

**Shooting fast-breaking
news is Robinson Helicopter's
latest endeavor**

NEWS HAWK

BY TIM McADAMS

Helicopters and cameras have allowed us to peer down at our world from a perspective rarely employed. It's not your ordinary combination, but one awash with synergy. Together, the mode and the medium have entertained and informed us, and savvy television news directors have known this for decades—charter a helicopter, yank off the door, and throw a cameraman in the back to get aerial footage. The pictures proved so valuable that larger TV stations began acquiring dedicated news helicopters and outfitting them with the latest lightweight gyrostabilized cameras, video recording machines, and microwave transmitters. Although these helicopters have captured images from the shocking to the sublime, to acquire and operate one is an expensive undertaking.

PHOTOGRAPHY BY THE AUTHOR





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Frank Robinson knew this. In the early 1980s he rocked the flight-training world with his cost-effective, performance-packed two-seat R22 helicopter. It became so popular that he expanded the design to a larger, more powerful four-seat version appropriately named the R44. In fact, it shares many of the R22's proven components, such as the patented two-blade tri-hinge rotor and maintenance-free Teflon-lined bearings. Also, like the R22, all life-limited components have a minimum 2,000-hour time before overhaul (TBO). The staunch Lycoming O-540 piston engine, derated from 260 horsepower to 205 hp for longer life, powers the R44.

Robinson believed that the news industry needed an affordable yet reliable ENG (electronic news gathering) helicopter. After extensive research he installed state-of-the-art cameras and recording and microwave gear on a new R44 helicopter and began marketing it as a turnkey package. Dubbed the R44 Newscopter, it would find its niche with smaller stations, Robinson figured. The package turned out so well, however,

that stations in larger metropolitan areas have taken notice.

One such station is Cleveland, Ohio's CBS affiliate, WIOI Channel 19. News-hawk 19—as Cleveland viewers know it—was placed in service in June. Tom Griesdorn, the station's general manager, says that the low operating costs allow him to keep the helicopter flying for longer periods than his competitors' Bell JetRanger or Aerospatiale AStar. Indeed, on the day that I was there touring the studios, a large truck overturned on a highway at midday, crushing a car. The other two stations' helicopters were not flying, but within minutes News-hawk 19 began sending back to the station, via microwave, quite stable video of the accident. The footage was spectacular.

On the following day I met pilot Peter Roelands and reporter Rick Abell at Burke Lakefront Airport in downtown Cleveland. The helicopter's home is at the Wadsworth airport, about 50 miles to the south, where maintenance is done. Roelands had parked the bright yellow R44 in a grassy area reserved for

helicopters, and we headed out to take a look before our scheduled liftoff time of 4 p.m.

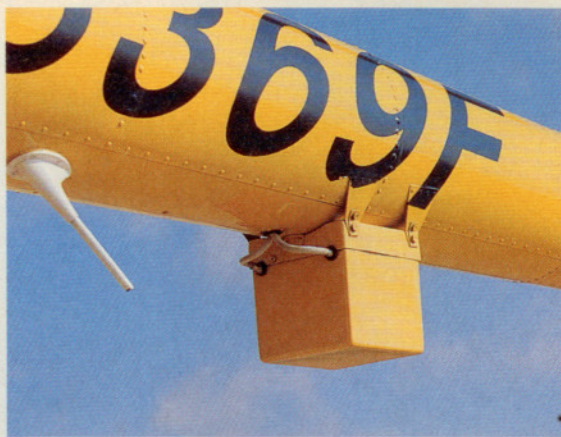
From a distance the two most obvious differences between the Newscopter and a standard R44 are the five-axis gyrostabilized camera ball, mounted on the nose, and the helicopter's battery, relocated to the bottom of the tail boom, not quite midway back. The two balance each other to maintain the helicopter's correct center of gravity. Closer scrutiny reveals additional antennas and a microwave pod on the belly. Aside from the telltale paint scheme, that's about it from the outside.

Inside, the helicopter's right rear seat has been removed and the space used to house the video and microwave gear. The storage space normally found under the left front seat now contains audio equipment. The Newscopter is available with either S-VHS or Beta SP video recorders. Two four-inch monitors reside on top of the instrument panel. One can be tuned to any TV station (although it's normally on WIOI), and the other is a monitor for the nose-

mounted camera. Images from two other on-board lipstick-size cameras can be displayed here as well. One is located on the rear stabilizer fin to show the helicopter's fuselage in flight, and the other is in the center of the windscreen to show the reporter during in-flight broadcasts. The camera operator sits in the left rear seat and has a six-inch monitor to view camera images.

Since the majority of the ENG equipment is designed to operate optimally at 28 volts, Robinson upgraded the R44's electrical system from 14 to 24 volts. Although the standard R44 maintains the original 14-volt system, Robinson now offers the higher-voltage version as an option.

By now it was getting close to launch time, and Abell was heading our way. He climbed into the rear left seat so that he could have access to the camera control box, and I took the front left, also known as the reporter's seat. There is no center post in an R44, so the view from every seat is unobstructed. Through a shared arrangement Abell would also be providing airborne traffic reports for radio station WTAM.



The Robinson Newscopter's battery has been relocated to the bottom of the tail boom, balancing the camera ball mounted on the nose.

The R44 shares the same advanced cockpit features found in the R22: the T-bar cyclic control, which makes getting in and out a snap; the automatic clutch engagement; and the RPM governor that eliminates throttle twisting. Also, to reduce pilot work load, there is a carburetor heat assist that automatically adjusts carb heat with power changes. With Abell, Roelands, me, and 2.5 hours of fuel, the helicopter weighed 45 pounds less

than its maximum gross weight of 2,400 pounds. Despite the mercury's pushing 85 degrees, Roelands lifted the helicopter into a hover and departed with ease.

The helicopter is capable of communicating on a multitude of frequencies and, once airborne, I quickly realized that Abell and Roelands were listening to several radios at the same time. The R44's standard AlliedSignal Bendix/King KY197 com radio has been replaced with the higher RF output, 24-volt Bendix/King KY196 radio. The Newscopter also comes with a II Morrow Apollo SL 60 GPS/Comm radio and two 450 MHz radios. Each seat has an audio panel that allows the user to choose which radio he or she wants to hear and to adjust the volume independently.

We weren't in the air long when the TV station called us to check out a possible accident that was backing up traffic along Interstate 71. Approaching the area, we found traffic stopped for miles. A closer look revealed no accident, but a construction zone with a stalled car blocking access. Abell decided to video-



tape it, and Roelands set the helicopter up in a 60-knot orbit at about 800 feet agl.

Using a laptop control box to direct all the functions of the FLIR Systems UltraMedia-RS gyro-stabilized camera ball, Abell can pan 360 degrees, roll plus or minus 25 degrees, and tilt up 20 degrees and down 110. Mounted inside the ball is a Hitachi HV-C10A 3-CCD broadcast-quality color camera with 700-plus lines of resolution. The camera's 20:1 Canon zoom lens comes with a built-in telephoto extender, pushing the effective range to 40:1.

As we circled the crippled car, I commented to Roelands that the R44 was noticeably smooth for a two-blade helicopter. With a smile, he agreed—perhaps thinking that pilot technique was involved, as well. Having quite a bit of flight time in two-blade helicopters myself (including the R44), I know that

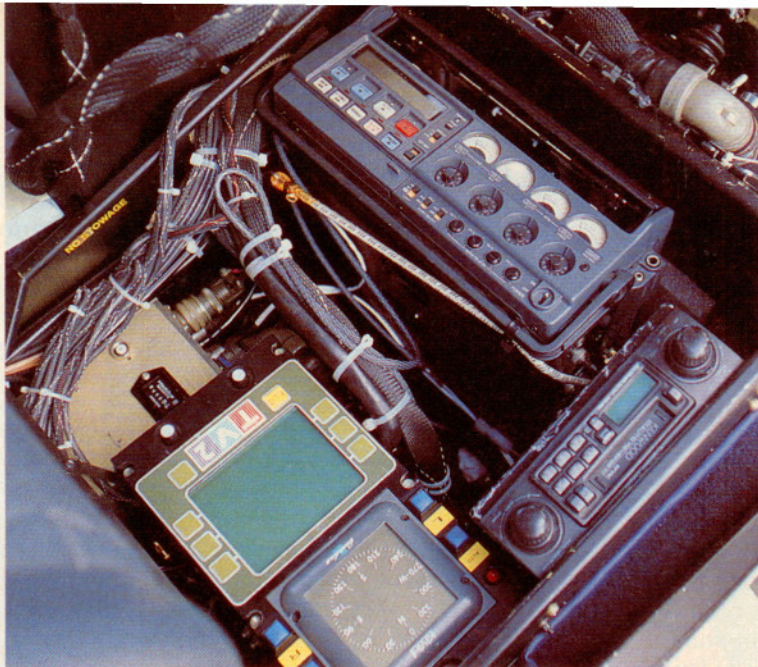
The helicopter's aft right seat has been removed and the space used to house the video and microwave gear. The storage space normally found under the left front seat contains audio equipment.

the right blend of power and airspeed makes a difference. Turning my attention to the camera monitor, I was impressed by the stability of the images. However, the best was yet to come. As Abell

zoomed all the way in, we were looking under the hood of the stalled car. Still rock-stable. After a few more circles, we had enough video. Abell gave a traffic report to the radio station, and we headed across town to check some other roads.

Roelands nosed the helicopter over, and we quickly accelerated to 120 knots, still smooth. En route, Roelands and Abell explained how they would do a typical live broadcast. The pilot would circle the scene while the camera-

man would operate the nose camera and the tiny camera pointed at my seat. The camera operator would switch between the scene and the reporter as the reporter was describing the news event. While the helicopter circled, an automatic device with a built-in directional gyro would keep the microwave beam pointing at the TV station's antenna. Although we didn't get to try it, I had seen it perform flawlessly





The R44 slips through the air at 120 knots because the shape of the fuselage minimizes parasite drag.

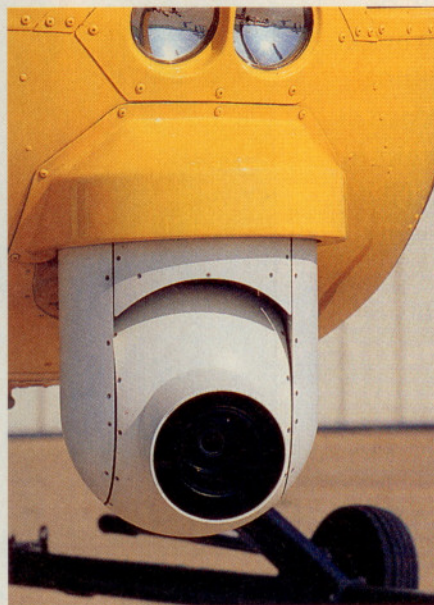
from the studio the day before.

As we were nearing the end of our afternoon flight, Abell demonstrated the lipstick cameras. The tail-mounted camera made for an interesting shot of the helicopter in flight. Since it is mounted directly to the frame, one would expect to see some vibration. However, because the lens is fixed at a wide angle of view, there is no noticeable shake. Abell switched to the one mounted above the instrument panel and I saw myself on the monitor. Again, there was no discernible vibration.

Back on the ground, Roelands and Abell talked about how every little detail has been thought out. The helicopter has a natural feel, and all the necessary switches are within easy reach. In fact, from the beginning, Robinson agonized over every detail of the R44's design. For example, the R44 can slip through the air at a remarkable 120 knots because careful attention was paid to the shape of the fuselage to keep parasite drag to a minimum.

Robinson applied the same philosophy to the Newscopter. According to the TV station's technical department, all the

ENG equipment is high quality and works as well as, if not better than, advertised. The R44 Newscopter comes complete for \$529,000 and can be operated for less than \$120 per hour. (Operating costs for a single-engine turbine helicopter are about \$350 per hour.) It



requires no scheduled maintenance between 100-hour inspections and can fly around town all day, sipping just 12 to 15 gallons of fuel per hour. The high reliability is important because Newshawk 19 flies an average of five to six hours a day.

For Roelands, that makes for a long day. But it's a fun job and his helicopter flight time is piling up fast. Although contracted to WIOI, he is employed by Helicopter Flight, Inc., of Minneapolis, Minnesota. The company is one of the largest suppliers of pilots and management services for the R44. To fly the R44 Newscopter, Helicopter Flight requires 1,500 total helicopter hours and 75 in the R44. The company will lower the 1,500 hours to 1,000 hours if the pilot has a flight instructor certificate.

At a delivery rate of one R44 Newscopter per month the TV-viewing public will be getting quite a dose of aerial photography. With nearly 14 ships already sold, Robinson seems poised to repeat the prolific popularity experienced by the R22. For Frank Robinson, that is indeed good news. □