
Injuries unknown, fatalities unknown | Private flight

Helicopter impacted terrain while landing after gradual loss of power.

Robinson R22

Beeville, TX, USA
Dec. 19, 2019 | NTSB CEN20CA037
Injuries unknown, fatalities unknown | General aviation flight

No description available.

Eurocopter AS350

Hanapepe, HI, USA
Dec. 28, 2019 | NTSB Unassigned
0 injuries, 7 fatalities | Air tour flight

No description available.



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Risky Business

Why do experienced pilots ignore obvious hazards?

IT'S DARK—VERY DARK. THE TRIP IS a short hop with passengers through mountainous country sliced by narrow valleys. You're not familiar with the destination, but you're very familiar with the 50-year-old helicopter and have the benefit of military flight training leading to a decades-long career of low-altitude law enforcement and search-and-rescue (SAR) missions.

Three new electronic flight displays were installed in the aircraft's instrument panel barely three months ago. The weather conditions don't pose undue problems. Given all these circumstances, you should be prepared to determine whether it's safer to fly high or stay low, right?



The main wreckage at Raton, New Mexico, Jan. 17, 2018.

The Flight

Ten minutes before 6:00 pm local time on Jan. 17, 2018, a Vietnam-era Bell UH-1H Huey lifted off from New Mexico's Raton Municipal Airport (KRTN), carrying five passengers to a private gathering on a ranch about 35 miles east, near the town of Folsom. Civil evening twilight had ended 15 minutes earlier and the night was dark, with a setting crescent moon providing "0%" illumination, according to the US Naval Observatory. However, skies were clear. Visibility was officially reported as 10 miles but essentially unlimited.

Roughly 10 minutes after takeoff, the helicopter's skids ran onto the top of a mesa barely 100 feet higher than the surrounding desert. The Huey slid across the mesa for 110 yards before one main rotor blade hit the ground, leaving a 25-foot scar. The entire main rotor assembly separated and came to rest 20 yards farther along, close to the tail rotor and its gearbox. The cabin tumbled another 66 feet before rolling to a stop upside down and catching fire.

The one passenger who survived was hospitalized with a broken shoulder and broken arm. She told investigators that "the stars were very bright" and that there was no turbulence during the flight.

The investigators reported that the surviving passenger recalled "no unusual noises, no observed warning

lights" and that "everything appeared normal.... [They] were in level flight when she heard a big bang as the helicopter hit the ground."

When the aircraft came to a stop, the passenger was left hanging upside down from her seat belt with jet fuel pouring over her but was able to release her belt and escape the wreckage as the helicopter caught fire. Several explosions followed, and the passenger managed to call 911 to report the crash.

Temperatures were near freezing (1°C at departure from Raton). The other four passengers, including a 3,140-hour commercial helicopter pilot with 120 hours of UH-1H experience, died before the first responders reached the scene two hours later. The pilot survived long enough to be rescued but succumbed during transport. He told one first responder that "it was all his fault and he flew into terrain."

The Aircraft

A Bell UH-1H, serial number 67-17658, the helicopter was built in 1967 and served the US government for nearly 30 years before being released by the General Services Administration in May 1996. Seven different civilian operators bought, flew, and sold the aircraft before it was acquired by its final owners in February 2017. During that time, the model's type certificate (TC)



The view toward Raton Municipal Airport (KRTN) from the initial impact site.

was acquired by Rotorcraft Development Corp., which added the accident helicopter to its TC in August 2007.

The UH-1H has two-bladed main and tail rotors powered by a single Lycoming (now Honeywell) T53 two-spool turboshaft engine. The variant in the accident helicopter is rated for a maximum continuous output of 1,300 shaft horsepower, and the aircraft's maximum gross weight was 9,500 lbs.

National Transportation Safety Board (NTSB) docket-file maintenance records indicate that on Oct. 4, 2017—barely three months before the accident—the helicopter had been fitted with dual-screen Garmin G500H primary flight-multifunction displays, a Garmin GTN 750H GPS/Nav/Comm multifunction touchscreen display, and a radar altimeter equipped with fore and aft antennas. The pilot's familiarity with this equipment has not been reported.

At the time of the accident, the aircraft was registered in the restricted category for external-load work. Under FAR 91.313, flight on restricted-category civil aircraft is limited to "the special purpose for which it is certificated," and personnel on board are limited to crew members, trainees, and those others "required to accomplish that special purpose." An exclusion for Part 133 external-load rotorcraft operations specifically states "nonpassenger-carrying."

The Pilot

The 57-year-old commercial pilot was too young to have flown combat missions in Vietnam, but he'd learned to fly Hueys in the US Army. According to an insurance application filed 10 days before the accident, he completed initial pilot training in the army in 1983–84 and flew both the UH-1H and the Sikorsky UH-60A Black

Hawk during his enlistment. He attended college after his discharge and went on to a nearly 20-year career flying SAR and law enforcement missions for the California Highway Patrol.

After a five-year absence from professional flying, he returned in April 2015 as a contract pilot and signed on with the accident operator as a full-time employee on Sep. 1, 2017. Both the insurance application and a medical application filed a month earlier claimed 2,065 hours of experience in UH-1 helicopters. Almost all his lifetime flight experience was in turbine helicopters.

The 67-year-old occupant of the left front seat was a commercial pilot who also had learned to fly in the US Army's flight training program—in 1970–71. He'd served as a Bell AH-1 Cobra gunship pilot in Vietnam, earning the Purple Heart for wounds received in combat. He was also employed by the helicopter's operator, though not primarily as a pilot; his insurance application, submitted on Feb. 7, 2017, listed 20 flight hours in the previous 12 months with just 1.5 hours in the UH-1H (the rest were in the closely related Cobra).

This pilot had served in law enforcement for 32 years, retiring in February 2004 as chief of the Pasadena, Texas, Police Department, which he joined after leaving the army in 1971. In the interim, he'd served as a dispatcher, officer, and instructor pilot. About 2,600 of his 3,065 flight hours of rotorcraft experience were in piston helicopters. He was the surviving passenger's father.

The Terrain

The elevation of KRTN is 6,349 feet mean sea level. The NTSB report describes the accident site as "a flat mesa about 10.7 nautical miles and 102° from KRTN at an elevation of about 6,932 feet," or 100 feet higher than the

surrounding desert. The report notes that the site was about 4 nautical miles south of the narrow, relatively flat valley in which US Highway 64/87 threads between mountains rising above 7,500 feet to peaks as high as 8,185 feet.

The pilot's experience navigating that route is unknown, but a witness at the destination said "it was probably minimal," as "the few times" he'd previously flown to the ranch had likely been from the Perry Stokes Airport (KTAD) in Trinidad, Colorado.

The Takeaway

An enduring mystery of aviation safety is why capable and highly experienced pilots either fail to recognize hazards that seem obvious in retrospect or knowingly choose to ignore them. In November 2007, for example, two Civil Air Patrol commanders with more than 53,000 hours between them took off from North Las Vegas on a dark night and flew their Cessna T182


straight into the side of Potosi Mountain. Complacency arising from long-standing comfort in the aircraft and airspace may have come into play in their loss of situational awareness.

The puzzling circumstances of the Raton accident could lead to the conclusion that a pair of ex-military aviators succumbed to the temptation to relive past glories and perhaps impress their passengers with a nap-of-the-earth flight over the desert at night. Nothing disclosed by the NTSB's investigation, however, suggests that either pilot was disposed toward that kind of recklessness, though they were flying a restricted-category ship outside its certification limits.

Is it possible they were trying to follow the highway through the valley but picked up the wrong road? The accident site was just north of a smaller thoroughfare, and the attempt to maintain ground contact in the dark might have accounted for the deci-

sion to fly so low.

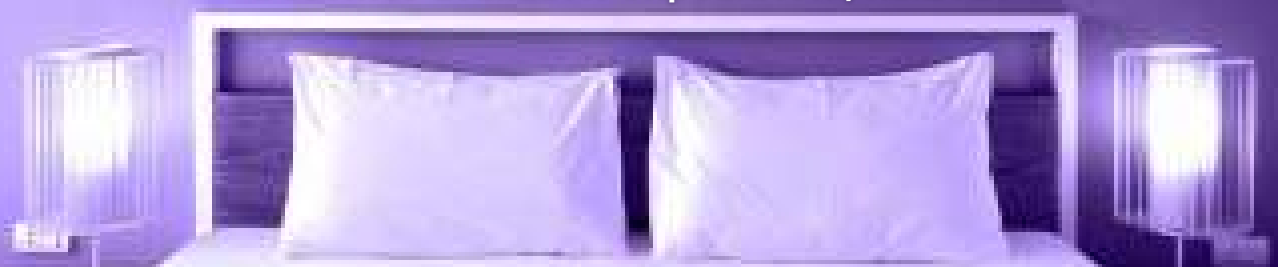
Another part of the puzzle is why the newly installed avionics didn't help to prevent the accident. However, we don't know whether either pilot was familiar with the capabilities of the electronic displays, or even whether the displays were fully operational. Set up properly, the devices could have provided terrain maps and even a helicopter terrain awareness and warning system (HTAWS). We know the helicopter was equipped with the radar altimeter needed to provide HTAWS alerts down to 50 feet, but not whether all the required interconnectivities had been completed or whether either pilot knew how to invoke those functions. We also know that as you climb, the valleys get wider and the peaks farther apart.

Sadly, the low altitudes that helicopter pilots love—and that serve them so well in combat, law enforcement, and inspection work—are not always their friends. 

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If You See Something, Say Something

Modern safety management empowers every employee to speak up.

WE'VE COME A LONG WAY MANAGING aviation safety since the early years. I read that when aviation pioneer Jimmy Doolittle was on loan from the US Army in 1926 to perform flight demonstrations in his P-1 Hawk biplane in South America, he broke his ankles in a barroom stunt. With both ankles in casts, Doolittle had his mechanic bolt them to the rudder pedals. The flight demonstrations went well, and Doolittle returned to the States to spend time at Walter Reed Army Medical Center to mend from his antics. That's one version of the story, at least, and one worthy of campfire folklore.

In decades past, safety was a bottom-up approach: if the pilot or mechanic/engineer thought it reasonable,

then managers didn't balk. There was often an attempt to power through the situation. When all was good, such as in Doolittle's stunt, the mechanic/engineer or pilot was hailed as a hero. If the attempt at safety failed, they

That puddle under the aircraft the flight nurse pointed out is probably water from the air-conditioning condenser, but what if it's fuel?

were said to have made a poor decision. This haphazard approach to safety management was bad for everyone involved: companies, owners, shareholders, employees, pilots, and passengers alike.

Fast-forward to 2020. The buzz term in aviation safety today is "safety management system," or SMS. It's centered around decision-making, process improvement, and a positive safety culture, and it employs a top-down AND bottom-up approach to managing safety.

Top-down is important because for SMS to be effective, an organization must have a positive safety culture, something that can't be done without the buy-in of senior leadership. Everyone from the CEO down must endorse the company's commitment to safety and a just culture. When the going gets rough—when the pilot turns down a flight because of weather or a mechanic/engineer grounds an aircraft—it's crucial that management back their decisions. Ensuring flight safety must be prioritized over the company's bottom line.

The bottom-up part of SMS comes in because it recognizes that safety isn't just the responsibility of the pilot, the safety director, or any one person: it's everyone's job. SMS requires open



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communication about detecting hazards and managing risk, granting authority at all levels to point out safety concerns.

Often the mechanics/engineers in a flight department, especially if the company is small, are left to manage safety themselves, thinking issues through without any help from management. They often work alone without supervision and many times late at night to support the daytime flight schedule.

If you're a manager, empower all your employees to feel free to speak up if they see something out of place or that doesn't seem right. That puddle under the aircraft the flight nurse pointed out is probably water from the air-conditioning condenser, but what if it's fuel? Your pilot thinks he might have exceeded a time limit for torque, so he writes it up and notifies the mechanic/engineer. A quick look at the exceedance page verifies he didn't exceed a limit, but without the benefit of having a positive safety culture and SMS in place, that pilot may not have been comfortable speaking up.

If you're a pilot, mechanic/engineer, or crew member, communicate with your managers to promote open channels of conversation and keep them informed of any challenges you may encounter doing your job. Your comments may help them to connect the dots and detect a safety hazard.

In aviation, we're surrounded by people with type A personalities. We like to do it all ourselves. But collaboration can offer great solutions if you let it. Another term for this in our industry is "crew resource management"—using all available resources to achieve a desired result.

If you still doubt the importance of enforcing an SMS from top to bottom no matter the size of your business, I'll leave you with this thought: if you think safety is expensive, try having an accident. Better yet, don't.

Fugere tutum! 



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Training for IIMC Is Crucial

Practicing your instrument skills could save your life.

DESPITE THE FACT that inadvertent entry into instrument meteorological conditions (IIMC) continues to be a topic at many helicopter industry safety meetings, these weather-related accidents still occur at an alarming rate. So let's go back to basics and discuss some potential solutions to this vexing problem.

significant risk or landing the helicopter as soon as poor conditions become imminent. Preflight risk assessments are very helpful in making a no-go decision.

Training for inadvertent IMC can be a little more complex and is sometimes viewed as an expensive option, but it's a crucial one. Instrument skills are perishable: their expiration date varies by the pilot's level of experience and ratings. Regardless of their documented expiration date, however, every pilot's instrument skills will expire if he or she fails to practice them.

If you don't practice often, your skills will weaken, at best. Weak skills combined with an unplanned encounter can be fatal.

Now that we've established that practicing your instrument skills is crucial, how often you should do so depends on your comfort level with flying by instruments. If you have an instrument rating and are proficient with the aircraft model, mission, and environment, practicing once or twice a year may be enough. If you don't have an instrument rating or you're flying a new aircraft model or in an unfamiliar area, regular practice makes more sense. And it's important to take that training seriously.

Let's look at how to train for IMC encounters. There are several ways to practice, all with varying degrees of effectiveness.

One good method is using a simulator that enables you to practice to all levels of instrument conditions with little or no risk to person or aircraft. Many pilots tell me that training in a simulator can be very humbling because it can show us we're often not as proficient as we thought we were. This is especially true for IIMC. In other emergencies, such as power loss or hydraulic failure, pilots respond almost by muscle memory, because of their repeated use of the same checklist of response procedures during training. In the case of IIMC, however, muscle memory seems to fade as we lose our sight. The sudden realization that you can't see can lead to the feeling that you suddenly don't know what to do because you can't see the results of what you're doing. Are you climbing ... descending ... banking?

Fortunately, with concentrated practice some muscle memory can be learned during IIMC training in a



AT Systems's helmet-mounted ATS Device lets students experience both simulated visibility and the sensations the body feels during forward flight.

Poor visibility or instrument flight rules (IFR) conditions mostly means we can't see outside the aircraft. We may not realize just how much we rely on visual cues from outside, but we find out very quickly when those cues are no longer there and spatial disorientation sets in. The "inadvertent" part makes IIMC even worse because we weren't expecting the lack of visibility. As a result, we may not be prepared to respond to the situation—a very dangerous condition that leads to accidents.

The two most obvious solutions are to avoid the conditions and to hone your instrument skills. Avoiding the conditions may mean canceling the flight if there's a

simulator. The cost of using a simulator will vary with the type of simulator and its location. Lower-level, less-expensive simulators and flight training devices can be a cost-effective option to higher-end models as long as their visuals permit good representations of the IIMC environment.

Training in an aircraft, too, can be effective if the pilot uses a view-limiting device and doesn't cheat by looking under or around the foggles or hood. Still, training in an aircraft does carry some limitations. Under normal circumstances, you can't actually fly in IMC conditions during training, so the "inadvertent" part will be inac-

If you don't practice often, your skills will weaken, at best. Weak skills combined with an unplanned encounter can be fatal.

curate when you have to take time to put on a hood in order to train. Such training does, however, allow you to practice flying by instruments and sharpen your scan, which can be crucial to surviving a real encounter.

Technological advances have recently developed a more practical, cost-effective solution to traditional training's limitations. A new, patented device from AT Systems designed for military training straps to a helmet without modification and provides a decreased visual environment controlled by an instructor-operated iPad. Called the ATS Device (see photo at left), the product enables pilots to experience both simulated visibility and the actual sensations the body feels during forward flight.

While simulators provide all the visual cues for decreased visibility that make you *feel* like you're moving, the ATS Device reduces visibility while you *are* moving. It allows the true seat-of-the-pants consciousness the brain experiences during actual flight because the product is used inside the aircraft itself.

Another advantage of the ATS Device is its ability to be used anytime during a training flight and the various options it provides for programming visibility and re-creating

Safety Town Hall

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Want to learn more about the ATS Device and IIMC? Then be sure to attend the Safety Town Hall meeting at HAI HELI-EXPO 2020.

Terry Palmer, chairperson of HAI's Training Working Group, will host the event, where she and a company representative from AT Systems, maker of the ATS Device, will talk about IIMC and answer your questions about the new technology. Also on the agenda: new trends in maintenance training.

Don't miss it!

real-life scenarios. Indeed, the ATS Device is the latest smartphone to the training hood's rotary-dial landline, and training in an aircraft equipped with one may be an efficient, effective alternative to simulator training.

Instrument training, whether in an aircraft or a simulator, can accurately demonstrate a pilot's skill

level by providing training scenarios that let the pilot reach—and learn—his or her limits. Through practice and increased awareness, pilots can overcome these limits and gain greater flexibility to make the right decisions in a degraded visual environment.

In the end, training is crucial for one central reason: it will increase your ability to survive an unexpected encounter with IMC conditions. 🌀

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LAST LOOK

By Mark Bennett

T&M Aviation's Bell 206B-3



Ron Wolf founded T&M Aviation in Abbeville, Louisiana, two decades ago, focusing on agricultural aerial applications. The company has since expanded to include weed-control spraying for forestry companies, firefighting as well as controlled burns, and a host of miscellaneous services such as aerial photography, training, and support. Licensed for spraying in 30 states—T&M has sprayed for gypsy moths at Camp David, the president's retreat in Frederick County, Maryland—the company's mainstay business is still aerial application. This Bell 206B-3 is one of five aircraft in T&M's fleet (another B-3, two Bell 206L-3s, and an L-4 make up the rest). It's shown here outside the company's hangars at Abbeville Chris Crusta Memorial Airport (KIYA).

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