

 National Transportation Safety Board PRELIMINARY REPORT AVIATION		NTSB ID: LAX07MA231B		Most Critical Injury: Fatal	
		Occurrence Date: 07/27/2007		Investigated By: NTSB	
		Occurrence Type: Accident		ICAO Report Submitted:	
Location/Time					
Nearest City/Place		State	Zip Code	Local Time	Time Zone
Phoenix		AZ	85034	1246	MST
Aircraft Information					
Registration Number		Aircraft Manufacturer		Model/Series Number	
N15TV		American Eurocopter		AS 350 B2	
Type of Aircraft: Helicopter			Homebuilt Aircraft? No		
Injury Summary:		Fatal	2	Serious	Minor
					None
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>On July 27, 2007, about 1246 mountain standard time, Channel 3 (CH 3) and Channel 15 (CH 15) News helicopters, N13TV and N215TV, respectively, collided in mid air while maneuvering in Phoenix, Arizona. Each helicopter was an American Eurocopter AS 350 B2. Mac America Communications and US Helicopters, Inc., were operating the helicopters under the provisions of 14 CFR Part 91. The commercial pilots of both helicopters and one photojournalist in each helicopter sustained fatal injuries. Ch 15 departed Scottsdale, Arizona, at 1222, and CH 3 departed Scottsdale at 1232, as local corporate flights. Visual meteorological conditions prevailed, and no flight plans had been filed. The main wreckage for both helicopters came to rest in a park about 75 feet from each other.</p> <p>Both helicopters were covering a police pursuit on local streets. The suspect's vehicle had been moving, but he stopped, abandoned it, and acquired another vehicle. The collision occurred during this transition.</p> <p>Another pilot indicated that there were five news helicopters in the air at the time of the accident. He indicated that the accident helicopters were positioned a reasonable distance apart when he first noticed them. The police helicopter then broadcast that there was going to be a car jacking. He stated that as a pilot, this would indicate to him that he would have to change position. He glanced away for a moment, and looked back to the accident helicopters while flying toward them. He noted that they had moved closer together. Shortly thereafter, they impacted. He could not say for sure the relative position of each helicopter, but noted that after the collision, CH 3 broke into many pieces. CH 15 remained in the air for a second, and then dove nose-first into the ground.</p> <p>Ground witnesses indicated that the CH 3 helicopter was relatively stationary. The CH 15 helicopter was maneuvering when the collision occurred. Upon impact, witnesses said that CH 3 broke into many pieces and fell to the ground spinning. CH 15 remained relatively intact except for the main rotor blades. It pointed nose down and collided with the ground. There were no reports of erratic movements prior to the collision, and no unusual sounds or smoke.</p> <p>A Phoenix Police Department helicopter pilot said that all aircraft operated on the same frequency (123.025). The media would operate a minimum of 500 feet above their altitude. In this case, they entered Class B airspace, and contacted Phoenix Sky Harbor (PHX) air traffic control tower (ATCT).</p> <p>The ATCT and local helicopter operators established a new letter of agreement (LOA), "Sharp Echo," on May 15, 2007. Its purpose was to specify responsibilities, define terms, and establish procedures to be used between Phoenix ATCT and signatory operators for the control and operation of VFR and Special VFR helicopters within the Phoenix Class B airspace. It changed ingress and egress to PHX, and added transition routes (north/south and east/west) that protect the final approach courses. All helicopters entering the airspace squawked the same secondary beacon code of 0400 on their transponders.</p>					
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Use of "Sharp Echo" indicates a pilot's understanding of and participation in this program. The pilots must state that they have the current ATIS code (e.g. "I have information Bravo") or the numbers. It states that helicopters should operate between 2,000 and 2,500 feet msl, north of Thomas Road while in the Class B Airspace, unless otherwise required. The controller is not required to provide separation to VFR helicopters in Class B airspace.

Other local pilots discussed local operating procedures. They all maintained communication with each other on the same frequency, and relied on maintaining separation by reporting their altitude and position relative to a ground reference point.

A review of recorded radar data indicated multiple targets at a mode C reported altitude of 2,100 feet msl; the accident site elevation was 1,100 feet.

The debris field was almost 3,000 feet long. Pieces of blade foam comprised most of the northern part of the debris field. A couple of main rotor blade tips were to the south and southwest about 700 feet from the main wreckage.

The main rotor blades for the AS 350 B2 rotate clockwise.

N13TV

The CH 3 helicopter had a primarily white cabin, transitioned to orange along most of the tail boom, and the tail was yellow.

Airframe

Fire consumed most of the main fuselage section. The tail boom section separated into several pieces.

The section of the tail boom forward of the tail rotor comprised one section. It had clockwise crush damage. The forward right section of the right horizontal stabilizer had a camera attached, and separated in an upward direction. The aft section of the left stabilizer separated, and was north of the main wreckage. It exhibited accordion crush damage in an outward direction. Investigators observed smeared zinc chromate primer transfer in a clockwise direction on the upper center section of the tail boom and horizontal stabilizer.

The aft tail boom comprised another piece. It exhibited a crush mark on the left side that was upward and to the right.

The remainder of the tail section with the tail rotor attached comprised a third major piece. The right side of the vertical fin exhibited punctures with black rub marks. The front of this section exhibited clockwise twisting with blue-gray paint and zinc chromate primer transfer. One tail rotor exhibited a flattened strike tab with chordwise scoring and orange paint transfer on the leading edge. The airframe manufacturer's investigator noted indications of flapping. The tail rotor drive shaft separated at the front end of this separated section; the fracture surface was angular and twisted. The tail rotor pitch change rod separated just forward of the tail rotor bell crank input along a 45-degree angle.

Main Rotor Blades

Red Blade

Charring encompassed the area 4 to 5 feet from the blade root. The blade portion aft of the spar from approximately 11 feet out was missing. The blade sustained mechanical damage and separation

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14 to 15 feet from the blade root. Investigators observed blue-gray and orange paint transfer marks on the leading edge from about 12 feet out to the separation point. The end plate and weights separated; investigators recovered them several hundred feet north-northwest of the main wreckage.

Blue Blade

Investigators observed significant mechanical damage 5 feet and 11 feet from the blade root, and the blade separated at these points. The leading edge stainless steel strip was missing from 9 to 11 feet. The blade sustained thermal damage from the root out to 11 feet; there was no thermal damage on the outboard separated pieces. The end plate was intact.

Yellow Blade

The blade portion aft of the spar was missing from 4 feet 4 inches and outboard. Investigators observed mechanical damage to the leading edge 5 feet from the blade root, and the blade separated at this point. The blade sustained mechanical damage 13 to 14 feet from the root. The 9- to 13-foot area sustained thermal damage. The outer 1 1/5 feet of the blade, with the end plate attached, separated; they found this piece on a parking garage rooftop southwest of the main wreckage site. The outboard leading edge of this piece sustained mechanical damage. The yellow Starflex blade sleeve exhibited the most severe damage of the three sleeves.

Engine

Post accident examination of the CH 3 engine revealed substantial impact and post-impact fire damage. The axial compressor ruptured from the gas generator between the intermediate casing and the turbine casing assembly of the gas generator. The axial rotor appeared solidly packed with mud and debris. The nose bullet was in place, and appeared undamaged. The compressor case and combustion chamber ruptured. The linking tube appeared flattened. The short shaft separated from the triangular flange at the rear of the turbine reduction gear; it exhibited torsional twist. The short shaft exhibited rotational scarring aft of the forward attach flange. The free turbine blades were in place, and the tips of the leading edges appeared chipped and broken.

N215TV

The CH 15 helicopter was primarily dark blue along the top of the cabin, tail boom, and tail; the lower part of the cabin was yellow.

Airframe

Fire consumed most of the main wreckage.

Main Rotor Blades**Red Blade**

The leading edge sustained mechanical damage 6 1/2 feet from the root; the blade separated at this point. The blade section aft of the spar was missing from the separation point to 12 feet 8 inches from the root. The leading edge stainless steel strip was also missing from this area. The blade portion outboard of 12 feet 8 inches separated; it hit a delivery truck and came to rest in a parking lot southwest of the main wreckage. The endplate was intact.

Blue Blade

The leading edge sustained mechanical damage and separated 4 feet 8 inches from the root. The

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inboard sections of the blade sustained thermal damage. Large sections of blade skin and foam core were missing. Investigators observed leading edge mechanical damage and forward bending from 9 feet 7 inches to 12 10 inches. One piece from this area separated; it was inside the park boundaries south of the main wreckage.

Yellow Blade

The blade sustained thermal damage from the root out to 8 feet 9 inches. Investigators observed severe mechanical damage and separation from 8 feet 9 inches to 11 feet 9 inches. A piece of blade from this area exhibited a semicircular impression with dimensions similar to a main rotor blade. There were blue-gray paint transfer marks along the leading edge. The blade section 11 feet 9 inches and outboard separated; the end plate was present.

Engine

Post accident examination of the CH 15 engine revealed substantial impact and post-crash fire damage. The axial rotor blades appeared bent in a direction opposite the direction of rotation. The nose bullet appeared flattened and smeared in a direction opposite that of rotation. The coupling tube between the engine and main rotor transmission ruptured; it exhibited torsional twist. The linking tube was twisted. The transmission shaft ruptured, and exhibited torsional twist. The short shaft separated from the triangular flange at the rear of the turbine reduction gear, and twisted; however, it remained connected to the triangular flange by a portion of the flexible coupling. The free turbine blades were in place, and appeared undamaged.

Federal Aviation Regulations (FAR)

FAR 91.111 addresses operating near other aircraft. It states in part that no person may operate an aircraft so close to another aircraft as to create a collision hazard. FAR 91.113 states in part that vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft.

Advisory Circular (AC) 90-48C Pilots' Role in Collision Avoidance

According to AC 90-48C, "...the flight rules prescribed in Part 91 of the Federal Aviation Regulations (FARs) set forth the concept of "See and Avoid." This concept requires that vigilance shall be maintained at all times, by each person operating an aircraft, regardless of whether the operation is conducted under Instrument Flight Rules (IFR) or Visual Flight Rules (VFR).

"Pilots should also keep in mind their responsibility for continuously maintaining a vigilant lookout regardless of the type of aircraft being flown. Remember that most MAC [mid-air collision] accidents and reported MAC [near mid-air collisions] occur during good VFR weather conditions and during the hours of daylight."

The AC further states, "pilots should remain constantly alert to all traffic movement within their field of vision as well as periodically scan the entire visual field outside of their aircraft to ensure detection of conflicting traffic. The probability of spotting a potential collision threat increases with the time spent looking outside, but certain techniques may be used to increase the effectiveness of the scan time. The human eyes tend to focus somewhere, even in a featureless sky. In order to be most effective, the pilot should shift glances and refocus at intervals. Pilots should also realize that their eyes may require several seconds to refocus when switching views between items in the cockpit and distance objects. Peripheral vision can be most useful in spotting collision threats from other aircraft. Pilots are reminded of the requirements to move one's head in order to search around the physical obstructions, such as door and window posts."

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Other Aircraft Involved		
Registration Number N13TV	Aircraft Manufacturer American Eurocopter	Model/Series Number AS 350 B2

Accident Information	
Aircraft Damage: Destroyed	Accident Occurred During: Maneuvering
Property Damage:	

Crew	Name	Certificate No.	Injury
Pilot	On File	On File	Fatal
2			
3			
4			
5			
6			

Operator Information			
Name US Helicopters, Inc.	Operator Designator Code	Doing Business As	
Street Address PO Box 625	City Marshville	State NC	Zip Code 28103
-Type of Certificate(s) Held: None			
Air Carrier Operating Certificate(s):			
Operating Certificate:		Operator Certificate:	
Regulation Flight Conducted Under: Part 91: General Aviation			
Type of Flight Operations Conducted: Other Work Use			

Flight Plan/Itinerary			
Type of Flight Plan Filed: None			
Last Departure Point Scottsdale	State AZ	Airport Identifier SDL	
Destination Local Flight	State	Airport Identifier	

Weather Information			
Investigator's Source:	Facility ID: PHX	Observation Time (Local): 1155	
Sky/Lowest Cloud Condition:		Ft. AGL	
Lowest Ceiling: Broken	5500 Ft. AGL	Visibility: 10 SM	Altimeter: 29.94 "Hg

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Weather Information (Continued from page 2)

Temperature: 34 °C	Dew Point: 19 °C	Wind Direction: 280	
Wind Speed: 6 Kts.	Gusts: 14 Kts.	Weather Conditions at Accident Site: Visual Conditions	

Administration Data

Notification From FAA AWP Operations Center	Date 07/27/2007	Local Time
FAA District Office/Coordinator Federal Aviation Administration AAI-100 Eric West	Investigator-In-Charge (IIC) howard Plagens	