NTSB HEMS Post-Hearing Comments

Author's Experience in the Industry

- Current Commercial (RW), Instrument-rated, 135-current HEMS pilot
- Former CFII
- Doctoral-level degree
- Manager in HEMS
- Accident/Incident free
- Former OPEIU member – I have been a party to both sides of the grievance process.
- Former PHPA member
- FAA FAASTeam member
- Aviation author
- Aviation consultant
- HEMS Model experience: CBS (Community Based System), Traditional/HBS (Hospital Based System), ADM (Alternative Delivery Model)

Disclaimer:

*These comments are my own personal opinions **only** and do not necessarily reflect the positions or opinions of my employer or their affiliates. All comments are based upon my current knowledge and my own personal experiences.*

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That said, I do feel that I am not alone as a pilot in this industry. One must realize that most pilots and managers will not step forward on issues that contradict their employer's business model for purposes of job preservation. Consequently, I would ask that this committee use discretion with my comments as I would most assuredly be penalized for my truthfulness and philosophical disagreement with respect to my current employer.

HAI - HAI is widely know as an operators' organization and does not adequately represent the pilots who operate within HEMS. They are heavily affiliated with the new operators group, AMOA. Therefore, there motives are suspect from the beginning.

AAMS – AAMS is hardly representative of the industry at this time. A rift has developed between AAMS general membership and those siding with AMOA. AAMS's former legislative counsel is now employed by AMOA. The hearings made it quite obvious that AAMS was being influenced by the operators. Bill Bryant is a hired gun for AMOA and was present as a representative of AAMS.

AMC – AMC is a publicly traded HEMS operator who has embraced the idea that operating for less equals greater profit margins. Their motives are simple: make money. While they are certainly not the worst operator, their business model is a large contributor to this "race to the bottom" that is being proliferated in HEMS.

CareFlight – CareFlight is a has-been that was once a proud operator. The regression of the industry has forced CareFlight to lower its own standards and rapidly digress to the bottom of the industry. A quick investigation will net numerous complaints and investigations regarding potentially unethical behavior and poorly executed competitive practices.

NEMPSA – NEMPSA is hardly representative of the industry. NEMPSA will proactively take a position on an issue only if said issue is likely to create additional hardships on pilots (e.g., additional paperwork, removal of sleeping quarters). Otherwise, NEMSPA has become reactive in nature and largely ineffective as a trade group.

FAA – Understaffing and a lack of experience in all areas rotary wing. Their understanding of HEMS is non-existent. As a result, they are quick to implement changes that do nothing more than muddy the issues; often changes reflect FARs that already exist with respect to PIC duties and obligations (E.g., latest A021 changes).

PHPA/OPEIU – OPEIU is part of the first and only failed helicopter union strike in the history of the world. PHPA is no more than an offshoot of OPEIU. Neither group is well represented in matters of HEMS. In fact, OPEIU's experience was gained in the Oil and Gas industry where meeting the minimum FAA standards is unacceptable - due to customers, not operators.

Format: I will address each Panel independently. The Comment box addresses and summarizes general thoughts and concerns. The text that follows the Comment box addresses the actual testimony.

Panel 1: Historical

Comment
Mr. Zuccaro has very little to offer in this conversation and absolutely no real experience in HEMS. He has been briefed by AAMS and AMOA. While I believe his motives are well-meaning, he has placed his faith in HEMS operators.

Dr. Blumen offers statistics without conclusion. He offers the same response that the GAO offered: More information is needed. I agree.

The US should take a hard look at the Canadian model. While not perfect, the Canadian model does minimize risk; albeit, at a cost.

Dual pilot, Twin Engine, IFR capability deserves a hard look. It will cost money, but how much is human life worth?

- The facts indicate that human error accounts for 77% of all HEMS accidents. The easiest way to increase situational awareness is to put another aviator's brain in the cockpit.

- GAO and Dr. Blumen admit more information is needed. Under current regulations, HEMS operators are not required to nor is there incentive to provide such information.

- # of patients/yr/aircraft has slightly decreased – There is a limited patient population out there. When operators depend exclusively on transports, they create a new patient population. This is evident when one considers the discharge rate within 24 hrs.

- Base on the HEMS accident rate, Dr. Blumen makes a startling realization: HEMS crews are part of the most dangerous in the US. This is unacceptable.

- HAI – Mr. Zucarro's statement that the industry is self-policing is misleading. The industry is making some changes, but only to appease the FAA. The fact

remains that the large operators are in business to make money. The lower the minimums, the cheaper they can operate. All improvements have been reactive in nature to show that we can police our own industry. Do not be fooled by this.

- While I believe that Mr. Zucarro has good intentions, he has brought a knife to a gunfight. Simply trying to do better is not enough. IHST's goal of reducing accidents by 80% is commendable, but not achievable through industry initiative.

- The airlines did not fix their problems voluntarily. Why would we expect HEMS to?

- Technology is a great tool, but it may also mask the root cause of accidents in HEMS.

- Basically, this panel mentions some possible problems and possible solutions. E.g., we have moved from NVGs to "night vision enhancement" devices. We are allowing the industry to manipulate terminology in the pursuit of cheaper technology. Do we really want a monitor that keeps a pilot's eyes drawn into the cockpit. Night vision enhancement devices are much cheaper than NVG operations and not as effective.

- HAI, AAMS, and AMOA all submitted comments. Their motives are all highly suspect. This is not about patient care or safety (other than how it relates to the bottom line).

- The crews and customers are now extremely educated in aviation matters. Operators can no longer claim sole expertise in HEMS. Operators continue to voice the need for "client" education. What they really are saying is, what we (operators) say is true; trust us, we're the experts.

- The push for an IFR low altitude infrastructure improvement is good, but shouldn't we have the crews and aircraft to deal with it. Single pilot is fine, as long as things are going well.

- A change in the cultural mindset is needed? I agree. A change in the corporate mindset is also needed. Safety first, profit second.

- The word mission is still used to describe flight requests (HAI). These are not missions. The word mission implies only success or failure. These are requests that can only have one outcome if accepted: to land safely.

- Complete isolation of the pilot is unachievable. It does not allow for proper planning and risk assessment. What needs to change is the hero culture.

Pilots are not there to save lives. They are there to safely complete each flight. Until operators quit pushing the idea of being heroes in the sky, we will not get there.

- Canadian approach to HEMS: 20 helicopters and 4 operators who remain free from fatalities. I resent Mr. Yales comment that compares the "doubling" of operations in Canada to the US. Mr. Yale obviously has a motive and it is evident. He is not a pilot and is not qualified to speak to aviation safety. Dual engines, Dual pilots, and IFR would severely impact his bottom line. Rather that set the benchmark in the industry, Mr. Yale is happy to lead the charge to the bottom if it means a better bottom line.

- The Canadians do receive government funding because safety costs money. Luckily, in the US, we have institutions outside of the government who have been doing this for years (E.g., Mayo Clinic, University of Michigan, Lifeflight of Maine). All of these organizations choose to operate at a higher standard and find other ways to defray the high operating cost of HEMS.

- The Canadians attribute their success to Dual Pilot, twin engine, IFR capabilities. Additionally, they cite SOPs and checklists as contributors. The Canadian approach is proactive rather than reactive; an approach not seen in the majority of the US industry.

- The increase in the number of helicopters in HEMS is obviously a result of the 2000 reimbursement changes. Reimbursement is the same for every helicopter. Cost to operate is not a factor. The incentive is to operate as cheaply as possible while still meeting the minimum. Part 135 is the floor, not the standard. Sadly, this is not the belief of the FAA or the major operators.

- Expansion into rural area is smoke and mirrors. Most operators put bases in already served areas where existing populations, and more importantly, payers, have been identified. Please refer to the ADAMs database for rural coverage.

- In Canada, Provincial Standards (similar to States) dictate crew experience and configuration (e.g., dual pilots)

- Mr. Zucarro addresses Dr. Blumen's concerns about lack of information by citing that AAMS collects data. He does not point out that this is strictly voluntary and the reporting numbers are very low with no checks for accuracy.

- Mr. Zucarro also seems to believe that the customers in HEMS do not know what the operators really do. This could not be farther from the truth. I think the testimony from Mayo Clinic staff, Lifeflight of Maine, and Boston Med

Flight demonstrated that the customers are very HEMS savvy. Oil and Gas safety policies and procedures have been set by the customers for years with excellent results.

- It should be noted that root cause analysis can be traced, in many HEMS accidents, all the way back to the CEO. The CEO is responsible for providing the right culture within an organization.

- AAMS asked Dr. Blumen if he normalized his data on job safety to reflect actual down time. If he had, the risk associated with HEMS would actually appear higher.

- IFR/VFR, Single/twin, SP/DP info is not out there to disseminate meaningful results. Agreed, but redundancy of systems (human or mechanical) is a proven risk reducer.

Panel 2: EMS Models and Reimbursement

Comments:

CBS – community based models rely exclusively on the number of patient flights. Staff at each base is well of how many flights are needed each month for a base to remain viable. I have experienced this pressure from each operator I have worked for. Whether it is posted on the wall, or simple stated in passing, staff know when numbers are down.

This side of the industry tends to represent the bottom due to the need to turn blades. Scanner jumping does exist. We were often told to go on "training" flight during certain times of the day. Certain operators do have scanner capabilities in their aircraft and their communications centers actively monitor scanners. While monitor scanners is okay, activating an aircraft prior to a request is not.

Additionally, many operators hire part time medics and nurses from the local area. This is done to avoid payment of benefits and to secure calls from the first responders. Many of the paramedics are also the first responders in a geographic area. There is an interesting investigation in AZ regarding this very topic.

Pizzas, t-shirts, pens, and things that blink and flash: This is no more than an attempt to persuade first responders to call a particular operator often disguised as educational offerings.

Community based services make of the vast majority of the minimally-equipped aircraft in HEMS. This is because they only make money on flights. Operating cheaper means bigger profits.

Public Use – operating under Part 91 is not acceptable. All public use should operate under 135 when involved in an HEMS flight; from start to finish.

ADM – Alternative delivery models are CBS models in disguise. Refer to PHI's HALO program or MDs Shock Trauma. All money is still derived from the number of patient flights. The difference is an agreement that the customer will utilize the operator's helicopter exclusively; usually in exchange for the customer's name on the side of the helicopter. However, the operator is still the only one who bills for all transportation.

HBS – the hospital based programs are also referred to as traditional programs. While they charge for flights, they usually do so at a loss. Their subsidy of flight services in not in vain. Hospitals have decided that the benefit of bringing high acuity patients into the health system pays for itself downstream. However, these customers are usually the leaders in the pursuit of safety and have very strong ties to patient care; not just lip-service. Perception is everything; accidents are not an acceptable risk of doing business.

- Life Flight of Maine summarizes the HBS model well (although they have no competition): high acuity care is not always time dependant; there is always another transportation option; and safety and patient care is the number one priority.
- The current reimbursement model favors the CBS model. Lower operating cost mean greater profits. If you are a for-profit company that depends on flights for all revenue, then it must be your priority to do only that which is required. Going above and beyond the minimum required affects your bottom line. Shareholders and investors do not like this.

- Patient care and aviation safety: How do you integrate the two? Simple, if aviation safety cannot be achieved, you do not transport the patient. Patients, as a vulnerable class, have the right to expect that they are flying with an operator who places safety above profit. Under the current regulations, this is not guaranteed.

- How are additional costs defrayed? Boston Medflight responded that they have never had to lobby for safety. Many other programs have been paying for safety for years. The opponents of coast are the for profit operators who favor the CBS model. With the HBS model, operators can charge more. Their profit, in this arrangement, is made regardless of flight volume.

- Mr. Yale, AMC, seems to push for higher reimbursement. Base on his company's growth, it is obvious that profit margins are up. However, he is unwilling to entertain the idea that the money for safety should come from an operator.

- The resonating message from the for profit operators is that SAFETY COSTS TOO MUCH, we're safe enough and we're the experts. There was a time when accidents ruined operators. Due to the vast number of helicopters in the US and the current popular business model, this is no longer true. The CBS model allows operators to put an aircraft wherever they want. Patients don't get to choose and first responders often work for the operator. Moreover, many first responders love the ability to "call in a helicopter". Abuses are rampant (e.g., MD state police transcripts referring to Waldorf EMS. When I worked in DC, it was widely known that Waldorf over-used HEMS because they didn't want to drive or take an ambulance out of service.).

- Over-triage does prevent deaths. However, under-utilization is political, over-utilization is educational.

Panel 3: State Oversight and Competition

Comments:
The bottom line in this discussion is simple. Many feel that the federal guidance under 135 is inadequate as applied to HEMS. Others (mainly for-profit operators) would like to continue the proliferation of HEMS growth and unfettered access to paying patient populations.

Essentially, operators have inappropriately utilized the preemptive clause of the ADA to allow unencumbered access to all patient markets. It is quite obvious that the ADA was never intended to apply to air ambulances (who were in their infancy at in 1978). However, DOT and the FAA have chosen to support this misapplication in an effort to protect their power over the rights of states.

The ADA was passed assuming that passengers would help guide the airline industry through choice. It is arguable whether this has been achieved. In HEMS, the passengers are patients and do not have that same choice. Therefore, I would argue that States not only have the right, but have an obligation to oversee this very vulnerable population.

Very few states have chosen to exercise this right in the past. Those that have find themselves unable to adequately provide oversight due to the ADA's preemptive clause. As a result, many states have given up on trying to regulate air ambulances within their borders and have seen disastrous results (E.g., AZ).

Currently, there is a movement among many involved in the HEMS industry that feels this unfettered competition is partially to blame. Therefore, HR 978 has been introduced and has the support of a large part of the industry. The basic premise is that Safety and Patient Care must override all other concerns. Profit driven models have a place in our industry, but not at the expense of safety.

Certificate of Need provisions are just one way states have chosen to actively oversee air ambulances. This model may contain provisions that require an operator to show, for example, a need for operating in a particular area, environmental systems, accreditation, statistic sharing, and dispatch protocols. The result is often excellent coverage based on the population's needs, excellent mutual aid agreements, and appropriate utilization.

For profit operators have very different motives: At the end of the day, making money is the number one priority. It is quite evident that the decision to open a base in a new location is based off of rate of return, not offering a service to an underserved area. One need only look at who falls on each side of the issue to understand why.

*Nonprofits need to make money as well, but the business model does not depend on flight volume exclusively.

- The witness from Vermont, Mr. Manz, made it abundantly clear that Vermont had a CON in place that does not allow for HEMS to operate from within the states borders. Despite Mr. Yale's despicable behavior, Mr. Manz was unwavering in his belief that the State of Vermont is well served by outside HEMS resources and the CON is appropriate and beneficial to its citizen population. Mr. Yale, who repeatedly attempted to persuade Mr. Manz otherwise, was unable to offer any evidence to the contrary.

- Dr. Bledsoe made a very good point: The level of care among programs is not always an apples-to-apples comparison. Large HEMS operators would like to have us all believe that the level of care they offer is on par with any HEMS program. This is not the case. One need only look at the credentials, training, education, and patient profiles to understand that some programs possess much higher capabilities. Moreover, equipment and patient access are also contributing factors in capabilities. Compare Mayo or University of Michigan to Air Evac Lifeteam.

- Dr. Bledsoe states the obvious concerning HEMS growth: There are just too many. Why? There is a lot of money to be made with minimal restrictions on how cheaply we can operate.

- Dr. Dodd, as PHI's medical director is normally very well spoken. However, it is quite obvious that he was unable to justify his own company's business model. Therefore, all of his responses were quite indecisive and he was unable to commit to any position, one way or the other.

- The FAA still argues that there is no difference between 135 operators, yet fails to recognize that many HEMS programs operate at a standard well above Part 135 minimums. There are two schools of thought in our industry: 1) Part 135 is the standard and 2) Part 135 is the floor.

- HAI expresses a concern on whether states should get into aviation. This is not about states getting involved in aviation. This is about states having the ability to provide oversight with respect to air ambulances should they so choose. Base on several presentations from the FAA, I think it is safe to say that FAA expects the industry (Manufacturers, trade groups, operators, customers) to police itself. This has been shown to be ineffective.

  Why would states not be allowed to oversee operations that transport a vulnerable population? At no time would a state be allowed to implement standards that are less that Part 135 minimums. This regularly happens in several areas of federal law. Look at environmental standards. State must meet the minimum standards set forth by the governing federal regulations, but are allowed to impose stricter standards should they so choose.

- HAI also questioned whether crews at a particular base knew the flight numbers need to remain "in the black". I am quite confident that every CBS base knows whether they need to improve volume or not. While it might not be as prevalent, many bases make sure that its crews know the "magic number" and pressure results, whether direct or indirect. The idea of writing the number on the wall has become taboo. However, bases who are not "performing", know it.

  That said, HBS are not immune to knowing when volumes are low. However, knowing that their livelihoods do not depend on flight numbers alone goes a long way to reducing pressure to fly.

- It is evident from current state of the industry, the lowest common denominator is driving the market. Other operators who must compete with the likes of AEL feel they must lower their own operating cost (i.e., standards). Sadly, this has resulted in the "race to the bottom". The operators do not look to find underserved areas. It is easier to go into a served area that has demonstrated good reimbursement and try to "squeeze" out the competition.

- HAI comments that competition creates many "new, beneficial services" that wouldn't otherwise exist. I would argue that HAI could not show me where new services have truly had an impact on appropriate patients. Furthermore, I would argue that this explosion of services has eroded the quality of care and has unnecessarily placed crews and patients in areas rich with risk exposure.

- Helicopter shopping does exist? It exists in the form of one service turning down a flight for weather and such not being relayed to other services. Often the calling agency fails to relay information concerning prior requests. This is an unacceptable part of our industry.

  It does not exist in the sense that a responding agency can shop up based on capabilities. First responders often do not understand capabilities nor would they ever be qualified to request a service based on aviation capabilities; medical capabilities maybe. The determination for aviation capabilities, at this time, lies with the pilot alone. Remember, many of these first responders work for the operators as well. The operators were quite clear in stating that all are quite capable and differences are minimal. See discussion with AEL concerning VFR versus IFR.

Panel 4: Patient Transport and Request Process

Comments:

Request for transfer are different depending on state oversight. The problems I see deal mainly with aggressive marketing, pressure, employment relationships, scanner jumping, and level of care.

- Many HBS programs have an internal process to determine flight appropriateness both pre and post flight. QA documentation is in place and transports require a sending and receiving physician to be in agreement. Most of the voluntary data entry is received from HBS, not CBS.

  Most HBS shoot for lower single-digit percentage for over-triage. There is no incentive to do this if you operate a CBS program or a for-profit operator who depends on flight numbers alone. Hospitals depend on getting high acuity patients the appropriate care.

  Hospitals have an incentive not to transport inappropriate patients. An inappropriate patient only takes up bed space that could otherwise be used for a high acuity patient.

- One should take a hard look at the motive behind PHI's HALO program. They have chosen to enter into a relationship for services with the local first responders. As a result, there have been many complaints that PHI's aircraft may not be the best aircraft for the patient. There have also been concerns with the medic/medic model with respect to the level of patient care.

- Services and level of care capabilities are highly regionalized. This is another reason to allow states to have oversight if they so choose. There is little uniformity in HEMS today, unless guided by state and regional EMS systems.

- The business of advertising services by giving away "goodies" is now bordering on absurd. While there is nothing wrong with self promotion and education, delivering pizzas is unnecessary. Additionally, many services have issued threats which are not supported by regulations pertaining to who should be called. Without state oversight, many agencies are not educated enough to know their own rights and obligations.

- The operators argue that patients can make a choice. However, there is no governance over advertising. How exactly does one ascertain a provider's level of care?

- The FAA commented on collaborative loop closure between MAYO and its vendor, OMNI. However, it was not made clear that this process is a MAYO process, not an OMNI process.

- The NTSB panel focused on outside providers, training, education. This is exactly where state oversight comes into play. However, states are rapidly loosing this ability due to erroneous court findings.

- Operators will often cite the idea that they are just responding to a request. I often flew patients where we were all scratching our heads. Why did we fly this person with a broken finger? When we asked the appropriate people, we were often told it was not our concern nor was it our job to question. "You call, we haul" has become the excuse of the operators. However, they are as capable as anybody for monitoring patient flights. Again, there is no incentive to do so.

Panel 5: Flight Dispatch Procedures

Comments:
While I certainly think that education is important, I would argue, absent pressure to keep volumes up, pilots are more than capable of performing the duties as a second tier of dispatch authority. The current risk assessment procedures are pure lip service. Pilots need to make good decisions without fear of job loss or economic ramifications.

I would encourage all Communications Specialists to maintain a better understanding of aviation. Possible an annual test (like Part 121 Dispatchers, but tailored to HEMS) would help ensure continuing education. Additionally, medical training has proven quite useful for communications specialists.

A general lack of adequate weather reporting is also a problem. However, I would argue that, as pilots, we must make decisions based on conservative weather predictions. If an area has poor reporting, we must assume the worst based on known conditions. Due to industry pressures, I think many pilots are making bad assumptions and finding themselves in trouble without adequate training and equipment.

- Lack of communication between areas of high saturation and heavy competition is a pervasive problem. States with CONs see much better collaboration between programs concerning NOTAMs, weather, and turn-downs.

- Weather reporting can and should be improved. Funding should be made available to benefit all operators. Systems, such as those made by Belfort Instruments, are affordable and reliable. At a minimum, all airports and level 1 & 2 trauma centers should have these systems.

- The industry standard is to have one Communications Specialist/three aircraft. This is unacceptable. One dedicated Communications Specialist should exist for each helicopter actively engaged in flight with 1 dispatcher/2 aircraft being the exception rather than the norm.

- In its current state, the federal system is unable to address the needs of low altitude flight to non-airport environments. As a result, Communications Centers and internal QA procedures play a vital role in the success of HEMS. Operators rely heavily on customer communications centers. Without these centers, operators would have no idea what was happening in terms of operation control. As it stands, the have little knowledge without communicating with local resources. Operators have become too large to adequately operate HEMS under Part 135.

- I do not agree that regional communication centers should act as Unicoms. In fact, I think the technology exists to allow local communications centers to remain in contact with aircraft throughout the world. In states with CONs, for example, programs track their own aircraft, but also notify competing communications centers as a courtesy. This is not the case in unrestricted, highly competitive environments; especially among CBS programs.

- Communications specialists knowing the difference between Part 91 and 135? This is irrelevant. All HEMS flights should be conducted under Part 135; no exceptions. This is not the norm. Many operators still operate Part 91 for various reasons.

- With respect to launch times. It was stated that VFR averages 5 minutes and IFR, 13 minutes. This is completely irrelevant information and misleading. Launch time should not enter into the equation. Launch times are dependant on aircraft, checklists, complexity, and the nature of the flight. Time to get to the aircraft is the only concern anyone should have. The whole idea of launch times has pressured pilots into ignoring important checklist procedures. Dual pilot crews with a challenge-response CRM process would alleviate this.

- Times to destination should not be given. In the grand scheme of things, all aircraft will arrive within minutes of each other if departing from the same location unless distances are greater than the norm. Requests should go to the closest base first. Operators should be required to notify the requesting agency if there is no aircraft at that location.

- Another mechanism to ensure the appropriate aircraft is used is to maintain a registry of aircraft and crew capabilities. If the patient has injuries from head to toe that need addressing, an aircraft should not be utilized that does not allow for full patient access. Programs which experience high competition are often less that honest when it comes to aircraft location, capabilities, and response time. Again, when flight volume is directly related to your viability, your priorities change.

Panel 6: Safety Equipment & Flight Recorders

Comments:
Safety equipment is out there and is a very important part in reducing risk. However, the equipment is only as good as the user. TAWS, TCAS, NVGs (not night vision enhancement devices*) are all a good supplement to proper aircraft, crew, and training.

HUMS systems, CVRs, and CDRs should all be mandatory. Based on this industry's past safety record, it is quite evident that we will never fully understand most of the accidents. As you well know, human error is the hardest to explain. Most of our past accidents are the result of poor decision making. It would help tremendously to have more information on the chain of decisions that lead to these accidents. The cost and weight arguments no longer make sense.

I was very impressed with the apparent practicality of the Apparea system.

**This terminology is being used to allow operators the option to utilize lower cost, unproven technologies. The idea of putting a camera and tv screen in the cockpit is absurd. Once again, operators are looking for the cheap way out. Also see AELs testimony regarding the Garmin 396 as a poor excuse for TAWS.*

- The FAA was asked: What is taking so long? While I can appreciate the FAA's position, it is time to admit that they are not the experts. While they spend time in the rule-making process, States should have the ability to oversee the area of air ambulance immediately.

  The idea that it is hard to justify the costs to the operators is ludicrous. The justification is in the number of accidents.

  At this time the FAA "encourages" voluntary equipage. Where is the incentive? Extra equipment interferes with profit margins.

- Wire strike kits: A low cost piece of equipment that can potentially be life-saving. In our operating environment, this should be mandatory.

- In spite of what AAMS and the operators claim, this industry must not allow technologies and their abilities to be ambiguously lumped together in the name of "Safety".

- The increased workload argument is invalid in light of appropriate training. These devices only give information to the pilot when it is needed and relevant. With proper knowledge (training costs money), this information will reduce pilot workload and increase situational awareness.

- AMC was asked: If you could choose one, which would it be? Answer: NVG. I would argue two pilots offer the best bang-for-the-buck safety improvement out there. Human error is the cause of most accidents. What better way to check bad decisions than with another aviation-savvy mind. However, this would like require a move away from single-engine, minimally equipped helicopters.

- Clarification: the cost of NVG is not $2 million/year. Cost is training, aircraft mod, and initial equipment. Only training is ongoing. Cost to replace an instrument under most NVG modifications (STS) is no more than replacing the equipment in question and providing the NVG glass to overlay the light source.

- CareFlight finds NVGs unnecessary because they "don't land in alleys and woods". NVG can be beneficial to anyone who flies outside of an urban area. I flew in DC; arguably one of the most urban areas in the country. I also routinely flew across the Potomac to the east and into WV (both are black holes at night). Operators use this excuse because NVGs cost money and require on-going training. These are the same people who will claim they have never needed them, so why would they want them now.

- These same arguments can be heard along side of:

    - There's no evidence that twin engine aircraft are safer than single engine aircraft.
    - There's no evidence that simulators are beneficial.
    - There's no evidence that dual pilot crews are safer than single pilot.
    - There's no evidence that IFR is safer than VFR flight.

Absurd arguments, but widely heard in HEMS – people will say strange things to validate profit-making motives.

Panel 7: Flight Operations Procedures and Training

Comments:
This was one of the most interesting discussions of the entire hearing.

The FAA showed its shortcomings and became quite defensive.

Reimbursement explanations demonstrated the proliferation of the CBS mode.

A large, minimalist operator, AEL, proved it could not defend its own business model outside of profit.

The medical side proved that they are quite aware of what HEMS operators do and proved they have a vested interest in this industry's betterment.

Two industry outsiders said what no one wants to say: Safety will cost you. Simulation is not only beneficial, but necessary. Training, training, training. Technology is great, but pilots must know how to use it. These two, Palmer and Webb, have no agenda outside of making HEMS a safer industry. The operators, through their questions, made it apparent that this approach towards pilot proficiency would be a financial burden on the industry. Again, proving that money matters over all else.

Other repetitive absurdities from the mouths of operators:

- There's no evidence that twin engine aircraft are safer than single engine aircraft.
- There's no evidence that simulators are beneficial.
- There's no evidence that dual pilot crews are safer than single pilot.
- There's no evidence that IFR is safer than VFR flight.

Absurd arguments, but widely heard in HEMS – People tend toe use lies and scare tactics in light of a valid defense. Sadly, if it is said often enough, people will tend to believe it.

- AEL: "VFR works for us". This was the theme to all of AEL's answer for the day. They even went so far as to say that VFR is as safe as IFR flight. The NTSB Chair was kind enough to expose this fallacy. However, this statement does allude to the underlying problems in our industry. The fact is that IFR capabilities require additional monetary expenditures. While everyone knows this, the operators will continue to argue that it's not useful, no safer, no evidence, ect. . .

- AEL, as most operators, claims to be committed to NVGs. However, they often use NVGS synonymously with vision enhancement devices. These are not the same. In fact, there are several cheaper, less-effective technologies available. Is this an area where we want to compromise?

- AEL refers to training for initial pilots that last 2-3 weeks. This is referring to total time until a pilot is put on the line. Again, operators were in the habit of providing misleading information. AEL often referred to their Flight Training Device as a simulator. It is not a simulator, and is barely an FTD. AEL's claim that it crews are "saving lives" is also disturbing. This only serves to perpetuate the hero mentality that is detrimental to our industry.

- Bruce Webb was a stellar witness. Bruce has no allegiance to any of the operators and is in a secure enough position to say what no one wants to hear. I applaud his honesty and steadfastness in light of offensive question by the likes of Craig Yale, AMC.

    - The primary focus for training should be: type-specific, task based, and scenario based.
    - Simulators offer real vale to pilots and crews.
    - Training is the key.
    - EMS operators usually only offer "basic" training to include:
        - 1 checkride/yr. The semi annual rides are a gimmick meant to appease the FAA (from personal experience).
        - Lack of training is the largest causal factor of accidents.
        - IFR training is only 2 times/yr.
        - The capability of the aircrafts outstrips the capability of the pilot in most cases.
        - Why? Because the regs allow it and cost is a major factor.
        - Training is often the checkride. This does still exist.
        - Level of training needs to be graduated.
        - More advanced aircraft should lead to more training. More safety devices means more training is necessary.
        - Safety devices are not effective until the user can operate them proficiently.
    - **Weather mins as per Op Specs should be tailored to aircraft and pilot capabilities. E.g., VFR a/c, b 206, VFR pilot = 10000' ceiling and 10miles visibility at night. If an operator wants to capture more flights, they have to upgrade their pilots and aircraft.**
    - Today's modern helicopters (EC 135/145/155225) are equal to most advanced corporate jets. E.g., the cockpit glass and FMS in an AW 139 is the same found in modern Gulfstream Jets.
    - In response to Mr. Yale's Question concerning the lack of simulators ineffectiveness, Mr. Webb felt confident the simulator was equally effective. In fact, Mr. Webb pointed out that in the real aircraft, there are mistakes that can never be allowed to continue to fruition. In a simulator, they can.

- Terry Palmer, Flight Safety - Amazingly, her obviously unrehearsed comments complimented what Mr. Webb had to say completely. Again, Mrs. Palmer has no incentive to do things cheaper. She is in the business of promoting lower accident rates through training.

    - Training is the key.
    - Simulation is a major part of training and has come a long way.
    - The corporate world trains 100% in simulators prior to passenger carrying.
    - Flying is a perishable skill that needs to be cultivated
    - Scenario-based training is very important.
    - Training should involve more than just aircraft specific training: Human factors, Instrument flight, AMRM/CRM.
    - You cannot simulate all conditions in the aircraft. Simulators also offer the following**:**
        - No Out of Service time
        - No risk to person or property
        - No bad habits are trained (e.g., simply touch the fire "T" handle)
        - Ability to put Non-Flying crew on board.

- Operators are now pushing FTDs due to outside pressure. However, the regulations regarding these devices allow for minimal design and results in a cheap "solution".

- Operators comment that less than 10% of the programs out there are actually flying IFR. I would add to this that at least they have the appropriate training 2 x a year, minimum, to know how to deal with IIMC and they are flying aircraft that are equipped for instrument flight. Most of these IFR programs have internal standards that are higher than the Federal minimums. This is because the customer demands it, not the operator.

- Mr. Webb – **"Basically, if you want to do the minimum training with minimum equipment, you should have operation minimums that will preclude you from getting into bad situations."**

- The levels of simulators are growing in complexity and realism. Even with this sophistication, the dry lease operating cost is still less than the actual aircraft.

- What perpetuates the lack of simulator use in HEMS? Unlike Oil and Gas or Corporate, the customer is on-existent (CBS) or has little bargaining room. Many operators are using "Operational Control" as an excuse not to provide this type of training. Training in-house allows for great flexibility, minimal travel, expense, and cost-savings do to lax regulations.

- AEL claims a survey exists that states 20% of pilots push weight and balance limits and 10% push weather. If crews believe this, why not speak up? Financial pressures have permeated every aspect of this industry and are most definitely more prevalent in CBS programs.

- Problems with Medical Crews: no duty time requirements, conflict of interests with employers, and no drug testing. Also, many companies perpetuate the life-saver mentality among its employees.

- The medically world recognizes the need and benefit of redundancy among crews, so why not among pilots? It costs money. Bang for the buck, this is absolutely the best safety device in existence.

- Why are crews pushing their limits? This human error is precipitated by internal and external pressure to fly. Again, flight volume may make or break a program in any given month. Operators so not hesitate to close a base down if it is not producing. Often the decision to open a base is nothing more than a whim. The end result often neglects employees and the communities they were meant to serve.

- Mr. Yale, AMC tries to insinuate that most pilots would not choose IFR over VFR. He insinuates that many hospitals do not have weather. It should be noted that Yale is not a pilot. Although many hospitals do not have GPS approaches or weather, many are in close proximity to an airport with weather and instrument approaches. Nowhere does it state that a patient cannot be driven from an airport to a hospital. In fact, this is often the case with IFR programs. Moreover, many IFR programs maintain GPS approaches. However, these approaches are often paid for by the customer, not the operator.

- AEL states that 50% of its flights are scenes and IFR flight would limit their response. IFR allows one to terminate nearby and continue, if possible, VFR. If not, you cancel the flight. VFR should not be attempted for these flights. The operators also claim that their pilots have an instrument license, but do not point out that they have almost no training, little hard IFR time, and are flying VFR only aircraft.

- The operators claim that checkrides in lieu of training do not exist. I have personal knowledge that this does exist.

- When asked to detail the nature of a Part 135 checkride, AEL's chief pilot could not. Furthermore, when asked to describe IIMC procedures, he never once stated that it was an emergency. The former CP, and now, DO made this statement. This is disconcerting and unacceptable.

- When asked about Part 91 versus Part 135 legs, the operators were a bit misleading. Some customers demand that all legs be performed as if a Part 135 flight is being conducted. However, operators and pilots still use Part 91 legs to their advantage. This effects weight and balance, flight planning, and duty times.

- The current FARs do not provide adequate oversight.

- HAI claims we need support. I agree. We need to deal with safety issues rather than make them go away. We need to invest money and equipment and our human resources. There needs to be a culture shift that eliminates fear of retribution. Loop closure is essential. Profit cannot be allowed to dictate corporate governance above safety.

- Training consists of four options: 1) failure, 2) stop ride – retrain, 3) new ride, 4) failure and termination. The reality is that the proliferation of HEMS programs has led to a need to fill seats. Often check rides are called training until the individual can pass. The worst part of this industry is the facts that very few pilots "fail" rides internally. I will not attempt to answer the how or why of this. Simulator training offers a more objective view from an outside party.

- The current system clearly does not work. Technology exists that allows a higher level of training.

- Pilots should be taught that patient condition is irrelevant. Our only job is get back to the earth safety each and every time we leave it.

- While IFR is the best tool for CFIT prevention, the FAA claims that in VFR, pilots should follow the regulations.

- Most people wrongly believe that their IIMC training, procedures, and abilities are better than they are.

- The top three tools to increase comfort level in turning down a flight: training/culture, AMRM/CRM, and frequency of training.

- IFR is a codified version of "strategic avoidance". New A021 is a nice pat on the back for the FAA and operators.

- Preflight planning is the lynch-pin to safety.

- Operators are less than honest when discussing duty times of medical crews, other jobs, employee shortages.

- Operators are reactive and then claim hardship (E.g., AEL discussing the use of Garmin 396 units). They bought the units to replace failing GPS units installed in the aircraft. This stand alone unit is much cheaper than actual replacement and can be panel mounted to bypass FAA maintenance regulations. As an after thought, this operator tried to claim their intention was to meet TAWS recommendations.

- No one likes to discuss the idea of dual pilots. This is a human resources and training nightmare for cheap operators.

- Continual turnover and perpetual vacancies have plagued HEMS for years. Low wages have added insult to injury. As a result, standards for hiring have seen an all-time low. Pilots are working considerably more than their normal shift hours.

- The FAA should consider placing HEMS in another Part outside of Part 135. HEMS is unique. Most important, patients do not have the ability to chose who they fly with.

- Launch times should not be a factor. However, AEL refers to their "7 minute" launch time repeatedly. Moreover, operators routinely advertise these launch times.

- Where is the top? Multiengine, 4 axis autopilot, all NTSB-recommended equipment, dual pilot, de-ice capable with a focus on training. Expect a few to rise to this new standard. Others will fight tooth-and-nail to continue adhering to the minimum.

- Look at 121: dual pilot, multi-engine, CRM, simulator training.

- According to the FAA: "If they abide by the rules, they will be safe". This is completely unacceptable. Obviously there is a problem that needs to be addressed. The current model is broken. "**The best way to predict the future is to create it." – Peter Drucker -**

Panel 8 & 9: Corporate Oversight & SMS

Comments:
Corporate oversight and agenda depends on one question: Where do you derive your profit?

For profit corporations derive profit from transportation; pure volume. Operating costs are to be as low as possible, thereby increasing profit margins. It is in their interest to transport as many patients as possible, regardless of condition. Accidents have a value and can become acceptable in light of profitability.

Non profits tend to be based with or affiliated with hospitals. Therefore, most choose to supplement the high cost of HEMS while seeing a return from high acuity patient care. It is in their interest to transport only those who have injuries that necessitate HEMS transport. Perception is everything. Any accident is unacceptable.

SMS is a step in the right direction. Guidance is needed. This culture shift will take time. Many will fail miserably due to disingenuousness.

- AAMS continues to attack the Public Use operators (MD State Police)
- Flight data monitoring is voluntary and kept close to the vest.
- AMC fails to mention that they pay IFR and VFR pilots the same. Aircraft complexity doesn't matter. This perpetuates the race to the bottom.
- AMC thinks IFR is not the answer. I agree, there is no single answer. However, IFR is a part of the solution.
- Culture needs to change. How do pilots and crews act when they think no one is watching?
- CAMTS is allowed to issue accreditation above and beyond the FAA, why can't states.
- Approach toward SMS is a good one. How come the FAA can't tell you what it is?
- HEMS needs to change its thinking. A decision to make a fundamental reorientation in the way we think is needed. "This is how we've always done it" is no longer acceptable.

- SMS may be useful in bridging the various disciplines in HEMS, but an organizations top decision makers must embrace the process and safety philosophy. This is not achievable when profit is the priority. Safety cannot be second to anything.

- Employees must feel empowered.

- Operators must show their commitment by providing the right tools, training, and personnel.

- If we do this right, many operators will not succeed. Many pilots and crews will have to seek other job opportunities. This is not a bad thing.

Panel 10, 11, 12: FAA

Comments:
I will not address the FAA and their shortcomings with respect to HEMS. The NTSB is fully aware of the FAA's position. Let it be said, the FAA are not completely at fault, but they are vastly under-equipped to deal with the idiosyncrasies of HEMS. However, they have admitted this and that is a step in the right direction. Since I believe that the FAA is not willing to move forward in any significant way and Congress is not likely to mandate it (in the near future), I would support, at the least, state oversight as the first step.

Problem Area	COMMON INDUSTRY RESPONSE	MY RECOMMENDATIONS
PILOT ERROR – Lack of situation awareness	Safety devices are added every day. Single pilot has worked for years. Dual pilot is overkill. VFR is as sage as IFR. Single engines are no more likely to fail than multi-engines. There is no evidence that simulators are beneficial. Simulators aren't like real flying. COST	1. Dual Pilot – redundancy among personnel as well as systems. Appropriate CRM utilization is the key.
		2. Training – Simulator and scenario based is necessary in HEMS. Training should reflect capabilities and complexity of tools utilized.
		3. Capabilities/Minimums/IFR – Additional capabilities reduce risk exposure.
OTHER AREAS OF CONFUSION – Unknown Environment Route Structure WX Air Taxi	1. FAA & Part 135 Following the Regulations is enough.	1. Aviation Anomaly – HEMS is not like other Part 135 operations. Patients do not have a choice. Well outside of the route structure. Rapid response desirable.
	2. Operators Part 135 is adequate. The industry is working on getting better.	2. How Should We Be Classified? We are HEMS. The very nature of being an air ambulance is different that other Part 135 operators. We need specific Regulations. See Canada
	3. Passengers, Crews, and Patients Patients do have a choice. Crews are trained annually.	3. Patients have no choice. Crews have limited, if any, liability with duties. AMRM has given us the illusion of CRM – this is not the case.
AIRCRAFT Equipment VFR/IFR Single Engine/Twin	We're installing new technology daily. Cost. IFR doesn't really work. There are very few IFR flights. We do IIMC training. Singles are just as safe as twins.	1. Equipment – TAWS, NVG, TCAS, 4-axis autopilot.
		2. IFR – route structure is safer. The capabilities and IFR proficiency reduces risk exposure.
		3. Twin Engine – redundancy is always better. See 121 as a model. 121 is not the same, but is a good tool for guidance.
PRESSURE Competition	Competition is good. It promotes quality.	Competition has led to inappropriate transports and pressure, both indirect and direct.

Financial	Everybody is “for profit”. More $ = bases will close and patients will suffer.	Complete dependence on flight volume creates undue pressure
Hero Mentality	We don’t promote this, but we do save lives.	As far as aviation, saving lives is not part of the equations. Safety is the first priority. Every flight that goes up, should come down safely; regardless of the patient’s outcome.

A reduction in the number of operators is needed. Additionally, we need mandates that prescribe how we will do business in the future. The Canadian model is a good start.