



Two-seater helps boost new pilots' confidence

by Alexa Rexroth

Armed with a flight instructor's typical toolbox of an expansive whiteboard, dry-erase markers, and a computer-projected flight manual, Laurent Coulon, a Hélicoptères Guimbal Cabri G2 factory pilot, held court over a captivated audience at Precision Helicopters in Oregon. Precision hosted Coulon along with Cabri instructors and pilots for a multi-day advanced training course designed to provide the first factory-equivalent training session in the United States. Seated among a group of pilots with Coulon at the helm, I listened with an ear typically tuned to a frequency of Robinson-related understanding when discussing piston helicopters. As discussed in depth by Coulon, however, the Cabri G2 differs from the Robinson R22 in multiple capacities. I would come to immediately recognize these differences later in the day when I had the opportunity to fly the Cabri.



With a fully articulated three-blade composite main rotor system, fenestron tail rotor, and composite airframe, the Cabri certainly stands out from other piston training helicopters. A Lycoming O360-J2A serves as the aircraft's powerplant, and pricing for the helicopter sits around \$400,000. While that price tag may induce sticker shock for a buyer who could purchase a Robinson R22 for something in the ballpark of \$250,000, Coulon explained the value of the aircraft is apparent when it comes to safety and associated maintenance costs.

Avery Kunz, an experienced Cabri instructor at Precision, echoed Coulon's reasoning and explained, "The way that it operates is very much like a turbine in terms of the power management, so we like the idea that it gets students into the mindset of the next aircraft they are going to get into. Students recognize the benefits of flying the aircraft and the quality of training they get with flying the Cabri."

Training costs in the Cabri have been averaging \$430 to \$450 per flight hour in the U.S., certainly more expensive when compared to most other piston training helicopters, but Kunz said cost has not been an overwhelmingly limiting factor. "We're seeing this shift and change away from the Robinson product and its narrow flight envelope. The Cabri gives the student a lot more freedom to make mistakes while still remaining safe and has a much larger operating envelope," said Kunz.

The French aircraft has been actively establishing itself in the U.S. market. Kunz estimated that in the U.S., there are approximately 20 to 25 Cabri instructors and 24 Cabri helicopters with 28 expected in the country by the end of the year. Coulon said the largest Cabri fleets are operating in England and New Zealand, with the U.S. falling into a third-place operating ranking. "Step by step, people are preferring to fly with the Cabri. It is much safer for training," he said.

Training the instructors

Precision Helicopters of Newberg, Oregon, hosted the first advanced training session for the Cabri in the U.S., led by Laurent Coulon. "I think the pilots are happy to fly with me because they can discover what we can and can't do with the Cabri. I want the instructors to apply the same techniques to their instruction," said Coulon. The course was well received by attendees who were able to receive flight training from both Coulon and Precision's in-house instructors. Orin Acker, an experienced pilot from Chicago and course attendee, concluded, "The Cabri flies better than a small helicopter should. It handles very well and has good authority. It was very impressive."

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The Cabri's fenestron is one characteristic that will be an adjustment for pilots used to more typical trainers, such as the Robinson R22, according to AIN's Alexa Rexroth.

I was curious about lead times on receiving a Cabri in the U.S., and Coulon said the process would take three to six months at the maximum end of the scale. I asked if it was difficult to acquire Cabri parts in the U.S., to which Kunz responded, “As a distributor, we do keep parts on the shelf here. The time zones work in our favor here in the U.S., and we can usually have something overnighted by the next day. Turnaround is not a long time and we have not had any aircraft sitting and waiting for parts.”

Classroom Instruction

Before setting out on our scheduled flights, Coulon provided a detailed ground course surrounding the advanced training syllabus in an effort to aid instructors in imparting the knowledge in their respective training programs. He outlined the unusual attitudes and emergency maneuvers that could be expected during the flight training portion to provide pilots with a refined understanding of the aircraft's operating envelope. The



topic of the relationship between Cabri's fenestron and pilots limited to conventional tail rotor experience occupied the bulk of Coulon's discussion.

"The only difficulty is the fenestron. People who are coming from a Robinson and going into a Cabri will need to get used to putting in some work with the pedals. The controls are heavier and you have to use trim and some effort. In the beginning, control seems harder, but after a little while you will see that in flight, it is very stable," said Coulon.

A service letter was added to the flight manual after two incidents involving pilots without previous fenestron experience who had losses of control in yaw. Coulon walked us through the typical situations and conclusions provided within the service letter. The letter stressed that a pilot should "never hesitate to apply full right pedal" to correct a yawing to the left and arrest the yaw before it can increase in speed. In addition, the letter notes, "A pilot with most experience with counterclockwise-rotating rotors, is a significant aggravating factor, because the pilot is used to applying left pedal rather than right, thus accelerating yaw motion rather than stopping it."

I asked Coulon how long he thought it would take a pilot without fenestron experience to begin to adapt to the Cabri. "When they start to fly in the Cabri, they will need around five to 10 hours to feel comfortable," he said. As a pilot without any previous non-conventional tail rotor experience at that point, I was eager to find out how the fenestron felt in flight.



In the Right Seat

With two helicopters operating at a time, I was placed with Kunz as my instructor, while another pilot was assigned to fly with Coulon. While the goal of the course at hand was to provide advanced training for Cabri flight instructors over a multi-day period, I told Kunz that I wanted my one hour of flight time in the Cabri to serve as an introduction to its nuances and characteristics. With gusting winds and persistent precipitation providing the setting for the day, we walked out to the Cabri, N370PA, and Avery told me this specific aircraft was the first Cabri to have arrived in the U.S.

Upon sitting in the helicopter, two things became strikingly noticeable to me. The first was of aesthetic concern, as I was faced with an appealing instrument panel and electronic pilot monitor (EPM) screen. A row of simple switches fell below the gauges and I noticed that carburetor heat was applied via a switch that could be left at “auto” or flipped to “hot” or “cold.” The second realization involved a very tangible concern that I can never seem to ignore despite some serious wishful thinking. I tried, filled with false hope stunted further still by my limited stature, to gain full extension on the pedals. Even after flipping the pedals to a position closer to the pilot, I still was out of luck. I immediately decided that my permanent sidekick, a cushion that has played a supporting role far beyond lumbar support, was going to be necessary to ensure my ability to apply full pedal input.

Kunz walked me through the start-up checklist and when the EPM came alive, I realized I would need to train my eye to adjust to the multiple limit indicator (MLI) and engine and rotor speed indicator. The uncluttered nature of the EPM helped to make that process non-intimidating and approachable. I was still concerned, however, about my impending pickup into a hover.

With the fenestron discussion on my mind, coupled with the thought of the rotor spinning clockwise, my apprehension was apparently obvious to a very vigilant Kunz. He instructed me to simply look outside and focus only on keeping the nose straight. I still started to input left pedal as I slowly raised the collective and Kunz demonstrated how much right pedal was indeed required for a successful pickup. He reset the Cabri and allowed me to do another pickup and this time I made sure to have my right foot ready. The second pickup felt better, but I could still feel myself fighting motor memory.

As we began to transition to forward flight, I started to recognize that the Cabri's controls definitely felt heavier than the R22's. Once we initiated straight-and-level flight, Kunz reminded me to use the electric trim to my advantage. We proceeded to a confined landing area where I continued to work on my control inputs and got my first glance at the Cabri's impressive capabilities for a relatively small piston helicopter. Advancing again into forward flight, a rainbow in the distance was unfortunately competing in the windscreen view with a trim string that



was clearly indicating my continued lack of proficiency. This visual reminder, however, fueled my interest in wanting to keep working to improve my comfort level with my pedal work.

Kunz directed me to another airport where we performed power recovery and full down autorotations and I began to fully appreciate the impressive little aircraft. The full-downs felt controlled and stable while Kunz demonstrated the Cabri's obviously large operating envelope. Upon return to Precision's base at Chehalem Airpark, we practiced hover autorotations that further increased my admiration of the Cabri. I was starting to feel hooked and thought that I would begin to feel more comfortable with the fenestron and controls with continued training. During my short time spent flying the Cabri, I transitioned from feeling doubtful upon pickup to feeling stung again by the addictive flying bug upon set-down.

A few days after my flight, I noticed a particularly interesting service letter in the Cabri's flight manual titled "safety and extreme maneuvers." The letter notes the Cabri's "good ability to demonstrate autorotations and forgiving behavior, a high capability to recover from marginal flight conditions, and the capability to operate in high wind gusts." The list of commendable qualities is immediately followed by Cabri's confirmation that such "characteristics may induce the pilot's excessive confidence" and they "would like to highlight that once the Cabri G2 flight margins have been overtaken, the safety benefits that you can expect are cancelled." Cabri therefore "insists that flight manual procedures should be followed for best flight safety." Even such a seemingly capable helicopter can't ever escape the consistent, and gravely important need for pilots to always remain humble. ■

Price:

(typically completed and equipped)

\$400,000.00

Engine:

Textron Lycoming O360-J2A

Power Rating:

(Max continuous)

145 hp

Power Rating:

(Max takeoff 5-Minutes)

160 hp

Passengers:

(typical)

1 crew + 1 pax

Max Range Speed:

80 kias

Range:

(85% power, 15-min reserve)

380 NM

Max Endurance Speed:

50 kias

Max Endurance:

(50 kias, no reserve)

5 hrs 40 min

Max Fuel capacity:

45 gal

Ceiling:

(service)

12,000ft

IGE hovering ceiling:

(gross weight, ISA)

5,000 ft

Max hovering ceiling:

(two pax, two hrs fuel, ISA)

7,500 ft

Max Gross weight:

1,543 lbs