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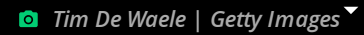
The helicopter team that films the Tour de France is one of a kind

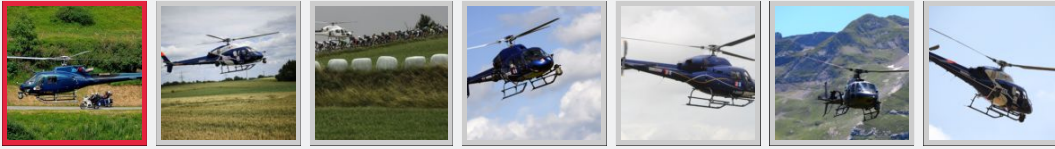
When filming this race, 500 feet is considered high altitude.

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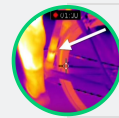
Since 1999, Hélicoptères de France has filmed the Tour de France.

 Tim De Waele | Getty Images



It's the time of year when the only bicycle race that most people pay attention to is at hand. The Tour de France began on July 6 and with it an intense competition that circles the country and ends in Paris with a yellow jersey presented to the winner. But for millions who watch it on TV, the race is secondary to the scenery. The Tour de France has been referred to as a travelogue for France, luring viewers worldwide with picturesque scenes of the French countryside and culture. The race began in 1903, and today the Tour is the third-largest sporting event in the world after the FIFA World Cup and the Olympics.

Many of the best views of the three-week-long competition come from video provided by helicopters that follow and shoot the action from overhead. Beyond the cyclists, the aircraft of **Hélicoptères de France** (HdF) capture jagged mountain slopes, ancient French castles, fields of sunflowers and the wide boulevards of Paris. Founded in 1991, HdF provides helicopter services from passenger transport and tours to cargo and medevac operations. But the company, which is based in the town of Tallard in southeastern France, is best known worldwide for its work as the official aerial film and support unit for the Tour de France, a status it has held since 1999.



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Flying squirrels?

HdF uses a trio of AS355 and AS350 Écureuil (Squirrel) helicopters to film and relay live images of the Tour. Built by Eurocopter (now Airbus), the AS355 is a light, five-passenger helicopter powered by a pair of 566 shaft-horsepower (shp) Safran Arrius 1A1 turbine engines. The AS350 is basically the same helo with a single 732shp Safran Arriel 1D1 turbine. Écureuils are in civilian use around the world, including the US, and with numerous military/government operators.

Two AS355s serve as the video-copters, carrying a wide-angle Cineflex gyro-stabilized, five-axis camera on the nose and a long focal-length camera on either side of the cabin. The cameras are encased in pods designed to interfere as little as possible with the aerodynamics of the aircraft. An AS350 serves as a relay helicopter, equipped with VHF antennas that receive and transmit live feeds from the AS355s, as well as ground cameras on motorcycles.

Circling at 2,000 feet (600m), the relay helo takes camera feeds and sends them to a fixed-wing aircraft flying higher at 10,000 to 25,000 feet (3,000-7,600m), depending on weather. The airplane sends the combined feeds back down to two receive trucks located along the race course.

The trucks act like signal repeaters, the first sending video to a satellite that sends it back to the second truck further along the course, which finally forwards the signal to the town where the finish line is located. With stages of varying terrain up to 140 miles (225km) long, this hop-skip method ensures the best video

fidelity with the least time-lag. The video signal is quickly decoded and available to producers in France Television's production truck at the finish line.

Low level

But the real action is with the AS355 camera helos. Flying at anywhere from 500 feet (150m) to literally one foot (30cm) above the ground, they bring viewers amazingly close to the riders while trying not to interfere with the race. HdF has developed special procedures with the French civil aviation authority, allowing not only extreme low-altitude flight but a lateral separation of just 500 feet from the course.

HdF has three specially qualified Tour de France camera pilots, though other HdF pilots can step in if necessary. They are joined by camera operators who focus on race action, from breakaways to accidents, as well as important landmarks and the artistic displays frequently created by towns and villages along the route.

The Tour typically announces the route the race will follow in November. By January of the new year, HdF teams take to the roads the race will cross in order to locate nearby landing fields and drop zones (including those on private property). They assess the overflight authorizations that will be required and negotiate with landowners where necessary.

For six months, the pilots train for the routes, maneuvers, emergency procedures, and camera positioning required by the director for the most effective, picturesque coverage. Their filming missions are literally scripted to the minute by the TV director, leaving little room for improvised maneuvering.

Filming the race is a sport of its own

HdF's CEO, Jean-Marc Généchési, is a former French Army and emergency services (EMS) helicopter pilot. In addition to the Tour, he landed the opportunity for HdF helos to film the Paris-Dakar Rally, as well as other bicycle races including Paris-Roubaix, the Criterium du Dauphiné, Paris-Tours, the Tour of Germany, and the Tour of Qatar. Généchési recently quipped to French newspaper *Les Echos* that "Broadcasting live images of the third largest sporting event in the world *is* a high-level sport."

During a race stage, camera pilots juggle six different radio frequencies, continuously communicating with each other, the camera operators, air traffic control, France TV, technicians and sportscasters. Over flat countryside, pilots not only have to maintain correct position but watch out for towers—especially high-voltage power lines. In the mountains they contend with unpredictable winds and hot temperatures that sap engine/rotor performance.

HdF pilots fly entirely by visual flight rules (VFR) daily for the three weeks of the Tour. By the time the riders finish on Champs-Élysées in Paris, the three HdF helicopters have amassed about 110 hours' flight time each during the event. During that time, HdF pilots will frequently fly in restricted airspace over cities, nuclear power plants, government buildings/installations, and over 30 nature areas.

Despite the challenges, the pilots love it. Each day they fly from a different airport, often a rural grass strip. The mountain stages are their favorite, according to Généchési, but the opportunity to fly at low altitude above Paris and other cities is magical, too. That magic is what they fly low and slow to capture.

As former HdF CEO Christian Duc told [Airbus' in-house magazine](#), "More than being a global sporting event, the Tour is a living postcard of France."

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