

# DISTRACTED

The pilots of two TV news helicopters were busy with news-reporting duties in the seconds before their midair collision in Phoenix.

BY LINDA WERFELMAN

Five television news-gathering helicopters were maneuvering to cover a police chase in Phoenix on July 27, 2007, when two of the aircraft — both Eurocopter AS 350B2s — collided over a downtown park as their pilot-reporters were describing the events occurring on the ground.

The crash killed the two pilot-reporters and two news photographers and destroyed both helicopters.

The U.S. National Transportation Safety Board (NTSB), in its final report on the accident, said that the probable cause was the failure of both pilots to see and avoid the other helicopter, and

“contributing to this failure was the pilots’ responsibility to perform reporting and visual tracking duties to support their station’s ENG [electronic news gathering] operation.”

The report identified as a contributing factor “the lack of formal procedures for Phoenix-area ENG pilots to follow



regarding the conduct of these operations.”

Visual meteorological conditions prevailed when the midair collision occurred at 1246 local time, about 23 minutes after a police helicopter contacted air traffic control (ATC) to join the pursuit by police on the ground of a suspect accused of stealing a pickup truck, backing it into a police vehicle and then fleeing in the truck. Over the next 22 minutes, pilots of the five news helicopters also checked in with ATC and headed for the area of the police chase.

An accident investigator photographs the wreckage of one of two TV news helicopters that crashed to the ground in a downtown Phoenix park after a midair collision. Four people were killed in the 2007 crash.

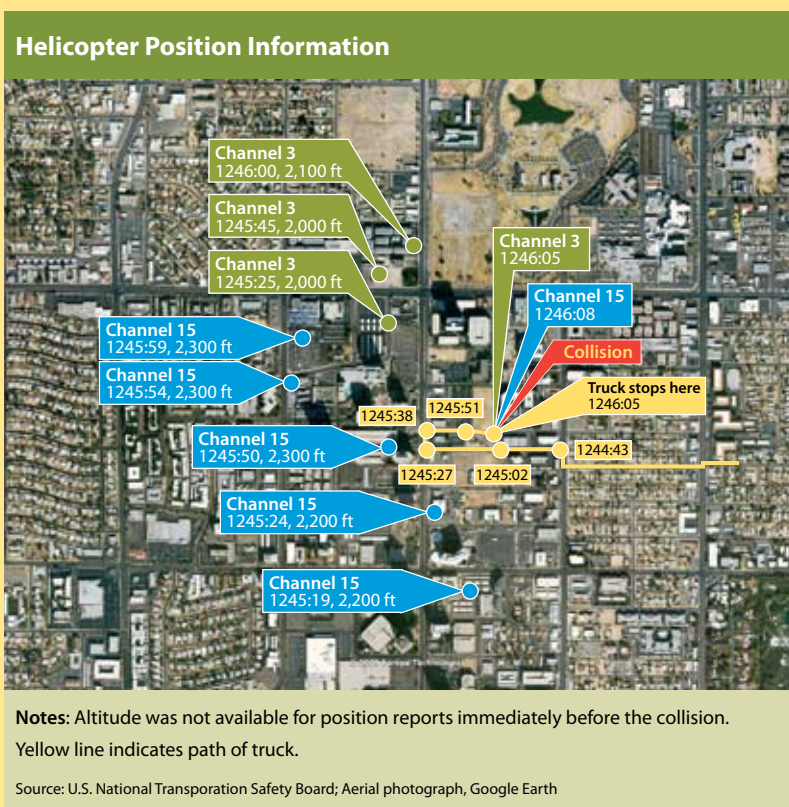


Figure 1

In accordance with informal procedures, the six helicopter pilots shared an air-to-air radio frequency to report their positions and their intentions. The accident helicopters — from Channel 3 and Channel 15 — had audio-video recording systems, and the information recorded by those systems was analyzed in the accident investigation. At 1238, the Channel 15 pilot was recorded telling the other pilots that he was flying at 2,200 ft, and the Channel 3 pilot said that his helicopter was at 2,000 ft (Figure 1).

“According to the Channel 3 and 15 audio recordings, about 1241:02, the Channel 15 pilot stated, ‘I’ll just kinda park it right here.’ About 1241:18, the Channel 3 pilot broadcast, ‘OK, I’m gonna move.’ Between about 1241:22 and about 1241:26, the Channel 15 pilot stated, ‘where’s three?’ ... ‘like how far?’ ... and ‘oh jeez.’ The Channel 15 pilot then transmitted, ‘Three. I’m right over you. Fifteen’s on top of you.’ Afterward, the Channel 3 pilot questioned which

helicopter Channel 15 was over, to which the Channel 15 pilot responded, ‘I’m over the top of you.’ About 1241:34, the Channel 3 pilot indicated that he was operating at 2,000 feet. About 1242:25, the Channel 3 pilot stated to the Channel 15 pilot, ‘OK. ... I got you in sight,’ to which the Channel 15 pilot responded, about three seconds later, ‘got you as well.’”

These comments — about four minutes before the collision — were the last in which the two pilots coordinated their helicopters’ positions or intentions. The video recordings from the helicopters showed that, during those four minutes, both helicopters continued to change position.

The report said that the suspect stopped the stolen vehicle about 1246:05, and in a broadcast recording that began at 1245:43, the Channel 3 pilot said, “Looks like he [the suspect] is starting to run. ... Looks like he’s gonna try and take another vehicle ... looks like they’ve got him blocked in there, but he did get ...” The Channel 3 report then ended “suddenly, with an unintelligible word,” the NTSB said.



Pat Shannahan/Associated Press

**Pilots of the two TV news helicopters had traded information about the positions of their aircraft several times, but investigators say the last exchange came about four minutes before their midair collision.**

The Channel 15 pilot, in a live broadcast that began at 1246:03, said, “He [the suspect] has stopped ... now it’s a foot chase. Now he’s in another vehicle ... doors open police ... oh jee.” That report also ended suddenly, the NTSB said, and audio recordings from both helicopters indicated that the midair collision occurred about 1246:18.

Both helicopters plunged to the ground in a city park, and the pilot of a third ENG helicopter told ATC there had been a midair collision.

The Channel 3 pilot, who in September 2006 reported having 13,579 flight hours, received a commercial pilot certificate with a rotorcraft-helicopter rating on Aug. 24, 1987. He also held a certified flight instructor certificate with a rotorcraft-helicopter rating and a second-class medical certificate. He was a backup pilot under contract to Channel 3 and a part-time employee; the station’s chief pilot said that the accident pilot had flown 79 flights and 124 flight hours for the station between Jan. 2 and July 5, 2007. The accident pilot also worked full time for Westcor Aviation in Scottsdale, Arizona, as director of operations and a charter pilot; the operator said the accident pilot had flown 88 hours for the company in 2007.

The Channel 15 pilot, who had 8,006 flight hours — all in helicopters, including 907 hours in AS 350B2s — received a commercial pilot certificate with a rotorcraft-helicopter rating on Dec. 7, 1990. He held a second-class medical certificate with a waiver for defective color vision; the NTSB report said that the deficiency

was not a factor in the accident. The pilot was hired in October 2005 by U.S. Helicopters, which had a contract to provide helicopter service to Channel 15. He flew an average of 45 hours per month for the station and did no other flying for U.S. Helicopters, the report said.

The Channel 3 helicopter had an ENG monitor near the instrument panel that displayed four scenes simultaneously: the station’s current broadcast, the video being recorded by the helicopter’s photographer and two other scenes selected by the pilot-reporter. The Channel 15 helicopter had a similar monitor that displayed one scene at a time.

The Channel 3 helicopter was equipped with an L-3 Communications SkyWatch SKY497 traffic advisory system that provided aural traffic warnings via the pilot’s headset, displayed traffic on a Garmin GNS 430 navigation unit and provided 20- to 30-second warnings of aircraft that were on a collision path.

“The system issued an aural alert when aircraft entered a cylinder of airspace surrounding the pilot’s aircraft that had a horizontal radius of ... 1,216 ft [371 m] and a height of plus or minus 600 ft [183 m],” the report said. Manufacturer’s guidance said that after hearing an alert, the pilot should look for the traffic and comply with right-of-way procedures. The guidance material also noted that an alert is generated only when the collision threat is first detected and that it is possible for the alert to be “inhibited.”

Channel 3’s chief pilot told investigators that the system had been functioning when he flew the helicopter earlier on the day of the accident. He also said that, in situations in which “a lot of traffic (was) in close,” the volume of the aural alert was turned down to ensure that the pilot could hear radio transmissions on the communications frequency.

Channel 15’s helicopter had no on-board traffic advisory system, the report said.

In addition to their use of the shared air-to-air frequency and their scans of the TV display screens in the cockpit, the pilot-reporters monitored the Phoenix air traffic control tower

frequency on another radio, communicated with their station news departments on a third radio and talked with their photographers over an intercom, the report said.

### 'Adequate' Communication

Radar data showed that the Channel 15 helicopter had been between 2,000 and 2,200 ft and entered a climbing right turn in the seconds before the crash; the last radar return showed the helicopter at 2,300 ft. At the same time, the Channel 3 helicopter, which had been at 2,000 ft, turned right; the last radar return showed the helicopter at 2,100 ft.

As part of the investigation, NTSB representatives met with Phoenix ENG helicopter pilots, who said that communication between the accident pilots had been "adequate" during the police chase. They also noted that, at the time of the accident, all operators except one used pilot-reporters to fly their aircraft; the exception was a station that employed a reporter-photographer.

However, the pilots told investigators that they sometimes lost sight of other helicopters because the aircraft paint schemes "tended to blend in with the desert landscape and vegetation." They recommended the use of high-visibility paint schemes for main rotors and tail rotors, and light-emitting diode (LED) anti-collision lights to improve helicopter conspicuity. Neither accident helicopter had these features.

The chief pilot for Channel 3 told investigators that, since the accident, pilots of the ENG helicopters have had "a lot more" air-to-air communication, describing the location of their helicopters and acknowledging the positions of others.

"He also stated that, in a static situation, such as a building fire, no helicopters would change position until all of the

pilots responded and that, in a dynamic situation, such as a car chase, the pilots would constantly communicate with one another and confirm each other's positions," the report said. "He further indicated that the pilots were providing more distance between each other's helicopters and were asking the photographers more often to check clearances (separation) with other helicopters."

The two accident pilots were experienced in helicopter operations

in general and ENG operations in AS 350B2s in the Phoenix area in particular, the report said. Both also were experienced in simultaneously flying their helicopters and reporting.

"Many of the tasks that the pilots were performing during the accident flight — such as flying the helicopter, operating the radios and initiating communications — were well-learned skills that would have been performed without much cognitive or physical

## Eurocopter AS 350



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The Eurocopter AS 350 is a light five/six-seat utility helicopter first produced in October 1977 by Aerospatiale as the AS 350B. The Aerospatiale helicopter division and the MBB (Messerschmitt-Bolkow-Blohm) helicopter division merged to form Eurocopter in 1992.

Several versions have been produced since the first AS 350Bs, which were powered by a 478 kw (641 shp) Turbomeca Arriel 1B turboshaft engine and a main rotor system comprising three fiberglass blades. The next version was the AS 350BA, with larger main rotor blades and an increased takeoff weight.

Current versions include the AS 350B2, certified in 1989, and the AS 350B3, first certified in France in 1997. The AS 350B2 has a 546 kw (732 shp) Arriel 1D1 engine, a maximum cruise speed of 134 kt at sea level and a maximum takeoff weight of 2,250 kg (4,960 lb) or 2,500 kg (5,512 lb) with an external load. The AS 350B3 has a 632 kw (847 shp) Arriel 2B engine, maximum cruise speed of 140 kt at sea level and a maximum takeoff weight of 2,250 kg, or 2,800 kg (6,173 lb) with an external load.

Source: *Jane's All the World's Aircraft*

effort,” the report said. “However the two helicopters collided without either pilot detecting the impending hazard. Thus, even for experienced pilots, the ability to shift attention among competing task demands may break down under high workload conditions and can lead to a narrowing of attention on a specific task.”

A review of audio recordings showed that the accident pilots did not use the air-to-air frequency to report their positions as often as the ENG pilots participating in the post-accident interview had thought, the report said.

“It is difficult to determine the extent that the Channel 3 and [Channel] 15 pilots’ reporting duties contributed to the breakdown in each pilot’s awareness of the other helicopter,” the report said. “The additional tasks of directly observing activities on the ground and providing narration could have affected the pilots’ ability to maintain their helicopter’s position or track the other helicopter’s positions. From about 1245:43 (Channel 3) and about 1246:03 (Channel 15) to the time of the collision, the pilots were continuously reporting the events as they unfolded, which narrowed the pilots’ attention to the ground and away from other tasks, such as maintaining the helicopters’ stated position and altitude and scanning the area for potential collision hazards.

“Even with the limited evidence to determine the extent that the pilots’ ENG-related duties affected their ability to see and avoid the other helicopter, the circumstances of this accident demonstrated that a failure to see and avoid occurred about the time that a critical event of interest to the ENG operations (the carjacking) was taking place on the ground. ... It is critical for ENG pilots to be vigilant of other aircraft during close-in operations and not to divert

their attention to a non-flying-related task or event.”

The NTSB also cited a report filed with the U.S. National Aeronautics and Space Administration Aviation Safety Reporting System (ASRS) — one of 18 reports of near-midair collisions involving ENG helicopters — in which the pilot described how he inadvertently allowed his helicopter to descend toward a police helicopter because his “hectic” workload had distracted him from altitude awareness.

“The midair collision in [Phoenix] and the near-midair collisions described in ... ASRS reports demonstrate the hazards involved in conducting ENG operations with multiple aircraft nearby,” the report said. “The safety board concludes that the Channel 3 and 15 pilots’ reporting and visual tracking duties immediately before the collision likely precluded them from recognizing the proximity of their helicopters at that time.”

### Aftermath

After the accident, both Channel 3 and Channel 15 modified their flight operations. The Channel 3 news helicopter is now staffed by two pilots — one to handle flying and the second to handle news reporting. The Channel 15 helicopter pilot no longer has reporting duties; the helicopter carries a photographer to obtain video.

In February, the Helicopter Association International (HAI) approved a new *Broadcast Aviation Safety Manual* developed along the lines of many of the NTSB safety recommendations issued as a result of the accident investigation.

The 10 safety recommendations included a call for the U.S. Federal Aviation Administration (FAA) to require ENG operators to assign reporting duties to “someone other than the flying pilot, unless it can be determined

that the pilot’s workload would remain manageable under all conditions,” and to require high-visibility blade paint schemes and high-visibility anti-collision lights on ENG aircraft.

Other recommendations said the FAA should develop standards for helicopter cockpit electronic traffic advisory systems to notify pilots of the presence of nearby aircraft, and require that the systems be installed in ENG aircraft; host annual ENG helicopter conferences to discuss relevant issues, and, based on those discussions, develop agreements specifying minimum horizontal and vertical aircraft separation requirements; and incorporate information from the HAI safety manual into an FAA advisory circular.

Other recommendations — superseding similar recommendations issued in 2003 — call for requiring the installation of a “crash-protected flight recorder system” on new and existing turbine-powered, non-experimental, non-restricted-category aircraft that are not equipped with a flight data recorder and cockpit voice recorder and that are operated under U.S. Federal Aviation Regulations Parts 91, 121 or 135. The recorder should record cockpit audio, if a cockpit voice recorder has not already been installed, as well as “a view of the cockpit environment to include as much of the outside view as possible” and flight data, the NTSB said.

Since 2004, the NTSB has included similar recommendations on its “most wanted” list of transportation safety improvements. ➤

*This article is based on U.S. National Transportation Safety Board (NTSB) Accident Report NTSB/AAR-09/02, “Midair Collision of Electronic News Gathering Helicopter KTVK-TV, Eurocopter AS350B2, N613TV, and U.S. Helicopters Inc., Eurocopter AS350B2, N215TV, Phoenix, Arizona, July 27, 2007.” Jan. 28, 2009.*