The Official Journal of the Airborne Public Safety Association

# AIRBEAT

May - June 2025


## INTERNATIONAL AIRSPACE:

### Ops, Regs & Specs Around the World

APSCON Europe 2025 Preview
DETAILS INSIDE

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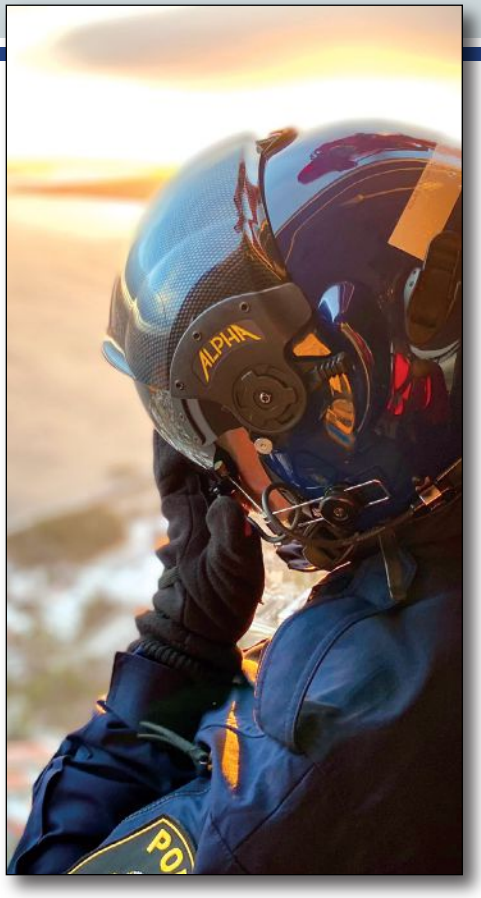


**Cover:** *Courtesy of Queensland Police Service Air Operations.* **Above:** *Courtesy of Swedish National Police Air Support.*



## DEPARTMENTS



AIRBORNE PUBLIC SAFETY ASSOCIATION

*Air Beat magazine is published bimonthly, along with a bonus Conference Preview Issue and annual Buyer's Guide, by the Airborne Public Safety Association, Inc. (APSA), a public benefit, non-profit California corporation. Annual subscriptions are $75 (U.S.).* 

AIRBORNE PUBLIC SAFETY ASSOCIATION

*"TO SERVE, SAVE AND PROTECT FROM THE AIR"*

**APSA President**
*Richard Bray*

I hope all is well with you and your units as we head into summer. Some of you have been busy fighting fires on both the West and East Coast this year. Please be safe—your hard work and dedication is appreciated.

July, of course, will bring APSCON / APSCON *Unmanned* to Phoenix, AZ. Our staff is finalizing the details for our premier event of the year, and we are very much looking forward to delivering our industry-leading training and networking to our new and old members alike.

APSA is a worldwide association. We have members in Europe, Australia, South America and many other parts of the world. Some of our international members have attended APSCON over the years, and others have offered their perspective as instructors. In this issue of *Air Beat*, we highlight our international colleagues with articles about the unique ways airborne public safety operations are conducted in countries around the globe. The issue is full of unique unit profiles and perspectives, and while there may be some operational and regulatory differences from nation to nation, we're all trying to accomplish the same goal: provide the highest level of service to the public in the safest manner possible.

Speaking of our international colleagues, APSA will host a conference in Europe this year for the first time ever. APSCON Europe 2025 is scheduled for Sept. 8–10 at the Bell Training Academy in Valencia, Spain. The event will be similar to our Regional Safety Seminars, with tabletop displays for our corporate members, classes for attendees and ample networking opportunities. The Bell Training Facility in Valencia has generously provided the classroom and hangar space needed to conduct this one-of-a-kind event.

For many years, our European colleagues have been asking us to bring our educational programs and instructors across the Atlantic, and it's finally going to happen. The APSA Board and staff members are excited to have this opportunity, and if successful, it could lead to bringing APSCON to other parts of the world, as well. For more information on APSCON Europe, see our brief conference preview on pages 52 and 53 of this issue. We look forward to seeing you all this year, be it in Phoenix, Valencia or at one of our many other events.

*Richard*


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*Daniel B. Schwarzbach*

Public safety aviation operations are conducted worldwide, and this issue highlights those beyond U.S. borders. APSA members hail from across Europe to Australia to South America and beyond, and this issue looks at how a cross-section of them utilize aircraft in fulfillment of their missions. Through profiles of these units, we look at similarities and differences in multiple areas including aircraft, aircrew composition, training and tactics. It's been eight (8) years since an issue of *Air Beat* focused on our fellow non-North American public safety aviators and, as we prepare for our first APSA-produced event in Europe (APSCON Europe 2025, Valencia, Spain, Sep. 8-10), we felt there is no better time to look beyond our borders once again.

### APSCON & APSCON *Unmanned* 2025 – Phoenix, AZ

Time is running out to register for APSCON & APSCON *Unmanned* 2025, July 14-18, in Phoenix, AZ. For the fourth year in a row, we are running these events concurrently to highlight how both manned and unmanned aircraft can complement each other in public safety aviation operations. Conducted as separate educational events with a shared exhibit hall, you will have access to industry-leading public safety aviation training, products and services in one location no matter what type of aircraft you operate. Registration for both APSCON & APSCON *Unmanned* 2025 is open on our website. Register today and plan to stay Friday night and attend our Annual Awards Reception where we will honor outstanding performance within our specialized industry. Hope to see you there!

### Time to Cast Your Ballot!

We have a contested election this year for the position of Central Region Director on the APSA Board. As in the past several elections, we are using electronic balloting. If you reside in the Central Region, you should have received your ballot via email on or about June 1. If you did not, please contact Megan Meese (mmeese@publicsafetyaviation.org; 301-631-2406) at the APSA office for assistance. The voting period runs through July 1, 2025. Vote!

### *Air Beat* 2025 Photo Contest

There's still time to submit your entries for the 2025 *Air Beat* Photo Contest, but don't wait too long! The submission period runs through June 30. This contest is co-sponsored by APSA and our graphics partner, Magic Graphx LLC. The winner of the grand prize, a GoPro HERO13 Black Action Camera Bundle, will be announced and the grand prize awarded on July 17 during the General Membership Meeting at APSCON 2025. The winner is not required to be present. For contest guidelines and to submit your photos, visit our website or airbeatmagazine.com.

### APSA Live Online Webinar Training Series

As you may be aware, since the COVID-19 pandemic, APSA has offered an annual series of live online training webinars, once a month, with the exception of the summer months. And while the 2025 series is currently paused, you can now access the recordings of previous webinars via our website! This has been requested for quite a while, and our new website enables us to do so. To find these recordings, log into the website with your credentials, navigate to the Member Dashboard (hint: it's under the dropdown by your name at the top right of the homepage), and click on Webinar Recordings under Resources. Choose the webinar you want to watch by clicking on it and enjoy!

In fulfillment of our mission,

*Dan*

# U.K. National Police Air Service Orders Seven H135s


The U.K. National Police Air Service (NPAS) has agreed to purchase seven Airbus Helicopters H135s in the initial phase of a fleet renewal program. The aircraft order is the first output of a contract signed with the BlueLight Commercial procurement agency and confirms Airbus as the exclusive supplier of NPAS helicopters for up to six years.

"With over 100 calls for air support each day, [NPAS] plays a unique and valuable role in saving lives, disrupting criminality and protecting communities," NPAS Chief Operating Officer and Accountable Manager Chief Superintendent Vicki White said. "The aircraft we currently operate were transferred to NPAS from individual police forces when the national service was formed over 13 years ago and, as such, they are some of the oldest and most-flown aircraft of their type in any U.K. fleet."

NPAS currently operates 16 H135 and four H145 helicopters from 14 locations on behalf of the 43 police forces in England and Wales. Airbus Helicopters in the U.K. provides maintenance and support for the NPAS fleet. The new helicopters will be equipped with Airbus' Helionix avionics system, and one aircraft will initially be used to train NPAS pilots on the new system, which is intended to enhance safety and operational effectiveness by reducing pilot workload.

More than 1,440 H135s are in service worldwide with over 320 customers.

## Austria Police Helicopter Lands Hard During Training


An Austrian Air Police helicopter crashed down on May 6 during a low altitude training operation. Neither crewmember aboard the aircraft was injured, according to multiple media reports.

The incident reportedly occurred at the Bad Vöslau/Kottingbrunn Airfield in Lower Austria. The AS350-B1 was performing a low-speed maneuver at low altitude when unknown events led it to fall to the ground. The flight instructor on board and a police pilot trainee were both reported to have escaped injury.

The circumstances of the accident are still under investigation. Reports indicate the helicopter involved in the crash is used exclusively for training purposes. The Austrian Ministry of the Interior said the capabilities of the Air Police would not be affected. The department employs about 50 pilots and operates 17 helicopters.

In the wake of the incident, the Austrian Air Police defended its pilot and aircrew training program, which takes 12 to 18 months, depending on the pilot's previous experience. Prospective pilots must undergo extensive classroom training and amass at least 150 hours of flight time. All police department pilots must also be certified to fly under night vision, take specialized courses for high-altitude operations and off-airfield landings, and complete additional training for special operations like external load and recovery rope transport flights.

## Bell 412EPX Receives Transport Canada Validation


Bell Textron Inc. recently announced the SUBARU Bell 412EPX has received Transport Canada Civil Aviation (TCCA) validation and can begin flight operations throughout the North American country.

"We're pleased the SUBARU Bell 412EPX has received TCCA certification and look forward to growing its presence globally," said Danny Maldonado, Bell's chief commercial officer. "This aircraft offers superior operational performance and efficiency for our customers while maintaining its long-standing reputation for reliability."

With 11 aircraft variants spanning over four decades, the Bell 412 possesses a long history of supporting critical public safety missions, including law enforcement, firefighting, and search and rescue.

Combining its increased maximum internal weight of 12,200 pounds, external weight of 13,000 pounds and ability to carry 5,000 pounds with a cargo hook, the 412EPX offers a unique ability to transport public safety equipment, and the helicopter's main rotor gearbox with dry run capability gives operators increased horsepower.

## PSNI Rescue Helicopter Has Near Miss With Drone

The Police Service of Northern Ireland (PSNI) reported that one of its helicopters nearly collided with an uncrewed aircraft while assisting on a rescue mission in early May. Following the incident, PSNI representatives condemned the drone pilot in a press release and on social media.

"This is absolute madness," a spokesperson said. "Had that drone impacted with the helicopter at any time, the result would have been catastrophic. Drones are not toys."

According to the spokesperson's accounting of the incident, PSNI and the Mourne Mountain Rescue Team (MMRT) had saved a man who had fallen to the base of a cliffside on May 10. After landing without incident with help from a neighborhood police team and the Newcastle Coastguard, the helicopter prepared to take off and return to Prestwick in Scotland. One of the police officers on the ground then saw a drone flying close to the helicopter.

"They immediately informed a member of [the] coast guard and members of the MMRT, who in turn informed the crew on board," the spokesperson said. "At the same time, officers made their way to the area of the park the drone was spotted in to try and identify its whereabouts and the person that was operating it."

Police said the drone left the area without making contact with the helicopter, but the pilot's actions were in violation of the law and warranted criminal prosecution.

Jill Truesdale, an Alliance Party councilor for the Mournes area, said the UAS pilot's behavior was "beyond stupid." "Hopefully, they will be caught and reminded of the laws around these things," she said. The investigation is ongoing.

## Albuquerque Police Department Receives New Helicopter


The Albuquerque (NM) Police Department took delivery of its new Airbus H125 helicopter in late April. Davenport Aviation delivered the aircraft via its General Services Administration contract.

The new H125 is the second procured by APD. The helicopter was completed with state-of-the-art law enforcement systems in partnership with Hangar One Avionics. Davenport supplied APD its first H125 in 2020. Replacing the department's aging fleet of EC120 models, the H125 offers a significant upgrade in capability and safety.

Outfitted with advanced search, navigation, communication and surveillance technology, the new H125 is designed to support APD's diverse mission needs, including crime prevention, suspect apprehension, and search and rescue operations. "Sitting at the base of the Sandia mountains, which exceed 10,000 feet, APD operates in a challenging hot and high flight environment," Davenport Program Manager Kevin Warfield said. "Helping to provide Albuquerque with this critical capability will provide APD with a tool to better serve the community and surrounding areas."

The Airbus H125 is renowned for its performance, reliability and cost efficiency and comes equipped with dual hydraulics, dual-channel engine FADEC, a crash-resistant fuel system and a glass-panel cockpit. It remains a popular choice for federal, state and local agencies across North America, accounting for more than 50 percent of all intermediate, single-engine helicopters used in public safety missions over the last decade.

Davenport supports government agencies of all sizes across the U.S., most recently announcing the first ever law enforcement order for an H160 by the New York State Police.

# NBPD Launches Hudson County's First Program Using Drone as a First Responder

The North Bergen (NJ) Police Department (NBPD) has officially launched an uncrewed aircraft unit, becoming the first municipality in its county with a drone as a first responder unit. Currently, only four other municipalities in the state deploy the technology.

Spearheaded by Sergeant Sean Rahbari, a certified Federal Aviation Administration remote pilot and member of the Hudson County Regional SWAT Team, the newly formed NBPD UAS Division includes a team of four trained officers. The program enhances situational awareness, improves response times, and increases officer and civilian safety.

While the drones can fly at an elevation of up to 400 feet, they are generally deployed at around 200 feet, responding in real time to emergencies prioritized by NBPD supervisors. With each flight using about 5 percent of the aircraft's battery per mile and the units requiring just 25 minutes to recharge, the drones offer a rapid-deployment advantage. NBPD records and stores each mission in a secure database, helping document and analyze public safety responses across the township.

The initiative was funded through criminal forfeiture funds, secured through Chief Robert Farley's efforts. "This program took nearly a year to get off the ground from FAA licensing to implementation, but it was worth every step," Farley said. "Our UAS division is already proving invaluable in search operations, scene assessments, and supporting patrol units. We're proud to lead Hudson County in deploying this kind of lifesaving technology."

NBPD said its UAS unit marks a major leap forward in the department's ongoing efforts to modernize policing and maintain the highest standards of public service and safety. The department said in a statement that it would announce further upgrades to its capabilities in the coming weeks.

# CHP Pilot Del Schulte Dies at 81

Delmar Schulte died on April 29 at the age of 81. He served The California Highway Patrol Air Operations Division for 23 years.

According to his online obituary, Shulte learned to fly in 1970, obtaining his pilot's license soon thereafter. He applied to join CHP's air unit in 1974 and began his career flying Air-11 out of Brawley, CA. In 1980, he was selected to lead the CHP air division based in Sacramento and transferred again in 1986, this time to Redding. He retired in 1997 but soon joined CalFire as a contractor and flew part time for 15 more years.

In his spare time, Shulte was an avid private pilot and devoted family man. In addition to his wife and children, he leaves behind 14 grandchildren.

# South Australia Police Purchases Two 429s

The South Australia Police (SAPOL) bought two Bell 429s in late March. Toll Aviation worked with the Government of South Australia to complete the purchase agreement.

Upon aircraft delivery, SAPOL will become Australia's third law enforcement agency to integrate the 429 into its fleet. Operations are scheduled to commence on Oct. 1, 2027.

SAPOL has selected a mixed fleet of helicopters and airplanes to meet their capability and service requirements, with the Bell 429 expected to be a high-readiness aircraft supporting airborne law enforcement, tactical response, search and rescue, disaster management and operational transport missions. The aircraft will be on standby 24 hours a day, 365 days a year, operated by Toll Aviation pilots and SAPOL tactical flight officers.

"We are thrilled to welcome Toll Aviation and SAPOL into the ever-growing Bell family," said David Sale, managing director of Bell's Asia Pacific region. "It truly is gratifying to know that our aircraft will play a crucial role in keeping the South Australian community safe."

The Bell 429 remains a popular model for use in the law enforcement, corporate and emergency medical services sectors. International users of the twin-engine platform include the New South Wales Police, Queensland Police Service, Canadian Coast Guard, Indonesia National Police, Royal Thai Police and Swedish National Police. More than 500 Bell 429s are currently in operation globally.

# Cyprus Police Helicopter Helps Fight Fires in Israel


A Cyprus Police helicopter assisted Israeli public safety teams in battling wildfires in early May. The "Akritas" helicopter, part of the Police Aerial Operations Unit, departed Cyprus sometime before noon on May 1 with a full crew and returned at around 5:30 p.m. the next day.

"The police helicopter Akritas has just landed at Larnaca Airport after successfully completing its mission," the Cyprus Ministry of Justice and Public Order said on X. "Warm thanks to the crew and all those who contributed to the effort."

The helicopter reportedly supported Israel's firefighting efforts throughout the two-day period. Following a meeting at Cyprus's Presidential Palace on wildfire preparedness, government spokesman Konstantinos Letymbiotis said "the Republic of Cyprus was the first state to respond to the call of neighboring Israel."

"We were in constant communication from the very beginning and responded within the framework of our own capabilities," Letymbiotis said. "[Cyprus] also offered ground forces in the event that they would strengthen firefighting efforts. Israel has not needed them so far." Letymbiotis said the assistance was offered as part of the European Civil Protection Mechanism.



## CALENDAR OF EVENTS

### Online Group Meetings

**June 11, 2025** – Unit Manager
**June 25, 2025** – Natural Resources
**July 9, 2025** – Safety
**July 23, 2025** – UAS
**August 6, 2025** – SAR
**August 20, 2025** – Maintenance

*To join, send an email to registration@publicsafetyaviation.org*

### sUAS Proctor Training Course – Advanced/Confined

**June 16-18, 2025**
South Berwick, ME

### APSA Safety Stand-To

**September 24, 2025**
Spokane, WA

### Hybrid Remote Pilot-In-Command (RPIC) Course

**June 2 - July 7**
Self-Paced Online with Live QA Session

### APSCON / APSCON *Unmanned*

**July 14-18, 2025**
APSA's 54th Annual Conference & Exposition
Phoenix, AZ

### APSCON Europe

**September 8-10, 2025**
Valencia, Spain

### Other Conferences

**Commercial UAV Expo**
**September 2-4, 2025**
Las Vegas, NV

**Register to attend APSA events at www.publicsafetyaviation.org. For additional information, contact APSA Operations Manager Benay Osborne at (301) 631-2406 or bosborne@publicsafetyaviation.org.**

# Japan National Police Agency Receives Two H145s

The Japanese National Police Agency has taken delivery of two H145/BK117 D-3 helicopters from Kawasaki Heavy Industries, Ltd. The aircraft are the third and fourth D-3s to join the National Police Agency's fleet.

The Japan National Police Agency deploys the D-3 not only for patrol and accident investigation, but also for information gathering and search and rescue. The helicopter's large rear clamshell doors allow easy loading and unloading of stretchers and other equipment, and its large cabin, flat floor and high performance at high altitudes make it ideal for the mission. The agency's four D-3s feature state-of-the-art avionics and a five-blade main rotor system.

The BK117 is a medium-sized, twin-engine helicopter developed jointly with Airbus Helicopters. The first model was placed into service in 1983, and Kawasaki has since delivered 202 of the airframes. Kawasaki said in a statement that it continues to improve the model for use in various applications. The D-3 offers a maximum of 12 seats, takeoff weight of more than 8,300 pounds, speed of about 163 miles per hour and cruising range of 450 miles. Its primary equipment includes an autopilot system, GPS map display unit and helicopter terrain awareness and warning system, among other technology.

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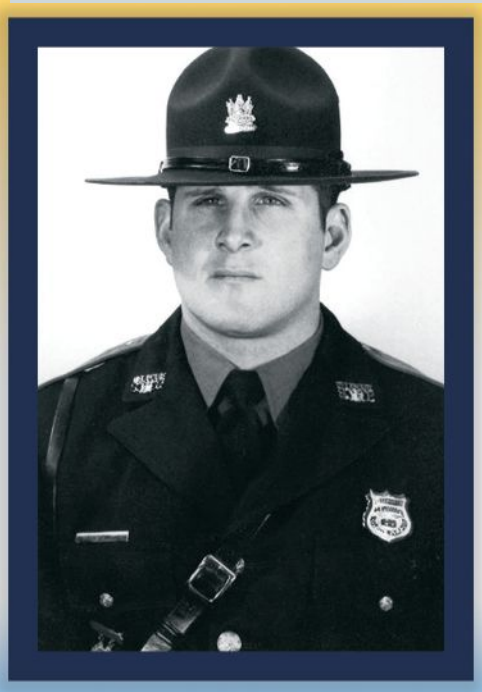

# Airborne Trooper's Line of Duty Death Recognized 40 Years After Fateful Incident

The Delaware State Police (DSP) recently honored the sacrifice of Corporal Dennis Kelly by adding his name to multiple law enforcement memorials, recognizing the committed aviation crewmember's life and service. In adding Kelly to its memorials and recognizing his line-of-duty death, the department said, "his legacy continues to inspire those who serve today."

Kelly, originally from Wilmington, DE, served with DSP for seven years. He was assigned to the DSP Aviation Section after several years of patrol. As a ground officer and pilot, he demonstrated exceptional dedication to service and public safety, the department said in a statement.

On May 20, 1984, Kelly and his partner, Corporal Thomas Robbins, were conducting routine helicopter takeoff and landing exercises at Sussex County Municipal Airport in Georgetown when they were involved in a crash. Their Bell Jet Ranger 206B helicopter made a hard landing and rolled over upon impact. While Robbins sustained non-life-threatening injuries, Kelly suffered a broken neck and spinal cord injury, resulting in quadriplegia.

Kelly, known by his aviation call sign "Combat," never fully recovered from his injuries. He lived with the enduring effects of the crash with strength and resilience for four decades before succumbing to complications from the injuries on Dec. 21, 2024. He died at age 69.

Kelly's name was formally added to both the Delaware State Police Memorial, located at DSP Headquarters in Dover, and Delaware Law Enforcement Memorial on the state's Legislative Mall in May. Currently, 23 troopers are honored on the DSP Memorial. Kelly will be the 24th trooper recognized for making the ultimate sacrifice. In May 2026, his name will be added to the National Law Enforcement Officers Memorial in Washington, D.C.

"Dennis felt privileged to be part of the Delaware State Police family," Kelly's wife, Paula, said. "A guy who never considered himself lucky thought he hit the lottery when he joined the Aviation Section—getting paid to do what he loved. I know he would be humbled and honored by this acknowledgment of his helicopter accident and the life he lived over the past 40 years."

Colonel William Crotty, DSP superintendent, said Kelly was worthy of one of the department's highest posthumous honors. "Corporal Kelly's resilience in the face of life-changing injuries and his decades-long struggle to live with honor reflect the very essence of what it means to wear this uniform," Crotty said. "His name will now be etched alongside our fallen heroes, where it rightfully belongs."


Delaware Governor Matt Meyer also spoke to Kelly's service and sacrifice. "In the line of duty, our officers face not only the dangers of their daily work but also the unforeseen challenges that come with their training," Meyer said. "The tragic loss of Corporal Kelly underscores the sacrifices made by those committed to community service. His dedication and spirit will remain in our memories. We stand united in honoring his legacy and supporting his family during this challenging time."

Joshua Bushweller, secretary of the Delaware Department of Safety and Homeland Security, said he was deeply saddened by Kelly's death, offering condolences to his family, friends and colleagues. "[Kelly's] loss reminds us of the sacrifices made by those who protect and serve," Bushweller said. "His bravery and dedication will forever be remembered, and it is fitting that his name will now be enshrined alongside those who gave their lives in the line of duty…May we honor his memory by continuing to uphold the values for which he stood."

To explain more about Kelly's life and legacy, his family created a tribute page at StoriesOfHisLife.com. Kelly's enshrinement on the DSP Memorial and Delaware Law Enforcement Memorial coincided with National Police Week in May, a time to honor all fallen law enforcement officers. The Delaware Fraternal Order of Police hosted the annual Delaware Law Enforcement Officers Memorial Service on the Legislative Mall in Dover on May 7.

# MULTI-CREW COORDINATION IN EUROPEAN HELICOPTER OPERATIONS

**By Cory DeArmitt,** *APSA Safety Program Coordinator, and* **Terry Palmer,** *Senior Consultant Aviation Strategy, Safety and Training, Pilot Landing LLC*

Multi-crew coordination (MCC) has emerged as a vital element of operational success and safety in law enforcement aviation around the world. In Europe, police air units rely on helicopters for a broad range of missions, including surveillance, suspect pursuit, crowd monitoring, and search and rescue. These complex tasks require seamless cooperation between pilots, tactical flight officers, and ground units.

Effective MCC is essential to ensure demanding missions are executed safely, efficiently and within legal and regulatory parameters. The European model is one from which everyone in the worldwide airborne public safety community can learn.

## The Role of Multi-Crew Coordination

MCC refers to the collaborative skills and structured communication methods that allow a helicopter crew to function as a cohesive unit. In law enforcement operations, this usually means a pilot and one or more tactical crew members sharing responsibilities for navigation, visual reconnaissance, communication with command centers and, sometimes, managing onboard surveillance technology.

Unlike commercial aviation, law enforcement operations often involve unpredictable, fast-evolving scenarios. In this context, MCC goes beyond traditional flight duties and includes dynamic decision making, clear delegation of tasks and mutual situational awareness—all crucial when operating at low altitudes over urban environments or during high-pressure pursuits.

## Regulatory Framework & Training

In Europe, helicopter operations for police and security agencies fall under the umbrella of the European Union Aviation Safety Agency (EASA) regulations, particularly in relation to operator certification and crew training. While some law enforcement flights may be conducted under state (non-commercial) operations and not fully subject to commercial aviation rules, EASA's standards for MCC training remain highly influential across the continent.


For aircraft classified as multi-pilot under their type certificate—such as the Airbus H135, H145 and Leonardo AW169—EASA mandates MCC training as part of all crews' qualifications. The training encompasses key competencies, including crew communication, leadership, task management, error mitigation and adherence to standard operating procedures.

Police air units across Europe typically provide initial and recurrent MCC training tailored to their specific operational roles. Simulators and scenario-based training are increasingly used to replicate real-world law enforcement missions, such as nighttime urban pursuits, crowd surveillance and coordination across multiple agencies.

## Tactical Crew Integration

A unique element in law enforcement helicopter operations is the presence of TFOs—sworn officers or trained observers who manage the mission-specific elements of the flight. Their roles include operating infrared


and camera systems, identifying suspects or threats and relaying information to ground units. They are as integral to mission success as the pilot.

This adds an extra layer of complexity to MCC, requiring even greater emphasis on inter-crew trust and non-technical skills. The tactical officer must understand aviation limitations, while the pilot must be aware of the tactical needs of the mission. European police aviation units have recognized this by developing joint training programs that include both pilots and flight officers in MCC scenarios.

## Operational Advantages

The benefits of effective MCC are clear. Improved coordination reduces the risk of miscommunication, improves mission planning and execution, and enhances the safety of all involved—both in the air and on the ground. In volatile situations such as civil unrest, hostage scenarios or rapid vehicle pursuits, coordinated air support can be a decisive factor in achieving a safe resolution.

Effective MCC enables law enforcement helicopters to integrate smoothly with other emergency services, such as fire and rescue or border patrol units. Inter-agency collaboration often relies on well-drilled communication protocols and shared situational awareness—key components of MCC training.

Spain's Policía Nacional and Guardia Civil, which operates multiple aviation units, serves as strong examples of MCC in action. The Policía Nacional's helicopter fleet, based at key locations like Madrid-Barajas and Barcelona-El Prat, is heavily involved in border surveillance, drug interdiction and public event monitoring. Meanwhile, the Guardia Civil operates helicopters for both civil protection and criminal enforcement across Spain's rural and mountainous regions.

Both agencies use Airbus helicopters, such as the H135, which is specifically designed for multi-crew operation. Missions often involve a pilot and flight officer managing camera systems, infrared sensors and communicating in real time with ground units.


Training for the crews is highly structured. MCC principles are embedded into mission rehearsals and simulator sessions, especially for complex operations like anti-narcotics raids and monitoring major public gatherings. The integration of TFOs into the national police agency's MCC framework has proven essential in improving mission outcomes and safety margins.

## Looking Forward

As law enforcement aviation continues to evolve—with growing use of drones, advanced surveillance systems and integrated command-and-control networks—the role of MCC is expanding. European police air units are investing in higher-fidelity simulation tools, cross-border joint training and standardization efforts across jurisdictions.

In European law enforcement helicopter operations, MCC is more than a regulatory requirement—it's a cornerstone of mission effectiveness and safety. By fostering a culture of teamwork, structured communication and continuous training, police aviation units are better equipped to meet the demands of modern public safety from the sky than ever before.

# SWEDISH NATIONAL POLICE AIR SUPPORT: NEW DEMANDS, COMPLEX FUTURE

By **Daniel Rosenberg,** *Tactical Flight Officer, Swedish National Police Air Support Unit*

Sweden is seeing a dramatic surge in gang related and violent crime, which has forced the country to adapt to the new situation and take measures to stop it. The Swedish National Police Air Support Unit is no exception.

Meeting the new, more complex criminal situation has caused the unit not only to alter its methods, but also reconsider its mission equipment. The Air Support Unit now works more closely than ever with the nation's intelligence departments, making it sharper in its responses and allowing it to search for the right persons in the right place at the right time.

The new national police model requires close collaboration among multiple units and authorities, with each department having consistent access to up-to-date information and allowing them to act quickly and be as effective as possible. To keep the Air Support Unit relevant in the fight against transnational and organized crime, it must maintain a mentality that allows it to change methods and operational approaches rapidly—the same way the criminals operate.

## Six Decades & Counting

The Swedish National Police Air Support Unit was founded in 1964, in preparation for a visit to Sweden by Nikita Khrushchev, who served as the First Secretary of the Communist Party of the Soviet Union from 1953 to 1964. Khrushchev had taken over the Soviet Union from Joseph Stalin.

Sweden's national police department decided it needed eyes in the sky prior to the communist leader's visit, and the Air Support Unit was formed. The department began by operating a Bell 47, which was replaced by multiple Bell 206 JetRangers and LongRangers several years later. In 2001, the unit took its first big leap in mission equipment by replacing its 206s with EC135s. In 2015, police administrators decided it was time for the next step up,



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and the Air Support Unit bought its Bell 429s, representing another considerable jump in operational capabilities.

Sweden has only one nationwide police force, and the Air Support Unit fleet now consists of nine Bell 429 helicopters covering the entire country, which borders Norway to the west and north and Finland to the east and stretches 173,860 square miles. Sweden is the fifth largest country in Europe with a population of 10.6 million. The Air Support Unit operates out of five bases around the country, with one positioned in each of its major cities— Stockholm, the nation's capital, Gothenburg and Malmoe—and two strategically based in the northern mountainous area in the towns of Ostersund and Boden.

Although the Swedish National Police Air Support Unit operates the same helicopter platform across all missions, its operational demands vary significantly. The unit mainly focuses on mountain rescue and hoist operations in the north, while in Stockholm and other major cities, it serves as a quick reaction force working with the national intervention team from a forward operating base and provides surveillance and public safety air support.

All the national police helicopters can perform the same tasks and carry out the same missions, except hoisting, which is performed only by the crews in Boden and Ostersund. All bases, however, complete public safety patrols, personnel transport, search for missing persons and all other tasks.

## Mission Oriented

The Swedish National Police Air Support Unit is not limited to flying only when called out. During its routine patrol missions, the unit primarily works surveillance missions, gathering intelligence for other departments. It is often during routine patrols that the Air Support Unit responds to calls, allowing it to arrive on scene quickly with crews already in the air. When the airborne unit can make a difference, crews respond, whether the case is a serious offense or a minor crime. As long as the aviation crews can support troops on the ground and affect outcomes, nothing is too small for a coordinated response.

The Air Support Unit flies with a single pilot and, typically, one tactical flight officer


per mission. The department also has adequate personnel to fly missions with two TFOs, with one working from the back on the mission console. Both pilots and TFOs are sworn police officers and must have experience from patrol before being able to apply to the airborne unit.

The Swedish National Police trains its pilots in an in-house flight academy based in Gothenburg. There, training is completed on one of the unit's old Bell 206s, which is now used solely for that purpose. The unit's TFO training spans 14 weeks, including on-the-job training. When choosing future colleagues, existing unit members use a series of tests, medical examinations and interviews to choose the best and most motivated officers possible for the job.

When fully trained, Swedish national police pilots have NVG and IFR ratings, which make operations safer and allow the


unit to operate anytime it is needed, even when weather conditions don't allow VFR flying enroute. To keep current on all profiles, such as IFR, ship landings in day and night time conditions and low flying, training is a critical part of the unit's everyday work when not responding to calls.

Currently, the Swedish National Police Air Support Unit is undergoing a midlife upgrade of its mission equipment systems. The department is in the process of replacing its Shotover ARS with the latest version of the technology and installing a new downlink system. The new downlink will provide internet connectivity and future proof the unit against coming needs in the area of high-speed data transfer, and new monitors and mission consoles will complete the upgrade. New equipment will also be added to make the unit more effective in finding missing persons and fighting crime.

The Bell 429 has proven to be an ideal platform for the majority of the Swedish National Police's airborne support work, but

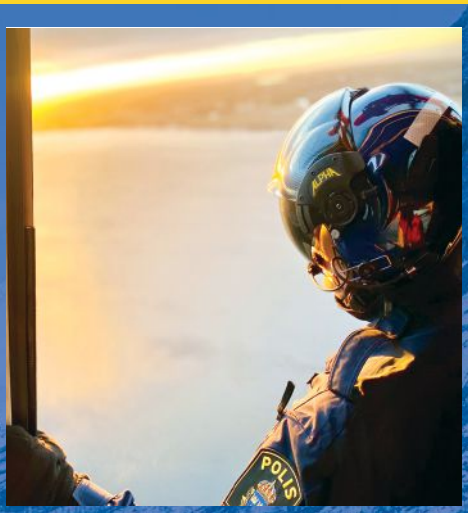

new demands in transport capacity have made the department look into acquiring a larger helicopter system, as well. The new platform must be capable of transporting more officers over greater distances for an increasingly rapid and effective response in critical situations.

A recent school shooting in Orebro, the nation's seventh largest city located about 120 miles from Stockholm, highlighted the Air Support Unit's urgent need for a platform upgrade. After 10 students were killed in the tragic event, it was clear that being able put personnel with the right training and equipment at the right place as soon as possible is of critical importance.

## UAS & the Future

Within the Swedish National Police Air Support Unit, the department has also established an uncrewed aircraft unit, which primarily develops methods and tests new equipment to be implemented throughout the country, but also completes missions. In all parts of Sweden, police districts operate UAS, but the more complicated and sensitive missions are carried out at the national level, and the federal police department is capable of deploying its UAS all over its territory.





UAS have proven to be a great complement to the Air Support Unit's helicopters, and the two units work closely together. In some relatively static events, such as soccer matches or demonstrations, UAS teams can operate effectively alone. However, when situations become dynamic or multiple locations are involved, helicopters remain irreplaceable. By working closely together and responding to the right missions for each platform, both the helicopters and UAS have continued to be valuable.

What the future holds for Sweden and its police apparatus remains to be seen. But the Air Support Unit remains ready to meet the coming challenges with an upgraded fleet of helicopters with the latest technology, well trained crews, and a mindset that will let it adapt to changes and face future challenges with agility and resilience. Whatever is to come, the unit will continue providing responsive law enforcement support, rescuing missing people and saving lives, making the money the Swedish taxpayer invests in the unit worth every dime.


BOISE
Needs Waiver
above 400ft
1,200 AGL
700 AGL
CLASS E
Surface Area
Air traffic
authorization
required

# Where Do We Fit?

## INTERNATIONAL AGENCIES & THE FUTURE OF LOW-LEVEL FLIGHT

**By Mike Becker,** *Owner, Becker Helicopters, International Representative, VAI Training & Operations Industry Advisory Council*

From an office in regional Queensland, Australia, surrounded by pinging email and social media alerts, streaming traffic feeds and the steady thrum of rotor blades overhead, one can't help but feel like they're living in a sci-fi movie. Except it isn't fiction—it's 2025, and the skies are more crowded, complex and unpredictable than ever.

A Lifeflite rescue chopper flies past at 1,000 feet AGL while a police POLAIR unit hovers at 500 feet tracking a target on the highway. McDermott Aviation is laying down mosquito treatment along the rivers with its LongRangers, while fixed-wing aircraft zip in and out of the local regional airport. A few miles away, hobbyists from the model aircraft club are buzzing their aircraft around below 500 feet with no awareness of or communication with anyone. And yes, someone is even ordering a pizza to be delivered by drone.

Welcome to the real-life chaos of low-level airspace. We've reached a tipping point, and the question is no longer if we need to rethink how we manage low-level operations—it's how fast we can act before it's too late.

### A Crowded Sky & Outdated System

The airspace that used to be the exclusive domain of commercial helicopters, police and air ambulance services, firefighting aircraft, and search and rescue operators is being infiltrated by a changing landscape of new technologies. And it's not just by one new type of aircraft. It's by a tidal wave of aerial vehicles: drones, electric vertical takeoff and landing (eVTOL) aircraft, advanced air mobility platforms and more.

The problem? Our rules and systems around the world were built for a different

era. Regulations governing pilot licensing, aircraft maintenance and airspace use still carry the fingerprints of the 1980s and 1990s. Meanwhile, the pace of aerial innovation has exploded in just the last five years.

Every day, we receive notification of a new technology that is going to improve our lives somehow—but that also requires continuous updating and purchase of the latest gizmo to function. Meanwhile, the low-level helicopter community continues to be left behind—ignored, patched over with exemptions, or buried under policies built for commercial airliners. This isn't just theoretical. We're already seeing the cracks.

Imagine you finish a rescue hoist operation on the beach only to find footage of your mission online—shot by a drone hovering 50 meters off your tail. You never saw it. No one reported it. You had no idea it was there. The footage is live before you even get back to base. Cue the emergency NOTAM, a public outcry, a witch hunt for the pilot—and still no permanent solution.

Worldwide, operators and regulatory agencies are firefighting the wrong fires, reacting with short-term fixes instead of designing systems that work proactively and universally. It's the same problem in every country—from the U.S. to Australia, from Europe to Asia. The systems the international aviation community relies on is fragmented, and every country is patching the same leaky bucket in isolation.

## An International Affair

The primary issue is governance. Since the dawn of aviation, civil airspace has been overseen by national regulators—the Federal Aviation Administration, Civil Aviation Safety Authority, European Union Aviation Safety Agency and others—operating independently under the umbrella of International Civil Aviation Organization standards.

But every country interprets the standards differently. So, while we're flying the same aircraft in near-identical missions, we're doing so under different rules, expectations, and oversight. And in many cases, there's little to no regulation for these new airspace users at all.

This is where we must ask, "what does true airspace integration look like?" We need a clean-sheet approach to low-level airspace management—an integrated, real-time, automated system that treats all users equitably and safely. The involved aircraft include:

- Law enforcement and emergency helicopters.
- Agricultural and firefighting aircraft.
- Commercial and private operators—both helicopter and fixed wing.
- Drone delivery services (Amazon, UPS, DHL).
- eVTOL air taxis and advanced air mobility vehicles.
- Private UAS operators.
- Model aircraft hobbyists.
- Balloons, gliders, ultralights and more.

We're all stakeholders. And we all have a role in shaping the future. The Vertical Aviation International (VAI) Training and Operations Industry Advisory Council is creating a sub-group to do just that—bring together voices from across the aviation spectrum to develop practical, universal solutions for integrating aerial vehicles in low-level airspace.

While the VAI sub-group is actively seeking solutions, it also needs input from across the aviation industry. The Airborne Public Safety Association has a massive interest in this airspace, and the VAI sub-group is looking forward to hearing from operators in the public safety aviation sector.

## Big Questions, Big Answers

We have no shortage of questions to tackle to integrate our airspace going forward:

- What airspace are we really talking about—below 10,000 feet, 5,000 feet, 1,000 feet, or even lower?


- How do we fairly allocate space between commercial airliners and low-level operators?
- How do we safely see and avoid each other when some crafts do not have pilots or eyes onboard?
- Why are we still relying on voice radio when real-time data-sharing via cellular or satellite tech is possible?
- Who manages the digital "bubbles" of awareness around every vehicle?
- How should different aircraft react to the information?
- What happens when today's technology becomes tomorrow's antique?
- And perhaps the biggest question of all—why are we still governed by rules designed for airline operations when our missions, aircraft and needs are unique?

It is time to rethink training and licensing. The knowledge a helicopter pilot needed from 1960 to 2000 wasn't the same as what's needed today. Do we still need to print meteorology information when ForeFlight and OzRunways give us a real-time, dynamic picture? Are traditional navigation skills still critical in a world of GPS-guided, magenta-line simplicity? Should every pilot know how an internal combustion engine works in a world where solid-state power sources and multiple electric motors are emerging as aircraft propulsion sources?

Less training is not the answer; rather, we need smart, relevant training based on what we operate and how. Today, we need skills that match our modern aircraft, airspace, operations and missions.

## A Call to Action: Shape the Sky You Work In

The changing airspace is a moment of great opportunity. Where there's change, there's room for innovation, leadership and growth. If we make the right changes, we can create a system that's safer, more efficient and better suited to the world we now operate in. But if we continue to patch holes and hope for the best, we'll find ourselves pushed out of our own operating environment—grounded by regulations we didn't help write.

Whether you're flying a police chopper over a city grid, managing SAR assets over mountains and oceans, or coordinating rotorcraft operations during wildfires, your voice matters. Don't wait for someone else to set the rules. Together, we can reclaim, redefine and protect the future of low-level aviation.


## JOIN THE CONVERSATION

Vertical Aviation International's subgroup on low-level airspace deconfliction is seeking input from the public safety community as it works toward modern, responsible solutions for our ever-changing airspace. To join the conversation, scan the QR code below.

# BRAZILIAN BRAWN:

## PERNAMBUCO'S AIR TACTICAL GROUP SAVES LIVES

**By Heitor Martins,** *Assistant Chief, Air Tactical Group of Pernambuco*


In December 2023, the Air Tactical Group of Pernambuco (GTA-PE) executed a critical aeromedical mission, transporting a cardiac patient from the remote island of Fernando de Noronha to the mainland.

The lifesaving operation, relying on the unit's newly acquired Seneca II fixed-wing aircraft, underscored GTA-PE's vital role in delivering rapid response capabilities across Pernambuco's diverse terrain, from urban centers to isolated islands.

In early 2025, GTA-PE won Vertical Aviation International's Law Enforcement Award, given to "an individual or organization that has contributed to the promotion and advancement of helicopters or UAS aircraft in support of law enforcement activities." The award brought well-deserved recognition to a unit that has shown significant growth, development and improvement over its 18 years of operation.

## THE REAL GTA

Established in 2007, GTA-PE operates under the Pernambuco State Department of Public Safety (SDS-PE). Comprising 88 personnel, including civil and military police officers and firefighters, GTA-PE provides aerial support for law enforcement, civil defense, rural firefighting and emergency medical services throughout the state of Pernambuco.

Pernambuco, located in Brazil's Northeast Region and extending west from the Atlantic Ocean, features a diverse landscape of coastal areas, semi-arid zones and urban centers, such as the capital city of Recife. The state's geography presents unique challenges for public safety and emergency response units, necessitating versatile and rapid aerial support to address issues ranging from urban crime to natural disasters.

Pernambuco is home to about 9.5 million people and covers a land area of nearly 40,000 square miles. The state also includes a volcanic archipelago, Fernando de Noronha, which features islands with jagged coastlines, minimally developed beaches and a marine park. It was from one of those volcanic islands that GTA-PE saved the suffering cardiac patient in late 2023.

As part of SDS-PE, GTA-PE functions as a critical component of Pernambuco's public



safety infrastructure, collaborating with other state departments and federal agencies. The aviation unit's operations complement those of national entities like the Federal Police Aviation Operational Coordination (CAOP) and Federal Highway Police Airborne Operations Division (DOA). CAOP's federal agents are responsible for transporting officers around the country and conducting other air support operations; DOA deploys multiple helicopters and several fixed-wing assets to patrol the nation's highways, aid accident victims and perform drug interdiction missions. Together, the three airborne units enhance Pernambuco's capacity to respond to emergencies and enforce the law.

## PAST TO PRESENT

Since its inception, GTA-PE has evolved to meet the growing demands of public safety in Pernambuco. Notable milestones include the acquisition of multiple advanced aircraft and the development of specialized training programs, reflecting the unit's commitment to enhancing its operational capabilities.

Specifically, GTA-PE's fleet comprises 10 aircraft: six helicopters and four fixed-wing assets. The unit's latest addition is an Airbus H135, a versatile twin-engine helicopter suitable for various missions, including law enforcement and medical evacuations.

Pernambuco's airborne public safety unit includes pilots, tactical operators, mechanics and support staff from various branches of the state's various public safety agencies. In 2024, GTA-PE initiated its first in-house pilot training program, a significant step toward enhancing the unit's operational autonomy and expertise.

GTA-PE conducts a range of missions, including aerial patrols, rapid deployment of tactical units, search and rescue operations, medical evacuations and transportation of government officials. The unit's versatility allows it to address diverse challenges across the state's varied landscapes.

GTA-PE's operations reflect the growing trend among international law enforcement agencies to integrate aerial capabilities into public safety strategies. Similar to units like the U.K.'s National Police Air Service and Australia's POLAIR, GTA-PE enhances situational awareness, rapid response and operational reach, particularly in regions with challenging terrain.

## LOGISTICAL INTEGRATION WITH NATIONAL AGENCIES

By collaborating with national entities like Brazil's Federal Police and Federal Highway Police, GTA-PE shares resources and intelligence to bolster its statewide security


efforts. The integration of the public safety units from the local to national level ensures cohesive responses to incidents and maximizes the effectiveness of aerial operations across jurisdictions.

GTA-PE's diverse fleet enables it to perform missions in both urban and rural settings. The recent addition of the Seneca II aircraft has expanded the unit's fixed-wing capabilities, allowing for longer-range missions and improved access to remote regions like Fernando de Noronha.

GTA-PE is in the process of acquiring three new aircraft. The unit expects imminent delivery of a Cessna 210, Cessna 208 Grand Caravan and Beechcraft King Air B260, each of which will contribute to its fixed-wing capabilities.

GTA-PE continues to advance its operational readiness through fleet modernization, personnel training and strategic collaborations as it approaches its 20th year. In addition to its new helicopter and fixed-wing assets, the department has begun integrating uncrewed aerial systems into its airborne response, enhancing surveillance and reconnaissance capabilities and ensuring that GTA-PE remains at the forefront of public safety aviation in Brazil.

# AN AWARD-WINNING MISSION

Vertical Aviation International recently honored Brazil's Air Tactical Group of Pernambuco (GTA-PE) with its annual Law Enforcement Award, which highlights individual and unit-level excellence in airborne public safety. Following is a description of the mission that helped GTA-PE win the award, as written by VAI's awards committee.

*For several days in late May 2022, multiple months' worth of regional rainfall fell in Brazil's northeast state of Pernambuco. In the state's capital, Recife, and surrounding areas on the Atlantic Ocean, the floods and landslides created catastrophic damage that claimed more than 130 lives and left more than 6,100 people homeless.*

*On May 28, one of the heaviest rainfall days, GTA-PE was grounded in Recife due to low visibility, having VFR-only Airbus AS350s and an H125 available. That morning, a flight nurse ran over to the base from an air ambulance airplane, requesting help because the ground-based ambulance couldn't make it to the airport through the flooding. After determining they could assist safely, the crew airlifted the critical patient to a hospital.*

*"That was just the beginning," GTA-PE Assistant Chief Lieutenant Colonel Heitor Martins said. "We had to wait about two hours at the hospital for the rain and low ceiling to pass before we returned to base. We called in all our pilots and crews—about 15 people total at the time—to help with rescues to keep our three aircraft flying."*

*As the rain cleared, a post-apocalyptic landscape of water and mud emerged. Thousands of people were stranded on roofs, in trees and on isolated high ground.*

*GTA-PE began rescuing people, in one case returning time and again to a single house with 19 people on the roof. With rescue baskets attached to the unit's aircraft, GTA-PE crews were able to lift 63 people from their roofs in the first few hours. They also assisted firefighters in rescuing thousands more by guiding and transporting fire department personnel and equipment.*

*The group's half a dozen pilots and its mechanics and crews worked around the clock, taking short breaks, first rescuing and transporting people to safety and the hospital, then delivering critical food, water, medicine and other supplies to communities in the hardest-hit areas, which had become completely cut off by the destruction. GTA-PE also partnered with the not-for-profit organization Vizinhos Solidários, delivering additional food, water, clothes and bedding to isolated communities.*

*The critical humanitarian work continued for a month as the group's aircraft helped overcome lost roads and bridges.*

*"It was very heavy work and unique for our unit," Martins says. "We'd only recently been reorganized from military police to an integrated team of military firefighters, military police and civil police under the Office of the Secretary of Public Security in Pernambuco."*

*GTA-PE's work didn't go unnoticed. Due in large part to the group's considerable support during what turned out to be the state's worst natural disaster on record, the unit received a boost in funding. Its fleet has since grown to three Airbus AS350 B2s, one H125, two H130s and four airplanes. Additionally, the unit recently took delivery of its first twin-engine IFR helicopter, an Airbus H135.*

*"The [rainfall] event showed the government how important our unit could be in this type of scenario," Martins says. "We can do much more now with IFR capabilities."*


# ONE TEAM: THE GROWTH OF POLAIR QUEENSLAND

**By Inspector Daniel Bust,** *Operations Manager, Aviation Capability Group, Queensland Police Service Air Operations*


Police Air Operations (POLAIR) provides the airborne law enforcement capability for the Queensland Police Service (QPS) in the state of Queensland, Australia. With an area of more than 650,000 square miles, Queensland is the second largest state in Australia, equivalent to being five times the size of Japan, seven times the size of Great Britain and 2.5 times the size of Texas. The estimated population was around 5,608,666 as of September 2024.

Queensland is primarily known for having the Great Barrier Reef off its coastline, but the state is also steeped in aviation history, with the international airline QANTAS (Queensland and Northern Territory Aerial Services) being established there in 1920 and Sir Charles Kingsford Smith, who completed the first air crossing of the Pacific from San Francisco to Brisbane, being born in the capital city.


Law enforcement in Australia consists of one national police jurisdiction, the Australian Federal Police, which is responsible for federal matters and community policing in one of the territories; each of the seven states and territories has its own policing organization, as well. Australia has no localized police or sheriff's agencies, as is common in the U.S. This means each state jurisdiction is responsible for everything from school-based policing to counterterrorism.

Airborne law enforcement in Australia is advanced, with all jurisdictions participating in a variety of national committees, from management groups to remotely piloted aircraft working groups addressing regulatory restrictions to counter-drone groups operating under the Australia-New Zealand Counter-Terrorism Committee. The interaction between all jurisdictions has led to open sharing of innovation and a willingness to assist when cross-border needs arise.

## NEWCOMER TO AN OLD DEPARTMENT

QPS was established in 1860, just 44 days after the state was born. The organization currently has 19,598 approved positions, consisting of 13,448 sworn police officers and 6,150 unsworn staff working across the state.

POLAIR commenced operations on Nov. 7, 2011, as part of a six-month trial funded by the Gold Coast City Council (a local government entity). Internal resistance to airborne capability initially emerged but quickly dissipated when the opponents began to recognize the benefits. Shortly thereafter, a second aircraft was announced, with the state government committing funding to keeping one aircraft on the Gold Coast and a second in Brisbane.

The operation of both aircraft was outsourced in 2012 via a wet lease arrangement with a community organization, Surf Life Saving Queensland (SLSQ). SLSQ operated multiple helicopters, providing beach safety and rescues along the famous Queensland coastline, making it a natural fit to operate the QPS aircraft.

The wet lease arrangement places contractual performance indicators on the

## POLAIR OVER TIME

| | |
|---|---|
| **November 7, 2011** | First POLAIR operational flight |
| **April 22, 2012** | Government commits to POLAIR operations |
| **August 16, 2012** | Commencement of operations with Surf Life Saving Queensland |
| **July 1, 2014** | Second helicopter commences operation |
| **September 17, 2016** | POLAIR Queensland officially established |
| **July 10, 2022** | Aircraft upgrade to EC135s |
| **July 3, 2024** | New contract for southeast Queensland (three B429s) |
| **October 1, 2024** | POLAIR Townsville operations commence |
| **October 2024** | Trials begin at Sunshine Coast and Cairns |

aircraft provider, ensuring sole-use availability of the police aircraft at all times. The aircraft provider is responsible for all maintenance and providing QPS-approved pilots. QPS provides the TFOs, a permanent staffing allocation since 2016, and conducts all operational planning and mission control activities.

## EXPANDING BORDERS

The initial POLAIR helicopters were BO105s, which served their purpose and, despite issues like a lack of air conditioning, are now affectionately remembered by several current TFOs, who worked in them for many years.

In 2022, as part of contract negotiations, SLSQ upgraded both aircraft to EC135s. The new aircraft remained in service for two years.

In 2024, POLAIR had a momentous year, introducing a new 10-year contract with SLSQ commencing in July and providing three new Bell 429 helicopters. In addition, the Queensland Government announced funding for a similar airborne public safety model to be introduced in Townsville, situated about 690 miles north of Brisbane.

A complex procurement process commenced and resulted in a Townsville helicopter business winning the 10-year service provision contract. Meridian Helicopters have now commenced operating the POLAIR aircraft in Townsville, which will see the introduction of three new Bell 429s within the next six months.

The same year, the state government provided further funding for short term contracts in Cairns (another 215 miles north of Townsville) and the Sunshine Coast (just north of Brisbane). The interim contracts are operated by Meridian in Cairns and SLSQ on the Sunshine Coast, both of which provide EC135s to the department.

This year is likely to bring further changes for POLAIR in Queensland. At the time of writing, the government was considering a funding submission as part of its 2025–26 state budget; if successful, the proposal would allow POLAIR to further expand its capabilities and increase its number of TFOs and additional support positions.

Beyond 2025, POLAIR is commencing preparations for the 2032 Olympic and Paralympic Games, which will be held in Brisbane. Ensuring the ability to provide aerial surveillance across numerous event sites around the state will be challenging, but the unit and organization have experience in similar operations, including policing the G20 Summit in Brisbane in 2014.

## THE EQUIPMENT & ITS USERS

POLAIR's staffing model has grown significantly over the past four years. When the division operated its two initial bases, it was directed by a senior sergeant (officer in charge), two team leader TFOs and five TFOs at each base. Today, the unit has 46 positions across six bases, consisting of:

- One inspector—manager of police air operations.
- One senior sergeant—officer in charge.
- Two senior sergeants—operations coordinators (one permanent, one temporary).
- Four sergeants—team leaders (senior TFOs).
- One sergeant—chief TFO and training.
- Two sergeants—remotely piloted aircraft systems.
- Twenty-eight senior constables—TFOs.
- Two senior constables—RPAS senior pilots.
- Five unsworn support positions.

POLAIR's capability provides QPS frontline officers with immediate access to intelligence and vision from onboard sensors (FLIR 380X), which is transmitted via a video downlink system. The current microwave system used for transmission is aging and limited to certain locations in the state, and POLAIR is currently developing a contemporary solution with multiple redundancies that would leverage 5G, low-earth orbit satellites and IP Mesh. POLAIR is seeking input from other jurisdictions with expertise in the areas, specifically using Starlink and IP Mesh.

POLAIR flight operations involve one civilian pilot and two TFOs, with the mission commander sitting front left and the task specialist (sensor operator) situated back left. The Civil Aviation Safety Authority is the regulatory body for aviation in Australia, operating much like the Federal Aviation Administration in the U.S., and places significant requirements on law enforcement. For example, TFOs must obtain a Certificate IV Aviation (aircrew) prior to being permitted to perform mission commander duties without supervision due to their involvement in aircraft safety processes. The requirement ensures POLAIR's training and testing system is advanced and provides its sworn officers with a clear developmental pathway during their initial years.

POLAIR enforces a minimum three-year tenure, with no maximum tenure restrictions.

## ON A MISSION

POLAIR plays a key role in keeping the Queensland community safe by providing the following critical airborne law enforcement capabilities to support the police service frontline:

- Rapidly responding to incidents in progress for various crimes, including vehicle theft, domestic and family violence, and serious assaults.
- Patrolling identified crime hot spots.
- Search and rescue (without winch capability).
- Covert operations and surveillance.
- Recon, intelligence and analysis of tactical environments.
- Patrolling roads, waterways and public transport corridors.
- Aerial support for mobile, high-risk offenders or vehicles of interest.
- Video and photographic recording of incidents.
- Disaster preparation and response.
- Supporting high profile police presence at public events.
- Contributing to critical infrastructure security.

In the 2024 calendar year, POLAIR aircraft:

- Responded to 3,208 calls for service and were the first QPS asset on scene at 1,381 jobs.
- Assisted with 174 searches, resulting in 113 missing persons being located.
- Recovered more than 448 stolen vehicles.
- Assisted with the arrest of 1,503 offenders.
- Attended 385 serious domestic and family violence incidents as a first responder, resulting in the location or containment of 265 suspects.

POLAIR is also responsible for providing governance and flight approval for police service RPAS, as well as counter-RPAS capability. In the 2024 calendar year, POLAIR authorized the deployment of 1,742 operational RPAS flights, using 123 registered aircraft and 88 pilots (RPAS piloting is a secondary function for officers) across the state.

POLAIR is one of two aviation units within QPS. The QPS Aviation Capability Group also includes Queensland Government Air (QGAir), which operates five AW139 helicopters as part of the state government's aeromedical service and nine fixed-wing aircraft (five King Air 360s, one King Air 250, and three Cessna Caravans), which provide prisoner transport, general transport for QPS and government VIPs, and other roles, such as organ retrieval and transport. Combined, the QPS Aviation Capability Group relies on a unique structure to operate a large and diverse aircraft fleet to ensure the delivery of safe and responsive frontline aviation services to the Queensland community.

POLAIR's highly trained TFOs, together with the unit's strong service provider relationships, contemporary aircraft and mission role equipment, are critical for allowing the QPS Aviation Capability Group to contribute to a safer and more resilient Queensland.

## ON THE BEAT DOWN UNDER: 2 NOTABLE INCIDENTS

In May 2017, POLAIR responded to an urgent call for assistance at a shots-fired incident in a rural location near Gatton, west of Brisbane. The incident resulted in the murder of Senior Constable Brett Forte by gunfire. While responding to the incident, both POLAIR aircraft and numerous TFOs and pilots were subject to direct and repeated automatic weapon fire over an extended period. Despite the assault, the POLAIR crews maintained a continual presence over the incident to provide police commanders and tactical units with situational awareness and a vital video downlink of the offender's movements. The airborne support allowed QPS tactical officers to move toward the offender's location and achieve a resolution. POLAIR's bravery was praised by numerous experts, including the national defense department, which highlighted the aircrew's ability to remain within range of the firearm with no ballistic protection and ensure the safety of officers on the ground.

In December 2022, POLAIR responded to the shooting murder of two police officers and a civilian near Wieambilla, a rural town about 200 miles west of Brisbane. Upon establishing itself at the incident location, POLAIR commenced a search for the offenders, whose whereabouts were unknown and posed an extreme risk of ambush. POLAIR located three offenders and commenced providing critical situational awareness of their locations, movements, access to firearms and tactical referencing to assist QPS team members. During the incident, POLAIR came under direct weapons fire from offenders for the second time in its history. Due to the incident location being outside of the normal POLAIR operational area, video downlink was not possible, so TFOs provided succinct verbal directions to commanders and emergency response team operators. With the situational awareness provided by POLAIR, the ground team conducted tactical operations to resolve the incident without any further police casualties. To hear audio from the POLAIR helicopter during the incident, visit www.youtube.com/watch?v=UbGZQxNJSQk.


eurocopter
EC135
POLITIE

# A DUTCH DECADE:

## CHECKING IN ON NETHERLANDS AIR SUPPORT

**An *Air Beat* Staff Report**

***Air Beat last profiled the Netherlands National Police Air Support Unit in 2015. Following is a look at what has changed—and what hasn't—in the 10 years since.***

The Netherlands National Police Air Support Unit has provided an invaluable airborne service to the Dutch people since its inception in 1953. A division of the Infrastructure Service within the national police department, the unit has operated countless fixed-wing and rotorcraft models during its nearly 75-year existence.

By 2015, however, the unit had settled into a comfortable groove, having eliminated its airplane fleet and focusing strictly on helicopters for airborne public safety operations. At the time, the unit had also vastly upgraded its technology, ensuring all its aircraft were outfitted with modern law enforcement equipment and fully IFR capable—and that all its pilots were IFR and NVG qualified. Training in full-motion flight simulators was a biannual event, and the department's national dispatch system had been upgraded to make the team optimally flexible.

The unit's focus on rotorcraft-based airborne support and technology has remained and grown over the past 10 years. The airborne public safety division has added a new AW139 helicopter, a fleet of uncrewed aircraft systems and the latest in airborne imaging and spotlight equipment.

### THE LATEST & GREATEST

The Netherlands National Police Air Support Unit today includes a fleet of nine helicopters: six EC135s and three AW139s. Covering a vast expanse of varied landscape on a mission to protect and serve, the service is not solely an airborne patrol outfit. It actively upholds aviation law by ensuring compliance with regulations and guaranteeing a high standard of safety and efficacy on every mission—from search and rescue tactics to safeguarding national borders through aerial surveillance.

All aircrew for the Netherlands Police Air Support Unit are sworn police officers. In addition to being trained, equipped and proficient in NVG and IFR operations, the organization is certified in maintenance per EASA regulations (CAMO + Part 145) and type-rated training (ATO). The unit's deployment area covers 13,086 square miles over land and another 22,000 square miles over the North Sea. Its main operations base is at Amsterdam Airport in Schiphol; the unit has


two satellite stations at Rotterdam Airport and Volkel, a military base.

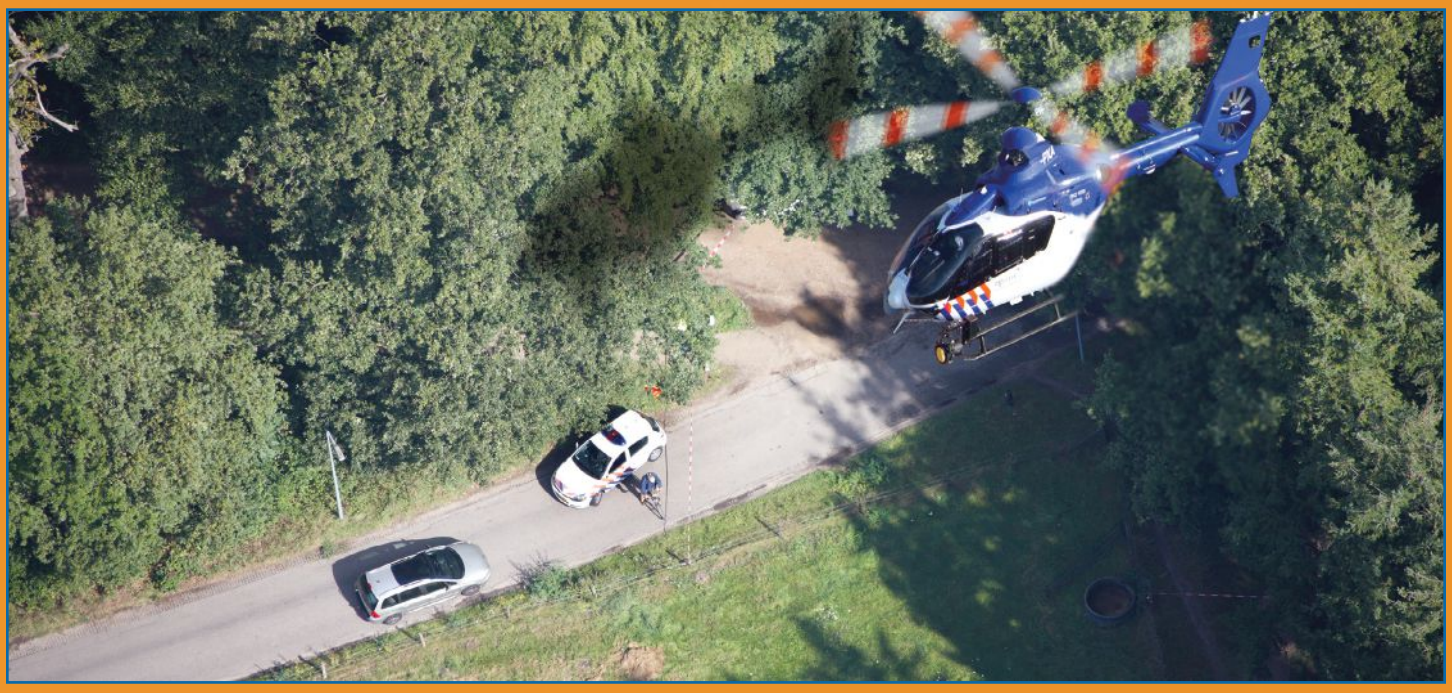
The Air Support Unit's aircraft and crewmembers are prepared and trained to handle both inadvertent IMC conditions and planned IMC ferry flights to staging areas with better conditions. Simulator training is critical to achieving the proficiency, with biannual training equating to a total of five or six days per year, depending on the helicopter type. Additional proficiency training is conducted in the air.

The unit's TFOs are critical to accomplishing its wide-ranging mission profile. Prior to flying, the flight officers must demonstrate that they are adept equipment operators, strategic navigators and situational awareness experts. The officers must facilitate on-scene management and process evidentiary material, as well—all within an environment that demands skill and the ability to react to ever-changing conditions.

Equally crucial to the unit's operations are cutting-edge technologies like GPS, radar, advanced navigation instruments, electro-optical and electro-mechanical systems, high-intensity searchlights, and mission mapping and video management software. Trakka Systems, a vision technology firm specializing in law enforcement and government agency support, began working with the Air Support Unit in 2023, providing it with state-of-the-art searchlights.

Midlife updates and equipment upgrades to the Netherlands Air Support fleet have included the installation of five TrakkaBeam TLX high-intensity searchlights on the EC135 aircraft and two TrakkaBeam TLX units on the AW139s. The additions have enhanced the helicopters' nighttime capabilities, enabling TFOs to execute crucial operations more effectively.

The compact, lightweight TrakkaBeam searchlights have been ideal for integration into the Netherlands National Police Air

Support Unit's multiple helicopter platforms. The lights' multi-spectral and Covert-IR filters minimize visible light output, enabling clandestine operations under NVGs. The 22,000 lumens of white light produced by the lights act as a beacon during public emergencies and search and rescue operations.

From illuminating disaster zones in search and rescue missions to piercing the darkness for critical nighttime surveillance, the Netherlands Air Support Unit is now more efficient than ever during nighttime operations; as night falls on the country, the unit becomes increasingly efficient, safe and secure.

## GOING THROUGH CHANGES

Over the last 72 years, the Netherlands National Police Air Support Unit has dialed in its aviation detail, but the department still seeks continuous improvement. With its steadily growing rotorcraft-only fleet, the department is planning a hangar expansion at its location on the Volkel Air Base. Schipol, though, still acts as the department's headquarters, housing its technical services division and administrative arm.

In the last 10 years, the Air Support Unit's EC135 fleet has been upgraded on a rolling basis, making its aircrews increasingly efficient during surveillance flights, whether they are monitoring traffic, offering crime scene overwatch, or conducting marijuana interdiction or environmental recognizance. The helicopters also conduct frequent search and rescue missions. While the EC135 crews are two-person (one pilot and one TFO), the AW139s operate with two pilots and one TFO.

Since 2015, the unit has added uncrewed aircraft to its operational mix. The drones have taken the lead on numerous operations, including traffic management and fireground documentation. The Netherlands National Police Air Support Unit, however, has not given up on its crewed support of firefighting operations; today, the unit is considering the addition of water-drop capabilities on its AW139s.

Risk management has remained a critical component of the Netherlands Police Air Support Unit's success over the past 10 years and beyond (see sidebar, "Some Things Never Change"). The unit must be able to quickly transition from providing air support to urban police units on the ground to completing coastal patrol flights, participating in search missions, and delivering the national SWAT team to high-risk incidents. The nation's marine climate often presents treacherous weather conditions, causing poor visibility or low clouds.

Notably, the airborne public safety unit was heavily involved in responding to riots during the COVID-19 related pandemic, a testament to its ability to transition its role

from mission to mission. With the pressure of completing lifesaving missions constantly in the background, the unit works to support its partners to the best of its abilities—and on the edge of its limits. However, the unit remains committed to remaining within the bounds of safe operations, a delicate balance that speaks to sensibilities central to the Dutch way of life.

Aircraft capabilities, aircrew qualifications and a fully integrated dispatch team are all critical parts of the Netherlands Police Air Support Unit's ability to remain safe and available. But the most important pieces of the puzzle are the unit's commitment to continuous improvement, quality of preparation, and a safe and just culture.

***Editor's Note:*** *Some content for this article was contributed by Harald Brink, National Expertise and Operations, Wouter Kaihatu, Flight Manager, and Edwin Gross, Deputy Chief Pilot, Netherlands National Police Air Support Unit; and Corey Stafford, Marketing Creative Director, Trakka Systems.*

## SOME THINGS NEVER CHANGE

The Netherlands Police Air Support Unit has maintained a safety-first mindset over more than seven decades. In addition to its written safety policy, the unit relies on a culture that allows it to safely manage changes in its day-to-day activities. For example, management might set policies about rules and weather limitations, but pilots, TFOs, dispatchers and other specialists are also properly incentivized to follow the rules.

A critical part of the organization's safety culture relies on collecting data about changing conditions. With ever-shifting regulations, the Netherlands Police Air Support Unit relies on a digital system for flight preparation and monitoring. Integration of systems, such as NOTAMs, METARs, TAFs, aircraft-tracking information and internal communications, has proven critical, and flight crews can access the information easily during both preflight and in-flight planning.

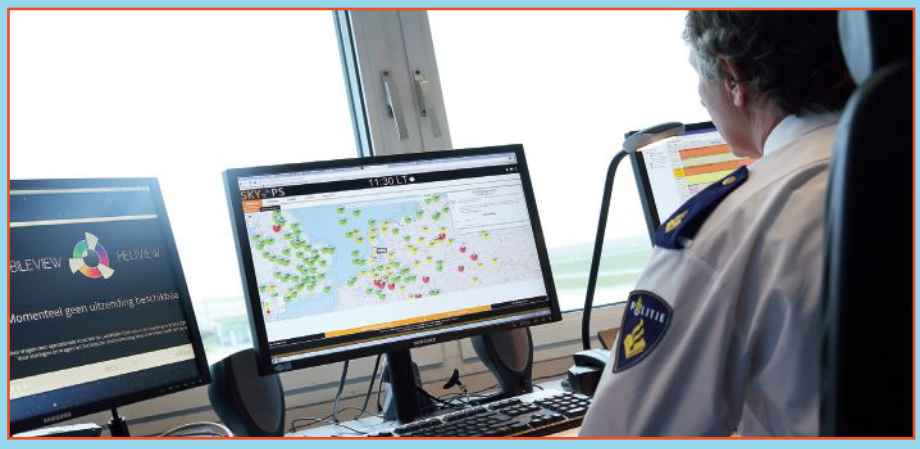
The Air Support Unit maintains strict control over the quality of the data it uses. Because decisions aircrews make before and during flight determine overall safety levels and outcomes, the unit decided to end its policy of making such decisions based on personal experience and comfort and create an integrated, systematic flight risk assessment tool about 15 years ago.

Today, the Netherlands Police Air Support Unit's flight risk assessments are firmly based on standards and uniform data analysis. The digital system allows the unit to update its assessments in-flight when conditions change using a bespoke flight management system integrating third-party data resources and providing single-point access for pre-flight briefing, autonomous flight monitoring, real-time flight risk assessment and post-flight review.

The team worked with SkyOps in 2011 to build the system that it still operates today. The application is embedded in the organization's procedures and workflow and provides the unit with the real-time information it needs to streamline flight operations. The system offers crews an automated pre-flight briefing, gives dispatchers the ability to update flight risk information, and provides a visual summary of all upcoming or ongoing flights with indications of aircraft status and individual flight risk levels. All flights are autonomously updated via onboard satellite tracking.

The modern Netherlands Police Air Support Unit can continuously follow its aircraft during any operation, and outcomes are recorded so the unit can later evaluate and analyze missions. The information is delivered in a flight-specific report with more fidelity than was ever possible using analog systems subject to human error.

—Wouter Kaihatu, *Flight Manager, and Edwin Gross, Deputy Chief Pilot, Netherlands National Police Air Support Unit*



# SAFETY THROUGH STANDARDS

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**www.apsaccreditation.org**

The Airborne Public Safety Accreditation Commission (APSAC), in conjunction with the Airborne Public Safety Association, has developed standards for accreditation of public safety aviation operations including: Standards for Law Enforcement Aviation Units; Standards for Aerial Firefighting Operations; Airborne Search and Rescue Standards; and Standards for Public Safety Small Remotely Piloted Aircraft Systems (RPAS).

The intent of the Accreditation Program is to encourage safe, efficient and accident free aviation operations in support of public safety aviation missions. The Accreditation Program is designed to objectively evaluate and certify a unit's overall compliance with the Standards.

### APSAC's Mission

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# FLYING WITHOUT LEAVING THE GROUND:

## Simulator Training in International Public Safety Aviation

**By Terry Palmer,** *Senior Consultant Aviation Strategy, Safety and Training, Pilot Landing LLC*

In a rapidly evolving global security landscape, the role of rotary-wing aircraft in public safety is expanding beyond traditional law enforcement patrols to encompass complex, high-stakes missions like surveillance, search and rescue, and tactical deployments. As the operational tempo intensifies and safety standards become more rigorous, aviation units worldwide are turning to one of the most transformative training tools available: flight simulation.

Simulation has become the standard in a global shift. Across Europe, the Middle East, Australia and the Americas, the demand for high-fidelity simulator training in public service aviation is surging. This shift is driven by several factors—budget constraints, increased mission complexity, and the need to improve safety margins without increasing risk. While the technology was once a luxury reserved for military and commercial airline pilots, it is now central to training programs for rotorcraft operations around the globe.

At the forefront of this transition are companies like Entrol, a Spain-based simulator manufacturer, and Coptersafety, an independent helicopter training center in Finland, along with many others around the globe. This collection of worldwide, modern simulation firms and training centers represent the cutting edge of how technology and training are being fused to produce pilots and mission crew that are better prepared, more adaptive and safer than ever before.

### MAXIMUM REALISM

Entrol's simulation systems are designed with modular flexibility to accommodate the diverse mission profiles law enforcement pilots undertake. For missions involving surveillance, Entrol has developed a fully integrated forward looking infrared system that replicates the real-world dynamics of camera operation. The technology allows pilots and tactical flight officers to train in the same synthetic environment, practicing coordination, communication and decision-making—skills that are mission-critical during real-world operations.

"With our simulators, mission crews can work together using mixed reality goggles and [virtual reality] systems, simulating everything from downwash effects to specific sea states for maritime missions," an Entrol spokesperson said. "Whether the crew is tracking a vehicle through a cityscape or conducting hoist operations over rough seas, they can experience the entire mission in a fully immersive setting."

One of Entrol's recent innovations includes LED-based visual systems that improve the user's vertical field of view—a significant advancement for training under night vision goggle conditions or during simulated urban flight, where vertical situational awareness is vital.

From the instructor's seat, the advantages of simulation are clear. Lorenzo Napoli, an AW139 flight instructor and examiner with Coptersafety, emphasizes that simulator training offers a safe, repeatable environment for pilots to develop confidence during emergency scenarios.

"Handling an emergency is based on your experience and understanding of yourself," Napoli said. "In the simulator, you can build that self-awareness and muscle memory. You can learn what to do if something fails when you're 50 feet over water or during marginal visibility—without putting lives at risk."

## CUSTOM MAKES CAPABLE

Simulator-based scenarios allow law enforcement, firefighting and SAR pilots all over the world to rehearse high-risk missions under variable conditions—something impossible to do safely in live flights. Weather, terrain, night operations and equipment failures can all be programmed, customized and repeated as needed. The training strategy not only boosts skill acquisition, but also often leads to improved unit-wide standard operating procedures.

One of the advantages of simulation and training firms like Entrol and Coptersafety is the ability to tailor the sim environment to match the user's operational theater. Whether it's urban environments with unique building layouts or rugged maritime zones, simulator scenarios can be modeled with satellite accuracy.

"At Coptersafety, we have an in-house modeling team that replicates real-world environments, including local police bases, hospitals or terrain with specific obstacles," a spokesperson said. "It allows for more meaningful and context-rich training experiences."

Training customization is especially important as more law enforcement and civil

authorities are taking over SAR responsibilities from military operators, particularly in Europe, the Middle East and Africa. "We're also seeing commercial operators expand into SAR roles for clients like oil and gas companies," Coptersafety CEO Hannu Marjoniemi said. "That shift requires new capabilities and increases the need for tailored, scenario-specific training."

## OPTIONS ABOUND

Beyond Entrol and Coptersafety, other simulator manufacturers and training centers around the globe are making a significant impact on police and public safety aviation. Reiser Simulation and Training, based in Germany, is another provider of full-flight simulators and flight training devices for rotary-wing platforms. Known for its high-precision motion systems and fidelity to aircraft behavior, Reiser supports both civilian and military operators, including those conducting law enforcement and SAR missions. The company's simulators are EASA-certified and often tailored to specific mission needs, integrating realistic cockpit environments, night vision compatibility and advanced instructor operating stations. Reiser's work with original equipment manufacturers and operators across Europe has helped further elevate the standard of simulation-based training for multi-role helicopter crews.

Another innovative player in the space is Loft Dynamics, based in Switzerland. Specializing in compact, immersive virtual reality-based training devices, Loft Dynamics offers EASA-qualified simulators with motion systems and realistic cockpit replicas. Their solutions are particularly well-suited for urban law enforcement or EMS operators who need accessible, high-quality simulation without the space and infrastructure demands of traditional full-flight simulators. With a focus on safety, cost-efficiency and sustainability, LOFT Dynamics offers training technology that is both agile and globally scalable.

In Canada, Topflight Elite Training & Charter specializes in mountain flight, night vision goggle, type recurrent, type initial, advanced, and specialized police and TFO training. In addition to its H125, EC120 and Bell 207 helicopters, Topflight offers training in an AS350 flight simulator. Topflight has been working with military, police, commercial and private operators since 1951—simulation training is the firm's latest innovation.

Ultimately, the value of high-level simulation extends beyond skills development—it builds organizational capability. By integrating NVG, FLIR, crew coordination and mission planning into a single synthetic training environment, operators can prepare for their entire mission lifecycle without ever leaving the ground.

As technology continues to improve, the simulators of today are not only replacing traditional flight hours but also reshaping the foundation of aviation training.

From the streets of London to the coasts of the Middle East and from utility corridors in the Nordic regions to megacities in Asia, helicopter pilots engaged in public service are benefitting from a new era of immersive, efficient and realistic training. As the global demand for aerial policing and rescue services grows, so too does the critical importance of simulator-based training that is both safe and scalable.

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# FOUR CORNERS: PUBLIC SAFE

**Airborne public safety is an international affair, with operators taking to the skies in support of ground officers in all four corners of the globe. In Europe, national and state agencies span the continent. In Africa, the Middle East and Asia, national police agencies dominate the landscape. Australia and Canada have their own unique structure of national and regional agencies. And while some of the airborne units around the world are well known to operators in the U.S., others are relatively quiet in the global public safety aviation community. Following is a look at a few unique international operators.**

## BY THE NUMBERS

**4,000** Helicopters flying public safety missions worldwide

**33** Countries with active airborne public safety units according to APSA and publicly available data

**16** Countries represented in APSA membership


### GEORGE TOWN, CAYMAN ISLANDS

The Royal Cayman Island Police Service Air Operations Unit was formed in 2010, when the department took delivery of an EC135 T1 helicopter. Primarily performing border security and police operations around the three-island nation in the western Caribbean Sea, the helicopter has also been used for air ambulance missions. The unit consists of an executive officer, a sergeant, three police constables, one auxiliary constable, one chief pilot and one line pilot.

# TY AVIATION AROUND THE WORLD


## AGLANTZIA, CYPRUS

The Cyprus Police Aviation Unit, established in 2008, patrols a 3,500-square-mile island—a land area roughly 50 percent of the size of New Jersey. The unit flies multiple helicopters in missions like search and rescue, surveillance, patient transport, firefighting and VIP transport.

## HONG KONG

While technically a paramilitary operation, the Hong Kong Government Flying Service performs the airborne police, SAR, air ambulance and firefighting services necessary to secure the Hong Kong Special Administrative Region. The unit, which operates a diverse fleet of rotor- and fixed-wing aircraft, was established in 1993, before Hong Kong became part of the People's Republic of China in 1997.


## CAPE TOWN, SOUTH AFRICA

The South African Police Service Airwing purchased a new H125 helicopter in 2022 to enhance its crimefighting efforts. The helicopter joined a fleet operating across the Republic of South Africa, the continent's fourth largest nation by population. The Airwing operates both airplanes and helicopters and performs routine patrols, SAR operations and tactical missions.

# VIRTUAL REALITY CHECK: The Latest on Full-Flight Simulators & VR

**By Nick Mayhew,** *Member, FAA Aviation Rulemaking Advisory Committee-Airman Certification Standards Working Group, Advisor, U.S. Helicopter Safety Team Steering Committee*

***Virtual reality has increasingly grabbed headlines in the training and simulation space. But what is the true current state of the technology?***

As the rotorcraft industry braces for a new era shaped by electric vertical take-off and landing (eVTOL) aircraft and urban air mobility, the way we train vertical aviation pilots is undergoing a dramatic transformation. Traditionally dominated by massive, multimillion-dollar Level D flight simulators, pilot training is now seeing a wave of innovation through immersive virtual reality (VR) solutions.

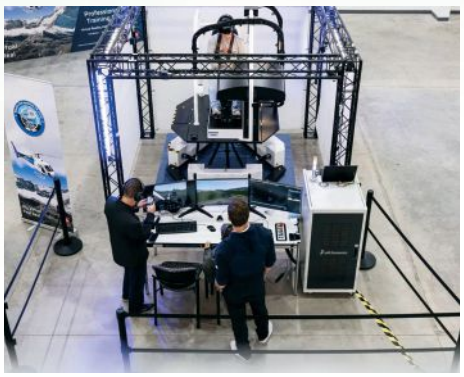
These developments, in both augmented and mixed reality, promise to make vertical aviation training more accessible, cost-effective and scalable—qualities that will be vital in supporting the rapidly expanding needs of the aviation industry.

## Level D Sims: The Gold Standard

For decades, Level D full-flight simulators (FFS) have set the benchmark for pilot training. Level D simulators replicate the cockpit environment with extraordinary fidelity, offering a high degree of realism in aircraft response, weather conditions and emergency scenarios.

A Level D certification, as defined by aviation regulators like the Federal Aviation Administration and European Union Aviation Safety Agency, means that a pilot can receive type rating credits without ever stepping into a real aircraft.

Level D simulators are incredibly sophisticated and expensive, often costing between $10 million and $20 million each. They require dedicated facilities with reinforced concrete floors, extensive maintenance and skilled personnel to operate. While their realism is unmatched, their high operational costs and limited geographic availability create restricted access, especially for smaller operators and those in emerging markets.



According to CAE, a leading manufacturer of Level D simulators, demand for pilots will exceed 60,000 for helicopters alone by 2030. The number is likely to balloon as eVTOL vehicles enter commercial service. With this surge, traditional simulators simply cannot scale quickly or cost-effectively enough to meet training demands.

## Enter Virtual Reality: A Disruptive Force

Recent advances in VR technology are challenging the status quo. Today's high-resolution headsets, motion tracking systems and spatial audio provide a level of immersion that was unthinkable just a decade ago. Leading VR companies are creating virtual flight simulation systems that combine certified flight physics engines with immersive 3-D environments. In fact, one firm's Robinson R22 and Airbus H125 simulators are the first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VR-based flight training devices to be certified by EASA for pilot licensing.

Unlike traditional Level D simulators, VR-based systems are compact, portable and affordable, often costing a fraction of an FFS. They are ideal for decentralized training centers, remote locations and even in-office environments for recurrent training. The use of VR also allows for repeatable training in high-risk scenarios without endangering personnel or equipment—and without taking up valuable simulator or aircraft hours.

The potential for enhanced learning outcomes is also significant. Studies from the University of Maryland and other research institutions suggest that VR-based learning can improve information retention and engagement. When applied to aviation training, this could mean faster skill acquisition, better emergency preparedness and improved decision-making under stress.

## Comparing Apples & Oranges?

It would be unfair to say that VR simulators can entirely replace Level D systems—at least at this time. Level D simulators still offer unmatched fidelity in full-motion response and aircraft system simulation. They remain crucial for initial type ratings, complex emergency procedures and high-stakes assessments. But the g-forces, vestibular cues and tactile feedback of FFSs are now being challenged by the latest technology in VR systems. In the coming years, they may come to equal their Level D simulation counterparts.

VR is already carving out a valuable niche in the early and intermediate phases of training. Pilot familiarization, cockpit procedures, visual flight rules, instrument training and basic emergency drills are all well within the capabilities of current-generation VR devices.

Modern VR goggles that run above 90Hz also offer the advantage of a wider field of view than Level D visual systems. Moreover, VR training tools can be updated and customized more rapidly than FFS devices, allowing for quick adaptation to new aircraft models or regulatory requirements.

One promising hybrid approach is integrating VR with physical cockpit mockups or partial motion platforms. This allows for more tactile feedback while maintaining the cost and spatial benefits of VR. Companies leading the way have begun to deploy these hybrid solutions, bridging the gap between high-fidelity simulation and scalable training tools.

## Regulatory Pathways & Industry Adoption

Regulatory bodies are beginning to embrace VR-based training, a sign that the technology is maturing. EASA's certification of the R22 and H125 simulators marked a significant milestone, demonstrating that immersive VR training can meet stringent regulatory standards. FAA is also evaluating several VR training devices under its Advanced Qualification Program (AQP), which provides more flexibility in training curriculum design.

Airlines, military operators and eVTOL developers are also taking note. Vertical Aerospace and Joby Aviation, two leading eVTOL manufacturers, have both expressed interest in simulation-heavy pilot training programs that incorporate immersive technologies. The U.S. Air Force is also testing VR-based pilot training for rotorcraft and fixed-wing platforms under initiatives like Pilot Training Next.

As eVTOL operations scale and the demand for vertical lift pilots grows exponentially, training solutions must evolve accordingly. A decentralized, modular training ecosystem, leveraging VR for accessibility and traditional simulators for certification, may become the new norm.

Ultimately, the future of vertical aviation training lies not in choosing between Level D simulators and VR, but in integrating the best of both and allocating training credits where it makes the most sense. As costs fall and fidelity rises, VR may democratize access to high quality flight training, empowering a new generation of pilots to take to the skies—real or simulated.

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## SEE IT YOURSELF

**To learn more about the the burgeoning VR industry, see the following references for the sources behind the facts in this article.**


CAE's 2023 Aviation Talent Forecast: www.cae.com/aviation-talent-forecast-2023/en/pilot.html

"EASA approves the first Virtual Reality (VR) based Flight Simulation Training Device": www.easa.europa.eu/en/newsroom-and-events/press-releases/easa-approves-first-virtual-reality-vr-based-flight-simulation

"Virtual memory palaces: Immersion aids recall": https://obj.umiacs.umd.edu/virtual_reality_study/10.1007-s10055-018-0346-3.pdf

FAA Advanced Qualification Program (AQP): https://www.faa.gov/training_testing/training/aqp

VRM Switzerland: https://vrm-switzerland.ch/

Varjo & Loft Dynamics product documentation: www.varjo.com and www.loftdynamics.com

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APSA conducts Safety Stand-Tos on-request in members' own facilities. Multiple agencies have already scheduled safety events for 2025. To schedule your own Safety Stand-To, please contact APSA.

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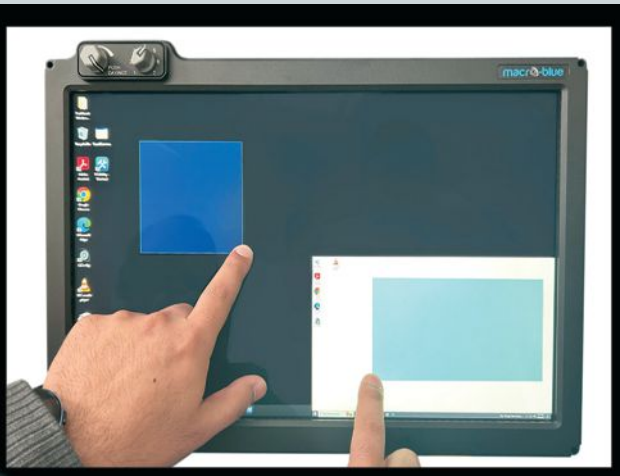
## MONTHLY ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, UAS operators, SAR personnel, natural resources aviators and, new in 2025, unit managers. Attendees can join the events from their own computer, mobile device or phone. The meetings are open to any APSA member. For more information or to be added to the mailing list, email safety@publicsafetyaviation.org.

## RESCUE SUMMIT

The APSA Rescue Summit is ideal for anyone who conducts lifesaving missions in vertical takeoff and landing aircraft. The summit includes presentations on a variety of topics critical to helicopter rescue technicians, including hoisting, SAR safety, and critical incident/accident reviews.

**Please visit the APSA website at PublicSafetyAviation.org/events for more dates, locations and details.**




# MACRO-BLUE: Elevating Mission-Critical Vision in the Skies

**By Richard Rusell,** *Program Coordinator, Macro-Blue*

When lives are on the line, visibility is everything. Whether it's a high-speed pursuit, search and rescue mission, or coordinated response to a natural disaster, aircrews must rely on precision technology to make rapid, informed decisions. At the forefront of this airborne capability is Macro-Blue, a California-based leader in advanced tactical display systems designed specifically for law enforcement, public safety and military aviation.

Founded with a mission to provide durable, pilot-friendly displays for some of the world's most demanding airborne missions, Macro-Blue has steadily earned its place as a trusted partner in the cockpits of police helicopters and surveillance aircraft nationwide. The company's commitment is simple: deliver technology that gives crews clearer vision, faster awareness and smarter control—no matter the mission profile. And the company's latest innovation, Multi-Host Technology, is a natural evolution of its commitment to public safety aviation and beyond.

## Engineering Built for Airborne Demands

Unlike consumer-grade or general aviation displays, Macro-Blue displays are purpose built to thrive in the unique operational environment of law enforcement and military rotorcraft. From high-vibration conditions to wide-ranging temperatures and rapid altitude changes, Macro-Blue units are engineered to perform with precision and reliability where other systems fail.

Each display is designed with sunlight-readable brightness (up to 1,500+ nits), high contrast and rapid response times to ensure clarity even in the most challenging conditions, such as direct sun glare, darkness or transitions from one to the other. NVIS compatibility, touchscreen functionality and a range of screen sizes from 7 inches to 22 inches make Macro-Blue displays adaptable to virtually any mission configuration.

## Patented Multi-Host Technology

At the core of the company's latest innovations is Macro-Blue's Multi-Host Technology, protected under two U.S. patents. The breakthrough allows users to connect two independent video or data sources to a single touchscreen display. A tactical flight officer can send touch data from a camera feed and mission map or toggle between a downlink video and mission computer—all with minimal latency and no need for external video switching hardware.


Unlike systems requiring manual input switching or external controllers, Macro-Blue's technology simplifies workflow through seamless user interfaces powered by its proprietary dual-knob controller or button-driven modules. This allows aircrews to retain their focus while adjusting views, zooming or selecting layouts on the fly.

## Designed With Officers in Mind

Macro-Blue's partnerships with airborne law enforcement units across the country directly shape the company's R&D efforts. By listening to TFOs and pilots in the field, Macro-Blue develops hardware and firmware solutions that improve day-to-day performance.

Recent enhancements include programmable touchscreen zones for quick-access functions, video layout modes to preserve native aspect ratios, and stowable mounting designs that allow displays to flip in virtually any direction, ideal for use in tight cabins or shared aircraft. And because every department has unique needs, Macro-Blue offers full customization support, from connector types to video standards (HD-SDI, composite, DVI-I, etc.) and mounting solutions.

Another Macro-Blue innovation involves the company's Leader/Follower application, designed to enhance operational efficiency when multiple aircraft or vehicles work together. This feature allows one operator to configure a primary display layout—such as camera feeds, mapping overlays or mission data—and seamlessly broadcast the configuration to multiple connected displays. By synchronizing views across different workstations, TFOs, pilots and mission commanders maintain a unified operational picture, reducing confusion and maximizing mission effectiveness.

Whether coordinating a multi-aircraft pursuit, wildfire suppression or tactical insertion, Leader/Follower ensures the entire team stays aligned in real time.

## Mission-Proven Performance

Macro-Blue displays are currently in operation with dozens of agencies, including the California Highway Patrol, Texas Department of Public Safety and Kansas State Highway Patrol, among others. The company's products have been deployed in a wide range of aircraft platforms and specialized law enforcement helicopters.

One of the company's standout success stories involves support for firefighting operations in the Western U.S., where TFOs use specialized Macro-Blue displays to manage water suppression, infrared feeds and live maps—all in aircraft exposed to smoke, heat and harsh lighting transitions. The feedback has been clear: Better visibility leads to faster decision-making and safer outcomes for everyone involved.

## Ready for What's Next

As law enforcement aviation enters a new era of unmanned systems, AI-based analytics and real-time data fusion, Macro-Blue continues to evolve. The company's roadmap includes integration-ready interfaces for smart avionics systems, software-defined display logic and mission recording enhancements. Macro-Blue is also preparing for certifications tied to military and FAA requirements (DO-178C, DO-254) for missions requiring airworthiness qualifications.

Behind every Macro-Blue product is a team of dedicated engineers, program managers and support personnel who understand the realities of airborne operations. The company doesn't just make hardware, it solves mission problems.

Whether outfitting a single aircraft or modernizing a fleet, Macro-Blue stands ready to support law enforcement and public safety aviators with the rugged, responsive and innovative display systems they need to succeed.


# DAVENPORT AVIATION: Your Aircraft & Equipment Partner

**By Chris Arnold,** *Director of Government Sales, Davenport Aviation*

Davenport Aviation is the trusted partner to government agencies across the country, delivering reliable, cost-effective aerospace solutions with unmatched flexibility. Based in Columbus, OH, and founded in 2009, Davenport is both an SBA-certified Woman-Owned Small Business (WOSB) and certified HUBZone program, as well as being proudly certified to AS9120B and ISO 9001:2015 standards. The company's mission is to support the readiness and operational success of its government partners through rapid, mission-driven solutions in aviation.

Davenport specializes in providing mission-ready aircraft, aircraft materials, mission equipment packages, search and navigation systems, training solutions, in-service support and MRO capabilities, along with full program management services.

From initial procurement through long-term sustainment, Davenport works side-by-side with its customers to deliver innovative solutions that meet their evolving needs.

What sets Davenport apart is the company's unique ability to offer core products through both General Services Administration (GSA) schedules and direct contractual relationships. This dual pathway ensures maximum procurement flexibility for Davenport's customers at the federal, state and local levels. The company is proud to hold a GSA Multi-Award Schedule contract and is continually expanding its offerings to stay ahead of the industry's demands.

As an SBA-certified WOSB and HUBZone contractor, Davenport provides government buyers with a streamlined and compliant path to procurement. The company's team personally manages each program with attention to detail and agility, allowing Davenport to respond quickly and effectively to complex challenges. The company continuously monitors the marketplace to ensure it is offering not only proven solutions, but also the most current and cost-effective technologies available.

Whether it's sourcing aircraft materials on tight timelines, delivering specialized training packages or overseeing end-to-end


program execution, Davenport has earned a reputation as the go-to expert in the industry. The company's customers rely on Davenport for speed, quality, and an unwavering commitment to mission success.

Davenport is the trusted partner for both Airbus Helicopters and the Robinson Helicopter Company for providing new-build mission-equipped helicopters and support to airborne public safety partners. With its OEM partners, Davenport offers agencies of all sizes and mission needs an aircraft type that fits their requirements. From the world's best-selling helicopter in history, the R44, to the highly capable and public safety market-leading H125, to Davenport's recent sale of the first ever H160 to be used in U.S. law enforcement, the company offers a wide range of rotary wing aviation capability to the North American airborne public safety market.

Davenport also provides fixed-wing and unmanned aircraft systems solutions, mission equipment, rescue systems, mission system upgrades, and in-service support and services. Through its network of aircraft OEMs, mission system providers, completion and repair centers, and internal capabilities, Davenport provides solutions for any aviation need your department may have.

Most recently, Davenport has invested in the development of an airborne counter-UAS system (ACUS). As drone-related safety concerns for crewed aircraft continue to grow, Davenport's public safety partners require the capability to counter the potentially disastrous effects of a mishap. The company has now integrated and tested a highly effective RF-detect system that provides crew situational awareness, improves flight safety, and can send position data of both UAS and pilot/operators to ground personnel for interdiction. Davenport's ACUS can be scaled to provide different capabilities ranging from detect only, to mitigation, to UAS defeat, depending on agency authority and legal authorizations. The system was flown on a Los Angeles (CA) Police Department H125 as part of its test and demonstration phase, and Davenport is in final contract negotiations with a state-level law enforcement agency to become the U.S. launch customer for this capability.

Davenport is also excited about its new relationship with the Robinson Helicopter Company. The value of airborne capability in the support of public safety continues to prove its worth and investment, with dividends. By teaming with Robinson to bring its product line to Davenport's capability set, the company believes it can better serve and support a broader range of public safety organizations than ever before. Agencies across North America have capability needs that these aircraft fill. Whether it's creating a new program, modernizing an aging fleet or adding additional capability, Davenport looks forward to working with new and old customers alike in bringing this capability to fruition.

Building on its initial success supporting U.S. Customs and Border Protection aviation needs with the H125, Davenport has grown into the market leader for providing mission ready helicopters to government partners. The company's list of customers range across all levels of government, including CBP, NASA, the Texas Department of Public Safety, the Metropolitan Police Department in Washington, D.C., the Albuquerque (NM) Police Department, the New York State Patrol and multiple other state/local agencies, as well as Department of Defense contracts.

Davenport Aviation doesn't just deliver products—the company delivers confidence. Whatever your aviation needs, Davenport can support them.

# INTERNATIONAL AFFAIR:

## PREVIEWING THE FIRST APSCON EUROPE CONFERENCE

APSCON EUROPE 2025
SEPTEMBER 8-10 VALENCIA, SPAIN

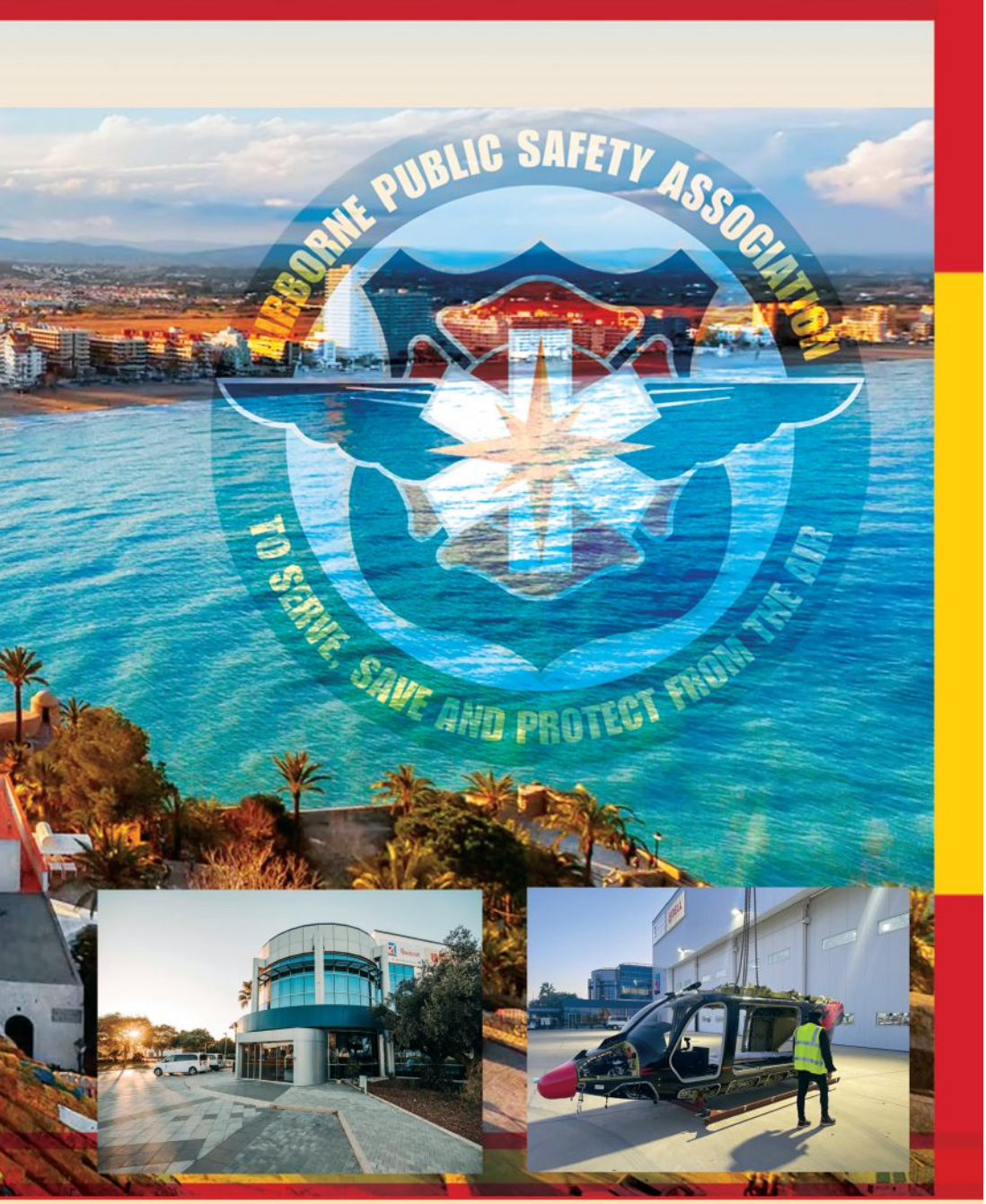

The Airborne Public Safety Association will hold its first-ever international conference in Valencia, Spain, from Sept. 8 to 10. The move comes after longtime planning to bring the association's industry-leading training and education conference structure to Europe.

The 2025 APSCON Europe conference and exhibition, to be held at the Bell Training Academy in Valencia, will be modeled after APSA's safety seminars in North America. The event will feature two and a half days of public safety air support unit training, a mini tradeshow of six-foot tabletop exhibits, and ample networking opportunities. The educational program will include sessions on a wide variety of airborne public safety topics, including hoisting and human external cargo, intelligence gathering, operations and tactics, crew resource management, health and wellness, safety systems, and remotely piloted aircraft systems.

The event, sponsored by Bell, is expected to draw attendees from all over Europe, where association members have long asked for APSA's training to be available closer to home. Europe is home to an experienced and growing public safety aviation community, and APSA continues to expand its reach across the continent.

Bell's European training academy, located at Aeropuerto de Valencia, offers training and support to customers around the world, including more than 200 hours of simulator dry leasing annually with its Level D full-flight simulator. The training facility and aircraft hangar offer a first-class location for the first ever APSA conference in Europe.

Valencia, Spain's third largest city and the 24th most populous municipality in the European Union, is the capital of the province that goes by the same name. Located on the banks of the Turia River and the Mediterranean Sea, the city offers palm tree-lined beaches, an active nightlife, worldclass museums, many local festivals and traditions, and an active sporting culture.




The 2025 APSCON Europe agenda is currently being finalized by APSA Training Program Manager Dan Knight. However, it is confirmed that day 1 (Monday, Sept. 8) of the educational agenda will feature a full day of industry-leading tactical training conducted by Clay Lacey. Attendees can expect exceptional training and networking opportunities throughout the event and into the evenings. Exhibitor set up will be on Monday, Sept. 8, from 8 a.m. to 5 p.m., and exhibits will be open all day on Tuesday, Sept. 9, and until noon on Wednesday, Sept. 10.

Exhibitor and attendee registration is now open, and all attendees must be registered to participate. Registration as an attendee is complimentary to all public safety aviation aircrew members. To register, go to https://apsa.users.membersuite.com/events/00b78c1f-0078-cada-766c 0b47a5a83038/details. Information on discounted lodging for conference attendees is coming soon.

To confirm exhibit space, visit the APSA website to complete a contract to be sent to Benay Osborne at bosborne@public-safetyaviation.org. Corporate Member tabletops are $1,275, non-corporate member space is $1,875. Booths include a 6-foot table and electricity and come with two exhibitor badges. Additional badges may be purchased for $50 each.

APSA anticipates strong participation in the event, so register or reserve your corporate tabletop today. Plans for a 2026 APSCON Europe event are already underway, and more details will be made available after the completion of this year's conference and exhibition.

# ADVERTISER'S INDEX



**When shopping for a product or service, please inquire at one of these companies. They help support your Association, and it's a great way to thank them!**

# SKYLIFE

*If you or your airborne public safety unit would like to be featured in a future Skylife installment, use the hashtag #AirBeatSkylife on social media images or email us directly at sgibbs@publicsafetyaviation.org.*

*A Virginia State Police medical flight team was honored on April 30 with the Children's Emergency Care Alliance of Tennessee's "Mutual Aid State Award." On Sept. 27, 2024, the team rescued 40 people from flooding caused by Hurricane Helene. Retired First Sergeant Jeffrey Bush, Master Trooper-Pilot Bryan Canada and Trooper-Pilot Jacob Culp, along with Ballad Health Flight Nurse April Boyd and Flight Nurse/Paramedic Wayne Carroll, participated in the rescue.*


*Corporal Mike Calhoun recently retired from the Riverside County (CA) Sheriff's Department after 23 years. During his 17 years in the department's aviation unit, Calhoun served as a tactical flight officer, pilot and flight instructor. He has also contributed to multiple industry publications, including* Air Beat, *and written a book,* Training Through Chaos.


*The Tennessee Highway Patrol Aviation Section recently participated in a wellness event at Dyersburg State Community College. During the event, students, faculty and staff gathered for discussion on substance abuse, HIV prevention and impaired driving, among other topics. Tennessee Highway Patrol officers, including those from the airborne division, joined community partners to answer questions and provide resources.*

*The Texas Department of Public Safety Aircraft Operations Division joined fellow first responders and community members in early April at the Mid Coast Hurricane & Disaster Conference. Designed to strengthen partnerships and enhance disaster response efforts, the event gave officers like Game Warden Douglas White a chance to show a few VIPs around the department's AStar.*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