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TEAMWORK LAUNCHES FIRECAT IN THE USA
FIRST USFS EU CONTRACT FOR FIRECATS

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TEAMWORK LAUNCHES FIRECAT IN THE USA

CANADIAN AND AMERICAN PARTNERSHIP LANDS FIRST USFS EU CONTRACT FOR FIRECATS

STORY & PHOTOS BY **JASON JORGENSEN**

Coldstream Helicopters of Kelowna, BC and Precision, LLC (Precision Helicopters) of McMinnville, OR have teamed up to put Super Pumas back into the skies fighting wildfires in the United States for the first time in more than a decade. Not only does this partnership and the subsequent Exclusive Use (EU) contract awarded by the USFS to Precision Helicopters, mark the debut of the new "Firecat" in the US; it also stands to change the game for firefighting agencies in a big way - by providing state and federal firefighting agencies with access to a Type-1 helicopter specifically modified for the firefighting mission that is also Standard Category.

PUBLIC USE?

In recent years, Federal and State firefighting agencies in the US have pushed for modernization in the industry to improve efficiency and increase safety. For fixed-wing air tankers, this has greatly narrowed down the types of aircraft qualified to perform firefighting missions. While the types of helicopters utilized in the firefighting mission have not been as affected, the specific types of missions they are able to carry out, based on their category or level of certification by the FAA has become more restrictive. Once upon a time, firefighters could be moved by nearly any helicopter that was able and available to move them under the guise of "Public Use." In today's environment, that is no longer an option as the stance taken by these agencies is in line with a strict adherence to the regulations in play.

Though safety has been "increased" and their potential exposure to

litigation has been decreased through these changes, those agencies have also greatly limited their options to perform certain tasks such as rapidly moving a large number of fire personnel and supporting their efforts on the fire line. And that's become a problem for which few have found a solution. This is largely because many in the industry believe that the rules surrounding public use aircraft need to be modified, or simply, properly enforced.

That is, unless one is operating a Standard Category aircraft, which already adheres to those regulations and checks all the boxes. While the rules in the United States have traditionally had room for interpretation, in other countries like Canada, they are very clear. The aircraft needs to be civil certified to fly passengers if they are going to be flying passengers, even if those passengers are firefighters going to fight a fire.

HELP WANTED: TYPE-1 HELICOPTER

The fire seasons of the last three to four years have really highlighted the need to identify and field larger helicopters to deliver more water onto wildfires. In the U.S. many operators have looked into and begun operating surplus military aircraft such as Black Hawks and Chinooks as an answer to this growing dilemma.

While surplus military aircraft have a long and celebrated history battling wildfires, operating most of these types of aircraft come with the additional complications of not being certified by the FAA as

Standard Category, they remain a Restricted category aircraft and in the U.S. that means their roles are very limited. In Canada however, that means that they can't be used at all, even to fight fires. Recently many more public entities have voiced concerns over the broad and sometimes confusing language of the restricted category Type Certificates (TC) that have been approved for operators to use. Each TC is different and thus each UH-60 operator may have a different maintenance program than the next as well as slightly different operating parameters. This inconsistency makes it difficult for public organizations to compare and hire given the possible issues and liability associated.

Having identified this need for additional Type-1 helicopters to help battle wildfires in Canada, Robert Gallager, owner of Kelowna, BC based Coldstream Helicopters, began his search to find an answer to the problem. Black Hawks were off the table entirely and the Bell 214ST was considered, but not a good fit. In Gallager's mind, what he needed to find was essentially a larger version of the Bell 212. Something that was rugged, simple, predictable, Standard Category, and that ideally, could be flown by a single pilot - a tall order in the Type-1 class of helicopters. Then, about three years ago, the helicopter market shifted, making Super Pumas more affordable, which brought the highly regarded and well-proven Airbus AS332s into his sights. From then on, the more familiar he became with the Super Puma, the more he realized that there

really was no competition, this was the aircraft he's been looking for and the idea for the new "Firecat'' had come to life.

INTRODUCING THE FIRECAT

Initially partnering with Heli Austria on the project, Coldstream acquired their first AS332 helicopter from HeliCarrier in 2019. The next year, they were able to purchase additional Pumas from CHC. Coldstream now has a total of 11 AS332s following their recent acquisition of four more Super Pumas from the Mexican government (one of which used to fly Frank Sinatra and the Rat Pack between Southern California and Las Vegas, before becoming part of the Mexican President's Fleet). Acquiring those aircraft was only one part of the equation. The second half of the equation is actually turning these originally offshore and VIP-use aircraft, into dedicated firefighting machines. Taking 13-14,000lb helicopters that had been primarily used to transport passengers and equipment to remote oil rigs and

trimming them down for firefighting meant that the heavy cats needed to undergo a serious weight reduction program to maximize their water carrying capacity.

By removing many of the heavy systems and parts that were no longer needed in their new missions, along with starting the company's own aerospace manufacturing division to help supplement the various support kits that they wanted to put onto the aircraft, Coldstream has innovatively managed to hit their empty goal weight of 10,000lbs on the ramp. This weight reduction plays a large part in the program's success, as the Firecat's performance and capabilities at these weights help to further differentiate it from all other Type-1 helicopters presently operating in North America.

CHALLENGE ACCEPTED

Reducing the weight of these helicopters was not the only challenge though, as there have been a multitude of hurdles that the Coldstream's


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project has had to overcome. Everything from the regulator, (Transport Canada,) trying to understand how to license the aircraft properly with pilots, to Airbus learning to understand the utilitarian style of operation that Coldstream is trying to introduce the aircraft to, along with the demands that are put on utility operators, from crew availability to tooling and support. Through it all, Coldstream really focused on these challenges and met them head-on to ensure that their program would be successful. There's a lot required to keep those aircraft flying, and although it's taken them three years and massive investments in infrastructure; understanding those pinch points in vendor management and supply chain have put them well ahead of the curve today.

Interestingly enough, Coldstream also ended up having to educate Transport Canada (TC) through this process as Gallager explains. "In Canada, we actually had to do the endorsements when I got our endorsements; because there was nobody in Canada that could actually give it to us. It was the 'chicken and the egg' issue, but we were able to work with the regulators, who were awesome with us. TC had the foresight to see the market moving into Canada. We bought our first '332 in 2019. By 2020, there were 10 Super Pumas registered in Canada, and I've lost count of how many more aircraft have been registered since." While there's been a learning curve for all involved, Coldstream

has fostered and built some very good relationships in order to do things properly. “We want to make sure that it’s done properly, safely, and with the intent that the industry as a whole will benefit from it.”

After three highly successful years of Super Pumas on the fire lines in Canada, Coldstream has now partnered with McMinnville, Oregon based Precision Helicopters, to bring the Firecat to the United States for its debut season. David Rath, CEO of Precision explained that in 2010, when he was the President of Evergreen Helicopters, they had gained experience operating AS332s on DOD contracts in Afghanistan for six or seven years. It was during those contracts that they learned a lot about operating the aircraft; including; “how well it performs in high and hot conditions, what you should and shouldn’t do, along with gaining the understanding of just how ‘smart’ the aircraft is on the electronics side.”

Impressed by the experience with Evergreen’s Super Pumas, two years ago, Rath’s Precision Helicopters purchased a pair of their own, with the express idea of converting them into utility and fire fighting machines. Those aircraft have now gone through their “G” checks (15 year maintenance reset) and have undergone their own weight reduction program. These machines have been contracted by the USFS as CWN (Call When Needed) aircraft and operated overseas during the 2020 fire season. Their past performance with the USFS and the Department of Interior, as well as their established CWN contract status set the foundation for their second aircraft in the USA, courtesy of their new Canadian partners. Since the partnership, they have been awarded

an EU (Exclusive Use) contract with the USFS in Placerville, CA for this 2021 season.

TEAMWORK MAKES THE DREAM WORK

Referring to themselves as better together than apart, Rath and Gallager consider the Coldstream / Precision match, synergistic. Both companies bring more than just loads of experience and expertise in operating helicopters around the world to the partnership too. For instance, the weight reduction program that Coldstream has developed, along with the kits they are manufacturing for the aircraft, will help Precision to lighten their aircraft well beyond what they had already done, and initially thought possible. The purpose-built sponsons that Coldstream has developed, for example, add an additional 500 to 600lbs of lift over the wider wing sponsons that the aircraft were delivered with. The cumulative effect of modifications such as this further enhance the performance of the aircraft in it's new specialized role.

Precision also brings integral experience to the table not only through their knowledge gained overseas, and expertise in firefighting, but also through their extensive background with their affiliate company conducting important missions using their Intelligence Surveillance and Reconnaissance (ISR), and Unmanned Aerial Systems (UAS). They are one of only a few companies conducting this operation for the


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Dept. of Interior in the USA. These additional attributes along with their collective team's field maintenance expertise allows the Coldstream / Precision team to meet the rigorous flight schedule that the U.S. Firefighting Customers require.

SKILLED SUPPORT

As with any aviation program, maintenance is a huge factor in the near and long-term success of the Firecat program. Most of the maintainers with experience on these aircraft come from the oil and gas industry; however, that operating environment is vastly different from firefighting. Capturing the "tribal knowledge" of those individuals that have a great deal of experience flying and fixing the Super Puma in a field environment has, in Rath's and Gallager's opinions, really been key in ensuring success for their Firecat program.

In Gallager's experience, many of his Bell 212 maintenance personnel have also been readily able to learn and absorb the knowledge and experience of these Super Puma field maintenance masters, because of how similar the aircraft are and intuitively designed the AS332 is. Even the mechanics marvel at the fact of how smartly designed the aircraft is, especially in its ability to be maintained for months and months on end in a field environment, and still operate as safely and reliably as if it were returning to its hangar nightly.

UNDERSTANDING THE MARKET

Further ensuring that the Firecats have a successful debut season in the US, are the efforts of Damon Petracci, General Manager of Precision, and his team of personnel which are dedicated to navigating through the world of helicopter contracts. This team has experience not only in successfully securing local, state and federal contracts but Petracci himself, has spent the better part of the last decade as a pilot operating in the Type-1 fire and utility heli market in the US, with many of the airframes in this class. This type of intimate knowledge and understanding of the capabilities and operational costs of many of the aircraft and operations they could have potentially been bidding against was also invaluable to the company's successful EU bid with the USFS.

Precision was able to sharpen their pencils and produce a strong, competitive bid knowing that if they received the contract, they were in a good position. Conversely, if they didn't receive it; they were still in a good position because they did not position themselves to partake in the unsustainable practice of taking a hit, just to get a contract. Today, there are many players in the Type-1 helicopter market in the US with the wider proliferation of ex-military Black Hawks and Chinooks in recent years, but Petracci, like many in the industry, expect that this will

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change in ways similar to those that occurred in the market in the years following UH-1s becoming widely available.

Initially there were dozens of operations using UH-1s because of their affordable availability. The operators which got into things early and seriously, made some fantastic purchasing decisions and some are still in operation today. Many operations which got into the market later on, did not fare as well. Those aircraft (and sometimes the operations themselves) were snatched up by the bigger players as it became increasingly difficult to win large enough bids to sustain their operations. While the UH-1's restricted category did play a minor role, at the end of the day, the cost of operations was never as low for late-comers as it was for the early adopters and that was an issue many operators couldn't overcome.

INTERNATIONAL ENDEAVORS

Costs play a massive role in any helicopter operations and frequently the success of long-term operations in the Type-1 segment depends on the ability to secure overseas contracts for those big helicopters when they're not on contract at home. Many people are familiar with the images of S61s, S64s and CH47s being shipped from the US to South America, Europe or Australia for their fire seasons, but it is easy to forget while looking at those images that there are still limitations as to where some of those aircraft can go based on ITAR (International Traffic in Arms Regulations) Restrictions.

For purposes of this discussion, this means that there is a limited list of the countries in which former US Military aircraft may be brought into - even for something like firefighting. Fortunately for Coldstream and Precision, these restrictions do not apply to an aircraft like the AS332. Further, because it is a Standard Category aircraft and is already recognized as such by civil aviation authorities all over the world, it is much easier from a foreign regulations aspect to operate these aircraft overseas. This also opens the doors to a wide variety of potential fire contracts for the Firecats that many aircraft in the Type-1 category simply can't pursue.

BUCKETS ARE ONLY THE BEGINNING

By the time this article is released, Precision's Firecat will already be stationed in Placerville, CA on their USFS EU contract. Though they will be utilizing Bambi buckets on long lines this season, already these

Super Pumas are vastly different from the AS332s that last saw fire service in California nearly a decade and a half ago (before ERA decided that offshore work was more profitable than fire contracts). Likewise, these aircraft are vastly different from their utility or logging brethren which have simply been pulled off the hill and equipped with buckets to fight fires.

According to Rath and Gallager, though they're very different from other Super Pumas out there, these aircraft still haven't been fully modified to achieve their peak performance either. There are still additional steps that can be taken to get even more performance out of these already lean machines, which is hard to imagine given that Firecat pilots already give the aircraft very high marks for how it flies, even with a full load of water and often relate it to feeling like flying a big AStar. Ty Burlingham, Chief Pilot for Precision and one of the pilots in the Firecat program illustrates, "With how well the Super Puma handles, its extremely nimble, has a wide power margin, and is incredibly stable, it's really easy to forget that you're flying a heavy helicopter."

Moving beyond the weight reduction these aircraft have already received, and taking additional steps to further enhance their performance, there are also several more advancements that will be integrated into the Firecat program in the near future. Already, Coldstream and Precision are testing 1,000 gallon external tanks from a few different manufacturers around the world. Additionally, the partnership envisions equipping the aircraft for NVGs, hoist operations, rappel insertions and much more.


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ADVANCED INITIAL ATTACK

Following the last few years of successful Firecat operations in British Columbia it has been shown that two Firecats can deliver up to 2 million lbs of water (1 million lbs of water each) to the fireline over an 8 hr period. This is also with near pinpoint accuracy which the firefighters on the ground greatly appreciate. Additionally, the Firecats can bring so much more to the party than a fixed-wing tanker. Staffing two Firecats with eight firefighters each allows both cats (along with their 16 firefighters) to make up one, fully equipped, initial attack unit. This makes the Firecat "Tanker Group" an unmatched initial attack module, capable of delivering both firefighters and water to the fire quickly.

This IA Module of Firecats and Helitack Firefighters has a range that encompasses more than 400 NM and is able to respond to any fire at speeds approaching 150 kts (175 mph). Once the Firecats drop off their firefighters, they're able to fly to the nearest water source and rapidly snorkel-fill their belly tanks. Within minutes the helicopters are back on the fire and supporting those firefighters on the ground with one thousand gallon (4000L) water drops every few minutes. Furthermore, because of their performance, these aircraft can continue to do so for up to three hours of "on station" time. Frequently, in their experience on fires during the past few seasons in Canada, even the HELICO aircraft had to leave to get fuel and return before the Firecats needed to leave for fuel.

Gallager adds, "it doesn't take a lot of imagination to realize that the amount of damage that kind of man and water power can do to a fire is massive, especially in the early (IA) stages." Even in an extended attack role, dropping 1,000 gallons of water every few minutes in concert with efforts on the ground and tankers overhead assures that the Firecat will likely remain an important asset on any incident that it is working.

FIRECAT 2.0

The Firecat's performance and its ability to move up to 19 firefighters at a time (more often, taking an IA team of nine firefighters with all their gear at once, where most other IA platforms are required to take multiple trips), coupled with its hoist capabilities and ability to fight fires at night, stands to put the AS332 in a position to bring a lot of flexibility as a tool in the proverbial toolbox. Not only do; BC, AB, and Ontario Wildfire recognize this, but other agencies that are being introduced to the Firecat, including Cal Fire and the USFS, are already seeing the helicopter's potential as well.

For Precision and Coldstream, helping these agencies understand the Firecat's capabilities is first accomplished by letting them know that the aircraft is now an option for them, and secondly, by educating them about the aircraft. As David Rath relates, "With other aircraft, we're just one of many operators of the type and when you apply for a contract the agency says 'Thank you, we'll call you if we need you.' With the Super Pumas the script has been flipped and agencies have shown a different level of interest all together. They've called us back almost immediately asking, 'can you do this?', 'can we do that?', 'what are your thoughts on this?' That level of interaction is not something that we are used to seeing from them, but we're taking it as a good sign."

Despite the interest of many agencies around the world in their program as it exists today, the team isn't finished innovating and further tweaking the final form of the Firecat yet. Gallager explains that, "One of the aspects that makes our partnership so great is that not only are our two companies very aligned in our culture, but we are very closely aligned in our vision as well." Future iterations of the Firecat include equipping them with many more mission systems and integrating them with other modules to enhance the capabilities that these modules will bring to Incident Commanders around the globe, further adding even more value to the program.

These advanced, future systems will include varying infrared and electro-optical sensors along with data downlinks. Coldstream is also testing 5G and satellite based connectivity for the aircraft and the team is even working on employing the aircraft in tandem with some of Precision's highly advanced drones operating as overwatch. These drones could be operated by one of their command vehicles, or by an operator based at Incident Command. The drone and the helicopter combination would be able to gather and provide a huge amount of data and intelligence on the fire which would then be fused together and provided to Incident Command and back to the aircraft, helping to enhance not only the Firecat's situational awareness of any

incident they are working, but that of the Incident Commanders on scene as well.

MOVING FORWARD - SMARTLY

In looking at the AS332 as a dedicated firefighting or utility aircraft in the North American market, the only real “Achilles’ Heel,” according to Gallager, is the supply chain. Everyone, including the Forest Service, knows that there is something called ‘Next Day Delivery’ and unfortunately, that’s not generally an option that can be found when ordering parts for a Super Puma which was built in France. Additionally, this past year has highlighted how programs from any industry which are dependent on a global supply chain can take massive hits when faced with something like a global pandemic.

In moving forward with their Firecat program, there are still a few things that need to be refined in the supply chain according to the opinions of Gallager and Rath. Firstly, they hope to eventually see more parts being available through the OEM, stockpiled somewhere in North America - and they believe that is something that they will see as the number of operators of the type continue to increase here. Secondly, the team has made great strides in finding local solutions to global problems by focusing on sourcing whatever they possibly can from their local supply chains.

Gallager is proud of the fact that Coldstream has formed a dedicated aerospace manufacturing division, which already has developed five STCs for this aircraft and will continue to do more. He is especially proud that all of the components for those STCs are manufactured within a kilometer of Coldstream’s hangar in Kelowna. As he explains,“Covid really showed that we cannot continue to rely on that global environment if we are subjected to those kinds of restrictions. It really helped create the opportunity for all of us to remember how


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to learn to take care of ourselves." Part of that is also about finding the right suppliers for everything.

Forging ahead, there is a great opportunity that is presenting itself for Canada and the US to 'cross-pollinate,' when it comes to many aspects of flying and fixing the Super Pumas, from fixing PCB Boards to finding Mechanics, training Pilots to manufacturing Cargo Hooks, the more these aircraft become common place on this continent, the more opportunities there are for all sorts of support at "local levels." "The distance from Coldstream in Kelowna to our facility in McMinnville is only a 1.2 hour flight in our PC-12 aircraft. Between our Part 145 Repair Station capabilities, and the ability to have a homogeneous inventory to support the fleet; any outside influences to delay the supply chain will become negligible," Rath states.

"CATS EAT BIRDS..."

After dealing with some significant hurdles to get here, Firecats have arrived and Coldstream and Precision are finally presenting fire agencies with a potential solution to some of the gap problems that they have been experiencing. Ultimately, it is up to the agencies to recognize those gaps and effectively field whatever solution they choose. At this point,

only time will tell how well the aircraft will differentiate itself from the rest of the Type-1 pack but Gallager thinks that nature has provided him with a clue, (he laughs) “Cats eat birds... right?”

In reflecting on Coldstream and Precision’s entry into the Type-1 helicopter market Gallager further explains. “Like everyone else, we had the opportunity to pick up ‘Hawks. I chose the Puma because of its performance, safety, reliability, and, because of its standard category. Plus, it’s one of very few Type-1 helicopters that are still in mass production. Anyone can pick up one off the line today.” Pausing briefly, “Let’s be honest, especially given the litigious atmosphere in the US, with a standard category Type-1 helicopter as an option, what benefit is there to using a restricted category helicopter for the same missions?”

Despite the numerous specialized missions that Coldstream and Precision are working toward having their Firecats fly, they are already separately being flown today by numerous AS332s around the globe, mostly, by their military operators which account for almost 80% of the more than 1,000 Super Pumas world-wide. In taking this helicopter and molding it into a specialized civilian platform to erform all of those missions for public safety; at the end of the day Coldstream and Precision aren’t, ‘reinventing the wheel,’ with the Firecat - they’re simply providing an innovative option for fighting fires with Type-1 helicopters. ■