

MIA08MA203
ATTACHMENT 19

INTERVIEW SUMMARIES



National Transportation Safety Board

Memorandum

Date: November 3, 2008

Name: Major Andrew Joseph McAndrew
Commander, MSP Aviation Command

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Major McAndrew was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on November 3, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Major McAndrew has been in his current position since November 2006. Prior to that, he held various Command positions within MSP. He has been employed at MSP for 23 years. Prior to MSP, he was a Baltimore City Police Officer, and prior to that he served in the U.S. Marine Corps Reserves.

Major McAndrew stated he didn't know Mr. Bunker very well. During his tenure as Commander, he only interacted with him a couple of times. He knew Mr. Bunker had 23 years of flying experience, but couldn't comment specifically on his skills since he had never flown with him.

Major McAndrew was asked about safety at MSP. He reported safety is their number one priority. During the week prior to the accident, Major McAndrew gave a presentation to his employees during a training class in which he reinforced this. Additionally, two days prior to the accident, Major McAndrew hosted a Safety Summit, with Federal and State agencies, as well as, private medevac operators. The purpose of the Summit was for the industry to talk about safety and learn from each other. Also, the addition of a full-time safety officer (Mike DeRuggiero) has increased safety at MSP. Mr. DeRuggiero solicits recommendations from the field and implements them through the Command. Several safety enhancements have already been put into place as a result of this process, such as: (1) tool box shadowing program; and (2) better lights and taxi positions at the Shock Trauma helipad.

Major McAndrew gave an example of his safety philosophy after an emergency landing that occurred just prior to the audit hearings (summer 2008). According to Major McAndrew, a pilot performed an emergency landing after noticing a fuel leak in the helicopter. Pilots and mechanics were worried that the event would get a lot of attention since the audit hearings were approaching. Major McAndrew stated he would rather



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send a truck to pick up the helicopter, than have it fly prematurely, resulting in an accident. Major McAndrew stated he always supports the pilots or mechanics if they ground helicopters.

Prior to the subject accident, MSP had over 100,000 accident free flight hours. Currently, they are working on the State of Maryland audit recommendations.

Major McAndrew stated he has requested funds to purchase new helicopters from the State of Maryland. He requested funds for 50 additional pilots and the "best helicopters" available. Currently, the State of Maryland is reviewing the request.

Major McAndrew was asked about the evolution of instrument flight training at MSP. He stated last year, Chief Pilot Gartland made a recommendation to him that they "tighten up the instrument training program." Chief Pilot Gartland thought pilots were not practicing instrument approaches to his standards, while practicing with each other. Chief Pilot Gartland wanted to make the program more structured. As a result, the new training program involves two checkrides per year, with an Instructor Pilot. This change provides "more structure and better training."

Major McAndrew described how MSP Aviation Command is funded. He stated 80 percent of the funding comes from the Maryland EMS Operating Fund. This fund is developed from a surcharge on vehicle registrations paid in the State of Maryland. The money collected from this fund (\$11 per registration) is distributed between MSP, volunteer Fire Departments, and the Maryland Institute for Emergency Medical Services Systems (MIEMSS). Maryland law states this fund contributes to the medically oriented functions of MSP Aviation. The remaining 20 percent of MSP Aviation funding comes from a "general fund." This fund supports the fixed-wing component of MSP Aviation, as well as law enforcement and homeland security functions. Major McAndrew stated there is not a requirement to fly a certain number of missions to maintain this funding.

Major McAndrew was asked to describe the breakdown of missions MSP performs. He reported medevac missions comprise about 80 percent of their operation, and the remaining 20 percent is comprised of law enforcement, search and rescue, homeland security, and damage assessment (natural disaster damages).

Major McAndrew was asked about other medevac operators in Maryland. He reported PHI, STAT, and MedStar operate within the state and perform primarily inter-hospital transfers. Major McAndrew stated MSP has Memorandum of Understandings (MOU) with each operator. Those MOUs state MSP has the first right to all scene medevac missions; however, if MSP cannot respond, the private operators will be called (through SYSCOM). The MOU requires that the private companies comply with weather



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minimums at least as stringent as MSP minimums. In 2007, the MOUs were relaxed a bit to give SYSCOM greater latitude in dispatching private companies.

The MSP also has MOUs with the U.S. Park Police, and Delaware State Police. Because of this situation, and the fact that MSP does not make money, MSP pilots are not exposed to any pressure to launch.

Major McAndrew described other Public Use medevac operators as: NJ State Police, Delaware State Police, New York State Police, Virginia State Police, California Highway Patrol, Fairfax County Police, and Travis County, Texas EMS (this operator is the only Public Use/135 operator).

Major McAndrew was asked how pay was at MSP Aviation. He reported it was low compared to the industry. One of the first things he did when he took over the Command, was commission a study to research pay. As a result, he put together a pay plan adjustment, which resulted in a 6 percent pay raise in July 2008 for employees. Major McAndrew noted they are "still not where they should be," however, they are "closer." He also stated there are currently many vacancies, he thought, directly related to the pay issue. They are currently recruiting.

Major McAndrew was asked how he thought morale was at MSP. He thought it had improved since he has been in the Command position, and that was due in part because his employees know that he will back them up. He also created a maintenance career ladder and increased their pay, which partially increased morale. Major McAndrew also thought the following has increased morale: (1) new safety equipment; (2) development of a newsletter increasing communication; (3) development of risk management council, which make recommendations to him.

Major McAndrew described pilot schedules. He stated pilots work 12-hour shifts, and overtime is available because of the number of vacancies (not to exceed crew rest limitations). The turnover rate is currently not as bad as when he first arrived in his position, partially due to the pay raise employees received in July 2008. Prior to July, turnover in pilot and maintenance positions did affect operations. Major McAndrew disagreed with the audit findings regarding excessive management turnover. He reported there have been three Commanders in the past 12 years, which is "not unusual."

Major McAndrew stated the quality of new hires was "good." New hires must have 2,000 hours of total flight experience, and endure a "tough training program." Recently, a pilot did not make it through the training program because he was "not up to speed." Major McAndrew reported MSP spent a lot of time and money training the pilot; however, that



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did not influence whether the pilot would pass training. Major McAndrew reported MSP would not "rubber stamp pilots."

Major McAndrew was asked to characterize the equipment at MSP. He stated it was "old but safe." After 25 years, the availability of helicopters decreases 40 percent because of the time they must spend in maintenance. Again, he has pushed to acquire a new fleet, and testified to the House Committee on the issue. He also reported maintenance was good and they would not return any helicopter to service without being completely airworthy.

Major McAndrew was asked to characterize the findings of the recent audit conducted by the State of Maryland. He reported they were "very fair." He was pleased that the findings did not indicate an unsafe operation. The recommendations that were made were "welcomed and implemented" by MSP.

Major McAndrew was asked what changes have been made since the subject accident. He described the following changes:

1. Increased weather minimums to 1,000/3 for night operations; 800/3 for day operations (pre-accident was 800/3 night; 600/2 day)
2. He requested a template for Part 135 operations from the private (Part 135) operators, to decide if MSP operations should be restructured to become more aligned with Part 135.
3. Stricter MEL operations (especially autopilot or instrumentation deficiencies)
4. Grounded all helicopters in the fleet until the instrumentation could be checked (particularly glideslope functions)
5. All pilots were grounded after the accident until they performed an instrument checkride

Major McAndrew was asked about Terrain Awareness and Warning Systems (TAWS) and night vision goggles (NVGs) in MSP helicopters. He responded that 3 of the 12 MSP helicopters have TAWS. Those helicopters are based in Cumberland and Frederick, since those bases have the most exposure to adverse terrain. All new helicopters that are purchased by MSP will have TAWS. Additionally, all 12 helicopters have radar altimeters. Currently, MSP helicopters are not compatible with NVGs.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 15, 2008

Name: Mike Gartland
Chief Pilot

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Gartland was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Gartland's job entailed conducting pilot training and giving annual checkrides. Two Instructor Pilots (IP), based at Martin State Airport, reported to him and also gave annual checkrides. Mr. Gartland had been employed at MSP for the previous 15 years. He was hired as a Civilian Pilot. Prior to joining MSP, he owned a Part 135 Helicopter Operation and Fixed Base Operator (FBO). Prior to that, he was a helicopter pilot for the Charles County Sheriff Department. Mr. Gartland had more than 10,000 hours of total flight experience, more than 7,500 of which was in helicopters. He was certified by the FAA as a helicopter airline transport pilot (ATP), as well as a commercial pilot, with the following ratings: airplane single-engine land, airplane multiengine land, and instrument pilot. He was also a certified flight instructor (CFI) and an instrument CFI (CFII) for both aircraft and helicopters, as well as, a multi-engine instructor (MEI).

Mr. Gartland stated the accident was not consistent with Mr. Bunker's flying skills. Mr. Bunker always "erred on the side of caution."

Mr. Gartland gave Mr. Bunker a checkride (Annual Evaluation) in October 2007 and he reinstated his Certified Flight Instructor (CFI) certification at the same time. The ride was conducted in actual instrument conditions. Mr. Gartland reported Mr. Bunker "always performed well," and had no trouble with instrument procedures. Mr. Bunker was "slightly above average" when compared to other pilots.

Mr. Gartland was asked to describe a typical (yearly) training plan for an MSP pilot. He reported a pilot flies with an IP once each quarter, and completes an Annual Evaluation and two Instrument Proficiency Checks (IPCs) each year. The checkrides are conducted to Commercial Practical Test Standards (PTS). During an annual checkride, a pilot completes an open book test, a closed book test, and a "limitations test." During the flight portion of the checkride, pilots are expected to demonstrate a recovery in (simulated) instrument conditions. Most checkrides last 1-2 hours in duration. Pilots receive their IPCs mostly by



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four regional instructor pilots, and Mr. Gartland is called in on a case-by-case basis, depending on availability.

Pilots that were based at Andrews AFB (ADW) conducted their IPCs at ADW, since ADW had every type of approach available. Pilots did not routinely conduct ASR approaches.

Mr. Gartland reported he had not experienced any problems with approaches at ADW; however, he did report that ADW controllers did not always answer pilots promptly, during the night shift.

Mr. Gartland was asked what the percentage of pilots he failed during checkrides. He stated "not many." If pilots know their checkride is approaching, they often practice ahead of time. Normally, pilots know he is coming, since the helicopter and personnel have to be scheduled; however, once in a while he conducts surprise inspections. If Mr. Gartland fails a pilot, they are given remedial instruction and "grounded" until they pass the checkride during a second attempt. Reasons for failure included not performing to the PTS, or not recovering properly during mistakes (ex: loosing altitude or climbing without recovery, constant oscillations).

Mr. Gartland was asked how he teaches inadvertent IMC recovery. He responded that he instructs pilots to close their eyes and put their head down. Then he places the helicopter in an unusual attitude and asks the pilot to recover. Or, he asks the pilot to close their eyes and maintain the flight controls, while he gives commands (climb, descend, turns).

Mr. Gartland was asked why some pilots are signed off for "recovery only," and some pilots are signed off for full IFR operations. He estimated the percentage of full IFR signed-off pilots was about 65 percent. Those pilots that are signed off for full IFR operations can file an IFR flight plan and conduct a mission IFR. Mr. Gartland was asked why Mr. Bunker was most recently signed off for "recovery only," but had a full IFR signoff previously. He stated the most recent instructor (May 2008) may not have known that Mr. Bunker had been previously signed off for full IFR operations (after a pilot receives a full IFR signoff, he maintains that signoff for the duration).

Pilots are supposed to practice approaches on their own (according to MSP Standard Operating Procedures (SOP)). Usually, this is done when returning to their base, after completing a mission.

Mr. Gartland was asked to describe the recent (November 2007) change in instrument training. He stated pilots used to perform 6 approaches in 6 months to maintain currency. Because there is typically only one pilot at a base at one time (single-pilot operation), the only time they could practice with another pilot was during a shift change. Mr. Gartland thought pilots were not conducting "quality training" while practicing with other pilots, so he decided to change the training program to now require two IPCs every six months. Mr.



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Gartland felt the new training program ensured better quality training for pilots. When asked if he thought the new training increased proficiency, he stated if pilots feel they are weak in an area they can request additional training from regional instructors.

During each IPC, pilots are required to conduct both non-precision and precision approaches, as well as holding.

Mr. Gartland reported the MSP received funding for a helicopter simulator; however, they were waiting to purchase one until they determine if they will be purchasing a new model of helicopter.

Mr. Gartland was asked about safety at MSP. He stated he wouldn't get in a helicopter if he didn't think it was safe. Pilots and paramedics must attend at least two continuing education (CONED) classes each year. One class contained information for paramedics to assist pilots in the cockpit if needed. Mr. Gartland reported the safety program "works well." Pilots are able to complete Aviation Safety Reports (ASR) if they experience a safety issue, and he believed the ASRs were being completed appropriately.

Mr. Gartland was asked what the role of the paramedic is, during IFR procedures. He stated they are only able to assist if there were no patients on-board, and therefore would be sitting in the front of the helicopter. In that situation, they could assist the pilot in securing the approach plates and watching the instruments. Mr. Gartland thought that during the accident, the paramedic (Mr. Lippey) would not have been able to assist Mr. Bunker since there were patients on the helicopter.

Mr. Gartland reported because MSP was a public-use operation, there was no FAA oversight.

When asked about morale at MSP, he stated overall it was "decent;" however, a "few people could drag others down." He thought pay was an issue that often affected morale.

Mr. Gartland was asked to describe Mr. Bunker. He stated he did not understand the accident, since Mr. Bunker would not have launched if he thought the weather would deteriorate. Mr. Bunker always checked the weather (he used the "HEMS" program or listened to the ATIS on the radio).

Mr. Gartland stated it was not unusual for fog to come in at ADW, and from what he knew about the accident; Mr. Bunker "did what he was taught." After listening to the ATC communications, Mr. Gartland did not think Mr. Bunker sounded excited at all. Mr. Gartland stated Mr. Bunker was a "good pilot," and it was "odd for him to lose altitude." He also stated it was "odd to request an ASR approach." Mr. Bunker should have flown the localizer approach if he could not fly the glideslope. Pilots do not routinely practice ASR approaches.



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Additionally, Mr. Gartland stated pilots were trained to set their radar altimeters to 300 feet, to prevent a descent below that altitude.

Mr. Gartland thought based on his rate of descent and airspeed, Mr. Bunker may have been performing an autorotation.

Mr. Gartland stated night-vision goggles (NVG) would not have helped Mr. Bunker since they "don't see through weather." He did report that terrain awareness and warning system (TAWS) would have helped. Currently, 3 of the 12 MSP helicopters have TAWS installed. There was no plan to install TAWS in the remaining helicopters. Mr. Gartland was asked to prioritize his "wish list" for helicopter equipment. He responded his priority preference would be: (1) TAWS; (2) helicopter simulator; (3) NVGs.

Mr. Gartland was asked if private (Part 135) medevac operators affect the MSP operation. He responded they didn't affect the MSP operation since they conduct primarily inter-facility transfers (which the MSP does not). By state law, mission requests within the state must go through SYSCOM, regardless of who will end up taking the mission.

Mr. Gartland was asked how pilot pay was at MSP. He reported it was "pretty sad," and the reason pilots stayed was due to their dedication to the mission.

Mr. Gartland stated management turnover rate was also an issue at MSP. Approximately every 3-4 years, MSP Aviation gets a new Commander. He thought this was partially due to the fact that when Commanders arrive in their position they are already close to retirement. Mr. Gartland reported that Commanders not having aviation knowledge was an issue; however, the current Commander "knows what to do" and puts civilians in his chain of command. He is the "best Commander in a long time."

Mr. Gartland stated that the quality of new hires had deteriorated because of pay issues. Pilots could not afford to live in the area.

He characterized the equipment as getting old and said it should have been replaced years before. It costs more to maintain older aircraft.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: November 3, 2008

Name: Michael W. DeRuggiero
TFC Pilot/Safety Officer, MSP Aviation Command

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

TFC DeRuggiero was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on November 3, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

TFC DeRuggiero had been employed with MSP since December 1986. He was the last Trooper Pilot hired, before the rule changed requiring a pilot have 2,000 hours before entering the program. During his employment he has served as a Line Pilot, an Instructor Pilot, and the Director of Training. He has 10,200 hours of total flight experience, 7,000 of which are in helicopters. He also has a Master's Degree in Human Resource Development with a Training Specialty, from Towson State University. His Bachelor's Degree in Psychology is from University of Maryland Baltimore Campus (UMBC). Currently, he serves as a full-time (pilot) Safety Officer, in the Risk Management Section. He serves as the pilot Safety Officer, and a paramedic is also assigned to the Section (Jon Longest). TFC DeRuggiero also flies as a Line Pilot for a minimum of 3 shifts a month, to stay current and provide audits. Previously, the pilot Safety Officer was a part-time position (which TFC DeRuggiero accepted in January 2008). As of October 2008, the position became a full-time position.

The Safety Officer position entails the following:

1. Implementing Safety Management Systems (SMS) from the corresponding FAA Advisory Circular (AC)
2. Investigating Aviation Safety Reports (ASR) completed by pilots
3. Educate paramedics and pilots on safety issues, primarily the "unanimous cockpit," concept (pilot and medic have equal responsibility for the flight and either can deny a mission if uncomfortable)
4. Assemble quarterly reports with information from ASRs (with identifying pilot information removed).
5. Perform "ride-alongs" to determine if Standard Operating Procedures (SOPs) are being adhered to and observe interactions between paramedics and pilots
6. Incorporate "just culture" (encouraging personnel to admit to errors, and no punishment will ensue if there is no malicious intent)



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7. Give safety training to new hires and in continuing education (CONED) classes

The Safety Officer reports directly to the Commander and makes recommendations based on safety issues. Safety information is disseminated to pilots via the "s-drive" (internal) website. He also puts together quarterly reports that involve ASRs (with identifying pilot information removed).

TFC DeRuggiero was asked to characterize safety at MSP. He stated it is "much improved." Around the time of the 1986 accident, there was a "paramilitary" culture at MSP. If a pilot was unable to make it back to their base, they were faulted for poor planning and they could lose annual leave. After the accident, the cultural issues began to go away and now the culture has improved greatly.

TFC DeRuggiero was asked how pilots evaluate risk. He stated per the SOPs, pilots first determine if the weather meets MSP minimums, and they can maintain a safe altitude of 500 feet above the ground. Then, they determine if the helicopter is airworthy (assure all instruments required for IFR are functioning and MEL is met). Prior to departure, they print out a performance sheet, with weight and balance calculations, fuel, and weather. Finally, the pilot would check with the paramedic to determine if he had any concerns.

Pilots rarely use SYSCOM for evaluation of weather.

In-flight mitigation involves assuring landing zones are adequate (60 x 60) by performing high and low reconnaissance. If the pre-determined landing zone is not adequate, the pilot can change it. Also, patients can be loaded quickly if adverse weather is approaching. All pilots are able, and encouraged; to perform IFR recovery if inadvertent IFR is encountered. According to TFC DeRuggiero, this maneuvering is safer than continuing to navigate in marginal weather.

Additionally, pilots have the ability to wait at the Trauma Center after patients are off-loaded if they need to, for weather to improve.

Currently, pilots do not complete a formal risk assessment (paperwork), as the Command does not believe it is the best method for evaluating risk. However, they are working to create a beneficial tool now. At the time of the accident, there was an assessment tool in the SOP, however, it was not used by pilots.

TFC DeRuggiero was asked about Mr. Bunker. He stated he was a "great guy, and very level." He was confident in his abilities and knowledgeable with the helicopter systems. TFC DeRuggiero flew with him during his transition to the SA-365 and said he was good



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at managing systems. The last time he saw Mr. Bunker was during a training class just prior to the accident. Mr. Bunker was in a "good mood overall," and had only a brief conversation with TFC DeRuggiero. They chatted about retirement and Mr. Bunker said he could not because he had children in college. He was funny. His hair had grayed and he had gained weight.

TFC DeRuggiero was asked if pilots felt any pressure to fly. He reported there was not. Pilots would not fly if the weather were below minimums. Additionally, the MSP does not fly for money, and they have Memorandums of Understanding (MOU) with private (Part 135) medevac operators which also prevents competition. TFC DeRuggiero stated pilots expect checks-and-balances from paramedics.

TFC DeRuggiero was asked to describe the instrument training evolution at MSP. He reported after the accident in 1986, all non-instrument rated pilots were sent to get an Instrument rating (Mr. Bunker was one of these pilots). TFC DeRuggiero was the last pilot brought in under the old system (December 31, 1986). As of January 1, 1987, new pilots had to have 2,000 hours of flight experience and an Instrument rating. When MSP acquired the Eurocopter Dauphin helicopter, pilots attended training at the manufacturer (in Texas), and then differences training (N1/N2/N3 models) in Maryland (at MSP). TFC DeRuggiero reported the primary purpose for instrument training was to assure pilots could recover from inadvertent IMC, since they are a primarily VFR operation. Some pilots are signed off for full IFR operations and some pilots are signed off for "recovery only." TFC DeRuggiero estimated the percentage was "about 50/50."

As of November 2007, instrument training was changed to now require two Instrument Proficiency Checks (IPC) every 6 months. This change was made to reduce blade time and make training more consistent. TFC DeRuggiero was asked if the new training program enhanced proficiency. He reported "perfect training equals perfection, and bad training equals bad execution." During the previous instrument training/recency of experience requirement (6 approaches in 6 months), pilots would often perform the required approaches on the last day of the month, just to document their currency. TFC DeRuggiero felt the new program involves better quality training.

TFC DeRuggiero reported it was unusual for pilots to encounter IMC, and it only happened "minimally."

During training, pilots are taught to use all instruments available to them. Instructors fail different components to determine how pilots respond. Instructors ask pilots to respond to the "worst case scenario," and routinely train with the glideslope failed.



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TFC DeRuggiero stated in the accident scenario, if the pilot lost the glideslope, he should have flown the localizer to minimums. He also thought requesting the ASR approach was reasonable; however, it's not common for pilots to do. The localizer approach would have been much more precise. If the pilot did not know the minimums for the approach, he could have engaged the altitude hold and performed a go-around.

When asked about the procedure for using radar altimeters, TFC DeRuggiero stated during an instrument approach, pilots would set the radar altimeter (RA) to the decision height or 300 feet. During VFR night flights, the RA must be set to 500 feet.

TFC DeRuggiero was asked about instrument approaches at Andrews AFB (ADW). He stated "generally the controllers work well with us," and he had not experienced any problems with the approaches there.

TFC DeRuggiero was asked what "PG on fly by" meant (from the SYSCOM transcript). He reported it meant PG Trauma Center could not take any more patients by air. This was the case previously during the day of the accident, but they were able to move patients and open again to air medevacs.

TFC DeRuggiero was asked if it would be helpful to have a pilot in charge of the Aviation Command. He stated it would be helpful. In the current MSP operation, personnel are promoted based on their "police performance." When they arrive in the Aviation Command, their police skills are not as in demand and they must depend on aviation experts in their division.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: September 29, 2008

Name: Michael W. DeRuggiero
TFC Pilot/Safety Officer, MSP Aviation Command

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

TFC DeRuggiero was interviewed at the accident site referenced above. Following is a summary of the interview with him.

TFC DeRuggiero was asked about risk assessment at MSP. He reported there was no formal paperwork process at the time of the accident; however there was information posted at each Section. Pilots are encouraged to perform a mental assessment regarding risk, and the topic is presented frequently during Continuing Education (CONED) classes.

TFC DeRuggiero stated the MSP conducted primarily VFR flights. The only flights they conducted IFR were when they were conducting training, or repositioning an aircraft. He estimated out of 5,000 calls, "maybe 10" were conducted IFR.


Jill M. Demko
Air Safety Investigator



National Transportation Safety Board

Memorandum

Date: October 15, 2008

Name: Lt. Walter Kerr
Commander, Flight Operations MSP

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Lt. Kerr was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Lt. Kerr has been employed with the MSP for twenty years. Prior to his Command position, he worked as a flight paramedic. He currently works three days a month as a paramedic to maintain his currency.

His job is to coordinate and maintain the assets of people and aircraft. He works with the maintenance department and flight operations to adequately staff 8 helicopter bases and one fixed-wing base across the State of Maryland. Lt. Kerr reports directly to the Assistant Commander, in a facilitation role. He is a private pilot (fixed-wing), and has accumulated about 4,000 hours flight time, as a paramedic. He has not flown as a pilot for MSP.

Lt. Kerr also works as a site surveyor for the Commission on Accreditation of Air Medical Systems (CAAMS). In this capacity, he is part of a commission that awards accreditation to aeromedical programs that demonstrate compliance in certain areas. Lt. Kerr stated the MSP has not applied for this certification to date. Similar government operations that have applied were: Austin-Travis County, Texas EMS (a public, part 135 operator), Los Angeles Sheriff Department, and Lee County, Florida Sheriff Department.

Lt. Kerr reported the Chief Pilot (Mr. Gartland) was the only aviator in a Command position. Mr. Gartland was the person who oversees training. Lt. Kerr does not see the results of any training performed at MSP.

Lt. Kerr was asked to describe Mr. Bunker. He reported that Mr. Bunker was an "easy going guy." He flew with him (as a paramedic) a "handful of times." Mr. Bunker was "knowledgeable, personable, and always the quiet person in the crowd." Lt. Kerr stated that Mr. Bunker was so "down-to-earth" that he would talk about golf, before flying. Lt.



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Kerr flew VFR missions with Mr. Bunker, and did not have the opportunity to fly IFR with him. Lt. Kerr stated Mr. Bunker was always a safe, precise, competent pilot.

The last time Lt. Kerr saw Mr. Bunker was about three weeks prior to the accident, at Headquarters, when he was "swapping a helicopter."

Lt. Kerr reported morale has fluctuated at MSP, and has been low recently, due to available resources and personnel pay. At the mission level, it remains constant because "everyone loves their job."

Lt. Kerr was asked about the quality of maintenance at MSP. He responded that he has "no reservation about flying in any aircraft." He did mention it was difficult to produce paperwork for every issue, and MSP is working to become better at that. Despite lacking paperwork, maintenance is always performed completely.

Lt. Kerr felt that the recent audit performed by the State of Maryland, was a good reflection of MSP business practices, but not aviation practices. He also stated the MSP sent a refurbishing plan to the government several years ago and they have been waiting for an answer. Lt. Kerr felt that this has affected morale. Lt. Kerr was asked why the audit was done. He stated there is a legislative mandate in Maryland that requires state agencies to be audited. The MSP audit took 13 months to complete, and Lt. Kerr felt the conclusions were fair and the MSP welcomed their recommendations.

Lt. Kerr used to be a full-time trainer, and still teaches some courses. He reported paramedics take a "pinch hitter" (one-day) class, which introduces them aviation topics, so they can be helpful to the pilot when in the cockpit. Lt. Kerr stated if a paramedic is in the back of the helicopter, and the pilot enters inadvertent IMC, his focus would shift to the cockpit and he would help the pilot with instrumentation. Lt. Kerr thought Mr. Lippey may not have been exposed previously to inadvertent IMC, since he has only been employed for a year.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 15, 2008

Name: Robert Corolla
Civilian Helicopter Instructor Pilot

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Corolla was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Corolla has been employed by MSP since 1994. He was hired as a civilian pilot and has been in a flying position for the duration of his employment. Prior to joining MSP, Mr. Corolla was a helicopter pilot in the U.S. Navy for 20 years (9 years Active Duty, and 11 years in the Reserves). Currently, Mr. Corolla is a Regional Instructor Pilot for Trooper 2 and Trooper 7. He also routinely flies as a crew pilot for Trooper 7. Mr. Corolla handles all new hire pilot training and other pilot instruction. His full time job is as a crew pilot, and he serves part-time as an instructor. He is currently based at Trooper 7, but was previously based at Trooper 2, Andrews AFB (ADW).

Mr. Corolla reported there are 3 full-time instructors at Headquarters, and 4 part-time instructors in the field (one in each region). He is responsible for training about 7-8 pilots in his region (plus new hires). Every pilot has to complete the following training each year:

1. Two instrument proficiency checks (IPCs) – 1 every 6 months
2. An Annual Evaluation
3. Quarterly training (emergency procedures, hoist training, new procedures, etc.)

Mr. Corolla stated an ideal situation would be to complete training every quarter, and if possible, more often.

Mr. Corolla was asked to describe a typical IPC. He responded he would depart under visual flight rules (VFR) and use a hood to simulate "inadvertent IMC." Mr. Corolla would then put the helicopter into an unusual attitude, and have the pilot recover. He would give the pilot different systems failures (ex: radios, engine failure) during the flight and observe how they analyze and recover from the failures. He would also require the pilot



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to successfully complete a precision and a non-precision instrument approach, both coupled and un-coupled from the autopilot. Most IPCs were 1.1 to 1.4 hours in duration.

Mr. Corolla stated he conducted training, using the MSP Training Plan.

Mr. Corolla felt the best place to practice approaches was at ADW. He has never had a problem with the approaches or controllers at ADW. Additionally, pilots that were based at ADW usually conducted their training (approaches) at ADW.

Mr. Corolla reported that there were two types of signoffs for pilots. Some pilots were signed off for full instrument flight rules (IFR) operations ("single pilot IFR"), and some pilots were signed off for "recovery only". The full IFR signoff required the pilot to complete additional instrument training, to include additional system failures. Once a pilot receives a "single pilot IFR" signoff, he would keep that signoff and not be required to receive additional training at each IPC. Pilots that had a "single pilot IFR" signoff were the only pilots authorized to initiate an IFR flight (with Command approval). Those pilots signed off for "recovery only," were not authorized to enter IMC, but had demonstrated enough skills to recover from inadvertent instrument meteorological conditions (IMC). Mr. Corolla thought the approximate percentage of number of pilots in each of these categories was "50/50."

Mr. Corolla had given Mr. Bunker instruction prior to the accident. According to Mr. Corolla, he was "above average" as compared to other pilots, and had "no trouble" with instrument approaches.

Mr. Bunker was signed off for "recovery only," as of his most recent IPC. Mr. Corolla was asked why Mr. Bunker had been signed off for "single pilot IFR" during previous years, but most recently was qualified for "recovery only." Mr. Corolla did not know why this was.

Mr. Corolla was asked if he has ever failed anyone training. He stated he has done this recently, but the percentage of total failures was small (approximately 1 in 14 years). The recent example, which he failed, was a new hire that had 2,000 hours of experience in an R-22 helicopter (not much instrument time). After 20 hours of training in the Eurocopter Dauphin, Mr. Corolla felt the pilot could not operate the Dauphin adequately, and the pilot subsequently resigned from MSP. Mr. Corolla stated he uses the FAA Commercial PTS, as well as a pilot's ability to maintain situational awareness, as his criteria for failure.

Mr. Corolla expected to see pilots "declare, level the helicopter, and climb," after entering IMC. Then, they should ask for vectors for an instrument approach and conduct



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the approach appropriately. Mr. Corolla did not experience any issues with pilots being unable to recover from IMC.

Mr. Corolla was asked if pilots ever practice instrument approaches on their own. He stated they were "supposed to," but he didn't know how often it happened. There was nothing in MSP procedures, which stated a pilot couldn't practice approaches although they couldn't log the time as instrument time if another pilot was not present (safety pilot). Mr. Corolla was unaware if Mr. Bunker routinely practiced instrument approaches. There was no requirement for pilots to practice instrument approaches.

Mr. Corolla described the evolution of instrument training at MSP. He reported prior to 2000, pilots received "more than enough" instrument training. After that year, salaries for helicopter pilots in the civilian industry increased, and a high turnover rate of pilots began at the MSP. Because of this, instructors currently spend most of their time training new hires, and not enough time performing recurrent training. Mr. Corolla estimated it took 3-6 months to completely train a new hire. Instructors use a syllabus to conduct new hire and transition training.

Mr. Corolla reported the requirement for pilot instrument currency recently changed (November 2007). Previously, pilots were required to conduct 6 instrument approaches every 6 months. Because there was usually only one pilot and one medic at a base during each shift, pilots would practice their approaches during shift changes, when two pilots were at a base for a period of time. As of November 2007, pilots would maintain their instrument currency by completing IPCs every 6 months with an Instructor Pilot. The rationale behind this change was to "save flight time" plus it got an instructor in the cockpit.

Mr. Corolla was asked how pilots evaluate whether or not to launch on a mission. He responded the first thing pilots do, is determine if the weather is within MSP limits ("800/3 at night and 600/2 during the day"). Pilots also evaluate weather trends in their region and assure the weather is within limits for the duration of the mission (getting to the patient, transporting to the hospital, and returning to the base). Pilots are not questioned if they deny a mission, and there is no pressure to launch from the Command staff.

Mr. Corolla stated the MSP very rarely conducts missions during IFR conditions, although they can conduct training IFR. The MSP is primarily a VFR operation.

Mr. Corolla was asked if he knew of any systems or instrument problems with any of the MSP helicopters. He responded that he was aware of sporadic issues with the electronics and "sometimes the glideslope wouldn't couple." However, he noted there



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were redundant systems in the helicopters and they abided by the MEL requirements, so safety of flight was never compromised. Mr. Corolla had not flown the accident helicopter recently.

Mr. Corolla last flew with Mr. Bunker when he completed his IPC with him in May 2008. He stated there was nothing unusual about the flight and Mr. Bunker "did pretty well." Mr. Corolla had no issues with Mr. Bunker's skills. He stated they did not complete an ASR approach during the flight, and could not remember the last time he performed an ASR approach. Mr. Corolla had never experienced a controller not being current or qualified to give an approach.

Mr. Corolla was asked how he felt about safety at MSP. He responded it was "good, pretty consistent."

Mr. Corolla reported that morale at MSP was also "pretty consistent;" however, it has been trending downward since the recent audit. He continued that he didn't think the audit was bad, however, he was disappointed in the press coverage surrounding it (thought it was not fair). He also thought it highlighted the need for better paperwork, better pay, and a burdening of instructors for 15 months with new hires at the expense of further training the field pilots as issues for improvement.

The issues in the subject accident, according to Mr. Corolla were:

1. pilot and controller need to have better communication in IFR conditions
2. pilots need to "forget there's a medevac onboard," and perform the full IFR approach if needed
3. the MSP Aviation program needs to rededicate to recurrent training

Mr. Corolla described Mr. Bunker as a "conservative, not make waves, follow rules, and not bust minimums pilot." He stated he was a big man (about 300 pounds), always smiling, never with a bad word. Mr. Bunker was an FAA Certified Flight Instructor (CFI) and Instrument Instructor (CFII); however, he was not an MSP Instructor. Mr. Corolla thought this was because he did not want the commute to Headquarters or the extra workload.

Mr. Corolla was asked if he thought two IPCs a year was enough training for pilots to maintain proficiency. He thought it was not, and that pilots needed to practice more than that. Before the November 2007 training change, pilots could practice approaches more often, "re-enforcing learning." According to Mr. Corolla, "proficiency" means "you can do it with your eyes closed," and "currency" means "you comply with FAA requirements."



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Mr. Corolla was asked about pilot pay, schedules, and the turnover rate at MSP. He responded the pay was lower than industry standards, and he liked the schedules. He estimated a pilot worked about 12 days in every 21 days. Additional overtime was available if a pilot wanted; however, no one was forced to work overtime. According to Mr. Corolla, the MSP turnover rate was "horrendous." After 2000, the MSP has had a "terrible time retaining pilots." He also stated during the previous 4-5 years, there have been 3 Commanders in charge of the Aviation Command. He characterized the equipment as showing its age but wonderful, noting that instrument-wise you could fly an ILS down to 50 feet. He indicated that he had no issues with maintenance, although he noted that maintenance had problems with turnover. He said it took longer to get aircraft repaired and they were down for longer. Asked about an instrument problem reported by Mr. Peterson, Mr. Corolla indicated that he had never seen the G/S decouple without warning. Asked about the safety program, he indicated it was positive. Safety officers varied in personality, but safety was still the paramount concern.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: September 29, 2008

Name: First Sergeant Tobin Triebel
Training Section Supervisor/Flight Paramedic

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Triebel was interviewed at the accident site referenced above. Following is a summary of the interview with him.

Mr. Triebel was asked to describe the process of how a MSP helicopter mission occurs. He reported the following process:

1. SYSCOM (MSP Dispatch) notifies the appropriate hangar (base) of a mission request. Either the pilot or paramedic could take the phone call.
2. The pilot looks up weather. A pilot could use any means available, to include "HEMS, AWOS, DUATS, or calling different airports." Pilots are required to print the weather at the beginning of the shift (retained for 90 days). They monitor the weather more closely (every hour) if it is marginal.
3. If the weather is greater than MSP minimums (Day: 600/2; Night: 800/3), they call SYSCOM back and accept the mission
4. The pilot performs a walk-around inspection of the helicopter. He would have already completed a detailed pre-flight inspection at the beginning of the shift.
5. Assuming no mechanical problems with the helicopter, the flight would depart for the mission.

While en route, the pilot would be talking to air traffic control, and the paramedic would be talking to SYSCOM or the Hospital (the medic would be sitting in the front of the helicopter, until patients are picked up, then he sits in the back with them).

Mr. Triebel reported the pilot does not have the ability to get weather updates while en route (other than the weather radar on board the helicopter).

After landing at the landing zone, the pilot would enter the next location in the GPS and monitor the radio (to facilitate the ground transport to the helicopter).

In regards to the accident sequence, it would have been normal procedure for the pilot to divert to Andrews AFB if he could not make it into PG Hospital. Additionally, the Instrument Charts were located in a pouch on the right side of the pilot's seat.



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Mr. Triebel reported MSP had 8 Bases (or "Sections"), among 4 Regions. The Andrews AFB location was the "Washington Section; Southern Region." At the time of the accident, MSP had 12 helicopters, which could rotate through those "Sections." There were 5 pilots based at Washington Section at the time of the accident, and 1 helicopter.

Mr. Triebel stated Mr. Lippey (the medic killed in the subject accident), was originally hired as a Trooper (October 1, 2004) at MSP, and then transferred to Aviation Command (April 25, 2007). This was the normal procedure for medics entering Aviation Command. Medics apply for a position in the Command and complete an interview process before being hired into the Command.

Mr. Lippey was a nationally registered Flight Paramedic and certified by the State of Maryland prior to being accepted into Aviation Command (these were prerequisites before being accepted into the Command).

MSP Flight Paramedics are required to complete 72 hours of training every two years. This also includes aviation-specific training, such as hoist rescues and duties in the cockpit. The Flight Paramedic's duties in the cockpit included:

1. Navigation (to include entering information into the GPS)
2. Communicating with SYSCOM
3. Visually looking for traffic or obstacles during a flight

"Pinch Hitter" Training is also given to Flight Paramedics every two years. This includes one hour of training on cockpit instruments and one hour of training regarding the basic concepts of flight. An Instructor Pilot gives the Paramedics training in the helicopter every two years (usually performed when returning from a mission).



Jill M. Demko
Air Safety Investigator



National Transportation Safety Board

Memorandum

Date: October 15, 2008

Name: Joshua Chason
TFC Flight Paramedic

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Chason was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Chason has been employed with the MSP for six years, and has been flying for 5 years. Prior to coming to MSP, Mr. Chason worked as a paramedic at a local fire department. He had no former aviation or law enforcement experience.

Mr. Chason knew Mr. Bunker "very well." He was one of the first pilots Mr. Chason flew with, and prior to the accident he flew with him several times a month. Mr. Bunker was a "nice guy, very capable, and had a passion for aviation." He was a comfortable pilot, calm, and always conscious of his environment. Mr. Bunker knew the local area very well. He was very thorough, and always conscious of the weather. Mr. Bunker was always "ahead of the weather," and could predict low or marginal weather before it arrived. He would say: "I will not be the guy who lets the weather catch up to me. Ceilings always come down." Mr. Bunker was previously an instructor pilot.

He described Mr. Bunker as a "family guy and a golfer." He loved his wife and kids very much, bragged about his children, and didn't get involved with political aspects of the job. He was happy to come to work. He was a big person and not the healthiest looking one. Mr. Chason was asked to relay a personal story about Mr. Bunker. Mr. Chason reported that his girlfriend cooked for the pilots, cake and cookies, and Mr. Bunker loved her. He told Mr. Chason to marry her. Mr. Bunker was an avid golfer, and Mr. Chason often went with him. Mr. Chason was an indifferent golfer, which "drove [Mr. Bunker] nuts." Mr. Chason relayed another story in which they were watching a University of Maryland football game during a shift once. During the game, a player got hurt and Mr. Bunker immediately started preparing the helicopter, anticipating the mission request. They eventually received the request, and transported the patient. Mr. Chason stated requests came often from UMD, but it was "no big deal to [Steve]." Mr. Bunker was "like a father," to all the younger medics, and often kept them calm. He was always happy, never flustered, and the nicest guy in the world.



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Mr. Chason had flown with Mr. Bunker in instrument conditions, and reported it was not uncommon to do so. He reported Mr. Bunker was very good at explaining to medics everything that was going on during a flight, and he was completely comfortable flying in adverse weather with Mr. Bunker. Mr. Chason enjoyed flying with Mr. Bunker, and commented he would still fly with him after the accident, if he could. The last time he flew with Mr. Bunker was about a week prior to the accident. Mr. Chason stated, "everything was fine" during that flight.

Mr. Chason was asked if pilots practice instrument procedures. He responded that pilots sometimes practice approaches when they are returning to their base, after completing a mission. However, this depended on how many hours were left on the helicopter, before it was due in maintenance. It was not done on every flight but was a regular practice.

Mr. Chason reported that Mr. Bunker was very focused and comfortable flying in adverse weather. He was always "on top of the radios, and ahead of the game." He knew the air traffic controllers at Andrews AFB, and was comfortable with the procedures there. He had good hearing, better than other pilots, and always read-back instructions clearly. Mr. Bunker was also open to information from medics and was never "cocky." Mr. Bunker had been flying for about 24 years.

Mr. Chason was asked what the normal procedure was for a pilot to check weather. He responded that pilots mostly used "HEMS." They could also call the tower or other bases to research surrounding weather. Pilots "constantly monitored the weather," according to Mr. Chason. At the beginning of each shift, pilots were required to "run the forecast," and brief medics on the weather conditions.

When asked how the decision to launch was normally made, Mr. Chason stated pilots monitor the weather all day, and depending on how the weather was, they would classify the status of base. The base would either be: "full-up status, call-by-call, or down." On the night of the accident, the base was "call-by-call." In that case, when SYSCOM called the pilot, he would have put them on hold, checked the weather, and if it was within minimums, he could accept the mission.

Mr. Chason stated either the pilot or the medic could deny a request if either felt uncomfortable. They could also turn back or divert if either one felt uncomfortable en route. Mr. Chason reported that Mr. Bunker wouldn't hesitate to deny a mission if he felt uncomfortable. He often predicted bad weather before it appeared.



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Mr. Chason reported there was no operational pressure to launch. Some medics feel an internal pressure, because they want to help people; however, pilots are the "reality check" in those scenarios. Medics often see only the patient aspect of the mission and pilots see the whole picture.

Mr. Chason was asked how he felt about safety at MSP. He responded that the "safety office," is comprised of a pilot, trooper and medic. He served in a safety position at one time and would do so again. Mr. Chason reported it had been 20 years since the last MSP accident. Because of that, and the fact that MSP had been praised recently for their operation, some people were uneasy ("being number one" comes with pressure); however, no one was complacent. Safety is a "top priority" at MSP.

When describing morale at MSP, Mr. Chason stated it was "down" before the accident. This was because they were flying older aircraft, that were often involved in more inspections. He noted there was some "uneasiness" with the Maryland State Government, since they have been waiting to hear if they would be given funding for new helicopters.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 15, 2008

Name: David Svites
Flight Paramedic/Section Supervisor Trooper 7

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Svites was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Svites had 13 years of experience with the MSP, all as paramedic. Prior to his MSP employment he worked as a paramedic with the Alexandria Fire Department (FD). He was not a pilot.

Mr. Svites was asked to describe Mr. Bunker, the accident pilot. He responded that Mr. Bunker was assigned to his base (Trooper 7) frequently, so he knew him very well. Additionally, after Mr. Bunker transferred to Trooper 2 (Andrews AFB) he often backfilled schedule vacancies at Trooper 7. Mr. Bunker was one of the safest pilots Mr. Svites knew. He always made decisions that encompassed the entire flight ("to and from the base"), and was not hesitant to cancel flights.

Mr. Bunker often instructed while he flew, explaining procedures and practices to the medics. He had "good cockpit CRM." The last time Mr. Svites flew with Mr. Bunker was the Tuesday or Wednesday prior to the accident. On that day, Mr. Bunker was "backfilling" a shift at Trooper 7, from 0700-1700. During that shift, they flew one mission and had a new pilot with them. On the way back from the mission, Mr. Bunker performed the GPS Runway 29 at St. Mary's Airport. Mr. Bunker had no difficulty performing the approach, and the weather was "clear." Mr. Bunker performed the approach from the right seat, and instructed the new pilot (in the left seat).

Mr. Svites was asked if he flew with Mr. Bunker in instrument conditions. He could not recall a specific time, but was sure he had at some point. Mr. Svites reported Mr. Bunker was a very organized pilot, who "didn't miss steps." Mr. Bunker always flew by a checklist and talked through his procedures for the benefit of the medics. He was never nervous or uncomfortable; always a "calm pilot". You could not rattle him. New medics were often assigned with Mr. Bunker because he was so good at talking them through procedures. He made it enjoyable and made issues easy to understand. Mr. Svites



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thought Mr. Bunker should be an instructor after watching him work with other pilots and medics.

Mr. Svites reported that Mr. Bunker was a pilot he enjoyed flying with. Additionally, he often played golf with him outside of work. He was a "generally happy person who was enjoyable to be around." His demeanor was the same outside work; you could not rattle him. He would just chuckle things off. When asked to relay a personal story about Mr. Bunker, he stated Mr. Bunker was notorious for snoring. The last time he worked with Mr. Bunker, they came back from a mission and Mr. Bunker was snoring on the couch when another pilot and medic came into the building. The snoring was so loud; they thought it was a generator.

Mr. Svites stated that Mr. Bunker was a loving and devoted husband and father of three. He was very involved in his family life; married for over 30 years with three children, aged 16, 19, and 20. Mr. Svites described Mr. Bunker as a "night owl." He stated when he worked the night shift, it was not uncommon for him to be awake all night.

Mr. Svites was asked what the procedure was for pilots to check weather prior to a mission. He responded, "HEMS is always up" on a computer at the base. Pilots would receive a DUAT briefing at the beginning of a shift, and if the weather were marginal, HEMS would be monitored more frequently. If the pilot has any question regarding the weather, he would get the weather before launching on the mission. The medic and pilot would discuss the weather before launching; however, Mr. Svites relied more on the pilot's assessment. The assessment would have to encompass the entire mission; i.e. they would have to be able to get to the scene, the hospital, and back to the base.

Mr. Svites never felt any pressure to launch. He has turned down missions before (although not often). This would depend on how the weather played into the shift. If the weather was bad, you could have an entire shift with no launches. Recently (summer 2008), he launched and then came back down due to weather. He then drove to the accident scene to assist with medical care. Mr. Svites stated they are not given patient condition from SYSCOM, so that doesn't factor into their decision to accept the mission.

If a launch were cancelled due to weather, the pilot would print a copy of the weather, and make an entry into a journal. They would also call SYSCOM to deny the mission.

Mr. Svites was asked what he knew about instrument practice/training. He responded that pilots used to practice instrument procedures as part of a mission (during the return flight); however, now, pilots have to perform a separate training flight with an instructor on board. They often bring a medic in case they receive a medevac request while training (reduces response time).



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Mr. Svites was asked if he had ever been caught in inadvertent IMC. He stated he had during a flight from St. Mary's to Martin State Airport (MTN). He reported when they launched, the flight was within weather minimums, and during the return flight to St. Mary's, they had to perform an ILS approach to the airport. When they could not see the airport at the decision height, they performed a missed approach and headed south. They performed two approaches to Patuxent River, and then Mr. Svites heard MedStar report that they made it into Easton. Mr. Svites then recommended to the pilot that they divert to Easton, they performed an approach there, broke out of the clouds at 800 feet and landed uneventfully. Mr. Svites never felt uncomfortable during the flight. He also thought the number of times he has entered inadvertent IMC was "infrequent." Even though the MSP minimums were "800 and 3," pilots often used "1,000 and 3." Mr. Svites thought inadvertent IMC occurred more during night conditions. He felt it was important to monitor temperature/dew point spreads in those situations.

Mr. Svites was asked how he felt about safety at MSP. He reported it was "very good," and there were no fluctuations over the years. He stated no pilot would ever "push the weather," and he completely trusted every aircraft that came out of maintenance. He also felt comfortable with the preflight and post-flight inspections that pilots performed. Mr. Svites commented that pilots often used the MEL to make airworthiness decisions.

Mr. Svites was asked to describe morale at MSP. He reported at the section level, it was "positive," however there was stress involved with maintaining crew coverage and securing days off. The farther employees were from Headquarters, the better morale was. It was part of Mr. Svites job to interpret information from Headquarters, in part to keep morale up.

When asked about how the decision is made to request a helicopter, compared to ground (ambulance) transport, Mr. Svites responded the Fire Department (FD) on scene makes the decision based on medical protocol established by the State of Maryland. This protocol involves the "trauma decision tree" and the drive time involved. Mr. Svites thought the Fire Departments in St. Mary's County requested helicopters more than other areas, due to their drive time to the closest Trauma Center. Mr. Svites stated he has never been questioned about why a helicopter launched. He reported, they are "just closer for the next launch" since they are already airborne. About 12 years ago, Mr. Svites had an experience in which he responded to an auto accident where there was steering wheel damage, but the patient was walking around after the accident. The patient had internal injuries not obvious (torn aorta) and died on the way to the hospital. This was an example of those calls that might appear unwarranted, but in the end are justified.



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Mr. Svites was asked if private helicopter operators accept missions if the MSP denies them. He responded sometimes private operators launch when MSP is below weather minimums. At one point during his career, the State of Maryland said if the MSP was "down due to weather" no operators could launch. Presently, that is not the case. If the MSP response time is too long, private operators could be called. MedStar is presently the primary operator for inter-facility transfers (MSP does not have to be called first for these). During the past 10 years, more private operators have come into the state and have performed more scene transports.

Mr. Svites was asked how the MSP Aviation Program was funded. He stated the Governor stated he would give the program \$133 million dollars, which turned into \$33 million. He thought MSP Aviation did not get any of the dedicated funds, and the Governor instead gave the money to the state communication system. Mr. Svites felt some consistency would be nice. Funding has always been an issue for MSP Aviation, however, there is more of a focus on funding now that they are requesting new helicopters. Additionally, new pilot salaries have always been an issue. It has been difficult for MSP Aviation to recruit and retain pilots, since they could make more money working for private operators (\$10,000-\$15,000 more). Mr. Svites was asked why he thought Mr. Bunker stayed with MSP, given the pay disparity. He responded that Mr. Bunker loved flying, loved the program, and lived in the local area.

Mr. Svites reported the MSP Aviation Program was a very safe operation. He stated both maintenance personnel and pilots always erred on the side of caution. Mr. Svites stated they don't "fly for money" (profit), they "just help a lot of people."


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: November 5, 2008

Name: Sgt. R. F. ("Bob") Adams
Non-Commissioned Officer in Charge of SYSCOM, MIEMSS

Subject: MIA08MA203, Forestville, MD, N92MD, SA-362 accident

Sgt. Adams was interviewed at the Maryland Institute for Emergency Medical Services Systems (MIEMSS), Baltimore, Maryland on November 5, 2008. Present for the interview were Jill Demko, Jason Fedok, Katherine Wilson, and Malcolm Brenner. Following is a summary of the interview with him.

He has served 19 years with the Maryland State Police (MSP), beginning as a flight paramedic and, since March 2005, with SYSCOM.

SYSCOM is a cooperative effort between the Maryland Institute for Emergency Medical Services Systems (MIEMSS) and the Maryland State Police (MSP) that controls and coordinates all aeromedical emergency responses in Maryland. It is staffed at all times with two communications operators from MIEMSS and an MSP duty officer. It coordinates primary scene activities for all operations, covering the Baltimore and Washington metropolitan regions as well as the entire State of Maryland. It handles all requests for flight management and mission management. It also provides dispatch and coordination functions for 65 other aircraft, including MedStar, U.S. Park Police, and public safety and commercial operators in Delaware and Southern Pennsylvania.

A 911 center, located in the county of the accident scene, is the primary source of a request for help. The 911 center calls SYSCOM, and the call is answered by an operator and can be simultaneously monitored by the police duty officer. The operator begins to develop the dispatch package while the duty officer determines aircraft availability. A flight crew accepts or declines the mission and, if they accept the launch, the duty officer tracks the flight, gathers weather information and passes it on to the crew. Normally, in calling SYSCOM, the 911 center would already have decided to request helicopter transport. A medic can call 911 to request a helicopter, or the 911 center can initiate a call because of multiple reports about a bad accident, in which case the 911 center can either advise SYSCOM or directly request a helicopter.

Pairing the MIEMSS operator with a MSP officer allows two people to work the request at the same time. The operator enters data into the CAD system where the information appears in front of the duty officer.



National Transportation Safety Board

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The 911 center tells SYSCOM the location, incident type, the specific incident, mechanism of injury, whether there are adult or child patients, whether the condition is critical or stable, whether there are multiple patients, the landing zone information including latitude/longitude coordinates, and the patient category.

Prior to this accident, SYSCOM did not require information on patient category. Virtually any request or distress call led to launching a helicopter and there was no quality control imposed by SYSCOM. Since this accident, however, SYSCOM now asks for category and stability information (effective October 9, 2008). Category "C" and "D" patients, who are more stable, now need authorization by a physician to receive helicopter transport. This new procedure should cut down on inappropriate launches of patients who do not need either helicopter transport or trauma centers and, perhaps, speed up necessary treatment at a local medical center. If the patient is stable (Category "C" or "D"), the new procedure specifies that they check with a physician or trauma surgeon before requesting a helicopter. SYSCOM will facilitate these communications, especially for counties without a local trauma center or ready medical expertise.

Once a launch decision is made, SYSCOM will prepare the dispatch package, provide it to the flight crew, and launch the aircraft.

Prior to the development of the Trauma Decision Tree, providers called SYSCOM and gave only the type of collision and a priority determination on a 3-level scale. The Trauma Decision Tree met a national standard and was introduced about two years ago and allowed earlier determination of significant factors such as whether the patient was stable or unstable. There were major efforts made by the State to give training to first responders on the Decision Tree, as an untrained responder could get confused.

The Duty officer monitors the ADDS-HEMS weather as a fleet monitoring tool, but it is not policy for the Duty officer to make a weather decision to decline or accept the flight. Instead, the Duty officer provides the package to the flight crew along with his recommendation and the crew decides whether to decline/accept. The Duty Officer always gets the crew involved. He has the authority to abort the mission but he never declines missions on his own authority due to weather. He also cannot order a crew to fly. In the next few weeks, SYSCOM will revise its procedures to allow the Duty Officer to decline missions without consulting a flight crew.

Once the mission is launched, the Duty Officer monitors HEMS and advises the crew. In addition, each aircraft has the RDR-2000 for weather (basic precipitation) information. The Duty Officer continues to monitor the weather while the helicopter is enroute, and provides weather updates to the flight crew through verbal communication.

SYSCOM's pool of certified Duty Officers is made up of pilots or Police Sergeants/Corporals who complete a flight crew orientation program and maintain proficiency by flying a mission every six months. It is a command position, therefore a civilian may not apply. An ideal



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candidate would be one with a flight crew background, but SYSCOM has trouble filling the positions with pilots. A State Police supervisor is acceptable after completing aviation training.

Currently, SYSCOM has 5 full-time and 13 part-time duty officers. All part-time officers are flight crew while, among the full-time officers, one is a flight paramedic, one is a fixed-wing pilot, and the rest are police officers. All SYSCOM officer applicants undergo a training process lasting at least six weeks that includes training at a trauma center and at flight, maintenance, and automated dispatch centers. A majority of the training is OJT. There is no factory CAD training or ADS-B/CRABS operations manual, nor is there any static testing performed. Candidates must audit at least two full shifts (with high call volumes), during which they see active launches, before they are allowed to work as a duty officer. They are gradually cleared to work solo but are surrounded with MEIMSS experienced people. Each MSP trainer has different strengths that pass along to candidates. Sgt. Adams serves as the final quality control for all new duty officers. Recurrency includes a six-hour shift within every 14 days. This can be a scheduling "disaster."

The trainers include a tenured duty officer for consistency. The CAD system is learned on-the-job. Most SYSCOM operators live in the Baltimore metropolitan area, which cuts the commute and provides emergency availability.

Sgt. Adams indicated that that some counties were more prone to use helicopter transport than others. Carroll County (where Waldorf was located) was the highest utilizer of helicopter transport, followed by Westminister, PG, and Baltimore counties. Anne Arundal and Annapolis counties were also high in utilization.

Montgomery County had a trauma center within the county, so it was often possible to transport victims by ambulance within this county in less time than would be required by a helicopter. In the past, there were many inappropriate helicopter launches within Montgomery County. Then, beginning about two years ago, MEIMSS began reviewing statistics related to mode of transport and time to trauma center. The Medical Director held a training session about this, and it led Montgomery County to a 40% drop in helicopter calls and system abuse. MEIMSS has considered using the Montgomery County example as a model for achieving more efficient utilization of helicopters through providing data and feedback to county programs.

When the MSP purchased the original Dauphine helicopter fleet, it made a great public relations effort that involved providing training to local fire departments. They visited fire departments statewide because they wanted the responders to understand helicopter operations and make good decisions. At that time, the launch program was very busy and they eventually unable to continue the training. They encouraged the state regulatory agency that controls pre-hospital care certification to continue this training to promote consistent decision-making statewaide, but it just never happened. He believes that if they were to get rid of the non-essential calls they would be able to pick enough other critical mission that people don't think about, the overall numbers would still be very favorable and



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they would be able to show that they are flying more really sick patients, which would be good for the program as a whole. There never was a quota established for how many flights they needed, "the calls just kept coming." Along with scene response, the program also provided inter-hospital transports that were less time-critical. This led to high level inspection intervals continually coming up and a lot of helicopter downtime for maintenance. Around 1999, the program decided to shed the inter-hospital transports and allowed them to be conducted instead by private operators. Private operators, who supplied their own care team, were more appropriate for hospital-to-hospital missions. The MSP, which maintained good coverage around the entire state, continued to do scene responses. This change led to a decrease in call volume, but the MSP still had high utilization of their aircraft. At its peak, the MSP conducted about 10,000 missions per year. More recently, this has dropped to the mid-8,000 missions per year.

In an average year, the MSP program declines no more than 15% of requested missions due to weather, and declines only 2 or 3 missions due to factors other than weather.

Helicopter shopping was a problem in the late 90's until about 2001. Private operators, trying to get established in Maryland, operated to lower weather minimums and actively wanted business. Around 2002, the MSP began a dialogue with private operators who had been hurt by bad publicity due to safety issues. This led to the signing of a Memorandum of Understanding (MOU) in 2005 under which private operators agreed to adopt the same weather minimums as the MSP and SYSCOM, as the single dispatch agent in Maryland, agreed to provide missions to private operators under specified conditions. There are perhaps three missions per month that are referred to private operators. This occurs when there is a critical patient at an accident scene, the MSP helicopter will not be able to respond in less than 25 minutes, and a private operator is available who can respond 10 minutes sooner than the MSP. This arrangement has worked well. The private operators do not jump calls or scud run. At the same time, there can be a big financial difference to patients since the MSP is a free service while a private operator can charge \$15,000 for the same service.

If MSP is unable to take a mission due to local weather, such as ground fog, they will send another operator. If MSP is unable to get into the region due to larger prevailing weather systems that affect the entire region, however, the mission goes no farther. SYSCOM does not give the dispatch package to anyone else. If MSP pilots decline a mission due to regional weather, and the county attempts to call a commercial operator instead, the commercial operator must decline the trip under the MOU.

Call volume is inconsistent. It is high in the summer, with 30 to 40 missions per day, compared to the winter when there are only 3 to 4 missions.

The paramedic on scene must evaluate whether a patient is stable and coping well or deteriorating. It is important to avoid over-triaging, but this is difficult since a victim may be gravely injured even when walking around. Damage to the vehicle can be used to indicate possible internal injury but this must reflect common sense, such as when the front of the



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brand new vehicle is destroyed but there is no damage to the passenger compartment. The categorization procedure of the Trauma Decision Tree is a response to control overuse of helicopter transfers. Many states like Maryland have stringent standards that are physician-directed while some states have looser standards.

SYSCOM, which began 17 years ago, is a national leader. It is a statewide center that controls every operator from one side of the state to the other and has an ability to mobilize large resources that few other facilities can match. Maryland was the first state to use non-military helicopter transport of patients and it has had a strong EMS program since the early 70's. When the Dauphine helicopters came on line, they had very good equipment, training, and solid weather minimums. Maryland was often a model for other programs, while most other states are hospital-based for patient transport. Maryland continues to work to maintain itself as the best program in the country. They adopt ideas from other innovative programs, such as a good program at a county level at Austin-Travis Texas and a private program run by Air Methods that is primarily a Part 135 operator.

Inadvertent IMC is very infrequent because of the program's weather minimums and happens fewer than 10 times per year. Of these occurrences, only about 1 or 2 per year involve weather deteriorating into IMC while the remaining occurrences involve crews who elected to enter IMC to avoid scud running. It does not happen a lot, but on a few missions, the aircraft departs expecting to complete the mission but is forced to return. Very infrequently do they pop-up and become surprised. More often, from the ground, the pilots decline before pop-up. With bad weather, MSP pilots can contact pilots for private operators such as MedStar to obtain pilot reports.

Any crews who encounter IMC during the mission are required to complete follow-up documentation and undergo risk review. The pilot provides an initial report to the Operations Director/Commander that describes the initial weather procedure. Risk Management Assessment then reviews the report.

On the night of the accident, the pilot would have experienced frustration at being unable to provide a timely transport to the hospital, but he knew Andrews AFB and had spent 18 years there so it would have been familiar. He did not believe that accident pilot would have taken off if he did not firmly believe that he could complete the mission and return to the Section.

The accident pilot had heard that MedStar landed successfully at the hospital when he decided whether to accept the trip. This could have led him to believe weather conditions were favorable even though he did not know where the MedStar originated. His reference to MedStar reflected a pilot report rather than a sense of competition. The accident pilot had been flying since 1988 and did not have a large ego. He would have been motivated to avoid post-mission paperwork and second guessing. It would have been easier for him not to accept the mission.

SYSCOM response to the accident was not at all good and there was poor coordination and communication with all of the agencies involved. His first thought were that it was at the



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fuel pumps or somewhere else. It is a Metro county, so they could not be down or someone would have reported it. If they were not at Andrews they had to be out of the County somewhere. Everyone knew there were four places at ADW where they could be: base ops, the tower, the hangar, and an access point to a taxiway that had been used in the past. When he arrived at SYSCOM he had a hard time believing that the ADS-B position was accurate because "someone would have looked out their side window and seen a helicopter." Therefore, the ADS-B information was not used as it should have been. No one recognized that they had a downed aircraft. They kept saying "it has to be somewhere" which created an inability to "take it to the next level." A better map (with terrain depicted) would have helped, since a park was where the flight disappeared. SYSCOM always loses the aircraft signal while on approach to an airport before landing, and the system "alerts " During a post-accident flight with Trooper 1, the aircraft signal was lost about ½ mile further south on the same approach. This happens "all the time" and led to a sense of complacency. Normal procedures are for the flight medic to call after landing, usually within 5-10 minutes. However, because they were offloading two patients to ambulances it could have been about 15 to 18 minutes before such a call. FM radios do not work well at Andrews and at a lot of other airports around the state.

The entire dispatch package, including the number of patients, is supposed to be relayed verbally to the pilot prior to the helicopter departing. The accident pilot took the initial request and would have briefed the medic on the way to the aircraft. Often, the medic can refuse a second patient or decide to ambulance the second patient. It is common for the paramedic to make contact with ground units prior to landing to obtain additional information. He did not know if that were done on the accident flight. In most missions involving multiple patients, where the medic accepts a second patient, the second provider has flown before. The flight medic would brief the "on-air" provider that "you are in the aft seat, and will be responsible for assessing the second patient." Information about the seatbelts, headset, and doors would also be provided. It only takes a few seconds with someone who's done it before, a little longer with someone who is new. They would be loaded into the helicopter before the patients and briefed. He estimated that using second providers from ground units saves MSP approximately \$6 million per year. They are considered part of the crew. However, it would be impractical to provide a helmet to the second provider, since it would be difficult to stock proper sizes and train the second provider to adequately work the visor system With limited time.

Sgt. Adams suggested that as many as 60% of the patients did not meet need for a helicopter transport, but "by flying everybody, we get all the sick ones."

The flight crews are the ones who make the call when a Section goes "conditional." There is constant communication between the Sections and the DO and the information is input into the CAD system.

Corporal Noyes was a patrol supervisor working out of the Westminster barrack who was in Sgt. Adams's academy class. He initially spoke with Sgt. Adams about applying for the job. He completed orientation and, after 6 weeks of training, worked fairly well at the job. He



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"had limitations because he was not flight crew." He was a solid person; a good supervisor, who handled troops well and had no administrative problems. He "was not as technical as [he] would like somebody to be" but he did make sure he was truly trained and competent for what he was doing. He might have difficulty troubleshooting computer or communication systems, but this was true of other SYSCOM employees as well. He did well on decisions involving fleet management and search operations.

Corporal Noyes first began work at SYSCOM in early 2007. He returned to the field for five months in 2008, then returned to SYSCOM in August 2008. Sgt. Adams reviewed with him changes since he last worked. Corporal Noyes also completed three days of recurrent training, including flying missions, before he restarted in August 2008 and went fully solo. The hardest things were the policy changes. He fell right back into equipment. He worked predominantly at night, in regular shifts of three days on-duty and three to four days off-duty.

The ADS-B data is always up on the screen. Current policy says if there is a loss of signal, the DO will contact the aircraft. In practice, the operators know they will have loss of signal at landing. It was understood that if loss is in cruise flight, the operators would initiate rescue procedures. The software is customized and displays TISS(?) radar targets as well as GDL-90 equipped aircraft. If a GDL-90 aircraft stops transmitting but remains airborne the operator should see a TISS target appear on the screen. There is a way to put a tag on the TISS target. When there is a loss of signal, it provides an audible signal and keeps the last position with the icon shown in red. In the past they had some operators turn down the volume of the alarm and Sgt. Adams "made an example of of them." There is no history of software bugs. The icon changes color and the audible alert sounds whenever the signal is lost. Since the accident the software has been updated from version 3.7 that only provided a view of the ADS-B data over a sectional chart, to version 4.0 that provides street-level mapping and satellite imagery, however version 4.0 is not yet outfitted with the fleet management software, so both system need to be run simultaneously. If you lose the ADS-B data on 4.0 currently, the icon currently disappears. This upgrade was not done as a result of the accident, rather, it was in the pipeline prior to the events of September 27th and was done a courtesy to give them another tool to use..

The duty officer confirms that the adjacent operators can cover his position whenever he needs to leave momentarily, such as for a restroom break. The operator normally eats lunch at a table adjacent to his position so he would not require relief.

They have changed the procedure concerning the timing of the dispatch package. Previously, they would expedite the mission by launching before the dispatch package was complete. For example, they would instruct the pilot to begin flying toward the accident county with an understanding that SYSCOM would provide the rest of the information once the flight crew was airborne. SYSCOM would subsequently provide latitude/longitude for the accident site. The problem was that the crew launched blind, and they had to do writing and planning in the cockpit while flying. Under the new procedure (implemented in the summer of 2005), SYSCOM provides the dispatch package before launch with enough



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information available to allow planning on the ground. This allows the flight crew to remain heads up and heads out during flight. The medic gets the latitude/longitude information before taxi.

Current procedure allows 7 minutes from the time the flight crew is notified until they are airborne. It allows 90 seconds from the initial call until the dispatch package is pushed to the crew. In cases of a clear and timely need, such as an active shooting, plane crash, or high-speed chase in the area, the crew can self-launch.

He believed that 10% was a good estimate for the number of missions that required a double lift.

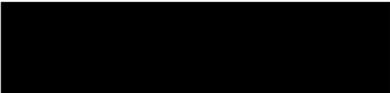
The MSP missions typically receive good support from air traffic control which will vector them anywhere they need. A good example of this is when Air Force One will hold for Trooper 2.

MSP has many aircraft capable of carrying multiple patients.


Dr. Malcolm Brenner
NRS – Human Performance


Jill Demko
Air Safety Investigator


Jason Fedok
Survival Factors
Investigator


Dr. Katherine Wilson
Human Performance
Investigator



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Memorandum

Date: October 15, 2008

Name: Douglas C. Floccare, M.D.
Maryland State Aeromedical Director

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Dr. Floccare was interviewed at the Maryland State Police (MSP) Aviation Command Headquarters, at Martin State Airport, Middle River, Maryland on October 15, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

He works for the Maryland Institute for Emergency Medical Services Systems (MIEMSS), which is the state agency and EMS authority in Maryland that is responsible for licensing and certification of EMS services. He is an emergency physician by training and was hired into his present position in 1989. He first worked as a volunteer fireman, completed medical training at the University of Buffalo, and completed advanced emergency medicine training at Johns Hopkins University.

Every medical program needs a medical director, but he is the only State Director in the country. The Maryland program is unique. It is a population –based coverage that can provide a timely response to all locations in the state. It is not profit-based. As Aeromedical Director for the Aviation Command, he oversees training of the medics but does not work OSHA issue.

The accident pilot was a good person with a positive attitude. Dr. Floccare had often flown with him in the past although not recently. They talked whenever Dr. Floccare called the base to talk to the medics. The pilot was always friendly and positive. Dr. Floccare probably last spoke with him during the month before the accident.

MEIMSS is an independent group that standardizes training, statewide communication, and protocol. Through its EMS Board, appointed by the state government, it provides formalized protocols including the Trauma Decision Tree for choosing between helicopter or ambulance transport. The current protocol became effective on July 1, 2008 following a training period that began in October 2007. The protocol is updated every two years. This time, the Trauma Decision Tree was changed as a result of CDC review of current trauma/triage evidence. Rollover crashes, for example, were reduced in estimated severity. The Maryland protocol adheres closely to the CDC review and exactly adheres to the recommendations of the American College of Surgeons.



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This is a statewide protocol. This is a benefit since everyone in the state works from the same procedure, but can also be a disadvantage since it takes a long time to change.

All requests for helicopter transport are made through SYSCOM. This system was added several years ago to prevent helicopter shopping when commercial programs entered the state.

About 2003, a private company MedStar based itself in Maryland. They had previously been based in Washington D.C. Several additional private companies have since based in Maryland. Private companies came to Maryland for inter-hospital trips. Prior to their arrival, when MSP conducted the inter-hospital transfers, Dr. Floccare would get paged to approve inter-facility trips; MSP is staffed with a medic, not an emergency nurse. They had to pick up a nurse first.

Categories "A" and "B" are based on vital signs. In Category "A", the most serious injury, the Maryland State police (MSP) response must be in less than 25 minutes or commercial companies are asked. They have to beat the MSP response by 10 minutes. This procedure has worked well. One operator was initially resistant and advertised for market share. But this changed. Now, if the MSP pilot turns down a flight to weather, a private company will normally not do it unless the weather problem is strictly local rather than regional. Dr. Floccare was not aware of the specific paperwork procedure necessary when a pilot turned down a trip due to weather.

SYSCOM works hard not to provide any medical information about the accident to the pilot before he makes a decision on whether to accept a trip based on weather. They do not want to pressure the pilot.

It happens perhaps once or twice per year that SYSCOM assigns an initial mission to a commercial operator rather than MSP. There was one highly publicized event in Western Maryland that unjustly caught the public attention. MSP did not dispatch because the helicopter could not get over the mountains for weather. A local commercial operator was able to fly to the scene and transported the patient to a local hospital only 7 miles away. Because of weather, they were unable to fly the patient to a trauma center or anywhere outside the immediate area.

Generally, if weather is down, nobody flies. MSP has circulated telephone numbers of its bases and of commercial operators so pilots can talk directly to the other pilots about weather. Commercial operators are encouraged to call MSP pilots. Dr. Floccare believed that there were no problems in the area of helicopter shopping because of the policy.



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In the accident, the decision to call for helicopter transport was consistent with the parameters of the Trauma Decision Tree protocol. The "C" classification given to one of the car victims was consistent with an intrusion observed in the passenger compartment of greater than 12 inches. This follows the guidance of the CDC panel, which wanted to have a predictive value of 20% or greater and considered this amount of kinetic energy transferred to the body to be predictive. PG County Hospital was a 48-minute drive time, and more than a 30-minute drive justified the use of helicopter transport. Thirty minutes is considered a decent time for a patient to no longer compensate for internal injury and show a drop in vital signs. The decision was made to transport the victim to PG County, which had a level-2 shock trauma center. There was a level-1 shock trauma center available at Baltimore but the American College of Surgeons did not discriminate clinically between Level 1 or 2 trauma centers.

Category "D" allows the EMS provider judgment. There were four victims, and it was decided to send two to a trauma center and two to the local hospital by ambulance.

The 30-minute drive time rule for launching a helicopter was included in the protocol about four years ago and is based on medical concerns. However, it can serve a secondary value of keeping the ambulance available for further community service rather than involving it in a multi-hour ground transport that would restrict ambulance coverage in some communities.

During the past year, there has been a steady downward trend in number of medevacs flown.¹ MEIMSS believes that this follows from their emphasizing appropriate use and represents significant progress. MEIMSS recently plotted data on the location of medevacs superimposed on computer-generated arcs showing 30-minute driving times around trauma centers. This information was provided to jurisdictions and medical officers to review. In some cases, there may have been appropriate justification for helicopter launches other than distance traveled, such as local traffic jams related to a football game or other factors. Therefore, MEIMSS regards this as a form of quality assurance feedback that can be useful for local counties to evaluate. In January to

¹ In a followup communication, Dr. Floccare stated that "our medevac transports have been declining over the past four years, and I believe that this is related to efforts that we have made as a system to improve helicopter utilization through education and refinements in EMS protocol." He provided the following statistics for patient transport numbers for the previous fiscal years (July 1 – June 30):

Year	Number of patients
FY 2005	5,409
FY 2006	5,093
FY 2007	4,730
FY 2008	4,199



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February 2008, MEIMSS representatives met with representatives of all counties in Maryland to tell them about the feedback program. People understood this initiative.

Infrequently, in the past, MEIMSS contacted the county directly when a crew raised a question about a specific call for helicopter transport. This action led to problems, so MEIMSS moved away from incident-based issues to prospectively providing feedback for local evaluation. The data did not display any big outliers.

MEIMSS recently hosted a Safety Summit that was held on Friday September 26 (one day before the accident). Invitations were sent to all helicopter operators for EMS, news helicopters, and so forth. NTSB, FAA, and HAI were invited as speakers.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



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Memorandum

Date: November 5, 2008
Name: Robert R. Bass, M.D.
Executive Director, MIEMSS
Subject: MIA08MA203, Forestville, MD, N92MD, SA-362 accident

Dr. Bass was interviewed at the Maryland Institute for Emergency Medical Services Systems (MIEMSS), Baltimore Maryland on November 5, 2008. Present for the interview were Jill Demko, Jason Fedok, Katherine Wilson, and Malcolm Brenner. Following is a summary of the interview with him.

Dr. Bass has held his current position since 1994. Prior to this position, he served in the U. S. Navy and trained and served as an emergency physician. He is the past president of the National Association of State EMS Officials and a past president of the National Association of EMS Physicians.

MIEMSS is a state licensing board that oversees EMS services in the State of Maryland.¹ It is an independent state agency overseen by an 11-person board. Each state in the United States has such an agency to oversee EMS services but the Maryland agency is more active than most. They use statewide protocols, statewide data collection, and quality assurance standards. Their communication system (SYSCOM) is unique. Maryland was the first state to operate a public helicopter service, beginning in 1970 when it was one of the first in the world. While other states provide public helicopter services, including New York, New Jersey, and Delaware, Maryland has the most comprehensive services. Initially, the missions involved responding to accident scenes (about 80%) and providing inter-facility transfers (about 15%), but in the early 2000's the inter-facility transfers were given to private operators. This was appropriate since private operators routinely have a nurse and paramedic on board while the State Police have a paramedic only. The State Police continue as the primary responder to accident scenes.

Dr. Bass met the accident pilot but did not know him.

¹ According to a fact sheet provided by Dr. Bass: "The Maryland Institute for Emergency Medical Services Systems (MIEMSS) oversees and coordinates all components of the statewide EMS educational programs, operates and maintains a statewide communications system, designates trauma and specialty centers, licenses and regulates commercial ambulance services, and participates in EMS-related public education and prevention programs."



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The American College of Surgeons provides national guidelines reflected in a Trauma Decision Tree to determine severity of injury and to help determine whether to launch a helicopter to an accident scene. This Decision Tree has been adopted by MIEMSS and is used by medical responders at the scene. It uses a four-stage process: 1) evaluate the victim's physiological signs (such as blood pressure and clearness of thinking); 2) check for severe anatomic injury (such as flailed chest or pelvic fracture); 3) review mechanism of injury; 4) consider additional factors, such as extreme age, pregnancy, or provider judgment. The Tree results in a classification of four levels of serious injury consistent with required treatment at a trauma center, from "A" (the most serious) to "D" (the least serious). The Tree provides the following guidance concerning means of transport: "Patients within a 30-minute drive time of the closest appropriate trauma/specialty center shall go by ground unless there are extenuating circumstances. Consider helicopter transport if of clinical benefit."

In the late 1970's there were no formal mechanisms for deciding to use air transport, and there were preventable deaths due to underutilization. Elements of the Trauma Decision Tree were introduced in the early 1980's. By the early 2000's, helicopter use had increased dramatically and there was industry concern of over utilization. Most recently, the tree was upgraded in late 2006 to reflect current mortality/injury data obtained from research funded by the Center for Disease Control (CDC) and National Highway Traffic Safety Administration (NHTSA). Some mechanisms of injury were removed from the tree, such as rollover and small front-end intrusion as a result of contemporary improvements in car design and the use of airbags. The American College of Surgeons recommended use of the revised Trauma Decision Tree, recognizing that it might allow some over-utilization of air transport as a cost of controlling preventable deaths.

MIEMSS conducted a detailed investigation of the accident. There were two occupants of the small car, aged 17 and 18 years. The road was slick, the car did a 360-degree turn and hit a tree in the median leaving a small portion of the tree to suggest that the car may have been airborne. It was then hit by another car in the oncoming lane. The back of the small car was destroyed. There was intrusion in the right rear passenger compartment that was greater than 18 inches. The original request for help indicated a "D" level of injury and was probably based on a subjective judgment by EMT providers from the Waldorf Fire Department. Paramedics arrived on ambulances, and they upgraded the assessment to "C" based on intrusion of the passenger compartment and reported symptoms. Both women showed no physiological or anatomic criteria but indicated they had neck and back pain and significant contusion.

Under Category "C" injuries, providers are directed to consider use of a helicopter if it provides "clinical benefit" and if the nearest trauma center is more than a 30-minute drive. In this case, the PG County Trauma Center was 48 minutes out (according to



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Google), the victims showed symptoms, and there was crushing of the car. MIEMSS concluded that the decision to call a helicopter was appropriate.

Ultimately, a decision to use helicopter transport requires some judgment and may reflect factors such as whether ambulances can be spared for the required turnaround and the receptivity of a local emergency room to a trauma victim. These decisions must also be made under extreme stressors such as noise, time pressure, emotion and bystanders. However, helicopter transport has tremendous benefits of extending access to trauma centers to 80 million Americans.

MIEMSS quality assurance is done at the local level with a quality assurance officer in each jurisdiction. Four to five years ago, in response to increasing helicopter use, MIEMSS initiated a new effort to assist the local quality assurance effort. Using satellite imagery (GIS data), plots were made of each trauma center in the state with shaded zones around each trauma center to represent areas of 15 to 30 minutes approximate driving time and dots to show accident sites from which helicopters had been launched. Anytime helicopter transport was requested from a shaded zone, MIEMSS asked the local jurisdiction to review the launch decision. They began sharing the GIS data with the local jurisdictions last year and the response was positive. Helicopter launches declined by about 23%, from about 5100 to 4100 per year, since they began this program.

Following this accident, MIEMSS convened an outside panel of medical experts to review the response procedures. As a result of this review, the triage diagram remained the same but the "C" and "D" categories changed. Now, anytime there are "C" or "D" victims, the responder must consult with a local emergency room or trauma center and reach agreement on the most appropriate mode of transport. Logistically, the change to this new procedure has been smoother than Dr. Bass anticipated. SYSCOM has been able to coordinate these consultations efficiently and there have been more joint decisions to use ground transportation.

There is an article in the scientific literature about a similar solution used by Pinellas County, Florida, which instituted a 30-minute rule and a consultation rule for responders to call for helicopter transport. The article reported that helicopter transport requests dropped 66%. A comparable drop might occur in Maryland with the adoption of the consultation rule. MIEMSS will evaluate mortality trends to judge its effectiveness. A consultation rule might be appropriate as a national solution. A pause before calling for helicopter transport may be helpful.

There is a liability issue with ground transport that a hospital must be qualified as a bay station to treat trauma victims, approved to MIEMSS standard of training and quality review standards. All trauma centers meet the standard of bay station. Trauma is a small part of medicine and hospitals have liability coverage. Serious trauma victims do



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not always present symptoms according to guidelines or the rule of 10 minutes difference by helicopter transport.

From January to July 1, 2008, all EMS providers in Maryland were required to receive training on the new standards applied this year to the Trauma Decision Tree. MIEMSS is also sending out a CD about these standards. There are 18,000 EMS responders in the state, including 10,000 first responders. Training can be a significant obligation.

The Maryland MSP helicopter program has flown 120,000 patients in 38 years. This was the first accident since 1986 and the first in which a patient was lost. The program has saved thousands of lives. Treatment at a trauma center, often made possible via helicopter transport, is associated with a 25% reduction in mortality.

Helicopters are based geographically around the state to provide a 15 to 20 minute response time. This is a public program funded by a surcharge of \$11 on vehicle registration. The helicopters are also available for law endorsement and multi-missions, providing added value for the investment.

Other parts of the country use private helicopter services and have experienced an explosion of providers, helicopter shopping, increased cost to patients, and launches in marginal weather. In Maryland, by contrast, there is a single contact point for dispatch that controls utilization and avoids multiple helicopter launch operations. Launch decisions are based on safety issues, with the pilot deciding whether to launch based on weather conditions.

The Waldorf area is not disproportionately high in helicopter launches. MIEMSS performed a tally on helicopter utilization by each county and divided by population. The Waldorf area (Charles County) showed about the same utilization as surrounding counties and was midrange. The ocean and bay shore areas showed the highest utilization and were also the farthest from any trauma center. Therefore, helicopter usage depends on distance from a trauma center.

In 2006 to 2007, Montgomery County dropped substantially in helicopter usage. The county has local trauma centers and quality control review convinced county providers that ground transportation was often sufficient.

Privacy issues do not prevent a hospital from sharing information with the quality assurance programs that would allow jurisdictions from obtaining patient outcome information that could be used in training to improve EMS provider responses. This sort of use is encouraged.

In the accident, the victims had signs and symptoms of pain and were 48 minutes away from trauma center treatment via ground transportation.



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He would like to see a forum sponsored by the Office of Injury Control within the Center for Disease Control (CDC) and the National Highway Transit Safety Administration (NHTSA), which have funded such work in the past, to review national standards on the use of aero medical services in the transport of trauma victims. He envisions that the use of satellite mapping for quality assurance and the use of a consultation rule might be useful for national standards.

[REDACTED]
Dr. Malcolm Brenner
NRS – Human Performance

[REDACTED]
Jill M. Demko
Air Safety Investigator

[REDACTED]
Jason Fedok
Survival Factors
Investigator

[REDACTED]
Dr. Katherine Wilson
Human Performance
Investigator



National Transportation Safety Board

Memorandum

Date: October 21, 2008

Name: Samantha Murray Smith
Volunteer EMT-B, Westlake 12 Fire Department

Subject: MIA08MA203, Forestville, MD, N92MD, helicopter accident

Ms. Smith was interviewed at the Westlake 12 Fire Department (FD) on the above date, regarding the automobile accident that precipitated the subject helicopter accident. Present for the interview were Malcolm Brenner, Jill Demko, and Deputy Chief Ramer. Following is a summary of the interview with her.

Ms. Smith began as an EMT-B at the Westlake 12 FD in March 2007. She did not have any medical experience prior. On the day of the accident (September 27, 2008), she began her shift at the FD around 1800. She was the "officer in charge" on ambulance 128.

Ms. Smith was "clearing" another automobile accident, when she heard the call for the subject automobile accident over the radio. Her ambulance was the first ambulance on scene. She described the scene as a two-vehicle collision, in which she had "never seen car damage like that." The vehicle she immediately went to was a blue SUV with two victims in the vehicle. The back end was "smashed in" and the two rear wheels were folded inward. The ambulance driver and an aide went to the other vehicle (which only had "dents on it.")

Ms. Smith stated the driver and passenger in the blue SUV were both conscious and both complaining of severe neck and back pain. The driver was "hysterical" and continually asked for her cell phone. Ms. Smith performed a rapid trauma assessment (gently touched areas to determine injury) on the passenger. During the assessment, she "barely touched her neck and abdomen and she screamed in pain." The patient did have good "PMS," or blood flow.

Ms. Smith continued her assessment of the patients while extracting them from the vehicle. She stated a fire fighter assisted her by "holding c-spine" (holding the patient's neck still), while she placed a backboard under the patient and then rotated her onto the backboard.



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While the patients were being extracted from the vehicle, Ms. Smith heard that a helicopter was coming to pick up the patients.

Ms. Smith loaded the vehicle driver (Jordan) into the ambulance and she was joined by "Tonya" and "Jackie" who went with her to the helicopter landing zone. They were in the ambulance about 10-15 minutes before being loaded into the helicopter.

Another ambulance (from another station) transported the vehicle passenger to the landing zone (because by protocol, they have to send a certain number of medical providers with a patient). This ambulance arrived at the landing zone first, and one of the providers ("Margie") was asked to go on the helicopter. She declined since she doesn't fly, and Ms. Smith and Tonya then discussed who would go. It was decided that Tonya would go on the flight.

Tonya got into the helicopter first, and sat in the rear medic seat, facing forward. Then Jordan was loaded behind the pilot, and finally the passenger was loaded on the left side.

Ms. Smith stated there were no difficulties securing the stretchers in the helicopter. She reported that the stretchers are loaded through the side of the helicopter and lock into place.

She did not see if the medical providers were seated and buckled in prior to takeoff. She loaded the patient and then returned to the helicopter. Prior to leaving, she told Tonya to "sit in the seat, hold Jordan's hand, and listen to the flight paramedic." Tonya had never flown before on a helicopter.

Ms. Smith did not think Jordan was given any medication on the ground. She recalled that an IV was started, but did not think any fluids were given. She did not know if any treatment would be needed in the air (she is a basic EMT).

Ms. Smith stated the helicopter was on the ground "no more than 20 minutes" and the pilot did not exit the helicopter at any time. She could not tell if the pilot had his shoulder harness on, as it was "pitch black" outside.

Ms. Smith briefly spoke to the Maryland State Police (MSP) medic on scene (in the ambulance). She briefed him on the patient's vital signs and her injury assessment. The medic then hooked up Jordan to a monitor for her vital signs, and may have started an IV (Ms. Smith couldn't remember if the MSP medic or a medic on the ground started the IV). Ms. Smith could not remember if the medic took off his helmet while on the ground (she stated that "normal practice" would be to take off their helmet prior to entering the



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ambulance since they can't hear with the helmet on; however, she couldn't recall in this case).

Ms. Smith remembered the weather as "clear" while she was working the accident; however, it had rained earlier in the day and the roads were wet.

The decision to have another provider go on the helicopter (Tonya) was made by the MSP medic. This decision was based on the severity of the patients' injuries, and in case there were internal injuries that hadn't surfaced.

Ms. Smith did not know how the decision was made to do a "double lift" (two patients in the helicopter); however, she stated that it was not unusual. The decision is based on weight (fuel on board, patient(s)' weight, etc.). The MSP medic would have made that decision.

Ms. Smith was asked how the decision is made to request a helicopter (vs. ground transport). She responded that they use the "trauma decision tree" (medical protocol). They receive training on the protocol every year. This year it was completed at the FD around June. The training included watching a DVD (about 60-90 minutes) of new protocols, and receiving a printed copy of the protocols. Every three years, refresher training is also given.

Additionally, medics have a smaller version of the protocol ("pocket protocols") on each ambulance.

Ms. Smith was asked how often she thought the FD requested a helicopter (vs. ground transport). She responded that it depended on the day (weather) and type of call. Some days there were multiple air transports and some days there were none.

Ms. Smith stated she had never requested a helicopter, but she could as an EMT-B.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 21, 2008

Name: William Paul Rudolph Jr.
EMT/EMS Training Manager/Driver – Westlake 12 Fire Department

Subject: MIA08MA203, Forestville, MD, N92MD, helicopter accident

Mr. Rudolph was interviewed at the Westlake 12 Fire Department (FD) on the above date, regarding the automobile accident that precipitated the subject helicopter accident. Present for the interview were Malcolm Brenner, Jill Demko, and Deputy Chief Ramer. Following is a summary of the interview with him.

Mr. Rudolph had been employed for the previous 5 years at the Westlake 12 FD. He was also a Hospital Corpsman in the U.S. Navy. He has been an EMT since 1993, has been nationally certified since 1997, and certified by the state of Maryland since 2004.

On the night of the accident, Mr. Rudolph began his shift around 2100. He became aware of the accident when he was in the lounge at the FD, and heard the "tones dropped," announcing a "MVA." He responded in an ambulance (with "Tonya" and "Sam") and stopped on the road, on the other side of the accident scene, in the direction he was traveling (to have a direct drive to the hospital). They were the first ambulance to arrive at the site.

Mr. Rudolph stated the accident involved two vehicles. He responded to the closer, less damaged vehicle. The damage was limited to the driver side door and there was no passenger compartment intrusion. The passenger in this vehicle appeared "okay," but was having breathing problems. The airbag had deployed and struck the passenger in the chest. Chief Ramer was holding the passenger's head stable and was calming her.

Mr. Rudolph then calmed the passenger and assisted in getting her onto a backboard. After that, he turned her over to another county medic, and went to the ambulance to assist with the driver (Jordan) of the other (more severely damaged) vehicle. He noted that Jordan recognized him, since she was a lifeguard at the pool that his family belonged. He also conducted training classes at the pool for emergency response. Mr. Rudolph assured Jordan (a "priority 2") was secured on the blackboard and the medic was ready for transport to the helicopter landing zone (LZ).

He drove the ambulance to the landing zone and turned his lights off as he approached, since the helicopter was already there (he didn't want to affect the pilot's night vision).



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When he arrived at the LZ, the other ambulance was already there with the passenger (Ashley) from the severely damaged vehicle.

Mr. Rudolph talked to the driver of the other ambulance, who told him they were requesting that someone fly with the second patient (Mr. Rudolph noted this was normal protocol). Mr. Rudolph suggested that Tonya go, and she and Sam then discussed who would go. Tonya ended up going with the patient on the helicopter.

Mr. Rudolph described Jordan's condition upon arrival at the helicopter. He stated she was complaining of neck pain and right thoracic pain (8 or 9 out of 10) along her ribs. Her rear chest area was extremely sensitive, and the possibility existed for fractured ribs. Her neck and back were also sensitive, and Mr. Rudolph suspected whiplash or a spinal injury. Mr. Rudolph reported that an IV was started prior to arrival at the LZ, but he did not think any fluids were given (he noted this is standard procedure since it is more difficult to start an IV once in the air). He did not believe any other medications were given to Jordan. When the flight medic arrived, he performed his own assessment, and listened to the EMTs briefing. The flight medic also secured Jordan to a monitor and checked her vitals. Mr. Rudolph could not comment on the medical treatment of the other patient (Ashley), because she was in another ambulance. Mr. Rudolph thought Jordan was "pretty stable" and did not think she would have needed treatment in the air.

The flight medic evaluated both patients and decided Ashley was more serious, so Jordan was loaded first into the helicopter (after Tonya got in). She was loaded feet first, behind the pilot. Then, the other EMTs loaded Ashley, head first into the left side. The flight medic then got into the helicopter, they sat on the ground for a "couple minutes," and then he heard the rotors spool up. He watched the helicopter lift off, hover, and depart. He did not see or hear anything unusual.

Mr. Rudolph was asked if there were any difficulties securing the patients in the helicopter. He responded there were not. The patients were first secured to the backboards, and then onto metal backboards in the helicopter. The left side metal backboard is not collapsible and the right side is. There is a grove-and-latch system with allows the backboards to lock in place. There is also a peg that locks the system, which was in place. The flight medic secured both boards.

Mr. Rudolph was asked if he spoke to the pilot at all, and he responded that he did not. He stated the pilot remained in his seat, in the helicopter, the entire time it was on the ground. He could not see if the pilot had his helmet or shoulder harness on. It was too dark to see the pilot. He did not even see a silhouette. Mr. Rudolph stated he spoke to the flight medic "only briefly," while the medic was in the ambulance receiving



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information about the patient. Mr. Rudolph thought the flight medic did not remove his helmet while on the ground.

Mr. Rudolph was asked to describe the weather on the night of the accident. He stated it had been raining, but was "not bad" at the time the patients were loaded onto the helicopter. He observed a "high cloud ceiling," and noted that he had seen the helicopter fly on "worse days." Mr. Rudolph also remembered that fog "rolled into the area quickly" later that night, around 0115.

Mr. Rudolph was asked how the decision was made to perform a "double lift." He stated he wasn't sure, but he heard the flight medic was upset enroute when he found out there were two patients (he thought there was only one). Mr. Rudolph stated it was normal protocol to have an EMT available to go on the helicopter if there were two patients, although each flight medic is different regarding whether another medical provider will travel. The decision is made by the flight medic (in conjunction with the pilot). If another medical provider will travel, they usually look for the smallest person to go, for weight and balance. In this case, both patients were "small." If another medical provider is unavailable the flight medic makes the decision to request another helicopter or use ground transportation.

Mr. Rudolph was asked if he was involved in the decision to request the helicopter. He stated he was not, but explained the decision is made by using the "trauma decision tree." He also teaches the decision making involved with the tree to other EMTs.

Mr. Rudolph stated if there is more than 12 inches of intrusion into an automobile (in category A or B), the tree dictates that the patients go to a Trauma Center. If the nearest Trauma Center is more than 30 minutes away, the tree instructs to "consider using a helicopter." Mr. Rudolph stated there is not a Trauma Center within 30 minutes, but there are 3 local hospitals. If a helicopter will take 30 minutes to arrive, he would drive.

The "trauma decision tree" is in the EMT curriculum and every year they watch an hour-long DVD on any protocol changes. Mr. Rudolph additionally incorporates the tree into scenarios, as it is not used for auto accidents only (i.e. also used for falls, shootings, etc.). Mr. Rudolph stated in the subject auto accident, Jordan was a "priority 2," and therefore the request for a helicopter was justified. The designation was based mostly on the mechanism of injury (damage to vehicle and chief complaints of patient). Jordan was complaining of rib pain and neck pain, and the concern was present for internal injuries. The designation of "priority 2" also alerts the hospital to the incoming trauma. If a patient were designated as "priority 3," they would be transported to a local hospital and not a Trauma Center.



Memorandum

Mr. Rudolph was asked how long it would have taken to drive to Prince George's (PG) Trauma Center. He responded between 30-40 minutes. He had never driven there before, so it may have even taken him 45 minutes. The roads were slightly damp with slick areas, but not too bad. There were some patches where he could see oil sheen as they had not had much rain before that weekend. He estimated the helicopter would have taken about 5 minutes to arrive there.

Mr. Rudolph was asked if there was a review process for the helicopter requests. He stated that there was a quality assurance process at the station and that the county had a quality assurance evaluator. Calls are chosen at random at the state and county level; however, he didn't know how calls were chosen for the review.

Mr. Rudolph has suggested to the Maryland Institute for Emergency Medical Services Systems (MIEMSS) that stations receive feedback regarding their requests for helicopter transports. He would like to receive information regarding patient outcomes to better understand if their requests for helicopter transports were justified. This feedback could be limited to the moderate-severe cases, which "could have gone either way."

Mr. Rudolph was asked if there were other medevac operators in the area. He stated that all requests for helicopter transport go through SYSCOM. SYSCOM first notifies Maryland State Police because they have 11 helicopters at 8 bases around the state. They have better coverage than other helicopter operators, which include the U.S. Park Police, MedStar, and LifeFlight. It is unusual for private operators to work at accident scenes. In 10 years, he has maybe seen MedStar come to a scene twice.

Mr. Rudolph was asked how he felt about the helicopter service. He stated it was "awesome," and "they are a great group of guys." Mr. Rudolph reported that he has been involved in numerous helicopter "flyouts," since the nearest Trauma Center is just over 30 minutes away.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 21, 2008

Name: John William Weyrich II
EMS Sargeant, Westlake 12 Fire Department

Subject: MIA08MA203, Forestville, MD, N92MD, helicopter accident

Mr. Weyrich was interviewed at the Westlake 12 Fire Department (FD) on the above date, regarding the automobile accident that precipitated the subject helicopter accident. Present for the interview were Malcolm Brenner, Jill Demko, and Deputy Chief Ramer. Following is a summary of the interview with him.

Mr. Weyrich has been with the Westlake 12 FD for 3 years, and had 15 years prior experience. On the day of the accident, Mr. Weyrich began his shift around 1800. He had been setting up for their annual fundraiser (car show) and was returning home after 2300, with Deputy Chief Ramer, when they encountered the accident scene and were among the first people to arrive.

Mr. Weyrich observed headlights through what appeared to be fog or smoke (Mr. Weyrich stated later he thought this was steam from the radiator or airbag dust, as it dissipated quickly). He observed a yellow vehicle "up the road" from the "primary vehicle" (about 40 yards away). There were many bystanders beginning to congregate and he immediately called 911 and described the "MVA," which he believed to be a "head-on collision."

Mr. Weyrich responded to the blue (more damaged) vehicle, on the passenger side, and Chief Ramer responded to the other (yellow) vehicle. He attempted to calm the driver and passenger and asked a bystander to get in the back seat and "hold c-spine" on the driver (hold her neck still). Mr. Weyrich "held c-spine" on the passenger, through the door. They remained in their positions until an ambulance arrived.

Mr. Weyrich stated he cut his thumb on the vehicle while he was helping the victims, so he was pulled out of the rescue. He did use his knee as support for the backboard, as the driver was extracted.

He had his thumb wrapped, and remained on-scene; however, he did not participate in treating the victims since he was injured.



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Mr. Weyrich did not know what the injuries to the victims were. The driver was screaming and saying, "she was sorry" repetitively. He just told them to sit still while he waited for the ambulance.

Mr. Weyrich did not travel to the landing zone where the helicopter was. When asked about the weather, he stated the ground was wet, but it was not raining at that time.

Mr. Weyrich was not involved in the decision to request a helicopter.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 21, 2008

Name: Louis Warren Ramer
Deputy Chief EMS 12, Westlake 12 Fire Department

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Ramer was interviewed at the Westlake 12 Fire Department (FD) on the above date, regarding the automobile accident that precipitated the subject helicopter accident. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Ramer was the Deputy Chief of EMS 12, and had been at the Westlake 12 FD station since 1998. He stated he was not scheduled for a shift at the FD on the day of the accident, but was setting up for a fundraiser (car show) nearby. He was driving back to the station with John Weyrich when they saw "weird headlights" around a curve in the road. He then saw a tree severely damaged and a car that had gone through the median. He told John to call 911 and he proceeded to the yellow car that was involved in the two-vehicle collision.

Mr. Ramer noticed that all the air bags had deployed, and there was a 16-year old male driver, and a female passenger. There was slight front-end damage on the car and a scratch on the side. When he arrived at the car, both the driver and passenger were already out of the car. The passenger was sitting on the ground, becoming "hysterical." The male driver was walking around and had a cut on his hand. The passenger was complaining of neck pain and screaming for her mom.

Mr. Ramer "held c-spine" (stabilized neck) on the passenger, and then an ambulance arrived with "Bill, Sam, and Tonya." Tonya went between the two cars, and Bill primarily helped him with the passenger. They loaded the passenger onto a stretcher and she was taken by ambulance to Civista Medical Center (CMC). The male driver drove himself to the hospital (Mr. Ramer thought this was mostly to accompany the passenger, as he did sign a release on scene to deny further medical treatment (other than bandaging his hand)). As he was leaving, Mr. Ramer found "Chief Haden," and noticed the other (blue) car.

As Mr. Ramer was loading the passenger onto a stretcher, he heard over the radio that a helicopter was requested. He was a little surprised that a helicopter had been requested since it had been raining. However, he looked up and saw the stars, so he



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felt the weather was fine for a helicopter. He also thought "if the weather was not good, SYSCOM would make that decision."

Mr. Ramer stated he was not involved in making the decision to request a helicopter, but he has made the decision before. He stated that the decision is made by conducting a "scene survey" and a "patient survey." Intrusion into the vehicle is usually the primary factor. For example, a good reason to call a helicopter would be if the steering wheel is bent, or the patient is unresponsive. In both cases, internal injuries could be a concern. Mr. Ramer stated there have been instances where the helicopter was no longer needed after it was launched, or even after it arrived on-scene. For example, after the helicopter is called, further patient assessments are conducted. If the patient condition improves, the helicopter could turn back to its base (flight medic makes that decision while enroute). Mr. Ramer has also been aware of situations where a helicopter was not called, a patient was taken by ground transport, and then flown out to a Trauma Center after arriving at the hospital.

In regards to the subject accident, Mr. Ramer felt the request for the helicopter was justified. The "trauma decision tree" was used, and the damage and injuries (for the blue car) fit "Category C." The level of intrusion was greater than 12 inches, the rear seats were "gone," the rear axle was broken, and the rear wheel was near the driver's door.

Mr. Ramer was asked to describe the "trauma decision tree." He stated it is divided into categories, and the primary purpose is to determine what type of facility to transport the patient to (level of care, or specialty hospital; i.e. trauma center, children's hospital, burn center, hand center). The purpose is not to decide the type of transport (helicopter vs. ground transport), although once the level of care is decided, the tree helps to determine if a helicopter should be requested. There is an entry under each category of the tree which states, "consider requesting helicopter if ground transport is greater than 30 minutes." Mr. Ramer felt that in the DC area, traffic and highway conditions are always considered when deciding whether the 30-minute guideline can be met. In regards to this accident, the drive to Prince George's Trauma Center would be "pushing 30 minutes."

Mr. Ramer was asked how often a helicopter is used compared to ground transport. He stated there really is no pattern, except in locations, which are farthest from the Trauma Center. For example, he thought helicopters are requested more in southern Charles County because it is farther from the Trauma Center. He noted there is also a racetrack there, at which severe injuries often happen.

Mr. Ramer was asked if there is any review of these requests. He stated he thought that some review was conducted by the Maryland Institute for Emergency Services Systems



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(MIEMSS). In addition, there might be a review if an EMT checked the "exceptional call" block on their paperwork. This block is normally checked if an EMT performs a skill outside his normal practice. This provides a red flag at the state level.

Mr. Ramer also stated that each EMS Station has a Quality Assurance (QA) Officer. This person chooses calls at random for review. Mr. Ramer was unaware of any unusual situations during these reviews. Mr. Ramer was not aware of any specific reviews of helicopter vs. ground transport.

Mr. Ramer stated EMTs file a report after each call, which includes patient info and call times (dispatch). A copy of the EMTs notes also goes into the patient's records (faxed to the hospital).

Mr. Ramer was asked how the Maryland State Police (MSP) service was. He stated it was "great," and they provide an "exceptional service." He reported the response time for Trooper 2 was "pretty quick," and he never waiting on the ground for an exceptional period of time. He did state that sometimes the helicopter has to wait on the ground, after it arrives, due to victim extraction.

Mr. Ramer has flown on an MSP transport 4 or 5 times and believes there is no reason for concern of their operation.

He additionally stated that no one at his Station made the decision to request the helicopter transport.

Mr. Ramer felt that it could help responders to receive more subsequent information on the medical outcome of their patients. This would provide feedback to help them improve their skills, but the amount of subsequent feedback is currently very limited in respect to patient privacy concerns.


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: November 18, 2008

Name: Bryan Allen
MedStar Pilot

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Allen was interviewed over the phone in reference to the above-mentioned accident. Following is a summary of the interview with him.

Mr. Allen was flying a medevac mission for MedStar transport on the night of the MSP accident and recounted his memory of the event. He stated he received a request to transport a patient from Civista Hospital in LaPlata, Maryland to Washington Hospital Center (WHC), Washington, D.C.

When he received the request (around 2330), he checked the weather for the route, from internet sources and surrounding airport AWOS. The weather appeared "ok" at his base and the route of flight, so he departed from Maryland Airport (2W5), Indian Head, Maryland and flew to Civista Hospital without incident. When he left Civista Hospital and flew north toward WHC, he noticed the cloud ceiling getting lower in D.C. and to the north. After landing at WHC, he felt the "window was approaching" to be able to depart WHC and return to 2W5 without encountering the weather.

The patient was off-loaded from the helicopter, and Mr. Allen again checked the weather before leaving WHC. He noted it was "still reported VFR, but not as good as when he left." He then departed to the south for the return flight to 2W5. Mr. Allen stated that as he flew along the VFR helicopter route, he overheard a transmission on the Washington National Airport (DCA) Tower frequency, regarding a pilot report (PIREP) from Trooper 2. Mr. Allen could not remember if he heard the transmission directly from Trooper 2, or if it was relayed information from the Tower controller about what Trooper 2 reported to them. Mr. Allen remembered that Trooper 2 reported the cloud ceiling as 1,000 feet when they departed from the landing zone, after picking up the patients.

Mr. Allen was particularly interested in this information because where he was headed (Indian Head, Maryland) was in the vicinity of Waldorf, where Trooper 2 reported the weather. Based on the PIREP from Trooper 2, Mr. Allen thought he could continue toward his base.



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As Mr. Allen continued flying south, he noted the cloud ceiling was lower than what Trooper 2 reported. The helicopter route he was flying required him to maintain an altitude of 200 feet, and then initiate a climb. Mr. Allen noted the cloud ceilings were 500-600 feet, and since he needed to initiate a climb, he knew he could not continue VFR. Mr. Allen turned the helicopter around and returned to WHC to wait for the weather to clear.

Mr. Allen stated he checked the weather at the time of the accident, and the current weather was not reflected on the internet. Mr. Allen commented that "it would have been nice" to have the updated weather available. Mr. Allen uses several different weather tools available on the internet, including: Aviation Century, HEMS, ADDS, and Jeppesen.

Mr. Allen flew a Eurocopter EC-135 for MedStar, and had accumulated about 2,700 hours of total flight experience.


Jill M. Demko
Air Safety Investigator



National Transportation Safety Board

Memorandum

Date: October 29, 2008

Name: Sherri Bunker
Wife of Accident Pilot

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mrs. Bunker was interviewed at her brother's house in District Heights, Maryland on October 29, 2008. Present for the interview were Malcolm Brenner and Sgt. David Svites, Maryland State Police Aviation Command. Following is a summary of the interview with her.

When Mr. Bunker did not have work demands, he typically went to bed between midnight and 0100 and awoke the following morning between 0700 to 0900. The quality of his sleep was normally fine. He was a night person.

On Wednesday, September 24, Mr. Bunker attended pilot training at Baltimore during the day. That evening, he and Mrs. Bunker ate dinner at a restaurant and he probably went to bed at his normal time between midnight and 0100. On Thursday, September 25 he probably awoke around 0800 to 0830. He was off-duty and spent all day at home with routine activities that included watching television and playing video games with their children. Mrs. Bunker went to bed early and estimated that Mr. Bunker went to bed at his normal time. On Friday, September 26, he probably awoke around 0800 to 0830. He completed his annual flight physical that went well. He did not play golf that day. He probably went to bed at his normal time. On Saturday, September 27, Mrs. Bunker awoke first and Mr. Bunker joined her for breakfast about 0800. It consisted of eggs and maybe oatmeal. The Bunkers ate lunch about 1500 at a Red Lobster restaurant where Mr. Bunker ate the shrimp special. He reported for work about 1800 for a 1900 start of duty and she had no further contact with him. He seemed fine all day. Prior to Wednesday, September 24, Mr. Bunker worked several day shifts.

Mr. Bunker had not experienced any previous aviation accidents or emergencies.

In the past 12 months, Mr. Bunker experienced no major changes in his personal or financial situations. Everything was fine. They had been married since 1985 and had three children, aged 16, 19, and 20 years.

In the past 12 months, there had been no major changes in his health. He was in good health and did not have a personal physician although he consulted physicians for



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occasional issues. He required bifocals for his vision and carried them with him on the evening of the accident. His hearing was OK. He had small hearing loss in certain frequencies from working around helicopters but did not require any hearing aids. He took no prescription medication and took no drugs to her knowledge, prescription or non-prescription, in the 72 hours before the accident. He did not smoke tobacco. He loved coffee, and typically drank several cups per day.

Mr. Bunker showed an interest in aviation when he was a child. He completed a private license for fixed wing airplanes first and subsequently for helicopters. He enjoyed all aviation and, having been first hired as a trooper, took helicopter training so he could qualify for the Aviation Command.

He found his work interesting and talked about it occasionally at home. He loved flying and being able to help people and save lives.

In response to questions, Mrs. Bunker indicated that her husband snored and had snored all the time she knew him. He did not kick while asleep and his sleep patterns did not display extended periods without breathing. Mr. Bunker did not complain of insomnia or other sleeping problems and never consulted a physician for sleep disorders. He was able to nap during the day.

Asked if there were other issues that might assist the investigation that had not been discussed, Mrs. Bunker indicated that there were none.


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 10, 2008

Name: Marvin Holt
Civilian Pilot (Retired)

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Holt was interviewed at NTSB Headquarters on October 10, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Mr. Holt was hired by the Maryland State Police (MSP) in 1973 as a State Trooper. He was accepted into the MSP Aviation Command in 1985. Prior to being accepted into Aviation Command, he obtained his Private Pilot Certificate (airplane single engine land/instrument airplane) and he had obtained his Commercial-Rotorcraft (and Instrument) Certificate. He paid for all of this training on his own.

After being accepted into Aviation Command, Mr. Holt was sent to a Turbine Transition course through the MSP (Jet Ranger school).

In June 2000, Mr. Holt retired as a trooper pilot and was rehired the next day as a "civilian pilot." At the time of his retirement, he had approximately 4,500 hours of total flight experience, 4,300 in helicopters, and 3,200 in the Eurocopter Dauphin. He completely retired from the MSP during the summer 2008.

Mr. Holt stated that the last MSP accident occurred in 1986. The accident involved a pilot with about 600 hours flight time and no instrument rating entering unforecasted fog on his way back to his base in Frederick and losing control (after a flight from Baltimore to Frederick).

After the accident in 1986, the MSP upgraded their fleet to fully instrument-equipped helicopters. In 1988, the MSP provided instrument training to those pilots who did not have an instrument rating. Mr. Holt already had his rating as an add-on from his fixed-wing rating.

Mr. Holt described the instrument training 20 years ago, as "thorough." It involved 4 to 5 hours of intense ground school followed by the same amount of time in the air. Mr. Holt stated that over the past few years, instrument training has not been consistent, and it is "on and off" every year. To most pilots, instrument training meant just staying current. Instrument proficiency did not happen for most.

Major Gary Moore was the Aviation Commander at the time of the last fatal crash (1986). He was an aviator; however, since then there have not been any Commanders with an aviation background (eight Commanders total). The MSP filled the positions in Aviation Command with



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medical or law enforcement personnel. Currently, the person in charge of flight operations is a medic.

Mr. Holt described safety at MSP as "excellent," 10 years ago. He stated the Director of Maintenance was qualified and knowledgeable. Since then, the organization is more concerned with not embarrassing the Command Staff, than safety. To describe this attitude, Mr. Holt relayed the following story:

In 2006, Mr. Peterson (a colleague of Mr. Holt's) brought to the attention of the Command, an "airframe cracking issue." The MSP told him not to report it further and subject to discipline that included sending him for a psychological evaluation. After Mr. Peterson reported the cracking, in one case right over the pilot's door, the MSP applied duct tape to the helicopters to "hide the cracks." However, they did repair the helicopters prior to returning them to service. Ten years ago, the MSP would have contacted Eurocopter; however, in this case, they did not, and performed the repairs on their own.

To their credit, Mr. Holt stated the MSP did comply with Airworthiness Directives and performed routine maintenance to his satisfaction.

In early 2006, Mr. Holt met with Maryland State Legislators to bring this information to them. His motivation was to prevent an accident. According to Mr. Holt, around this time, pilots stopped reporting problems with the helicopters (he described the "problems" as leaking fuel lines and engine shut downs). In April 2007, one of the helicopters had a fuel leak and the pilot was faulted for sending the Aviation Safety Report (ASR) paperwork through improper channels. Around the same time, the Director of Maintenance, Ron Eaton, (who was not a pilot but was an A&P) was fired. He was replaced by Walter Kerr (a Medic). Mr. Kerr is now in Flight Operations.

Mr. Holt was asked why he retired from MSP last year and he responded that he was targeted for investigation and threatened with disciplinary action. He received a surprise visit at work by his lieutenant and was not allowed union representation during a two-hour questioning. Mr. Holt left the MSP because he felt that "someone would ride a helo down and it wouldn't be him."

Mr. Holt was accused of misconduct at the time of his retirement. He had no prior disciplinary actions on his record, other than in 1991 or 1992 when he descended too low during a law enforcement search.

Regarding instrument training, Mr. Holt stated that Major McAndrew (Aviation Division Commander) disseminated a policy memo in November 2007, which curtailed instrument training time. The memo stated that pilots would now only receive instrument time on a semi-annual basis with an Instructor Pilot. Prior to this policy change, pilots could only practice instrument approaches during a shift change (because that was the only time two pilots would be at a base at the same time). Mr. Holt felt that the motivation behind the memo was due to maintenance back-ups and not enough operational helicopters.



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Mr. Holt was asked how many of the MSP flights encountered IFR conditions on a regular basis. He responded that the only time they flew IFR was if it was an inadvertent encounter. He estimated this occurred maybe once every 18 months.

When asked how a pilot would avoid IFR conditions, he responded that a pilot would have to be "prudent." If the weather was questionable, or deteriorating faster than forecast, a pilot shouldn't launch. Some pilots used the company minimums as a guideline. No pilots received a lot of "cloud time."

Mr. Holt stated that Major McAndrew's new policy affected instrument proficiency, but he could not attest to the degree it affected pilots since it was issued after he retired. He also stated Major McAndrew was not a pilot.

Mr. Holt was asked about Mr. Peterson. He stated Mr. Peterson was a Naval Aviator prior to his employment at MSP. He flew for over 20 years in the Navy and he thought Mr. Peterson may have a degree in Aeronautical Engineering. Mr. Holt did not think Mr. Peterson was dishonest and was a "nice guy." Mr. Holt never flew with Mr. Peterson since they were assigned to different bases.

Mr. Holt was asked to describe Mr. Bunker. He stated he never flew with Mr. Bunker since they were assigned to different bases (Mr. Holt was assigned to the Norwood Base for the duration of his employment); however, he ran into him about once every two months when they were both at MSP Headquarters or on multiple missions. Mr. Bunker was always happy. He stated that they never discussed the "whistleblower events" during their conversations.

Mr. Holt was asked to describe how he felt about the pay at MSP. He stated it was below standard. He was asked why he stayed given that information, and he responded he needed a job. He estimated the pilot turnover was 12-18 pilots in the last year (2007).

Mr. Holt was asked to describe the different groups of pilots at MSP. He stated that after the 1986 accident, the Maryland legislature stated that pilots had to have 2,000 hours of flight experience and an Instrument rating to be accepted into the MSP Aviation Command (these were referred to as "civilian pilots." Prior to the 1986 accident, pilots were hired as Troopers and then applied to Aviation Command. There was no requirement for flight time, but a pilot did need to acquire their pilot license on their own. Currently, about 40 pilots were "civilian" compared to about 5 pilots who were troopers. The trooper pilots had a higher pay scale.

Mr. Holt was asked to describe morale at MSP. He stated it was "low and declining" due to pilots resigning and the Command Staff not being qualified. Also, there was a pay disparity between "trooper pilots" and "civilian pilots," as well as pilots that work the night shift versus pilots that work the day shift.

He stated the reason most pilots stay with MSP is because of their love for the job. It is a rewarding job where you get to help people. Also, prior to 1999, they had the best equipment among helicopter operators but the equipment was now getting old.



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Mr. Holt was asked how he felt about the schedules at MSP. He stated generally everyone was pleased with the schedule. At his base, they worked 12-hour shifts, no more than four consecutive days.

Mr. Holt was asked about the workload distribution at MSP. He responded that it wasn't really a problem among pilots because they all enjoyed overtime. He did think that the maintenance department was overwhelmed. Among the mechanics, not many had helicopter experience. Recently, when both of the Avionics Technicians left MSP, they were not immediately replaced.

According to Mr. Holt, the accident helicopter was the second helicopter delivered to MSP. He flew it many times.

Mr. Holt described an "unreported accident" that occurred in 2000. He stated the flight was a two-ship rescue, with both helicopters intending to land at Baltimore Shock Trauma. Mr. Holt was flying the second helicopter, trailing behind the first (accident) helicopter. Mr. Holt stated that the first helicopter landed on the primary landing pad and off-loaded the occupants. It was moving to a secondary pad (to allow his helicopter to land on the primary pad), when it struck the building. Mr. Holt stated the helicopter was at "full power," but was taxiing when the rotor blades impacted the building. The event resulted in the main rotor blades, tail rotor, and transmission being replaced (about \$2 million in damage). Mr. Holt diverted due to the mishap. He reported that parts of the blades were found blocks away and the helicopter had to be lifted off the pad with a crane. Mr. Holt felt that the MSP was proud that they didn't report the event.

Mr. Holt stated the turnover rate at MSP was unusually high (about 16%); most of the turnover was in the maintenance department. He also stated the management turnover rate was high because troopers were consistently being promoted to acquire their next rank.

When asked about the quality of new hires, Mr. Holt stated it was "ok," except for one pilot that did not meet the hiring criteria of 2,000 hours of flight time. He felt that pilots had minimum instrument time and minimum turbine time.

Mr. Holt was asked how he felt about training at MSP. He stated it included monthly written examinations, and was "enough to meet the requirements." Mr. Holt felt the training did not include enough "in-cloud training." At the time he retired, pilots could only practice instrument procedures/approaches, if they were at Headquarters or during a shift change at their stations. These were the only situations in which two pilots would be in the same place, at the same time (since their operations are primarily single pilot).

Since 2004, the MSP has been trying to acquire a helicopter simulator; however, to date they have not, and perform all training in the helicopters.

In reference to how Mr. Holt felt about the MSP equipment, he reported it was "not as maintained as he would have liked." The MSP had 12 helicopters; however, usually they only had 8 in service at one time. His section was often closed for the lack of equipment. Mr. Holt



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stated the maintenance was "questionable," and the subscription they had for IFR charts had expired and was not renewed. Mr. Holt reported that Mr. Peterson was the person who first noticed the charts were not current.

When asked about the financial condition of the program, Mr. Holt indicated that the program appeared to be overspending its available budget. Asked about labor union representation, Mr. Holt indicated that the pilot union did not do an adequate job of protecting pilot interests such as its failure to provide representation for his interrogation. Troopers had a fraternal organization to assist them. He did not know whether mechanics had union representation.

Mr. Holt described the evolution of the Aviation Command. He stated in 1986, the MSP experienced their first fatal accident. After that, civilian pilots were hired (i.e. pilots didn't have to be a Trooper first); however, pilots had to have 2,000 hours total flight time and an instrument rating. In 2006, the MSP tried to recruit Trooper pilots again, but the Maryland State Legislature stopped the process and they went back to hiring civilians with 2,000 hours.

Mr. Holt reported at the beginning of his career there were three MSP Aviation bases. At the time of his retirement, there were eight bases across the state. Around 2004-2005, the mission of MSP Aviation Command was focused more on law enforcement and homeland security (rather than medevac). In recent years the priority has changed back to primarily medevac (each helicopter can be used for all three missions). If a helicopter were being used for law enforcement, it would be diverted if a medevac mission were requested.

With regard to federal oversight, Mr. Holt thought the Federal Aviation Administration (FAA) was supposed to oversee the medevac part of the MSP operation (those missions flown as "Part 91 flights"). The law enforcement missions were conducted as "public use" flights, and Mr. Holt thought there was no FAA oversight for those missions. Mr. Holt never saw the FAA at the MSP bases.

Mr. Holt was asked how the decision is made to request a helicopter. He responded the first Fire Department (FD) on scene would do that. Mr. Holt felt "for the most part, they did a good job" with the requests. However, sometimes the FD would request a helicopter to save (their) time. Mr. Holt felt that "more than half the calls were inappropriate;" for example, "hangnails and drunk people." Given the circumstances he was aware of regarding the subject accident, Mr. Holt felt the request was not warranted.

Mr. Holt reported the system is "statistically driven by funding." If a request were made for a helicopter, it wouldn't be denied unless the weather or maintenance issues grounded the helicopter. Mr. Holt stated pilots operate under a "you call, we haul" philosophy. Pilots could "write up" inappropriate requests (he wrote one up in 1990); however, those "write ups" stopped since nothing ever came of them. Mr. Holt was asked if a medical director or other person ever reviewed the requests. He stated he didn't think there was a review process, but if someone did that it would be Dr. Floccare.



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In reference to how a pilot makes the decision to launch, Mr. Holt stated they are encouraged to look at the weather at the beginning of their shift, and more often if the weather is "marginal" (every hour or before launch). Mr. Holt was asked if he ever turned down missions and he responded, "lots." He stated sometimes he would "launch to the scene and then come home if the weather was bad enroute."

Mr. Holt was asked if he felt any pressure to launch while working as a pilot for MSP. He responded that there was some competition with private medevac operators (PHI and MedStar). If a pilot turned down a mission, and a private operator launched on the mission, the pilot would have to write a report. This happened once to Mr. Holt when a squall line (with thunderstorms) was approaching his base. The MedStar base was on the other side of the squall line, which is why they were able to accept. Mr. Holt stated no one ever talked to him about the report.

Mr. Holt was asked about the recent MSP audit performed by the State of Maryland. He thought it was "condensed," and he felt the auditors were misled. Mr. Holt stated the auditors interviewed current and recently retired employees. He felt information was given to the auditors that was not in the report, and/or the information was "sanitized." Mr. Holt gave the following examples of this information: (1) medics with expired drugs; (2) medical equipment not maintained; (3) a "confidential" helicopter replacement report written in 2004. Mr. Holt felt the audit was "incomplete." Auditors spent nine months at Headquarters and another three months to write the report. Employees put themselves "on the line," needlessly according to Mr. Holt.

When asked how he felt about the MSP Aviation program as a whole, Mr. Holt responded he was concerned with pilot pay and maintenance. He stated he has attempted to bring his concerns to management through the chain of command; however, he encountered delays at every step of the process. Mr. Holt thought the management was not in favor of "civilian pilots" and preferred "trooper pilots." He believed the program began to degrade around 2004. Mr. Holt felt that overall the MSP had a "good program," but they were not receptive to internal changes. He also felt that the egos of some personnel often interfered with business.

According to Mr. Holt, the MSP Aviation Command used to function well, but the industry evolved and they did not. He described the evolution of the EMS industry as strict Part 135 standards and "CAMTS certification" (requiring a second medical provider on board). Additionally, Mr. Holt thought that a manager of a Part 135 EMS operation would have to be an Aviator. In the MSP organization, key management officials were not aviators. Mr. Holt stated the MSP wanted to use cadets as a second medical provider because it was less expensive (instead of a second medical provider).

At the time of the most recent accident, Mr. Holt felt the morale was low. Seasoned mechanics and pilots were leaving for better pay. Additionally, there were no promotion opportunities for civilian pilots (except to become an instructor pilot).

Mr. Holt was asked if the MSP had a procedure for using radar altimeters (RA). He responded they set the RA to decision height. As the helicopter descended to that height, the pilot would receive a yellow light and an audible warning.



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In reference to the subject accident, Mr. Holt stated if he was flying an approach, and the glideslope was "inop," he would fly the localizer to minimums and then go-around (if visual contact with the ground could not be made).


Jill M. Demko
Air Safety Investigator


Dr. Malcolm Brenner
NRS – Human Performance



National Transportation Safety Board

Memorandum

Date: October 14, 2008

Name: Peter E. Peterson
Civilian Pilot 2, Maryland State Police Aviation Command

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Peterson was interviewed at NTSB Headquarters on October 14, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

He had completed about 4,200 flight hours of which 4,100 were in helicopter, mostly as pilot-in-command. He held ratings for commercial and instrument rotorcraft. He graduated from the U.S. Naval Academy with a degree in aerospace engineering and held a Masters degree of Aeronautical Science from Embry Riddle University with coursework in human factors. He held a FAA Class 1 Medical Certificate but, because he had undergone bypass surgery, it was provided under a special issuance authority.

He learned to fly in the Navy, starting in a T-28 trainer and serving in numerous missions as helicopter pilot. After retiring from the military, he worked for several years outside of aviation. In July 1999, he accepted employment as a helicopter pilot with the Maryland State Police (MSP) in part because of the opportunity to resume flying.

His first impression of the MSP operation was favorable. The MSP program had a long, proud history as the "oldest existing public medevac program." It claimed the first civilian medevac. The program had an excellent safety record with no events or accidents. The mission was exciting and all people involved in it were extremely dedicated.

He had been out of the cockpit for 8 years, since he last flew off frigates in 1991, and a lot had changed. It took him awhile to become familiar with the local area. He was initially based at Andrews and, subsequently, at Frederick.

He had no disciplinary problems through his military career or with MSP until the autumn of 2005. During 2005, he had to discontinue flying for 6 months to undergo heart surgery. He returned six months later with a stint. He had a 2 to 3 week lapse while he was awaiting his issuance. So he was tasked to prepare a powerpoint presentation for the organization about helicopter replacement needs. Then, he was called to work directly for the Commander about developing a program to achieve



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Commission on Accreditation of Air Medical Systems (CAAMS) certification. He discovered problems and this led to a major falling out.

The Code of Maryland required commercial operators to be CAAMS and FAA Part 135 certified. The MSP, which had neither, had been given a pass. It was a 1980 system stuck in the 21st century and had not evolved as it should have. It would need a massive cultural change to meet the requirements of Part 135 and would need two medical people, a nurse and a medic, for CAAMS certification. Instead, they had a trooper and a paramedic. They would have difficulty meeting the necessary salary level. They need to hire nurses, and leave the trooper-controlled era. He wanted the program to upgrade to Part 135 standards. It would have meant obtaining CAAMS certification and Part 135 certification and would have made this a premiere program.

During the same time period, he discovered that the State police trooper paramedics had a non-profit NFPA had been in forfeiture since 1995 and was still collecting dues. He reported this.

Further, he advocated sending helicopters to support the Katrina relief effort. The State of Louisiana sent an EMAC request to Maryland for helicopter and fixed wing logistics support to backfill for the New Orleans Coast Guard. However this request was turned down, because resources were already committed to an NFPA Superintendent inspection tour.

As a result of these disagreements, he became a whistleblower within the program for the past three years and became increasingly vocal and outspoken.

He believed that his concerns may have helped launch an audit by the State legislature. He attended the audit hearing, and could see all the holes in the organization. He felt that the Commander and the Director of Maintenance were evasive. The program was having difficulty keeping people and the experience base in maintenance had eroded. The budget was down. The aircraft were aging, their availability was limited, and the program was struggling to have 12 aircraft available especially in the summer busy season.

Pilot pay was substandard. People loved the job and the mission, which included search and rescue, homeland security, as well as medevac. He took a \$10,000 pay cut from GS-12 to accept this job. Pilots, who were required to have 2,000 flight hours and were mostly former military pilots, were paid poorly based on their experience level especially when compared to managers, who were troopers with little aviation experience. The audit discussed salaries.



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Pilot morale before the accident was abysmal and had been so for a long time. A former Assistant Commander, Ronnie Eaton, conducted a pilot survey in 2006 that was never published. Hearsay indicated that responses revealed problems. Morale was better when he started but, by the time of the accident, bad morale and draconian management had a long history.

Schedules were no problem until March 2008. For 9 years, he got 3 to 4 days off in a row. But in March, while he was out on family leave, he was assigned a new compressed schedule that was untenable. It involved 8 days on and 3 off. A compressed schedule would allow a second job or time off. But it was just a fact of life that such schedules were hard on circadian rhythms.

The workforce was understaffed. The most critical shortage was in maintenance, and was reflected in the low experience level of mechanics and high turnover in the avionics group.

According to the audit report, the wiring diagrams were not current.

On July 17, 2008, he experienced a mechanical problem involving glideslope. In 9 years of flying, he had never seen such a discrepancy. About 0200, when there was little traffic, he was flying ILS approaches into Frederick for proficiency. The flight director had buttons for G/S localizer, and went from amber to green to indicate capture. He was shooting the Westminster ILS at Frederick under night VFR conditions, and the outside view suggested the approach was too low. At the final approach fix, he still had green capture but was 500 feet low on the altitude indicator. The indicator should have returned to amber if it lost G/S capture and, if he had been in actual IFR conditions, the G/S bug could incorrectly driven the flight too low. Another pilot confirmed the problem. He reported this problem to maintenance and wrote it in blue ink. However, about two weeks later, he delivered another aircraft to headquarters for maintenance on a brake problem. He got a ride back with a senior mechanic he trusted, Bill Conrey, who had 30 years of experience in the Army. Mr. Conrey confided that the glideslope problem he had written up had been examined on the wrong aircraft.

The mechanics were eager but short on experience. He did not have faith in them. They were swamped and the experience level was down. Immediate maintenance was often not done if problems were subject to MEL. The ILS could be inoperative and they would fly VFR only. Troopers wanted control but the maintenance people signed for the work. A senior mechanic said that the FAA should take away the Part 145 certificate. The mechanics were overwhelmed. One senior mechanic, Dave Rosenberger, was the only factory-trained engine mechanic on the line. Therefore, he was under much pressure.



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The maintenance administrator, Dave Shekel, warned him just before the audit that one of the mechanics had said there was an improper component in one of the aircraft that should cause it to be taken off-line. Mr. Peterson advised him to tell this to the auditors. Such encounters scared him.

Just before he retired from the military, there was a fatal H-53 helicopter accident involving in-flight breakup that resulted from the installation of improper bolts on the rotorhead. This further sensitized him to the importance of proper maintenance.

There were troubling indicators before the accident concerning safety of aircraft: Non-professional parts and personnel, degraded experience, avionics turning door, hearsay of false parts.

Mr. Peterson had an outstanding reputation for careful pre-flight inspection. Before the accident, he said that you can't preflight everything, such as the G/S problem, which a pilot would not have known about.

Mr. Peterson was criticized by his manager as a hypocrite for continuing to fly the MSP helicopters when he felt the aircraft were unsafe. Asked why he continued to fly despite his concerns, Mr. Peterson indicated that his religious convictions and concern with safety issues were reflected in his motivation to continue. He had not flown since the accident, although he returned to work and was available.

His initial training in model at MSP was as good as you get. The program spent much effort to ensure everyone did everything. It was 4 to 5 months long and employed 3 instructors. It was very good.

Recurrent training was always deficient. The program did not have aircraft/instructors for the job. The required checkrides were tripled this past year and the program used only two pilot/instructors.

When he started with MSP, he received an instrument proficiency check and a BFR checkride in model. He did the BFR every year. He flew approaches with another pilot for proficiency and got 1 hour per month of actual instrument practice. This could involve 1-3 approaches for each pilot, shooting IFL and going missed. More recently, following a memo in fall 2007, the program reduced to an IPC every 6 months. He was an instrument instructor in the Navy. To him, this new policy led to a reduction in proficiency. You need to bury your head in the cockpit.



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The MSP program was funded 80% from the Maryland EMS fund and 20% from the State Police budget. The EMS fund was \$55 million from license plate registration and was a stable source. Recently, the state added \$50 for any moving violation. However, this fund was also used to fund firefighting equipment and medical activities as well so the percentage to police had shrunk in recent years while aircraft reliability was decreasing. Publicly, they said the program was fully funded but the funding was actually decreasing over time.

Mr. Bunker, the accident pilot, was easy going, jovial, and friendly. He had no bad word for anyone. Mr. Peterson worked at Andrews periodically from 2002-2003 when Mr. Bunker was based there. He never flew with Mr. Bunker, although he turned over day and night shifts to him. Mr. Bunker always provided him a good turnover, didn't gloss over problems, and was straightforward but not edgy. Mr. Peterson never socialized with Mr. Bunker, never heard of unsafe actions by Mr. Bunker, and liked him. He last saw Mr. Bunker on July 17, when he passed each other in the maintenance area. Mr. Bunker had a big smile and exchanged pleasantries.

His first instrument approach occurred with the MSP, at night over water, but he had extensive instrument experience and was not afraid of IFR. Retired trooper pilots did not have a strong base of actual instrument experience. He heard that the pilot involved in the 1986 accident, Greg May, was a good pilot with limited instrument experience.

In the event of an inadvertent IFR encounter, it takes 30-40 seconds to transition from VFR to IFR and stabilize the aircraft regardless of how good the pilot is.

Asked whether there was pressure before the accident for a pilot to launch into weather, Mr. Peterson said there was no such pressure. He said that HEMS had become the great equalizer and that every trooper and dispatcher looked at it. There was a long standing policy to print out the weather as part of the explanation for why the trip was declined. Rick Bartlett, on the night of crash, wrote a report. He declined flight over mountains in questionable weather.

As aircraft availability has gone down, however, pressure has increased to take questionable aircraft. For example, a medic, Greg Lance, said "I told my wife I would come and see you especially after HEMS pressure to launch in weather."

There was an MOU with private companies like MedStar that, if MSP would take more than 25 minutes to respond, SYSCOM will dispatch the nearest commercial operator. The MOU gave the police a cover to keep out the commercial companies by stretching the numbers and "never reporting more than 24 minutes." Maybe they doctored dispatch times. The MOU prevented inroads by commercials.



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There were issues concerning whether to launch a helicopter rather than an ambulance. The decision to request a helicopter was based on medical protocols set by MIEMSS headed by Dr. Bass. He did not know how the protocols were trained or exercised. His personal experience was that helicopters were overutilized. The audit report should have percentages.

Carroll County did not like to take their ambulance out of service. One and ½ years ago, he landed and waited 20 minutes to fly 3 miles. The State Aeromedical Director, Dr. Floccare, reviewed the run sheet. He saw the need for a quality control system to weed out bad launches.

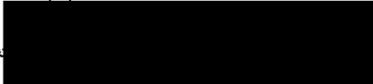
The MSP program valued loyalty over truth. Many people bared their souls for the audit report but their criticisms never appeared.

The Safety Office program was gutless. It became a shell after his 2006 safety report and the discipline he received. The number of ASR's declined. The Safety Office settled the routine, mundane issues of the ASR reports but real safety concerns not broached because of fears of recriminations.

Scott Russell, a trooper pilot, served as safety manager. He had a Marine background, was a decent pilot, but was headstrong and did not get big picture. For example, he headed a program backed by management to install fast roping on the aircraft so SWAT teams could jump out of the aircraft rapidly using the ropes. However, the aircraft were not designed for this and the manufacturers would not provide support if the installed hoist cable broke. Mr. Peterson submitted an ASR about this and killed the program. Scott did not understand his role and ran the fast rope program despite being head of the risk management program. Safety was only an advisor to management.

After Scott withdrew, the Commander appointed Mike DeRugierro as Safety Director but Mike kept his flying responsibilities and the safety function was reduced to a part-time effort. Mike was the designated pilot examiner for the FSDO.


Dr. Malcolm Brenner
NRS – Human Performance


Jill Demko
Air Safety Investigator



National Transportation Safety Board

Memorandum

Date: October 16, 2008

Name: Senator John C. Astle
Maryland State Senator

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Senator Astle was interviewed in his congressional office at Annapolis, Maryland on October 16, 2008. Present for the interview were Malcolm Brenner and Jill Demko. Following is a summary of the interview with him.

Senator Astle completed pilot training at the Naval Aviation School at Pensacola, Florida in 1968. He flew CH-46 helicopters on combat missions in Vietnam until July 1969, flew as pilot on the Presidential Helicopter for 6 years, and served as flight instructor and Marine pilot in both active and Reserve duty until his retirement from the military with the rank of Colonel. From 1978 to 1984 (following active military service) he worked as a commercial helicopter pilot for the Baltimore City Police. In 1984, he began part-time work as helicopter pilot for a commercial air ambulance service that lasted for about one year. Simultaneous with these other responsibilities, Sen. Astle began public service in 1982 as an elected official in local and, subsequently, state government. At the time of the interview, he served as a Maryland State Senator.

As a Maryland State legislator, he has no direct oversight responsibility over the Maryland State Police (MSP) Aviation Program but oversees budgetary aspects of the State Police and Department of Natural Resources. He is attentive to this program, however, and occasionally holds hearings related to it.

The MSP program experienced a fatal accident in 1986 and, following this, the program Commander made public appeals for improved equipment. The legislature convened a Joint Committee on Medevac issues to review the program and appropriated money for the program to buy new Dauphine helicopters. Sen. Astle also wanted a 2,000 hours and instrument rating requirement for new hires to upgrade the pilot credentials in the program and this was also adopted in the legislation. The State Police fought this training provision because they wanted to hire troopers. The MSP program had a mind set for troopers rather than civilian pilots and it resulted in a two-culture system.

Prior to this legislation, all pilots in the program were police. Troopers completed pilot licenses commercially in Piper or Cessna airplanes and, when they had completed about 150 flight hours, received training from the program in helicopters. Therefore,



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they began with about 200 flight hours of which only 50 were helicopter. They gained additional experience by flying out on missions as co-pilot for about 60-70 flight hours, returning from the mission by car.

The pilot involved in the 1986 accident had no instrument rating. He was a strictly VFR pilot, and got caught in inadvertent IMC conditions.

Sen. Astle sits on the Joint Legislative Audit Committee. The Committee Chairman, at his urging, arranged a 2008 audit of the aviation command. This allowed Sen. Astle and others with concerns to present questions. Unfortunately, the audit people were unfamiliar with aviation.

Sen. Astle wrote to the FAA Administrator to review the maintenance oversight performed by the FAA on the MSP program. The FAA had not yet responded as of the date of the interview.

He believed that the MSP program had shaky maintenance practices. It left pilot writeups unaddressed until scheduled maintenance checks, so pilots routinely flew aircraft with writeups into the grace period on the checks. There was no process in place for tool control. The Director of the Maintenance Department was a trooper paramedic without a maintenance background. The FAA maintenance manual not current. Wiring diagrams were worked from manufacturer preliminary, rather than final, diagrams. These deficiencies are important because, as a pilot, you need assurances that maintenance is good.

He believed that the MSP program had shaky operations practices. The pilot pool was heavy in police or retired police with lower initial flight time requirements than those applied to civilian pilots. The unit was managed by a road trooper with no knowledge of aviation and was run as a para-military organization. In the actual military, an aviation unit would always be overseen by an aviator. Some of the pilots may not have been instrument current, and the Jeppeson subscription had expired.

He believed that the overall program was shaky. It promoted itself as the "best in the world" by hiding shortcomings. For example, they experienced an event in which a helicopter was damaged on the roof of a hospital and this was not reported to the NTSB or FAA. Sen. Astle questioned whether the program complied with the law, because the level of damage appeared to require reporting. They experienced two additional events that were not reported, involving an engine shutdown in flight and a fuel leak that exposed passengers to hazardous material. The program hid these problems.



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Sen. Astle was the only helicopter pilot in the Maryland State legislature. Once the audit came out, he received substantial attention. He believed that the program needed upgraded oversight for safety. It should be operated to Part 135 standards, with FAA oversight and appropriate safety procedures. The program carried passengers for hire and Maryland drivers paid its support.

Mr. Peterson, a pilot who has provided whistle-blower information about the MSP program, was involved in a personal incident for which he received discipline. It occurred at the Children's Hospital, when he attempted to depart with one engine not at full power. Sen. Astle believed that Mr. Peterson should have been counseled rather than disciplined. Overtorquing an engine can be a common error, especially when pilots operate alone and under tiring conditions. Pilots should be comfortable to report overstress/overtorque events without fear of penalty, as would be the case in the military, and this seemed like an example that the State Police mentality did not understand aviation.

The NTSB investigation will have a significant impact on the future direction of the program. The police will continue the program if the NTSB report concludes that the accident involved only marginal weather and pilot error. However, if the NTSB report uncovers internal problems with the program, it would be a basis to remove the operations from the police and replace them with private industry. Sen. Astle questioned whether the Police Department should manage this program.

Historically, the program was championed by an outstanding pioneer in shock trauma named Dr. R. Adams Calley. Trauma medicine was expensive and required a flow of patients. Based on the military experience in Vietnam, using helicopter for field evacuations, the Maryland program was developed to transport patients to shock trauma treatment through a coordination of the shock trauma centers, police, and the state agency MEIMSS. Commercial operators were not viable at that time.

This arrangement can encourage overutilization. Paramedics were licensed by MEIMSS. Every volunteer fireman had ownership interest in this program. Police encouraged fire departments to call helicopters without worrying about budgets. The MEIMSS Director Dr. Bass was the highest paid state employee. The Trauma Decision Tree Protocol did not eliminate unnecessary transports, since half the patients were subsequently discharged within 24 hours. Sen. Astle was certain that helicopter transports were overutilized in the MSP program.

By contrast, there were better controls in private industry. At MedStar, the company established medical necessity for launch. All dispatchers were medically qualified and established need before providing transports.



Memorandum

In the current accident, the victims were launched to the PG County Trauma Center. Sen. Astle felt that it would have been more appropriate to launch them to the trauma center at Baltimore, since PG County had a poor catchment area with many uninsured and poor people and since flying time to either center would have been similar. He speculated that the choice of PG County was determined by weather considerations.

He was skeptical that the MSP program needed money for new equipment. The helicopters he flew in Vietnam were still being flown in Afghanistan, and he suggested that it was the quality of maintenance rather than the age of the airframe that was important.

He felt that attrition was a real problem with the MSP program. The Governor cut the State budget this year, so salary increases were unlikely. The Director of MIEMSS briefed the state legislature that the program had financial issues and would need additional funding by FY11. Therefore, this was an appropriate time to review and rethink this program.

Sen. Astle flew as a pilot for MedStar, a commercial operator, so his association may have led to a perception that he wanted to privatize the program. The MSP program did not love him. However, MedStar did not want to expand at the expense of their core business. Further, Sen. Astle had a responsibility to the people of Maryland.

He believed that the State Police should not run this program. Police need aviation. Street officers loved this program. But the program could not conduct medevac, homeland security, and search and rescue efforts without suffering.

EMS aviation was 35 times more dangerous than coal mines. It was challenging, particularly at night, in weather, with maintenance issues. Sen. Astle felt that Maryland benefited by having a socialized medevac program, but believed that it needed Part 135 certification and proper oversight and needed to be run by a commercial company whose core business was aviation.

A commercial operator, Air Methods, was preparing a proposal to take over the program. This company had 12 new Bell helicopters and would rent the 8 facilities from the state and operate the current program under contract. He believed that the Legislature needed to consider options such as this for the future of this program.

It is true that, eleven years ago, Sen. Astle lost a son to a trauma accident in Maryland. His son was involved in a rollover accident on the Eastern Shore and was ejected from



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the car. MSP transported the son via helicopter to a shock trauma center where he died. The physician spoke with Senator Astle and his family to advise that the injuries were non-survivable. The MSP provided a safe transport.

As a policymaker, Sen. Astle wanted a system that was safe. The General Assembly would soon have a debate about the future of this program, and the NTSB report would be a foundation of the discussion. It would provide an important internal look at the running of this operation.


Dr. Malcolm Brenner
NRS – Human Performance


Jill M. Demko
Air Safety Investigator



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Memorandum

Date: December 4, 2008

Name: Sergeant Keith Bohn
Pilot, U.S. Park Police

Subject: MIA08MA203, Forestville, MD, N92MD helicopter accident

Mr. Bohn was interviewed by telephone regarding the above-mentioned accident. Following is a summary of the interview with him.

Mr. Bohn stated on the night of the accident, he was on duty from 2000 – 0600, at his base in southeast Washington D.C. (Anacostia). At 0040, he was at the base, and received a call from SYSCOM. He was informed that contact had been lost with Trooper 2, and was requested to assist in a search for the helicopter. Mr. Bohn was told the last contact with Trooper 2 was when they couldn't get into PG Hospital and were diverting to Andrews AFB (ADW), due to weather. He was also informed that Trooper 8 had already attempted a search, but could not continue due to weather.

Mr. Bohn received the coordinates of the last known position for Trooper 2 from SYSCOM. When he plotted the coordinates into the GPS, he noted the last position was in Walker Mill Park. Mr. Bohn departed the base at 0050 and used the GPS to navigate toward the park. He attempted to fly direct, but was unable due to deteriorating weather. His first route of flight was from the south of PG Hospital toward the park. He was unable to get close due to the weather, and then decided to follow Route 95 north past Oxon Hill, Maryland. He got within about 2 miles of ADW, and had to divert again, due to a low ceiling near ADW. His third attempt was from the east, following Route 450. Again, he got within about 2 miles of the park and had to turn around due to the low cloud ceiling.

After about 45 minutes of flying, Mr. Bohn returned to the base in Anacostia and landed at 0138. After landing, he got in his car and drove toward the park in an attempt to locate Trooper 2. He arrived at Walker Mill Park around 0220, and Trooper 2 had already been located when he arrived. Mr. Bohn reported the survivor was being treated at the scene when he arrived.

Mr. Bohn stated when he was flying he was communicating with Washington National Airport (DCA) Control Tower personnel. They reported to him during his flight that the cloud ceiling was 1,400 feet and the visibility was 8 miles. Mr. Bohn stated he "didn't think [the ceiling] was ever that." He reported to the tower personnel that he was flying



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at 400 feet and he thought the ceiling was about 50 feet above him (at 450 feet). He told the controllers the ceiling was much lower than they were reporting. Mr. Bohn also stated the DCA controllers were very helpful in trying to get him close to the park.

Mr. Bohn reported the fog was building over forested areas that night, before building over the rivers. He commented that normally this occurs the other way around (building first over the rivers). Mr. Bohn stated it was "one of those call-by-call nights."

He reported at the time he launched, ADW was not reporting current weather. Additionally, when he drove by ADW on his way to the park, he noted the fog continued to the ground (approximately 0200).



Jill M. Demko
Air Safety Investigator