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# ROTOR

BY

AIRBUS HELICOPTERS

## Super Puma: ready for anything

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Bruno Even, CEO of Airbus Helicopters

“Versatility and mission capability are the bedrock of our platforms’ success.”

At Airbus Helicopters, versatility is the aspiration for all of our products and services. Our fleet of helicopters serves over 3,200 customers and operators across the globe, who, in turn, have a wide range of mission needs. Our success as a company depends on our ability to respond to these requirements. Indeed, the versatility and mission capability of our helicopters are the bedrock of their success.

With its capacity to evolve, the Super Puma epitomises the adaptability that we have innovated and engineered into our fleet. With the Icelandic Coast Guard, the H225 has demonstrated its worth. Can there be a better proof of product than a helicopter that can be relied on to operate in the vicinity of volcanic eruptions? Similarly, when we hear Precision, an operator with a wealth of experience that spans several mission types and platforms,

talking about the advantages of using their H215s to fight fires and saying that its reputation is still growing in the US, we truly see that this helicopter is set to continue to have an impact many years into the future.

Another example which shows exactly how integral versatility is to our range is the US Coast Guard’s fleet of Dauphins. Deployed across a diverse array of missions, from search and rescue to drug interdiction, the helicopters have been in service for 40 years, proving both their adaptability and longevity.

Speaking of pioneering, in the last few days, we saw the Racer high-speed demonstrator take its first flight. Such an accomplishment exemplifies Airbus’ spirit of innovation, and we are proud that this helicopter represents an ideal balance of speed, cost-efficiency and mission performance.

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# Super Puma: ready for anything

Designed with versatility in mind? The Super Puma possesses a range, size, payload and advanced systems that make it perfectly suited for a variety of missions — civil or military.

Articles: Kieran Daly, Alexandre Marchand, Ben Peggie, Salomeh Grace

Having proven its operational excellence for decades and benefitting from Airbus Helicopters' commitment to continuous innovation, the Super Puma is as robust as ever, continuing to gain new admirers — and new operators.

# Still in the race!

The investments made in recent years have kept the H225 at the forefront of the commercial scene in a multitude of civil and military roles. Here is the portrait of an aircraft that never stops improving.



One of the oldest heavy helicopters in service worldwide, it is also one of the most modern: therein lies the paradox of the Super Puma and its latest versions, the H215, H225 (civil) and H225M (military). More than 1,100 members of the Super Puma family have been built over the past 40 years, and some 350 H225s and H225Ms are currently in service worldwide. “Autonomy, payload, cabin dimensions, operating costs and, above all, versatility: the Super Puma boasts a number of solid assets that make it a relevant choice in the world of aerial work, parapublic services and military operations,” sums up Michel Macia, H225 Programme Manager at Marignane. “The Super Puma can be seen on all five continents, from Brazil to Vietnam, from Europe to Africa. It’s a little-known fact, but there are also around fifty of them in service in the US and Canada, used to fight forest fires, for example, or for police forces or even the US Navy, in the case of the eight aircraft owned by Air Center in Texas”.

## A UNIQUE AIRCRAFT—WITH CONTINUOUS INVESTMENT

In the second half of the 2010s, the aircraft suffered from a downturn in the oil and gas market, which normally has a high demand for heavy aircraft. And yet, the Super Puma family continued to thrive, racking up around twenty deliveries a year over the next five years. “The Super Puma owes its commercial success

to its versatility and modularity,” emphasises Michel Macia. “The aircraft is unique, offering a perfect solution for a wide range of missions, with numerous optional features and the ability to be rapidly reconfigured”. What’s more, Airbus Helicopters has never stopped investing in the H225 family. In the military sector, this has meant the integration of new communication and encryption systems, as well as new weapons, which recently led to the qualification of the HForce version. “At the same time, our ambitions in terms of flight safety have never been higher, often exceeding regulatory requirements,” continues Macia. “Dynamic sub-assemblies have been at the heart of our concerns in recent years, for example with the design of an improved main gearbox, featuring new mechanical parts coupled with the installation of a real-time vibration monitoring system. As we wanted this main gearbox to be adaptable to machines already in service, its outer shell remained unchanged.”

## NEW AND IMPROVED

This new main gearbox went into service last year on new machines. And from this year onwards, the new parts will be systematically fitted to units already in service at the time of the 2,000-hour general overhaul, at no extra cost to operators. Operators will also benefit from a 160kg increase in payload, with a maximum take-off weight of 10,160 tonnes. Michel Macia also mentions the design of a new-generation magnetic cap for detecting metal residues in oil. This new oil debris monitoring (ODM) offers the advantage of avoiding human handling. “The new system scans and counts debris in real time without having to be inspected. We’re already using it successfully on a test bench, and now we want to mature the technique for use in flight, in two- or three-years’ time”. Operational safety also applies to maintenance and even logistics, as Macia explains: “We’re going to simplify 250 essential maintenance tasks for operators,

- 1: Michel Macia, H225 Programme Manager
- 2: The H225 offers exceptional performance at altitude
- 3: Getting ready for take-off... 250 essential maintenance operations will be simplified, boosting availability





4

4: The Super Puma's versatility means it can carry out a range of missions

5: A search and rescue operator on the winch of a Super Puma

6: Super Pumas often represent the most efficient way of repairing power lines

7: In the future, operators will need a heavy helicopter capable of operating well beyond 200 nautical miles

8: Sea power – a Super Puma hovers above the swells

to make it easier for technicians to intervene and improve the execution of maintenance tasks. To reduce this risk, we've focused on digitising instructions, produced instructional videos and even redesigned certain parts to make them easier to service. More than half of the 250 interventions identified have been dealt with, and we will have completed this work in less than two years". The avionics have also been improved, with four 20x25cm (10x8in) screens replacing the current six on the dashboard - the largest available on the market today. Coupled with a new interface, these screens give crews a better understanding of their environment and aircraft control. The simplified interface also gives crews greater control over the conduct of their missions.

**MODERNISING FOR A SUCCESSFUL FUTURE**

On the industrial front, the complete digitisation of the Super Puma, the use of virtual reality, 3D printing and digital mock-ups have had a profound effect on reducing manufacturing times and lightening the maintenance load.



5

Add to this the implementation of new manufacturing infrastructures and tools, and we can see that all the pieces of the puzzle are falling into place to ensure the Super Puma will see several more years of success. "The market is currently offering us opportunities, and by being constantly modernised, the H225 family still has a solid future ahead of it," confirms Michel Macia. "In the years to come, the oil industry will still need a heavy aircraft capable of operating well beyond 200 nautical miles. What's more, the H225's versatility means it can carry out a wide range of missions. We can also see the H225 becoming firmly established on the scene, for example in fire fighting. Fire fighting has traditionally relied on second-hand aircraft, but the urgency of the climate situation may well call for a change in behaviour in this area. The Super Puma's water-carrying capacity of four tonnes is close to that of a water bomber aircraft, while offering unrivalled modularity and flexibility of use, with faster response times that can bring in men and water, and a higher turnaround rate. This level of performance gives the H225 the opportunity to remain the best aircraft in its category for the next thirty years."



6



7



8

# H225

# Continuous improvement

Over the years, Airbus Helicopters has invested in modernising the H225 to match customers' evolving mission requirements, bringing it to the highest safety standards and reducing its time to market. The multi-mission heavy lift solution for decades to come.

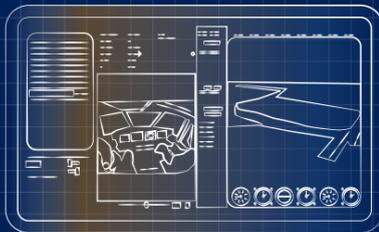
**Payload**  
**+160kg MTOW**  
**(11.16 tonnes)**



**Airborne communications system**

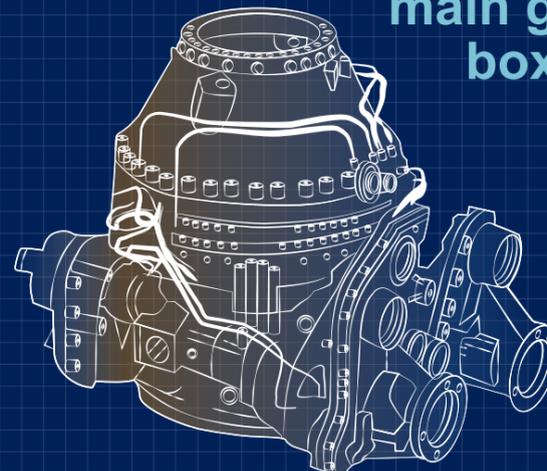
**4G** available on board

**Cockpit & tail boom cameras**

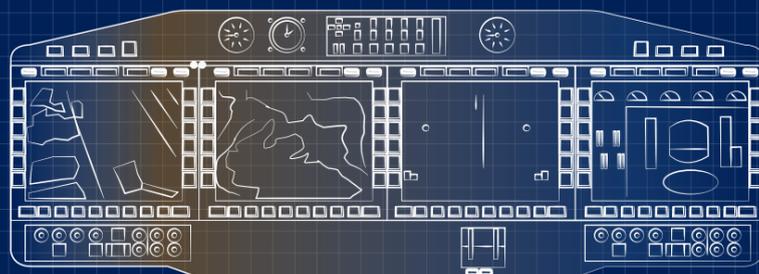


**1st helicopter flight**  
powered solely by  
**sustainable aviation fuel (100% SAF)**

**Enhanced main gear box**



**New H225 avionics**  
**Largest screens**  
on the market with  
**innovative interface**



**Simplified maintenance plan**

Reduced workload for operators

**H225M**  
**Force**  
**Qualified**

**New monitoring system**

WiFi maintenance data download

data-based maintenance

# H225 pilots keep their cool after volcanic eruption

The Icelandic Coast Guard (ICG) and its fleet of three Airbus H225s are woven into the fabric of life in their home country in a way matched by few other operators.



2

The ICG's intimate relationship with society and the government was underlined early this year by a flurry of missions following a series of volcanic eruptions on the island, culminating in the loss of several homes in the fishing village of Grindavik as seen worldwide on TV. Crew Commander Þórarinn Ingi Ingason says: "I was in flight when the lava burned the homes down and those images were taken. Iceland is not that big and I have a lot of friends in Grindavik—I was receiving messages asking 'what is happening?' These types of operations really impact life."

## RISKY BUSINESS

While their main priority is rescue missions, the role of the Reykjavik-based ICG helicopter unit in the event of an eruption is initially to fly with scientists, and often a videographer, to measure the size of the crevasse, look for signs of any further fissures with thermal cameras and in general, to gather the big picture for the government authorities. Regardless of the operation, volcanic activity brings a special set of risks and challenges. "We've had quite a few eruptions in Iceland in the last 10-15 years. We've seen lava reaching hundreds of metres into the air and bursting—big splashes of lava the size of containers. The eruptions can be quite different, and sometimes we need to take



1



3

into account ash. We always try to approach on the upwind side so that we don't get the ash in the engines, especially at night," Ingason explains. "Even without ash," continues Ingason, "there are toxic, sulphur-based gases. We have gas meters and we get a signal if it is above limits. I was flying once in the highlands to look at some fuel barrels on the ground. You couldn't see it but the gas had piled up in small low areas around the site. There was no indication of it at first."

## SCOPING OUT THE NIGHT WALKERS

With summer's respite from the cold, the ICG witnesses a greater influx of people exploring the highlands, with the result being a significant increase in medevac flights across Iceland's rugged terrain. Ingason himself admits to being awed by the sight and doesn't blame anyone—tourist or native—wanting to see it. He says: "Some people have never seen an eruption. For them it is a really powerful experience and even more so at night. We fly with night vision goggles (NVGs) looking for them. When people are hiking without any experience, are not fit, or have the wrong shoes then they can get into trouble. You have some people walking on fresh lava with a crust and underneath it is 1,000°C and the lava is just waiting for the crust to break."

## CONFIGURED TO TACKLE BOTH FIRE AND ICE

In addition to navigating volcanic eruptions, the ICG's range of missions is wide, with operations varying between the seasons. The Coast Guard is often called upon by the government in winter to provide access to remote villages affected by heavy snowfall, braving freezing conditions with the aircraft's indispensable de-icing system. The team is also prepared to tackle fires in the summer heat, equipping the H225 with a water bucket. Managing such extreme missions can be challenging, but Ingason praises the H225 for providing the comfort and ease needed to facilitate their operations. "The aircraft is extremely comfortable to fly. The helicopter performance is excellent and the pilot interface is really good. The autopilot is really something else—it's a game changer."

## NEVER A DULL MOMENT

It doesn't stop here—the Coast Guard also conducts all-weather search and rescue (SAR) missions and is always ready. Ingason states: "Often we are already airborne when we are tasked with a new mission so then we can respond immediately." In addition to this, when on the ground, they are committed to being ready for take-off within one hour—but in practice the average is just over 30 minutes.

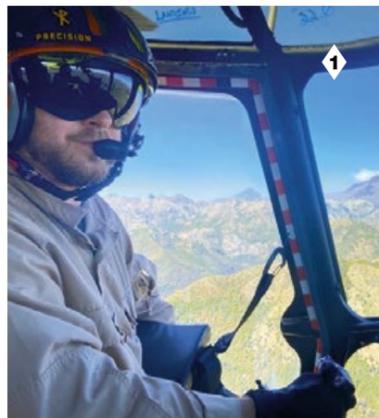
1: Performing in challenging conditions. Icelandic volcanic eruptions see ash and lava reach hundreds of metres into the air

2: A volcanic eruption seen from the cockpit window

3: The H225 often performs search and rescue or medevac flights across Iceland's rugged terrain

# Putting out fires with “Precision”

The Super Puma has proven itself as an optimal fire mitigation support worldwide. However, despite having fought fires in hotspots such as Canada, Chile, France and Greece, it has been slightly less present at US wildfires. US-based operator, Precision, believes that could change. Matt Parker, Unmanned Business President and Ty Burlingham, Helicopter Unit Chief Pilot, explain why American fire fighters are starting to notice the H215.



1: Ty Burlingham, Helicopter Unit Chief Pilot

2: One of Precision's H215 helicopters gets ready for another fire fighting mission

3: The Flexrotor in flight

4: The H215 taking off with its water bucket attached

“If they want us there, we can get there,” explains Burlingham, when asked about Precision’s operational footprint. “Wherever we’re needed, we will go. We operate all over the US for fire mitigation. What really showcased the abilities of the aircraft was when we ended up down in Chile for the fire season. In South America you see a lot more Super Pumas on rotation and ours probably flew around 205 hours in about 45 days.”

## FIRE PROVEN

With a mixed fleet that includes several Airbus helicopters, Precision has vast experience in vertical lift solutions. Deploying their assets and expertise across a range of missions - from providing surveillance of protected wildlife and natural environments, to supporting special military operations—their business depends on having the right tool for the operation. With the Super Puma’s capacity to transport up to 18 fire fighters, and its capability to deploy 24 cycles of water in two hours (equal to 4,000 litres), it offers invaluable support. Each fire fighters asset has an important role in the entire mission but none has the ability to put precise water drops in as many cycles per hour as that of the helicopter. Precision’s multi-mission business model means they know what they’re talking about when discussing the effectiveness of certain helicopters. So their praise of the H215, like the helicopter itself, carries a lot of weight. “The [US] Forest Service really fell in love with the helicopter,” says Parker, explaining that the Super Puma is bolstering its reputation in the country. “Its speed, range, fuel load and its thousand-gallon bucket—all the the fire agencies I talked to are super excited to have that capability. On a fire, they [the H215s] get used a lot. Sometimes you get to a fire and you’re not the first one that gets called up but with the Super Puma, when it’s on the fire, it’s constantly working”. Burlingham agrees: “For sure. We’re the kid at school with the new toy and everybody wants to see it. Fire fighting constantly ask questions when we’re overhead. They ask us how long we can be on station. When other similarly sized helicopters answer back with two hours and we respond with three and half hours, they’re impressed.”

## A LITTLE DRONE WITH A BIG FLEX...

Another tool Precision deploys to support fire mitigation operations is the Flexrotor, a tactical

unmanned aerial system (UAS). Having begun using it for conservation and anti-poaching reconnaissance in 2016, Precision quickly understood that it possessed some impressive technology for a VTOL weighing a mere 25kg. “It’s a testament to [Aerovel co-founder and Chief Technology Officer] Tad McGeer’s engineering, that it clocked 1,000 flight hours on one of its first missions. It’s incredibly durable. Normally you have to replace the UAS, or key components, after about 250 hours. The fact that it’s a tail-sitting VTOL means the sensors last a lot longer and it offers the ability to operate in confined spaces others cannot.” The Flexrotor can fly for more than 12 hours on fire fighting missions. “It’s incredibly easy to use and it only needs two people as crew for a wildfire,” explains Parker. It provides the most up-to-date information, which is invaluable. Fire fighting can look at live footage and be better placed to identify where the fire is, or will move to, allowing them to optimise movements. For Parker, the next steps are to have the Flexrotor and Super Puma operating on the same fire. “I’m not sure it’s happened yet but there would definitely be advantages.”



# Heavy weaponry: the HForce is strong in the H225M

The nature of warfare is changing, so it naturally follows that military helicopters will require new capacities in order to adapt to emergent threats, in addition to their more traditional support roles. In 2023, Hungary took delivery of the first H225M with HForce. Philippe Kohn, Military Missions Specialist for Airbus Helicopters, explains why it makes sense to add weapons to a heavy helicopter.



## AN EVOLVING WAR NEEDS AN EVOLVING HELICOPTER

“Tomorrow’s war will be a hybrid war,” states Philippe Kohn, as he explains that multi-faceted threats will necessitate a range of responses. “It won’t be the case of two armies fighting each other, it’s two societies trying to destabilise one another. Cyber-attacks, attacks on energy supply, population displacement... starting fires all over the place. That’s what war is now. Militaries will need a helicopter that can perform a range of functions: rescue civilians, evacuate people, carry generators to repair energy systems that may have been attacked.” Of course, militaries also regularly need a helicopter that is an effective firing platform. Historically, air support missions might have been more likely to be the domain of smaller helicopters with their superior discretion and agility. Often, heavy helicopters weren’t even equipped with weapons, instead consigned to troop transport and utility missions. However, by adding armaments to the H225M, its mission scope can be significantly enlarged, theoretically rendering any weaponised mission possible—and whilst maintaining the superior range and payload of a heavy helicopter. In short, now it can do everything. With the integration of HForce, the H225M has evolved into a completely versatile helicopter, capable of delivering any military mission. As Kohn explains, “HForce transforms



a non-specialised helicopter into a non-specialised attack helicopter. Why? Because in order to fire, you have to aim, and to fire with precision, a specialised attack helicopter like the Tiger aims via the electro-optical system (EOS), and that didn’t exist [on a non-specialised helicopter] until the development of HForce.”

## RIGHT ON TARGET

Kohn also points out that incorporating this enhanced versatility is in its own way, an innovative leap forward. “If a helicopter is powerful and if it reduces workload, which is definitely the case with the H225—it was the first modern helicopter built for modern times, with autopilot, four-axis digital system—if we put good equipment and/or good weapons on this helicopter, it will have even more versatility. If I fire with a laser-guided rocket from the H225M or from a Tiger, the end result will be the same. If you compare the cannon of a Tiger with the cannon of the H225M, there is a difference in terms of end result and mass, but we’re the only company that has been able to integrate a weapon this powerful

into a non-specialised helicopter.” The quality that the HForce system added to the H225M was immediately apparent during testing, with the helicopter’s size and flight controls giving it tremendous advantages as a firing platform, according to Kohn. “It’s excellent, it’s highly stable, our firing was extremely successful. It’s really very, very precise. With the non-guided rocket at 1,200 metres, we achieved a precision of less than 30 metres. It’s a helicopter capable of firing ballistic weapons of 20mm—that’s the largest you can find in non-specialised helicopters; like with the rocket, the levels of ballistic precision are unparalleled.”

## ROLE REVERSAL

In addition to the helicopter’s enhanced versatility is the fact that it can be modified to switch roles extremely quickly. “In less than half an hour,” mentions Kohn, “with fewer than three technicians and with no special tools, you can transform an attack helicopter into a fire fighting helicopter, a search and rescue helicopter, and I think ours is pretty much the only range that can offer this.”

1: Philippe Kohn, Military Missions Specialist for Airbus Helicopters

2: The introduction of HForce on the H225M enables it to use a variety of armaments

3: The H225M on the flight line at Airbus Helicopters in Marignane



**THE HELICOPTER COMPANY: FLYING INTO HISTORY**  
 THC, Saudi Arabia's premier provider of commercial helicopter services and fully owned by the Public Investment Fund, has signed a historic framework agreement with Airbus at the HAI Heli-Expo, which took place at Anaheim Convention Center, California. The framework agreement will include up to 120 Airbus helicopters of various types set to be delivered over the next five to seven years. Part of the deal is a firm order for eight H125s along with 10 H145s that are converted options from an earlier contract, bringing THC's total firm Airbus helicopter fleet to 60, 25 of which are already in service today. The new H125 helicopters will support the delivery of THC's range of services in areas including aerial work and tourism. The H145s will be used in a variety of roles including emergency medical services (EMS) and corporate transport.

**THE H125: MAKING IT IN INDIA**

In a major boost to 'Make in India', Airbus Helicopters has announced that it is partnering with the Tata Group to establish a final assembly line (FAL) for helicopters in the country. The FAL will produce Airbus' best-selling H125 helicopter from its civil range for India and export to some neighbouring countries. The FAL will be the first instance of the private sector setting up a helicopter manufacturing facility in India, providing a major boost to the Government of India's 'Aatmanirbhar Bharat' (self-reliant India) programme. Under this partnership, Tata Advanced Systems Limited (TASL), a subsidiary of Tata Group, will set up the facility along with Airbus Helicopters.



Ecureuil



**THE BEST VIEWS OF NIAGARA WILL STILL BE FROM AN H130**

Niagara Helicopters has placed an order for six H130 helicopters, confirming a full fleet renewal for the tourism company based in Niagara Falls, Ontario. Each year, the company welcomes more than 100,000 customers from all over the world, providing a nine-minute, 27 kilometre sightseeing tour over Niagara Falls. The aircraft of choice for tourism, the H130 has a wide, unobstructed cabin which accommodates the pilot and up to seven passengers, providing outstanding visibility through a large wrap-around windscreen and wide windows.



**TWO MORE ECUREUILS FOR INDIA'S HERITAGE**

India-based aircraft charter company Heritage Aviation has placed an order for an H125 and H130 helicopter, to operate under the Government of India's regional connectivity scheme - 'Ude Desh ka Aam Naagrik (UDAN)'. Heritage Aviation is one of the leading helicopter operators of India and has been awarded several new helicopter routes under the latest UDAN tender.

**GERMAN BUNDESWEHR COMMITS TO RECORD-BREAKING H145M ORDER**

The German Bundeswehr and Airbus Helicopters have signed a contract for the purchase of up to 82 multi-role H145M helicopters (62 firm orders plus 20 options). This is the largest order ever placed for the H145M and consequently the largest for the HForce weapon management system. The contract also includes seven years of support and services, ensuring optimal entry into service. The German Army will receive fifty-seven helicopters, while the Luftwaffe's special forces will receive five.



H145



**FRANCE SELECTS H145 FOR A SOLID ORDER**

The French Armament General Directorate (DGA) ordered 42 new H145 helicopters at the end of 2023, on behalf of the Ministry of Interior, with deliveries set to start in 2024. Of these 42 helicopters, 36 are destined for the French rescue and emergency response agency, Sécurité Civile, while the French law enforcement agency, Gendarmerie Nationale, will use six. The contract includes an option for a further 22 H145s for the Gendarmerie Nationale and a range of support and service solutions from training to spare parts, as well as a complete initial support package for the aircraft.

**DRF LUFTRETTUNG ADDS 10 MORE H145 HELICOPTERS TO ITS FLEET**

German helicopter emergency medical services operator DRF Luftrettung and Airbus Helicopters have announced orders for up to ten H145 helicopters (seven firm orders, three options). The ordered helicopters will also be covered by DRF's fleet-wide HCare Initial contract, which provides comprehensive parts-by-the-hour support. DRF Luftrettung is one of the largest and most experienced air rescue organisations in Europe. The organisation and its subsidiaries operate more than 50 Airbus H135 and H145 helicopters at 40 bases throughout Germany, Austria, Liechtenstein and Switzerland for emergency rescue and intensive care transport operations. In addition to this, they are also deployed for special missions, including hoist operations and day and night operations.



**FIRST LOOK AT THE CITYAIRBUS NEXTGEN**

Airbus has presented its full electric CityAirbus NextGen prototype to the public, ahead of its maiden flight later this year. The unveiling coincided with the opening of the new CityAirbus test centre in Donauwörth, which will be dedicated to testing systems for electric vertical take-off and landing vehicles (eVTOLs). The centre, which is part of Airbus' ongoing and long-term investment in Advanced Air Mobility (AAM), began its operations with the CityAirbus NextGen's power-on in December 2023 and it will be now used for the remaining tests required before the prototype's maiden flight later in the year. These tests cover the electric motors with their eight rotors as well as the aircraft's other systems such as flight controls and avionics. At the same time, Airbus is expanding its global network and partnerships to create a unique ecosystem that will foster a successful and viable AAM market. Airbus recently signed a partnership agreement with LCI, a leading aviation company, to focus on the development of partnership scenarios and business models in three core AAM areas: strategy, commercialisation and financing.

# It can make it anywhere: the H160 in New York





# AUSTRALIA THE SECRET TO POLICING THE WORLD'S LARGEST JURISDICTION

1

Since December, the Western Australia Police Force has been busy pushing into new operational territory with its two five-bladed H145s.

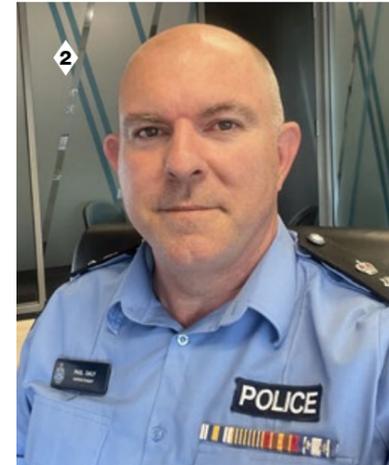
Article: Heather Couthaud

Western Australia (WA) is weighted like a punching bag. For all of its 2.5 million sq km, most of its population clusters around greater Perth in the southwest. The rest is vast distances of remote bushland. From Albany in the south, to Karratha in the north, it's just shy of a journey from Paris to St. Petersburg – making WA the world's largest law enforcement jurisdiction. Policing its entirety requires a robust aerial presence. When the WA Police Force were looking at replacements for their aging BK117 and AS365, only a helicopter with enough passenger capacity (six tactical officers), advanced mission role equipment (FLIR, search light, hoist and fast-rappelling), and range (to cover that famous Outback) would do. The H145 fit the bill. Since December, when the second of two helicopters arrived to join its partner against

crime (delivered in July 2023), the WA Police Air Wing has had a busy summer.

### WHERE THE ACTION IS

In January, an Air Wing H145 helped locate three people aboard a capsized boat off the coast, using daytime cameras to keep the survivors in sight until a police boat arrived on scene. Earlier in the month, local news reported on two high-risk car pursuits where the H145 provided aerial coverage to tactical response teams. In one, an armed man pointed his weapon at the officers overhead. "Even with shots fired my team continued to provide that critical situational awareness to officers on the ground and command teams in Perth," says Superintendent Paul Daly, officer in charge of the air wing. In a home invasion in February, three



2

"It has pushed us into a new area and been able to create opportunities that we never had in the past."

Superintendent Paul Daly, Police Air Wing, Western Australia Police Force

people assaulted a male occupant, while a woman called emergency services. "Our aircraft was flying. They were able to throw the camera over onto the house and capture these three guys leaving the house, jumping the fence and making off," says Daly, who says the invaders were unaware of the helicopter tracking them. "At a time of our choosing, we did a traffic intercept and took the offenders into custody."

### CLEAR AND PRESENT

While remaining mindful of community and law enforcement regulations, the WA police carry out day and night patrols, the helicopters an unobtrusive presence thanks to their compactness and long range. Responsible for everything from searches for gold prospectors in the bush to high-energy crowd control on New Year's Eve, the Air Wing—under Superintendent Daly, himself a frontline police officer for 30 years—has been getting used to the upgraded capabilities the H145s provide. These include having the extra 150kg useful load of the five-bladed variant to carry a full tactical team. "With the H145, we're now able to move people around. This has pushed us into a new area and been able to create opportunities that we never had in the past,"



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says Daly. Further, the H145's state-of-the-art capabilities endow it with a force multiplier effect. Camera feed from above beamed to individual police officers' mobile phones makes for better decision-making in dynamic situations. Taking over a pursuit from the air and calling off ground assets reduces risk to police and onlookers. Inserting a tactical team into danger-ridden situations restores order. None more than Daly understand the advantage an air wing brings to a police force. "The ability to stay in the air longer, the equipment we have on board...we can use the aircraft one at a time or put both up together; we're really only limited by our imagination as to how we're going to deploy them."

1: The two H145s of the Western Australia Police Force patrol the coast of Perth

2: Superintendent Paul Daly, Police Air Wing, Western Australia Police Force

3: The H145 performs a range of missions, from supporting rescues to aerial coverage for tactical response

4: Capacity, equipment and range: the H145 proved to be a perfect fit for the Western Australia Police Force



# THE ECUREUIL DOESN'T JUST FLY; IT LEADS

From the challenging altitudes of Mt. Everest to the frontlines of emergency medical services and disaster relief, the Ecureuil has demonstrated its unparalleled capacity to deliver aid, save lives, and perform under the most demanding conditions for 40 million flight hours. Three of its most iconic customers explain what has lifted it above the competition.

**Article: Belen Morant**

The Ecureuil family is more than another statistic in aviation, even if its statistics are impressive: with 40 million flight hours, gracing the skies above 127 countries with 2,107 operators at the helm. Every 22 seconds an Ecureuil takes off to carry out all kinds of missions, because if there is one thing that characterises this family, it is undoubtedly its versatility. From emergency medical missions, law enforcement and rescue missions to aerial work (where the H125 stands out for being able to transport the equal of its own weight), the Ecureuil has been described as the ideal working tool when the going gets tough.

## THE WORLD'S BIGGEST ECUREUIL FLEET

Air Methods boasts over 100 Ecureuils, underpinning their vast EMS operations across nearly 300 US bases. Their testimony speaks volumes: "We perform more than 100,000 emergency medical transports per year. The Ecureuil family, of which we have more than 100 units, are fundamental to our lifesaving efforts. Single engine operations in the EMS sector are complex. But what makes the H125 and the H130 so interesting is the cabin size. On an Ecureuil we have the ability to have access to the patient, which is critical during the transport.

We need reliable products to support our patients in the best conditions. We are proud to collaborate with Airbus," says Leo Morrisette, Executive Vice President of Operations for Air Methods.

## 40,000 FLIGHT HOURS IN HAWAII

Over in Hawaii, the world's Ecureuil fleet leader has amassed 40,000 flight hours. In fact, Air Maui owns two of the most-flown Ecureuils to date. What they appreciate most about their H125 is its ability to carry six people with an unobstructed forward view and its reliability in such difficult conditions as over the Halloco volcano at 10,000 feet. "It has been very successful for our operations for more than 30 years. From an economic point of view, this is the best helicopter on the market that we can find, because no other helicopter allows us to carry so many passengers in pleasant conditions for tours along the coast, at the waterfalls or to fly over the volcanoes of Hawaii," says Steve Eggers owner of Air Maui.

## HIGH & HOT CONDITIONS IN LATIN AMERICA

In Latin America, there are 848 Ecureuil family helicopters flying today, many of them in hot, high-altitude conditions that test their power every day. Helisul, which owns the largest Ecureuil fleet in Latin America, stands as a testament to the Ecureuil's adaptability and performance, especially in the diverse and challenging landscapes of Brazil. Operating almost the entire Ecureuil range for nearly 40 years, Helisul leverages these helicopters for a multitude of missions, from aeromedical rescues to passenger transport and fire fighting. "Brazil is a very tropical country. When we operate over the sea, it behaves very well; but in panoramic flights with winds from all sides or performing aeromedical rescue it behaves also in a spectacular way. For us, the big difference between the Ecureuil family and the rest of the single-engine family is the quality of the immediate support we have through Helibras, and also the maturity of the product, which gives us great results," explains Bruno Biesuz, Operational Superintendent at Helisul.

**1: Air Maui's Ecureuil fleet has amassed over 40,000 flight hours**

**2: Air Methods helicopters perform 100,000 emergency medical transports per year**

**3: A Helisul Ecureuil flies past Rio's Christ the Redeemer statue**

**4: Air Maui owns two of the most-flown Ecureuils**



# THE RACER IS A REAL WINNER!

The first flight of the Racer marked the beginning of a new era. Its hybrid design offers simple, elegant solutions to the technical challenges of high-speed helicopters.

Article: Alexandre Marchand



**1: Julien Guitton, Racer Programme Manager**

**2: Powering up the Racer**

**3: Final checks in the cockpit**

It was a few weeks before the first flight. The team was completing the final quality inspection of the Racer, prior to the first ground tests on the runway. Julien Guitton, who heads the programme, spoke of the pride his team felt at the time: "This is an incredible moment! In the life of any engineer or worker, preparing for the maiden flight of a new aircraft, especially one with such a high level of innovation, is a unique and extraordinary experience." The final adjustments were made by a very tightly knit team, with no

more than 50 engineers and workers on site, supported by the entire company and numerous partners. It was a commando operation that reflected the whole philosophy of the new aircraft: high performance and economy of use.

### THE PERFECT SPEED

"The aim of the Racer is not to go as fast as possible, but to offer enhanced operational capabilities at the right price for missions where speed can really be an asset," sums up Julien Guitton. "When we ask end users whether high speeds are of interest to them, the answer is invariably 'yes, but'. Speed at any price, without taking into account the economic and environmental impact, is of no interest to anyone." When the project was launched, as part of the European Clean Sky 2 programme, the objectives were ambitious: a 20% reduction in fuel consumption and CO<sub>2</sub> emissions compared with a conventional aircraft of the same weight, and an equally significant reduction in the noise footprint. The simulations, confirmed by initial flights, showed that the Racer met these requirements.

### A WINNING FORMULA

The key to this success lies in the aircraft's 'compound' formula, which has already been successfully tested on the X3 demonstrator

since 2010. The Racer combines a unique architecture (special fuselage aerodynamics, helicopter rotor, fixed wing and propulsive propellers) with innovative engine power management and an autopilot that knows how to make the most of this combination. "The Eco-Mode system, developed with the support of the DGAC (French Civil Aviation Authority) and several other partners, plays an essential role in delivering the performance we expect," emphasises Julien Guitton. "It involves putting one of the two engines on standby during cruise flight, with the ability to restart it almost instantaneously if necessary. The aircraft flies slightly slower than it would with both engines running, but it's still faster than a conventional helicopter. Above all, it saves 20% in fuel consumption." The performance of the wing is also optimised in all phases of flight, thanks to the use of flaps placed on the trailing edge, contributing to lower fuel consumption. By providing 40% of the total lift, the wing takes the load off the rotor, reducing dynamic loads and vibrations. The Racer also promises to be more comfortable than a conventional helicopter. "The flight control system and autopilot enable us to take full advantage of all the possibilities offered by the compound formula," explains Julien Guitton, who also provides the following example: "By adjusting the distribution of power between the rotors, we can alter the position



of the aircraft and carry out totally unprecedented low-noise approaches." Other benefits are expected, such as longer maintenance intervals. "Our ability to validate technical solutions that offer long operating life cycles is a major challenge for this programme," agrees our contact.

### FIRST FLIGHT

The Racer lifted off for the first time on 25 April 2024.



# 40 YEARS, 11 MISSIONS... ONE ALL-IN-ONE AIRFRAME

Since 1984, the US Coast Guard has used the H-65 Dauphin for 11 different mission profiles, operating in every atmospheric state from sea level to the peaks of Alaska, saving countless lives.

Article: Heather Couthaud

US Coast Guard archives are replete with awe-inspiring saves. When rescue swimmer John Linnborn twisted the H-65's hoist crank tight in Slava's tourniquet and stopped the man bleeding to death, he defied all limits of what was possible. Slava's leg should have been severed after being crushed by a piston; he should have bled out. Yet he retains it to this day. In its way, the service's H-65 short-range recovery helicopter has also defied limits. In four decades with the USCG, the Dauphin continues to serve missions in environments ranging from the Caribbean to the Bering Sea.

### AT THE START, A SAR ASSET

"It's a beautiful aircraft and the speed was so great," recalls Paul Langlois, retired US Coast

Guard pilot, on flying the H-65 in 1985. Langlois's H-65 expertise saved the crew of the *Gale Runner*, a sailboat dismasted in a storm. Launching at night, Langlois flew on instrumentation in 50-knot winds to the vessel drifting on 25-foot swells. The H-65 had just been upgraded with night vision equipment in the cockpit and, by coincidence, the co-pilot was experienced in the technology, a boon which helped Langlois manoeuvre through sea stacks to lower a hoist to the vessel. After watching the boat capsize, they lowered the H-65's hoist to one passenger. "When she got in, a wave washed over the top of the basket. The whole helicopter shuddered," he recalls.

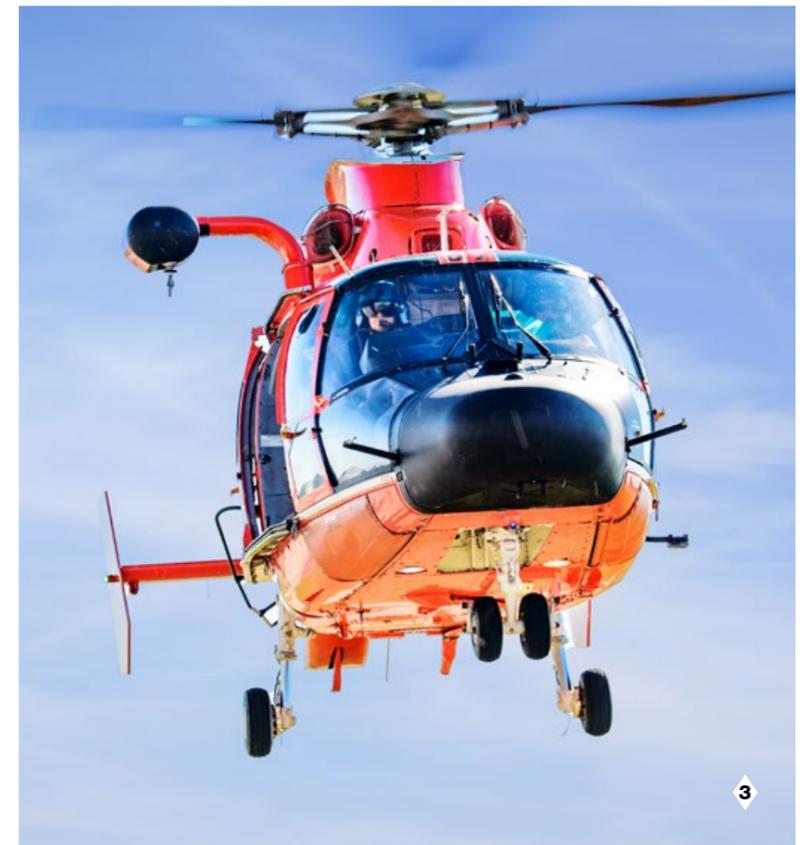
### NEW ENGINES, NEW LIFE

The aircraft's hoist capability added inland

SAR to its repertoire. One rescue in 2007 launched John Linnborn, retired Coast Guard rescue swimmer, and Dan Leary, USCG pilot (ret.) and Life Flight Network pilot, to the top of 7,000-foot Brother Mountain where a climber was trapped in a snowstorm. Leary recalls his captain challenging him about the mission's altitude, but the H-65 had just upgraded to Turbomeca engines. "I said, 'Captain, we should have no problem'." It was a monstrous increase in performance," says Leary. But in darkness with a storm pushing in, they were up against the helicopter's limits. "I remember John saying, 'hey man, don't leave me'. He was on that mountain for less than a minute to grab the guy," says Leary. In the 80s and 90s, the H-65's footprint was small enough to fit the mid-sized cutters, so it was unique in adding shipboard deployments to its activities, on migrant patrols in the Caribbean but particularly patrolling US waters in the Bering Sea. For Coast Guard pilot Tim Eason (ret.), 8 December 2004 would lead to the most intense hours of his life when he and his crew rescued the survivors of a grounded freighter in Alaska. Aboard a USCG cutter, Eason's team launched in a violent storm to assist another crew extracting the sailors. He was in a hover when a wave shot from the ship's hull and brought down the larger helicopter. Eason battled blinding snow cells in the dark, hoisting 150 feet down to rescue the Coast Guard crew and a sailor from icy waters. Offloading them, he flew back through the mountains for the ship's master and a rescue swimmer, saving six lives.

### MULTI-MISSION EVOLUTION

In the early 2000s, the Coast Guard began using the H-65 as a multi-mission platform. Its agility proved useful in Rotary Wing Air Intercept missions protecting the airspace around Washington D.C. Here, the USCG employ climbing and banking manoeuvres at full power to intercept aircraft. "The H-65 is very nimble. It's uniquely suited for that mission," says Tim Eason, who flew RWAI for six years. Outfitted with weapons, the militarised MH-65 was deployed for Airborne Use of Force missions, in particular with the Helicopter Interdiction Tactical Squadron (HITRON) for drug-interdiction patrols. Even today, during emergencies like the wildfires in Hawaii, the Coast Guard is there, sending an MH-65 to rescue people escaping the flames.



1: Lift off for one of the USCG's Dauphins

2: USCG crew have been relying on the Dauphins to save lives for 40 years

3: The Dauphin's power allowed it to perform vital missions—even at high altitude



# A SCHOOL IN HUMILITY

The village of Sainte Léocadie is perched at an altitude of 1,300m in the Eastern Pyrenees. Between Andorra and the Mediterranean, it is home to the Mountain Flight Training Centre (Centre de Vol en Montagne, CVM), where several hundred French and foreign helicopter pilots train every year.

Article: Alexandre Marchand

Specific atmospheric conditions, power constraints, the use of unprepared surfaces and often hostile terrain make flying in the mountains a real challenge. “The horizon fades, landmarks disappear, altitude and temperature affect helicopter performance and you have to manoeuvre with precision all the time,” explains Colonel François Pierron, Chief of Staff of the 6th Combat Helicopter Regiment School Base, where the CVM is based. All French military pilots pass through the CVM at least once in their careers to learn more about this unique environment, and in particular how to fly at power limits.

### COLD SWEAT

“The student pilots from the Dax Base School come to Sainte Léocadie as part of a two-week course that gives them around 10 hours’ flying experience in

the mountains,” Colonel Pierron adds. This course sometimes makes the young pilots, who only have around 50 hours’ flying experience, break out in a cold sweat, but they all agree that it’s worthwhile. “It’s undoubtedly the most complex and rewarding phase of our training, because it brings into play reflexes that we don’t develop elsewhere,” they explain. “This course won’t turn us into real mountain pilots, but it will at least give us first-hand experience of the reality of working at the limits of our power in a mountain environment that is often deceptive, and invariably dangerous if you don’t stay on your guard...” Students are trained in Dax on the H120 ‘Calliope’, and use it to fly to the CVM, which does not have its own fleet. This aircraft is seen as particularly well-suited to mountain training: powerful enough to operate in standard weather

conditions, ‘well-situated’ in the air mass and able to anticipate power recoveries. It is also capable of putting students in situations where they are at their limits in terms of power, a situation which forces trainees to face the critical choices they need to make in terms of landing areas, approaches and trajectories.

### STAYING ON COURSE

The courses offered by the CVM are not limited to student pilots. Instructors use the facilities for refresher training and, on a wider scale, all French combat helicopter units come to Sainte Léocadie for weeks of training dictated by operational requirements. In addition to the French Army Light Aviation, the French Air Force, the Gendarmerie Nationale, Sécurité Civile, customs and even the French test pilot school EPNER (École du Personnel Navigant d’Essais et de Réception) are also regular users. “In addition to French users, we also welcome a number of foreign detachments every year,” adds Colonel Pierron. “Belgians, Czechs, Germans and Spaniards are regular users of the CVM, and like the French detachments, each unit travels to the Pyrenees with its own aircraft and its own technical detachment.” Flying in a mountainous environment is an ideal playground for experiencing flight and developing muscle memory for the position of the flight controls and indeed, the young pilots at Dax recognize the CVM as the most complex phase of their training, one that requires reflexes that can’t be found elsewhere.



### BASE STATISTICS

The CVM has a permanent staff of 20, including three officers. Its residential building has around 50 beds and is designed to accommodate trainees for 40 to 42 weeks a year. The centre also provides minor logistical support to visiting detachments (fire brigade, controllers, fuel, etc.). By 2023, the CVM had trained around 100 military personnel and logged around 2,500 flight hours. Although the centre doesn’t have its own helicopter, it can make use of Helidax aircraft in transit for various public service missions or to support associations, which mobilise around 20 hours of flight time each year.



1: An H120—perfectly at home in the Pyrenean mountains

2: An aerial view of the CVM

3: Inside the cockpit on a training flight

# THE RACERS WHO SWAPPED ROTORS FOR WHEELS

With 12 stages covering nearly 7,000km of Saudi Arabia's most daunting desert terrain, the 2024 Dakar Rally was a challenging environment for even seasoned motorsport professionals. Yet in their first-ever rally, a team of 10 Airbus Helicopters colleagues working only in their spare time crossed the line in second place. Team leader and driver Jean-Michel Paulhe tells *Rotor* all about the adventure.

Article: Ben Peggie

If anyone is ever wondering whether Airbus Helicopters employees buy into its ethos of pioneering and sustainability, they need look no further than the ten colleagues who participated in this year's 2024 Dakar Rally (confusingly taking place in Saudi Arabia). Not only did they target the most difficult rally in the world for their first-ever attempt but they also developed a brand-new hybrid car. "As you know, in the helicopter world, Airbus is trying to work more and more on hybrid [propulsion] systems. That's why we pushed the idea of developing the hybrid car," explains Jean-Michel Paulhe, Head of Industrial Performance for the NH90 by day, and team leader and rally driver

in his spare time. "Also, like our helicopters where we're using SAF, we wanted to try to build this car to run on ethanol. Globally, the combination of these two technologies reduced the carbon footprint significantly."

### AIRBUS HELICOPTERS SUPPORT

As it turned out, Airbus Helicopters was able to offer more than inspiration, in means of support. "We were able to use Airbus technology and tools," continues Paulhe. "That was really helpful." The company's emphasis on pioneering new innovations also meant the team had the intrinsic mindset to not only conceptualise a new car

but also ensure it would meet the most rigorous standards of safety. "Safety was certainly one of the main aspects," notes Paulhe. "We worked as if we were working on a helicopter to demonstrate that our system provided safety for the crews, but also for the people outside the cars." Safety was not the only challenge, though. Once the race began the team would have to overcome equipment failure, sourcing spare parts and of course, all the difficulties you would expect in a rally taking place in the unforgiving conditions of a desert. "Every day, when I was putting all the equipment together, I thought: 'It's so difficult. What am I doing in the middle of Saudi Arabia? I'm crazy. I should be with my wife and two children right now,'" Paulhe remembers.

### SHARING SUCCESS

The team competed in a category specifically for new energy vehicles. "There were only 10 teams in the beginning and we were the only team without any Dakar Rally experience, so our target was simply to make it to the end of each day," says Paulhe. "Day after day, we showed we had a good level of consistency. Ultimately, we finished second place in the category." An incredible achievement considering the only team to place ahead of them had competed 35 times. In addition to the podium finish, Paulhe is proud that the team has contributed €11,000 which has been shared evenly between two chosen charities. "The first one is in Senegal, called 'Senecol'. As Dakar is in West Africa and not in Saudi Arabia, it was important for us to support something in Senegal. The money will



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support the opening of two additional classes of 40 children each. The second is 'Toit pour nous', a French charity that develops homes to support disabled people. Half the money raised will be used to open a new house for six people."

### THE NEXT STAGE

When pressed on their future plans Paulhe is determined to push things even further. "This year we want to have the two women who were in the core team at the starting line of the Morocco Rally. That is one objective. The other objective is to continue to develop. We are not here just to race, but also to learn about new technology. We know what we need to improve. The challenge is to be able to go further and achieve an even more impressive emissions reduction."



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1: Getting to grips with the dunes in Saudi Arabia

2: Setting off at the start of a stage

3: A further demonstration of success built on the foundations of teamwork and collaboration

4: Setting off from the main entrance of Airbus Helicopters' headquarters in Marignane

# HCARE IS A MISSION LIKE NO OTHER

Helping to keep the world a beautiful place, Airbus HCare portfolio offers the best combination of support and services for every customer. Starting the moment an Airbus helicopter is delivered, we'll make sure your operations are carried out efficiently, safely and cost-effectively. Because when your focus is on the mission, our focus is on you.

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