

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA165	04/21/2017 1250 CDT	Regis# N653LA	Vidrine, LA	Apt: N/a
Acft Mk/Mdl AIR TRACTOR INC AT 602-NO SERIES	Acft SN 602-0653	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim	Prob Caus: Pending
Eng Mk/Mdl P&W PT6A		Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 137
Opr Name: CENTRAL FARMERS FLYING SERVICE	Opr dba:		Aircraft Fire: NONE	AW Cert: SPR

Events

1. Maneuvering-low-alt flying - Loss of engine power (total)
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Narrative

On April 21, 2017, about 1250 central daylight time, an Air Tractor AT602 agricultural airplane, N653LA conducted a forced landing near Vidrine, Louisiana. The commercial rated pilot was not injured and the airplane was substantially damaged during the landing. The airplane was registered to and operated by Central Famers Cooperative dba Central Farmers Flying Service under the provisions of 14 Code of Federal Regulations Part 137. Visual meteorological conditions prevailed at the time.

The pilot reported to the responding Federal Aviation Administration (FAA) inspector, that he was conducting spray operations. The pilot added that he was on the last run and made a climbing turn, when the engine "flamed out". He turned on the [fuel] boost pumps, but was too low to the ground for an engine start. The pilot then conducted a forced landing in a rice field. During the landing, the airplane impacted several levies.

The airplane's main landing gear were torn off during the landing and the airplane came to a stop on its belly. Substantial damage was noted to the airplane's left and right wings.

The airplane was retained for further examination.

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Accident Rpt# CEN15FA171	03/12/2015 2315 CDT	Regis# N919EM	Eufaula, OK	Apt: N/a
Acft Mk/Mdl EUROCOPTER AS 350 B2		Acft SN 4113	Acft Dmg: DESTROYED	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl TURBOMECA ARRIEL 1D1		Acft TT 1943	Fatal 1 Ser Inj 2	Flt Conducted Under: FAR 135
Opr Name: EAGLEMED LLC		Opr dba: EAGLEMED LLC		Aircraft Fire: NONE
				AW Cert: STN

Events

1. Enroute-cruise - Loss of visual reference
2. Enroute-cruise - Loss of visual reference

Narrative

HISTORY OF FLIGHT

On March 12, 2015, about 2315 central daylight time, a Eurocopter AS350 B2 helicopter, N919EM, impacted trees and terrain while maneuvering near Eufaula, Oklahoma. The commercial pilot was fatally injured, and the two medical crewmembers sustained serious injuries. The helicopter was destroyed. The helicopter was registered to and operated by Eagle Med, LLC, Wichita, Kansas, as Eagle Med 35, a 14 Code of Federal Regulations Part 135 emergency medical services (EMS) positioning flight. Dark night visual meteorological conditions prevailed at the time of the accident, and a company visual flight rules flight plan had been filed. The helicopter departed from St. Francis Hospital Heliport (4OK3), Tulsa, Oklahoma, about 2248 and was destined for McAlester Regional Airport (MLC), McAlester, Oklahoma.

According to the two medical crewmembers, one of whom was an emergency medical technician (EMT) and one of whom was a flight nurse, the crew checked the weather before the previous flight to transfer a patient to 4OK3, and the report showed ceilings at 8,500 ft and 6 miles visibility at MLC and ceilings at 10,000 ft. at 4OK3. During the flight to transport the patient, the pilot stated that the clouds above their cruise altitude were lower than he expected. The pilot descended the helicopter and then landed it at 4OK3 without incident. While on the ground at 4OK3, the pilot checked the weather conditions again, and they were the same. The pilot conferred with the medical crew per their risk management procedures, and they decided to return to MLC as planned. The helicopter took off and headed southbound at a cruise altitude of about 1,500 ft. mean sea level (msl) in an area with a terrain elevation of about 700 to 900 ft. msl.

The EMT, seated in the far left back seat, stated that they were about halfway to MLC when they suddenly entered instrument meteorological conditions (IMC). He recalled the pilot saying that this was "not good." He told the pilot to climb to 3,500 ft., but he did not think the pilot initiated a climb. He also told the pilot that he could see lights on the horizon. The pilot asked him to "tell him about those lights." He told the pilot, "They are to the left" and gestured a left turn with his hands. The EMT said that he then saw a strobe flash and trees and said, "pull up," but the helicopter crashed.

The flight nurse, seated in the far right back seat, stated that as they departed the Tulsa area, she began monitoring their route on the chart. She added that they were practicing a procedure regarding inadvertently encountering IMC when the EMT said, "We're in a cloud." The pilot responded, "What do I do now?" and the EMT answered, "go up." The pilot then said that he was proceeding to Okmulgee, Oklahoma, because he could see lights to the left. He then said, "I'm turning left." When he started the turn, the EMT began yelling "pull up." The pilot then said, "What's that noise?" The EMT responded, "that's your 500" (altitude warning). The flight nurse said she started seeing trees and then did not see or hear anything after that.

The helicopter had an EMS Sky Connect GPS transmitter that sent 39 messages to the company containing location information and device power status. The last three messages showed the helicopter as it approached the accident site. The third-from-the-last message showed the helicopter on a 173° heading at 414 ft. and a ground speed of 118 knots. The next-to-last message showed the helicopter on a 146° heading at 397 ft. and a ground speed of 110 knots. The last message showed the helicopter on a 172° heading at 380 ft. and a ground speed of 119 knots.

PERSONAL INFORMATION

The pilot held a commercial pilot certificate with single-engine land airplane, helicopter, and instrument ratings. On August 23, 2014, he was issued a second-class medical certificate with no limitations.

Company records showed that the pilot had flown 2,384.7 total hours and 7.6 hours in the 30 days before the accident. The records also showed that the pilot successfully completed a flight review in the accident make and model helicopter on February 24, 2014.

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AIRCRAFT INFORMATION

The four-place, single-engine helicopter, serial number 4113, was configured for EMS transport. It was equipped with a single 143-gallon fuel tank and was powered by a 712-horsepower Turbomeca Arriel 1D1 turboshaft engine, serial number 19080.

A review of the company's maintenance records revealed that the helicopter was maintained under a company aircraft inspection program and had undergone a 100-hour inspection on March 9, 2015, at total airframe time of 1,935.2 hours. The Hobbs meter was recovered at the accident site, and it read 1,941.5 hours.

The Federal Aviation Administration (FAA) conducted a ramp inspection of the Eagle Med facility on March 11, 2015, that revealed discrepancies with the night vision goggle (NVG) lighting system and the radio altimeter indicator. The NVG system and radio altimeter were deferred until a 100-hour inspection could be completed on the NVG system and a filter could be replaced on the radio altimeter indicator. Until that was completed, helicopter night vision goggle operations were not permitted.

METEOROLOGICAL INFORMATION

A meteorological reporting station was located at Okmulgee Regional Airport, Okmulgee, Oklahoma, about 20 miles north-northwest of the accident location at an elevation of about 720 ft. A 2315 automated weather report indicated wind from 020° at 3 knots, visibility of 10 statute miles or greater, ceiling broken at 2,400 ft. above ground level (agl), broken cloud layer base at 3,000 ft. agl, temperature 12° C, dew point temperature 11° C, and an altimeter setting of 30.13 inches of mercury. From 2015 to 2315, the reported cloud layer was generally at or above 5,000 ft. agl; however, at 2255 (20 minutes before the accident), the reported cloud layer was scattered at 1,100 ft. agl.

A meteorological reporting station was located at MLC about 28 miles south of the accident location at an elevation of 770 ft. At 2053, MLC reported overcast clouds with bases at 9,000 ft. agl. Beginning at 2153 and continuing through the accident time, MLC automated reports indicated that the lowest cloud bases were between 900 and 2,100 ft. agl.

WRECKAGE AND IMPACT INFORMATION

The accident site was located atop a wooded hill on an embankment next to a creek about 9 miles west of Eufaula at an elevation of 840 ft. msl. The helicopter came to rest on its right side and was oriented on an easterly heading. (See figure 1 for a photograph showing the accident site and main wreckage.)

Figure 1. A photograph showing the accident site and main wreckage.

The initial impact point was a tree about 190 ft. west of the main wreckage. Several trees in the immediate vicinity of the helicopter were broken and showed marks that corresponded with impact marks on the helicopter's fuselage and rotor blades. The wreckage debris path was on a bearing of 093° from the initial tree impact.

The main wreckage consisted of the cabin, fuselage, fuel tank, engine, transmission, main rotor system, and left skid. The cockpit area, including the instrument panel, windscreens, right side pilot seat, medical litter, and chin windows, was broken downward, separated, and fragmented. The horizontal situation indicator was found with the heading stopped at 093°, the course selector needle was found set to 175°, and the heading bug was found set to 240°. The right cockpit and cabin doors were broken out, twisted, and fragmented. The left cabin and cockpit doors were also broken out. The left cabin door rested on the left skid, and the left cockpit door was behind the helicopter fuselage. The left skid was undamaged. The aft portion of the fuselage was broken upward and twisted about 45° to the right.

The transmission and engine were broken downward and aft but remained intact. The main rotor system mast and head remained attached to the transmission. The three blades remained attached at the head but were displaced aft. The outboard leading edges of all three blades showed gouges and fractures. One blade was bent downward 30° about 5 ft. outboard of the rotor head. The outboard portion of the blade was broken aft about 4 ft. from the bend. The other two

blades were broken aft about 5 ft. outboard of the rotor head.

The fuel tank remained intact. During wreckage recovery, about 60 gallons of clean, uncontaminated fuel were removed from the tank.

Adjacent to the right side of the helicopter fuselage, in and along the creek and on the opposite side of the creek, were broken pieces of the right skid, flight publications, medical equipment, pieces of the cabin interior, the right cockpit door, and parts of the right cockpit door frame. The pilot seat was located along the creek aft of the helicopter fuselage. The pilot seat was intact and the restraints were connected. It was separated from the floor track.

The tailboom was separated about 2 ft. aft of the fuselage, was resting upright on the ground about 55 ft. aft of the main wreckage, and was oriented west-northwest, opposite the main wreckage. The top and bottom vertical stabilizers were broken aft. The left horizontal stabilizer was intact but showed upward bends at the inboard trailing edge and aft tip. The right horizontal stabilizer was bent and broken upward and twisted aft. A 6-ft-long piece of broken tree trunk was located beneath the left horizontal stabilizer and along the left side of the tailboom. The tail rotor hub and blades were attached and located beneath the tail rotor gear box. One tail rotor blade was broken near the hub but remained attached. Both blades showed chordwise scratches, and the leading edges and ends of the blades showed bends and gouges. The tail rotor drive shaft was separated torsionally at the connection to the tail rotor gear box and fractured torsionally about 30 inches outboard of the gear box. The drive shaft was also separated about 4 ft. forward of where the tailboom was separated from the fuselage.

Pedal and cyclic control to the main and tail rotor systems was established. The helicopter and all the separated components were recovered for further examination. The examination of the engine, transmission, flight controls, and other systems revealed no preimpact anomalies.

Three personal electronic devices were recovered from the wreckage and sent to the National Transportation Safety Board's Vehicle Performance Laboratory for examination and data extraction; no data pertinent to the accident were extracted. For more information, see the report, "Multiple Electronic Devices," in the public docket for this accident.

MEDICAL AND PATHOLOGICAL INFORMATION

The Board of Medical Investigations, Office of the Chief Medical Examiner, Eastern Division, Tulsa, Oklahoma, conducted an autopsy of the pilot. The pilot's death was attributed to "multiple blunt impact injuries."

The Federal Aviation Administration's Bioaeronautical Sciences Research Laboratory conducted toxicology testing on the pilot's specimens. The tests detected zolpidem in the pilot's blood and liver. Zolpidem is a prescription hypnotic medication used to treat insomnia and may impair mental and/or physical ability required to perform potentially hazardous tasks such as driving or operating heavy machinery.

SURVIVAL ASPECTS

After impact, the surviving medical crewmembers egressed the helicopter wreckage, and the EMT immediately called company dispatch to report the accident and their location. Several agencies then used the position report from the crew, data from the on-board GPS, and signals from the 406-MHz emergency locator transmitter to locate the wreckage. Emergency responders hiked in dark night conditions through remote rugged terrain and arrived at the crew's location several hours later .

ADDITIONAL INFORMATION

Per company information, in 2012, Eagle Med entered into the FAA's Safety Management System and established a risk management program. Risk mitigation procedures the company follows includes Crew Resource Management and their "EagleMed Three to Go - One to Say No" policy where it takes the consensus of all three crew members to agree to take a mission, but it only takes one crew member to say no to reject a flight.

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Accident Rpt# WPR14LA206	05/23/2014 1602 PDT	Regis# N260TA	Waitsburg, WA	Apt: N/a
Acft Mk/Mdl WILLIAMS HELICOPTER CORP UH 1H	Acft SN 70-15750	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl HONEYWELL T-53-703	Acft TT 8315	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 137	
Opr Name: ARCHER AVIATION INC	Opr dba:	Aircraft Fire: NONE		AW Cert: SPR

Events

1. Takeoff - Loss of control in flight

Narrative

HISTORY OF FLIGHT

On May 23, 2014, at 1602 Pacific daylight time, a Williams Helicopter Corporation UH-1H helicopter, N260TA, crashed immediately after takeoff near Waitsburg, Washington. The commercial pilot received minor injuries and the helicopter sustained substantial damage to the rotor system and tail boom. The helicopter was registered to, and operated by, Archer Aviation under the provisions of 14 Code of Federal Regulations, Part 137. Visual meteorological conditions prevailed for the flight, and no flight plan had been filed.

The pilot stated that the initial takeoff into a hover felt normal, and he increased the altitude of the hover to get out of the dust cloud. He felt the vertical vibration (1:1 vibration) as he transitioned forward. He continued forward expecting the vibration to dissipate, however, the vibration increased in severity such that he was being thrown against his shoulder straps. He attempted to land, but the helicopter rolled right and impacted the ground.

Witnesses said that the helicopter took off stirring up a lot of dust, then came back down a few seconds later, hitting tail first and rolling on to its left side.

Surveillance video captured the helicopter's takeoff and immediate descent into terrain. The video shows the helicopter on the ground with the rotors turning. A flagpole with a flag hanging limply from the top was also in the video frame. The helicopter lifted in to a hover, stirring up dust. The helicopter then rises and proceeds up and forward out of the video frame. A second and third video cameras captured the helicopter descending with the tail low and the right side of the helicopter pointed toward the ground. Rising dust created a brownout condition and the details of the ground impact were obscured.

A Federal Aviation Administration inspector responded to the scene, examined the wreckage, collected maintenance records, retained copies of the surveillance video, and collected witness statements.

AIRCRAFT INFORMATION

The helicopter was configured with two seats in the cockpit, and an agricultural application hopper tank occupied the cabin area. The registered manufacturer, Williams Helicopter Corporation, data plate indicated it was a model UH-1H, SN 70-15750, serial number 039. A second data plate marked Bell Helicopter Company, indicated a model 205, UH-1H, SN 10507, customer serial number 70-15750. The Bell Helicopter data plate exhibited three locations where numbers had been stamped over other numbers; manufacturer serial number, customer serial number, and certification date. The technical representative from Bell Helicopter reported that Bell company records show that the data plate serial number was inconsistent with the data on either data plate.

A review of the maintenance records indicated that the most recent maintenance was performed on May 23, 2014, hobbs time 2,843.7 hours, total aircraft time 8,314.5 hours, and total engine time of 3,265.9 hours. The maintenance included the repair to the tail fin skin and ribs, tail rotor drive shaft cover, and a 25-hour inspection. During the wreckage examination, the hobbs time was noted as 2,843.7 hours.

WRECKAGE & IMPACT INFORMATION

On October 1, 2014, the NTSB investigator-in-charge (IIC) and a technical representative from Bell Helicopter examined the helicopter wreckage. The helicopter was positioned on the trailer used to recover the wreckage. The tail boom had been separated from the fuselage just aft of the fuselage to tail transition. The rotor head, main rotor blades, and tail rotor were not on the trailer with the main wreckage but located in a storage hangar.

Control continuity was verified by moving the cockpit flight controls (collective, cyclic, and pedals) and observing sequential movement at the stationary swash plate and tail rotor control bell crank/cables. Control continuity to the elevator was confirmed.

The tail rotor angle drive (42ø gearbox) was seized due to misalignment of the drive shaft. The tail rotor gear box was fractured exposing the drive gear. Preimpact drive continuity to the tail rotor was confirmed.

Drive train continuity to the main rotor was confirmed. Main drive shaft k-flex fractured consistent with transmission aft displacement. No visible signs of heat distress to the drive system. The transmission was rotated by twisting the rotor mast manually. The transmission rotated freely with no binding. The rotor mast exhibited rotor head fracture surface and oval deformation consistent with torsional overload. The transmission was separated from all 4 mounting points and displaced aft and left. Main mast stabilizer bar pitch arm had separated and the damper reservoir had impact damage and was empty with dark dirt and oil observed around the pitch arm mount. The other main mast stabilizer bar pitch link had detached from the damper rod end. The forward two transmission mount inserts were removed by investigators and examined.

Both main rotor blades were accounted for and attached to the main rotor hub. Balance weights for both rotor blades were located. One rotor blade had 5 large blade weights in the outboard pocket, and 0 blade weights in the inboard pocket. The other blade and associated blade weights remained in the outboard pocket and 15 weights that would have fit into the inboard pocket. Both rotor mast stabilizer bars were present.

Tail rotor and gear box were attached together. Rotor blade pitch links were attached, and the rotor blades exhibited rotational leading edge and skin damage.