

NATIONAL TRANSPORTATION SAFETY BOARD
Public Meeting of October 27, 2009
(Information subject to editing)

Aircraft Accident Report
Crash During Approach to Landing of
Maryland State Police Aerospatiale SA365N1, N92MD
District Heights, Maryland
September 27, 2008
(NTSB/AAR-09/06)

This is a synopsis from the Safety Board's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. Safety Board staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

SUMMARY

On September 27, 2008, about 2358 eastern daylight time, an Aerospatiale (Eurocopter) SA365N1, N92MD, call sign Trooper 2, registered to and operated by the Maryland State Police (MSP) as a public medical evacuation flight, impacted terrain about 3.2 miles north of the runway 19R threshold at Andrews Air Force Base (ADW), Camp Springs, Maryland, during an instrument landing system (ILS) approach. The commercial pilot, one flight paramedic, one field provider, and one of two automobile accident patients being transported were killed. The other patient being transported survived with serious injuries from the helicopter accident and was taken to a local hospital. The helicopter was substantially damaged when it collided with trees and terrain in Walker Mill Regional Park, District Heights, Maryland. The flight originated from a landing zone at Wade Elementary School, Waldorf, Maryland, about 2337, destined for Prince George's Hospital Center (PGH), Cheverly, Maryland. Night visual meteorological conditions (VMC) prevailed for the departure; however, Trooper 2 encountered instrument meteorological conditions (IMC) en route to the hospital and diverted to ADW. No flight plan was filed with the Federal Aviation Administration (FAA), and none was required. The MSP System Communications Center (SYSCOM) was tracking the flight using global positioning data transmitted with an experimental Automatic Dependent Surveillance-Broadcast (ADS-B) communications link.

CONCLUSIONS

1. The pilot was properly certificated and qualified in accordance with Maryland State Police standards. Additionally, although the Federal Aviation Administration classified the flight as a public operation, the pilot was qualified under 14 *Code of Federal Regulations* Part 91 to conduct the flight under visual flight rules or instrument flight rules as a civil operation.

2. The helicopter was properly certificated, equipped, and maintained in accordance with 14 *Code of Federal Regulations* Parts 43 and 91 applicable to civil aircraft operating under visual flight rules or instrument flight rules. The recovered components showed no evidence of any preimpact structural, engine, or system failures.
3. Instrument meteorological conditions prevailed in the accident area with scattered clouds near 200 feet above ground level (agl) and cloud ceilings near 500 feet agl. Although Andrews Air Force Base was reporting visibility of 4 miles in mist, lower visibilities in fog occurred locally in the accident area.
4. The pilot's decision to accept the flight, after his inadequate assessment of the weather, contributed to the accident.
5. Had a formal flight risk evaluation program been in place at Maryland State Police before the accident, it may have resulted in the cancellation of the flight.
6. When the pilot was unable to reach Prince George's Hospital Center due to deteriorating weather conditions, he appropriately made the decision to divert to Andrews Air Force Base and request ground transport for the patients.
7. No evidence was found that suggests that the glideslope was not functioning properly. The lack of information regarding the accident airplane's navigation frequency settings and flight instrument indications precluded National Transportation Safety Board investigators from determining why the pilot believed he was not receiving a valid glideslope signal.
8. The pilot's workload increased substantially and unexpectedly as a result of encountering instrument weather conditions.
9. The pilot's expectation that he could descend below the cloud ceiling at an altitude above the minimum descent altitude for the approach, his familiarity with Andrews Air Force Base, and the reduction in workload a return to visual conditions would have provided are all factors that may have encouraged the pilot to deviate below the glideslope and attempt to "duck under" the cloud ceiling.
10. The pilot failed to adhere to instrument approach procedures when he did not arrest the helicopter's descent at the minimum descent altitude.
11. Although descent rate and altitude information were readily available through cockpit instruments, the pilot failed to monitor the instruments likely because he was preoccupied with looking for the ground, which he could not identify before impact due to the lack of external visual cues.
12. If the helicopter had been equipped with terrain awareness warning system, the aural terrain alerts of "Caution Terrain," "Warning Terrain," and "Pull-up," would have been provided. These would have been more salient than the alert provided by the radar altimeter and likely would have caused the pilot to attempt to arrest his descent.

13. The failure of the Potomac Consolidated Terminal Radar Approach Control controller to provide the current Andrews Air Force Base weather information likely led the pilot to expect that he could descend below the cloud ceiling and establish visual contact with the ground at an altitude well above the minimum descent altitude for the approach.
14. Air traffic services provided by the Reagan Washington Airport Tower and Potomac Consolidated Terminal Radar Approach Control controllers to the accident flight exhibited numerous procedural deficiencies, including unresponsiveness, inattention, and poor radar vectoring. These deficiencies were a distraction to the pilot and increased his workload by requiring him to compensate for the poor services provided.
15. Although the pilot met the recent-experience requirements to act as pilot-in-command under instrument flight rules, he was not proficient in instrument flight. This lack of proficiency likely contributed to the pilot's failure to properly conduct what effectively became a nonprecision approach at night in instrument conditions.
16. Changes made by the Maryland State Police Aviation Command to its instrument training program about 10 months before the accident did not promote instrument proficiency.
17. Based on the late hour, the length of time awake, the risk factors for sleep apnea exhibited by the pilot, and the decision to deviate from the published procedures, the pilot was likely less than fully alert, and fatigue may have contributed to his deficient decision-making.
18. The Maryland State Police System Communications Center duty officer lost situational awareness of the helicopter while it was in flight.
19. The lack of adherence to effective flight-tracking policies by Maryland State Police System Communications Center personnel created an institutional mindset that allowed duty officers to assume that aircraft had landed safely when the Automatic Dependent Surveillance-Broadcast signal was lost; over time, safe landings were taken for granted.
20. Had two Maryland State Police aviation employees not pursued their own search effort, locating the accident site would likely have taken several more hours than it did.
21. The incident commander's lack of aviation knowledge diminished the effectiveness of search and rescue activities.
22. Maryland State Police troopers and System Communications Center personnel were insufficiently equipped and trained to conduct a search involving global positioning system coordinates, and this hindered their ability to locate the site of the wreckage.
23. Neither Prince George's County nor Maryland State Police dispatchers fully understood the importance of obtaining distance and bearing information, as well as the cell tower location, before releasing a location obtained from cell phone 'pinging;' this lack of understanding led dispatchers to provide the cell phone tower's simple street address without context to all units involved in the search. This distracted and confused units already searching a more likely location.

24. The Federal Aviation Administration air traffic control's inability to produce timely location data also hampered search and rescue efforts.
25. Knowledge of the disjointed search and rescue efforts and the techniques eventually employed to locate the accident site could provide valuable lessons to agencies, such as Helicopter Emergency Medical Services dispatch centers, 911 dispatch centers, and fire, police, and sheriff's departments, involved in search and rescue efforts.
26. Having aboard the aircraft a recorder system that captured cockpit audio, images, and parametric data would have aided the National Transportation Safety Board in determining the circumstances that led to this accident.
27. The Federal Aviation Administration's (FAA's) classification of all medical evacuation flights by government-owned aircraft as public operations conflicts with its own earlier guidance, creates a discrepancy in the level of FAA safety oversight of Helicopter Emergency Medical Services aircraft operations carrying passengers and is contrary to the intent of Public Law 103-411, which states that aircraft carrying passengers are excluded from operating as public aircraft.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's attempt to regain visual conditions by performing a rapid descent and his failure to arrest the descent at the minimum descent altitude during a nonprecision approach. Contributing to the accident were (1) the pilot's limited recent instrument flight experience, (2) the lack of adherence to effective risk management procedures by the Maryland State Police, (3) the pilot's inadequate assessment of the weather, which led to his decision to accept the flight, (4) the failure of the Potomac Consolidated Terminal Radar Approach Control (PCT) controller to provide the current Andrews Air Force Base weather observation to the pilot, and (5) the increased workload on the pilot due to inadequate Federal Aviation Administration air traffic control handling by Ronald Reagan Washington National Airport Tower and PCT controllers.

RECOMMENDATIONS

New Recommendations

To the Federal Aviation Administration:

1. Seek specific legislative authority to regulate Helicopter Emergency Medical Services (HEMS) operations conducted using government-owned aircraft to achieve safety oversight commensurate with that provided to civil HEMS operations. (A-09-XX)

To all public Helicopter Emergency Medical Services operators:

2. Develop and implement flight risk evaluation programs that include training for all employees involved in the operation and procedures that support the systematic evaluation of flight risks and the consultation with others trained in Helicopter Emergency Medical Services flight operations if the risks reach a predefined level. (A-09-XX)
3. Require emergency medical services operators to use formalized dispatch and flight-following procedures that include up-to-date weather information and assistance in flight risk assessment decisions (A-09-XX)
4. Install terrain awareness warning systems on your aircraft and provide adequate training to ensure that flight crews are capable of using the systems to safely conduct Helicopter Emergency Medical Services operations. (A-09-XX)

To the Maryland State Police:

5. Implement a program to screen—and, if necessary treat—your pilots for obstructive sleep apnea. (A-09-XX)
6. Revise your policy regarding incident commanders to specify that, in any event involving a missing or overdue aircraft, an Aviation Command trooper will serve as the incident commander. (A-09-XX)
7. Provide additional training to your dispatchers on the use of cell phone ‘pinging’ and include instruction about how to integrate the data obtained from cell phone pinging into an overall search and rescue plan. (A-09-XX)

To Prince George’s County, Maryland:

8. Provide additional training to your dispatchers on the use of cell phone ‘pinging’ and include instruction about how to integrate the data obtained from cell phone pinging into an overall search and rescue plan. (A-09-XX)

To the National Association of Air Medical Communications Specialists, the Association of Public-Safety Communications Officials International, the National Emergency Number Association, the International Association of Police Chiefs, the National Sheriffs’ Association, and the International Association of Fire Chiefs:

9. Inform your members through your websites, newsletters, and conferences of the lessons learned from the emergency response to this accident, particularly emphasizing that search and rescue personnel need to understand how to

interpret and use both global positioning system coordinates and the results of cell phone 'pinging'. (A-09-XX)

Previously Issued Recommendations Reiterated in this Report

To the Federal Aviation Administration:

1. Require all emergency medical services (EMS) operators to develop and implement flight risk evaluation programs that include training all employees involved in the operation, procedures that support the systematic evaluation of flight risks, and consultation with others trained in EMS flight operations if the risks reach a predefined level. (A-06-13)
2. Require all rotorcraft operating under 14 *Code of Federal Regulations* Parts 91 and 135 with a transport-category certification to be equipped with a cockpit voice recorder (CVR) and a flight data recorder (FDR). For those transport-category rotorcraft manufactured before October 11, 1991, require a CVR and an FDR or an onboard cockpit image recorder with the capability of recording cockpit audio, crew communications, and aircraft parametric data. (A-06-17)
3. Require all EMS operators to install TAWS on their aircraft and provide adequate training to ensure that flight crews are capable of using the systems to safely conduct EMS operations. (A-06-15)