

UNITED STATES OF AMERICA  
NATIONAL TRANSPORTATION SAFETY BOARD  
OFFICE OF ADMINISTRATIVE LAW JUDGES

\* \* \* \* \*  
In the matter of: \*  
\*  
PUBLIC HEARING IN THE MATTER OF \*  
THE ISSUES ON EMERGENCY MEDICAL \* Docket No.: SA-530  
SERVICES HELICOPTER OPERATIONAL \*  
SAFETY \*  
\*  
\* \* \* \* \*

NTSB Board Room and Conference Center  
429 L'Enfant Plaza  
Washington, D.C. 20024

Thursday,  
February 5, 2009

The above-entitled matter came on for hearing,  
Pursuant to Notice at 8:30 a.m.

BEFORE: ROBERT L. SUMWALT, Chairman  
LORENDA WARD, Hearing Officer  
TOM HAUETER  
VERN ELLINGSTAD  
DAVID MAYER

## APPEARANCES:

Technical Panel:

DR. EVAN BYRNE  
DR. BOB DODD  
MR. JEFFREY GUZZETTI  
MR. RON PRICE  
DR. LOREN GROFF  
MR. AARON SAUER  
MS. LEAH YEAGER  
MR. TOM LATSON

KEITH HOLLOWAY, Public Affairs Specialist

Parties to the Hearing:

CRAIG YALE, Air Methods  
SANDY KINKADE, Association of Air Medical Services  
RAYMOND DAUPHINAIS, CareFlite  
LOUIS R. BELL, CareFlite  
HOOPER HARRIS, Federal Aviation Administration  
MATT ZUCCARO, Helicopter Association International  
GARY SIZEMORE, National EMS Pilots Association  
AL DUQUETTE, Professional Helicopter Pilots  
Association(PHPA)/Office of Professional  
Employees International Union(OPEIU), AFL-CIO

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P R O C E E D I N G S

(8:30 a.m.)

1  
2  
3 CHAIRMAN SUMWALT: Good morning. This hearing will  
4 reconvene, and we have a panel this morning on Flight Operations  
5 Procedures and Training, and issues to be discussed may include  
6 flight planning, weather minimums, weather reporting, preflight  
7 risk assessment, night flight, medical crew functions,  
8 responsibilities and training, FAA regulations and advisory  
9 gonets, simulator use, and crew resource management.

10 Ms. Ward, would you please place under oath and qualify  
11 the witnesses?

12 MS. WARD: Thank you, Mr. Chairman. Could the witnesses  
13 please rise? Please raise your right hand.

14 (Witnesses sworn.)

15 MS. WARD: Thank you. Be seated. Okay. We'll start  
16 with Mr. Weink, could you please state your name, your title and  
17 your organization?

18 MR. WEINK: Good morning. First name is Neil, last name  
19 is Weink. I'm employed by Omni Flight Helicopters out of Dallas,  
20 Texas, and I'm at the Mayo Clinic, Rochester, Minnesota Hospital-  
21 Based Program.

22 MS. WARD: And your title?

23 MR. WEINK: Aviation Site Manager for Omni Flight at  
24 Mayo.

25 MS. WARD: Thank you. Mr. High.

1           MR. HIGH: Yes, I'm Kevin High. I'm here on behalf of  
2 ASTNA, the Flight Nurse's Association and my employer is  
3 Vanderbilt Medical Center at Nashville, Tennessee.

4           MS. WARD: And your title?

5           MR. HIGH: I'm a registered nurse.

6           MS. WARD: Thank you. Mr. Webb.

7           MR. WEBB: Good morning. My name is Bruce Webb. I'm  
8 the Chief Pilot for American Eurocopter located in Grand Prairie,  
9 Texas.

10          MS. WARD: Thank you. And, Ms. Palmer.

11          MS. PALMER: My name is Terry Palmer, and I am Manager  
12 of Rotocraft Special Programs for Flight Safety International, and  
13 I'm also the lead of the training work group for JHSIT.

14          MS. WARD: Thank you. And, Mr. Bonham.

15          MR. BONHAM: Good morning. I'm Tony Bonham, the Chief  
16 Pilot for Air Evac EMS, doing business as Air Evac Live Team and  
17 Texas Live Star.

18          MS. WARD: Thank you. Mr. Buehler.

19          MR. BUEHLER: Good morning. I'm Lawrence Buehler. I'm  
20 an Aviation Safety Inspector with the FAA assigned here in  
21 Washington.

22          MS. WARD: Thank you. Mr. Riley.

23          MR. RILEY: My name is James Riley. I am the current  
24 President of the Flight Paramedic Association and I currently am  
25 employed by Mayo Clinic as a paramedic for flight.

1           MS. WARD: Thank you. Mr. Chairman, these witnesses are  
2 now qualified.

3           CHAIRMAN SUMWALT: Thank you, Ms. Ward. Ron Price, I  
4 believe you're leading this Technical Panel, if you would please  
5 introduce the Technical Panel and begin with the questions.

6                           TECHNICAL PANEL QUESTIONS

7           MR. PRICE: Yes. Thank you very much. To my left is  
8 Jeff Guzzetti, who will co-chair the Technical Panel with me. To  
9 his immediate left is Dr. Bob Dodd. To my right is Tom Latson.  
10 And to his right is Leah Yeager. To her immediate right is  
11 Dr. Evan Byrne.

12                   What I'd like to do is start with questions individually  
13 and we're going to start with operations and move into training  
14 and crew member training. I'd like to start with questions for  
15 Mr. Weink.

16                   Mr. Weink, could you give your qualifications and  
17 experiences and expound on what exactly you do for your  
18 organization?

19           MR. WEINK: Yes. I am a civilian trained pilot. I did  
20 not come from the military, from that side of things. Second  
21 career for me as far as careers are concerned, I've got just a  
22 short 7,000 hours of flight time. In that time, I have done  
23 flight training, worked for a company that had a 135 certificate,  
24 through that, grew through the company to where as a line pilot  
25 all the way up through check airman, chief pilot and director of

1 operations of that. From there I was fortunate enough to get into  
2 the EMS industry, worked for Air Methods for nine years as a line  
3 pilot. From there, in 1999, I moved closer to home, into the  
4 Rochester community and from there I've been employed by Omni  
5 Flight and in the last eight to nine months, I've assumed the  
6 position of aviation site manager to where I oversee the hospital-  
7 based program at Mayo and with that, we have three bases. We have  
8 one at Rochester, Minnesota, one at Eau Claire, Wisconsin, and one  
9 at Mankato. We have 13 pilots and 7 mechanics. We oversee all of  
10 the training, the training aspects, how we train, what we train  
11 and where, from that side, and the basic managerial portion of  
12 Omni that goes on at Mayo.

13 MR. PRICE: Okay. Thank you very much. Could you  
14 briefly walk me through a typical EMS flight that you would  
15 conduct out of your base?

16 MR. WEINK: As far as the EMS typical side of things,  
17 when it comes into it, no flight starts until the shift starts,  
18 from that side of things. So the pilot will come in and in the  
19 morning or the evening, when the shift starts. With that, they  
20 log in electronically through the Internet down at our OCC in  
21 Dallas. So they come on and it has to do with duty time as well  
22 as our paper log that we use. From there, the pilot will do the  
23 preflight on the aircraft, come back in, log back into the  
24 Internet. All of the maintenance issues, anything that's come  
25 due, will do, has been done on the aircraft, has been checked.

1 It's all logged so that OCC knows where we're at with the  
2 aircraft, what's coming due and what's left for time. And then  
3 weather is all assessed and reported and going through to be  
4 entered into the data for us.

5           And then from there, we go through and do a shift  
6 briefing with the crew. Along with that, the weather is reported  
7 with them. At our base, we run a status of green, yellow or red.  
8 Green means we can go anywhere in our 150-mile radius local or  
9 radius area that we fly in, that we have no concern to weather.  
10 Yellow means there's something out there that we want to look at  
11 before we accept a flight, and red means we can nowhere.

12           And all these issues are talked about prior to that.  
13 Within that, we move on down to the risk assessment that we have  
14 done. Through Omni we have our risk assessment scores that are  
15 entered. We have a static to where we are based on pilots and  
16 check rides and where we are in our currencies and then we have to  
17 do a risk assessment before flight for each leg of the flight  
18 because each leg, based on weather, is going to be different on  
19 the risk.

20           Right on down to procedural things that we're going to  
21 do for the day, NVGs, a NVG briefing is covered, where we're at,  
22 currency and the usage, and from there, and then we're back out  
23 and ready to accept a mission. When the mission comes in, it will  
24 come into our dispatch center at the Clinic. Our emergency  
25 communication center will take the call. From there, we'll just

1 use a yellow status. From that side of things, they will page and  
2 radio the pilot so that there's two means of getting a hold of  
3 him, that they need to check weather to a destination.

4 From that side of things, no patient information is  
5 issued at this time, so that there's no influence as to whether  
6 the flight should be accepted or not from that side, and as well,  
7 our ECC will contact our OCC down in Dallas for Omni Flight to let  
8 them know that there's a tentative flight being looked at or to be  
9 accepted.

10 The pilot will assess all the weather from that side,  
11 and look at it. If there's any questions, we will call our OCC  
12 and down there, we run all the weather by them, and all of our  
13 procedural things that we're going to do, whether we're going to  
14 do this VFR or whether we're going to do an IFR, and all the risk  
15 levels and discuss the risk assessment with them.

16 If we accept the mission, from there, then a release  
17 number will be issued so that Omni knows that we are out flying.  
18 It will come back. We accept the mission through our ECC, and  
19 from there we go out and if it's IFR, then we're going to file our  
20 IFR flight plan with Flight Service, come back out, brief the crew  
21 on the flight that we are accepting the flight and we will be  
22 doing it IFR and the procedures that we're going to be using with  
23 it, go out, remove the aircraft from the hangar, do the preflight  
24 walk around, go back in, start the aircraft up per the procedures.  
25 We file a flight plan whether it's VFR or IFR with our

1 communications center at the hospital, and then we contact our  
2 approach control that we have to get our clearance.

3           From there, we will depart the hospital helipad via  
4 departure procedures and utilize the infrastructure within the IFR  
5 as well as the hospital itself has 25 GPS approaches into the  
6 health system hospitals that we have, and we utilize those  
7 frequently. So if it happens to be one of our own particular  
8 approaches, we'll utilize that, go in and shoot the approach  
9 procedure inbound. At the missed approach, if we broke out of the  
10 clouds and we have the hospital in sight, we'll continue in and  
11 land.

12           From there, we will close the flight plan with either  
13 Flight Service or approach control if we can get them by radio.  
14 And from there, we have to close our flight plan through our ECC,  
15 and from there we will -- if again at the missed approach point,  
16 we're not out of the clouds, we don't have the hospital in sight,  
17 we do the missed approach procedure as depicted and return back to  
18 the hospital using the GPS approach back into the hospital.

19           From that side, if we did land, we go back in and  
20 reassess all the weather from that side of things, and file an IFR  
21 to go back home, and it's generally done with a clearance void so  
22 that we can use our departure frequency on the way back out, our  
23 departure procedure I should say on the way back out. From there,  
24 we're back up within approach control and using the clearance to  
25 get back home to use the GPS approach to get back into St. Mary's.

1 MR. PRICE: Okay. Thank you very much.

2 MR. WEINK: Yes.

3 MR. PRICE: A couple of very specific questions. You  
4 say you have 25 GPS approaches?

5 MR. WEINK: Yes. The hospital itself has taken the  
6 initiative on the safety aspect of things through Omni and what we  
7 do at Mayo. We're a firm believer in IFR, and with that, to be  
8 able to get to the communities that we serve up there, the  
9 infrastructure with airports and that portion of it, makes it  
10 harder to get to some of our facilities or the health systems. So  
11 within that, in the last -- we had 5 initially to start with, and  
12 in the last 2 years, we've put in 20 more GPS approaches to the  
13 hospital facilities.

14 MR. PRICE: Okay. Thank you very much. Also you  
15 elaborated on filing IFR. From the time you get a call until the  
16 time you wheels up, would be about how long would you say?

17 MR. WEINK: The rule of thumb that we use, and there's  
18 no punitive with it. All it is, is for tracking purpose to see if  
19 we need to change any particular portion of this, they want us off  
20 VFR in 15 minutes and they'd like us off IFR in 20 minutes. If we  
21 exceed that, there's no punitive damages. All we do is study it  
22 to see, you know, if there is a reason as to why it's taking more  
23 than 20 minutes. Is it a weather issue, weather information issue  
24 or what the procedure that we need to improve on from that, but 20  
25 minutes is the basic benchmark that we use before we assess it.

1           MR. PRICE: Thank you very much. I do have a couple  
2 quick questions on -- you mentioned green, yellow, red for  
3 weather. Under Part 91, what are the weather minimums for a night  
4 helicopter flight in uncontrolled airspace?

5           MR. WEINK: When you stalk, there's -- the regulatory  
6 side of it, for everybody, I don't know everybody's background  
7 from that side of things, Part 91, if I own my own helicopter and  
8 I can go out and fly, all I have to do is be clear of the clouds  
9 from that portion of it in uncontrolled airspace.

10           Per the 135, or per the operator's side of this, we have  
11 minimums. We have to have our half mile visibility during the day  
12 and then a mile at night. We also have a minimum safe altitude of  
13 300 feet. So within that, you have to be above that and beyond  
14 that to be Part 91.

15           We as in Omni don't do Part 91 operations. Everything  
16 that we do is Part 135 from that side. So whether we're going out  
17 to a PR or whether we're carrying a patient or we're doing a  
18 maintenance or whatever we have, everything is done Part 135.

19           MR. PRICE: So under strict rules under Part 135, except  
20 for op specs, you, if the weather let's say was 500 feet and 1  
21 mile visibility, you could fly under 135 rules as they're written  
22 today?

23           MR. WEINK: Can I clarify again? Somebody coughed. I  
24 got 500 foot on the ceiling and how much visibility?

25           MR. PRICE: 501.

1 MR. WEINK: During the day?

2 MR. PRICE: At night.

3 MR. WEINK: At night, no, per our 135 ops, we can't do  
4 that, no.

5 MR. PRICE: Op specs.

6 MR. WEINK: Op specs, yes.

7 MR. PRICE: Notwithstanding op specs, what would it be?

8 MR. WEINK: I mean Part 91 again, to come back into it,  
9 all I've got to have is a mile visibility and I have to have a  
10 minimum safe altitude of 300 feet under Part 91.

11 MR. PRICE: Okay. When you call for the weather,  
12 weather service, Flight Service gives you the weather. What would  
13 be Flight Service's definition of marginal VFR?

14 MR. WEINK: Flight Service in their briefings, standard  
15 briefings that they issue, anytime the cloud height drops below  
16 3,000 feet, and we have a visibility less than 5 miles, we move  
17 from what's called VFR into marginal VFR conditions, and when we  
18 get to that point, their protocol, whether it's lifeguard  
19 helicopter or if it's myself flying a helicopter or someone flying  
20 an airplane, they will proceed with the phraseology that VFR is  
21 not recommended.

22 MR. PRICE: Okay. And what about if they say IFR  
23 conditions?

24 MR. WEINK: When they come back in, IFR itself is  
25 anytime we fall below 1,000 feet on the ceilings and less than 3

1 miles visibility, and that's when IFR conditions exist.

2 MR. PRICE: Okay. Thank you. So would you say that to  
3 fly safely in a VFR environment, what would your recommended  
4 minimums be for a VFR night flight notwithstanding any of the  
5 rules?

6 MR. WEINK: I personally, I mean, you know, as we get  
7 older, anything -- your minimums always go up. Once I fall below  
8 VFR, I get very hesitant as far as doing anything personally when  
9 it comes into it. The next thing is, is the tools that you have  
10 with you, to be able to do your job, the more tools you have, the  
11 more avenues you have, the more -- the safer the flight becomes.  
12 If you've got an IFR equipped aircraft, certified, and you're an  
13 I-5 certified pilot and you're current to where if some unreported  
14 weather, inclement weather encroaches to where you have an avenue,  
15 that route, if you have TAWS, if you've got an autopilot, if  
16 you've got TCAS (ph.) to help you out with other aircraft, night  
17 vision goggles, that portion of that makes the whole intended  
18 flight massively safer.

19 MR. PRICE: Okay. And what tools do you currently have  
20 on your helicopter?

21 MR. WEINK: Currently what we have, the existing  
22 helicopter that we have at Rochester, is a single pilot IFR  
23 aircraft, with an autopilot, with NVG capabilities. We have two  
24 new aircraft. The one is in mission or in operation at our  
25 Mankato base. It's a new EC145. It's a single pilot IFR

1 aircraft, NVG compatible. It has a version of TCAS. It's T I S T  
2 A S and TAWS on board, and our second EC145 is in shipment now or  
3 I should say in the process of being flying to Eau Claire. So  
4 we'll have two EC145s, single pilot IFR with a lot of tools on  
5 board to help us.

6 MR. PRICE: Okay. I'd like to move on and talk about  
7 your training. Could you briefly describe the training you get on  
8 a yearly basis?

9 MR. WEINK: What we receive at our contract here on the  
10 IFR side, we get our six-month check rides. We get our annual  
11 check ride and a six-month recurrency ride. Also per Mayo and  
12 Omni, we support the IFR side of this just like they support it  
13 with purchasing GPS approaches. All of the pilots get a minimum  
14 of an hour, up to an hour and a half each month to go out and  
15 train IFR, even though they're current, IFR going in, we end up  
16 shooting a lot of GPS approaches, that type of thing on the non-  
17 precision side, and we don't get a chance to shoot a lot of ILS  
18 approaches. So we'll go back out and we'll shoot and be  
19 comfortable with those as far as doing ILS approaches with that,  
20 too.

21 The other issue that we have with this in Minnesota  
22 where we're at, we get blessed with icing conditions. So  
23 therefore helicopters are not certified to fly in ice. So  
24 therefore we can't fly it. We still want the pilots comfortable.  
25 So we'll go out on a VFR day where the weather, and we will still

1 go out and flying our training every month so that the pilot has  
2 the comfort level that they need in case they get in trouble.

3 MR. PRICE: Okay. Thank you. Could you briefly touch  
4 on what your program provides for, the crew members in the --  
5 training?

6 MR. WEINK: Yes. Our crew members, our medical crew  
7 members receive annual training every year when we come back, and  
8 it's all, everything, the crew member training itself is done. We  
9 do crew resource management training. We do AMRAM (ph.) training  
10 from that side of things, and then the other thing that has really  
11 helped us is the NVG because with that, we have all crew members  
12 on NVGs, the pilot and both medical crew will wear goggles when  
13 we're out. We, as in Mayo, purchased four NVG goggles per  
14 aircraft so that we can have one out for recertification and all  
15 three can still be on goggles. This, through crew resource  
16 management has really opened up the crew aspect of things for  
17 talk, whether they're drifting right, drifting left, fore, aft,  
18 that portion of it. So there's ongoing training pretty much all  
19 year long to support this.

20 MR. PRICE: Okay. Thank you. I have one last question,  
21 and that is what do you feel personally your opinion, what the  
22 industry needs to improve its safety?

23 MR. WEINK: I think my end, one word kind of supports --  
24 that comes out is support. We need support, whether it be in  
25 training. We need support whether it be in aircraft. The

1 aircraft itself, the tools that are on board the aircraft, from  
2 that side. And it's regulatory-wise, everybody needs to play on  
3 the same field, you know, with rules. I don't believe in 91 any  
4 more from that side of things as far as going out. I think  
5 everything should be 135. So just basic support, get the right  
6 tools, right stuff that you need to do your job and do it well.

7 MR. PRICE: Okay. Thank you very much. I'd now like to  
8 move my questions to Mr. Bonham. Could you briefly give us your  
9 qualifications, experience and your position?

10 MR. BONHAM: Yes, sir. I've been involved in helicopter  
11 EMS for actually 20 years this year, have about 12,000 hours, have  
12 worked for 3 other or actually 2 other operators besides my  
13 current operator, have been the chief pilot of Air Evac EMS for 3  
14 years. Prior to that, I was the assistant chief pilot for the  
15 company, and also an FAA designated pilot examiner for also 20  
16 years.

17 MR. PRICE: Okay. Thank you. Given that we've asked  
18 you here because your company is mainly VFR flights only, could  
19 you expand on that and give us a fill in the gap about VFR flight  
20 versus the IFR flight we just heard about?

21 MR. BONHAM: You know, for our company, and we're more  
22 of a community-based organization, basically in a nutshell, VFR is  
23 what works for us. The -- I think some of the drawbacks with the  
24 IFR, the limited infrastructure, the problems, the difficulty  
25 dealing with icing issues, the aircraft certification, the pilot

1 proficiency, it's just not what works for us. VFR is our model  
2 and it's what we prefer.

3 MR. PRICE: Okay. Mr. Weink mentioned that he uses  
4 night vision goggles, TAWS, TCAS, et cetera. Do you have an  
5 opinion on the use of those items?

6 MR. BONHAM: Yes, sir, I do. You know, I think  
7 technology is one of the aspects that we need to look at. Our  
8 company is actually dedicated -- we have 84 bases currently in 14  
9 states. We have committed to putting NVGs at all of our bases,  
10 and actually when the 13 initiatives that's commonly referred to  
11 the 8,293 that was issued in January of '05, the FAA notice, it's  
12 been our practice that when any FAA notice is issued, we abide by  
13 it, and our principals that work with us, I would say it is more  
14 than a suggestion from them, and it actually takes me to something  
15 else I wanted to bring up, is that of those 13 initiatives, and  
16 later in the same year, August of 2005, the 8,301 risk assessment  
17 recommendation, the FAA notice came out, and we were in compliance  
18 with that within approximately six months. But our company  
19 installed terrain awareness equipment in all of our aircraft. One  
20 of the, I guess, concerns that we have at this point is I would --  
21 I'm fairly certain that our current terrain avoidance -- terrain  
22 awareness equipment doesn't meet the new TSO. I would hope that  
23 that's viewed and taken into consideration also, especially since  
24 we're committed to the NVGs. We currently have 13 bases that are  
25 up and running NVGs. As you know, that's a slow process. We're

1 working on it, adding bases monthly. In my office right now, I  
2 have 60 sets of goggles. We have another 50 that's on order that  
3 we should receive within the next 2 months. So I think that -- I  
4 mean -- and I would appreciate and probably others that have added  
5 the equipment, from the recommendations of the 8,293 in '05, that  
6 that would be taken into consideration, especially with the  
7 aircraft or the companies that are adding or committed to NVGs  
8 companywide. And by the way, NVGs are costing us \$75,000 per base  
9 for implementation.

10 MR. PRICE: Okay. Thank you very much. I understand  
11 that NVGs aren't just the cost of the equipment but for training,  
12 too. Could you touch on the amount of training that a typical  
13 pilot gets per year?

14 MR. BONHAM: Are you referring to NVG or --

15 MR. PRICE: Yeah, any training.

16 MR. BONHAM: Our training -- our initial new hire  
17 training program just briefly consists of approximately two to  
18 three weeks of training. It starts off with two days of AMRAM.  
19 That's where the flight crew members, medical crew members, the  
20 maintenance technicians, communication specialists, our datalink  
21 personnel and by datalink personnel, our communications center is  
22 -- we have one location that has a communications center datalink  
23 and those two combined would be what, in the industry, would be  
24 referred to currently as an operational control center. And the  
25 pilot training then, after the AMRAM, the medical crew members,

1 flight crew members, maintenance technicians are split up into  
2 their different areas. Pilot training then consists of another  
3 week to 10 days in the classroom. We also have a flight training  
4 device which some refer to as a simulator. Our pilots receive,  
5 new hire, three to four hours in the simulator, and then actually  
6 once the classroom instruction is complete, then approximately 10  
7 to 12 hours in the actual aircraft.

8           You know, one of the differences between our company and  
9 a couple of other operators that I've flown for previously, and  
10 again this was in previous years and things change as we move  
11 along, but ours is more dedicated to we feel turning a helicopter  
12 pilot into an EMS helicopter pilot. I expect that when a pilot  
13 reports for new hire training within our company, that basically  
14 that they could meet the standards, the practical test standards  
15 of a commercial check ride related to Part 61, 91, 135. You know,  
16 we have found that of an average class, 8 to 12 pilots per month,  
17 that where we used to have a higher percentage, 70 to 80 percent  
18 maybe that were previous EMS, we're finding now that there's  
19 probably 2 to 3 in that class. So we really concentrate on the  
20 operations manual, operations specification and, you know, there's  
21 a big, an immediate culture change that has to take place within  
22 that group of pilots.

23           You know, I can see it in their faces, and that's  
24 something else that I feel needs to be addressed. We're  
25 addressing technology, training, regulations, oversight, but we

1 really need to look at the culture. I really see the looks on  
2 their faces that they're reporting -- when they're reporting to  
3 duty and they're reporting to training, it's in their minds  
4 they're saving lives and they're going to do what it takes to get  
5 this done.

6           So I would say for lack of a better term, they're really  
7 brought down to a level that I think they need to be brought to,  
8 to get the correct mindset, and I can see it in the medical crew  
9 members, too. Everyone's ready to, it appears to depart and  
10 scoop, drop in somewhere and save lives, and that's the things  
11 that we have to stop and, you know, it's my job to encourage and  
12 make it clear to our pilots that even though our mission is to  
13 provide helicopter EMS service to a rural environment, that the  
14 first mission and foremost is to follow the rules, the  
15 regulations, our ops manual, op specs and policy and procedures.

16           So I guess in a nutshell that's our training, initial  
17 training.

18           Recurrent training, once a year, we have computer-based  
19 testing that's performed out in the field. The pilots do it  
20 throughout the year on their own time. It's about 40 hours of  
21 training. When they report to training in West Plains, there's  
22 another one day of ground school. There's work in the simulator,  
23 in the FTD, and then actually the flying training and flight  
24 portion of the training.

25           MR. PRICE: Okay. Thank you very much. I would now

1 like to move on speaking of training, to Mr. Bruce Webb. Could  
2 you please expound on your qualifications and experience level and  
3 what you do?

4 MR. WEBB: Yes, sir. Again, my name is Bruce Webb. I'm  
5 currently the chief pilot for American Eurocopter in Grand  
6 Prairie, Texas. I have been flying helicopters for now over 26  
7 years, professionally for 24 years.

8 CHAIRMAN SUMWALT: Mr. Webb?

9 MR. WEBB: Yes, sir.

10 CHAIRMAN SUMWALT: Excuse me. Would you speak up just a  
11 little please? Thank you.

12 MR. WEBB: I'm not certain -- okay. I have to get very  
13 close.

14 CHAIRMAN SUMWALT: Pick it up like a helicopter mic and  
15 put it close to your mouth.

16 MR. WEBB: Very close.

17 CHAIRMAN SUMWALT: Correct.

18 MR. WEBB: Sorry, sir. I began my career in the Chicago  
19 area flying helicopters, Part 91 initially. Then as an  
20 owner/operator of a helicopter company for seven years in the  
21 Chicago area flying Part 91, Part 135, Part 145 repair station,  
22 Part 137 agriculture operations, and did that. Sold that company  
23 and then went to fly EMS. I flew medical helicopters from 1994 to  
24 '99, five years, flying BK117s, both VFR and IFR, in different  
25 programs. I flew in Nebraska, Ohio and North Carolina.

1           From there I went to American Eurocopter, began my  
2 career with American Eurocopter in February of '99, initially as  
3 an instructor/production test pilot. We would provide training to  
4 our transition, initial transition training and recurrent training  
5 to our customers in type specific training. So we would train our  
6 customers how to operate our specific models of aircraft. I did  
7 that for approximately a year and a half, almost two years, and  
8 then became chief pilot and have been chief pilot now for eight  
9 years.

10           Again our primary focus at American Eurocopter with  
11 respect to training has been to provide training, very type  
12 specific training. So it has been training which has been  
13 primarily focused on simple training without regard initially for  
14 scenario-based training. In other words, our training would be  
15 task based. We would teach a student how to handle a tail rudder  
16 failure, handle a hydraulic failure, handle any of the number of  
17 emergencies that may be listed in the flight manual, but these  
18 emergencies were largely task based.

19           In compliance with FITS, we're moving to scenario-based  
20 training which we all know or we all believe is a much more  
21 encompassing training program, which will allow the students to  
22 effectively learn not just the task, but all the procedures and  
23 limitations which apply to that task. So that's where we're  
24 moving to now. We have a Part 141 school for NVG training. We  
25 began that school in 2006 as part of this initiative for FITS

1 training, for scenario-based training, and we currently have that  
2 NVG program in place, Part 141, as well as a night urban emergency  
3 program, training program in place, and just yesterday our  
4 simulator was qualified. So we do have an EC135 convertible to a  
5 EC145, level 6 flight training device certified, and we will be  
6 seeking our Part 142 training certificate to begin training in  
7 that device.

8 MR. PRICE: Okay. Thank you very much. You mentioned  
9 that you were an EMS pilot for many years. Could you comment on a  
10 typical EMS flight in regards to what Eurocopter is teaching or is  
11 evolving in teaching?

12 MR. WEBB: Well, I'll speak about my experience. I --  
13 the preponderance of my time was spent at a remotely based  
14 operation, no traditional operation per se, in that the helicopter  
15 was not located at the receiving facility or at a hospital. The  
16 helicopter was actually located remotely based. So, you know, we  
17 sat in the community in the aircraft so we were closer to our  
18 patients, potential patients. So dispatch would call. We'd get a  
19 telephone call or a page, and we would have a call pending. The  
20 pilot would check the weather to ensure the weather was  
21 sufficient for that route of flight to accomplish the flight. If  
22 it was suitable, the pilot would brief the crew on the flight at  
23 the aircraft typically, board the aircraft, depart for the scene.  
24 Now again because we were remotely based, we did a fair amount of  
25 scene work. Our scene percentage was about 26 percent. So

1 oftentimes, if you're departing for a scene, you would not have  
2 any real hard data on the scene. It might just be a county or it  
3 might be a direction and heading or a direction and distance to  
4 fly until you can get that data en route. So it can become very  
5 busy en route to a scene, to a hospital even, but specifically to  
6 a scene.

7           So the aircraft on its way to the scene, the patient  
8 briefing will come in, the patient report will come in. The EMS  
9 providers, the first responders will provide information to the  
10 aircraft typically directly via radio. The pilot will get a  
11 landing zone report via radio as well. The aircraft lands at the  
12 scene. Typically at the scene, the aircraft does not shut down or  
13 at least that was our protocol. The aircraft would remain  
14 running, and the crew would recover the patient, place them in the  
15 aircraft, and at that time would be -- we would have a basic  
16 understanding of where we were going to fly unless something had  
17 changed with respect to the patient. In other words, if the  
18 patient was significantly more compromised than initially thought  
19 or less compromised, would dictate where we would actually take  
20 the patients. So until the patient was actually loaded in the  
21 aircraft, the ultimate destination may be in question. And even  
22 en route, the destination can be in question again as the patient  
23 conditions change.

24           So the aircraft departs the scene, flies to the  
25 receiving hospital. The aircraft lands. The crew disembarks,

1 removes the patient to the emergency department and the aircraft  
2 typically would recover, refuel, return for the crew and return  
3 back to base. Now that's a VFR flight, and again, you know,  
4 without going into all the detail of, you know, checking the  
5 weather and whether we're red, green or yellow, again much of that  
6 is similar throughout the industry.

7 MR. PRICE: Okay. Moving right along, what was your --  
8 I asked others about their training. As an EMS pilot, how much  
9 training did you get and from Eurocopter's standpoint, what  
10 training do you recommend that EMS pilots and crews get?

11 MR. WEBB: All right. Well, I think training is the  
12 key. Certainly technology has helped us all be safer. When I  
13 received my training to fly as an EMS pilot, I received the basic  
14 training like most other pilots receive from the operator, and  
15 then I started flying the line. Now the regulations, Part 135  
16 requires a check ride every 12 months. But oftentimes, in my  
17 case, every time, the training which is required per the FAR Part  
18 135, was not received by me. It was not received because there's  
19 a sentence in the regulations which say that a check ride may be  
20 counted towards that 12 month training. So when I was flying EMS,  
21 it was very common, probably the practice, not the exception, to  
22 receive a check ride every 12 months but really no training. And  
23 so I as flying a VFR helicopter for approximately three years and  
24 that was normal course of business.

25 When I started flying an IFR helicopter, again the

1 initial IFR training was fine. Subsequent training was every six  
2 months, but again a check ride may count for the training. So I  
3 think that is unfortunately more common than most realize. I  
4 think that training is in my mind what we see at Eurocopter, the  
5 largest causal factor in the accidents we have today. It's not  
6 the inability of the aircraft to fly in the environment. We have  
7 developed, produced, marketed, delivered, very capable aircraft.  
8 The capability of the aircraft in most cases out stripes the  
9 pilot's capability to operate it safely because people, operators,  
10 oftentimes, because the regulations allow it, choose I believe for  
11 economic reasons, not to take advantage of all the training which  
12 may be available.

13           So I was the co-chair on the RTCA 212 Committee for  
14 HTAWS which Mr. Bonham was speaking about, and while I'm certainly  
15 an advocate of technology and I have used the different TAWS  
16 boxes, I don't think that's the silver bullet. Another box in my  
17 mind is not the silver bullet to solve these problems. It is  
18 training. Train the people to use the products as they were  
19 intended to be used, hold them accountable to use the product  
20 correctly, free the regulations up to allow for those operations,  
21 and I think we'll be far, far down the path in the right  
22 direction.

23           MR. PRICE: Okay. And real briefly then, how frequently  
24 would you suggest training should be accomplished?

25           MR. WEBB: Well, I think that the level of training may

1 need to be graduated just as I believe weather minimums may need  
2 to be graduated based upon the aircraft you're flying and the  
3 environment you fly in. If you're flying a basic VFR helicopter,  
4 with weather minimums which may be conservative or in my mind  
5 realistic, perhaps training once a year is suitable although I  
6 personally believe that twice a year should be requisite, and if  
7 you're going to fly a very technically advanced aircraft like most  
8 of our IFR helicopters truly are today, I think, you know,  
9 quarterly would be very wise.

10           You know, I think there is a huge misunderstanding in  
11 the aviation community outside of helicopters, respective of the  
12 complexity of the machines we fly today, and if you would get in  
13 the cockpit of an EC135, 145, 155, 225, you would find them more  
14 similar to a very advanced corporate jet than any helicopter that  
15 people's, you know, recollection would lead them to believe.

16           So even as short as 20 years ago, when we really began  
17 this process of EMS, the aircraft were fairly uniform. The  
18 technology was fairly uniform, and when I say that, you had a VOR,  
19 you had a NDB, but those all work the same. Today we have, our  
20 aircraft are FADEC, Full Authority Digital Engine Controls.  
21 They're glass cockpits, fiber optic gyros, digital autopilots.  
22 The functions and the systems are infinitely more complex than  
23 they once were but the training requirements haven't changed and,  
24 in fact, you know, we must, we must require and take training.

25           MR. PRICE: Okay. Thank you very much. Moving along in

1 the training venue, I'd like to direct my questions to Ms. Terry  
2 Palmer. Could you expound on your qualification and experience  
3 and in addition to that, since you're the simulator guru person,  
4 could you expound a little bit on the simulators past, present and  
5 future.

6 MS. PALMER: Okay. That's a lot to talk about. Okay.  
7 I believe in training and just like Bruce Webb just mentioned,  
8 training is key, and my background is training. I owned a 141  
9 flight school. Then I went to work in the training department at  
10 an EMS operation before I came Flight Safety eight years ago, and  
11 people might ask if I talk about training because I work for  
12 Flight Safety, and that's not true. I work for Flight Safety  
13 because I believe in training, and training is the key.

14 And just like it's been for other parts of aviation,  
15 whether it be 121 operations or corporate jets, training has  
16 always been the key, and simulation has been a major part of that.  
17 And simulation has come a long way. Right now, if you were  
18 training to be a corporate jet pilot, in a 121 operation, you're  
19 going to go through training and go through a simulator, and you  
20 are not actually getting in that aircraft until you have  
21 passengers in the back because you're doing 100 percent of your  
22 training in a simulator, and it comes out to be that you know what  
23 you're doing. And that's so important, and that's why it's so  
24 wonderful to see that simulation is taking such a major role right  
25 now in this industry.

1           Where are simulators going? Where did they come from?  
2 Flight Safety's been in the simulator business for over 50 years,  
3 and it is a business where you have to take training to a standard  
4 in that simulator in order to get people that are qualified to get  
5 into that aircraft and be able to fly it safely.

6           And in helicopters, a lot of people don't realize this,  
7 but there's been helicopter simulators out there for more than 30  
8 years. And we have been training in Sikorski and Bell simulators,  
9 twin engine simulators for more than 30 years. And it's not just  
10 a matter of learning systems because what the pilots have to deal  
11 with and what Mr. Webb was talking about, there are perishable  
12 skills especially if you're flying in a VFR operation. You're  
13 dealing with perishable skills that need to be reinforced, and the  
14 best way that you can do that is to do scenario-based training in  
15 a simulation environment so that you can practice the things that  
16 you're not going to do on an everyday basis. And to do simple  
17 training once a year for a VFR operation is wonderful if you're  
18 never going to run into any issue beyond basic VFR operation. But  
19 when you're talking about going into inadvertent IMC conditions,  
20 when you're talking about coming into any kind of abnormal or  
21 emergency situation, what are you going to revert back to? And  
22 simulation training has been proven in all different types of  
23 aviation as the key to keeping those perishable skills up to par.

24           Simulation for now, what do we have available now?  
25 Well, we've had Sikorski simulators for a long time. We've had

1 Bell twin engine simulators for a long time. Bell Helicopter has  
2 flight training devices at level 6. Eurocopter now has a  
3 simulator or flight training device at level 6. These devices are  
4 starting to show up in various different companies. These devices  
5 are things that can be used not just for aircraft specific  
6 training.

7           Okay. Learning systems, learning the emergency  
8 procedures and systems, that's very important. But, we have to  
9 look at the human factor side of it, and we have to look at the  
10 other perishable skills such as instrument flight. And if we look  
11 at those things, it doesn't even have to be the type of simulator  
12 that matches the type of aircraft that you're flying. You can  
13 practice these skills in any type of simulator.

14           And, you could ask why can't you do it in an aircraft?  
15 Why shouldn't you do it in an aircraft? Why should you do it in a  
16 simulator, in the simulators that we have now? Because if you do  
17 it in an aircraft, there are things that you cannot possibly  
18 simulate. There are conditions that you cannot possibly simulate.  
19 You would put the aircraft at risk. You take the aircraft out of  
20 service to do things that you could very easily do in a sim, and  
21 it's very interesting because you can use a simulator, anytime,  
22 day or night, in any kind of weather. You can't say that about  
23 aircraft.

24           We recently had a customer come through and get into a  
25 simulator and he was practicing engine fires, and the instructor

1 gave him an engine fire and do you know what he did? He reached  
2 up and touched the fire handle. He didn't pull the fire handle.  
3 He touched the fire handle because all of his training had been  
4 done in the aircraft, and you certainly don't want to pull the  
5 fire handle when you're flying in the aircraft. So when  
6 practicing, that's what had done. So in the simulator, when he  
7 got the engine fire, what did he do? He touched the fire handle.  
8 Now I'm not going to say in a real fire condition that's what he  
9 would do, but it's something to think about.

10 In a simulator, you can practice the entire event,  
11 whether it be an emergency, whether it be a human factor issue,  
12 you can practice anything. And you can also put non-flying crew  
13 in the simulator with you. We do AMRAM training using the  
14 simulator. We have the pilot. We have the medical crew. We give  
15 them scenarios. We give them roles to play where they can  
16 actually practice doing a complete flight. You can do a complete  
17 flight in a simulator. We do inadvertent IMC training,  
18 inadvertent IMC, where the pilot is not necessarily in the  
19 aircraft that he flies every day, but he's in a simulator, he has  
20 a scenario that he flies and then little things pop up. Maybe  
21 it's going to be an emergency in the aircraft but something that  
22 would be very common that could be in any aircraft or maybe it's  
23 going to be weather, and you never know when.

24 And, we do this with complete briefings, and we do this  
25 with simulation and then debriefing. We also have cameras set up

1 so people can look back and see what it is that they did in the  
2 simulator. They can learn from that. They can learn the human  
3 factor side from that. And it's not just a matter of training  
4 crews, pilot crews, flight crews. You can do that in a simulator  
5 but you can also teach single pilot CRM, single pilot, how to  
6 manage all of the resources around you and to learn from something  
7 by watching yourself. And we also request that anybody that's  
8 coming in for training, tell us what it is you want to train.  
9 What is it that you feel that you need in addition to the  
10 standard? What is it you want to work on? What is it that you  
11 haven't done in a long time? Maybe you haven't been flying at  
12 night. Maybe you haven't done it. You haven't been in instrument  
13 conditions. Fine. Let's spend a little bit more time doing that.

14           Those are the kinds of things that we like to cover, and  
15 with the new training programs, with the way they're set up, it's  
16 not a cookie cutter set up for training. We train to the training  
17 program that the company has. If it's a 135 operation, there's a  
18 training program. Train to the training program, but do the  
19 scenarios, and the scenarios should be based on the type of  
20 operation that they're flying. In a simulator, if you're flying  
21 in the mountains, we do scenarios in the mountains. If you're  
22 flying offshore, we do scenarios offshore. Train to the type of  
23 flying that you're doing. And that's where the simulators are  
24 now.

25           Right now we have Sikorski. We have Bell simulators.

1 We have Eurocopter Flight training devices that we're coming out  
2 with. There were not a lot of single engine flight training  
3 devices which is one of the reasons that people didn't use a lot  
4 of simulation in helicopters. There weren't a lot of them out  
5 there. There are now. There's 206. There's 407. There's Astar  
6 (ph.), and the new simulators that are coming out, the ones that  
7 will be certified this year at FlightSafety are going to be level  
8 7 devices. Level 7 meaning that you can get the maximum amount of  
9 training credit from a flight training device and, of course, it's  
10 based on the POI and it's based on what the FAA certifies but you  
11 can get the maximum amount of training credit. And then if we  
12 also look at all of the new technology, like Mr. Webb was  
13 mentioning, like we heard yesterday with the TAWS, these are  
14 things.

15           One of the things that came up yesterday that I noticed  
16 was when asked, did anybody have any accident with TAWS on board  
17 the aircraft, and what was the answer? Not with an operable unit.  
18 What about units that people have shut off because they didn't  
19 know how to use them? And these are the kinds of things that need  
20 to be trained, and they can be trained in a simulator.

21           And I think technology is important, and technology can  
22 be simulated, so that people can learn how to use it to a comfort  
23 level that when they're faced with an emergency or faced with an  
24 abnormal situation, they can revert back to the way they were  
25 trained and that's critical.

1           MR. PRICE: Okay. Thank you very much. I now would  
2 like to move, clean up just a few questions. I have a question  
3 for Mr. Weink and Mr. Bonham, either one of you or both of you  
4 could take this. The FAA recently released a new operations  
5 specifications A021. Could you comment? Have you implemented it  
6 or going to or what's the status?

7           MR. BONHAM: Yes, sir. We are in the process of  
8 implementing it at this time.

9           MR. PRICE: Okay. Thank you. Mr. Weink.

10          MR. WEINK: The operator, Omni Flight, that we're  
11 working with, Clark Kirshner (ph.), is in the process of going  
12 through, evaluating it all. We're in the process of totally  
13 rewriting our whole ops manual and ops side of that house. So  
14 it's coming down the pike.

15          MR. PRICE: Okay. Is there any specific implementation  
16 date or is it just as approved?

17          MR. WEINK: Ours will be as approved. It's into the FAA  
18 off the FSDO in Dallas down.

19          MR. PRICE: Okay. Well, thank you very much. Mr.  
20 Guzzetti might have a couple of questions.

21          MR. GUZZETTI: Certainly. Thank you, Ron, or Mr. Price.  
22 First of all, I want to thank all seven of these ladies and  
23 gentlemen. They raised their hand quickly when we reached out to  
24 get a good robust witness panel on flight ops and training.

25           I also have just some clean up questions, and then I'd

1 like to probe the role of the flight nurse and flight paramedic  
2 which are represented on this panel.

3 In terms of the pilot issues though, Mr. Weink, you  
4 indicated that Omni Flight conducts your operations. Can you  
5 explain a little bit about how that works? Does Mayo contract out  
6 to Omni Flight and does Omni hold the 135 certificate or does  
7 Mayo? Can you explain that relationship?

8 MR. WEINK: Yes. Omni Flight Helicopters out of Dallas,  
9 Texas, holds the 135 certificate for the air operations portion of  
10 it. It's a little different all the way along. The pilots, the  
11 mechanics, the ballpark of the aircraft stuff are all leased to  
12 Mayo. There is contractually differences, aircraft to aircraft.  
13 Some of them they own. Some of them they lease from that side but  
14 Omni is the 135 provider.

15 MR. GUZZETTI: Okay. And how many pilots does Mayo  
16 employ via Omni?

17 MR. WEINK: We have 13 pilots and 7 mechanics.

18 MR. GUZZETTI: Okay. And how many aircraft?

19 MR. WEINK: We have a total of four. The fifth one is  
20 en route up to Rochester as we speak.

21 MR. GUZZETTI: And what type of aircraft?

22 MR. WEINK: They're all Eurocopters, BK117 B2s, C1s and  
23 C2s.

24 MR. GUZZETTI: Okay. And you indicated that, you know,  
25 you're an all IFR operation, you've got all the bells and whistles

1 in terms of the night vision devices, the TAWS, and I think you're  
2 considering image recorders or a -- or some sort of flight  
3 recording device. Is that correct?

4 MR. WEINK: Yes. The last DC145 that's coming in will  
5 have a cockpit video recorder as well as a voice so that we can go  
6 back and review any portion of that. I don't know the total  
7 details as to its total capabilities, but it is in this aircraft.

8 MR. GUZZETTI: Okay. And I know we got a little bit  
9 into this in day one of the hearing, but I mean that's a pretty  
10 impressive machine that you operate and a pretty robust operation.  
11 Where does the funding come for that? How are you able to do  
12 that? You're a hospital-based system. Is that correct?

13 MR. WEINK: Yes. I, as the aviation site manager,  
14 through Omni, aren't privileged to a lot of the financial side of  
15 the house, from that side of it, but Mayo itself has two things  
16 that they really hold high on it. Number one is patient care.  
17 Second is safety. Anytime we as an Omni or from that side of  
18 things up there, have a safety issue, we can get it addressed. If  
19 it's there, if it's something we can work with, funding is looked  
20 for.

21 MR. GUZZETTI: Okay.

22 MR. WEINK: We don't get it tomorrow. There's times it  
23 takes a month. There's time it takes a year. Sometimes it takes  
24 a couple of years but we come through, and with that, like I say,  
25 with patient care, they hold that high but safety is right up

1 there with it.

2 MR. GUZZETTI: Does Omni serve -- are they just  
3 dedicated to Mayo or do they also lease or operate their own EMS  
4 program or do they do it for other hospitals?

5 MR. WEINK: Omni itself has 70 plus contracts throughout  
6 the United States in 19 states and a little over 100 aircraft.

7 MR. GUZZETTI: Okay. And does Omni -- are you aware if  
8 Omni has a FOQA program, a Flight Operations Quality Assurance  
9 Program?

10 MR. WEINK: It's all being implemented right on down to  
11 the safety management system that's coming in place. So it's all  
12 there. It's coming.

13 MR. GUZZETTI: Okay. Mr. Bonham, I'd now like to ask --  
14 well, no. One last question for Mr. Weink, and then I'll move on.  
15 How are your crew members paid? Are they paid per flight or is it  
16 a salary situation? Is there an incentive to get paid more money  
17 if you go on more flights? How does that work out?

18 MR. WEINK: The crews themselves, pilot and/or medical  
19 crew, are dedicated crews. Pilots themselves, there is no  
20 incentive-based pay for anything. The paramedics and critical  
21 care nurses are all staffed medical crew. They are with us for  
22 the 12 hours that we're on duty, and they don't have supplemental  
23 duties that they have to go down and work in the ER if they're not  
24 flying or that portion of it. So they're all dedicated flight  
25 crews.

1           MR. GUZZETTI: Okay. Thank you very much. Mr. Bonham,  
2 now, of course, you represent an EMS VFR operator, and it's my  
3 understanding that in the U.S. as far as EMS helicopters  
4 operations, the VFR operators and ships outnumber the all IFR  
5 operations. Is that your understanding?

6           MR. BONHAM: That's my understanding.

7           MR. GUZZETTI: With that in mind, do you believe that  
8 these VFR HEMS operators can operate just as safely as an all IFR  
9 operator? And if you believe that, why do you believe that?

10          MR. BONHAM: You know, as I stated previously, I do. I  
11 think that it could not work for us if it was strictly IFR. And,  
12 you know, the additional -- I mean information that I have just  
13 discussing with other operators and totally anecdotal information,  
14 is that even of the IFR operators, there's probably less than 10  
15 percent of those flights that are actually flown IFR. I even had  
16 a few friends at a few bases around the country that speculate  
17 that less than 1 percent of their flights are IFR. So all VFR,  
18 and again, the infrastructure, the issues with certification, the  
19 icing, the scene work, approximately 50 percent of our flights are  
20 to the rural community, to scenes. There's just no way for us to  
21 be able to get to those locations IFR.

22          MR. GUZZETTI: Okay. And many of our accidents that  
23 have occurred, I don't know, I wouldn't say many, but several have  
24 occurred due to the inadvertent flight of a VFR pilot into or a  
25 VFR ship into IMC. How do you combat that within your

1 organization or can you opine about that in terms of all VFR  
2 operations to prevent those types of accidents?

3 MR. BONHAM: Within Air Evac, we have, of course, the op  
4 specs, AL21, and what we require also at each base, that that  
5 base, depending on their location, geographical location, that  
6 they also implement standards, ceiling visibility requirements  
7 with in Class G airspace, above and beyond the AL21  
8 recommendations. I think the changes to AL21 are good, but even  
9 ours that we use, are currently that or higher already.

10 MR. GUZZETTI: Okay. And you indicated -- well, to ask  
11 the same questions that I asked of Mr. Weink, I guess I was very  
12 impressed with the number of helicopters or you say you have 84  
13 bases in 17 states. Is that correct?

14 MR. BONHAM: Fourteen states.

15 MR. GUZZETTI: Fourteen.

16 MR. BONHAM: Eight-four bases, yes, sir.

17 MR. GUZZETTI: And is there usually one helicopter per  
18 base or you're talking 84 helicopters?

19 MR. BONHAM: That's correct.

20 MR. GUZZETTI: Okay. What business model is Air Evac  
21 again? Is it a subscription service?

22 MR. BONHAM: It is -- it would be. Well, we offer  
23 subscription.

24 MR. GUZZETTI: Okay. And what type of ships do you fly?

25 MR. BONHAM: All of ours are Bell 206, L1s, L3s, L4s.

1 MR. GUZZETTI: Okay.

2 MR. BONHAM: And there's four 407s within the company.

3 MR. GUZZETTI: Okay. So the Bell 206s, of course,  
4 stalwart of the helicopter industry. It's a single engine  
5 helicopter.

6 MR. BONHAM: Yes, sir.

7 MR. GUZZETTI: You indicated that you have a TAWS system  
8 that doesn't meet the TSO. I was very -- when you first told me  
9 that a few days ago, I was very interested in that because this is  
10 a -- it's a very common -- can you tell us what type of TAWS  
11 equipment this is?

12 MR. BONHAM: Well, this is a Garmin, and again, it's --  
13 when a FAA notice is issued, our principals, I work very, very  
14 closely with them. They're in our office, all three of them, at  
15 least monthly. They're out in the field inspecting our bases  
16 every four to six weeks. I've even spoken to them this week and  
17 they're currently in the field inspecting bases, and they cover  
18 the entire 14 states. But when a notice is issued that way, we  
19 take it very, very seriously and those are recommendations, and  
20 normally we see that as an enhancement to safety. And again, it's  
21 almost that we will do what we have to do but when someone I guess  
22 jumps out into the forefront and has the initiative to meet all of  
23 those recommendations, all of the 13 recommendations, and there  
24 really wasn't a standard put out at the time that I was aware of.  
25 So, you know, here we are. So now if it's mandatory

1 that we comply with the TSO of the HTAWS, then -- well, we've got  
2 84 plus 396s that are not going to be of any use anymore and all  
3 of ours are updated. We actually had the University of North  
4 Dakota that came to our operation and utilized our aircraft to do  
5 studies to compare the 396, the Garmin, with some of the other  
6 GPSs or that have the TAWS and, you know, it has parameters that  
7 can also be set. It has an audible. It has the warning. You can  
8 tune it down to lower intensity meaning you can set it at 100  
9 feet. You can also use the cautionary as a 3 to 500. You can set  
10 it at 60 to notify you of 60, within 60 seconds, 90, 120 seconds  
11 of approaching terrain. So it's worked for us.

12 And especially that on top of the NVGs. And again,  
13 technology, as someone stated previously, it's not the silver  
14 bullet. So I would just -- I hope that that's reviewed.

15 MR. GUZZETTI: Okay. The Garmin 396, is that a handheld  
16 unit or a panel mounted? And do you know what the differences are  
17 between that and say the Honeywell system that was described here?

18 MR. BONHAM: Well, the Garmin itself is considered carry  
19 on equipment. Ours is hard mounted in the aircraft. There's a  
20 337 that is specifically to the hard mount, and the aircraft is in  
21 or the Garmin is in the hard mount, and it's also coupled into our  
22 -- most of our aircraft have also the 42430. So it's not the  
23 single GPS. Our aircraft have two GPSs.

24 MR. GUZZETTI: Okay.

25 MR. BONHAM: So it's coupled with those also.

1 MR. GUZZETTI: How many pilots does Air Evac employ?

2 MR. BONHAM: Approximately 360.

3 MR. GUZZETTI: 360. And can you describe the flight  
4 risk assessment that you perform typically for a typical EMS  
5 mission?

6 MR. BONHAM: Yes, sir. The flight risk assessment was  
7 actually implemented right after 8,301 which came out in August of  
8 2005, and I would say within a few months, we had our risk  
9 assessment program in place.

10 Basically how it works is, when the pilot receives a  
11 transfer request, the risk assessment, of course, weather is  
12 checked and the normal duties, requirements, but the risk  
13 assessment has different -- different items have different values.  
14 When the pilot works the risk assessment, a value of less than 35,  
15 the pilot can accept the transport without further consultation.  
16 If the risk assessment falls between 35 or if it's higher than 35,  
17 our datalink department which is the -- they're flight data  
18 analysts, FDAs, which also have operational control within the  
19 company, a consultation is performed with them. If the risk  
20 assessment is 60 to 99, then I get involved in it. The datalink,  
21 a FDA will call me 24 hours a day, either me or we also have 5  
22 regional directors of flight operations which are also pilots, but  
23 they do not fly. Their primary responsibility is management in  
24 the field. Either an RDFO or myself will be contacted and the FDA  
25 will discuss the risk of the flight with me or the RDFO, and at

1 that point, we will determine if the flight is accepted or not.  
2 And if it reaches a score of 100, the flight is automatically  
3 declined.

4 MR. GUZZETTI: Okay. And just a couple of other  
5 questions, and then I'll move on from you to another witness.

6 Again, the same questions I asked of Mr. Weink. Your  
7 pilots, how are they paid? Your flight crews, how are they paid?  
8 Are they paid per flight or are there incentives to fly on extra  
9 flights or is it a strict salary or how's that work?

10 MR. BONHAM: No, sir. There's absolutely no incentive  
11 for any flight. There -- and it was referenced yesterday as I was  
12 sitting in the hearing. Our pilots, medical crew members, they  
13 are not aware of -- if it's a member, someone that has a  
14 membership with the organization, that absolutely does not come  
15 into play. There's no one, there's not a member, there's no one  
16 that can call a base for direct dispatch. Now not to say that  
17 doesn't happen, but if a person does call the base, the call is  
18 then forwarded to our communications center, and at that point,  
19 it's treated exactly like any other flight.

20 MR. GUZZETTI: Okay. Thank you very much. Mr. Webb,  
21 you indicated something about compliance with FITS, and can you  
22 explain what that acronym is, FITS?

23 MR. WEBB: FITS is the FAA and Industry Training  
24 Standards. It's a program which essentially moves us from task  
25 oriented training to scenario-based training, and as Mrs. Palmer

1 pointed out, that is where certainly the manufacturers and many of  
2 the training operations are moving towards because it does give  
3 you a much -- a well rounded training experience. So, you know,  
4 that's Eurocopter's and many other industry participants.

5 MR. GUZZETTI: Okay. Do you train pilots that are from  
6 all VFR operations?

7 MR. WEBB: Yeah, we train pilots who are both VFR only  
8 programs, and also programs which are VFR and IFR programs.  
9 Strictly IFR programs are extremely rare.

10 MR. GUZZETTI: Okay. And you indicated in your  
11 testimony "training quarterly would be very wise." Can you  
12 expound upon that? Would you say -- I mean if you had your  
13 druthers and that pilots to be at their optimal in a reasonable  
14 sense, would come in once every three months and receive a day's  
15 worth of training, or what would that look like to you?

16 MR. WEBB: Well, I think that would have to be  
17 graduated, again based upon the aircraft that one is flying and  
18 the environment they're flying. For example, if you're flying a  
19 VFR helicopter, a single-engine VFR helicopter, and your op specs  
20 are such that you are, let's imagine your op specs say that at  
21 night you have to have a 3,000 foot ceiling and 5 miles of  
22 visibility, and during the day, you know, some value lower than  
23 that, but certainly specifications which would, if followed, would  
24 preclude your ability to enter IMC conditions and you're operating  
25 in an environment where let's say it's terrestrial environment, no

1 marine environment. Perhaps you don't need quarterly training.  
2 VICE, a program that is flying single pilot IFR in a very  
3 technically advanced aircraft, possibly using NVGs or not, but we,  
4 you know, again we've jumped ahead in technology at a very rapid  
5 pace and unfortunately the training has not kept pace with that.  
6 So a single pilot IFR operator flying a very technically advanced  
7 aircraft, yes, I believe quarterly training, and I'm not speaking  
8 about training necessarily at American Eurocopter.

9 MR. GUZZETTI: Right.

10 MR. WEBB: I'm speaking about training wherever they can  
11 obtain quality training, and whether that's, you know, in for a  
12 day of ground school, perhaps they have a day of NVG ground  
13 school. They got in the sim and they fly the sim NVG for a couple  
14 of hours. Then the next quarter, perhaps it is contact  
15 procedures. They come in, they do a scenario-based training  
16 program like in our simulator where you would go out to an  
17 accident scene, you can pick up a patient, when the patient's  
18 loaded on board the aircraft, the mass of the machine goes up, you  
19 depart the scene, you have an engine failure, a tail rudder  
20 failure, a hydraulic failure, any number of failures, and how you  
21 respond to those failures. So perhaps the second quarter of  
22 training is contact training. The third quarter perhaps is  
23 strictly IFR training, and maybe the fourth quarter is back to  
24 more contact training or other specific training, you know, how to  
25 use your TAWS box, how to properly use your FMS. It's

1 interesting. There's just not a lot of training conducted for  
2 these advanced systems today.

3 MR. GUZZETTI: Okay. And that brings me to Ms. Palmer.  
4 Ms. Palmer, you say there are level 6 or level 7 simulators now  
5 that are going to be coming out. They exist now or coming out  
6 shortly for the Bell 206.

7 MS. PALMER: Correct. There's level 6 FTDs, flight  
8 training devices out there right now and there's level 7 coming  
9 out within the next three months.

10 MR. GUZZETTI: And can you just quickly for the  
11 layperson describe what these levels are, level 6, level 7?

12 MS. PALMER: The levels are -- it's based on the FAA  
13 Part 60, and basically it determines how much training credit you  
14 can get from using a particular device.

15 MR. GUZZETTI: So is a level 7, is that equal to getting  
16 trained in the actual helicopter?

17 MS. PALMER: It's as close as you're going to get in a  
18 flight training device without using a full motion level D  
19 simulator. A full motion level D simulator, you can do 100  
20 percent.

21 MR. GUZZETTI: I see.

22 MS. PALMER: But in a flight training device, and the  
23 whole purpose of having flight training devices is to keep the  
24 cost down so that people can use them on a regular basis. So a  
25 level 6, you can get a certain amount of training and then a level

1 7, if -- now we don't have the level 7 certification yet. We're  
2 still waiting on the FAA to come through with it. The level 7  
3 flight training devices are supposed to give you the training  
4 credit, equivalent to all of your Part 135 training and then part  
5 of the check ride, not 100 percent of the check ride. And that's  
6 how we understand it to be right now.

7 MR. GUZZETTI: Okay. And can you tell me what the cost  
8 is, if you can, of a Bell 206 level 6, you know, what it would  
9 cost an operator to come in and train per hour on that or how does  
10 that work?

11 MS. PALMER: I can give you an idea of what we're doing.  
12 I don't know what the other companies are doing for their flight  
13 training devices. We are going to have any kind of training  
14 program that somebody wants. If you want to dry lease it, come in  
15 with your own instructors and work with our training devices, say  
16 our 206 or Astar, we will lease it out for less than the operating  
17 cost of the aircraft by the hour.

18 MR. GUZZETTI: Okay. Why don't you think -- I don't  
19 know. I get the impression that helicopter simulators aren't  
20 being used a lot. It's as if that community -- do you think  
21 there's a myth that they just don't exist or they're not prolific  
22 enough for people to operate?

23 MS. PALMER: There wasn't a lot of promotion of that  
24 being available, but there wasn't a lot of flight training devices  
25 or simulators for all different models, and a lot of people felt

1 that the only way to train in a simulator was to do the exact same  
2 make and model that you're flying. Now, yes, you're going to get  
3 the maximum training credit by doing the exact same make and model  
4 that you're flying, but there's so many of the perishable skills  
5 and the human factor skills that you can do from using any device.

6 MR. GUZZETTI: Okay. And going back to Mr. Webb, can  
7 you -- how are type ratings granted in other countries as opposed  
8 to this country for helicopters?

9 MR. WEBB: Interesting question. Certainly in this  
10 country, you only must be type rated if you're operating an  
11 aircraft above 12,500 pounds.

12 MR. GUZZETTI: Which most helicopters aren't, right?

13 MR. WEBB: In this country, certainly in the EMS  
14 industry, I think it's safe to say, none are. So -- but a type  
15 rating in other countries, people become rated in a specific make  
16 and model type and they must receive training to be type rated in  
17 that model of aircraft and then to maintain currency in that  
18 aircraft, to operate that aircraft, they must take recurrent  
19 training every year or they lose their ability to flying that  
20 machine, and it doesn't matter the size of the machine. So  
21 someone who's typed in AS350 must take training every 12 months to  
22 maintain their currency to fly that aircraft. Now that's in other  
23 countries.

24 In the United States, someone can learn to fly a R22. I  
25 think it's gross weight is I think 13,070.

1 MR. GUZZETTI: That's a piston powered --

2 MR. WEBB: Piston powered small aircraft, and they could  
3 come to any manufacturer but they could come pick up an EC155 from  
4 us which is single pilot IFR, a very, very complex aircraft, and  
5 legally fly it away.

6 MR. GUZZETTI: Very interesting. Thank you. There are  
7 three other witnesses on this panel that haven't spoken, and I'd  
8 like to give them an opportunity now.

9 Mr. Buehler, I know you're with the FAA. You've spent a  
10 good chunk of the last few years trying to improve HEMS safety.  
11 Can you just give us a quick background of where you work now and  
12 what your background is with the FAA?

13 MR. BUEHLER: Yes, sir. I'd be glad to. Background is,  
14 generally I'm military trained on helicopters, essentially been  
15 flying them for over 35 years. In 1991, I joined the FAA in the  
16 Office of Rulemaking, spent a few years with the Office of  
17 Rulemaking, later joined the Flight Standards Service. In Flight  
18 Standards, I've been working helicopter issues and when the  
19 Director of Flight Standards established the 135 Air Carrier  
20 Operations Branch in December of '05, I moved into that branch.  
21 We've been working issues in the HEMS community since that time.

22 MR. GUZZETTI: Okay. And a specific question I wanted  
23 to ask you, Mr. Bonham brought it up, he brought up an FAA notice  
24 number -- I can't find it right now, the 13 -- Mr. Bonham, what  
25 was the --

1 MR. BONHAM: 293, 8,293.

2 MR. GUZZETTI: 8,293, and that is an exhibit here. Was  
3 that notice, Mr. Buehler, incorporated? Because I noticed here in  
4 the exhibit, it expired last year.

5 MR. BUEHLER: Yes, sir.

6 MR. GUZZETTI: Was it incorporated into another document  
7 or something or superseded?

8 MR. BUEHLER: We carried -- there was a lot -- just as  
9 Mr. Bonham referred to, there was a lot of good best practices  
10 kind of thing there. We carried that forward in a document that  
11 doesn't expire in a safety alert for operators. I believe that's  
12 06001.

13 MR. GUZZETTI: Okay. Thank you. And I note tomorrow we  
14 will have Mr. Dennis Pratte and other FAA folks, Brad Pearson, to  
15 go into more detail regarding this, but I know that you've had  
16 involvement in the dissemination or the writing of some of these  
17 things.

18 MR. BUEHLER: Yes.

19 MR. GUZZETTI: Can you just briefly describe your  
20 experience over the last year or two with these notices and how  
21 you get input from them and what prompts them?

22 MR. BUEHLER: Yes, sir. Just before the branch was  
23 formed, as I mentioned in December '05, the FAA Administrator  
24 noted the rising number of aircraft accidents in the HEMS  
25 community. So he said let's take a look at this. We put together

1 a task force across the states of helicopter specialty trained  
2 inspectors, and took a look at the accidents from 1998 to '04. It  
3 was a total of about 85 accidents.

4 Our analysis indicated that the main causes were night,  
5 continued flight into terrain, inadvertent IMC. They were our  
6 main challenges. So we looked at what tool do we have to  
7 expedite, essentially change behavior out there in those three  
8 areas. We used our FAA workforce to move forward on putting out  
9 good ideas on the night flight. We included risk assessment early  
10 on. Some consideration of inadvertent flight into IMC. Along  
11 with that, we made a first change to op specs A021. They took a  
12 look particularly at night flight and that was the first time that  
13 the FAA distinguished between a dark night and a light night  
14 there. That originated from some of the NTSB reports that  
15 clarified dark night, and anybody here that flies, knows that  
16 there's a difference.

17 So we attacked those three areas and have continued to  
18 move through them. We continue to facilitate IFR. We see that  
19 best see fit counter measure that's out there. Continue to  
20 address night operations. So we're working on a number of facets.  
21 So we've done notices to talk to our inspectors. We've done ACs  
22 to provide general guidance to the community.

23 MR. GUZZETTI: Okay. Thank you, and I know we'll go  
24 into some of those specifics tomorrow with Mr. Pratte. There's a  
25 whole laundry list of items that the FAA has done, and we'll get

1 into that a bit later. But from your standpoint on this panel,  
2 some of the specific things I guess we'd like you to comment on, I  
3 know that you played a role or sat on the RTCA Committee for the  
4 HTAWS.

5 MR. BUEHLER: Yes.

6 MR. GUZZETTI: Is that correct?

7 MR. BUEHLER: Yes, that's correct.

8 MR. GUZZETTI: You've heard -- there are a lot of  
9 operators, not just Mr. Bonham's operation, but others that  
10 utilize the Garmin 396. From your standpoint, what's the  
11 difference between that and the HTAWS specifications and the TSO  
12 and why would you prefer a piece of equipment that meets the TSO  
13 over the GPS devices in terms of enhancing terrain awareness?

14 MR. BUEHLER: Well, to meet the TSO, it passes a test by  
15 our aircraft certification service. So anything being installed  
16 in the aircraft, if you will, should meet the certification  
17 requirements.

18 Let me mention, you brought up the RTCA effort. Garmin  
19 was represented in that RTCA effort. So they I would say  
20 acknowledged certainly the minimum operational performance  
21 standards that the RTCA put out and in line, the TSO.

22 MR. GUZZETTI: And does the Garmin 396, to your  
23 knowledge, have an obstacle database that gets loaded up into it  
24 or no? Are you familiar with that?

25 MR. BUEHLER: I haven't used that instrument. So I pass

1 on that.

2 MR. GUZZETTI: Fair enough. I'd like to move on, just  
3 very briefly, with the other two-thirds of the folks that operate  
4 EMS missions, and that's the very important role of the flight  
5 nurse and the flight paramedic. And I guess I'd like to start out  
6 with a basic question, and you'll have to excuse my ignorance, if  
7 you will, for how basic this question is but I think it would be  
8 good for the public to answer. What is the difference between a  
9 flight nurse and a flight paramedic? And I guess I'd like to ask  
10 the question of both of our panelists here. I'll start with Mr.  
11 High. What is --

12 MR. HIGH: That is --

13 MR. GUZZETTI: Go ahead.

14 MR. HIGH: That's a good question. First of all, thank  
15 you for letting me be here. My name is Kevin High. I'm here on  
16 part of ASTNA, the flight nurse's association. We're membership  
17 of about 1800 people, comprised of flight nurses around the world.

18 The straight answer is a level of training and  
19 education, and typically we find that the majority of HEMS  
20 transports in the United States have really two common -- really  
21 three common denominators. There's a pilot. There's typically a  
22 nurse, and there's a patient on board. And really it's an  
23 education and training certification difference there.

24 MR. GUZZETTI: Okay. What -- I'll ask you the same  
25 question, Mr. Riley, in your mind, what are the basic differences

1 between a flight nurse and a flight paramedic?

2 MR. RILEY: Again, thank you. I'd like to express  
3 gratitude for being here.

4 The difference between the flight paramedic and the  
5 nurse is basically what Mr. High had referenced, is that there is  
6 a difference in the clinical education, but one of the key factors  
7 I think that is important to keep in mind is that the use of the  
8 paramedic in this industry is that we are the only personnel who  
9 provides clinical care that has been trained to work in out-of-  
10 hospital or clinic environment, and I think that's a key aspect.  
11 And that's one of the rationale for the use of the nurse/paramedic  
12 configuration. There are other configurations with physicians and  
13 RTs, but those might be more specialty missions and different type  
14 of mission profiles around the country. But on the average, the  
15 majority of the mission configurations for crews are a nurse and  
16 paramedic. And that's really the difference, is the training, but  
17 our aspect with the out-of-hospital training.

18 MR. GUZZETTI: Out-of-hospital training. In other words  
19 a paramedic is kind of used to operating on scene, like you see  
20 paramedics on television, out on the roadside or something like  
21 that, administering --

22 MR. RILEY: That is correct. Our focus is identifying  
23 hazards. It's a philosophy that's taught through a lot of the  
24 core education, learning about the hazards, developing a  
25 philosophy of always being able and prepared to expect the

1 unexpected. The other aspect from the medical standpoint is  
2 primarily just stabilization and more of a hands-on clinical  
3 stabilize the patient. We have also the technical skills as far  
4 as operations from various equipment around vehicles, and that  
5 goes -- basically we start from the ground and you have rate of  
6 communications, operations, safety around the vehicle, those same  
7 principles apply once you approach and you move to the industry of  
8 aviation.

9 MR. GUZZETTI: Okay. And, Mr. Riley, you're the  
10 President of the International Association of Flight Paramedics?

11 MR. RILEY: That is correct.

12 MR. GUZZETTI: And how many members are in your  
13 organization?

14 MR. RILEY: Our membership currently is a little over  
15 1100, and that is internationally as well.

16 MR. GUZZETTI: Okay. Mr. High, typically do flight  
17 nurses interact with the pilot, just before, during and after the  
18 flight, and what's the nature of that interaction?

19 MR. HIGH: Absolutely. Typically as Mr. Weink  
20 described, on a normal shift, you come in, in the morning or  
21 evening, and it's really a team approach. You have yourself, the  
22 pilot, your other crew member which is typically as Jim said, a  
23 paramedic, and you begin your daily duties, and ideally that  
24 involves sitting down, the pilot doing some type of briefing about  
25 what's going on with the aircraft, maintenance-wise, what's going

1 on with the weather, anything that we can expect today and just  
2 kind of having a few minutes of getting together and knocking out  
3 those daily tasks in kind of a meet and greet.

4 MR. GUZZETTI: Okay. There's a phrase that I've heard  
5 in prepping for this hearing called three to go, one to say no.  
6 Are you familiar with that phrase?

7 MR. HIGH: Yes.

8 MR. GUZZETTI: And what does that mean?

9 MR. HIGH: There's three of you on board, and if anyone  
10 of the members of the three, the pilot, the nurse, the paramedic,  
11 if anyone of those three says, no, I don't feel comfortable with  
12 the weather, the situation, the aircraft, whatever, you're going  
13 to cancel that flight right then and there, no questions asked.  
14 It's non-punitive and return to base.

15 MR. GUZZETTI: And does that happen pretty much --

16 MR. HIGH: Yes.

17 MR. GUZZETTI: -- predominantly from your perspective?

18 MR. HIGH: I think it's the rule rather than the  
19 exception. I hear a lot more -- I started flying in '93. I think  
20 the culture's improved a lot since then, and it does happen. It  
21 does happen.

22 MR. GUZZETTI: Mr. Riley, I'd like to ask you the same  
23 question. Have you heard of that phrase and is it practiced from  
24 your standpoint?

25 MR. RILEY: From my standpoint, from an association

1 standpoint, the phrase is very common throughout the industry, and  
2 the one thing that I'd like to I guess address is that in a recent  
3 survey, in which we had done within our own membership, there is  
4 some concern. This doesn't reference the exhibit which was  
5 presented to you a few weeks ago. This was another survey that we  
6 had done internally, just looking at safety, and approximately 75  
7 percent of the respondents within our membership had felt that  
8 they were not comfortable or did not feel that they were able to  
9 speak out in regards to a safety concern.

10 But the concept of three to go, one to say no, is  
11 present. The question is how comfortable are the crews to be able  
12 to speak up. And in the duration of training, I've been to AMRAM  
13 and CRM, that has helped over the years but there's still room for  
14 growth.

15 MR. GUZZETTI: I understand. Thank you. And that leads  
16 me up to your survey which you did reference. It's Exhibit 9(g),  
17 and we don't need to put it up on the screen, but there were a  
18 couple of things that caught the Tech Panel's attention on that.  
19 One is the survey that you conducted, I believe you indicated that  
20 of the flight paramedics, 30 percent of the respondents reported  
21 that the pilot is not blinded from the nature of the flight  
22 request. In other words, the pilot is aware that they've got an  
23 infant having seizures in the back or something like that. Does  
24 that concern you?

25 MR. RILEY: It raises a great amount of concern.

1 Primarily, number one, is our association core mission and goal  
2 really is patient advocacy, human safety and clinical excellence,  
3 and so we encroach on a lot of those when you're looking at the  
4 percentage of pilots that are aware of the nature of the call.  
5 Conversely, should that same standard be put aside and used for  
6 crew members as well.

7 MR. GUZZETTI: Okay. And then the other part of the  
8 survey that caught our attention is only 7 percent, when you  
9 asked, "Does your program push any of the following aircraft  
10 performance limits? 10 percent said, yes, they pushed the limits  
11 of weather minimums, 20 percent said weight and balance, 15  
12 percent said the range of the aircraft, and only 70 percent,  
13 leaving 30 percent left, only 70 percent report that they do not  
14 push any limits on the aircraft capabilities." Does that also  
15 concern you?

16 MR. RILEY: It has a great amount of concern for us  
17 because it's still 30 percent that is open for error and making  
18 human judgment that we know leads to unfavorable outcomes.

19 MR. GUZZETTI: Would you support required crew resource  
20 management training for flight paramedics and flight nurses?

21 MR. RILEY: Absolutely.

22 MR. GUZZETTI: And, Mr. High, I'd like to ask you the  
23 same question.

24 MR. HIGH: Absolutely. Absolutely.

25 MR. GUZZETTI: Okay. And, one other area, and then I

1 think I'm going to be finished here. The issue of fatigue for  
2 medical crew. I know that they have different -- the FAA has set  
3 requirements for flight hours for pilots but are you aware of any  
4 FAA requirements or any other requirements for duty times for  
5 flight nurses and flight paramedics, Mr. High?

6 MR. HIGH: Some of our members, some of the programs out  
7 there, are CAMTS accredited. There are certain guidelines under  
8 there for crew rest. We actually, we did a survey, too, that was  
9 similar to the flight paramedics and about 56 percent of the  
10 respondents do 24-hour shifts. We found that around 50 to 60 of  
11 them had a crew rest policy. What we'd like is that if you do  
12 shifts, if you do 24-hour shifts, or whatever you do, you need to  
13 have some type of crew rest policy in place. The issue of fatigue  
14 is one that it needs more study. I think a good, impartial  
15 research into this in medical crew members is something that's  
16 needed.

17 MR. GUZZETTI: Okay. And, Mr. Riley, any thoughts on  
18 fatigue?

19 MR. RILEY: No, not really. I mean I agree with Mr.  
20 High, with ASTNA's position. Basically from our survey, it was  
21 similar. It was 70 percent of paramedics actually do 24-hour  
22 shifts.

23 MR. GUZZETTI: Okay. And, Mr. Riley, who do you think  
24 is responsible -- has the responsibility for the safety of the  
25 patient during the EMS flight?

1           MR. RILEY: All of us have a responsibility for the  
2 safety of the patient in different respects. The pilot has a duty  
3 to make sure that all of us are safe, getting us there in a safe  
4 fashion, from Point A to Point B. The medical crew has a duty to  
5 make sure that we're working in the best interest of the patient.  
6 Safety is the utmost, highest priority and that can down several  
7 different roads but the bottom line is, we all take that into our  
8 first address of account.

9           MR. GUZZETTI: And can you give some examples of how a  
10 flight paramedic can help the pilot with the aviation safety  
11 aspects of a flight?

12           MR. RILEY: That really can vary on the type of aircraft  
13 in which you're working in. It depends if you're involved with  
14 patient care. If you're going out on an empty leg or to a  
15 response mode, going to a facility or a scene flight, the  
16 potential for sitting, if it's a front cockpit aircraft, like a  
17 BK, one of the medical crew who would take turns, typically ride  
18 up in the co-pilot's seat, may help with radio communications,  
19 might help with some of the GPS equipment, might even pull out  
20 maps and help provide lat/longs, and look for any type of overall  
21 minimum height requirement that would be required on the maps.

22           So basically we try and facilitate and help in any  
23 fashion we can to offload some of the stress. Sometimes if you're  
24 in areas that are highly populated, urban, where there's a lot of  
25 radio traffic, they -- the pilot might be busy talking to ATC.

1 That would give us an opportunity to communicate with the  
2 communications center which we report to.

3 MR. GUZZETTI: Okay. And, Mr. High, I'd like to ask you  
4 the same question? Any other examples or --

5 MR. HIGH: That covers it. Really you're another pair  
6 of eyes and ears there on that aircraft and I think some of it,  
7 like Jim said, is variable with the type of aircraft that you fly.  
8 My experience as a clinician was in a medium twin in a BK117 or an  
9 EC145, where you had -- where you were able to ride up front and  
10 perhaps perform a few more duties than you would if you were just  
11 in the back all the time, but really you are. You're another pair  
12 of eyes and ears on the aircraft.

13 MR. GUZZETTI: Okay. Thank you, Mr. Chairman. That's  
14 all the questions I have. Mr. Price, did you have any?

15 CHAIRMAN SUMWALT: Excellent. Thank you. We'll take a  
16 -- before getting into the parties, questions from parties, we'll  
17 take a 15 minute break. Let's reconvene at 10:30. Thank you.

18 (Off the record.)

19 (On the record.)

20 CHAIRMAN SUMWALT: We are back in session. We will now  
21 turn to the parties for the questioning of the witness and since  
22 we have a FAA witness, Mr. Harris, with the FAA, would it be your  
23 preference to go in order or would you prefer to go last?

24 MR. HARRIS: We prefer to go last, sir.

25 CHAIRMAN SUMWALT: Great.

1           MR. HARRIS: Thank you.

2           CHAIRMAN SUMWALT: And we will start then with NEMSPA,  
3 Mr. Sizemore.

4                                   PARTY QUESTIONS

5           MR. SIZEMORE: Thank you, Mr. Chairman. Thank you,  
6 Panel. To start out, we have a few questions for Mr. Weink. You  
7 discussed a typical IFR flight for you. Can you tell me about  
8 what percentage of IFR flights you all make?

9           MR. WEINK: It varies from month to month when we go  
10 into it because again we don't have an aircraft that we can fly in  
11 icing conditions. What we're looking for is someplace in the 10  
12 percent range. There are times we exceed that and then there's  
13 times we're down to 2 percent.

14          MR. SIZEMORE: Okay. As was described, you all fly some  
15 pretty high-tech aircraft, that have a lot of bells and whistles  
16 and stuff. If you were constrained by budget, is there one  
17 particular system that you would choose over the others? For  
18 instance, a TAWS versus NVG versus IFR.

19          MR. WEINK: Once you have them, it's hard to go without  
20 them. It's -- I currently -- I mean I'm not checked out on the  
21 145 yet to fly all the bells and whistles as we talked about. IFR  
22 and NVG are huge. I, again coming from the civilian side of the  
23 house, had never flown NVGs until 2006 in October when we  
24 implemented ours. I wonder how we flew so long without them. The  
25 crews that are flying the EC145 with TAWS and the TCAS, that kind

1 of thing, are just amazed TCAS-wise at the aircraft that are out  
2 there that you never see. You're up on radar. We're fortunate  
3 that Rochester, we've got Rochester Approach, that goes out 40  
4 miles for us from that side of things, but then they still don't  
5 catch everything.

6 MR. SIZEMORE: So it's safe to say that there's not any  
7 particular one that you would prefer?

8 MR. WEINK: No.

9 MR. SIZEMORE: Okay. You mentioned that you track  
10 liftoff times. Is that a function of Omni Flight or is that a  
11 function of the hospital?

12 MR. WEINK: The hospital.

13 MR. SIZEMORE: Okay.

14 MR. WEINK: And it's just that the time is not in there  
15 for anything punitive. If we have, you know, issues on the  
16 liftoff time, and it could be anything from the tug or whatever  
17 that we're using to take the aircraft in and out of the hangar.  
18 If it's getting, you know, towards non-reliable, that type of  
19 thing, it's all traced for that. We'll find the funding to get a  
20 new tug.

21 MR. SIZEMORE: Okay. Do you have any operational  
22 responsibilities to Mayo Clinic?

23 MR. WEINK: Operational responsibilities, I'm there  
24 strictly as a managerial. I attend the meetings, organizational  
25 side of things, from that side, but direct operating-wise, no.

1           MR. SIZEMORE: Okay. So you said you're there in a  
2 management role. That's not a management role for Mayo.

3           MR. WEINK: No, no.

4           MR. SIZEMORE: Okay. In regards to the culture of HEMS,  
5 what's your feeling on statements like we save lives and those  
6 type things?

7           MR. WEINK: I guess coming from the pilot side of the  
8 house, it's something -- I guess it's something that we don't  
9 promote. Saving lives is not our deal. It's to be safe. We  
10 don't set our standards on how many lives we saved. It's a matter  
11 of, you know, a whole safety culture, and just how safe we can be.

12          MR. SIZEMORE: Okay. Thank you. In a short answer,  
13 Kevin, your feeling on the same statement?

14          MR. HIGH: I think that the helicopter is an instrument  
15 and to do what we do, you have to be a part of a system and the  
16 end result of that system is to help people, but first and  
17 foremost, you have to do that in a safe manner. There's no metric  
18 that is used on the healthcare side for how many people, how many  
19 lives we saved or anything like that.

20          MR. SIZEMORE: Okay. Thank you. Jim.

21          MR. RILEY: I can agree to a point with the other two  
22 respondents. However, there is just an anecdotal image of  
23 supremacy of the air medical industry that just harbors the ideas  
24 of superiority, you guys are the best. You go out and you try and  
25 -- you take care of things that most people never get to take care

1 of. So to describe that, that feeling, there is an aura out  
2 there. To actually make it tangible and put your finger on it,  
3 it's a very difficult concept.

4 MR. SIZEMORE: Okay. Thank you. Ms. Palmer, you talked  
5 a little bit about training and, Mr. Webb, this may go for you as  
6 well. What's your thought process on realism and training?

7 MS. PALMER: Well, training should be scenario based and  
8 be as real as possible so that when a pilot is in a position where  
9 they need to make a decision, they can revert to the training and  
10 know that they're making the correct decision.

11 MR. SIZEMORE: Mr. Webb, any comment?

12 MR. WEBB: Again, I would agree with Mrs. Palmer.  
13 Scenario-based training is where the industry is moving to. We  
14 must provide training which immolates the real world environment  
15 as much as possible, and training devices, whether they're full  
16 simulators or low-level FTDs, you know, ones, twos, all of these  
17 devices have considerable capabilities for low cost, vice, 10  
18 years ago. I mean it's computer technology that has allowed this.  
19 So when you will see the visual system of the level 6 FTD, I think  
20 most people in this room would be very, very impressed with the  
21 clarity of the image and resolution and the ability to provide  
22 scenario-based training with those systems. So, you know, we've  
23 -- certainly task-based training, you know, has worked marginally  
24 well for a long time, but we now have the capability to do  
25 scenario-based training, and we must all move to that.

1           MR. SIZEMORE: Thank you. Mr. Riley, you mentioned your  
2 survey, and it was brought out that 30 percent of the members or  
3 the respondents said that flight crews in general pushed limits.  
4 Can you quantify that a little bit and elaborate as to who it is  
5 that's actually pushing those limits and why they're pushing those  
6 limits?

7           MR. RILEY: To really elaborate extensively on that, I  
8 find it difficult to comment because that would need actual  
9 further surveys to identify some of those, some of that  
10 information. However, I think anecdotally the 30 percent is a  
11 perception of the paramedics and knowing that pilots are not  
12 guarded, the fact that the medical crews are not guarded either,  
13 can play into some internal pressures as to feeling that we should  
14 take the flight and it doesn't help not having a barrier.

15           MR. SIZEMORE: Any external pressures play a role in  
16 that?

17           MR. RILEY: Based on our survey, I can't really account  
18 for external pressures but from anecdotal information, that comes  
19 through general discussions from the flight paramedics and on  
20 websites and Flight Web, there are discussions that do come about  
21 referencing pressures, internal, external, and just an unfavorable  
22 experience sometimes.

23           MR. SIZEMORE: Okay. Thank you. Mr. Bonham, you talked  
24 a little bit about your risk assessment program and if the levels  
25 reach a certain point, you have to be contacted or one of your

1 representatives. Can you give me an idea of how often that  
2 happens?

3 MR. BONHAM: I would say on the average of maybe two to  
4 three times a week.

5 MR. SIZEMORE: Okay. Is there a QA process that you use  
6 along with that to say why is it getting to this point and also is  
7 there anything that looks at those that don't get to that point  
8 possibly to see if some of those should be at that point?

9 MR. BONHAM: Well, if I understand your question  
10 correctly, there's different parameters that can actually cause us  
11 to have a higher risk assessment number, and one of them is in  
12 particular new pilots. On the average, we train 8 to 12 new  
13 pilots per month. Other things that come into play is the  
14 terrain, night, experience in EMS. So a lot -- some of the higher  
15 numbers are actually expected because some of them relate directly  
16 to the experience of the pilot and the location, the base the  
17 pilot has been assigned to.

18 MR. SIZEMORE: Okay.

19 MR. BONHAM: So those are reviewed.

20 MR. SIZEMORE: Okay. Thank you. That's all, Mr.  
21 Chairman.

22 CHAIRMAN SUMWALT: Thank you. We have seven witnesses  
23 here and I'm sure there are a lot of questions. So what I would  
24 suggest that we do is we will go around for a first round and then  
25 we'll do as we did yesterday afternoon. We'll come back for a

1 second shorter round. So --

2 MR. SIZEMORE: Thank you. We appreciate that.

3 CHAIRMAN SUMWALT: Yes, indeed. Air Methods.

4 MR. YALE: Thank you, Mr. Chairman. I have a few  
5 questions here.

6 CHAIRMAN SUMWALT: You know what? Let's see. Yeah, I  
7 guess that's right. Yeah, you were next. So I don't know. I was  
8 looking at my notes here. So, yeah. I show that AAMS would be  
9 next, but I don't see how that would work. So let's go to Air  
10 Methods. (Laughter.)

11 MR. YALE: Okay. Thank you, sir. Mr. Weink, if I  
12 could --

13 MR. WEINK: Yes, sir.

14 MR. YALE: -- when does your program use VFR? I mean  
15 you said it was about 2 to 10 percent type of thing as far as the  
16 IFR. The VFR, what makes you choose to do VFR as opposed to IFR  
17 since you have all those tools?

18 MR. WEINK: Every mission is based on what it is. Scene  
19 lights, where you don't have an instrument approach to be able to  
20 get to the scene as well as an instrument departure procedure to  
21 get away. The other thing is when it comes down to it, our rule  
22 of thumb is, is once it drops below 1,003, you lose your VFR. On  
23 the ruling side of things is when we promote or push IFR, and  
24 that's what the hospital with its GPS approaches, most of those  
25 minimums are in the 500 foot range, as far as ceiling heights.

1 From that, it's just much safer to be upstairs and flying IFR than  
2 it is down trying to be at 500 feet or 800 feet, trying to skud  
3 run and get there.

4 MR. YALE: How many of those 25 hospitals that you  
5 talked about that had approaches, also have weather reporting?

6 MR. WEINK: A lot of them themselves. We reassessed, we  
7 as in Mayo, excuse me, when I use we, when I was involved with  
8 this, in the decision process in the last two years to put these  
9 approaches in, the Mayo Health System really looked and found the  
10 funding to put these approaches in to better access the patients.  
11 So we were looking to get more rural areas, farther out, you know,  
12 that didn't have access like we had prior to this but with the new  
13 weather minimums that were enacted and the changes that are coming  
14 down now, we changed our thought process and went back to more of  
15 our milk runs, excuse the phraseology. The ones that we go to  
16 primarily now, to where we can access those patients easier, even  
17 though there is an airport close, to where we can shoot an  
18 instrument approach into the airport, take an ambulance two miles  
19 or whatever to the hospital, take that delay in patient care as  
20 well as ambulance ride back and out. I don't know the exact  
21 numbers when it comes back into it as far as of the 20 that don't  
22 have them but I'd say 3/4 of them have weather reporting  
23 capabilities because they're in the vicinity of an airport.

24 MR. YALE: And those that don't, you're not able to  
25 conduct 135 IFR flights to. Is that correct?

1           MR. WEINK: As it was stated, the 135 regs are starting  
2 to change with that.

3           MR. YALE: Okay. And, Tony, what factors would limit  
4 for you your utilization of IFR on HEMS missions? I mean what  
5 would limit that relative to your environment that you see?

6           MR. BONHAM: Well, primarily in the rule environment, it  
7 would be very difficult to -- approximately 50 percent of our  
8 flights are scenes. You know, we wouldn't -- there's not a point  
9 in space approaches that we could shoot. We would end up having  
10 to go to an airport. The patient then would have to be  
11 transported to that airport, depending on how far that would be  
12 from the accident scene, and so I could really see a delay in  
13 patient care of trying to go down that road of IFR especially in  
14 the rule environment.

15           MR. YALE: Do your pilots that fly VFR have instrument  
16 ratings from the FAA?

17           MR. BONHAM: Yes, sir. All pilots within our company  
18 have instrument ratings.

19           MR. YALE: And what type of IFR training does your VFR  
20 pilot get?

21           MR. BONHAM: Well, for the initial new-hire pilots,  
22 there's approximately four hours FTD training. When the recurrent  
23 pilots are brought back in yearly, there's also FTD training  
24 there. Also IIMC procedures are stressed along with other  
25 emergency procedures, and also pilots are brought in again every

1 six months for IIMC currency and emergency procedure training.

2 MR. YALE: Mr. Webb, you mentioned that operators tended  
3 to count check ride as training. Do you know if that's still the  
4 predominant practice?

5 MR. WEBB: I won't speak for operators today because  
6 certainly I'm not flying for an operator today that's conducting  
7 Part 135. I have queried people as they come through training,  
8 and I can certainly say that people have agreed with me that that  
9 is how they have been qualified. So I believe that it still does  
10 exist.

11 MR. YALE: In a HEMS specific type of situation, do you  
12 know?

13 MR. WEBB: Certainly. Yes, sir.

14 MR. YALE: Mr. Bonham, could you define for us what IIMC  
15 is?

16 MR. BONHAM: IIMC, basically VFR, a pilot has to  
17 maintain certain visibility requirements, ceiling requirements and  
18 cloud distance requirements, along with being able to visually  
19 keep sight of the ground during the day and reference to lights at  
20 night. Anything below those minimums would be a IIMC event, and  
21 it doesn't necessarily mean you have to enter clouds or enter fog.  
22 So that's generally the difference between the two.

23 MR. YALE: Thank you. Mr. Buehler, from the statistics  
24 that you were talking about earlier, what phase of flight are the  
25 majority of the accidents that have happened in HEMS? When do

1 they occur? There's obviously the en route, there's the portion  
2 with the patient on board, and there's the repositioning.

3 MR. BUEHLER: I don't know that, Mr. Yale.

4 MR. YALE: It's been stated in previous elements that  
5 the majority of the flights happen in the 91 phase or the portion  
6 without the patient on board. Is that relatively accurate?

7 MR. BUEHLER: Yes.

8 MR. YALE: And then my question would be to Mr. Riley,  
9 since the majority of the accidents happen during the phase where  
10 the patient's not on board, and yet where the patient on board is  
11 the point where the entire crew, aviation and medical, is acutely  
12 aware of the condition of a patient, why is it that you have this  
13 sense then that that's such a pressure piece for it?

14 MR. RILEY: Could you restate the question more clearly?

15 MR. YALE: Well, I guess my question is, is that --  
16 we're talking about the pressure issues of the pilot knowing the  
17 condition of the patient, and yet the phase of flight where the  
18 pilot has the clear knowledge of what's going on with a patient,  
19 appears to be the phase that we have the least accidents in.  
20 Where's the cause and effect relationship?

21 MR. RILEY: I can't make actually a cause and effect  
22 relationship other than the fact that there is, if you're talking  
23 about pressures, and 30 percent of the pilots may know what's  
24 going on, they might go ahead and think, well, we'll give it a  
25 shot. Let's go up and take on a flight. That may provide an

1 opportunity at any phase of the flight for something to happen or  
2 something not to happen.

3 MR. YALE: Mr. High, you stated the majority of the  
4 programs operate with 24-hour shifts.

5 MR. HIGH: It was actually -- in our surveys, 58 percent  
6 of the respondents did 24-hour shifts.

7 MR. YALE: And of those that are doing 24-hour shifts,  
8 do you know how many shifts routinely are scheduled in a month for  
9 a person working a 24-hour schedule?

10 MR. HIGH: I don't. I think it's variable. Just  
11 anecdotally I could tell you that's variable. There's some that  
12 do only 24, some that do 12 and 24s. It's variable.

13 MR. YALE: But on a routine three schedule, A, B, C type  
14 24-hour shift, there are 8 shifts in a Kelly (ph.) schedule,  
15 correct?

16 MR. HIGH: Yes.

17 MR. YALE: So they would work eight days out of a month.

18 MR. HIGH: Out of 30, yes.

19 MR. YALE: Okay. Thank you. Mr. Webb, does your EC135  
20 simulator that you have fly exactly like a real aircraft in all  
21 flight phases including hovering and takeoff?

22 MR. WEBB: Excellent question. I would say that since  
23 we completed our certification yesterday, the answer to that is  
24 yes.

25 MR. YALE: Okay. And would you be comfortable then

1 taking a pilot that's never flown an EC135, starting out with him  
2 in the simulator and on completion of training, give him the keys  
3 to go fly passengers?

4 MR. WEBB: You know what? While I think that that may  
5 be possible, it's not our intention to do that. Our intention we  
6 believe, that what we bring to the table with respect to training  
7 is a blended solution. So, for example, in a 135 program, we look  
8 to use the simulator for approximately 80, 85 percent of the  
9 training with, you know, the remaining portion being conducted in  
10 the actual aircraft, but again when you build these simulators,  
11 you must collect the flight data and then the flight data must be  
12 compared against the simulator flight data. So you cannot build  
13 it, have qualification, and not be within the flight loop data as  
14 it's drawn. So they do accurately represent the real company.

15 MR. YALE: Mr. Bonham, how accurate do you feel that  
16 your FTD is at flying below 50 feet as far as simulating that  
17 effect?

18 MR. BONHAM: You know, I think generally for emergency  
19 procedures and IMC training, generally speaking, it suffices. Of  
20 course, you will hear basically pilots input that this doesn't fly  
21 actually like a real aircraft, and we know that, you know, and I  
22 can relate to that. I was type rated in a Lear quite a few years  
23 ago and I had never been in a Lear in my life, and the pilots that  
24 had the issue with the aircraft were the ones that had had a lot  
25 of experience in actually flying Leers, that had gone to get to

1 the type rating and their comment was, well, it's not exactly.  
2 And I think we all know that. I've never flown in a simulator or  
3 a FTD that I could walk out of and say this is exactly like the  
4 actual aircraft.

5 MR. YALE: Thank you. That's the end of my questions,  
6 sir.

7 CHAIRMAN SUMWALT: Thank you. And for the record, for  
8 clarification, the question what is IIMC, and I think it would be  
9 fair to say that IIMC stands for Inadvertent Encounter with  
10 Instrument Meteorological Conditions. Is that correct?

11 Inadvertent IMC. We're referring to it here as IIMC, but it's --

12 MR. BONHAM: Yes, sir. That is correct.

13 CHAIRMAN SUMWALT: Okay. Thank you.

14 MR. BONHAM: Yes, sir.

15 CHAIRMAN SUMWALT: So we'll go now to CareFlite. Thank  
16 you.

17 MR. DAUPHINAIS: Thank you, Mr. Chairman. For both of  
18 the operators, Mr. Weink and Mr. Bonham, is your weather training,  
19 is that -- is more emphasis placed on weather avoidance or the  
20 IIMC training?

21 MR. WEINK: On ours, in our training portion of this,  
22 whether it's on the initial or recurring or ongoing training,  
23 there's -- in our geographical area up there in Minnesota, the  
24 training itself is based off the weather, the weather patterns,  
25 everything that are coming, to make sure, you know, they

1 understand and they're in the loop of what -- on top of the  
2 weather phenomenons that are going on, such as icing and  
3 everything that's going on now. The flight portion of it is  
4 instrument as well as inadvertent and we do that VFR where we go  
5 inadvertent IMC as well as when we're under NVGs, we'll go  
6 practice inadvertent IMC procedures.

7 MR. DAUPHINAIS: So is the training emphasis on  
8 avoidance or recovery?

9 MR. WEINK: Both.

10 MR. DAUPHINAIS: Okay. Mr. Bonham.

11 MR. BONHAM: I would say, you know, we always train for  
12 the worst case scenario, but our emphasis is on avoidance.

13 MR. DAUPHINAIS: Okay. And, Mr. Bonham, while you have  
14 your mic on, Mr. Buehler was asked a question about the update  
15 cycle on the 396. You use them.

16 MR. BONHAM: Yes, sir.

17 MR. DAUPHINAIS: So what is that update cycle?

18 MR. BONHAM: The update cycle, I believe it's monthly  
19 for obstacle avoidance. I believe it's every two months for NAVAs  
20 (ph.) for frequencies, but I can tell you, regardless of what that  
21 is, ours are updated continuously companywide.

22 MR. DAUPHINAIS: I wasn't questioning that. I was just  
23 curious about the update cycle.

24 MR. BONHAM: Yes, sir.

25 MR. DAUPHINAIS: Thank you. And, Mr. Bonham, what

1 portion of your operations are conducted under 91?

2 MR. BONHAM: You know, when we are flying outbound on a  
3 transport to pick up the patient, there's really no choice. That  
4 is a Part 91 flight regardless. We can call it whatever we want  
5 to call it but in the FAA's eyes, that's a Part 91 flight. As  
6 we're transporting the patient, that's Part 135 and, of course,  
7 the leg back to base, regardless of what you want to call it, it  
8 is a Part 91 flight. But I can say that ever since I have been  
9 the chief pilot, and even prior to that, all of our flights within  
10 the company, and this is regardless, if it's a training mission, a  
11 ferry flight, patient transports, any leg of the flight, anytime  
12 any pilot is in our aircraft, at anytime, we abide by the  
13 operations manual and the operations specifications.

14 MR. DAUPHINAIS: Thank you for correcting my question.  
15 That's the way I meant to ask it. Thank you.

16 MR. BONHAM: Okay.

17 MR. DAUPHINAIS: All right. And, Mr. Bonham, again, as  
18 long as I've got you --

19 MR. BONHAM: Okay.

20 MR. DAUPHINAIS: -- for your new-hire pilots, given the  
21 type of aircraft, do they get -- when they get assigned to a base  
22 and they get out to that location, do they get area specific  
23 training of any kind? And how do you do that?

24 MR. BONHAM: Yes, sir, they do. Once they arrive at  
25 their base, there's an orientation and, of course, there's a

1 required local area exam that is given, and we have a minimum of  
2 at least three hours of day training orientation, two hours of  
3 night, and usually normally it exceeds that amount of time.

4 MR. DAUPHINAIS: And do you have an aircraft that's used  
5 for that with the medical configuration or something? I mean how  
6 do you do that?

7 MR. BONHAM: We do have spares in the company that we  
8 use on occasion, but if spares aren't available, we will actually  
9 use the base aircraft.

10 MR. DAUPHINAIS: Okay. Thank you. And, Mr. Weink, I'm  
11 a bit confused. For your IFR operations, when you're outbound to  
12 a hospital, did I understand you to say about 20 of your 25  
13 approaches have weather at the hospital for flying 135s to those  
14 destinations?

15 MR. WEINK: Weather in the vicinity of it, yes, that we  
16 use because a lot of the instrument approaches are less than a  
17 mile from the airport when we come into them. So --

18 MR. DAUPHINAIS: Okay. So technically isn't that a 91  
19 flight and you're using area forecast for that leg?

20 MR. WEINK: We take on the certification side of it,  
21 where we take the biggest hit is on the altimeter setting. From  
22 where we're moving it away, we lose height, on the height of the  
23 approach, from where we don't have the vicinity weather, but  
24 that's part of the reason. I mean in the implementation side of  
25 it again, too, is to be able to 91 outbound legs IFR. Everything

1 else is 135.

2 MR. DAUPHINAIS: Right. Okay. I just wanted some  
3 clarification on it.

4 MR. WEINK: Yeah.

5 MR. DAUPHINAIS: Thank you.

6 MR. WEINK: Yep.

7 MR. DAUPHINAIS: And then for Mr. Webb and Mrs. Palmer,  
8 I have to agree with the training piece. That's -- I think we  
9 need to get back to basics and I agree with that. You both spoke  
10 a little bit about the over reliance on technology versus the  
11 basic skill sets. Could you expand on that just a little bit?  
12 And how do we do that in a simulator?

13 MS. PALMER: The basic skill sets, of course, need to be  
14 trained, and you do that by doing aircraft specific and then you  
15 can do just the basic flying techniques in almost any simulator.  
16 But then, of course, you've got your IFR. Is that what you're  
17 saying or your technology?

18 MR. DAUPHINAIS: You both made reference to -- actually  
19 Mr. Webb spoke directly to the point on the over reliance on  
20 technology. And I tend to agree that we're starting to overload  
21 the cockpit with information, not all of it useful at the same  
22 time. So --

23 MS. PALMER: A lot of the people that originally learned  
24 to fly an aircraft did not have the technology they're putting in  
25 the aircraft now. So they learned to fly the aircraft and now

1 they've got all this new technology in it, that they might not  
2 have been trained directly how to use. And if you ask some  
3 pilots, you know, when do you learn to use this new equipment that  
4 we're putting on board your aircraft, and they tell you in flight.  
5 And that's where I think that simulation is the way to go because  
6 you can learn how to operate some of this new technology. Put the  
7 new TAWS equipment and things like that in the simulator and learn  
8 how to use it so that you're more comfortable in flight.

9 MR. DAUPHINAIS: And so how do we train when technology  
10 fails I guess and getting back to the basics?

11 MS. PALMER: Train the basic skills.

12 MR. DAUPHINAIS: Okay.

13 MS. PALMER: Fly first.

14 MR. DAUPHINAIS: Right. Thank you. Mr. Webb.

15 MR. WEBB: And if I may, that's -- certainly technology  
16 is important. My base comment would be this. The technology  
17 exists today in the aircraft for very safe flight. However, in  
18 some cases, the regulations inhibit our ability to use that  
19 technology, and when I say that, we discuss that Part 91 or Part  
20 135, many of the flights are done VFR. Well, certainly they are  
21 because the regs force people to fly VFR. When you can fly a Part  
22 135 helicopter in a 300-foot ceiling, and 1-mile visibility at  
23 night, or a 1/2 during the day, legally, yet you cannot depart IFR  
24 unless you have a 1,000 foot -- I'm sorry -- for Part 135, a  
25 2,000-foot ceiling and 3-mile visibility without an alternate

1 airport available, it's ludicrous.

2           So, of course, they're flying 91 or 135 VFR. The regs  
3 force that. So, you know, we must evolve to a point where we  
4 encourage IFR flight, where we allow the operators to use the  
5 system as it was designed and we train the pilots to utilize the  
6 aircraft as the manufacturers have designed and built them.

7           MR. DAUPHINAIS: So we're forced to go VFR or 91 based  
8 on a lack of infrastructure?

9           MR. WEBB: I believe that is largely the case, and  
10 because of that lack of infrastructure or regulations which allow  
11 these technologically advanced aircraft to operate safely, you  
12 know, whether it's our product or our competitor's products, you  
13 know, I can fly an EC225 with a four axis autopilot, do FMS, anti-  
14 ice, but if I want to go to Dallas Executive, right in the  
15 airport, in our hometown, I have to have a 1,000-foot ceiling and  
16 a 2-mile visibility or I can't go IFO without an alternate.

17           MR. DAUPHINAIS: I feel your pain. Thank you. Speaking  
18 of infrastructure, Mr. Buehler --

19           MR. BUEHLER: Yes, sir.

20           MR. DAUPHINAIS: -- one of the high points since the  
21 development of 250 has been the ADDS weather reporting system, and  
22 thank you for that. Do you have any idea when that may be allowed  
23 for the go decision as well as the no go?

24           MR. BUEHLER: The straight answer is, no, sir, I don't  
25 because it's gone into the weather R&D area now whereas we worked

1 it as an operational issue and used operational money to get that  
2 experimental site up.

3 MR. DAUPHINAIS: Any idea how long that process would  
4 take and who do I write to?

5 MR. BUEHLER: I can't give you a name but I'd be glad to  
6 talk to you afterwards.

7 MR. DAUPHINAIS: Thank you, Mr. Chairman.

8 CHAIRMAN SUMWALT: Thank you, Mr. Dauphinais. HAI.

9 MR. ZUCCARO: Thank you, Mr. Chairman. I'm going to  
10 start with Mr. Weink. During the preflight and planning and risk  
11 assessment phase and decision making that's going on, do the  
12 medical crews get involved in that process with the pilot?

13 MR. WEINK: The medical crew itself is in the brief  
14 portion of it. When it comes into risk assessment, through the  
15 policies that we have through Omni, there's two portions to it.  
16 We have a static risk as to what it takes for the helicopter and  
17 the pilot to be duty ready, and then the mission portion of it is  
18 added when the flight actually comes in because it's all pretty  
19 heavy laden with weather and, you know, whether you're VFR, IFR  
20 and then the tools you have on board with it.

21 And then once again we've talked with OCC and  
22 everything, and the flight is a go, then we brief with the crew  
23 itself and what's going on, like because again we haven't had  
24 patient care. We don't know what it is from that standpoint,  
25 comes in, and then maybe the mission itself might not work due to

1 the fact that the patient's complications portion of this doesn't  
2 fit the mission statement we're trying to do.

3 MR. ZUCCARO: Okay. You indicated you had IFR  
4 approaches. Am I correct that there are 25 of them or --

5 MR. WEINK: Yes, we have 25.

6 MR. ZUCCARO: Okay. And GPS point in space?

7 MR. WEINK: Yes.

8 MR. ZUCCARO: Okay. I'm curious. Who financed and paid  
9 for those approaches?

10 MR. WEINK: Knock on wood, our -- the program that we're  
11 at, the Mayo Clinic did.

12 MR. ZUCCARO: I mean there's no federal funding in this?

13 MR. WEINK: No.

14 MR. ZUCCARO: Who actually owns them?

15 MR. WEINK: Mayo does.

16 MR. ZUCCARO: Mayo does. Are they available to other  
17 operators?

18 MR. WEINK: As it sets today, no.

19 MR. ZUCCARO: Okay. You indicated you talked about IFR  
20 launch times, a 20-minute VFR launch times and 15 minute.

21 MR. WEINK: Yep.

22 MR. ZUCCARO: Okay. And you said that they want us off  
23 by then.

24 MR. WEINK: Well, no.

25 MR. ZUCCARO: Who is they?

1           MR. WEINK: Within that, my apology for not making that  
2 clear. That's a benchmark that's set by the hospital when we come  
3 into it, and it's just purely a benchmark. If they don't make the  
4 20 minutes, there's no punitive with it. It's just a matter of --  
5 it's a place that was -- or a time that was set that, you know, as  
6 a benchmark that if it's taking over that, is there tools in place  
7 or something that needs to be upgraded, something that needs to be  
8 changed, like we were talking about, if it take too long to get  
9 the aircraft out of the hangar --

10           MR. ZUCCARO: Uh-huh.

11           MR. WEINK: -- do we need a new tug, do we need, you  
12 know, and that's what that benchmark is set forth.

13           MR. ZUCCARO: Okay. Thank you.

14           MR. WEINK: There's no punitive.

15           MR. ZUCCARO: We were talking about varying weather  
16 minimum and criteria when we got into Part 91 operations, and you  
17 said it was 1 mile, 300 feet. Is that correct?

18           MR. WEINK: Proportion --

19           MR. ZUCCARO: Or did I misunderstand that?

20           MR. WEINK: Pardon.

21           MR. ZUCCARO: Or did I misunderstand that?

22           MR. WEINK: No. I mean proportions, because we were  
23 talking 91 versus 135 and how part of that all works and runs  
24 hand-in-hand, as we talked in 91, out in Class G airspace you've  
25 only got to be clear of the clouds from that side of things. But

1 when you enact and put part of the op specs back into it again, I  
2 have to have portions of it, a day minimum vis (ph.) is a half and  
3 night is a mile, but then the other thing that comes back into  
4 this, we have a minimum safe altitude of 300 feet. So that we  
5 can't be below that unless we're on approach or departure.

6 MR. ZUCCARO: And that's for VFR operations?

7 MR. WEINK: VFR and/or IFR.

8 MR. ZUCCARO: Okay.

9 MR. WEINK: We have to have that for takeoff minimums as  
10 well.

11 MR. ZUCCARO: Okay. And you think that's adequate?

12 MR. WEINK: Personally, no.

13 MR. ZUCCARO: Okay. Fair enough. Thoughts on pilot  
14 workload, as we're talking about all this technology and adding  
15 all this equipment and boxes to aircraft and taking advantage of  
16 what's available, do you have any concerns or thoughts about pilot  
17 workload or potential overload certainly in single-pilot  
18 operations and single-pilot IFR operations?

19 MR. WEINK: Yes, I do. Again, coming from the civilian  
20 side of the house, I've never been military trained. I've had the  
21 luck or however you want to put it, to be able to fly different  
22 types of aircraft, aircraft that have been retrofitted, I mean to  
23 make things work, and I'll say it candidly, too, that we do have  
24 aircraft in our system here that are not the most friendly to fly.  
25 When I come in, the new Garmin GPS that we put in one of our

1 aircraft a number of years back, I mean the only place to put it  
2 was down low on the console and in theory, when it comes to the  
3 pilot scan, that portion of that, when they're starting to get  
4 into trouble, whether it's weather, inclement weather type thing,  
5 now they're looking down to reset the GPS. I think that's really  
6 not a favorable thing to do. We worked hard and long with Omni as  
7 well as with Mayo and the 13 pilots that we had up there to come  
8 up with a standard as to what we wanted in the new helicopter.  
9 Fortunately, you know, where we got two of them, looking at a  
10 different one, too, to where we have a very user friendly cockpit.  
11 We had it at the AAMS Conference this last year up in Minneapolis,  
12 and the ones that sat in it were amazed at how user friendly it  
13 is.

14 MR. ZUCCARO: Great. What would your thoughts be on  
15 looking at a comparison of airplanes and helicopters and the  
16 helicopter operating environment at the lower altitudes especially  
17 in marginal weather? Do you think that there's a focus of the  
18 pilot's attention in a VFR operation to maintain VFR and visual  
19 acuity in reference to ground? And is there -- that's where I'm  
20 really trying to get. Do you think there's a potential to create  
21 a situation that might be less than desirable by having the  
22 continual reference to technology indicators in the cockpit?

23 MR. WEINK: I think a pilot can paint himself into a  
24 corner, you know, from that side of things when you start to rely  
25 too much on things. In our geographical area up there in

1 Minnesota, regardless of whether it's winter, we have the lake  
2 effects, everything that come across that challenge our weather in  
3 the wintertime, right on down to the humidity in the summertime.  
4 We can have 80 degree with 90 percent humidity. We can get to  
5 where you can rely too much on that but it has to get back to crew  
6 resource management, everything that comes into this, the go, no  
7 go thing, back to where it says three to go but it only takes one  
8 to say no. We need to turn around and go home.

9 MR. ZUCCARO: Fair enough. Just as a general, you know,  
10 overview or thought that you might have, how do you view the  
11 current Federal Aviation Regulations in terms of adequate  
12 oversight for HEMS operations now as they exist?

13 MR. WEINK: I think they've come a long ways. With  
14 that, I think we've got a long ways to go because as we've  
15 alluded, the whole panel here, too, airframes are changing,  
16 technology is changing, that portion of it. I mean the road's  
17 been rough. I'm not saying it's going to get any smoother for a  
18 while but from that side of things, they've helped us but I mean  
19 we still need a lot more help.

20 MR. ZUCCARO: Okay. We were talking about industry,  
21 safety initiatives. You were asked a question and you said we  
22 need support. I guess my thought, who is the we and what support  
23 do you need from who?

24 MR. WEINK: It was made as a general statement when it  
25 comes into it, we being the pilots or the medical crew, the whole

1 staff, everything that's in the helicopter to go out there. I  
2 guess I knock on wood every day that I fly for who I fly with and  
3 where I fly because if we have a safety issue, it's dealt with.  
4 It's not put under the table. It's not taken lightly from that  
5 side of things, and if it's a true safety issue down to where it's  
6 something, we go find and we start looking for money to help take  
7 care of the problem.

8 MR. ZUCCARO: Would I be correct if I stated that the  
9 support is from the rest of the operating community to provide  
10 adequate equipment that would be for safety initiatives and also  
11 to back the decisions being made?

12 MR. WEINK: Yes, everything right on down to it. I mean  
13 we can talk support being, you know, the initial operator who you  
14 work for, to make sure that support is there, the hospital, the  
15 hospital administration, that portion of it is there, the FAA  
16 themselves, rather than, you know, I mean you could -- from that  
17 standpoint, if a pilot, you know, gets into inadvertent IMC, that  
18 they do the control, climb, confess and not really about his  
19 ticket being totally taken away from him for life, you know. So  
20 there's support all the way around that we need.

21 MR. ZUCCARO: Okay. Thank you. Do you have a written  
22 memorandum of understanding or agreement with the end user client  
23 referenced operational control, as to who has that and what it is?

24 MR. WEINK: Within Omni?

25 MR. ZUCCARO: Yes.

1           MR. WEINK: I'm sure -- I haven't the document itself  
2 but, yes, operational control is Omni Flight. And --

3           MR. ZUCCARO: But is there a written agreement or  
4 memorandum of understanding with the clients, that they  
5 acknowledge that and there's --

6           MR. WEINK: Oh, yes. Yes.

7           MR. ZUCCARO: -- an explanation of what it means?

8           MR. WEINK: What it means, and they've all been trained.  
9 All of our communications center, what we call our ECC, that's all  
10 trained, right on down to who has control and final authority of  
11 the aircraft.

12          MR. ZUCCARO: Okay. You have a flight review process I  
13 understood --

14          MR. WEINK: Yes.

15          MR. ZUCCARO: -- and you're reviewing flights that are  
16 -- when a flight is cancelled, you kind of look at it and see why  
17 and what happened, whatever. Is that correct?

18          MR. WEINK: Yes. Our procedures that we have there,  
19 whether it's a flight that was completed or a flight that was  
20 attempted and aborted to come back, there is a process. The pilot  
21 initiates it. It goes in electronically and everybody that was  
22 involved, from the pilot to the medical crew, to communications,  
23 everybody that was with this, has input into it to reassess and  
24 evaluate. If anything is escalated, from there, then it goes to  
25 management and it makes a complete closure loop as to come around

1 as to, you know, if there was issues, how they were dealt with and  
2 how the resolution that it took to resolve the issue from that  
3 side. And then anything else, the other side, the flip side from  
4 what it is, we do monthly safety meetings with the pilots and then  
5 anything that come up, anything that was highlighted from that  
6 side of things, your safety committees and that, are all reviewed  
7 with the pilots.

8 MR. ZUCCARO: Okay. Do you have risk assessment for  
9 HEMS? Risk assessment and decision making, do you believe it's  
10 the same as for other mission profiles? There's no difference,  
11 whether I'm doing a corporate flight, air tour flight, offshore  
12 flight, I'm doing a HEMS flight, the risk assessment to determine  
13 whether I can go from A to B safely, is the same for all those  
14 mission profiles? Is there anything different do you think that  
15 is done?

16 MR. WEINK: I'll explain what we have, okay. Along with  
17 what was required, per the regulatory side of the house, Omni had  
18 implemented and put in a risk assessment program, that we have,  
19 that we utilize. Long before that, for -- I've been there for  
20 nine years and prior to that, they had it. We had a risk  
21 assessment tool that was implemented back then, and it was all  
22 based on issues, everything from pilot -- experience, you know,  
23 aircraft, aircraft maintenance issues, back up, crew fatigue, that  
24 portion of thing that put a scale so that we had a system going to  
25 get everybody on the same playing field to know what our risk was

1 for the scheduled shift that we had. And that was implemented  
2 back then. Omni's now is all set up and the risk assessment is by  
3 the flight and the leg of the flight. So --

4 MR. ZUCCARO: What I'm trying to drive at is there  
5 anything that you know of that is different when you're making a  
6 determination as to whether to take a flight and whether it can be  
7 conducted safely or not with HEMS flights versus other flights?  
8 Is it the same decision making that I can get from A to P safely?

9 MR. WEINK: Ours at Omni, I mean how we do things and  
10 conduct ours up there is the same.

11 MR. ZUCCARO: Okay.

12 MR. WEINK: Because, I mean we talked about it, you  
13 know, because it's just the outbound IFR leg is 91. Everything  
14 else is 135, and it all runs under the same scrutiny whether it's  
15 on the risk assessment side, the weather side, all of that is all  
16 done per 135.

17 MR. ZUCCARO: Okay. I know I'm coming up on time, but I  
18 need a third round.

19 CHAIRMAN SUMWALT: Well --

20 MR. ZUCCARO: So I don't know if you want move on.

21 CHAIRMAN SUMWALT: Well, let's move on and --

22 MR. ZUCCARO: Okay.

23 CHAIRMAN SUMWALT: -- we'll see. Thank you, Mr.  
24 Zuccaro. PHPA.

25 MR. DUQUETTE: Thank you, Mr. Chairman. Mr. Weink, how

1 long does it take to take someone -- a new pilot comes in, suppose  
2 I wanted to come in and ask to work for Omni here. How long would  
3 it take you before I would be an operational pilot?

4 MR. WEINK: The initial onset of what it is, the hiring  
5 practice that we have now, the hiring system, I mean if you walked  
6 in today, it's always open for two weeks. We do an in-house thing  
7 to see if there's any pilots within Omni that wants to trade or  
8 exchange. If not, we'll go to the outside and look. From that  
9 standpoint, they go through a rigorous interview process with  
10 Omni, and if Omni is comfortable with the applicant, then it's  
11 brought forth to us, up there. We bring the gentleman up on the  
12 premise that it just a visit. It's not an interview because the  
13 interview portion is basically over with down in Omni, and they  
14 get to see us and we get to see him or she, from that side of  
15 things, and they'll spend part of day with us there. When that's  
16 concluded and everybody that's involved gives the thumbs up that  
17 this is somebody we'd like to join, you know, us and fly with us  
18 up there, it goes back to Omni, and it'll take, oh, another good  
19 week to get the rest of that process done. From there, they go  
20 through all the 135 training portions of it. They're in class for  
21 nine days as far as with the operational sides of the schooling,  
22 op specs, HR, that portion of it, and then from there they go into  
23 aircraft training. They're into aircraft training again for  
24 another week and then they come out and the flight training.  
25 Flight training lasts based on aircraft to aircraft, approximately

1 in our new EC145s, it's 8 1/2 hours. We plan on 10 hours of  
2 initial training in the aircraft, and then we bring them up to the  
3 base. We do all the local orientation portion of it to where  
4 they're -- the local nav, the area nav tests, everything that are  
5 done. We bring them in. They fly for three shifts with us and  
6 another pilot, and then from there, the first 30 days, they're put  
7 on dayshifts. They're not allowed to flight nights, and then  
8 after that, they continue into night shifts and then after 90  
9 days, if we're comfortable and he's comfortable, we'll transition  
10 them into the IFR portion.

11 MR. DUQUETTE: Okay. Thank you. Mr. Bonham, obviously  
12 you have a different organization and situation, approximately and  
13 briefly also would you tell us how long it would take to get a new  
14 pilot before he or she becomes operational for your organization?

15 MR. BONHAM: Briefly, but when the new hire training  
16 begins, from that point, the pilot is normally ready to begin a  
17 shift at his or her base in approximately three to four weeks, and  
18 at that point, the base pilot's supervisor for that particular  
19 base will shadow that pilot for a minimum of one hitch which would  
20 be at least seven days, and we leave that pilot on day shifts only  
21 for a period of time, and we also require higher weather minimums  
22 for the new pilot at the base, and then there's -- after a few  
23 weeks, then they're allowed to go on shifts by themselves and then  
24 we will -- and then onto night hitches also after that.

25 MR. DUQUETTE: Right. Of course, we understand that

1 your operation is obviously slightly different than Mr. Weink's.  
2 So I'm going to ask this question. Do any of the hospitals that  
3 you service provide either approaches or weather?

4 MR. BONHAM: No, sir, they do not.

5 MR. DUQUETTE: Okay. If it happened, it would just be  
6 because it's the fact that it's near an airport and you would get  
7 it from there?

8 MR. BONHAM: Yes, sir. That's correct.

9 MR. DUQUETTE: Mr. Weink also mentioned about their  
10 pilots are able to take anywhere from an hour to an hour and a  
11 half a month for personal training, additional training. Do you  
12 have such a provision either in your organization or the hospitals  
13 that you support? Do they support additional pilot training?

14 MR. BONHAM: And that question's for me?

15 MR. DUQUETTE: Yes, sir.

16 MR. BONHAM: There's not actually -- I would say that  
17 the hospitals that we service, there are not inputs from those  
18 hospitals for specific requirements or recommendations.

19 MR. DUQUETTE: Okay. Ms. Palmer or Mrs. Palmer, excuse  
20 me. What does the insurance underwriters think of the FTD and  
21 simulator training?

22 MS. PALMER: The insurance underwriters -- that's a good  
23 question. The insurance underwriters have been always very  
24 interested in simulator training on the fixed wing side. I mean  
25 they've always encouraged it for fixed wing turbine operators.

1 Lately, Mr. Larry Maddiello (ph.) who is working with the HAI  
2 insurance committee and safety committee, has done a lot of work  
3 in educating the underwriters as to the latest technology  
4 available as far as simulation and other new technology.

5 Also, they have been very interested in finding out when  
6 these types of things would be available, and as far as the  
7 incentives, I think somebody brought something up yesterday or the  
8 day before about incentives, and talked about the safety bucks  
9 program. I can tell you that several EMS operations have used  
10 safety bucks toward simulator training.

11 MR. DUQUETTE: Okay. Thank you. And this question goes  
12 basically to Mr. High and Mr. Riley with regards to -- we've  
13 already covered the fact that it's three to go and one to say no,  
14 but I want -- obviously that's used to decide whether you get off  
15 the ground, but is that policy also used once you're en route? Is  
16 that part of the risk assessment? In other words, you're en route  
17 from Point A to Point B to pick up a patient and one of the crew  
18 members --

19 MR. HIGH: Absolutely. It can even be before you leave  
20 the ground.

21 MR. DUQUETTE: Yes, I understood that portion. But I  
22 wanted to clarify that also it's a continuing process, that it  
23 also continues while in flight?

24 MR. HIGH: Absolutely, yes.

25 MR. DUQUETTE: And in regard to your training, obviously

1 you have medical training, but what exactly do you have as far as  
2 aviation training? Are you trained, for example, in weather or --

3 MR. HIGH: It's going to vary. It's going to vary from  
4 program to program. Generally speaking, you'll get some basic  
5 aviation training. When I began flying, I got a one hour weather  
6 class. The real training it's going to focus around is on  
7 emergency procedures, on door jettisons, issues like that, and  
8 that's going to be done on the aircraft. You'll have to complete  
9 that program before you're allowed to fly, and then as you go  
10 along, as you move along in orientation, they'll bring in CRM and  
11 then hopefully you'll have some recurrent CRM training also.

12 MR. DUQUETTE: Okay. Thank you. And, Mr. Weink, you  
13 mentioned the fact that you're picking up a new aircraft. It kind  
14 of caught my ear, the fact that you were talking about a video  
15 camera as part of your flight data collection. Do you have a FOQA  
16 program or a HUMP (ph.) program in place or is that in the  
17 process?

18 MR. WEINK: That will be in the process. This is  
19 something that got added to the aircraft towards the tail end. It  
20 actually extended the purchase of the aircraft or getting the  
21 aircraft completed. So it was added on at the end. So it's  
22 within the program itself at Mayo. It's in the process.

23 MR. DUQUETTE: Okay. And this question is for Mr.  
24 Buehler. Mr. Buehler, obviously we have one operation that's IFR,  
25 has all the bells and whistles, and we have Mr. Bonham here

1 working also within the regulation. Do you see a possible safety  
2 or regulatory-wise, a conflict -- I won't say a conflict of  
3 interest, but a problem, the fact that we have really the two  
4 extremes here?

5 MR. BUEHLER: No, sir, we don't. Both can exist as long  
6 as they meet the current regulations.

7 MR. DUQUETTE: Thank you. That's all the questions I  
8 have.

9 CHAIRMAN SUMWALT: Thank you, Mr. Duquette. AAMS.

10 MS. KINKADE: Good morning and thank you all for being  
11 here this morning. I'm going to actually start with Mr. Buehler.  
12 And it's sort of as a follow up to a comment that was made by Mr.  
13 Webb. Although Part 61 does not require a type rating for small  
14 aircraft, do you know if it's true if the Part 135 does require  
15 initial annual transition differences and upgrade training in the  
16 make, model and type? In other words, when he was stating that  
17 there are no requirements to get a type rating for an aircraft, he  
18 gave the example that a R44 pilot could jump into a 225, is it  
19 true that that same regulation applies to Part 135?

20 MR. BUEHLER: What you stated there, you have to address  
21 the make, model and type of the aircraft that you have and train  
22 for it.

23 MS. KINKADE: So in a Part 135, that is a requirement?

24 MR. BUEHLER: Yes.

25 MS. KINKADE: Okay. I just wanted to clarify that

1 because I think that was kind of left hanging out there. Thank  
2 you. Sorry. I lost my notes. Mrs. Palmer, what do you think the  
3 minimum amount of simulator training that a pilot should have? Is  
4 it annual, every other year, every five years? Do you have a  
5 recommendation?

6 MS. PALMER: It depends on what you're trying to  
7 accomplish. If you were trying to do complete Part 135 type, you  
8 know, then we're looking at, in an IFR program, a minimum of twice  
9 a year. If you are trying to do some refreshing of perishable  
10 skills, it could be done more often, but in a lower quantity of  
11 time in the simulator if you know what I'm trying to say. I mean  
12 we can do a complete program that covers everything or little bits  
13 of it at a time. So it depends on what you're trying to  
14 accomplish.

15 MS. KINKADE: Okay. Both for Mr. Weink and Mr. Bonham.  
16 Do your medical crews get -- are they also on night vision  
17 goggles? And if so, what kind of training do they get?

18 MR. BONHAM: It's required that one of the medical crew  
19 members in the back is on NVG and the training specifically for  
20 them is they go through the same ground school requirement as the  
21 pilots, the flight crew members go through, which is eight hours  
22 of ground training, and then there's also flight training for them  
23 also, and then there's also recurrent training. The medical crew  
24 members are involved in that also.

25 MR. WEINK: Our NVG process and everything that we have,

1 the medical crew as he stated, attends the same ground school.  
2 It's an eight-hour ground course for the goggle itself that the  
3 pilot does. Their requirement isn't as stringent as the pilot is  
4 as far as for everything that has to be done with them. They have  
5 to do their three events which is a takeoff en route and landing  
6 portion of that. We encourage them to ride along. They ride way  
7 more than that. The only time we, as Omni in the training portion  
8 of that, don't or won't allow them to ride along is when we're  
9 doing the emergency procedures portion of the training portion of  
10 NVG. So they receive substantial. They have to stay current. If  
11 they're not, we have a NVG officer, a designated person, at our  
12 base from Omni that brings them back up to speed and gets them  
13 current again.

14 MS. KINKADE: Thank you. We heard the reference to  
15 AMRAM a few times, and I'm wondering if again, Mr. Bonham, Mr.  
16 Weink and Mr. High, if you can even speak, I know you used to fly  
17 at Vanderbilt for a number of years, how do you incorporate the  
18 medical crew in that in terms of going through emergency  
19 procedures? What tools do you use for that?

20 MR. BONHAM: Well, again, our initial training for  
21 everyone begins with two days of AMRAM training, and the flight  
22 crew members, medical crew members, are involved in that training  
23 also. We also -- we have actually, in addition, that we have  
24 built within our company, to our flight training device, and it's  
25 actually the rear area of the helicopter, the rear cabin, where

1 the medical crew members receive their training. There's a mock  
2 person in the back that they're working on, and all aspects of the  
3 flight are covered. Medical crew members are on board.  
4 Everyone's in helmets. It's exactly like it would be at a base.  
5 They receive all emergency training, IIMC, day training, night  
6 training. We actually take them in and out of scenes, in and out  
7 of elevated helipads at hospitals, and there's an Advisory  
8 Circular that addresses AMRAM and we also follow that AC.

9 MS. KINKADE: Is there anything different done with  
10 Mayo?

11 MR. WEINK: I'll jump in here for now. Our annual crew  
12 training which is rolling around. The month of March is dedicated  
13 for our annual crew training. A portion of that is dedicated or  
14 set up for AMRAM training. We have continual AMRAM training or  
15 issue things that we work through every day, every shift change,  
16 that we do a part of the briefing, is to go through an operational  
17 review and an emergency procedure review, what their  
18 responsibilities are and terminologies, everything that we have to  
19 do keep the crew operating as a crew. So it's ongoing as well as  
20 it's mandatory once a year that they receive annual training.

21 MS. KINKADE: Do you have anything to add?

22 MR. HIGH: You know, generally speaking, we did a survey  
23 of our membership, and we found that only 80 percent of the  
24 respondents had had CRM training or AMRAM training, and only 73  
25 percent got recurrent training. Ideally, if I go back to my

1 experience at Vanderbilt, which mirrors most like Mayo, it's  
2 daily, a shift briefing, where we took a topic, whether it was an  
3 emergency procedure or a scenario-based event and built on that  
4 and which I found to be very effective.

5 MS. KINKADE: Okay. Thank you. I've hit my 10-minute  
6 mark, so I'll stop.

7 CHAIRMAN SUMWALT: Thank you. FAA.

8 MR. HARRIS: Thank you, Mr. Chairman. I'll start with  
9 Ms. Palmer. Are you aware of a special rule in Part 135 that  
10 allows 142 training centers to execute an air carrier's training  
11 program?

12 MS. PALMER: Yes.

13 MR. HARRIS: Does Flight Safety routinely exercise or  
14 conduct training activities under that rule?

15 MS. PALMER: Yes, we do. We do train for Part 135.

16 MR. HARRIS: Do you have an approximate estimate as  
17 either to the number of customers or possibly the percentage of  
18 your customer base which are 135 operators of the helicopter  
19 world?

20 MS. PALMER: I don't have that number.

21 MR. HARRIS: Okay. Thank you. Do you know how long  
22 that rule has been in effect by any chance?

23 MS. PALMER: That rule has been in effect as long as I  
24 have been with Flight Safety.

25 MR. HARRIS: Okay. Very good. And how long have you

1 been with Flight Safety?

2 MS. PALMER: Eight years.

3 MR. HARRIS: Okay. Thank you. Mr. Bonham, Mr. Webb  
4 accurately described the fact that satisfactory completion of a  
5 competency check by a pilot can be substituted for recurrent  
6 flight training under Part 135. Could you elaborate as to what a  
7 Part 135 pilot competency check includes?

8 MR. BONHAM: And I'm sorry, are you referring to the  
9 recurrent training or the IIMC? What?

10 MR. HARRIS: Well, Mr. Webb made reference to the fact  
11 that the regulation allows a satisfactory completion of a  
12 competency check, the annual pilot check to be substituted for  
13 recurrent flight training, and so my question is, what is the  
14 content, and you can be general in nature but the content of a  
15 pilot competency check under Part 135 such as at your  
16 organization?

17 MR. BONHAM: The content at Air Evac is there's a  
18 computer-based testing program that the pilots complete in the  
19 field and annual. It's approximately 40 hours of ground school  
20 training. Once they arrive at our facility, then there's one day  
21 of ground school. There is at least one session in the FTD  
22 covering emergency procedures and IIMC procedures and then the  
23 next day it moves to the flight line for the training and check  
24 ride.

25 MR. HARRIS: Okay. But I suppose my question is

1 actually the component of the check ride itself. There was an  
2 offer and it's certainly an accurate one, that a check ride can be  
3 substituted for training under Part 135, and if your program  
4 doesn't do that, perhaps I should consider asking Mr. Weink this  
5 question, but in general, the content of a check ride under Part  
6 135, for VFR operations, if you'd be prepared to answer that. If  
7 not, I'll ask Mr. Weink.

8 MR. BONHAM: Are you referring to actual maneuvers  
9 that's --

10 MR. HARRIS: Right.

11 MR. BONHAM: Okay.

12 MR. HARRIS: What you actually have to do on the check  
13 ride in order to have a check ride.

14 MR. BONHAM: Actually, the check ride, if you're  
15 familiar with the commercial practical test standards, fairly --  
16 pretty much immolates those standards and they consist of just  
17 briefly, you know, it starts out with normal takeoff and landings,  
18 max performance takeoffs, steep approaches, slope landings, power  
19 failures at a hover, power failures at altitudes, straight in  
20 autos, 180 autos, IIMC training and then we go beyond that and  
21 actually do loft training. The pilot will be given coordinates to  
22 a mock scene, and we'll then fly to that location.

23 MR. HARRIS: And just to clarify, those checks are type  
24 specific, correct? In other words, a check taken in a Bell 206  
25 would not qualify a pilot to fly an AS350?

1           MR. BONHAM: The comparison between those two is  
2 accurate.

3           MR. HARRIS: Thank you. And what happens if a pilot  
4 fails the competency check in a 135 operation?

5           MR. BONHAM: Well, there's a couple different scenarios  
6 that's happened previously with us and the options are that  
7 depending on what is not satisfactory, the pilot can be retrained.  
8 Training can actually -- actually you have more than one option  
9 there. The regulation allows for the check ride, the check airman  
10 to actually stop the ride and to retrain at that point and then  
11 continue the ride. The other option is that the ride can be  
12 stopped completely, and retraining and that possibly could be  
13 sending the pilot through recurrent or initial training again or  
14 the other option is the pilot could be terminated from the  
15 company.

16           MR. HARRIS: Thank you. And the last question for Mr.  
17 Buehler. Last year the FAA was involved issuing an exemption to  
18 an operator concerning the Part 135 weather reporting requirements  
19 at destination airports. Could you elaborate somewhat on that and  
20 perhaps also what the relationship of that exemption then to the  
21 subsequent revision to A021 is?

22           MR. BUEHLER: Yes, sir.

23           MR. HARRIS: And what effect that might have on IFR  
24 operations.

25           MR. BUEHLER: In processing that petition for exemption,

1 we gave strong consideration to what I had said a little bit  
2 earlier, that an IFR flight is the best CFIT countermeasure that  
3 we can employ. In light of that, there is some restrictions in  
4 the current regulation or prohibitions, that limit access to  
5 weather. If we could get more access to weather reporting, we do  
6 encourage IFR flight. So in processing that exemption, one of the  
7 main points of that was rather than having weather at the  
8 destination airport, we allowed the weather to be taken from any  
9 airport within 15 nautical miles. So that opened up a significant  
10 number of hospital heliports for the petitioner.

11           Subsequently, another large operator came in with a  
12 similar petition. So we had then set the precedent out there for  
13 this type of operation. It is that precedent that we use to build  
14 the current A021 in allowing IFR operations. Other weather access  
15 that was going on during this time, I mentioned a limitation in  
16 the current regulation. There was some other relief in the  
17 regulation that said if after investigation by the National  
18 Weather Service this other, you know, this other station, provided  
19 information or provided enough weather information at the  
20 destination, you could use that.

21           Well, the investigation was not defined. So we went out  
22 to the National Weather Service. Since then, we have established  
23 a memorandum of agreement with them that says what that  
24 investigation entails. Simply put, they're looking for the other  
25 weather station to be meteorologically representative of the first

1 station. So we've increased access to weather there.

2 Also yesterday you heard there's a number of AWA  
3 stations currently fielded that do not make an input to the  
4 national system. We have, we, the FAA, has done another  
5 memorandum of agreement with the National Association of State  
6 Aviation Officials, who essentially own the municipal weather  
7 reporting. The memorandum of agreement generally says if they  
8 will bring that signal, that report, an electronic report, to a  
9 central location, we'll pick up that and put it into the national  
10 system. In that way, we gain information about all those other  
11 AWA stations out there. This is an ongoing effort because as we  
12 approach the NASAO representatives, we do get a questioning look  
13 in response to our inquiry about getting weather out of their  
14 municipal airports. So we've been pursuing weather on a number of  
15 fronts.

16 MR. HARRIS: Thank you very much. I have no more  
17 questions.

18 CHAIRMAN SUMWALT: Thank you. That completes the first  
19 round. Why don't we go around for a second go around, and I would  
20 ask the parties to please limit your questions to five minutes or  
21 under. So we'll start with NEMSPA.

22 MR. SIZEMORE: Thank you, Mr. Chairman. Mr. Weink, who  
23 completes your crew member training program?

24 MR. WEINK: The initial completion portion of it, the  
25 crew member himself, as far as you're saying, medical crew

1 members?

2 MR. SIZEMORE: Yeah, I mean who does the training?

3 Who's the person who actually gives that training?

4 MR. WEINK: I myself have been designated until now.

5 MR. SIZEMORE: Okay.

6 MR. WEINK: Yes.

7 MR. SIZEMORE: So you give all of it?

8 MR. WEINK: Yes, as far as the annual training and that  
9 portion of it, yes.

10 MR. SIZEMORE: Okay. Mr. Webb, you made a statement  
11 that training was the single most important solution. Is there a  
12 specific portion on the training that you think meets that  
13 statement?

14 MR. WEBB: Yes.

15 MR. SIZEMORE: ADM, whatever.

16 MR. WEBB: I think that currently the system we have in  
17 place clearly does not work. I mean we're here today because what  
18 we have is broken. So, you know, whether it is a regulation which  
19 may need an amendment or an operating practice that needs  
20 examined, what we currently have does not work. So technology  
21 exists today, simulators, to provide training that is real and  
22 useful. We talk about inadvertent IMC procedures. All that's  
23 wonderful. Do it in a simulator where you can allow the student  
24 to make the error and crash the aircraft. We don't that in the  
25 real world. Today, to every pilot in this room who has had

1 inadvertent IMC procedures training in other than a simulator, has  
2 never been allowed to allow the maneuver to go to fruition, never.  
3 When they take instrument training, they're never allowed to let  
4 the maneuver go to fruition. If I'm training someone IFR, IMC, in  
5 a real helicopter, and they miss a clearance, they misunderstand a  
6 clearance, they descend below MDA, they do anything improper, I  
7 stop it. I can't allow them to -- I mean I'm in the clouds. In a  
8 simulator, I don't have to do that. In a simulator, I can allow  
9 that to go to fruition. So scenario-based training in simulators  
10 is where we must go to stop the accidents that we current are  
11 having.

12 MR. SIZEMORE: Okay. Thank you. Mr. Buehler, you said  
13 several times now that you feel like IFR is the only real solution  
14 to CFIT accidents.

15 MR. BUEHLER: Yes, sir.

16 MR. SIZEMORE: Do you know of any CFIT accidents that  
17 have occurred in EMS aircraft while operating IFR?

18 MR. BUEHLER: No, sir, I don't.

19 MR. SIZEMORE: Okay. Okay. Thank you. Mr. Chairman, I  
20 think that's all we have for right now.

21 CHAIRMAN SUMWALT: Thank you, Mr. Sizemore. Air  
22 Methods.

23 MR. YALE: Thank you, Mr. Chairman. I'd like to just go  
24 ahead and clarify one thing if I could and it should just take  
25 some really short responses, Mr. Weink and Mr. Bonham, if I can.

1 We've been talking about this 135, all legs type of piece through  
2 this, and there's several points of clarification but I'd like to  
3 encapsulate it if I can. Mr. Weink, you talked about doing all  
4 parts, 135, but I think I've understood you to say that some of  
5 the phases of your 91 currently, under the rules right now, part  
6 or your legs are actually done 91. Is that correct? From a  
7 regulatory standpoint.

8 MR. WEINK: Yes, from the regulatory standpoint of it,  
9 yes, and that's -- I mean --

10 MR. YALE: But the spirit is to do them under the same  
11 set of rules, safety thought, mindset, of 135 throughout?

12 MR. WEINK: Yes.

13 MR. YALE: And, Mr. Bonham, I think I heard the same  
14 thing from you, that you were saying that even regulatorily you're  
15 repositioning flights without the patient on board, are 91, that  
16 from a standpoint of your rules, you're operations, your weather  
17 minimums, everything, that that's all conducted as though it was  
18 135 now. Is that correct?

19 MR. BONHAM: That's correct.

20 MR. YALE: Okay. I mean I think that's an important  
21 thing to understand when we start talking about that piece.

22 Mr. Weink, even though the medical crew is a resource  
23 and obviously the pilot to utilize, isn't the pilot trained and  
24 checked out to the point where the pilot should be able to operate  
25 the aircraft safely by themselves?

1           MR. WEINK: Yes. In any instance, when it comes into  
2 it, the pilot, I mean proficiency-wise, check ride-wise, training-  
3 wise, everything is all trained to operate the aircraft solely as  
4 pilot in command. When it gets down to crew resource management,  
5 and that portion of it, delegating responsibilities, right on down  
6 to the crew giving the passenger brief, if we're bringing a parent  
7 along, ultimately the pilot is responsible for that but with the  
8 crew being trained, he can delegate that responsibility to the  
9 crew member to do the passenger brief.

10           MR. YALE: Okay. Thank you. Mr. Riley, in the AMRAM  
11 and crew resource training that you get, how does the patient's  
12 condition factor into the decision process?

13           MR. RILEY: Conditions of the patient really doesn't  
14 take into account how we approach safety.

15           MR. YALE: So from the training that you get both  
16 through AMRAM and the crew, you're basically trained as a  
17 professional to not have that be an influence or in the decision  
18 making relative to safety, correct?

19           MR. RILEY: Correct. Our interest is in the patient and  
20 safety simultaneously.

21           MR. YALE: Okay. Thank you. Mr. Buehler, you stated  
22 that IFR flight was the best prevention for a CFIT accident. For  
23 those operations that must be done VFR, what do you consider to be  
24 the best tool to avoid CFIT?

25           MR. BUEHLER: First of all, obey the regulations. You

1 get a grin out of there but we feel that the regulations are  
2 adequate. Give me your question again, Mr. Yale.

3 MR. YALE: Well, basically my question is what would you  
4 see as the -- the legs that are going to be VFR, if we're going to  
5 continue to see missions and that --

6 MR. BUEHLER: Certainly.

7 MR. YALE: -- what do you see as the best tool to avoid  
8 CFIT in those legs?

9 MR. BUEHLER: Proper preflight planning. We did some  
10 advisory material out there about preplanning routes and planning  
11 for arrival at the scene, preflight planning.

12 MR. YALE: And of the technical tools that we've talked  
13 about, do you have a bias relative to those?

14 MR. BUEHLER: No, sir. I won't pick one above the  
15 other.

16 MR. YALE: Okay. And then just as one last point if I  
17 could to clarify, Mr. Weink, just in the comments that you've  
18 made, I'm looking for clarification, not admonishment if that  
19 helps in the question but you talked about Omni and then we send  
20 them to Omni and then they come to us and then, you know, Omni  
21 does this and it comes to us. You work for Omni Flight  
22 Helicopters. Omni Flight Helicopters is in control of the  
23 certificate there, and the pilots are all employees of Omni Flight  
24 Helicopters. Is that not correct?

25 MR. WEINK: Yes.

1           MR. YALE: Okay. And, you know, do you see that as an  
2 issue at all, if you will, sort of the loyalty factor to the  
3 program that you're on, do the pilots find themselves feeling torn  
4 in any way as to who they're responsibility is to, relative to  
5 those issues?

6           MR. WEINK: I don't think it's a torn issue, you know,  
7 from that side of things. We have to address issues as to why  
8 certain things are happening, you know, whether it's in our  
9 debrief system that we have or, you know, part of the operational  
10 sides of things. That would be the only portion I could see there  
11 that we have. I mean otherwise I mean the line is pretty much  
12 drawn in the sand. I mean we get our paychecks from Omni. We're  
13 employed by them, and we're there to do a service and that's to  
14 transport patients for the Mayo Clinic.

15           MR. YALE: Thank you, sir.

16           MR. WEINK: Yes.

17           MR. YALE: That's all the questions, sir.

18           CHAIRMAN SUMWALT: Thank you. CareFlite.

19           MR. DAUPHINAIS: Thank you. This would be for the two  
20 operators again, Mr. Bonham and Mr. Weink. And you've both been  
21 at your company's programs for a while. Is that correct?

22           MR. BONHAM: Yes.

23           MR. DAUPHINAIS: And you were there when the changes in  
24 the A021 and all the weather stuff came, and I don't know if you  
25 track weather boards, flights and forecast weather and all that

1 stuff. Have you seen a difference before and after the changes  
2 the FAA brought to us?

3 MR. WEINK: I'll jump in right away. The weather change  
4 is what enabled us to get new aircraft. We tracked it. Our  
5 initial, when we went through on the proposal, some of the  
6 meetings and everything that I attended to, we thought we were  
7 going to lose 10 percent. We lost 20 when the weather changed.  
8 So that's what enabled us to go and go to the Board or not us, but  
9 within Mayo, for them to go to the Board and to get new equipment  
10 to better help us operate within the environment again.

11 MR. DAUPHINAIS: So the FAA induced a stimulus package  
12 for Minnesota?

13 MR. WEINK: Apparently but I mean the biggest thing is  
14 it affected our VFR programs --

15 MR. DAUPHINAIS: Right.

16 MR. WEINK: -- is what it affected. So we went IFR at  
17 all three bases.

18 MR. DAUPHINAIS: Okay. Mr. Bonham, do you have any --  
19 you may not, but I'm just curious.

20 MR. BONHAM: You know, it has been our goal at Air Evac  
21 to actually get to -- for there to be a decrease in weather  
22 aborts. You know, there's one thing within our company without a  
23 doubt that a pilot does not have to worry about and that's getting  
24 a call from anyone, anywhere, at any point, and insinuating you  
25 maybe should have reconsidered. You may get a call from me on a

1 weather board, is that, well, there may -- you should have  
2 possibly reconsidered and went the other direction, and so weather  
3 boards have decreased.

4 MR. DAUPHINAIS: Thank you. That's all.

5 CHAIRMAN SUMWALT: Thank you. HAI.

6 MR. ZUCCARO: Thank you, Mr. Chairman. Mr. Bonham,  
7 reference to your thoughts on IFR versus VFR which you current  
8 operate, and I know you mentioned there were drawbacks,  
9 infrastructure, icing considerations, certification. The  
10 certification, is that the certification of the aircraft, the  
11 certification of your program to operate IFR or the certification  
12 training requirements? Or all of the above?

13 MR. BONHAM: I would say all of the above, and let me  
14 also say this is that we are -- VFR works for us. And the other  
15 chief pilot can maybe speak more or answer your questions better  
16 than I can, but we have not even considered an IFR operation.  
17 It's just -- so some of the ideas and some of the suggestions that  
18 I give you, it's just talking amongst my friends within the  
19 industry.

20 MR. ZUCCARO: Sure. I understand. Those considerations  
21 or drawbacks to IFR that you currently have, from your viewpoint,  
22 those being absent, if there was an aircraft that had deicing  
23 capability, if the infrastructure was, in fact, adequate and can  
24 have a seamless transition, and if you had the certification  
25 issues resolved, and we're just asking a philosophical question,

1 do you consider VFR or IFR a safer environment or both?

2 MR. BONHAM: I consider them both safe. Again, as it's  
3 been mentioned already, as far as regulations are complied with  
4 and even above and beyond, and utilizing some of the technology  
5 there, I think they're both very safe.

6 MR. ZUCCARO: Okay. Just out of curiosity, what are  
7 your current VFR weather minimums for day and night?

8 MR. BONHAM: Our current -- you're referring to before  
9 the new --

10 MR. ZUCCARO: Ceiling visibility that you're required to  
11 have before you conduct a flight?

12 MR. BONHAM: It's basically 500 and 2, 800 and 3, 1,000  
13 and 3, 800 and 1,000 and -- 500 and 2, 800 and 3, 800 and 3, 1,000  
14 and 5.

15 MR. ZUCCARO: Okay. Is there a mountainous  
16 consideration in there? Is that what the other numbers are or --

17 MR. BONHAM: I'm sorry. Is there what?

18 MR. ZUCCARO: Is there a mountainous consideration or --  
19 because I was just looking for day VFR and night VFR requirements?

20 MR. BONHAM: Yes, sir. That's -- no, that's the day and  
21 night. Day local, night local, day across country, not across  
22 country.

23 MR. ZUCCARO: Across country, I've got you. Thank you.  
24 I know your aircraft are VFR and you operate VFR. Are any of your  
25 aircraft equipped to a level that would facilitate flight by

1 reference to instruments if it became necessary?

2 MR. BONHAM: All of our aircraft have the  
3 instrumentation to recover from a IIMC event.

4 MR. ZUCCARO: Okay. The other questions, and I'm sorry  
5 if I'm moving fast, but I'm watching the clock. Trained pilots,  
6 you said to train pilots to be EMS pilots, what's the difference  
7 or what's the additional training that they get that they wouldn't  
8 get if they would just go into a normal 135 operation?

9 MR. BONHAM: Well, you know, and again I've worked for a  
10 couple of other EMS operators, and this quite a few years ago, but  
11 basically it was a refresher of 61, 91, 135, touch on the ops  
12 manual and then just go to the aircraft and --

13 MR. ZUCCARO: Well, I guess what I'm really trying to  
14 get at, is there a specific difference when you say making them  
15 EMS pilots versus -- is there anything different they get in your  
16 training program that they wouldn't get in, you know, by  
17 regulation or your particular program versus just going to a  
18 charter operator 135?

19 MR. BONHAM: I think where we're different in some  
20 respects is that we have a program that's referred to as the day  
21 in the life of an EMS pilot, and we actually -- pilots from the  
22 beginning to the end, and it just takes a few days to cover but it  
23 covers all aspects, physiological, psychological, all aspects of  
24 what is required when a pilot signs in for duty that morning at  
25 the base, all the things that he or she may see throughout the

1 day, different types of flights, weather, and actually some of the  
2 scenes, and we've actually literally had pilots to walk out of the  
3 program after that and just say this is not for me. I can see now  
4 that I can't handle that.

5 MR. ZUCCARO: Okay. Fair enough. Would you agree with  
6 the logical that HEMS decision making, risk assessment, is the  
7 same as other mission profiles? If I'm making a decision to  
8 whether I can fly safely from A to B, and I'm doing it corporate  
9 flight, I'm doing it on an offshore flight, I'm going it on a HEMS  
10 flight. Is there anything that's different in that decision  
11 making process for HEMS?

12 MR. BONHAM: You know, I haven't given that much thought  
13 but you're asking me the question now and I would say yes. As far  
14 as the particulars, right off the top of my head, again the  
15 experience level of a pilot, the experience in EMS, the terrain --

16 MR. ZUCCARO: Well, I'm talking about the pilot making  
17 the decision as to whether he or she can go from A to B safely.  
18 Is there anything you would consider different because it's a HEMS  
19 flight versus a corporate flight or an offshore flight?

20 MR. BONHAM: There's no difference as far as I'm  
21 concerned as opposed to if I am a 135 certificate air carrier,  
22 that's what I do. That's what our company does. Now that's the  
23 considerations or the consideration that or what I have to uphold  
24 utmost. So if the question is something different than that, I  
25 don't really understand.

1           MR. ZUCCARO: I don't want to misspeak, but if I  
2 understood it, you do think it's the same process for any flight?

3           MR. BONHAM: I would say generally an air carrier is an  
4 air carrier.

5           MR. ZUCCARO: Okay. That's fair enough.

6           CHAIRMAN SUMWALT: Thank you, Mr. Zuccaro. Thank you.  
7 PHPA.

8           MR. DUQUETTE: Thank you, Mr. Chairman. One question  
9 for Mr. Webb. There's been some discussion with regards to  
10 equipping an aircraft in such a way so that in case of IIMC,  
11 inadvertent IMC, that the aircraft, in fact, can make a safe turn  
12 around, and also a comparison with the aircraft that, in fact, is  
13 certified. So my question is what's the difference in equipage as  
14 far as the equipment on board for IFR capable, in other words,  
15 making a turn around, and an IFR certified?

16           MR. WEBB: Well, I think when most operators speak about  
17 an aircraft that's capable of recovering IMC, they're largely  
18 speaking about an attitude indicator, maybe a HSI, a RMI,  
19 instruments which they would be present in an IFR aircraft but not  
20 in the numbers nor the higher level of equipment. So to recover  
21 IMC, basic recovery is, you know, climb, confess, climb to VMC and  
22 then fly to VMC. You don't need a whole lot to do that, and again  
23 based upon my experience, our company's experience, training  
24 customers, people have a -- people believe that their inadvertent  
25 IMC procedures are much better than they are. Put them in a

1 simulator and put them in that situation, most people have great  
2 difficulty recovering. Again doing it under the hood or doing it  
3 out in a training scenario, in a real aircraft, is in my belief,  
4 inadequate training based upon what we can do today. It was fine  
5 20 years ago when that's all you could do but we've advanced past  
6 that. I mean let's take advantage of that. So again, you know, a  
7 certification process for an IFR aircraft, as we all know, is very  
8 detailed and a long arduous, expensive process. However, to  
9 maintain safety, IMC, flying IMC, as opposed to skud running, or  
10 flying Part 91, within the op specs, flying 91 within the  
11 regulations, but again as we know, those regulations allow for  
12 very low flight above the surface and the accident rates have  
13 proven that that's not working.

14 MR. DUQUETTE: Thank you, sir. And we have no further  
15 questions, Mr. Chairman.

16 CHAIRMAN SUMWALT: Thank you, Mr. Duquette. And AAMS.

17 MS. KINKADE: Thank you. Mr. Buehler, based on your  
18 knowledge of the HEMS industry specifically, do you happen to know  
19 what percentage of all flights are flown IFR?

20 MR. BUEHLER: I don't know the percentage of flights  
21 IFR. I know of our industry, there's 74 certificateholders out  
22 there. About a third of them are authorized to fly IFR.

23 MS. KINKADE: Okay. Thank you. And then just a  
24 question for Mr. High and Mr. Riley, very brief answers. I know  
25 you could expand on this for a long time. If you have the top

1 three things you could think of that would improve the  
2 communication that Mr. Riley talked from his survey, that the  
3 medics specifically, I don't know if the flight nurses feel the  
4 same way, there's this feeling that they can't communicate to the  
5 pilots or their leadership, that they're not comfortable with  
6 turning down a flight I think is what you were referring to. What  
7 are at most the top three things that could improve that?

8 MR. RILEY: I think number one, first and foremost is it  
9 all stems back to training. Every program, every part of the  
10 industry has a lot of their own version of safety training and  
11 crew resource management, AMRAM training. There's various  
12 elements out there but I think one of the key things that would  
13 help is providing some additional training, and I mean in that,  
14 you know, we look at simulator training for medical procedures.  
15 The pilots look at simulator training for their procedures. What  
16 about embracing an opportunity to look at developing a teamwork  
17 approach and creating an environment for training for both of them  
18 to work together. And I think that harbors a better  
19 communication. That's really the ultimate opinion I think that  
20 would be the most important aspect in our industry to employ.

21 MR. HIGH: Three things, mandate, mandate AMRAM or CRM  
22 training, mandate it. Number two, set some type of floor that at  
23 every shift change or every shift briefing, the pilot is going to  
24 discuss three things, what's going on with the aircraft, the  
25 weather, what we can expect and one, a safety topic if you will.

1 The other crew members have to be there in proximity to the pilot  
2 and just begin with that. The third thing, set limits or set a  
3 standard for how often you have to do training. Mr. Weink  
4 mentioned doing quarterly training. I did it in my time at  
5 Vanderbilt. We did quarterly safety training. That was it. You  
6 didn't get around it. Every quarter you were going to do that,  
7 but set some type of floor for this training and enforce it.

8 MS. KINKADE: Okay. Thank you.

9 CHAIRMAN SUMWALT: No more questions. Thank you, Ms.  
10 Kinkade. FAA.

11 MR. HARRIS: Thank you, Mr. Chairman. Mr. Buehler,  
12 we've heard discussions of several different types of technology  
13 including IFR, HTAWS, night vision goggles, and you've raised the  
14 issue of preflight planning. In the new op specs A021, do we  
15 address any preflight planning requirement?

16 MR. BUEHLER: Yes, sir. One of the main points of the  
17 new A021 is a real consideration of determining what altitude you  
18 should travel at to remain above the obstacles. That might seem  
19 like a very simple thing to do, but accidents are happening with  
20 folks running into stuff. So the heart of it is that  
21 determination in light of cloud clearance, the type of airspace  
22 you're operating in, and your company minimums. Also in there is  
23 risk assessment. The main is the altitude.

24 MR. HARRIS: Very good. And basically what you're  
25 talking about is a strategic avoidance of the CFIT accident by

1 finding an altitude that would clear obstacles and train along  
2 your route of flight. Is that correct?

3 MR. BUEHLER: Yes, sir.

4 MR. HARRIS: Given that, is IFR essentially a codified  
5 methodology of doing that assessment of the altitudes along the  
6 routes of flight?

7 MR. BUEHLER: Yes, it is.

8 MR. HARRIS: And then looking at technologies like HTAWS  
9 and NVGs, would you consider those to be primary methods in light  
10 of this issue of flight planning?

11 MR. BUEHLER: Definitely not. They're supplemental.

12 MR. HARRIS: And so you would see flight planning as the  
13 linchpin to actually determining how to conduct the flight safely?

14 MR. BUEHLER: I believe so consistent with my response  
15 to Mr. Yale.

16 MR. HARRIS: Thank you very much, sir. We have no more  
17 questions.

18 CHAIRMAN SUMWALT: Thank you. We now turn to the  
19 Technical Panel for a follow-up round.

20 MR. PRICE: Thank you very much. Real quick, this is  
21 for Mr. Riley and Mr. High. Can you briefly explain the acronym  
22 concern and the website associated with it?

23 MR. HIGH: The concern at work is something that's  
24 sponsored by ASTNA, and it's kind of a clearing house or database  
25 of the incidents, accidents, crashes that were started by a nurse

1 in Colorado, and it allows for the reporting of such by programs,  
2 it's voluntary, that kind of gives you an idea of the issues or  
3 things that are going on out there and kind of a lessons learned,  
4 an informal way of sharing information.

5 MR. RILEY: I would agree with that. I think one of the  
6 key messages to take, it's a reality check reminder that it is a  
7 dangerous industry, but second, that we must learn from mistakes  
8 and use that information as a tool to help mitigate future  
9 problems.

10 MR. PRICE: Okay. And would you say that that website  
11 is widely used and representative of your communities?

12 MR. HIGH: I think it's a part. I think it's a part of  
13 the industry. I think it does get a lot of views and actually I  
14 know the founder, David Kernst (ph.), that he gets a lot of  
15 inquiries even from lay people, from the press and although it has  
16 a little bit looser definitions if you will of accident, incident,  
17 et cetera, et cetera, it's a good source of information.

18 MR. PRICE: Okay. And given that it's a good source of  
19 information, Mr. Bonham, have you ever read the website and taken  
20 any incident off of it to make any type of corrections?

21 MR. BONHAM: Yes, sir. I have seen and read the  
22 website. As far as corrections, I can't recall.

23 MR. PRICE: Okay. My point is a non-punitive feedback  
24 system is similar to a FOQA, and it seems like I've seen incidents  
25 that did draw attention. Next question is to Mr. High and Riley

1 again. Did you -- I've heard that almost 66 percent of the  
2 flights, the EMS flights are without patients on board. Is that  
3 about correct?

4 MR. HIGH: I think it varies from program to program.  
5 If you're based out of a community, that's very well the case.  
6 You're flying only one leg or flying three legs. You're going  
7 out, you're picking up the patient, coming back to the hospital,  
8 that's your second leg. Your third leg is back to your base.  
9 That's probably the rule rather than the exception, but the  
10 hospital-based programs typically are just going to fly two legs.  
11 So it's kind of 50/50.

12 MR. RILEY: I would have to agree with that. It really  
13 is mission profile and based on your operations, if you're  
14 outbased or located within a medical facility.

15 MR. PRICE: So somewhere between 50 and 66 percent?

16 MR. HIGH: Yes, fairly accurate.

17 MR. PRICE: Okay. Given that the medical crew is  
18 responsible for jettisoning, patient safety, patient briefing,  
19 strapping them in, medical attention, clearing the aircraft in the  
20 event of an unscheduled landing, or emergency, keeping the patient  
21 calm, and that you have annual requirements, does it seem to you  
22 like that's part of maybe -- there should be some standards for  
23 that?

24 MR. RILEY: I would agree in that there should be a  
25 floor, a baseline to work off of as far as training. I mean we

1 keep reiterating the concept of training. I mean having some  
2 baseline to work from, I think is a good place to start.

3 MR. HIGH: We actually write standards for different  
4 parts of the flight nurse practice, for ground, for rudder wing,  
5 for fixed wing, but they typically focus on medical things.  
6 They're not entirely focused on a lot of the flight operations and  
7 the nuances of saying. I think that would be helpful. That's  
8 really complex but there's, as Jim just said, there's not really a  
9 good floor there from where to start.

10 MR. PRICE: Okay. So you all agree that standards  
11 should be in place and that probably you should record that annual  
12 training, recurrent training and qualifications somewhere?

13 MR. RILEY: I think one of the important things again is  
14 establishing a floor and not a ceiling because there is  
15 opportunity for growth and so at least having a baseline, where to  
16 start and how to address the minimum standards would be beneficial  
17 to crews across the industry.

18 MR. HIGH: Absolutely. I can tell you that at  
19 Vanderbilt we keep that up for our accreditation, but also you  
20 have a way of going to a person's, to a file, to a folder, to a  
21 document on line and seeing just what training they're up to date  
22 on, what they need and what's pending, et cetera, et cetera.

23 MR. PRICE: Okay. Thank you. My fine one is has to do  
24 with night vision goggles. Would you be comfortable with a pilot  
25 that's flying with goggles and the crew doesn't have them or vice

1    versa, you have them and the pilot doesn't or is it a whole total  
2    crew concept?

3                   MR. HIGH:  Jim, take that one.  You've got more  
4    experience on the NVG stuff.

5                   MR. RILEY:  Okay.  From an association standpoint, I  
6    can't speak on behalf of wearing night vision goggles in aircraft  
7    that is an open cockpit like a Astar or Long Ranger or a 407.  
8    That is a different operation, yet I've worked in some of those  
9    aircraft but that was prior to NVGs.  Working in aircraft that  
10   have cabins, being able to wear goggles is a useful tool and where  
11   I currently work, at Mayo, there is the philosophy that everybody  
12   wears them.  You know, when you have a limited vision field of  
13   view with a set of goggles and if you have two more sets of eyes  
14   with goggles, that enhances your ability to see where you're  
15   going.  So that's a good philosophy, and a little bit is good, a  
16   little bit more is better.  That's a philosophy that is hard to  
17   disagree with just from the essence of it.

18                   MR. HIGH:  I'd agree.  I don't have -- I have no  
19    experience myself with NVGs.  When I talk to colleagues, and  
20    really applicable with any type of technology, being able to see  
21    what everybody else is seeing, kind of levels the playing field if  
22    you will, and you've got -- if you've only got two crew members  
23    that can see an obstacle and you're trying to negotiate that and  
24    the other person is kind of in the blind, if you will, it, at the  
25    minimum, kind of boosts your anxiety a little bit but, yes, I

1 think everybody having goggles on is a good idea.

2 MR. GUZZETTI: Mr. High and Mr. Riley, one other  
3 question for you. How often do medical crews on 24-hour shifts  
4 get 8 hours of uninterrupted sleep while on the shift or when  
5 they're not missions, do they do other duties like work in the  
6 emergency room? Are they sometimes awake for most of the 24  
7 hours? Can you just give us a thumbnail sketch of how that works?

8 MR. HIGH: Yes. It's variable. If you look across our  
9 membership, we do, especially on the nurse side, the people, if  
10 they're at a hospital or they're hospital based, the tendency for  
11 hospital administration is, gee, I've got these people and they're  
12 not doing anything else, and we'll pull them somewhere, and that  
13 really, really impacts fatigue. I think that is an exception  
14 rather than a rule. I can't give you a factual number on how many  
15 people get eight hours of uninterrupted sleep. I alluded to  
16 earlier in our survey that we only had about 60 some odd percent  
17 of respondents that actually had a crew rest policy and rest  
18 policy means if you don't get "X" amount of hours of sleep, you  
19 have to either call administration or you're taken off flight duty  
20 or something like that. It's very, very variable, if that's such  
21 a word.

22 MR. GUZZETTI: Mr. Riley, any comments?

23 MR. RILEY: I would have to agree. I mean the tradition  
24 -- that is more the exception. I think because there are some  
25 places that have gone to 24-hour shifts in hospital bases, not to

1 say that -- or I should say there's probably a fair number of  
2 hospital bases that still do not do 24-hour shifts because maybe  
3 the staff is owned by the hospital, and so if you're on a 24-hour  
4 shift and sleeping, that can be construed as non-productive hours  
5 from a hospital, just from a pure HR standpoint. But the crews  
6 have tried to, the ones that are more independent, that work at  
7 hospitals, they try and help out, but they really I believe try  
8 and express that we have a fatigue policy. We want to make sure  
9 our crews are safe. From our standpoint, sure, we do have staff  
10 within the association, that are paramedics within the  
11 association, that do encounter some of those situations.

12 To actually give you a specific number, that I can't  
13 give you and we did do some surveys in discussing the percentage  
14 of rest policies. That's about 70 percent, pretty close to what  
15 ASTNA had said. And actually feeling comfortable to employ that  
16 rest policy, that was a pretty high percentage close to that, too,  
17 where they feel that they could actually take a safety nap and  
18 pace themselves for the day.

19 MR. GUZZETTI: Okay. Thank you. One final question and  
20 I think the Tech Panel is done, and that is to Mr. Bonham. The  
21 issue, have you heard from Garmin that it will not meet your --  
22 that Garmin Equipment will not meet the TSO?

23 MR. BONHAM: I have not.

24 MR. GUZZETTI: Okay. But are you assuming that's the  
25 case?

1 MR. BONHAM: Yes, sir. That's correct.

2 MR. GUZZETTI: And so if there is some sort of  
3 requirement for all HEMS operators to put a HTAWS system on their  
4 ships, you have how many ships?

5 MR. BONHAM: Currently 84.

6 MR. GUZZETTI: Eighty-four. So if that requirement came  
7 down --

8 MR. BONHAM: Well, currently 84 bases, 100 aircraft.

9 MR. GUZZETTI: Okay. One hundred aircraft, if that  
10 requirement came down next week, that would be -- would that be a  
11 significant financial and burdensome issue for your company?

12 MR. BONHAM: Yes, sir, it would.

13 MR. GUZZETTI: Okay. That's all I have.

14 CHAIRMAN SUMWALT: Thank you very much. We turn to the  
15 Board of Inquiry. Mr. Haueter.

16 BOARD OF INQUIRY QUESTIONS

17 MR. HAUETER: Yes. Mr. Bonham, a quick question. Since  
18 you're strictly a VFR operation, how many missions can you not  
19 complete a year percentage-wise because of that?

20 MR. BONHAM: Are you referring to the turn down rate --

21 MR. HAUETER: To turn down rate.

22 MR. BONHAM: -- because of weather?

23 MR. HAUETER: Yeah.

24 MR. BONHAM: You know, to be honest with you, that's  
25 something that I can't give you a specific number. It's really

1 not a concern of mine that it's tracked. If --

2 MR. HAUETER: Can you give a percentage estimate do you  
3 think or --

4 MR. BONHAM: I would say possibly 15 percent maybe.

5 MR. HAUETER: Okay. Thank you. And for Mr. High and  
6 Mr. Riley, there's been some discussion about having the  
7 paramedics/nurses provide more support to the pilots including  
8 reading out air speeds, altitudes, backing them up on approaches.  
9 Do you believe that can be done with additional training or would  
10 you support that?

11 MR. HIGH: I think it could be done with proper  
12 training. However, in recognizing the pilot's in command of the  
13 aircraft. They're perfectly capable of flying the aircraft by  
14 themselves, and once we get -- we lay hands on the patient, we're  
15 out of it. I think it's doable with training but it needs to be  
16 clearly delineated tasks, what you're supposed to and what you're  
17 not supposed to do. I call this. It's okay to touch this, don't  
18 touch that though rule. But as long as it's clearly delineated, I  
19 think that's fine.

20 MR. RILEY: I would have to agree with Mr. High. Having  
21 a clearly delineated role as a method to facilitate and help a  
22 pilot would be beneficial. That's my answer.

23 MR. HAUETER: Okay. Thank you.

24 CHAIRMAN SUMWALT: Dr. Ellingstad.

25 DR. ELLINGSTAD: Thank you. I'd like to ask a couple of

1 questions about staffing and then some of the scheduling. Mr.  
2 Weink, what sort of turnover do you have with respect to pilots  
3 and your flight crews?

4 MR. WEINK: Pilots themselves, the 13 pilots that we  
5 have, our turnover is very, very low. From the standpoint, it's  
6 back to part of what we had spoke about earlier, given our  
7 geographical location. The hardest thing to get pilots to do is  
8 move up where it's cold. So that's part of the visit. We have  
9 them come up and explain to them, you know, from that standpoint,  
10 what it is, what our mission statement is and how we do things as  
11 far as with Omni through Mayo and that portion of things, and we  
12 usually end up getting someone that is from a geographical area  
13 that has dealt with the cold, and that's our biggest factor.  
14 Somebody will move up, they spend one winter, and they're gone  
15 prior. So with that, that's helped us. So our turnover rate is  
16 low.

17 DR. ELLINGSTAD: Is that also the case with the medical  
18 crews that are on?

19 MR. WEINK: I can delineate to that I guess. Medical  
20 crews themselves, they have a set standard as to what Mayo has, as  
21 to what they -- a standard as to what experience level and that  
22 portion of things that they need to qualify to be on, you know,  
23 part of it is like three years of ER experience and/or critical  
24 care. Our average level of the nursing staff up there is in  
25 excess of 10 years. So we're three times what the recommended

1 qualification for the job. The average qualification is already  
2 10 years or above that. The turnover rate is not -- it's not  
3 huge. We do have some because people do move, that portion of  
4 things, but it's not high.

5 DR. ELLINGSTAD: But it's a relatively stable staff?

6 MR. WEINK: Yes.

7 DR. ELLINGSTAD: Mr. Bonham, how about in your case?

8 MR. BONHAM: Yes, sir. I believe the pilot turnover  
9 rate for 2008 was around 12 percent.

10 DR. ELLINGSTAD: Excuse me?

11 MR. BONHAM: About 12 percent.

12 DR. ELLINGSTAD: Okay. How do you find your  
13 availability of pilots to fill those vacancies?

14 MR. BONHAM: We have a recruiter within the company that  
15 assists with that and just advertisement.

16 DR. ELLINGSTAD: What sort of a washout rate do you  
17 have?

18 MR. BONHAM: Within our flight training, the initial, the  
19 new hire flight training department, we have lost as many as --  
20 one of our larger classes of 18 pilots, we lost 50 percent. It's  
21 not uncommon that out of a class of I would say 10 to 12 pilots,  
22 to lose 3 out of that class of that size.

23 DR. ELLINGSTAD: Okay. How do you in general kind of  
24 consider your circumstances? Are you satisfied with the  
25 availability of people to fill your slots or are you anxious about

1 it?

2 MR. BONHAM: Well, you know, it's obvious that as time  
3 has gone along and there are more operators or I guess bases, it's  
4 becoming more difficult to fill the positions. Also we've got the  
5 military. That issue overseas hasn't helped matters any. We're  
6 also noticing that there's -- at one point a few years ago, maybe  
7 50 to 80 percent, and that's just approximate figures I'm throwing  
8 out there, our pilots had previous EMS experience, and now we're  
9 looking at probably out of a class of 10 to 12, maybe 3 of those  
10 pilots have had previous EMS experience, and that's why we're  
11 very, very critical of the pilots that complete our training and  
12 are sent to the field.

13 DR. ELLINGSTAD: Okay. I'd like to look a little bit a  
14 the work schedules. Mr. Guzzetti raised that issue of how the  
15 shifts are scheduled with the medical personnel, but with respect  
16 to the scheduling of both flight crews and medical personnel,  
17 first of all, Mr. Weink, what is the scheduling practice for your  
18 flight crews? How long -- when do they start? How long do they  
19 work?

20 MR. WEINK: Yes. Of the three bases, we've left that a  
21 little bit independent because of geographical portions of that.  
22 Currently at Rochester they work six on, six off. So they'll come  
23 in and work three days and then rotate into three nights and  
24 they're done. Mankato, adjacent to us, is seven on, seven off.  
25 They do that for practical purposes. It puts their weekends more

1 in line with their families and those are split day and night.  
2 Eau Claire, over in Wisconsin, from that side of things, they're  
3 seven on, seven off. They come in, work seven days, they're off  
4 for seven and they're back on for seven nights. So it's six and  
5 six and seven and seven.

6 DR. ELLINGSTAD: Okay. And what sort of an accounting  
7 do you have in terms of duty time, rest time, et cetera, with  
8 respect to that?

9 MR. WEINK: As per the regulatory side of things, we  
10 have duty logs that we have to fill out. Per that, we have to  
11 meet certain standards. We can only fly "X" amount of hours per  
12 quarter per year in that, and this is all tracked through the  
13 certificateholder. Omni Flight has this, and it's all done via  
14 paper trail and an electronic that they fill out every morning.  
15 So it comes into it, that it's all documented that they've had  
16 their 10 hours minimum rest prior to attending, and then they also  
17 get their 13 - 24-hour rest periods a quarter.

18 DR. ELLINGSTAD: Okay. And that is all tracked by Omni?

19 MR. WEINK: By the certificateholder, yes, Omni.

20 DR. ELLINGSTAD: Mr. Bonham, how about with Air Evac?

21 MR. BONHAM: Basically, sir, what he just mentioned is  
22 regulations that we follow also. Our pilots are typically  
23 scheduled for 7 days, which we refer to as one hitch, and they're  
24 scheduled for 12-hour shifts, and then, of course, it's mandatory,  
25 the FAA regulation, that there's at least 10 hours of rest before

1 the pilot can return for the shift the following day or following  
2 night.

3 DR. ELLINGSTAD: Okay. Thank you.

4 CHAIRMAN SUMWALT: Dr. Mayer.

5 DR. MAYER: Thank you. I had a question for the two  
6 operations, Mr. Weink and Mr. Bonham. There's been a lot of  
7 questions that have drawn out comparisons and contrasts among your  
8 programs and I wanted to ask you about your mission mixes, in  
9 other words, the proportion of flights that are interfacility  
10 transfers versus on-scene responses to ad hoc landing zones. Mr.  
11 Weink.

12 MR. WEINK: Ours, when we look at that, I mean through  
13 Omni being at Mayo, when we get to Mayo managerial and decision  
14 things, the model that they try to run is 20 percent scene work  
15 and 80 percent interfacility. We don't always hit that. We haul  
16 more trauma than that. It's just that the interstructure of the  
17 area where we're at, you know, Minnesota, Wisconsin and that, the  
18 EMS industry is good there. So the ALS, BLS services will get the  
19 patient out of the particular scene, whether it's farm and/or a  
20 car accident and get it to the local hospital. So we get diverted  
21 en route to the scene, and it ends up being a hospital transport.  
22 So -- but 80/20 is what we shoot for.

23 DR. MAYER: Thank you. And, Mr. Bonham.

24 MR. BONHAM: Sir, ours would be more in the line of 50  
25 percent interfacility, 50 percent scene.

1 DR. MAYER: Thank you very much. Mr. Riley, to switch  
2 gears for a moment, you told us earlier about a survey of your  
3 membership that, if our notes are accurate, suggests that about 75  
4 percent of respondents voiced some concern that their ability to  
5 speak up for safety concerns. Just for clarification, you did  
6 submit some information about a survey to our docket, but the  
7 survey that you referred to about the safety concern, is it a  
8 different survey or the same survey?

9 MR. RILEY: That actually is a different survey and the  
10 reason it was not submitted is because that literature is being  
11 prepared for publication.

12 DR. MAYER: Do you have any estimate of when that will  
13 be published? I'm wondering if it would be in time to be  
14 submitted for our docket?

15 MR. RILEY: It won't be prepared and ready by the end of  
16 this month I don't believe. Is that the timeline which you're  
17 looking towards?

18 DR. MAYER: When you publish the article, or prepare it,  
19 we would very much appreciate receiving it.

20 MR. RILEY: We can make sure that would happen.

21 DR. MAYER: Thank you. A couple of questions to  
22 conclude for the FAA, for Mr. Buehler. We heard Ms. Palmer  
23 testify earlier about the benefits of training in simulators for  
24 helicopter operations even when the type of the simulator doesn't  
25 exactly match the helicopter type in operation or use. And I'm

1 just wondering, although I don't have a specific question, but I'm  
2 wondering if there are any regulatory impediments that come to  
3 your mind about that kind of I guess so-called mixed training.

4 MR. BUEHLER: Well, certainly on basic tasks, a  
5 different device than what you are flying you could use but  
6 getting closer to the aircraft that you do fly is the better  
7 approach. Certainly in any of her training programs, part of that  
8 qualification of that simulator is credit for certain tasks.

9 DR. MAYER: Thank you. And also on another topic for  
10 the FAA, you mentioned a MOU that had been signed that would aim  
11 to bring local weather observation stations, local AWA stations  
12 into the National Reporting Program.

13 MR. BUEHLER: Yes, sir.

14 DR. MAYER: Did you say when that MOU was signed? Is it  
15 recent or has it been in place for a while?

16 MR. BUEHLER: It's been in place for a while.

17 DR. MAYER: And has it resulted in municipal AWAS coming  
18 online to the national program?

19 MR. BUEHLER: As I mentioned, as I -- as we bring that  
20 up to the National Association of State Aviation Officials, each  
21 of the state representatives often -- I get a quizzical look to  
22 that. In fact, I'm also active in the International Helicopter  
23 Safety Team, and we sent a representative to NASAO's annual  
24 conference to address that very situation with them. So we're  
25 advertising.

1 DR. MAYER: But it has not yet been effective at  
2 bringing AWAS?

3 MR. BUEHLER: Not largely effective.

4 DR. MAYER: Is there a particular impediment? You  
5 mentioned that the local programs would need to I guess do wiring  
6 or I guess --

7 MR. BUEHLER: Yes.

8 DR. MAYER: -- conceivably wireless to bring the data to  
9 a central point. Is that the major impediment?

10 MR. BUEHLER: Yes, sir.

11 DR. MAYER: Thank you very much.

12 CHAIRMAN SUMWALT: Ms. Ward.

13 MS. WARD: Thank you, Mr. Chairman. I just have a few  
14 questions. I may have missed it. This is for Mr. Weink and Mr.  
15 Bonham. Did you gentlemen state if you had single-pilot  
16 operations or did you have dual?

17 MR. BONHAM: Single pilot for us.

18 MR. WEINK: Yeah, we're currently single pilot IFR.

19 MS. WARD: All right. Thank you. Mr. Buehler, maybe  
20 you can help me. I have been looking on the FAA website, looking  
21 at the Part 135 because I hear that for the most part that the EMS  
22 operations are under Part 135, and we've been talking about crew  
23 members and crew member training. How does Part 135 define a crew  
24 member?

25 MR. BUEHLER: Part 135 defines a crew member as anybody

1 assigned duties in flight.

2 MS. WARD: And by duties in flight, what do you mean?

3 MR. BUEHLER: It might be as simple as assisting with  
4 the security of the passenger, emergency evacuation of the  
5 passenger, maybe shutting down certain systems in an emergency,  
6 duties assigned to flight.

7 MS. WARD: I couldn't find where a nurse or a paramedic  
8 was defined.

9 MR. BUEHLER: That's correct.

10 MS. WARD: But I did notice that they had a SIC, a  
11 second-in-command. We also have a flight attendant defined in  
12 Part 135.

13 MR. BUEHLER: Yes, ma'am.

14 MS. WARD: Do you consider the EMS operations to be a  
15 unique type of operation?

16 MR. BUEHLER: It's just similar to what Mr. Zuccaro  
17 said. It's just another type of aviation.

18 MS. WARD: Another type of aviation that has a  
19 paramedic, a nurse and more than likely a patient on board.

20 MR. BUEHLER: Yes.

21 MS. WARD: Does 135 address securing the patient?

22 MR. BUEHLER: Yes, it does.

23 MS. WARD: Where at?

24 MR. BUEHLER: I can't tell you offhand.

25 MS. WARD: Okay. I'm just curious because I noticed

1 that the FAA has Part 136 which is dedicated to basically air  
2 tours --

3 MR. BUEHLER: Correct.

4 MS. WARD: -- and Part 137 is going toward agricultural  
5 aircraft and 133 for external loads for helicopters. I was just  
6 kind of curious if the FAA was entertaining to have another one  
7 set out there for HEMS operations or EMS?

8 MR. BUEHLER: We've discussed it and nothing in the  
9 works right now.

10 MS. WARD: Can we bring up Exhibit 9(i), page 3? Okay.  
11 Page 4. I don't know how clear that is up there. Can you go  
12 back one more? There we go. Zoom in a little bit if you'd like.  
13 There was some talk about this particular notice. We did talk  
14 about Exhibit 9(i) a little bit, I think Mr. Guzzetti did. I'm  
15 just curious because the FAA has in here that -- to emphasize the  
16 use of radar altimeter for non-operations, consider the using  
17 enhanced vision and train, the TAWS that we've been talking about  
18 at length, and also to consider the incorporation of night vision  
19 goggles, and we have both yesterday and today that a lot of the  
20 operators are using the HTAWS and they're using the NVGs. Why  
21 don't the FAA require it?

22 MR. BUEHLER: On the NVGs, it may not be appropriate to  
23 all segments of the industry.

24 MS. WARD: Okay. I'm going to switch gears just a  
25 little bit. We were talking about the crew resource management

1 and I think the term is AMRAM. Is that what we've been saying?

2 MR. BUEHLER: Yes.

3 MS. WARD: And I know that they are wanting some  
4 standardization. Does the FAA look at the paramedic and the nurse  
5 training? Do they accept the training or approve it like they do  
6 for the flight crew and for flight attendants?

7 MR. BUEHLER: What we look at is the certificateholder's  
8 training program and that possibly could be a part of it, and  
9 that's reviewed and approved by the FAA.

10 MS. WARD: Okay. The reason I ask that is because I did  
11 hear both yesterday and a little bit today, that some of the  
12 paramedics, possibly the nurses, are wearing the NVGs and if we  
13 don't have standardization, the training that they're receiving  
14 for the NVGs, it could create an opportunity for a failure in the  
15 system. That's all the questions I have.

16 CHAIRMAN SUMWALT: Thank you, Ms. Ward. Mr. Bonham,  
17 this question may have been asked and if so, I apologize, but what  
18 is your average launch times from the time that the call is  
19 received until your takeoff?

20 MR. BONHAM: Somewhere within our company it's  
21 referenced that seven minutes is referenced but that is really no  
22 concern of mine and no concern of anyone else within the company.  
23 I think it's difficult to absolutely put nothing there whatsoever  
24 because when a flight request does come in, that's, you know,  
25 that's not the time for someone to go take a shower or finish

1 eating a meal or finish cooking. So seven minutes is referenced  
2 within our company but there's never been a time that I'm aware of  
3 anyone that's contacted any pilot anywhere or medical crew member  
4 and brought up a launch time issue.

5 CHAIRMAN SUMWALT: Thank you very much. Mr. Weink, now  
6 I notice that your launch times for VFR operations were 15  
7 minutes. Is that correct?

8 MR. WEINK: Yes.

9 CHAIRMAN SUMWALT: Because Mr. Bonham only has VFR  
10 operations and so yours is -- his is about 7 minutes, yours is 15  
11 minutes. We heard yesterday that there was a launch time of about  
12 five minutes I think for VFR operations.

13 MR. WEINK: Uh-huh.

14 CHAIRMAN SUMWALT: Do you have competition in your area  
15 where other operators are competing for those same patients?

16 MR. WEINK: Competition is always there. We have within  
17 the system up in our area, basically they have the closest  
18 aircraft protocol, where it comes in that wherever it comes in,  
19 they always launch the closest aircraft to the particular, it's in  
20 the trauma side of it. Interfacility is interfacility, and that's  
21 usually coordinated through the receiving or the sending hospital  
22 from that side. Response times, we used to have a 10 minute  
23 response time. We took a good look at that on safety and with  
24 winter and winter ops and that portion of it, we elected to move  
25 it to 15 minutes because we didn't want it to be a stressful

1 issue, you know, from that side of things, to move it in, and  
2 again all it is, is a benchmark, and it's not a matter of any  
3 punitive, anything. It's just a matter of where it's at and what  
4 we need to do to improve.

5 CHAIRMAN SUMWALT: Thank you. And I appreciate that,  
6 and when we refer to competition, you mean companies outside of  
7 Omni Flight/Mayo Clinic that may be trying to get those same  
8 patients. Is that correct? You do have that sort of competition  
9 or do you mean competition between your own bases?

10 MR. WEINK: This would be competition outside. The  
11 bases are all dispatched through -- our three bases are dispatched  
12 through one center. So there's no competition between bases.  
13 It's just the competing EMS services in the states.

14 CHAIRMAN SUMWALT: Thank you very much. Mr. Bonham, I  
15 heard your comments about your purchasing the Garmin 396 and now  
16 it does not meet the TSO for TAWS. When you purchased that, when  
17 the decision was made to purchase it, was it an attempt to meet  
18 that TAWS requirement?

19 MR. BONHAM: Yes, sir, it was. It was again with the  
20 FAA Notice 8,293 that was issued in January of '05 I believe, and  
21 I don't remember there being any specific recommendations related  
22 or requirements for a terrain avoidance warning system when we  
23 made the decision to purchase all of those.

24 CHAIRMAN SUMWALT: Thank you. Mr. Webb, you made the  
25 statement that technology is not the magic bullet, and I think

1 I've said all along that there is no single magic bullet that's  
2 going to fix the problems that this industry is experiencing.  
3 Would you concur that it is a multilayered approach that will fix  
4 it, that there will be a combination of training, a combination of  
5 technology, a combination of better procedures, better regulatory  
6 oversight? Do you think that what is going to fix it will be a  
7 combination of factors?

8 MR. WEBB: I believe so. I think that certainly the  
9 industry will enjoy different appreciable levels of safety with  
10 different approaches. In other words, is it most safe to fly a  
11 dual pilot IFR helicopter with deicing capabilities with crew  
12 members who are trained every quarter? Certainly. But that's not  
13 the environment or the structure that we have today. So I believe  
14 that we will enjoy the greatest benefit in safety by a large  
15 percentage through training.

16 Now if we want to add TAWS, if we want to add NVG, if we  
17 want to add those devices, that's wonderful, and if we train the  
18 operators to use them properly, we will enjoy an additional level  
19 of safety. But without that training, simply adding the products  
20 and without the ability to operate the products in the way they  
21 were designed to be operated, we're going to expend a lot of  
22 capital and solve nothing.

23 CHAIRMAN SUMWALT: Okay. Thank you. I'd like to ask  
24 for Exhibit 3(a). I counted the pages. I thought it was 31 but  
25 what did the page number end up being? I guess it doesn't really

1 matter but unless we need it for the record but -- so we have this  
2 exhibit from the first day's presentation from Dr. Blumen's  
3 presentation, and it's a fatal accident rate per 100,000 flight  
4 hours. And if you look, the Part 121 scheduled, you really can't  
5 even see that line because it appears to be the baseline actually,  
6 at least the way I read this. And I think that Ms. Palmer, you  
7 have a training background. Are you familiar with the training  
8 requirements or training practices for Part 121 air carriers? Do  
9 they go out and do a lot of airplane training these days or where  
10 do they do most of their training?

11 MS. PALMER: They do almost all of their training in the  
12 simulator.

13 CHAIRMAN SUMWALT: Okay. And as a former air carrier  
14 pilot, I would agree with that. I went to the simulator twice a  
15 year and do you believe that the training along with other things  
16 have combined to form that multilayered approach that I'm  
17 referring to that has driven the air carrier rate down whereas the  
18 rest of the industry is still above that?

19 MS. PALMER: Absolutely.

20 CHAIRMAN SUMWALT: And if we're talking about a  
21 multilayered approach, I would like for Mr. High, Ms. Palmer, I'd  
22 like for anybody else to weigh in on this, but sim training would  
23 be one of those we just said. How about technology such as TAWS?  
24 Would that be another thing that's helping to drive the air  
25 carrier rate down? We said yesterday that there's never been a

1 CFIT accident with a TAWS equipped airplane, and yet CFIT  
2 continues to be one of the largest killers of commercial airline  
3 traffic, passengers I should say. How about standard operating  
4 procedures? Do the air carriers have very -- SOPs? Yes, they do.  
5 Is there a difference in regulations between the standard with  
6 Part 91 and Part 135 compared to the 121 carriers? Mr. Buehler,  
7 I'll ask you that. Is it a different standard?

8 MR. BUEHLER: Very similar for the two carriers or the  
9 two commercial operators. 91 is a general aviation operator.

10 CHAIRMAN SUMWALT: It is indeed and so there is a  
11 different standard between 91 and Part 121. We know that. And  
12 there are some differences between Part 135 and 121. Is that  
13 correct?

14 MR. BUEHLER: Yes, sir.

15 CHAIRMAN SUMWALT: And we know that most of the, I think  
16 from the accident data that we've seen, we've seen that most of  
17 the flight, while many of the accidents that we're seeing occur,  
18 in the HEMS industry, are occurring under what part? Conducted  
19 under what part of the FARs?

20 MR. BUEHLER: The two legs, under 91.

21 CHAIRMAN SUMWALT: That's right. Under Part 91.

22 MR. BUEHLER: Yes, sir.

23 CHAIRMAN SUMWALT: There's a difference between Part 91  
24 standards, Part 121 standards, Part 135 standards. Another reason  
25 that that baseline -- I'd like to keep that exhibit up there.

1 Another reason that that air carrier accident rate may be  
2 significantly lower might be things like mandated CRM. Is CRM,  
3 Mr. Buehler, required for Part 135?

4 MR. BUEHLER: No, sir.

5 CHAIRMAN SUMWALT: Is it required for Part 121?

6 MR. BUEHLER: I believe so.

7 CHAIRMAN SUMWALT: I'm sorry. I didn't hear that.

8 MR. BUEHLER: I believe so.

9 CHAIRMAN SUMWALT: Okay. It is. Do we have a  
10 requirement under Part 121 for formalized dispatch flight  
11 following procedures, Mr. Buehler?

12 MR. BUEHLER: Yes, sir. Yes, sir.

13 CHAIRMAN SUMWALT: Okay. Do we have it for Part 135?

14 MR. BUEHLER: No, sir.

15 CHAIRMAN SUMWALT: Okay. So what I'm really trying to  
16 say here is there is a reason collectively why the air carriers in  
17 this country have an accident rate that is very, very, very low  
18 and that everyone else is above that. So as Peter Drucker said,  
19 the best way to predict the future is to create it. If when we  
20 look into that crystal ball and we don't like what we see, we can  
21 go out and immolate those best practices or those regulations or  
22 those technology enhancements or those training practices that are  
23 associated with companies that are highly successful. So I'll  
24 leave you with that one.

25 Ms. Palmer, I attended a meeting in November that you

1 hosted at the DFW Airport, and someone in the audience said, and I  
2 agree with this, it's amazing to me that someone can go out and  
3 buy a used corporate jet and spent \$2 million for it, and there's  
4 going to be a requirement for their insurance carrier that they go  
5 out and receive simulator training, but somebody can go out and  
6 purchase a \$7 million helicopter and there is no requirement for  
7 simulator training. Is that correct?

8 MS. PALMER: That is correct.

9 CHAIRMAN SUMWALT: Do you have any ideas why that may  
10 be?

11 MS. PALMER: Why the insurance carriers have not  
12 actually realized the new simulators were that were available,  
13 they did not know what training programs were available and I  
14 think that was one of the purposes of the educational session that  
15 Mr. Maddiello held.

16 CHAIRMAN SUMWALT: Thank you. Mr. Buehler, what is the  
17 status of what came out an advance, a notice of -- the draft A021  
18 that came out on November 14th. What is the status of that at  
19 this time?

20 MR. BUEHLER: Yes, sir. We've fielded it. It's in the  
21 implementation phase.

22 CHAIRMAN SUMWALT: Okay. Thank you. Any idea -- okay.  
23 So when will that be implemented? Is it being implemented now?

24 MR. BUEHLER: Yes, sir, it is.

25 CHAIRMAN SUMWALT: Okay. All right. Thank you very

1 much. Good. Mr. Buehler, you've mentioned that -- well, what  
2 would be -- from the data that you are familiar with, what would  
3 be one of the largest causes of accidents in the HEMS industry,  
4 the largest factor? Would it be loss of control? Would it be  
5 CFIT? I mean it would be both of those. Would you agree with  
6 that?

7 MR. BUEHLER: Yes, sir, I would.

8 CHAIRMAN SUMWALT: CFIT is a very large --

9 MR. BUEHLER: Yes.

10 CHAIRMAN SUMWALT: Okay. You mentioned a moment ago  
11 that there were more CFIT accidents occurring in non-IFR  
12 operations and to your knowledge, there's been no CFIT accident  
13 occurring under IFR operations. Is that correct? In the HEMS  
14 industry.

15 MR. BUEHLER: Yes, sir.

16 CHAIRMAN SUMWALT: And yet when I ask the question, the  
17 question was as I recall from one of the witness, is there a  
18 difference in safety between an IFR operator and a VFR operator, I  
19 believe your response was, well, there is no difference from a  
20 safety perspective. They're both meeting the regulations. But I  
21 think when you compare the -- yes, they are both meeting the  
22 regulations, but which is safer? If we have more CFIT accidents  
23 occurring with VFR operations, and CFIT is one of the largest  
24 killers of people in the HEMS industry, how can we say that the  
25 VFR operations are as safe as the IFR operations?

1           MR. BUEHLER:  If they abide by the rules, they'll be  
2 safe.

3           CHAIRMAN SUMWALT:  Thank you.  Well, it's been a  
4 fantastic morning.  Believe it or not, I have the secret schedule  
5 up here with the times and we are actually on schedule.  Believe  
6 it or not.  We're right where we should be.  So I commend everyone  
7 involved for your participation.  Let's take an hour for lunch.  
8 Let's reconvene at 1:55.  We are in recess.

9           (Whereupon, at 12:55 p.m., a luncheon recess was taken.)

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A F T E R N O O N   S E S S I O N

(1:55 p.m.)

CHAIRMAN SUMWALT: We will come back to order.

Just administratively, the security found -- I think someone left these devices coming through security. So if you're missing these, they're here, and who do they belong to? Great. Thank you. Thank you. We've all done it.

Okay. So during the last session, we had testimony from a witness that there had been no CFIT accidents under IFR. The Board -- that's not actually a Board position. We are going to look into those figures and we don't have that. We're just basing -- the testimony of the witness is where that statement came from. However, we will use our research and engineering resources to find out exactly what that figure is. Thank you. Yes, sir. Mr. Harris.

MR. HARRIS: I'd like to offer our resources also in that study.

CHAIRMAN SUMWALT: Thank you very much. And, Mr. Dodd, Dr. Dodd, do you want to just comment on that, what we'll do on that?

DR. DODD: We'll certainly follow up and work with FAA on that, Hooper, Mr. Harris, and then we'll get back to you, Mr. Chairman, as soon as we have the answer.

CHAIRMAN SUMWALT: Okay. Thank you. Thank you very much.

1           Okay. The next panel will be on corporate oversight and  
2 issues here will be oversight, safety and reporting systems,  
3 communications procedures, site inspection processes, hospital  
4 oversight, external and internal audits and certification.

5           And, Ms. Ward, will you please place under oath and  
6 qualify the witnesses.

7           MS. WARD: Thank you, Mr. Chairman. Could the witnesses  
8 please rise? Raise your right hand.

9 (Witnesses sworn.)

10          MS. WARD: Thank you. Okay. I'll start with Mr.  
11 Bassett. Could you state your name, your title and the  
12 organization that you represent?

13          MR. BASSETT: My name is Chris Bassett. I'm the Chief  
14 Pilot of Air Methods Corporation.

15          MS. WARD: Thank you. Mr. Judge?

16          MR. JUDGE: My name is Thomas Judge. I'm the Executive  
17 Director of LifeFlight of Maine.

18          MS. WARD: And, Ms. Frazier?

19          MS. FRAZIER: My name is Eileen Frazier. I'm the  
20 Executive Director with CAMTS.

21          MS. WARD: Thank you. Mr. Chairman, these witnesses  
22 have been sworn in and qualified.

23          CHAIRMAN SUMWALT: Thank you, Ms. Ward. This Panel will  
24 be led by Ms. Leah Yeager. I turn it over to you, and if you'll  
25 please introduce the Technical Panel that will be assisting you.

## 1 TECHNICAL PANEL QUESTIONS

2 MS. YEAGER: Thank you very much. And on the Panel  
3 today with myself will be Dr. Robert Dodd and Mr. Thomas Latson.  
4 Okay. Thank you.

5 Ms. Frazier, I'd like to begin with you today. Ladies  
6 first. Before we get started, could you just briefly explain what  
7 CAMTS stands for and how you got involved with CAMTS?

8 MS. FRAZIER: I'd be happy to. CAMTS is an acronym for  
9 the Commission on Accreditation of Medical Transport Systems, and  
10 what we do is accredit air medical and ground services throughout  
11 the United States, and actually we're available worldwide. We  
12 started back in 1989 actually when we received a feasibility study  
13 grant from then ASHBEAMS which is now AAMS. We were looking at  
14 doing a peer review type of visit to programs so that we could  
15 look at safety primarily because we had experienced a  
16 proliferation of accidents in the mid-eighties with air medical  
17 companies.

18 We realize when we started to do this and look into the  
19 study that there was more to it than just looking at safety.  
20 There were a lot of medical issues that were not addressed by the  
21 typical medical protocols because we were doing medicine in  
22 transport, and that was a little bit different.

23 So we started with standards and our first site review  
24 was in 1981. We've been in business since then. There are  
25 currently 147 accredited services. About 30 percent of those are

1 rotor wing only; 54 percent of those are rotor wing, fixed wing  
2 and ground or some combination of that. The rest are fixed wing  
3 only or ground critical care only. So that's kind of how the  
4 makeup goes. So there's 147 currently. Most of those are in the  
5 United States. Some are in Canada, and there's one in South  
6 Africa.

7 MS. YEAGER: Okay. Thank you. So just to clarify, you  
8 say that how many HEMS operators are currently accredited by  
9 CAMTS? You said there's 147?

10 MS. FRAZIER: There's 147 programs.

11 MS. YEAGER: Programs.

12 MS. FRAZIER: It's a little confusing because we don't  
13 really accredit operators, Part 135 operator.

14 MS. YEAGER: Okay.

15 MS. FRAZIER: They're part of the accreditation process  
16 but we're actually accrediting a program such as LifeFlight,  
17 Flight for Life or names like these.

18 MS. YEAGER: Okay. Thank you. And you mentioned CAMTS  
19 accreditation standards. What are those standards?

20 MS. FRAZIER: The standards, and I believe you have an  
21 exhibit, cover everything, if you kind of see the index.

22 MS. YEAGER: Is that 10(b)? Exhibit 10(b).

23 MS. FRAZIER: Yes, I believe so.

24 MS. YEAGER: If we can pull that up.

25 MS. FRAZIER: The standards actually cover every part of

1 an air medical service, from the medical direction to the medical  
2 protocols to the medical personnel, pilots, mechanics, aircraft,  
3 medical configuration of the aircraft, quality management,  
4 utilization review, and then there's a ground aspect as well. And  
5 there's criteria under each one of the standards.

6 MS. YEAGER: Okay. And if I'm an operator that wants to  
7 get CAMTS certification, who's eligible? And if you could walk me  
8 through the entire certification process.

9 MS. FRAZIER: Okay. If you are to apply for  
10 accreditation, there's an initial application. There's really two  
11 prerequisites that you would not be eligible if this would occur.  
12 You have to have a Part 135 certificate, whoever is -- either you  
13 as the program or whoever is providing that air medical service to  
14 you, and you have to have two care providers. So if you don't  
15 have those two aspects, you wouldn't be eligible to apply.

16 Critical care ground can apply as a separate unit. They  
17 don't have to have an air unit. If you have rotor wing and fixed  
18 wing, you must include both types of services. You can't  
19 piecemeal it.

20 So once you apply for accreditation, you receive, it's  
21 sort of a self-study. We call it a PIF, but program information  
22 form is a little misleading. It's a huge document. It asks  
23 questions about each of the standards. It asks for attachments,  
24 and when we receive all of that information, programs have up to a  
25 year to complete and return that information. Then we will go

1 ahead and review it and schedule a site visit.

2 Usually a site visit on an average-sized program is  
3 about two surveyors and about two to three days out on the site.  
4 The report from the site surveyors goes back to the Board of  
5 Directors. It's the Board of Directors that makes the decision on  
6 accreditation, and our Board is made up of 17 member  
7 organizations. Each organization represents every discipline that  
8 you would find in an air medical service from pilots to nurses to  
9 respiratory care practitioners to paramedics to mechanics to all  
10 the different alphabet groups.

11 MS. YEAGER: Okay. And you touched on this a little bit  
12 but how long from the time that someone puts in the paperwork to  
13 the time they're actually certified, what's an average time it  
14 would take to get certified by CAMTS and what's an average cost of  
15 a certification for an operator?

16 MS. FRAZIER: The average time for an initial  
17 application -- by the way, they're accredited every three years  
18 for full accreditation. Average time would probably be nine  
19 months to a year from the time they applied. The cost is \$5,000  
20 flat fee when you return your PIF, your form, and then there's a  
21 charge for site surveyors' travel expenses and fees after the site  
22 survey is completed.

23 MS. YEAGER: Okay. In 2008, last year, you issued  
24 several new proposed standards to be added to CAMTS accreditation  
25 standards --

1 MS. FRAZIER: We did.

2 MS. YEAGER: -- which I understand were adopted just a  
3 few days ago on January 30th. These standards include several  
4 safety issues which includes systems management safety, sleep  
5 deprivation and fatigue and hospital helipad and on-scene  
6 landings. Those are just a few of the safety ones. I know we're  
7 going to be talking about SMS in the next Panel, and not to step  
8 on Dr. Byrne's turf here, if you could possibly talk about the new  
9 standards that were just adopted regarding helipad and hospital  
10 scene landings and also crew and fatigue issues.

11 MS. FRAZIER: Sure. What happens with standards is when  
12 we are reviewing standard, and by the way, we're kind of going  
13 through this process all the time because at every Board meeting,  
14 we look at standards that have typically been missed. So perhaps  
15 it's a standard we need to clarify better or we need to do away  
16 with altogether or have other standards to address the issue. In  
17 this particular case because there were a lot of accidents over  
18 the summer months, at our July Board meeting, we looked at  
19 preliminary reports of accidents and also we look at things at  
20 NTSB recommendations, FAA Advisory Circulars and what's out there.

21 We have the ability to change standards rather quickly.  
22 Our normal process is every two to three years, but in this case,  
23 because there were some pressing issues, we felt like we wanted to  
24 do an addendum. So the addendum that you're referencing was just  
25 passed January 30th, and it did look at -- the number one issue

1 that we have concerns about is fatigue and sleep deprivation.  
2 When we look at Dr. Blumen's study and he found that 49 percent of  
3 the accidents occur at night while only 34 percent of the actual  
4 flights occur at night, we want to know what else is the problem  
5 there besides running into weather and those sorts of things, and  
6 everyone I think in the United States is a little concerned about  
7 fatigue. We're all in kind of that busy mode.

8           And, with flight operations, when we looked at the  
9 studies that have been done on sleep deprivation and sleep  
10 inertia, we didn't find anything specific to EMS operations and  
11 the way we practice. We're a 24/7. There's some fire studies but  
12 they didn't actually study the firemen after they woke up.

13           One of our biggest concerns is sleep inertia, that  
14 period of wakefulness after you wake up. What is your cognitive  
15 function? What are your psychomotor skills? And what activities  
16 must you do immediately after being awakened. So we have concerns  
17 about that.

18           What we did was address fatigue and sleep deprivation in  
19 three different ways right now until we can do more studies. We  
20 looked at educating personnel on the factors that surround sleep  
21 deprivation and fatigue and also sleep inertia. We looked at how  
22 to put those into a risk analysis type thing so that when crews  
23 come on duty, there's a risk analysis scoring they can look at to  
24 check themselves about fatigue. And then we also looked at things  
25 like the education, continuing education on sleep deprivation,

1 circadian rhythms and recognizing the signs of fatigue. So that  
2 was one of the issues we looked at.

3 We also looked at, I think you referenced SMS. We had a  
4 section on SMS already in our seventh edition standards. What we  
5 did was add a little bit more to that to speak to teamwork and  
6 communications and crew coordination because a lot of the things  
7 we see when we do site visits is people are just beginning to look  
8 at SMS. Many times we find programs don't quite understand what  
9 it is. They might have a checklist of things they're supposed to  
10 have but I don't know and we don't know if they're truly getting  
11 to a safety culture with the SMS that they're developing. So  
12 we're trying to look at that a little bit more.

13 We also added some issues about hospital helipads and  
14 scene landings, crew coordination with that, communications in and  
15 out of hospital helipads. One of the issues that we run into when  
16 we go out and review programs is that there may not be anyone at a  
17 hospital helipad that you can directly communicate with that you  
18 are coming in. If it's your own hospital helipad, if it's a  
19 program that's based at that hospital, usually there's very  
20 sophisticated procedures and there's somebody from security to  
21 meet you. That may not always be the case with a hospital helipad  
22 that's not within your own system. So it's imperative that better  
23 communications and sometimes even agreements happen so that  
24 programs know who they should contact, who should know that  
25 they're coming into that hospital helipad. So that was another

1 issue we looked at.

2 And, we looked at other things, aviation QM, how to  
3 measure your safety culture. We also added things to the post-  
4 accident incident plan, based on some recommendations from the  
5 families of survivors of the accidents and based on things like  
6 having a process to communicate with them and having services for  
7 them to help them right after a tragic accident. So those are  
8 kind of the main things.

9 MS. YEAGER: You mentioned -- just to go back to the  
10 issue with sleep deprivation, you mentioned that you want to do  
11 more studies. Does CAMTS have anything in the works right now or  
12 any initiatives to do any studies regarding sleep deprivation?

13 MS. FRAZIER: We're still in the developmental process  
14 and we're still looking for funding, but there's several studies  
15 that could come out of this issue. The main concerns are length  
16 of shifts because we see more and more medical personnel working  
17 24, 48-hour shifts. We are also concerned about number of  
18 consecutive shifts in a row, and we're concerned, as I said  
19 before, about sleep inertia. We probably are going to start with  
20 the sleep inertia study, and we want to know if it's a factor in  
21 the initial response and activities of EMS pilots and medical  
22 crews. We're not set up to disclose any details about that.  
23 We're thinking maybe in a simulator type study, but we don't have  
24 any further information on that.

25 MS. YEAGER: Thank you. And if you could just explain

1 some of the privileges that an operator would get with CAMTS  
2 certification. Are there any privileges associated with it or --

3 MS. FRAZIER: Sure. A program that applies for  
4 accreditation is probably very interested in looking at their  
5 entire process and having an audit performed so that they can see  
6 where their performance improvement focus should be. And, as I  
7 said, we have 147 currently.

8 There are programs out there that apply for  
9 accreditation because they have to. They may be in a state and  
10 there are nine states that require CAMTS accreditation. They are  
11 given two years to achieve that accreditation but in the interest  
12 of doing that, we have applications from programs in those states.  
13 There are also, especially in the fixed wing world, there are  
14 certain insurances and contracts that require CAMTS accreditation  
15 in order to receive the contractor insurance.

16 There's also just the benefit of some of the intangible  
17 benefits that you wouldn't think of, like the crew working  
18 together on a common goal, and the pride and just the whole effort  
19 of working together on something this task oriented because it  
20 does take quite a long time to get all of your materials together.  
21 Most programs are probably practicing what the starts are saying,  
22 but many programs don't have anything documented to show. So the  
23 biggest thing that we find is that they have to improve on  
24 documentation before they can apply.

25 MS. YEAGER: Okay. Thank you very much. I'd like to

1 next move onto Mr. Judge, and before we go, I do have an exhibit  
2 that I'd like to enter into the docket. It would go under Panel  
3 10(m), and it's just a few slides that Mr. Judge has prepared.

4 (Whereupon, the document referred to  
5 as Corporate Oversight Exhibit 10(m)  
6 was marked for identification.)

7 MS. WARD: Do you have a paper copy of them?

8 MS. YEAGER: I do.

9 CHAIRMAN SUMWALT: Okay. So these have not been entered  
10 until now?

11 MS. YEAGER: That's correct, sir. Yes.

12 CHAIRMAN SUMWALT: Do you have any objections,  
13 Mr. Judge? You're entering them yourself?

14 MR. JUDGE: Yes.

15 CHAIRMAN SUMWALT: We wanted the exhibits in by last  
16 week. So I want to make sure it not objectionable to you.

17 MR. JUDGE: Yes, they reference the paper exhibits, the  
18 other exhibits that have already been entered.

19 CHAIRMAN SUMWALT: That's fine. We'll enter it as an  
20 exhibit? Which one? 10(g).

21 MS. WARD: M.

22 CHAIRMAN SUMWALT: 10(m), thank you.

23 (Whereupon, the document referred to  
24 as Corporate Oversight Exhibit 10(m)  
25 was received into evidence.)

1           MS. YEAGER: Thank you. Mr. Judge, we had the pleasure  
2 of hearing your testimony on the first day of the hearing, and not  
3 to have you repeat yourself, but for those of us that are like  
4 myself, that have a good memory but sometimes it's very short, if  
5 you wouldn't mind once again telling us a little bit about  
6 LifeFlight of Maine and how it's structured, and how you came to  
7 be involved with LifeFlight of Maine.

8           MR. JUDGE: Sure. It is an honor to be asked back. We  
9 are a small non-profit. We're a medical transport organization.  
10 We serve the entire State of Maine. We're owned by a hospital  
11 consortium, although we're an independent business unit and we  
12 provide kind of a wide variety of critical care services for the  
13 entire State of Maine.

14           I was asked in 1998, along with a physician colleague,  
15 to buy the hospital consortiums to develop an air medical program  
16 for the State. At that point, we were the only state in the  
17 country without any access to air medicine and they essentially  
18 gave me a white sheet of paper that said never compromise safety,  
19 make it world class and don't spend a lot of money. And so the  
20 hospital systems put up some funding but then from there, we're  
21 expected to operate in the black.

22           MS. YEAGER: Okay. And currently how many helicopters  
23 are you guys operating in Maine right now?

24           MR. JUDGE: We operate two helicopters that are based at  
25 hospitals about 120 miles apart from each other. We fly single

1 pilot, fly IFR, full NVG and that's been the steady piece since  
2 the beginning.

3 MS. YEAGER: Okay. And how many pilots are in your  
4 program?

5 MR. JUDGE: We contract -- just a couple other pieces I  
6 think are important about us. We are a private organization as is  
7 much of air medicine, if not virtually all of air medicine in the  
8 United States. We are a private organization engaged in a very  
9 public mission. We think that based on that, the assurance of  
10 public values and trust, we have to do that, for doing stuff. We  
11 are not an air taxi company. We are a medical company. We  
12 contract with a Part 135 certificateholder on a long-term basis to  
13 provide the aviation services. They employ 10 pilots and 3 full-  
14 time mechanics that they base in Maine to us, to staff -- we own  
15 the aircraft. They staff the aircraft and provide the maintenance  
16 services.

17 MS. YEAGER: Okay. And how many medical crew are a part  
18 of your program?

19 MR. JUDGE: There are about 38 medical crew, then 3  
20 physicians that are hands on and another 15 physicians that  
21 oversee the program from around the state, and 9 communications  
22 specialists, very small administrative staff.

23 MS. YEAGER: Okay. When LifeFlight of Maine was first  
24 established, what was the basis of your safety program and how has  
25 it evolved over the last 10 years?

1           MR. JUDGE: Well, if you could -- kind of a couple part  
2 question. Perhaps you could put up the first slide, we would do  
3 that. We could take a look. I had the unfortunate previous  
4 experience of being the Chairman of the EMS Board in the State,  
5 that had to deal, 15 years ago, a long time prior to LifeFlight,  
6 with one of the most egregious air medical crashes ever in the  
7 country. So when we got tasked with doing this, there was some  
8 premises that we said were absolutely essential if they wanted us  
9 to be involved.

10           One is that we said that the helicopter program could  
11 not be part of the competitive war between hospital, that our  
12 hospital consortiums compete with each other, other hospitals in  
13 the state compete with each other, and the helicopter program had  
14 to not be part of that or we wouldn't be involved.

15           Secondly, we understand there's risk in this and we are  
16 asking our people, and when I say our people, not only do we  
17 contract with a Part 135 certificateholder to produce aviation  
18 services, but actually LifeFlight of Maine does not have a single  
19 employee. We contract for nurses and paramedics with hospitals.  
20 We contract for physician services with hospitals, and we contract  
21 for medical communications from a communications company, and we  
22 contract for management services. I actually work for a company  
23 called Affiliated Healthcare Management which is a wholly owned  
24 subsidiary of one of our parent organizations. So there's a  
25 fairly complex set of contracts that deal with this.

1           So when I say our people, you know, I know that was kind  
2 of in the last Panel, you know, there's people work for different  
3 organizations and we have clear bright lines on those, but we're  
4 asking people to do something that's incredibly complex. We're  
5 asking them to do it 24 hours a day, and so we, you know, from a  
6 values base, you know, started out, the slide disappeared, and  
7 said the first bullet of our SQMS is that, you know, every person,  
8 and we actually borrow this from Sikorski, that every person that  
9 works in our organization will go home at the end of their shift  
10 in the same or better condition than they came to work. That's  
11 the first bullet, and I think that that sort of drives things. So  
12 if you look at this, we understand that there's a three-legged  
13 stool, and if any leg in the three-legged stool falls apart, you  
14 don't have safety. So we look at this and say there's a clinical  
15 imperative. We understand that that's the business that we're in.

16           But we also have this aeronautic reality, the risk part  
17 of it, and then there's a fiscal part of it that's, you know, the  
18 cost base of this, and what we have to design, and we're very big  
19 into the idea of designing systems, is design a system so that one  
20 decision, in any one of those places, cannot contaminate the next  
21 decision. So there's more than just not telling the pilot that  
22 there's a two year old in Calais Regional Hospital that needs to  
23 be transported. That's part of a design process to prevent that  
24 from doing so.

25           So we work really hard at understanding and designing

1 our contract arrangements, designing how our people work together,  
2 based on that three-legged stool so that each decision is an  
3 independent decision that has to work in concert, you know, for  
4 the safety system to work.

5 MS. YEAGER: Okay.

6 MR. JUDGE: From that time, and if you could go to the  
7 next slide, the evolution of this is that I think that most people  
8 start with a safety program and they kind of move on. Over time,  
9 you know, we looked at CAMTS. We became fully CAMTS accredited  
10 sometime ago. We always look for opportunities to be externally  
11 measured, and in 2005, you know, as part of the IHST initiative,  
12 we joined with a group of other organizations across the country  
13 actually and Canada, to form something called the Aviation Safety  
14 Network in North America.

15 So when we look at this and we say that, you know, if  
16 you're going to have a comprehensive safety piece, that it's got  
17 to have a whole series of components that you put together, you  
18 know. And, if you look at the bottom of the big part of the  
19 pyramid of cultural development and we look at the top, that those  
20 have to be joined, and you see this kind of one upside down piece  
21 of that system, where the safety management system resides in the  
22 middle of all of those things, but this idea of safety assurance.  
23 And this goes back to the premise, the design premise, that if we  
24 are a private organization producing a public service, we have to  
25 base that on assurance to the public that their needs are going to

1 be met.

2 MS. YEAGER: Thank you. Also just in this complex  
3 system, what type of audits do you conduct? Do you have internal  
4 and external audits as part of this?

5 MR. JUDGE: It's part of the agreement to be in the  
6 Aviation Safety Network. So we have our CAMTS accreditation and  
7 we have to do that every three years and there's actually a much  
8 more active reporting cycle for CAMTS as well. We have our  
9 operator, conducts an annual audit for their quality assurance,  
10 and they have also unannounced audits where they're coming up. We  
11 do that with our professional liability insurances, that they come  
12 in and do audits as well for doing this. And then we agreed, as  
13 part of the Safety Network, there's a set of 86 standards that  
14 were developed looking at the five big regulatory bodies, the UK,  
15 Canada, Australia, New Zealand, and the U.S., the FAA, looking at  
16 ICAO, looking at the IHST, developed a set of 86 standards that we  
17 voluntarily benchmark ourselves to. So we internally get an audit  
18 every year. That also gets benchmarked against the other seven  
19 organizations in North America that are part of this so we can  
20 compare ourselves, and then from that, develop an annual work plan  
21 and very specific piece and then on a multidisciplinary basis,  
22 send our physicians down to our mechanics and COMs (ph.) people.  
23 We send a group every year into academic training about the  
24 concepts of risk management to bring that back into the  
25 organization.

1 MS. YEAGER: Okay. Thank you. And currently at  
2 LifeFlight of Maine, are there any safety initiatives that you are  
3 currently initiating?

4 MR. JUDGE: Well, we've just obviously -- we put in  
5 night vision goggles in the last year. We've just put in  
6 satellite tracking.

7 There's always more things to be done but what we've  
8 stepped back and done and looked and said, there's really three  
9 areas of risk. So there's an operational risk. So we looked at  
10 one -- I'll give you a quick example. We looked at the idea that  
11 we have sometimes unscheduled passengers and the previous panel  
12 agreed that all of a sudden there's a crew member due a briefing  
13 for a mother that's going to come aboard the aircraft on short  
14 notice because her child is being transported 150 miles away. How  
15 do you deal with the risk of that? And we looked at that and said  
16 that should not be an ad hoc decision. We don't want risk  
17 decisions to be ad hoc. So we stepped back and we did a complete  
18 analysis of everything that could go wrong in that and then  
19 developed a mitigation strategy and then with our operator,  
20 develop a very specific, because they already had a specific thing  
21 of a passenger briefing but went back in and said here's a  
22 checklist of additional things. We want to make sure that if  
23 we're going to accept that person, that they're not going freak  
24 out in the middle of the night because everyone else is in NVG  
25 goggles and they're not. They're not going to panic if they run

1 into turbulence. So there is a very specific thing of are they  
2 prepared? So that's an operational risk profile.

3 We do venture risks. So if we go into a venture to  
4 risk, we put in night vision goggles. We go into a very specific  
5 set of change management, walk through how you're going to do that  
6 so when we incorporate new technology, we do that. To give you an  
7 example on that, so there's a very specific piece that the  
8 operator has to do at the FAA, to put the night vision in. We got  
9 most of the way through the process and our nurses and paramedics  
10 said, yeah, we've done our three events. All of that's good. We  
11 don't feel comfortable. So we stepped back in and said if you  
12 don't feel comfortable, then we haven't managed this change of  
13 operation. So we will now buy more aircraft time. We want  
14 everyone to come in. We will buy the time in the aircraft. You  
15 need to go up in the aircraft at night until you get to the point  
16 that you're comfortable for doing those things.

17 So I think that having those processes, and then the  
18 last piece is always the enterprise, the big parts of risk in an  
19 organization, you know, whether that's financial, whether that's  
20 adding a new base, any of those kinds of things. So we looked at  
21 all of those and we tie a change management piece and we tie that  
22 in with the SQMS and we tied that same SQMS in, so it's integrated  
23 and parallel with the SQMS of the operator which is Aeromed (ph.).

24 MS. YEAGER: Okay. Great. Thank you very much. Mr.  
25 Bassett, I'd like to move onto you. You're here today to testify

1 about corporate oversight because Air Methods Corporation is the  
2 largest HEMS operator in the United States. Can you please  
3 describe the scope and size of Air Methods Corporation?

4 MR. BASSETT: Yes. Air Methods was founded in 1980.  
5 The company operates a fleet of 335 aircraft in 43 states. We  
6 employ 3,000 people, 1,048 of those are pilots, 505 are mechanics.  
7 The 335 aircraft we operate are comprised of 20 different types.

8 MS. YEAGER: And you mentioned how many helicopters are  
9 in, did you mention?

10 MR. BASSETT: We have 335 aircraft, 20 are airplanes.

11 MS. YEAGER: And how many flight crew do you employ?

12 MR. BASSETT: 1,048 pilots.

13 MS. YEAGER: How about medical crew?

14 MR. BASSETT: I don't know that answer.

15 MS. YEAGER: Okay. And how many bases and how many  
16 states?

17 MR. BASSETT: 254 bases in 43 states.

18 MS. YEAGER: Okay. And on the first day we talked about  
19 different models, hospital-based models and the community-based  
20 models. Do you operate both?

21 MR. BASSETT: Yes, ma'am, we do, hospital based and  
22 community based.

23 MS. YEAGER: Do you know the percentage breakdown of --

24 MR. BASSETT: It's 60 percent hospital based, 40  
25 community.

1 MS. YEAGER: In regards to corporate oversight, how does  
2 Air Methods manage and organize safety for such a large operation?

3 MR. BASSETT: We manage safety through a safety  
4 management system. If you consider the four pillars of safety,  
5 the first being policy, we have very clear, well-defined policies  
6 and procedures that are published in our employee handbook, our  
7 general operations manual, the pilot training manual and our  
8 corporate safety manual.

9 Second being safety risk management, we do operate using  
10 a safety risk analysis matrix. We have an accident prevention  
11 program. We oversight and evaluate our operations through our  
12 various levels of management and through the enhanced operational  
13 control of our operational control center.

14 The third, safety assurance, again management oversight  
15 and auditing provided us with assurance that we're operating in a  
16 safe manner. Safety promotion starts at the top. Our corporate  
17 mission statement is that we provide safe, professional, air  
18 medical transportation, beginning with our CEO who provides a  
19 safety statement. We establish corporate and base safety culture.  
20 We promote that by training our pilots to accept the flight  
21 requests that they can do safely, legally, and prudently and to  
22 turn down those that they cannot.

23 MS. YEAGER: Okay. And with such a large operation,  
24 you're based in Englewood, Colorado, correct?

25 MR. BASSETT: That's correct.

1 MS. YEAGER: And do you have a dedicated safety team  
2 that's focused just on the safety of the operation?

3 MR. BASSETT: Yes, ma'am, we do. We have a safety  
4 department.

5 MS. YEAGER: Okay. How many personnel are in that  
6 department?

7 MR. BASSETT: The department in Englewood is comprised  
8 of five individuals and in the field, each base has a safety  
9 representative.

10 MS. YEAGER: Okay. And how is communication from the  
11 safety staff in headquarters in Englewood, how does Air Methods  
12 communicate safety down to the, I think you said 254 bases?

13 MR. BASSETT: We do so through operations memos and  
14 through safety notices, safety alerts, safety memos, and through  
15 our AIDMOR. AIDMOR is an acronym for Accident, Incident, Damage,  
16 Malfunction, Operations Report. It's web-based, and it's  
17 available to all employees. Memos and notices will also be posted  
18 to an electronic bulletin board that's available for pilots to  
19 read when they log in electronically, when they come on duty.

20 MS. YEAGER: Okay. And I think you mentioned briefly in  
21 there, if I heard it, about having a safety pilot at each base.  
22 Is that correct?

23 MR. BASSETT: Safety representative, yes.

24 MS. YEAGER: A safety representative. Okay. It's not  
25 necessarily a pilot. It's somebody who --

1           MR. BASSETT: I think in most cases it is, but it could  
2 be somebody from the maintenance department.

3           MS. YEAGER: Okay. And with that, how are those  
4 personnel trained and are they compensate for that duty?

5           MR. BASSETT: They are. One of the responsibilities of  
6 the lead pilot is safety representative for the base.  
7 Additionally, the bases may have somebody else designated as a  
8 representative, and they're trained to do different duties such as  
9 updating safety bulletin boards and conducting monthly base safety  
10 meetings, communicating safety concepts and things that come down  
11 from Englewood. There is some compensation for them. I couldn't  
12 tell you what it is off the top of my head.

13          MS. YEAGER: Okay. Thank you. And currently what are  
14 some of the safety initiatives that Air Methods is implementing?

15          MR. BASSETT: Some of the things that we've done over --  
16 recently and over the years, first of all, I think the operational  
17 control center that Mr. McCall described in great deal in a  
18 previous Panel, is a very significant step forward in a safety  
19 initiative. Being able to communicate weather and other hazards  
20 that pilots may not know about that are currently in flight, I  
21 think is paramount.

22                 Aircraft equipment, we've committed to a 100 percent  
23 night vision goggle fleet. We've committed to HTAWS. Before the  
24 TSO came out, we committed to the Honeywell Mark 21. Satellite  
25 tracking and communication, satellite weather download and wire

1 strike protection system. These are standard pieces of equipment  
2 in new aircraft we bring into the fleet.

3 We've always operated under higher weather minimums than  
4 those specified in A021. We've recently created a technology  
5 review group that keeps an eye on what's the most current state of  
6 the art technology pieces that we may implement into our  
7 operation.

8 Our training has always been above and beyond the  
9 minimum requirements of the FAA. The company's involved in many  
10 organizations. We're involved with the International Helicopter  
11 Safety Team, the Air Medical Safety Advisory Council. We have  
12 four individuals sitting on HAI committees. We have three  
13 individuals sitting on AAMS committees. We are very close to 100  
14 percent CAMTS accredited in our community-based operations. We  
15 support all of our hospital customers who aspired to become CAMTS  
16 accredited, and we're also involved and participating in Dr.  
17 Blumen's research, some of the OEMs, Bell and American Eurocopter,  
18 we sit on their advisory boards. And finally, we're part of an  
19 organization called Friends and Partners of Aviation Weather in  
20 attempts to try and better serve our industry with weather  
21 reporting services that are available.

22 MS. YEAGER: Okay. Thank you. And I just want to -- I  
23 have one last question before I end this part of the session. Air  
24 Methods over the past few years has acquired other HEMS operators.  
25 During the time of an acquisition, how does Air Methods manage

1 safety during that transition period?

2 MR. BASSETT: FAR 119.49 requires that an air carrier  
3 have operations specifications, and the administrator has the  
4 ability to require an op spec for other items as needed, as it's  
5 quoted in the regulation, and when one large air carrier acquires  
6 another large air carrier, that's an item deemed necessary for an  
7 op spec. In order to get that op spec, I think it's A501, we  
8 needed to come up with a transition plan. We drafted this  
9 document, provided it to our FAA team for their review, and it  
10 went back and forward a couple of times until it was sufficient  
11 where both sides agreed to its contents.

12 The principals of our FAA team signed it, the director  
13 of operations, director of maintenance, and the chief pilot and  
14 myself signed this document and that then led to the issuance of  
15 the op spec, and we use that document which outlines in great  
16 detail what you just asked, how are we going to manage safety of  
17 both organizations during that period.

18 MS. YEAGER: Okay. Thank you very much. Ms. Frazier, I  
19 just have a few follow-up questions for you. You indicated the  
20 total number of CAMTS accredited programs, but what percentage of  
21 all HEMS operators are CAMTS accredited?

22 MS. FRAZIER: That's difficult to say because I don't  
23 know how -- as far as rotor wing, probably 50 percent. Of total  
24 air medical services, with the way fixed wings come and go,  
25 probably 35 percent.

1 MS. YEAGER: Okay. And are the CAMTS standards a safety  
2 standard or a medical practice standard?

3 MS. FRAZIER: It's both. Our mission is to improve  
4 patient care and safety. So we look at the total program, from  
5 patient care to safety standards to pilots to mechanics to the  
6 entire service including the aircraft and medical configuration.

7 MS. YEAGER: Okay. Thank you. I have no further  
8 questions.

9 CHAIRMAN SUMWALT: Great. No others from the Board of  
10 Inquiry?

11 MS. YEAGER: Technical Panel.

12 CHAIRMAN SUMWALT: Great.

13 DR. DODD: Actually, I just have one follow-up question  
14 for Mrs. Frazier. When you mention that the CAMTS accreditation  
15 standards are both a standard for safety and for medical practice  
16 or medical care. I'm curious, when you say safety standards, are  
17 these recommended practices above and beyond what FAA requires or  
18 what is being addressed from a point of view of safety?

19 MS. FRAZIER: They are. It's difficult. People ask,  
20 well, how many safety standards do you have, and it's difficult to  
21 answer that because safety is kind of embedded in many of our  
22 standards. For example, the FAA requires that a stretcher be  
23 STC'ed because it's bolted down to the aircraft. We go a little  
24 bit further because for patient care, the stretcher must be able  
25 to have the head raised so that you can take care of the patient

1 who has difficulty breathing. Issues such as medical  
2 configuration again, the FAA doesn't require a divider between the  
3 pilot controls and the medical personnel and patient on the  
4 aircraft. We do. So there are issues that are in all of the  
5 sections, as far as -- in fact, thank you for asking that because  
6 I wanted to bring a point from the last session.

7 As far as training goes, we have actually two and a half  
8 pages of aircraft familiarization and safety training for medical  
9 personnel. Someone asked if there were standards for training.  
10 Yes, there definitely are standards for that, and it's not only  
11 initial but it's annual training for all the medical personnel.

12 DR. DODD: Okay. Thank you. I have no further  
13 questions.

14 CHAIRMAN SUMWALT: Thank you. We'll turn to the  
15 Parties. Air Method, you would be next but Mr. Yale, would you  
16 prefer to go last?

17 MR. YALE: Yes.

18 CHAIRMAN SUMWALT: Great. Thank you. CareFlite.

19 MR. DAUPHINAIS: CareFlite has no questions.

20 CHAIRMAN SUMWALT: No way. FAA.

21 PARTY QUESTIONS

22 MR. HARRIS: For Mr. Bassett. How surprising. Well, at  
23 least the first witness that will be asked a question. I'm sorry,  
24 sir. As part of your corporate governance, do you include a  
25 strategic plan for fleetwide equipage of aircraft --

1 MR. BASSETT: I would --

2 MR. HARRIS: -- standard?

3 MR. BASSETT: For new aircraft, yes, sir.

4 MR. HARRIS: Any retrofit plan?

5 MR. BASSETT: Yes, sir, both. We do have a standard  
6 equipage and configuration for new aircraft and we do have  
7 something similar for those that will be refurbished. Not  
8 everything in our fleet will be refurbished. Many of them will be  
9 sold and replaced with new aircraft.

10 MR. HARRIS: Would it be possible for you to describe  
11 what that suite of capabilities are that you're planning to  
12 implement on a fleetwide basis?

13 MR. BASSETT: It's model dependent. We have single VFR  
14 aircraft and we have twin engine IFR aircraft. So that drives  
15 mostly the suite that you're describing but I will give you, they  
16 all get dual GPS and dual nav or -- capability. The smaller  
17 aircraft may have some type of a multifunction display within a  
18 GPS unit such as a Garmin 530. The larger aircraft would have a  
19 dedicated multifunction display, primary and navigation displays  
20 are glass. The safety equipment includes what I mentioned before,  
21 night vision goggles, HTAWS, satellite weather, satellite tracking  
22 and communication.

23 MR. HARRIS: Okay. Thank you. That's all for us.

24 CHAIRMAN SUMWALT: Thank you, Mr. Harris. HAI.

25 MR. ZUCCARO: Thank you, Mr. Chairman. Mr. Bassett, I'm

1 just wondering if you know if you had written memorandums of  
2 understanding with the clients, the end users, in reference to  
3 operational control and what that definition is?

4 MR. BASSETT: Very clear language in contract with our  
5 customers, yes, sir.

6 MR. ZUCCARO: Great. And you have an internal audit  
7 program. Is that correct?

8 MR. BASSETT: Yes, sir, we do.

9 MR. ZUCCARO: How does that work?

10 MR. BASSETT: At the local level, we have a requirement  
11 for program managers to audit each base twice a year. Our  
12 regional management team audits them once per year, and then our  
13 certificate compliance evaluators who perform training and check  
14 airman duties also evaluate each base they go to, and each base  
15 will see a visit from an evaluator at least twice a year. Like  
16 the airlines, we train all our pilots twice a year.

17 MR. ZUCCARO: Great. I know we talked about night  
18 vision goggles, TAWS and the company's commitment to equip. Is it  
19 also correct, you already have a significant portion of the fleet  
20 already equipped, right?

21 MR. BASSETT: With night vision goggles?

22 MR. ZUCCARO: Yeah.

23 MR. BASSETT: Yes, sir. We made that commitment  
24 approximately two, two and a half years ago. There were  
25 bottlenecks and they're opening up. And so our progress is there.

1 I'm projecting this year we're going to make great strides over  
2 what we did last year and the year before in our pursuit to get to  
3 100 percent. With a fleet of 300 and some aircraft, it's an  
4 undertaking.

5 MR. ZUCCARO: I can imagine. You also have TAWS  
6 equipped aircraft.

7 MR. BASSETT: Yes, sir. They're hand-in-hand.

8 MR. ZUCCARO: Great. Mr. Judge, I just took note of the  
9 fact that you mentioned about when you made the initial decision  
10 to become involved in the current operation that you're in that  
11 you would be reluctant or would not do that if that operation was  
12 exposed to the competitive environment among the hospitals.

13 MR. JUDGE: Correct. If the helicopter system was going  
14 to be used between the hospitals as a point of competition, to  
15 bring patients back, we said, I and my chief medical director said  
16 we would not be involved.

17 MR. ZUCCARO: So one can assume from that that you  
18 basically feel the competitive aspect of some elements of the  
19 business could potentially have a negative effect?

20 MR. JUDGE: I think that for healthcare, you know, leave  
21 aside the aviation part.

22 MR. ZUCCARO: That's what I'm trying to clarify.

23 MR. JUDGE: Healthcare competition can have a negative  
24 effect --

25 MR. ZUCCARO: Okay.

1 MR. JUDGE: -- for patients.

2 MR. ZUCCARO: Fair enough. Thanks. Ms. Frazier --

3 MS. FRAZIER: Yes.

4 MR. ZUCCARO: -- do you have a sense of how many  
5 programs request accreditation on their own initiative rather than  
6 being required to do so by some third party influence?

7 MS. FRAZIER: Probably 75 percent because there are only  
8 9 states that require CAMTS accreditation and that would be a  
9 primary reason in those areas. So I would say about 75 percent  
10 are looking towards performance improvement.

11 MR. ZUCCARO: Aside from the state requirements, if I  
12 understood it correctly, there's requirements in a number of the  
13 contracts that they be CAMTS and also the insurance industry looks  
14 at this as a requirement?

15 MS. FRAZIER: The insurance industry not so much for  
16 helicopter --

17 MR. ZUCCARO: Okay.

18 MS. FRAZIER: -- but for fixed wing there are some.  
19 Indian Hill Services in their business operating agreement does  
20 require CAMTS accreditation in some of the areas. It's not a  
21 nationwide type thing.

22 MR. ZUCCARO: Okay. Do you have a sense of -- let me  
23 take a look here. What percentage of the standards of the audit  
24 process relates to aviation, aeronautical issues versus the  
25 medical side of the audit process and standards?

1 MS. FRAZIER: Again, it's difficult to say because if  
2 we're talking about communications as part of aviation or the  
3 aircraft as part of aviation, that's a lot of standards. So it's  
4 probably 50 percent.

5 MR. ZUCCARO: Well, I'm trying to --

6 MS. FRAZIER: If you're just isolating only pilots and  
7 maintenance, that's probably only about 30 percent of the  
8 standards.

9 MR. ZUCCARO: Thirty percent of the standards.

10 MS. FRAZIER: Uh-huh.

11 MR. ZUCCARO: Okay. Fair enough. And if I also  
12 understood it correctly, you accreditate programs not operators?

13 MS. FRAZIER: That's correct.

14 MR. ZUCCARO: So hypothetical if there was an operator,  
15 and that operator had, I don't know, 100 bases around the country  
16 and only one of those programs applied for accreditation, you  
17 would go to that one location, wherever that may be and accredit  
18 that program?

19 MS. FRAZIER: Correct. It's how the program is  
20 perceived by the public. So in the case of -- user methods, or  
21 PHI, they have various groupings of programs, could be more than  
22 four or five bases, but their groupings are named under a specific  
23 name, such as PHI of the Southwest.

24 MR. ZUCCARO: Well, that's like Staff Life, LifeFlight,  
25 those kind of programs.

1 MS. FRAZIER: Right. So it would be an accreditation to  
2 that specific area, not to the entire PHI programs.

3 MR. ZUCCARO: Would I be correct if I said then if you  
4 went to, I'll just pick a place, if you went to a program that was  
5 located in Dallas, Texas, you would only go to Dallas, Texas and  
6 look at that program at that location and base the accreditation  
7 on what you saw at that one facility?

8 MS. FRAZIER: If that is their only location. If they  
9 have five bases, we go to every base.

10 MR. ZUCCARO: Well, no. That's what I'm trying to get  
11 at. I have an operator, he has 100 bases around the country.

12 MS. FRAZIER: Right.

13 MR. ZUCCARO: Accreditation is only being requested from  
14 one base that's located in Dallas, Texas.

15 MS. FRAZIER: If it has a different name.

16 MR. ZUCCARO: Well, it has a program name.

17 MS. FRAZIER: Right.

18 MR. ZUCCARO: Yes.

19 MS. FRAZIER: That's what we would accredit.

20 MR. ZUCCARO: So you wouldn't somewhere in the process  
21 go back and visit the main company headquarters and their  
22 facilities and --

23 MS. FRAZIER: It all depends. If the main corporate  
24 headquarters has operational control or communication centers,  
25 then we would go back to that main corporate headquarters.

1           MR. ZUCCARO: Okay. Is there any particular reason why  
2 you don't accredit operators?

3           MS. FRAZIER: It's not in our mission. Our mission is  
4 both patient care and safety. We would have to really look at how  
5 we look at our mission and maybe change it, if we were just to  
6 look at operators.

7           MR. ZUCCARO: Have any of the CAMTS accredited programs  
8 experienced accidents?

9           MS. FRAZIER: Yes.

10          MR. ZUCCARO: Fatal accidents?

11          MS. FRAZIER: Yes.

12          MR. ZUCCARO: What is the reaction or is the reaction  
13 should that occur to a CAMTS accredited program?

14          MS. FRAZIER: What we do is we have a very specific  
15 policy. There's an accident report that they turn in along with a  
16 root cause analysis. We look at the NTSB reports, of course. We  
17 go out and visit. We do a supplemental visit within six months of  
18 the accident, and what we're really interested in is what changes,  
19 were there any alterations they made in policies, procedures or  
20 what happened as a result of the accident. It does not  
21 necessarily mean that accreditation would be withdrawn but it does  
22 mean that they would have an immediate look see at least within  
23 the first six months after the accident.

24          MR. ZUCCARO: Sure. Considering obviously the value of  
25 accreditation programs and, you know, their place in the industry,

1 it's not a representation that if you're not CAMTS accredited,  
2 you're not safe, right?

3 MS. FRAZIER: Not at all.

4 MR. ZUCCARO: You could have operators who, in fact, are  
5 not CAMTS accredited but, in fact, equal to or maybe better than  
6 using the standards that they use?

7 MS. FRAZIER: That's absolutely correct.

8 MR. ZUCCARO: Okay. Thank you. That's all the  
9 questions I have.

10 CHAIRMAN SUMWALT: Thank you, Mr. Zuccaro. PHPA.

11 MR. DUQUETTE: Thank you, Mr. Chairman. For Mr.  
12 Bassett, I have a question for you. Do you have a timeframe as  
13 far as your organization, as far as equipment, such as HTAWS and  
14 I'm understanding that you're dedicated to, in fact, do that, can  
15 you give an approximate timeframe when you think all of your  
16 aircraft will be so equipped?

17 MR. BASSETT: Yes, I can. Just let me refer to a note.  
18 We have a conservative estimate and meaning by that, we may get  
19 done sooner than this, but we will be 100 percent by 2012.

20 MR. DUQUETTE: 2012.

21 MR. BASSETT: Yes.

22 MR. DUQUETTE: Okay. Do you by chance have a timeframe  
23 how many you convert per month? After all, you've got to bring  
24 the aircraft in and do the work on it.

25 MR. BASSETT: It's, you know, it's been a difficult

1 thing to try and assess that because we've had such a bottleneck.  
2 The new aircraft go out much quicker. The refurb take a lot more  
3 time. You start to open them up and get into them and, you know,  
4 you can find problems that are going to slow down the refurb  
5 process, but based on that, I was given a number that we were  
6 looking at refurbing about 14 aircraft this year, and then the new  
7 aircraft are in addition to that. The bottlenecks previous, and  
8 again, we're doing this as a package, rather than just go out and  
9 install HTAWS without doing the NVG mod. We're not going to do it  
10 that way. We want to get all the safety equipment put in at the  
11 same time. As you well know, when you take an aircraft out of  
12 service, it creates problems behind that need to be addressed. So  
13 we're going to do it all in one down period.

14           The bottlenecks before, we didn't have the equipment.  
15 We couldn't get the goggles. That's loosened up as was pointed  
16 out earlier. The ability to give check rides to pilots was very,  
17 very difficult for the longest time because there was only one  
18 inspector in the entire FAA that could give a check ride, and we  
19 needed to get our people qualified to give check rides, but that  
20 has improved tremendously. We now have on our certificate  
21 management team, each inspector, every inspector on the operations  
22 side of the team, is goggle qualified. That allowed us to get our  
23 training captains and check airmen up to qualification with  
24 goggles. So we went from approximately 6 or 8 on our side, we now  
25 have -- I looked at the number the other day. I want to say it

1 was about 32. So we've got many more people in our organization  
2 now that are qualified to give training and check rides. So it's  
3 happening exponentially faster, but for me to really nail down  
4 what are we going to get done in 2009 and 10, we conservatively  
5 estimated that we'd get there by the end of 2012, and I'm  
6 suggesting that maybe we get there sooner, but we'll see.

7 MR. DUQUETTE: Okay. Thank you. Now when you were  
8 talking about updating, obviously we mentioned TAWS. But what  
9 about flight data monitoring? Is flight data monitoring also  
10 going to be part of the upgrade or is that something that you're  
11 looking for further down in the future?

12 MR. BASSETT: Such as the -- equipment that we --

13 MR. DUQUETTE: -- or something comparable.

14 MR. BASSETT: We have had them to Englewood to present  
15 the product to us along with some other manufacturers, DataLink  
16 comes to mind. They've been looked at. No decision at the  
17 executive level has been made yet but we understand the value of  
18 it and my inclination is that at some point we will look much  
19 closer and more seriously at it.

20 MR. DUQUETTE: Okay. Thank you. Ms. Frazier, I have a  
21 question or two for you. You mentioned sleep inertia.

22 MS. FRAZIER: Yes.

23 MR. DUQUETTE: And I understand that you're going to be  
24 some studies, but do you have an idea or timeframe of what they  
25 figure, how long this sleep inertia period lasts? Is it 10

1 minutes, 15 minutes, or that's part of the reason why you're doing  
2 the study because we really don't know?

3 MS. FRAZIER: No, there have been quite a few studies  
4 and the least amount of time that we found is 20 minutes for the  
5 period of wakefulness to last, 20 minutes, and then up to 75  
6 minutes. That's for cognitive function. Up to 75 minutes for  
7 psychomotor skills. That's the least amount we've found.

8 MR. DUQUETTE: Has CAMTS looked at the aspect of  
9 scheduling, about how certain crews, for example, might be working  
10 a seven and seven, seven days on, seven days off, and then seven  
11 nights or versus crews that are one a seven or six day shift but  
12 they do day/night operations during some portion of their  
13 schedule?

14 MS. FRAZIER: It's one of the things that we mention.  
15 As far as having programs look at their scheduling, to see what's,  
16 you know, what's appropriate. We don't have anything -- any  
17 guidelines to say that you can't work more than seven days or  
18 seven nights currently, but as a follow-up to the sleep study,  
19 that's something we do want to look at both for medical crews and  
20 for pilots.

21 MR. DUQUETTE: Okay. And I notice that for CAMTS  
22 certification, in some cases you had pretty good -- you're being  
23 very specific, search lights being able to work, night vision  
24 goggles, radar altimeter, all this type of stuff, and you also  
25 talked about training for the med crews. Does CAMTS specify

1 training specifically for pilots?

2 MS. FRAZIER: No, it's according to the operator's  
3 training program.

4 MR. DUQUETTE: Would CAMTS consider recommendation as  
5 far as CAMTS certification training such as simulator training or  
6 FTD type training?

7 MS. FRAZIER: We always consider everyone's suggestions  
8 for standards.

9 MR. DUQUETTE: Thank you. And, Mr. Chairman, that's all  
10 my questions.

11 CHAIRMAN SUMWALT: Thank you, Mr. Duquette. AAMS.

12 MS. KINKADE: Thank you. Ms. Frazier, can I ask you, do  
13 you track what percentage of programs that submit an application  
14 are not successfully accredited?

15 MS. FRAZIER: We do. About 65 percent that go through  
16 accreditation for the first time receive full accreditation. Of  
17 the 35 percent that do not, only about 8 percent of those are  
18 totally withheld. The rest of those are given what we call a  
19 provisional and it's not an accreditation. It just gives them  
20 another six months to be in compliance with the standards. So  
21 they're almost there but not enough to be accredited.

22 Of the percentage that I mentioned that are withheld, 8  
23 percent, those have to do with programs that really have a very  
24 serious either patient care or safety issue or sometimes both that  
25 we feel it would take them a bit longer than six months to

1 correct, to make the appropriate corrections.

2 MS. KINKADE: Okay. Thank you. Do you know how many  
3 public service agencies are CAMTS accredited?

4 MS. FRAZIER: We have one currently, and they are 135  
5 certificated and do fly with two crew members.

6 MS. KINKADE: Okay. That one got asked. Mr. Bassett,  
7 how would you compare or contrast the safety cultures between your  
8 hospital-based and your community-based programs? In other words,  
9 does being in a partnership with a hospital affect safety and how?

10 MR. BASSETT: I don't draw any contrast between them. I  
11 don't see one having a different safety culture or being safer  
12 than the other.

13 MS. KINKADE: And this one would be for both Mr. Judge  
14 and Mr. Bassett. Can you both describe the process of safety  
15 inspections conducted by FAA officials at your sites?

16 MR. BASSETT: Yes, I can describe it. We have them all  
17 the time. Every week. The FAA will arrive at a base and they  
18 have a checklist they use, a job aid, I think that comes out of  
19 their inspector's handbook, and they run through the checklist and  
20 look for compliance in each of those areas. Usually they do this  
21 with the assistance of somebody from one of our bases that can  
22 help them find the items they're looking for. Once the inspection  
23 is complete, they communicate and record the findings. They  
24 record the findings and communicate them with their local  
25 management. If the inspection is done by somebody on our

1 certificate management team, out of the Denver FSDO, then that  
2 information goes back to the FSDO in that fashion. If it's done  
3 by somebody from a FSDO local to the base, that information is  
4 communicated up to our CMT in Denver.

5 MR. JUDGE: In our case, obviously that's going through  
6 the operator. We have a local FSDO that does recurrent  
7 inspections. They'll appear at both of base sites, unannounced,  
8 sometimes announced, sometimes unannounced. I'm not, you know,  
9 part of that. That's going to be either one of the mechanics or  
10 one of the pilots. In addition, the FSDO for Aeromed which is out  
11 of Philadelphia comes up once or twice a year at least and they've  
12 been kind of more present because we've added night vision and  
13 added things. So they've been coming up more present and the last  
14 time, under the operational -- when the FAA put the new  
15 operational control things in, there was about a three day very  
16 precise visit of every facility. So the FAA is very present.

17 MS. KINKADE: Thank you. And, Mr. Bassett, as their  
18 methods have grown, your number of bases and acquired other  
19 companies, can you give us examples of the challenges you have  
20 discovered and discussed how you've addressed these challenges of  
21 growing rather rapidly?

22 MR. BASSETT: Can you be a little more specific with the  
23 areas of challenge?

24 MS. KINKADE: Well, are there any? Have you noticed  
25 that by growing, you're up to 335 helicopters, 5 years ago you had

1 how many?

2 MR. BASSETT: Considerably less.

3 MS. KINKADE: Less. So in a five year period, have you  
4 found some challenges by growing that fast? I'm assuming, you  
5 know, more employees, more aircraft.

6 MR. BASSETT: The key to it, the challenges, yes, but  
7 the key -- they're usually logistic challenges, and the key to  
8 managing those is to remember to grow your infrastructure. You  
9 can't just add more bases. You need things in between and we have  
10 done that. We've managed that well, and so those challenges were  
11 met without a lot of great difficulty by having the support  
12 between the base and Denver.

13 MS. KINKADE: And one last question. Hopefully I have  
14 the time, and this is for both of you. We heard some comments  
15 about non-punitive reporting as a method for sort of a safety  
16 culture concept. I was wondering if you could both comment on  
17 that, if that's something that you support or utilize?

18 MR. JUDGE: I'll go first this time. We absolutely, we  
19 have an integrated risk system that looks at all clinical  
20 occurrence, all operational occurrence reporting, incident  
21 reporting, hazard reporting. They'll go into that. Our operator  
22 has a similar system with similar requirements. They have, you  
23 know, there may be something that they would report into their  
24 system that wouldn't come into our system. They're not interested  
25 in whether, you know, a monitor has a failure in it.

1           That all goes through, we are very big into the concept  
2 of just culture. I think we even put up one of the slides, and we  
3 integrate the just culture side of this in our SMS parallel with  
4 the operator SMS and parallel with the clinical QAPI program. So  
5 it is our belief that no one should leave our organization unless  
6 they want to leave our organization. We have very low turnover.  
7 Aeromed has had very, very low turnover. So, you know, they're  
8 working and I think people feel very open and trusting of each  
9 other.

10           MR. BASSETT: The AIDMOR system that I spoke of before  
11 is non-punitive. Additionally, we have a whistleblower third  
12 party, outside party, where employees can report things and do so  
13 anonymously. So they do get reported and because it's a third  
14 party, the identity is erased and we don't know who that person is  
15 that's reporting.

16           And the third thing that we've recently undertaken is  
17 something from the airlines. It's called ASAP. It's an aviation  
18 safety action program. This is a program that involves three  
19 entities, Air Methods, the FAA and the Pilot's Union, and two of  
20 us have signed it and we're very close to the third party signing.  
21 When we implement that program, it's an opportunity for pilots to  
22 report things that they might not have due to fear of punitive  
23 action, and this complete removed it, not only from Air Methods or  
24 rather -- let me rephrase that. It allows the pilot to report  
25 things that would then not carry a punitive action from the FAA,

1 reporting it up through us. So it's a collaborative effort that I  
2 believe will provide us with a lot more information of what's  
3 happening out there day in and day out.

4 MS. KINKADE: Thank you. Thank you, Mr. Chairman.

5 CHAIRMAN SUMWALT: Thank you, Ms. Kinkade. NEMSPA.

6 MR. SIZEMORE: Thank you, Mr. Chairman. Thank you,  
7 Panel. For Mr. Bassett and Mr. Judge, you said as a part of your  
8 safety oversight, you have a standardized risk assessment program,  
9 and that's a preflight program?

10 MR. JUDGE: In our case, there is a preflight program  
11 for both static and then dynamics. So it may change during the  
12 course of the day but there's a much wider risk assessment program  
13 that goes through the aviation safety network. So there's  
14 multidisciplinary looking at literally every kind of risk. We  
15 want to put a new piece of medical equipment aboard. That has to  
16 be a risk assessment, you know, there's a venture risk around  
17 that. We need to do something that's a new operation, an  
18 operational risk program. And that would have assignment of  
19 people that would all be multidisciplinary so that if it crosses  
20 any line between aviation and medicine that you're going to have  
21 people at every level looking at that.

22 MR. BASSETT: The risk assessment I spoke of is a  
23 preflight tool. Ours is designed under the guidance of Advisory  
24 Circular 120-92.

25 MR. SIZEMORE: Okay. A follow on to that. Do you have

1 an in-flight risk assessment program, a continual program to  
2 assess the risk during a particular flight?

3 MR. BASSETT: The risk assessment matrix is not for the  
4 entire flight request because things do change, and again it's a  
5 tool. It's a thinking tool. It's something that a pilot uses to  
6 perhaps evaluate what is happening or what will be happening. So  
7 it is something that should be and is considered throughout the  
8 entire flight request or mission.

9 MR. SIZEMORE: Are there specific points that would  
10 require an action such as return to base, land?

11 MR. SIZEMORE: We leave that decision with the pilot.  
12 We have kicked that around. Do we want to have a telephone call  
13 when the risk meets whatever measurement you choose to use? And  
14 once school of thought is if a pilot is calling is, he's already  
15 second guessing himself. So the answer is he may already have the  
16 answer. He may be looking for an affirmation and as Mr. McCall  
17 pointed out the other day, they do call into our operational  
18 control center. I'm looking at this, I see this as an issue, what  
19 do you see? And most likely we'll get a concurrence.

20 MR. JUDGE: Our operator would be similar so that  
21 there's preflight risk. Things can change during the course of a  
22 flight. If you change any nature of a flight, then you have to  
23 stop, pull action. If you're going to end up going somewhere,  
24 that may require you to land because, you know, it comes down to  
25 all the fuel, planning, the flight planning, the route planning,

1 for those kinds of things and get it on the ground and start over  
2 again.

3 MR. SIZEMORE: Okay. Thank you. Ms. Frazier, you  
4 talked a bit about the process that a program would go through for  
5 CAMTS accreditation. And you talked about the initial audit that  
6 you all do. Are there follow-up audits on unannounced basis that  
7 go along with this?

8 MS. FRAZIER: There can be. We require -- every year,  
9 there's an annual verification packet that the programs must  
10 submit. We probably have a very extensive database that gets  
11 changed frequently. One of the things we require our programs to  
12 do is report any change. So if they report, for example, that  
13 there's a change in management, maybe we just require what the  
14 manager's background and experience is. If there's change in an  
15 aircraft, or a base, that denotes a different type of review, we  
16 could possibly go out as a supplemental visit or as a monitoring  
17 visit which is an unannounced visit.

18 If we get complaints, we check those out with the  
19 program. If it's felt that this feels uncomfortable, we may want  
20 to go take a look see. That could denote a monitoring visit as  
21 well. Last year, we did about seven monitoring visits.

22 MR. SIZEMORE: Okay. But mostly it's a self-declaration  
23 kind of process?

24 MS. FRAZIER: Right.

25 MR. SIZEMORE: Okay. What's the organizational makeup

1 of CAMTS as far as who has oversight I guess of your organization?

2 MS. FRAZIER: It's a non-profit corporation. There's 17  
3 member organizations that are listed somewhere in one of the  
4 exhibits. NEMSPA is one of those organizations. In addition to  
5 that, each organization sends a participant who participates on  
6 the Board of Directors. They must be currently involved in  
7 medical transport, whether it's air or ground. In addition to  
8 that, we have two ad hoc members who have experience from the  
9 public, either in medicine or in another accrediting body or in  
10 aviation, and we also have two JHSIT advisors that sit on the  
11 Board.

12 MR. SIZEMORE: Okay. And this is just a quick question.  
13 Have you considered having the FAA or the NTSB participate in  
14 that?

15 MS. FRAZIER: We wouldn't have the FAA sit in on Board  
16 decisions because that would be a conflict for the FAA, number  
17 one. If there was some kind of issue that came up, they'd feel  
18 like they'd have to do something about it. But we do work closely  
19 with the FAA and the NTSB. We do meet with them. We do give our  
20 draft of standards to them to have them review. One of the things  
21 that we did, the FAA had a weather symposium a few years ago, and  
22 when we attended that, we realized that one of the issues that  
23 came up was something we could help with, and we developed a  
24 weather shopping video that is now widely available and sent out  
25 to everyone with Flight for Life in Milwaukee and through a FAIR

1 (ph.) grant. So we do work closely and try to pay attention to  
2 what the issues are from that side.

3 MR. SIZEMORE: Okay. One thing that you mentioned was  
4 aviation, QA, QAH (ph.), some metrics there. The things that you  
5 track, do you track things like response times, launch times,  
6 weather aborts, weather turndowns, those type of things?

7 MS. FRAZIER: We do.

8 MR. SIZEMORE: Okay.

9 MS. FRAZIER: Yes.

10 MR. SIZEMORE: And --

11 MS. FRAZIER: We ask the programs to do that.

12 MR. SIZEMORE: Right. Do you provide any guidance on  
13 how that information should be used or utilized?

14 MS. FRAZIER: We don't prescribe any particular liftoff  
15 time. That's up to the program to do, and that could vary  
16 depending on the operations. As was stated before by other  
17 participants, the quality management piece is really what you're  
18 looking at, when you look at liftoff times, times on scene, those  
19 sorts of things, and by quality management, what I mean is the  
20 whole process of CQI, quality assurance, performance improvement,  
21 whatever you're calling it these days. So when a manager looks  
22 back, they really can't manage appropriately unless they have  
23 something to measure by. And also with liftoff times, it's really  
24 -- the patient is there. He's in need, and we have to be able to  
25 look at how quickly and how do we respond to that patient's needs.

1 If there's perfectly explainable situations that happen, that's  
2 not an issue but if a manager has to answer why did this patient  
3 wait out in the cold, in an ambulance for 30 minutes when you  
4 promised that the ETA was 15 minutes, we could have made a  
5 different decision. Those are the kind of things that a manager  
6 needs to be able to look at and answer.

7 MR. SIZEMORE: Thank you. That's all, Mr. Chairman.

8 CHAIRMAN SUMWALT: Thank you, Mr. Sizemore. Air  
9 Methods.

10 MR. YALE: Thank you, sir. Mr. Bassett, if I could  
11 start with you. One of the questions that had been asked earlier  
12 was about, for example, the recording capabilities and that. I  
13 believe you said something about a technology review committee for  
14 new technology. Could you just give a little more explanation  
15 about that?

16 MR. BASSETT: Yes. Those of us in aviation remember 20  
17 years ago when nothing new came out. Everything was the same as  
18 it was, year after year. In today's day and age, the technology  
19 is moving very, very rapidly, and we want to stay ahead of it, and  
20 what we looked at two or three or four years ago as being what we  
21 believed to be the best piece of equipment to put into our  
22 aircraft, may have been so at that time but may not be in another  
23 few years. New technology, new equipment that will help us  
24 improve our safety record, such as the -- device that we saw  
25 yesterday. These kinds of things need to be looked at, and unless

1 you have someone or some entity looking at those items on a  
2 regular basis, you may miss them. So I suggested this idea was  
3 approved and we put together a technical review group. I sit on  
4 this group along with a couple of other pilots, folks from our  
5 engineering department, from our avionics shop, and we review  
6 different pieces of equipment that are available. And then make a  
7 recommendation to an executive committee and they decide what  
8 equipment will go in the aircraft. But we try to give them an  
9 executive summary of what's out there.

10 MR. YALE: Roughly what percentage of the Air Methods  
11 fleet is IFR, actually flies IFR?

12 MR. BASSETT: Our fleet I believe is slightly more than  
13 half equipped for IFR, 51 percent seems to stay in my mind. We  
14 have I believe 19 percent of our bases IFR.

15 MR. YALE: Okay. And do you have any idea what  
16 percentage of the flights that are conducted under IFR with those  
17 programs that actually have IFR?

18 MR. BASSETT: Most of those bases are less than 10  
19 percent.

20 MR. YALE: And what is that impediment of being able to  
21 use IFR?

22 MR. BASSETT: It's not suitable for most of the flight  
23 requests that we receive. There is no infrastructure. I think it  
24 was Mr. Downy talked about or described a road system where you  
25 get on here, go to there and get off. That doesn't exist. And so

1 we can't take off on an IFR flight to go from the base which may  
2 be at an airport and it may not be, to the scene of an accident.

3 MR. YALE: You mentioned that you've got this standard  
4 that's for the aircraft that are either new, being refurbished, or  
5 being scheduled to be done by the 2012 period of time of the night  
6 vision and TAWS and satellite tracking and weather download and  
7 wire striking, et cetera. Why was the choice to go that way?  
8 What drove the company to make that decision?

9 MR. BASSETT: We looked at actually the IFR capability  
10 and looked at some hard numbers. Are we using IFR? Is it a  
11 useable tool for us or should we maybe look at equipping the  
12 aircraft with other tools that are more appropriate for what we're  
13 doing, for the missions, the flights that we are being requested  
14 to take? And, a decision was made at that time to invest the  
15 money in those other tools.

16 MR. YALE: Okay. Excellent. Ms. Frazier, I'd like to  
17 maybe clarify just a couple of things if I could real quick. You  
18 mentioned that in order to be CAMTS accredited, that one of the  
19 things required was to have two crew members. Can we clarify that  
20 that's two medical crew members, not two aviation crew members?

21 MS. FRAZIER: You're correct. It's two medical crew  
22 members.

23 MR. YALE: Okay. And when you talked about sort of how  
24 you segregate whether or not you're going to evaluate something as  
25 a program, it's even a little more than name, is it not? In other

1 words, to use our own situation, being LifeNet in Arizona is not  
2 the same as being LifeNet in New York. You treat those as  
3 completely different programs even though they have the same name,  
4 correct, from an accreditation standpoint?

5 MS. FRAZIER: We do, and some of the other reasons for  
6 that, and business is very complicated as you well know. Some of  
7 the other reasons could be that it's a program that falls under  
8 the same medical direction. So the medical direction in New York  
9 would be totally, not totally, but different from what you would  
10 have in Arizona.

11 MR. YALE: Part of the standards that are involved with  
12 CAMTS, actually I would suggest most of them, speak more than just  
13 to their individual standard. They tend to define the necessity  
14 of a culture. Is that a fair statement? I realize that's kind of  
15 soft term, but --

16 MS. FRAZIER: That's a fair statement although we're not  
17 happy with the way the standards are formatted right now. Part of  
18 what we're doing for the end of this year is formatting in a  
19 better way so that you can look at a section and say, ah-ha, this  
20 has all to do with safety, or this section has all to do with  
21 quality management and try to get it a little bit better grouping  
22 than it is now.

23 MR. YALE: Sort of a follow on to that is, is that with  
24 so many of the parts that have both a very clear, you can say,  
25 yes, you've got it and check the box and a part that says they're

1 actually living to the intent of what that is, being an important  
2 part of the full value of it, how does the Board work to be able  
3 to get objectivity into the decision for accreditation as opposed  
4 to having it be subjective?

5 MS. FRAZIER: That's a really good question, and that's  
6 one of the other things that we want to do with the new standards.  
7 We want to have evidence-based standards that clearly define the  
8 intent of the standards so there's no confusion.

9 MR. YALE: One of the things that came to mind when you  
10 were talking about fatigue, is the fact that we clearly have a  
11 business industry, a community that is not one size fits all. And  
12 what is the consideration relative to fatigue. I guess I'm having  
13 a hard time framing this question. The point being is that  
14 fatigue can come from simply the duty time, but fatigue can also  
15 be involved in how the duty's derived and my thought is there are  
16 areas of this country where the bases are rural and in some cases  
17 super rural, and it may take a couple of hours just to simply get  
18 the crew there and the crew back, the fatiguing element from just  
19 trying to do that, versus a longer shift with very low volume.  
20 How is that being considered?

21 MS. FRAZIER: And that's one of the things that we did  
22 initially say 24-hour shifts for medical crews were unacceptable,  
23 and we backed off from that because we were looking at those very  
24 rural areas where in some cases, they fly the personnel out to the  
25 base and 48 hours later fly them back. In those cases, what we

1 look at is what are their policies? Do they have timeouts, and  
2 not only do they have a timeout policy, do they use it? Can they  
3 show us where they used it? Is there a certain threshold? For  
4 example, do they do -- if they do three flights, does the base  
5 shut down until the medical crew can rest and those are kind of  
6 the issues that we're looking at in the new standards.

7 MR. YALE: And one of the things that has struck me  
8 listening to the testimony over the last few days, is the fact  
9 that we're talking about the technology and that, that could help  
10 us to avoid the type of accidents that we've had, but there's also  
11 the safety element and the technology that we've already  
12 implemented, that's the accidents that we don't have, as a result  
13 of that. Some of the things that come to mind are things like,  
14 for example, some of the safety elements like helmets and  
15 protective clothing and those type of things, visors that are down  
16 so that we have bird strikes, we don't wind up having people have  
17 loss of rudder. Are those standards with the CAMTS piece?

18 MS. FRAZIER: Yeah, and that's a good question because  
19 these sorts of things evolve in the standards, and that's why we  
20 redo standards every two years. When we started out, oh, about 10  
21 years ago, we said you either have to have a helmet and this is  
22 everyone on the aircraft, or you have to have a padded head strike  
23 area meaning anything your head's going to hit, if you were  
24 jostled around, seatbelted in. Or you have to have clear  
25 obstructions in that head strike area. We went from that to the

1 last time we redid standards, requiring that helmets be worn. So  
2 it's sometime an evolving process but, yes, they are required now.

3 MR. YALE: Okay. And therefore I assume, Mr. Judge, Mr.  
4 Bassett, that helmets, visors and protective clothing are also  
5 part of the standards that you work with?

6 MR. JUDGE: Yes.

7 MR. BASSETT: Yes.

8 MR. YALE: Thank you. No more questions, sir.

9 CHAIRMAN SUMWALT: Thank you, Mr. Yale. Are there any  
10 follow-up questions from any of the parties at all? We have one  
11 and I'll tell you what. We'll just continue around with the  
12 rotation. Seeing none here at CareFlite. FAA.

13 MR. HARRIS: So I think I've heard the term safety  
14 culture once or twice in this afternoon's session. I'd like to  
15 ask each of the three witnesses if you could perhaps define what  
16 you think a safety culture means, what your organization thinks  
17 that it means, in its application of its corporate oversight?  
18 Let's start with Mr. Bassett and work our way across.

19 MR. BASSETT: A culture is the way things are done in a  
20 given location. What we expect at each base is that the safety  
21 culture is representative of what our philosophy is at Englewood.  
22 As I said before, we train our pilots, accept the flight requests  
23 that you can do safely, legally, prudently. Turn down all the  
24 others. That's what I expect.

25 MR. JUDGE: Yeah, I would echo that. I think there's

1 probably a little bit more. I mean it's certainly a belief system  
2 in how the world works and how you operate in the world. I think  
3 there's two other elements, and so I think as Mr. Bassett has  
4 said, that the way things are done around here and the way things  
5 are done around here 24 hours a day, 365 days a year. So that,  
6 you know, at 2:00 in the afternoon when the game is on, it's the  
7 same thing as at 3:00 in the morning on Sunday.

8 I think there's two other parts of the culture that our  
9 people look for. One is an accountability that treats everyone  
10 equally. That becomes part of the just culture. So whether it's  
11 the person at the top, the person at the sharp end, all of those  
12 people get treated equally in an accountable system. And then the  
13 other element that I think is incredibly important is this idea of  
14 assurance of the public's trust.

15 MR. HARRIS: And, Mr. Frazier, although you're not an  
16 operator, could you comment on your understanding of the safety  
17 culture?

18 MS. FRAZIER: I sure can. It's one of the questions we  
19 ask programs when we go out, to describe your safety culture and  
20 ask different participants, pilots, medical crews, managers, and  
21 we get a lot of interesting answers. I echo what the other two  
22 have said about safety cultures, how we do things here. It should  
23 really be based on the values of the organization, and not just  
24 values that you can list off and say, oh, these are our values.  
25 It must be evident in how they practice in their everyday work

1 schedules and their everyday work. It should be something they  
2 are practicing. Some of the answers we get are things like, well,  
3 we have a safety committee and we meet once a month and, you know,  
4 things like that. So I don't think the whole idea of culture has  
5 met up with everyone out there yet.

6 MR. HARRIS: Thank you very much.

7 CHAIRMAN SUMWALT: Thank you. HAI, any follow up?  
8 PHPA.

9 MR. DUQUETTE: No follow up.

10 CHAIRMAN SUMWALT: Thank you. AAMS.

11 MS. KINKADE: Yes, just one quick follow up to my last  
12 question I asked you both. You talked about anonymous reporting,  
13 and I heard you talk about pilots, but does that same philosophy  
14 apply to the medical crew as well?

15 MR. JUDGE: It applies to everyone. If you're an  
16 administrative assistant, if you're a mechanic, no matter who you  
17 are, there's anonymous reporting.

18 MR. BASSETT: Yes, the third party system I spoke of  
19 applies to everyone.

20 CHAIRMAN SUMWALT: Thank you. NEMSPA.

21 MR. SIZEMORE: Yes. Mr. Bassett, you talked about the  
22 technology committee and all that kind of stuff, and you  
23 referenced technology as a tool. Do you use that same process or  
24 do you look at softer skills like training and personal  
25 development and decision making, those kind of things, in the same

1 light?

2 MR. BASSETT: Yes, I do. We don't have a group  
3 dedicated for those things -- well, we do actually because we do  
4 discuss those items amongst the director of operations, aviation  
5 compliance manager, myself, our aviation training managers in  
6 Englewood. We do meet and we do discuss those items. Our  
7 training and our method of recording training, these things are  
8 continuously being evaluated and improved.

9 MR. SIZEMORE: Okay. Thank you. And, Ms. Frazier,  
10 question, do you have data that shows that the use of CAMTS  
11 promotes safer or a more safe program than non-use of CAMTS?

12 MS. FRAZIER: We don't. I don't know of any accrediting  
13 agency that has such a study. If you would help us format it, I'd  
14 love to get your help on that.

15 MR. SIZEMORE: Okay. Thank you. That's all.

16 CHAIRMAN SUMWALT: Thank you. And Air Methods.

17 MR. YALE: We're done, sir.

18 CHAIRMAN SUMWALT: Thank you. Tech Panel.

19 MS. YEAGER: We have no further questions.

20 CHAIRMAN SUMWALT: Thank you. We turn now to the Board  
21 of Inquiry. Mr. Haueter?

22 MR. HAUETER: None.

23 CHAIRMAN SUMWALT: Dr. Ellingstad.

24 BOARD OF INQUIRY QUESTIONS

25 DR. ELLINGSTAD: Just a couple of quick questions to

1 Mr. Bassett and Mr. Judge. Mr. Bassett, you had indicated that  
2 your acquisition of flight data monitoring systems is a bit in the  
3 future yet. Does that imply that you're not using a FOQA type  
4 program now or are there elements of that that you are using?

5 MR. BASSETT: No, we do not have a FOQA program at this  
6 time.

7 DR. ELLINGSTAD: Is that something that's in --

8 MR. BASSETT: Absolutely, yes. We felt that the ASAP  
9 program was more important. We felt that that was the first thing  
10 we needed to get implemented and we will have that implemented  
11 very soon, and I know that our CEO is very interested in a FOQA  
12 program.

13 DR. ELLINGSTAD: Okay. You mentioned your safety  
14 department at your headquarters with the staff of five or so. Are  
15 they the ones that are managing your ASAP program?

16 MR. BASSETT: Yes, sir.

17 DR. ELLINGSTAD: What else do they do?

18 MR. BASSETT: Actually our director of safety will be on  
19 the next panel.

20 DR. ELLINGSTAD: Okay. We'll wait for him and ask him.  
21 Mr. Judge, do you operate a FOQA program?

22 MR. JUDGE: Our operators parent, Era Helicopters (ph.)  
23 operates a FOQA program and they're embedding it now down in to  
24 Aeromed.

25 DR. ELLINGSTAD: Okay. Very good. And just one quick

1 question to Ms. Frazier. You talked about your sleep inertia  
2 study. Does your organization perform research like this itself  
3 or are you contracting that out or how would that be accomplished?

4 MS. FRAZIER: No, sir, we're not researchers. We would  
5 contract that out to researchers.

6 DR. ELLINGSTAD: Okay. Is this a university research  
7 outfit or --

8 MS. FRAZIER: Yes, Dr. Von Thame (ph.) from the  
9 University of Illinois is the chairperson of that.

10 DR. ELLINGSTAD: Okay. Thank you.

11 CHAIRMAN SUMWALT: Thank you, Dr. Ellingstad. Dr.  
12 Mayer.

13 DR. MAYER: Thank you. We talked earlier, Mr. Bassett  
14 and Judge, we talked a little bit earlier about FAA inspections of  
15 your programs and I believe Mr. Bassett, I believe you said you  
16 host FAA inspectors at your facilities every week. I didn't get a  
17 sense though for, I guess the duration and depth of these visits.  
18 Can you talk a little bit about that?

19 MR. BASSETT: Okay. You're speaking of base visits, not  
20 a visit by members of our certificate management team to our  
21 office in Englewood, correct?

22 DR. MAYER: Correct. Yes.

23 MR. BASSETT: Base visits are very common. Being in 43  
24 states, we have a certificate management team of 25 aviation  
25 safety inspectors, and I believe three of those are remote sited,

1 and the others travel quite a bit. So there is an awful lot of  
2 oversight in addition to our CMT inspectors from FSDOs where we  
3 have operations, get out and inspect our programs. They could be  
4 the duration of two hours to all day at one base. Some  
5 inspectors, you may find this hard to believe, are a little more  
6 in depth than others and dig deeper. But it seems that the  
7 methodology of what they're doing and what they're looking for is  
8 very similar compliance in many different areas, and they may look  
9 at things, as I said before, on their own or they may get  
10 assistance. We generally prefer the assistance because we want to  
11 ensure that they're seeing everything that they want to see and it  
12 gives us an opportunity to take some notes, if we find some areas  
13 of deficiencies that are corrected on the spot, we can take notes  
14 and make sure that all bases are aware of those things, should  
15 they need to be made.

16 We do require the local base management to provide us  
17 with notification when there is a base visit from a FAA  
18 individual, and a follow up to any findings that may have come out  
19 as a result of that inspection.

20 MR. JUDGE: And again, it would be the FAA's  
21 relationship would be with our operator. I think my observation  
22 is over the last several years. I mean I think this has been  
23 building, is that there's a much closer linkage between the local  
24 FSDO and, I don't know the proper term, the supervising FSDO for  
25 the certificateholder in Philadelphia, that it seems to me they

1 talk a lot more together. So when the people from Portland are  
2 showing up at our bases, they're coming with a specific set of  
3 things they want to see I think on behalf of the principal  
4 inspector in Philadelphia. The principal inspectors from  
5 Philadelphia are also showing up. So I think we've seen a much  
6 tighter relationship. Because we've been involved in this big IFR  
7 project, of building this infrastructure and putting these --  
8 there's been a lot of other FAA people coming in to look at  
9 pieces, and so, you know, the IFR guys will come to certify  
10 approaches, and then we're seeing that the principal inspectors  
11 will come up from Philadelphia. So even though some other branch  
12 in the FAA is looking at this, we want to understand what's going  
13 on, you know, in our certificateholder. So I think we've seen a  
14 lot more and certainly compliance, friendly, firm and thorough is  
15 the way I would describe it.

16 DR. MAYER: Thank you. Both you, Mr. Judge and Mr.  
17 Bassett, also talked a little bit about non-punitive reporting  
18 programs and I believe one of you referred to them as  
19 whistleblower reports. We talked about who they're solicited from  
20 and how they're handled, that they're de-identified in Mr.  
21 Bassett's case. Can you talk a little bit about how you handle it  
22 inside the company? How do you address the issues that you  
23 receive?

24 MR. JUDGE: In the integrated risk management systems,  
25 so some of this can be anonymous. Some of this can be identified.

1 As something would come through, it would be classified into what  
2 area of the operation it affected. By that classification system,  
3 it would then be assigned to someone at a management level to deal  
4 with. So if it's a communications failure, that's going to be  
5 different than if it's, you know, an aviation piece of, you know,  
6 an aviation event. From that, then there would be a chain that it  
7 goes through and it'll just keep pinging until it gets closed, and  
8 then anyone in the system can go in and look at all of those  
9 reports 24 hours a day and see that.

10           Because we are a little complex organizationally, that  
11 each one of the, you know, the operator has a whistleblower  
12 program. The hospital has whistleblower programs. So there's  
13 multiple whistleblower programs for anonymous reporting that's  
14 there. So I would not know necessarily, you know, something could  
15 be on the aviation side of the house, could go in their system,  
16 they could deal with it and I may or may not know depending on the  
17 level of complexity of that for that. But generally our people  
18 are pretty open and they're not afraid to void their issues. And  
19 so I know them pretty quickly.

20           DR. MAYER: Thanks very much, and I look forward to  
21 hearing more about these sorts of things in the next panel. I  
22 understand that they'll be, you know, this will be part of the  
23 safety management discussion that's coming up next. So I should  
24 probably keep moving.

25           I did want to ask Ms. Frazier a question about her audit

1 staff. If you do have auditors on staff and what sort of  
2 experience and training they have to carry out the audits that are  
3 necessary for accreditation.

4 MS. FRAZIER: Sure. We have about 50 site surveyors.  
5 We call them site surveyors, basically auditors, and they are  
6 medical personnel or pilots or we have a few mechanics that must  
7 be currently involved in air medical or ground transport. They  
8 are selected -- they're subcontracted. So they're selected  
9 specifically based on the needs of the program. For example, if  
10 we do a fixed wing service, we would choose one of the surveyors  
11 medical-wise that is familiar or works in the fixed wing service  
12 but there's conflicts of interest always that have to be cleared  
13 away first. So ordinarily we're sending somebody from the East  
14 Coast to the West Coast just to avoid conflicts. Same way with  
15 the aviation part. We wouldn't send necessarily a fixed wing only  
16 pilot to a rotor wing service. So we try to match the surveyor's  
17 background, and they must have four years of experience and none  
18 of site surveyors have less than 10 years experience at the  
19 present time.

20 DR. MAYER: Thank you. Programmatically, how do you  
21 address a situation where, I mean I took a look at your  
22 accreditation standards, and they're quite extensive. If an  
23 operator who's largely in compliance with your standard disagrees  
24 with a particular standard, maybe not the intent of the standard  
25 but the means of compliance, do you have a way to negotiate

1 alternate means of compliance?

2 MS. FRAZIER: We have very little of that but if there  
3 are some issues, we do have programs that may have several things  
4 that they have not corrected. If they're minor type things, that  
5 doesn't mean they're not going to be accredited. They're just  
6 accredited with those few outliers. But they have to be real  
7 minor type issues.

8 DR. MAYER: Thank you. Thank you.

9 CHAIRMAN SUMWALT: Thank you. Dr. Mayer. Ms. Ward.

10 MS. WARD: I have no questions for this Panel.

11 CHAIRMAN SUMWALT: Thank you. Mr. Bassett, what total  
12 number of your aircraft, round numbers, approximately how many of  
13 your aircraft now are currently equipped with TAWS?

14 MR. BASSETT: Fifty-seven.

15 CHAIRMAN SUMWALT: Fifty-seven. And with night vision  
16 goggles?

17 MR. BASSETT: Seventy-two.

18 CHAIRMAN SUMWALT: Seventy-two. So yesterday we said we  
19 had the Honeywell representative say that about 28 to 30 percent  
20 of the HEMS fleet was equipped with TAWS now and I think he said  
21 around 200 aircraft. So if we take out Air Methods, we find that  
22 Air Methods has over a quarter of the TAWS equipped HEMS fleet.  
23 That's the math I do on that. Is that about right? You've got 57  
24 of approximately 200.

25 MR. BASSETT: That's correct.

1           CHAIRMAN SUMWALT: Okay. You went ahead and made --  
2 your company made the corporate commitment to equip all aircraft  
3 by 2012, and what was behind that rationale? There's not a  
4 Government mandate for it. Why did you do it?

5           MR. BASSETT: Again, as I mentioned to Mr. Yale, we  
6 looked hard at where to spend our dollars to improve safety at Air  
7 Methods, and we weren't going to wait to be mandated by any  
8 regulation. We wanted to improve the safety at Air Methods, and  
9 we looked at what was available. IFR is not the answer, sir. The  
10 answer we believe is more in line with night vision goggles and  
11 with TAWS.

12           CHAIRMAN SUMWALT: Thank you. And just out of  
13 curiosity, Mr. Judge, you have two helicopters in your operation,  
14 and how many are NVG equipped? I think you said all of them?

15           MR. JUDGE: Yeah, both are NVG, both fly IFR.

16           CHAIRMAN SUMWALT: And how about HTAWS?

17           MR. JUDGE: We have not put HTAWS in. I think we looked  
18 forward to that technical service order. My guess is that we will  
19 see very different equipment, you know, come onto the market  
20 fairly quickly and we would obviously be -- we think that that's a  
21 great piece. We are very big believers in IFR. I think the HTAWS  
22 is a great addition, and we'll put them in.

23           CHAIRMAN SUMWALT: Thanks. And, Mr. Bassett, back to  
24 you, I mentioned that I've heard arguments from various operators  
25 as to why they didn't want to go ahead and equip with HTAWS and

1 things like nuisance warnings, the weight of the equipment, the  
2 whole 1.6 pounds of it, the increase in pilot workload and how  
3 have you dealt with those?

4 MR. BASSETT: Well, as you said, 1.5 pounds is not an  
5 issue. Training is not an issue. As the Honeywell representative  
6 pointed out yesterday, it's a very, very simple piece of equipment  
7 to interpret. I went out and flew in an aircraft a couple of  
8 weeks ago and tried to generate some nuisance indications and was  
9 unable to do it. It has not been an issue. At least if it has  
10 been an issue, it certainly has not been reported up through our  
11 AIDMOR system, and I can tell you, sir, that if it were an issue,  
12 our pilots would not hesitate to let me know.

13 CHAIRMAN SUMWALT: Yes. Thank you. And perhaps could  
14 some of these complaints that we're hearing about, the nuisance  
15 warnings be coming from not what is now the TSO compliant TAWS but  
16 perhaps some of the handheld units that are panel mounted and  
17 things like that?

18 MR. BASSETT: That may be possible. I have no  
19 experience with those systems.

20 CHAIRMAN SUMWALT: Thank you. I'd like to turn to Ms.  
21 Frazier, and what incentives do organizations have to become CAMTS  
22 accredited? Do you -- are there some places, some organizations  
23 that will not reimburse unless the operator is CAMTS accredited?

24 MS. FRAZIER: I'm aware of some insurance companies that  
25 ask if they're CAMTS accredited. I don't know that they wouldn't

1 reimburse if they weren't. That's more prevalent in the fixed  
2 wing end. Basically these are programs that really aspire to  
3 excellence and they want to know where they are with the  
4 standards, do they meet, do they exceed, where can they make  
5 improvements? And so we do apply those that do apply for  
6 accreditation. You know, in most cases, it's not required by  
7 anyone unless they're in those states that require it.

8 CHAIRMAN SUMWALT: Yes, and you mentioned that there are  
9 nine states that require it.

10 MS. FRAZIER: Nine states.

11 CHAIRMAN SUMWALT: And so what is it about those states  
12 that force them or got them interested in requiring CAMTS  
13 accreditation?

14 MS. FRAZIER: Well, that's a whole other issue. We  
15 actually, as the Board, do not -- we do not want them to require  
16 CAMTS accreditation because it does put us quite in a legal  
17 situation. If the program happens to lose accreditation or isn't  
18 accredited in the timeframe, then we are facing a lawsuit. So the  
19 states that require it wanted to do that because they want to  
20 provide the best care and safety for their patients, for the  
21 public, and they felt that this was a way to do it. Many of the  
22 states do not have any aviation expertise to help them in setting  
23 up their state standards for that part of the operation. And we  
24 understand why they did it. What we would like states to do is  
25 just say you have deemed status. In other words, you are

1 automatically licensed if you're a CAMTS accredited program  
2 because you've already met and exceed minimal standards.

3 CHAIRMAN SUMWALT: Thank you very much. I've looked  
4 through Exhibit 10(h), the CAMTS accreditation standards, 78  
5 pages. It looks very impressive, and in follow up to what Dr.  
6 Dodd said, it appears that most of those standards are applying to  
7 the medical side of the house, not necessarily towards the  
8 aviation safety side of the house. Can you comment on that?

9 MS. FRAZIER: Well, there are a lot of standards in the  
10 general standards section that apply to all three disciplines, and  
11 you'll see in the right margin, it would apply to rotor wing,  
12 fixed wing, ground. Some of the quality measures are all three  
13 disciplines. So it's a little misleading because if you just look  
14 at the rotor wing section, or the fixed wing section, that just  
15 applies to the aviation component but not to the other parts,  
16 communications and those areas that really would be part of the  
17 aviation.

18 CHAIRMAN SUMWALT: Thank you. As you know, Ms. Frazier,  
19 three years ago the Safety Board made four recommendations to the  
20 NTSB to require certain things, and we'll go over them. We  
21 requested that the FAA require all flights that would fly with  
22 patients on board, if one flight is going to operate under Part  
23 135, then they'll all be required to operate to that higher  
24 standard. Does CAMTS currently require that to be CAMTS  
25 accredited?

1 MS. FRAZIER: Yes, sir, we do. That changed in the  
2 seventh edition standards after your recommendation.

3 CHAIRMAN SUMWALT: Thank you. Does CAMTS require a risk  
4 assessment prior to flight?

5 MS. FRAZIER: We do. That changed in the seventh  
6 edition standards.

7 CHAIRMAN SUMWALT: That's an actual requirement --

8 MS. FRAZIER: Yes.

9 CHAIRMAN SUMWALT: -- not a recommendation.

10 MS. FRAZIER: Yes. It's part of the safety management  
11 system.

12 CHAIRMAN SUMWALT: How about formalized dispatch and  
13 flight following?

14 MS. FRAZIER: We've always really had a whole section on  
15 flight following. What we've said now in the last addendum is  
16 that we are recommending that satellite tracking. We're not  
17 requiring it at this point, but we are strongly recommending  
18 satellite tracking.

19 CHAIRMAN SUMWALT: Thank you. And how about a  
20 requirement for TAWS? Where are you on that one?

21 MS. FRAZIER: We don't have this in the addendum or the  
22 current standards, but it will be a consideration the next time.

23 CHAIRMAN SUMWALT: Thank you. Mr. Judge, you mentioned  
24 a -- well, let me just wrap up on this particular point here.  
25 Again in the last session I wrapped up by pointing out some of the

1 best practices that the air carriers are doing and in addition to  
2 those things that I elaborated earlier, and I think there is, they  
3 all combine to keep the air carriers accident rate very low. In  
4 addition to that, many of the airlines have ASAP programs. Mr.  
5 Bassett, I was glad to hear that Air Methods was moving with that.  
6 Many of the airlines have FOQA programs. So I think again those  
7 are best practices that might be immolated by this industry.

8           Mr. Judge, you mentioned just culture. What does that  
9 term mean?

10           MR. JUDGE: Well, I think actually there was a fourth  
11 slide there. Could you put it in? Because I think that that  
12 would just -- if you look at -- and this has been our approach,  
13 and we didn't dream this up. This came from Patrick Hudson and if  
14 you look at a system that comes down of how people get treated and  
15 how decisions get made and the accountability and the assurance  
16 that if you start at the top, there's a series of things. And you  
17 kind of follow it down that you get into the attitudes,  
18 accountability, the leadership and behaviors, that's the culture  
19 that people have to trust, that they can trust each other, the  
20 public has to be able to trust that that's what we follow, and I  
21 think if you follow the same slope of the curve, and you go back  
22 to Mr. Zuccaro's original presentation, and you look at the series  
23 of things that the FAA working with industry did, that you'll find  
24 in the bottom right-hand corner, it's all about culture, and if  
25 you want to drive this down, you have to have that integrated

1 system that goes down but it comes down to, you know, a belief in  
2 how you live every day. When you walk in the door, how do you  
3 live every day? And that's what we instill in our people, that's  
4 what they instill in us.

5 CHAIRMAN SUMWALT: Thank you. I suspect we'll get more  
6 into that with the next Panel on SMS, speaking of which, let's  
7 take a break and let's be back at, according to that clock, 4:05.  
8 We are in recess.

9 (Off the record.)

10 (On the record.)

11 CHAIRMAN SUMWALT: We will come back to order, and just  
12 from a process perspective, we are exactly where we should be from  
13 a time perspective. So again we're getting the relevant  
14 information and we're doing it in a reasonable time fashion. So  
15 thank you for your cooperation there.

16 The next Panel will be on safety management systems, and  
17 the issues covered will be an overview of SMS, FAA and industry  
18 SMS activities, reporting programs such as FOQA, ASAP and HUMP,  
19 and implementation strategy for HEMS.

20 Ms. Ward, would you please place under oath and qualify  
21 the witnesses.

22 MS. WARD: Please raise your right hand.

23 (Witnesses sworn.)

24 MS. WARD: Thank you. Okay. Mr. Johnson, could you  
25 please state your name, your title and organization you're

1 representing?

2 MR. JOHNSON: Yeah, my name is Keith Johnson. I'm the  
3 Safety Program Manager for the Airborne Law Enforcement  
4 Association. I'm the Chief assessor for the Airborne Law  
5 Enforcement Association accreditation program and I am the  
6 industry lead on the IHST Joint Helicopter Safety Implementation  
7 Team, Safety Management System Group.

8 MS. WARD: Thank you. Dr. Arendt.

9 DR. ARENDT: My name is Don Arendt. I'm presently  
10 working for the FAA as Flights Manager of the Flights Standards  
11 SMS Program Office.

12 CHAIRMAN SUMWALT: Thank you. And Mr. Stockhausen.

13 MR. STOCKHAUSEN: Ed Stockhausen. I'm the Director of  
14 Safety for Air Methods Corporation.

15 MS. WARD: Thank you. Mr. Chairman, the witness have  
16 been qualified.

17 CHAIRMAN SUMWALT: Thank you, Ms. Ward. Evan Byrne,  
18 Dr. Evan Byrne will lead the Technical Panel.

19 TECHNICAL PANEL QUESTIONS

20 DR. BYRNE: Thank you, Mr. Chairman. Supporting me on  
21 this Panel to my left is Ms. Leah Yeager; to her left, Mr. Aaron  
22 Sauer; and to his left, Dr. Loren Groff.

23 Good afternoon, Panel. Dr. Arendt, what is safety  
24 management system?

25 DR. ARENDT: Well, a safety management system as it's

1 name applies is a management system. If I had to boil it down to  
2 one aspect, it's really all about decision making. We heard a lot  
3 about data. We hear a lot about culture. We hear a lot about  
4 manual writing, these sort of things, all of which are essential  
5 artifacts in the safety management system, but it is just that.  
6 It's a management system. It's a tool for the management of any  
7 enterprise, in this case, EMS helicopter organization to manage  
8 risk in their organization and underlying that is decision making.

9 DR. BYRNE: What are the components of the system?

10 DR. ARENDT: Well, as Mr. Barrett pointed out, I could  
11 congratulate him or thank him at least for looking at our material  
12 there, the four components. You have a policy section which lays  
13 out the objectives, accountability, frameworks and responsibility  
14 frameworks, such administrative things like documentation.

15 We have a safety risk management element which starts  
16 with getting a thorough understanding of the organization's  
17 operations and the possible attended risk to that and designing  
18 risk controls. So it's a design function.

19 Then we have a safety assurance function, and assurance  
20 is sometimes a word that's misunderstood. If you look it up in a  
21 law dictionary, it just says something that give confidence. So  
22 basically the safety assurance system is for us to go out and find  
23 out whether or not our risk controls continue to be in place and  
24 they work and to gain confidence in them. And, finally, there's a  
25 safety promotion element largely, the training, communications and

1 culture shaping, all elements of the system.

2 DR. BYRNE: So as far as examples of the components, a  
3 company's newsletter would be in what component?

4 DR. ARENDT: A newsletter would be done in the  
5 communications area, communicating back to the employees essential  
6 things. It could be the hazards that have been discovered, new  
7 changes in risk controls, company policies. So it's a  
8 communications element that's done in the promotion element.

9 DR. BYRNE: And as far as the concept that we talked  
10 about in the last session, FOQA, where would that exist in a  
11 safety management system?

12 DR. ARENDT: FOQA, I would put in the safety assurance  
13 system, although the safety assurance system, there's a very close  
14 linkage in between safety risk management and safety assurance,  
15 but as a data source, it's a way of assuring that our risk  
16 controls are working or discovering where they're not and possibly  
17 discovering new hazards that would build a connection back into a  
18 safety risk management element to change our risk controls.

19 DR. BYRNE: With the four components, safety promotion,  
20 safety risk management, safety assurance and -- or safety policy,  
21 excuse me, are they equal weight in a safety management system or  
22 are some components weighted higher than others to make this  
23 system work?

24 DR. ARENDT: I don't know that there's really a weight,  
25 sir. The safety risk management and the safety assurance are two,

1 as I say, very highly interrelated components. One isn't really  
2 complete without the other. Those are the two functional activity  
3 components but without the policy that sets the objectives, sets  
4 up the management framework, sets up the accountability framework  
5 to make them work, then they'll have no structure, and without the  
6 culture shaping portion of the safety promotion, then the people  
7 in the system won't work effectively. So I would say they are  
8 four highly interacting components and no one is really more  
9 important than the other.

10 DR. BYRNE: And how does a safety management system fit  
11 into existing or planned schemes of oversight?

12 DR. ARENDT: Well, I think quite closely, it's always  
13 been the statutory responsibility of an air carrier to operate at  
14 the highest levels of safety. I think in many cases we haven't  
15 really operationalized that with allowing the aircraft both the  
16 challenge and an opportunity. It's a challenge to show -- the FAA  
17 indicates that it was a mandatory one as it is some places in the  
18 world, it is not. Now it's voluntary in the United States, but  
19 it's a challenge to show the management capability. How do I  
20 manage the technical functions up front show that we have  
21 confidence again, assurance. It's our job to do assurance in the  
22 FAA, that we'll be successful, that we'll get successful outcomes.  
23 So I say it's both a challenge and an opportunity. Things like  
24 certification, our continued oversight, those marry up quite well  
25 with those two operational or functional areas of risk management

1 and safety assurance because we look at things in certification,  
2 program approvals. This gives us a very repeatable set of  
3 expectations to look at, that risk control has been designed in,  
4 and also some assurance that they are activities going on in the  
5 carrier to look at their own activities themselves in conjunction  
6 with FAA surveillance. I think they marry up quite well with  
7 oversight.

8 DR. BYRNE: What is the status of rulemaking in this  
9 area?

10 DR. ARENDT: Right now we're considering rulemaking. We  
11 have, of course, a large and complex system. We're concerned with  
12 anything that we do, making sure that we don't put operators in a  
13 bind with things that are ill thought out, or that we have  
14 multiple certifications, let's say to have incompatible management  
15 systems. So we're studying rulemaking. We'll be using the normal  
16 rulemaking process with all of its attendant activities. The next  
17 thing that you're going to see coming out at any rate is an  
18 advanced notice of proposed rulemaking and I have to make sure we  
19 differentiate. That's not an NPRM, a notice of proposed  
20 rulemaking. There won't be a language in it for proposed  
21 rulemaking language. An advance notice of rulemaking is basically  
22 a solicitation to the public allowing the public to give us their  
23 ideas, their thoughts on this particular subject. So that should  
24 be coming out later this year. That's the next step they'll be  
25 publishing.

1 DR. BYRNE: Mr. Stockhausen, in the last session I heard  
2 the concept of the four components or four pillars at that time  
3 mentioned in SMS. It sounds like your company is moving towards  
4 SMS. Why are you not waiting for regulatory change?

5 MR. STOCKHAUSEN: Yes, sir. My mandate from the CEO is  
6 to just move from a reactive or, yeah, reactive, proactive process  
7 to a proactive predictive process, and it was determined that a  
8 SMS is the best vehicle to use to do that.

9 DR. BYRNE: How does this change your function or your  
10 role as far as Director of Safety and having a safety department?

11 MR. STOCKHAUSEN: You know, it's kind of like looking in  
12 the mirror. You look at yourself in the mirror every day and you  
13 don't really see much change but if somebody comes across you that  
14 hasn't seen you for two years, it may be a shock, but basically  
15 what a SMS does, is it's a holistic approach. It's a systematic  
16 approach to managing safety and risk. So one of the things that  
17 we see is it's ability to break down walls or barriers or what was  
18 called the old silo system of safety where -- and we've heard a  
19 lot of talk here in the past couple of days about, you know,  
20 technology and training and human factors and, you know, different  
21 elements of, you know, what is safe, what makes a safety system  
22 and what may be the best system to use, you know. So it breaks  
23 down the walls of, you know, of the departments and those kinds of  
24 things and allows communication, free flow of information,  
25 collection of data and just, you know, consolidating all those

1 into one system to manage safety.

2 DR. BYRNE: Mr. Johnson, why is SMS an improved way of  
3 doing things?

4 MR. JOHNSON: It essentially gives operators a roadmap  
5 that they can use. It provides a set of attributes. There's 12  
6 attributes that we address, that the ICAO, the FAA and a number of  
7 other associations have adopted in their SMS program, and the  
8 organizations that we have studied that implement these various  
9 processes have been able to make significant reductions in  
10 mishaps.

11 DR. BYRNE: Can you give an example on how SMS has or  
12 moving towards a SMS has helped to prevent a mishap?

13 MR. JOHNSON: Well, I suppose the best example is one  
14 that I've been personally involved in, in my career. In the first  
15 10 years that I managed the Los Angeles Police Department's  
16 Aviation Division, we had nine accidents, almost one accident a  
17 year. And following the last accident which was tragically a dual  
18 fatality, we implemented a SMS system and the organization has not  
19 had another accident in excess of 400,000 flight hours. That's no  
20 accident.

21 DR. BYRNE: Let's turn now to I guess guidance for an  
22 operator in trying to establish in SMS system. And there's FAA  
23 guidance and as we heard on Tuesday, there is guidance from the  
24 IHST. Let's start with the FAA guidance. What are the  
25 foundational documents that an operator would turn to when it's

1 trying to establish a SMS?

2 DR. ARENDT: Right now there's a couple of foundational  
3 documents for us. There are two FAA orders, one FAA order and one  
4 that's come from the Office of Aviation Safety. Those are more  
5 foundational documents to us. They're internal. They're  
6 available to the public, but the foundational document that we use  
7 is AC12092. I think most of the operators are familiar with it,  
8 introduction to safety management system. It's currently  
9 undergoing a revision, by the way, that we're reorganizing the  
10 standard portion of it, the appendix, into the framework of the  
11 recently published ICAO framework. It doesn't really change any  
12 of the requirements if you will, any of the expectations in it,  
13 but it reformats it so that it's a little bit easier to use and  
14 it's more compatible internationally.

15 We also have some internal documents. I say internal  
16 because they're not published in the form of notices or ACs, but  
17 they're published by our program office, by my office for use in  
18 the SMS pilot project but even though they're not posted on the  
19 FAA website, we've got an assurance guide. We've got some  
20 implementation material. All of that's available by contacting  
21 our office. That will, as time progresses, through the pilot  
22 projects and my resources, will find its way into official  
23 publications.

24 DR. BYRNE: What do you mean by the pilot projects?

25 DR. ARENDT: The pilot projects are a set of what you

1 might call a beta test of SMS implementation. We started out  
2 about two, two and a half years ago, largely starting with the  
3 Part 121 group, the Part 135, so far most of the operators we have  
4 are the jet operators, those that are operating internationally  
5 because as some of us realize, there's an ICAO requirement for  
6 SMSs that the U.S. has not adopted yet but ICAO requires it for  
7 international flying.

8           So the pilot project was started as a means of allowing  
9 us to gain experience both in oversight, implementation  
10 strategies, guidance material. We've made outreach sessions to  
11 approximately 50 operators and repair stations. Part 145 is under  
12 the same ICAO requirement but we've got probably about half of  
13 them are active. So we interact with the local certificate  
14 management teams to kind of allow under a standardized  
15 methodology, the operator to develop, using the voluntary guidance  
16 and for us mutually to learn some best practices in  
17 implementation, oversight and interaction as well as to allow the  
18 operators a forum to interact between them.

19           DR. BYRNE: Do any of these operators have a fully  
20 mature SMS at this time?

21           DR. ARENDT: I would say not right now. Again, that's  
22 probably open to discussion. What we've found in looking at  
23 operators when we've gone out and done what we call a level 1  
24 exercise with them, which is a gap analysis, we haven't found --  
25 this is from the entire spectrum. We have not yet found an

1 operator that most of the things that are in our document are --  
2 they're somewhere in the company. We have not yet found an  
3 operator where all of the are there everywhere in the company.  
4 It's kind of between the functions of the company, between  
5 maintenance, ground ops, cabin safety, flight ops, dispatch.  
6 Again, some areas are stronger than some areas of the company.  
7 Some areas are almost absent elsewhere in the company.

8           But it's a long-term commitment, too. It takes, we're  
9 guessing the same as the Canadians, where the best data point  
10 seems to be so far looking pretty true, about a two and a half to  
11 three and half year cycle for complete development. So it's not  
12 an overnight thing to develop a really mature management system if  
13 it's really a management system and goes beyond a basic safety  
14 program.

15           DR. BYRNE: Why does it take so long?

16           DR. ARENDT: Well, a lot of it is there are some --  
17 there's some fundamental changes in the way of thinking. There  
18 are some infrastructure things, too, to put in place. So as I  
19 say, it's about decision making. It's not putting a manual on the  
20 shelf. It's not buying a package. It's not passing an  
21 inspection. It's really a fundamental reorientation in the way we  
22 think and as a decision making process, it has to involve the  
23 decision makers in the company. It can't be just a product of the  
24 safety department. It's not a safety program on steroids or  
25 something like that. It's really a fundamental reorientation and

1 in some cases that's a bigger reorientation than others for some  
2 organizations.

3 DR. BYRNE: Mr. Johnson, what was the rationale behind  
4 the development of the IHST SMS toolkit for small operators?

5 MR. JOHNSON: Well, the rationale is that most of the  
6 large corporate operators in the roto prop industry have mature  
7 SMS programs. The small operator, the operators that -- in the  
8 criteria we used, anywhere from one to five helicopters, those are  
9 the ones that don't have SMS programs. They don't know what SMS  
10 is, and as a result of that, what we did initially was to write a  
11 SMS toolkit which basically helps the small operator to walk  
12 through very simple but distinct steps in implementing a safety  
13 management system. So the initial rationalization was directed  
14 towards the small operator.

15 DR. BYRNE: Mr. Zuccaro mentioned the term scalable  
16 guidance. Can you elaborate on what that means? The toolkit  
17 provides scalable guidance for helicopter operators.

18 MR. JOHNSON: I'm sorry. I didn't realize you were  
19 addressing that question to me. We identified several steps.  
20 There are certain 12 attributes that we address. These tell  
21 people -- it provides them with a set of processes that they need  
22 to employ. However, we don't tell them what to do or how to go  
23 about doing it. That's simply left to their discretion based on  
24 the size and complexity and the various kinds of missions within  
25 the organization.

1           And then what we intend to do is to go back and look at  
2 these various processes. One of the mechanisms we're using to do  
3 that is a mentoring program where we actually go out in the field,  
4 provide a gap analysis and then assist various operators without  
5 actually implementing a SMS program. And as a part of that, we're  
6 going to look at what works and what does not work, and when the  
7 FAA is completed the rule in approximately I believe in around  
8 2011, prior to that, we will have an idea from throughout the  
9 helicopter industry, whether it happens to be law enforcement or  
10 corporate, various kinds of operators, we'll have known what works  
11 and what doesn't work for the small operator. And, as a result of  
12 that, we'll be able to provide more specific, more intelligent  
13 guidance back to the FAA.

14           DR. BYRNE: Are you revising the toolkit or planning any  
15 updates?

16           MR. JOHNSON: Yes, we are. The second revision has been  
17 under way now for almost a year, and we expect that's going to be  
18 completed somewhere in the May, June timeframe, and at that time,  
19 it'll be made available to the helicopter community. We're also  
20 looking or working on a computer training program, and that will  
21 enable people to go online and download a program. They can then  
22 use the toolkit or the computer training program as aids in  
23 implementing their SMS program, and once again, we'll be asking  
24 for feedback so that we can continue to improve that document as  
25 well.

1 DR. BYRNE: As far as the existing guidance. Is there  
2 anything that needs to be done, this is a question for anyone  
3 there, is there anything that needs to be done to translate the  
4 existing guidance to HEMS operations for effective implementation?

5 MR. JOHNSON: We haven't specifically addressed the HEMS  
6 community. We do have representatives on the Joint Helicopter  
7 Safety Implementation Teams from the HEMS community. They are  
8 working on a set of best practices. That is still a work in  
9 progress, and at such time as it's completed, that information  
10 will be disseminated to the HEMS community as well.

11 DR. BYRNE: Mr. Stockhausen, do you have enough  
12 information in terms of applied guidance to implement a SMS at Air  
13 Methods?

14 MR. STOCKHAUSEN: There is some information out there.  
15 A lot of my information has been mentioned before. Transport  
16 Canada has a SMS and has had a SMS program for sometime. ICAO  
17 obviously, Australia, New Zealand, have some information and some  
18 guidance out and have had an SMS I believe mandated for a number  
19 of years. Part of the problem is not having that best practice.  
20 It's not having a template that you can look at, and again part of  
21 that issue is the fact that a SMS is a performance-based system.  
22 So if you're talking about scalability, what would work for us, as  
23 an organization with over 300 aircraft and geographically, you  
24 know, diverse, it might not be or probably wouldn't be appropriate  
25 for a smaller operator or a middle-sized operator. So, you know,

1 developing those best practices and getting those fielded, and  
2 having a range of options that you could at last use as a  
3 template, not necessarily not as a rubber stamp or a cookie  
4 cutter, but use as an idea to be able to mold something  
5 appropriate for your organization.

6 DR. BYRNE: Dr. Arendt, would a SMS for a small operator  
7 I guess going on with what Mr. Stockhausen said, scalability,  
8 would it have the same basic components and have the same basic  
9 level of safety as a SMS for a large operator?

10 DR. ARENDT: We would expect so. The actual SMS, the  
11 management system, just like quality management systems, as Ed  
12 mentioned, is a performance-based functional system. That is, it  
13 specifies what is to be expected and not exactly how. We try not  
14 to make it prescriptive that assumes any specific or a priority,  
15 or makes any priority assumptions about specific organizational  
16 structures, positions, documents, whatever have you.

17 But within those four pillars, I would expect that any  
18 organization could develop a SMS there. Now what it's going to  
19 look like when you're done is a great deal different. Again, it's  
20 a decision making tool instead of decision making practices.

21 As far as guidance material, we have another project to  
22 try to produce a SMS guidebook similar, if you're familiar with  
23 the ISO standards, ISO 9004, something that amplifies, gives some  
24 suggestive practices for implementation. That will probably be a  
25 downstream project due to the resources that we have available to

1 do it. But I think primarily what we're hoping to get out of our  
2 pilot projects is to provide hands-on mentorship but also hands-on  
3 learning from the organizations that are involved. Every time we  
4 give one of our training sessions, our workshops, I could tell you  
5 the information changes from what we've learned in actual  
6 applications.

7 MR. JOHNSON: If I could just elaborate a little bit on  
8 what Dr. Arendt said. One of the things that the IHST is doing is  
9 to go out and meet with operators in various helicopter  
10 communities around the United States, and I think last year we  
11 probably attended something on the order of 30 different  
12 conferences involving all different helicopter community  
13 operators, and talking about SMS, talking about what we're doing,  
14 and the various initiatives that are underway, and we believe  
15 that's going to be an important way of promoting SMS.

16 DR. BYRNE: Thank you. Mr. Stockhausen, what's the  
17 first step involved in implementing a SMS?

18 MR. STOCKHAUSEN: Probably the first step would be  
19 conducting the gap analysis.

20 DR. BYRNE: How important is I guess management or  
21 senior management buy in?

22 MR. STOCKHAUSEN: It's extremely important. If you  
23 don't -- as Mr. Arendt had mentioned, it's a top down, bottom up  
24 system. So if you don't have the support, you know, from your  
25 upper management, company ownership, CEO, presidents, whatever,

1 then you're not really going to be successful because there is  
2 going to have to be some resources applied whether, again  
3 depending on the size of your organization, whether it's staff or  
4 technology in the form of databases, search engines, those kinds  
5 of things. So it's very important that you have the upper  
6 management, top level management set that tone and set that  
7 commitment.

8 DR. BYRNE: Have you conducted your gap analysis?

9 MR. STOCKHAUSEN: We have.

10 DR. BYRNE: When was that done?

11 MR. STOCKHAUSEN: Actually we've conducted two. We  
12 conducted one not quite two years ago, and then we actually just  
13 completed another one in January.

14 DR. BYRNE: How involved is that process in terms of  
15 time or personnel resources?

16 MR. STOCKHAUSEN: It's fairly involved. Again, you can  
17 get into as much depth as you'd like. What we did is we took a  
18 team, this last one, we had a team of three or four folks that we  
19 in our offices for a week and went through all of the, I believe  
20 there's 160 some items on the gap analysis, you know, the elements  
21 and sub-elements of the safety management system.

22 DR. BYRNE: Your safety policy, does that contain  
23 discussion about safety management systems?

24 MR. STOCKHAUSEN: Yes, sir, it does. We have a safety  
25 policy that's reviewed yearly, and it's a safety policy from the

1 CEO, and it mentions specifically safety management system among  
2 other things.

3 DR. BYRNE: What training has your staff received for  
4 SMS?

5 MR. STOCKHAUSEN: My corporate safety staff has all been  
6 to either the HAI safety course. Some of them have -- one has a  
7 master's in engineering. One just about has a master's in safety.  
8 So the TSI course, Transportation Safety Institute, like I said,  
9 HAI, and then we've offered that training to, last year, all of  
10 our regional managers, operations and maintenance managers and our  
11 certificate managers as well, we had TSI, Transportation Safety  
12 Institute, come in and give us a week-long class on safety  
13 management systems.

14 DR. BYRNE: Has your senior management gone through  
15 training for SMS?

16 MR. STOCKHAUSEN: No, sir, our senior management has not  
17 yet gone through training for SMS.

18 DR. BYRNE: Is there a reason for that?

19 MR. STOCKHAUSEN: No, sir.

20 DR. BYRNE: Yesterday we talked about normalization of  
21 deviance with the running stop signs in North Dakota, the example,  
22 also procedural, intentional noncompliance. Now is Air Methods  
23 addressing that particular hazard to their system in terms of your  
24 SMS program?

25 MR. STOCKHAUSEN: Yes, sir. You know, basically we try

1 to identify through our reporting system, the AIDMOR, which has  
2 been mentioned before, identify trends that may be relevant to  
3 procedure, intentional noncompliance. Basically what we find is  
4 that there's something else in the system, I know most pilots  
5 don't go out there to intentionally disregard any kind of  
6 regulation or policy and procedure. So what you have to do is,  
7 what we do is perform a root cause analysis, if we identify trends  
8 or individual things that come to light. Then you have to  
9 basically peel back the layers of the onion. Is it a policy and  
10 procedure? Is it a management practice? Is it a training  
11 proficiency issue, hiring practice, fiscal practice, those kinds  
12 of things, to determine what, you know, what was the cause and  
13 effect, you know, why did the end user make the decision that they  
14 made, and like I said, normally it's not -- they're doing  
15 something to work around an issue that doesn't meet a need  
16 basically. So that's how we're doing it right now and in the  
17 future, matter of fact, in March, we're meeting with the LOSA  
18 Collaborative, Line Oriented Safety Audit, University of Texas.  
19 It was the group that basically designed the LOSA methodology,  
20 Threat and Error Management, and we're going to sit down and try  
21 to develop methodology for the HEMS industry. Basically we are  
22 single pilot, not dual pilot, you know, so the dynamics are going  
23 to be different but we feel as though we can work out a system  
24 where we would be able to gather that relevant information.

25 DR. BYRNE: And as far -- let's go to the ASAP or the

1 discussion of the ASAP or the AIDMOR program. How many staff do  
2 you have again?

3 MR. STOCKHAUSEN: We currently have five.

4 DR. BYRNE: And how many -- ASAP is not in place,  
5 correct?

6 MR. STOCKHAUSEN: That's correct. It's not yet in  
7 place. We, you know, obviously we partnered with our Union and  
8 with the FAA and the MOU is working its way through the process.

9 DR. BYRNE: The AIDMOR program, that's the same type of  
10 information gathering?

11 MR. STOCKHAUSEN: It's very similar. It was designed --  
12 when we set it up, we set the AIDMOR up with the eye towards  
13 eventually looking at an ASAP type program. So, you know, sole  
14 source reports, a non-punitive type system was designed into the  
15 AIDMOR with, like I said, the eye moving towards an ASAP  
16 eventually.

17 DR. BYRNE: And when an AIDMOR report comes in, what  
18 happens to it?

19 MR. STOCKHAUSEN: An AIDMOR report comes in. It's  
20 viewed by the safety department. It goes into a database. It's  
21 classified in a number of different ways, and depending on, you  
22 know, what type of report it is, if it's a hazard, obviously it  
23 gets looked at. All hazards get looked at and then a root cause  
24 or basic root cause is done the hazard, an analysis is done to  
25 then determine what, you know, what fix needs to be into place for

1 that particular hazard. That gets transmitted to the appropriate  
2 department or individuals within the company that would be  
3 accountable for that, and then we wind up closing that out. I'm  
4 sorry. What was the rest of your question?

5 DR. BYRNE: You answered it pretty much.

6 MR. STOCKHAUSEN: Okay.

7 DR. BYRNE: But does the reporter, the person who  
8 submitted the report, do they get feedback directly about whatever  
9 corrective action may have been taken?

10 MR. STOCKHAUSEN: They do. When they submit an AIDMOR  
11 report, they get a notification through their e-mail that, you  
12 know, we have received the report. Once we classify the report,  
13 they also get notification through e-mail that we have classified  
14 the report and we do a monthly AIDMOR summary that goes on our  
15 Internet site safety page of our Intranet, we call it the portal,  
16 and it's a summary that's done with normally commentary from the  
17 safety department or the certificate team.

18 DR. BYRNE: We heard earlier from the Director of  
19 Operations, that as far as management of change or mergers and  
20 acquisitions, primarily were logistics issues. How about culture?  
21 How does Air Methods address the potential hazard as far as  
22 merging two disparate cultures?

23 MR. STOCKHAUSEN: Yes, sir. We looked, you know, as  
24 part of the process of, you know, acquiring the -- the last  
25 acquisition that we made, we obviously went in and did due

1 diligence. We looked at their safety programs, looked at their  
2 culture, looked at their reporting systems, and basically we went  
3 into, you know, with the idea of what is best practice, and we  
4 took away several things. Mr. McCall talked about the 411 system,  
5 and some of the technology running behind the scenes and our OCC.  
6 Mr. Bassett mentioned the third party anonymous reporting system.  
7 We basically extended or renewed that contract with the company  
8 that they were using for that. So we were very careful and did a  
9 good bit of due diligence to look at where they had been, how they  
10 could mesh with our culture, mesh with our operation, and make  
11 sure that that was as seamless as possible.

12 DR. BYRNE: On Tuesday we heard the concept that the  
13 pilot was the final determining factor in safety, making the  
14 decision to press the start button. How, Mr. Johnson, does SMS  
15 help in making sure that that decision is a sound one?

16 MR. JOHNSON: Well, one, there has to be a decision  
17 making protocol that starts with having standards in place. One  
18 of the things that SMS does, it really engages the management and  
19 the organization, the accountability for implementing various  
20 safety initiatives. It doesn't just rest on the shoulders of the  
21 safety director. It rests on the shoulders of the people who are  
22 managing the organization. So one of the things that SMS does is  
23 to truly engage management and leadership in making go, no go  
24 decisions.

25 DR. BYRNE: Mr. Stockhausen, how can SMS help to bridge

1 gaps in what appears to be a matrix system, that is there's a lot  
2 of players or people who can affect safety, organizations that can  
3 affect safety in your operation, first responders, medical staff,  
4 pilots? How does SMS help bridge those various entities and  
5 ensure that they're sharing information with respect to safety?

6 MR. STOCKHAUSEN: You know, that's a good question.  
7 With an organization our size, it's certainly a challenge. Being  
8 able to integrate all of the systems and make sure that the  
9 information and the knowledge gets passed all the way down to  
10 where it needs to be. You know the nature of the system itself is  
11 that it is a system and, you know, all of the components or  
12 attributes of the system are designed to take into account those  
13 types of things. So like I said before, if it's, you know, it  
14 allows us to develop, you know, the options and the systems that  
15 will work best to get that information out. So, you know, we have  
16 a safety patient reporting system. We have a medical occurrence  
17 reporting system. We have obviously the maintenance reporting  
18 system, the AIDMOR, the anonymous reporting system as we move into  
19 the ASAP and the different data collection modes. Then, you know,  
20 hopefully we'll be able to consolidate all of that information and  
21 through different vehicles, newsletters, posting of ops memos,  
22 safety bulletins and alerts, our portal page, the 411 sign in  
23 page, those kind of things, we'll be able to disseminate that  
24 information. And being able to do that, hopefully we'll take care  
25 of that.

1 DR. BYRNE: And as far as staffing, is additional  
2 staffing needed for implementing SMS, Mr. Stockhausen?

3 MR. STOCKHAUSEN: Again, yes and no. It kind of depends  
4 on again the size of the organization, what systems you have after  
5 you do your gap analysis, what do you need to put into place?  
6 What resources do you already have? In our case, we moving to the  
7 ASAP program. So, you know, we're posting another position in the  
8 safety department for an ASAP manager. So as you bring these  
9 systems on line, and again depending on the size of your  
10 organization and your needs, you may have to increase staffing,  
11 yes, sir.

12 DR. BYRNE: Dr. Arendt, last question. From your  
13 measure, how do you measure the effectiveness of a safety  
14 management system?

15 DR. ARENDT: The first thing we're going to have to look  
16 at is just getting all the practices in place. Some of the other  
17 things we've been exploring is looking at some of the changes and  
18 perspectives and attitudes and activities across the organization,  
19 and that's what we talk about in terms of culture. Culture isn't  
20 anything that you can specify but you can certainly see it in the  
21 organization, but our first thing is to go through gap analyses,  
22 look at all the practices, put the practices in place that will  
23 support that culture. And I'll be frank, that one of the things  
24 that we're learning the most about is how to measure  
25 organizational outcomes, just as the lady who was, and I apologize

1 forgetting names, sometimes I forget my own, from CAMTS there had  
2 said that measuring program effectiveness isn't always the easiest  
3 thing to do, but it's an essential thing for us to learn how to do  
4 better but as I say, the first thing is to look at are the  
5 programs and practices in place, and then try to monitor, is that  
6 really changing the way we think about safety. Is it becoming  
7 part of what we do? Whereas, risk management is more the way you  
8 do what you do anyway than it is something that's done at the end.

9           One of the things that I notice, at the risk of being  
10 too long winded here, one of the things that I notice in the  
11 organizations we've worked with, if you start seeing that the  
12 safety director, safety department, whatnot, is running the SMS,  
13 you really don't have a SMS. If you observe that the main safety  
14 activities are being shared and conducted by the senior managers  
15 of the company, the people that are running the productive  
16 operations of the company and they're integrating safety  
17 management into them, I'd say that's one of the first indicators  
18 that you're starting to see or maybe you've completely seen a  
19 safety management system.

20           DR. BYRNE: Thank you. Mr. Chairman, I have no further  
21 questions.

22           CHAIRMAN SUMWALT: Thank you very much. And we'll turn  
23 to Parties and, of course, Air Methods and FAA, since you have  
24 witnesses, would you prefer to go last?

25           MR. YALE: Yes.

1           CHAIRMAN SUMWALT: Thank you.

2           MR. HARRIS: And I'd actually defer on that. I'm ready  
3 to go whenever in order.

4           CHAIRMAN SUMWALT: Perfect, then you will go -- we'll go  
5 in order for you, and so I believe it's CareFlite's turn to begin  
6 first. Thank you.

7                                   PARTY QUESTIONS

8           MR. DAUPHINAIS: One second please. Dr. Arendt, I had  
9 one question. You said that it would take three, three and a half  
10 years to get a SMS program to mature. What size organization are  
11 you basing that timeline on?

12           DR. ARENDT: That's more of a median and at this point,  
13 it's an admitted guess. Again, the only data point we have of a  
14 large scale implementation across the country is Canada who  
15 mandated it some years ago. They're looking at -- and have been  
16 fairly well on track with their operators, and those are  
17 everywhere from, well, in our terms, medium size Part 121  
18 organizations to small bush operators.

19           I might say, part of it is the amount of investment the  
20 operator can make. So I'm not sure that the rate is necessarily  
21 tied to the size of the organization, but that's a median. It's  
22 also going to vary depending on what's already in place. There's  
23 a wide variance there. It could be quite quick if the  
24 organization already had mature practices in place. It might take  
25 a long time before starting from ground zero.

1           MR. DAUPHINAIS: Right. And that's kind of my next  
2 question. With the gap analysis, that's where you decided the SMS  
3 would become effective the narrower the gaps I mean I would  
4 assume, right?

5           DR. ARENDT: Correct. Right now in our case, we've got  
6 kind of a quality problem in that it's voluntary. So your gaps  
7 could be total and you're not in noncompliance anywhere. It's a  
8 question of deciding where we are.

9           MR. DAUPHINAIS: So if you've got most of the bricks,  
10 just putting in the mortar.

11          DR. ARENDT: Correct.

12          MR. DAUPHINAIS: Okay. Mr. Stockhausen, you mentioned  
13 that the SMS programs need to be proactive. Does your  
14 organization so risk analysis studies of your various flight  
15 activities?

16          MR. STOCKHAUSEN: We do.

17          MR. DAUPHINAIS: And how does that work?

18          MR. STOCKHAUSEN: In a couple of different ways, Ray.  
19 Obviously the programs themselves will look at, you know, the risk  
20 that they have on a local level. As we see reports come in, you  
21 know, one of the classifications that we do with an AIDMOR is  
22 assign it a risk level, and then from there, depending on what  
23 category it's in, whether it's a human factors category or an  
24 environmental category, organizational category, those kind of  
25 things, you know, look at it to determine if there's any trends,

1 you know, look at our systems to see if there's something we're  
2 doing as an organization or, you know, in training or a management  
3 practice or whatever may be affecting that. So in a couple of  
4 different scales there.

5 MR. JOHNSON: If I could just comment on your first  
6 question that you asked Dr. Arendt. It's been my personal  
7 experience in a fairly large law enforcement organization, that  
8 implementation of the SMS takes about three to four years for a  
9 couple of reasons. One is the fact that it requires change the  
10 culture of the organization, and as a part of that, we're changing  
11 attitudes. And there has to be a trust, and that trust is going  
12 to come from the employees in the organization of management and  
13 that's what the just culture process is all about. So changing  
14 those attitudes is probably our biggest challenge.

15 MR. DAUPHINAIS: And, of course, you'd agree, it's a top  
16 down, bottom up?

17 MR. JOHNSON: I agree.

18 MR. STOCKHAUSEN: If I might add one thing that I did  
19 fail to put in there, I apologize, that one of the other  
20 parameters we're looking, too, when we first started our pilot  
21 project, we did have sets of milestones that we thought we should  
22 accomplish certain things. We found out that most of our  
23 assumptions were wrong, and one thing that we've added since then,  
24 particularly recognizing that right now it's voluntary, there's no  
25 commitment to meet a milestone or regulatory milestone, we're more

1 interested in people taking the time to develop quality programs  
2 in their organizations than we are to put a book on the shelf, put  
3 a mark on the wall, that says we've met a milestone.

4 MR. DAUPHINAIS: Right. Mr. Stockhausen, I agree with  
5 your statement that generally no pilot will go out there to  
6 intentionally violate a rule or policy, and I agree but in the  
7 outliers, I mean where does the non-punitive reporting and so  
8 forth cross that line? I mean, and maybe this is more for Dr.  
9 Arendt, you know, in the bigger picture of things. At some point,  
10 there's going to be that outlier and how do you know when that  
11 line's been crossed?

12 MR. STOCKHAUSEN: Well, there's a couple of things. You  
13 know, in the FAA guidance, there's, on ASAP for example, there's  
14 the big 5, you know, is it, you know, a drug issue? Is it an  
15 alcohol issue? Is it reckless behavior? Is it an intentional  
16 violation of policy or procedure. So those are pretty, you know,  
17 pretty clear cut.

18 MR. DAUPHINAIS: And what I was thinking but didn't say,  
19 was the repeat, folks who can't seem to get the message.

20 MR. STOCKHAUSEN: You know, again, we want to move  
21 towards the ASAP and look at the ASAP, you know, process and part  
22 of that process is stated, you know, in the AC as well as the MOU,  
23 is that -- and again, the idea is to get as much information as  
24 you possibly can. So unless one of those big 5 have been met,  
25 even the repeat offender, you know, has some relief under that

1 particular system.

2 Now the ERC, or the Event Review Committee, has the  
3 ability to make a different decision as a group, but initially at  
4 least through the guidance, that's how it reads.

5 MR. DAUPHINAIS: So there is the review process beyond  
6 there.

7 MR. STOCKHAUSEN: Right.

8 MR. DAUPHINAIS: Okay. All right. Thank you. And  
9 that's all of my question.

10 CHAIRMAN SUMWALT: Thank you. FAA.

11 MR. HARRIS: Thank you, Mr. Chairman. This is for Mr.  
12 Stockhausen. Can you describe how your SMS implementation relates  
13 to your air carrier systems, such as your operational control  
14 system, your training program, your general operations manual  
15 development and maintenance and so on?

16 MR. STOCKHAUSEN: Yes, sir. You know, as a department  
17 we're involved in basically all of that, at the very least as an  
18 advisor. You know, all of those components, the training, the  
19 general operations manual, the OCC and the OCC policies and  
20 procedures, as well as, you know, the basic safety elements, I  
21 mean they all work together. It's all part of the system itself.

22 MR. HARRIS: Thank you. And, Mr. Johnson, with your  
23 experience in a very large public safety agency operation, and  
24 also in your role with the Airborne Law Enforcement Association,  
25 we've heard discussion of public aircraft operations involving

1 entities which conduct both law enforcement, search and rescue,  
2 fire safety related actions as well as helicopter EMS, and can you  
3 offer some comments on how an SMS, an organization's SMS could  
4 deal with such diverse operational or organizational missions, not  
5 meaning a flight mission but an organizational mission?

6 MR. JOHNSON: Are you talking about implementing the  
7 SMS?

8 MR. HARRIS: Implementing and executing or -- yes,  
9 implementing and operating under a SMS in such diverse flight  
10 activities?

11 MR. JOHNSON: Well, I think first of all, the safety  
12 standards essentially are the same. We have the same system  
13 standards. Where the missions change or the size of the operation  
14 is larger, more complex, it becomes more challenging particularly  
15 from the standpoint of training, and that's a big part of the SMS  
16 process but the fundamentals of a SMS program are not unique to  
17 one size organization or the other. The principals are all the  
18 same. It's really a matter of how you get there.

19 MR. HARRIS: Thank you. And, Dr. Arendt, this is my  
20 last question. There was a discussion where the word again  
21 culture came up in this discussion. Could you comment on how an  
22 SMS might be part of influencing an operator's safety culture  
23 development?

24 DR. ARENDT: Look at culture in three basic elements.  
25 There's a structural or environmental element. That's the kind of

1 things we put in place with our management systems, with our  
2 programs and whatnot. There's a psychological element. This is  
3 how people think and feel. It's the hardest one to get to. We  
4 get to it from surveys and whatnot. And there's a behavioral  
5 element, how people act in the system. All three of these pieces  
6 are interactive.

7           One of the first things we'll do with the safety  
8 management system is work with that environmental area. I was  
9 asked about how do you tell when somebody's crossed the line? One  
10 of the things in our policy is making sure there are clear  
11 standards of behavior and promotionally communicating them to  
12 people so they know where those lines are, but when the line isn't  
13 crossed, being able to make them feel, again thinking and feeling,  
14 the psychological element, make them feel that we're receptive to  
15 their input. Back to the structural element, make sure that we've  
16 got a process by which we can take in that information and show  
17 them we're doing something with it and having good management  
18 behavior so they can see we're walking the talk.

19           So I think within all of those three elements, you can  
20 see that the things that we put in place and how we interact with  
21 our people top to bottom, it's very important that we empower the  
22 people at the bottom, that we have the right structures and the  
23 right processes and the right resource allocations from the top.  
24 So it's again a management system that drives how we make  
25 decision. I think it sets up the framework to support a good

1 culture.

2 MR. HARRIS: Thank you, sir. Thank you, Mr. Chairman.

3 CHAIRMAN SUMWALT: You're welcome, Mr. Harris. HAI.

4 MR. ZUCCARO: Thank you, Mr. Chairman. In order to try  
5 to be as short as possible, I'd like to ask two questions to all  
6 the witnesses. The first question is, we've been having a  
7 discussion about SMS in terms of the top down, the staff, the  
8 employees. Do each of you envision that there are other parties  
9 or entities involved in SMS that do not work for the company? Mr.  
10 Johnson, if you can start.

11 MR. JOHNSON: I'm not sure I understand the question.

12 MR. ZUCCARO: SMS has been indicated that we're talking  
13 from the top management down through the employees in that  
14 company. Do you view that there's any other organizations, people  
15 or entities that would be involved in that company's SMS that  
16 don't work for the company?

17 MR. JOHNSON: Absolutely.

18 MR. ZUCCARO: That's what I'm trying to draw out.

19 MR. JOHNSON: Absolutely. I think probably the most  
20 obvious one is aircraft maintenance. A lot of operators do not  
21 provide their own maintenance especially the small operator. They  
22 have to contract it out, and in that case, you need to have the  
23 same culture, the same kind of standards for a maintenance  
24 operation whether it's internal or external.

25 MR. ZUCCARO: Mr. Arendt.

1 DR. ARENDT: Well, the first and most obvious one is us  
2 I guess, the FAA. We're interacting on safety, and it's a highly  
3 interactive thing. We talk about the three Rs, roles,  
4 responsibilities and relationships. So those are things we have  
5 to think about. As Keith has mentioned here, too, within the  
6 complexities of business arrangements, there are a lot of  
7 contracting, a lot of alliances. We've learned a lot this week  
8 within the EMS community how many different hospitals one might  
9 deal with, different sources of medical personnel, and  
10 arrangements there. So there are a lot of different corporate  
11 lines, I think that get crossed in a single system. So when we  
12 have to see how do we get information to flow, how do we get the  
13 same level of employee empowerment and standards of behavior  
14 across the corporate lines, there are any number of different  
15 organizations.

16 MR. ZUCCARO: Thank you. Mr. Stockhausen.

17 MR. STOCKHAUSEN: There's not much to add to that. I  
18 mean the answer is yes. Obviously we're working with customers  
19 and, you know, the supply crew members, medical crew members that  
20 fly on our aircraft, you know, working at their facilities, at  
21 their hospitals and so on as well as, you know, vendors that we  
22 use. So, yes.

23 MR. ZUCCARO: Okay. Thank you. The other thing is to  
24 try to clarify the topic we were talking about, scalability, and  
25 would you all agree with the statement that a properly implemented

1 and managed SMS program is scalable to the application of an  
2 operator who owned one helicopter and operated it up to a fleet of  
3 300, that if you did that the right way, theoretically you would  
4 have the same level of safety?

5 MR. JOHNSON: I agree.

6 DR. ARENDT: I concur.

7 MR. STOCKHAUSEN: Yes.

8 MR. ZUCCARO: Okay. Thank you. That's all my  
9 questions.

10 CHAIRMAN SUMWALT: Thank you, Mr. Zuccaro. And PHPA.

11 MR. DUQUETTE: Mr. Chairman, we have one question for  
12 the entire Panel. We've been discussing SMS and one of the  
13 comments that had been made, I think on several occasions, is that  
14 the empowerment of the employee. Would each of you in turn go  
15 into a little more detail as to how the SMS actually empowers the  
16 employee?

17 MR. JOHNSON: Want me to start? Well, I think one of  
18 the things that initially that has to occur is management needs to  
19 define how the operation is going to conduct business. It needs  
20 to define the responsibilities of all the employees in the  
21 organization and that includes the people at the operator level as  
22 well as supervisors and manager, and having an appropriate set of  
23 standards for those people to operate by, having best practices  
24 that are clearly understood by the employees of the organization,  
25 but I couldn't complete a thought on that without commenting on

1 the issue of accountability, and we've talked a lot about just  
2 culture and the culture of the organization today. As part of  
3 that empowerment, the employees need to understand that they also  
4 are going to be held accountable. In talking about  
5 accountability, it's not necessarily a negative thing. In many  
6 cases, part of being held accountable deals with counseling and  
7 training, not just punitive kinds of actions.

8 MR. DUQUETTE: Thank you.

9 DR. ARENDT: I think the things that Keith has just  
10 mentioned about making sure that we're definitive about  
11 responsibilities and accountability as well as what authority each  
12 individual employee has, and what they don't have, what they don't  
13 have to worry about, employee reporting. We need to listen to our  
14 employees, convince them that we're interested in their views in  
15 what's going on in the system because they're the ones that see  
16 what's going on in the system.

17 The key to non-punitive reporting systems isn't just the  
18 non-punitive part. We're just trying to take a disincentive for  
19 people to tell us what's going on out there.

20 But the other thing, too, I think is to provide a safety  
21 management structure for them. We always say that the pilot is  
22 the final authority but we also want to make sure that we're  
23 supporting them well, with good practices and good policies such  
24 that we don't say, you're the final authority and it's your  
25 problem. You know, we don't want to take away that authority to,

1 you know, to discontinue something that's unsafe, but we also  
2 don't want to put them in a position where it's totally on their  
3 shoulders to determine whether it's safe or not. They need to  
4 know that that organization is supporting them as well.

5 MR. DUQUETTE: Thank you. Mr. Stockhausen.

6 MR. STOCKHAUSEN: Yeah, and again being the tail end  
7 Charlie here, but I agree with both my colleagues, and one of the  
8 things that, you know, on a revised safety policy statement, is  
9 the expectation that we have for the employee when it comes to  
10 safety but also the permission, giving permission to the employee  
11 to hold the company accountable for what, you know, we say we're  
12 going to do in regards to safety. I think that's a very important  
13 part of it.

14 MR. DUQUETTE: Thank you. And, Mr. Chairman, we have no  
15 further questions.

16 CHAIRMAN SUMWALT: Thank you, Mr. Duquette. And AAMS.

17 MS. KINKADE: Thank you. Mr. Arendt, from a compliance  
18 point of view, what date will helicopter EMS providers be expected  
19 to have an operating SMS?

20 DR. ARENDT: We don't really have an answer for that at  
21 the present time. As we're saying, we're considering rulemaking.  
22 We do have voluntary material out presently but right now we can't  
23 give an expected date for any rulemaking if that occurs.

24 MS. KINKADE: Would you envision a phased-in approach  
25 like Canada did?

1 DR. ARENDT: We're stressing a phased-in approach and  
2 again, you know, as far as anything that might be regulatory,  
3 that's got to follow the process but in our voluntary programs, we  
4 do look at a phased-in approach. It's basically a four-phased  
5 approach with three milestones in it.

6 MS. KINKADE: And you mentioned a SMS pilot project.  
7 Were there any helicopter EMS providers involved?

8 DR. ARENDT: Well, I might say as of this week there  
9 might be at least one. We have also had another couple of  
10 requests that were waiting to get back. At present, there are  
11 none that have been active in the program here but as of this  
12 week, we've had some good conversations with colleagues to my left  
13 and right here on that topic.

14 MS. KINKADE: Thank you.

15 MR. STOCKHAUSEN: Could I just say something?

16 MS. KINKADE: of course,

17 MR. STOCKHAUSEN: Yes. In conversations with Mr. Arendt  
18 and understanding that the trial project is open still for  
19 participation, that they invited and we agreed. So --

20 MS. KINKADE: Great. Thank you. Mr. Johnson, what were  
21 a few of the key steps taken to reduce the law enforcement  
22 accident rate at LA that you referred to?

23 MR. JOHNSON: First of all, it involved the managers and  
24 the organization actually getting involved in establishing the  
25 standards by which we were going to operate. I think changing the

1 culture was the most difficult thing we faced. There was a lot of  
2 distrust. We initiated an incident reporting system. We got a  
3 lot of pushback as a result of that initially. I would say it  
4 probably took two or three years alone simply to get people to  
5 understand that the incident reporting system was non-punitive.  
6 We were looking at preventing similar kinds of occurrences within  
7 the organization. And the other dealt with holding first line  
8 supervisors accountable for the safety within their particular  
9 area of responsibility. In the past, those safety  
10 accountabilities generally rested on the safety department, and  
11 that's a big departure in implementing SMS is putting those  
12 accountabilities on the shoulders of first line supervisors and  
13 managers.

14 MS. KINKADE: Thank you. And this is a question I'm not  
15 sure any of you will be able to answer, but if anybody might be,  
16 Mr. Johnson, from your experience, outside of the safety bucks  
17 program, do you know of any insurance providers that encourage  
18 reward implementation if you have a SMS system in place?

19 MR. JOHNSON: I do not. We had a lengthy discussion a  
20 couple of months ago in Dallas as a part of our IHST effort. Some  
21 insurance companies do provide some incentives and discounts but  
22 it's done very much one a one-to-one basis. It's not widespread,  
23 and the IHST is still looking and going to be exploring with  
24 insurance underwriters a way to create incentives for people that  
25 implement SMS programs.

1 MS. KINKADE: And this question can probably be answered  
2 by all three. Can you provide an example of how SMS forces senior  
3 management engagement in safety?

4 MR. JOHNSON: In our case, starting with the way we've  
5 laid out the voluntary material for those that are engaged in it,  
6 there are specific requirements. There are specific requirements  
7 in policy. There are specific requirements for management reviews  
8 in the safety assurance area. There are specific requirements for  
9 designation of levels of management to accept risks. So all  
10 throughout the system, there are requirements there in the  
11 structure of the programs.

12 MR. STOCKHAUSEN: In meeting those requirements, we've  
13 done a couple of things. We have a root cause analysis review  
14 board that is part of the root cause analysis process. When  
15 something comes in and the analysis is complete, then we have a  
16 review board that meets that consists of most of the major  
17 stakeholders in the company so that they can vet those  
18 recommendations before they go out into the field. Our COO sits  
19 on that particular board, and we also have a safety council which  
20 is all of our senior management. The CEO chairs that counsel.  
21 The safety department runs the meeting but the CEO is the chair of  
22 that particular council, and we go over mostly higher level things  
23 but occasionally we get into the individual occurrence or incident  
24 to be reviewed, but mostly it stays at a higher level, but those  
25 are two examples of, you know, very high level involvement in our

1 program, in our system.

2 DR. ARENDT: I agree with both of my colleagues. One of  
3 the things that I find in the field is that a lot of programs  
4 don't have a safety review council or a safety committee meeting,  
5 and the ones that do generally don't have upper management that  
6 are represented on those meetings. And so that's one of the best  
7 practices that we are defining as part of the SMS effort, is that  
8 management needs to be part of that council. They ultimately hold  
9 the responsibility for making the final decisions or  
10 recommendations that are put forth by the council, and I think  
11 that's one of the more active meaningful areas for upper  
12 management to participate in the SMS program.

13 MS. KINKADE: And one last question, Mr. Stockhausen.  
14 Has Air Methods inserted any SMS related terms and conditions into  
15 client contracts to achieve alignment of philosophy, practices and  
16 resource allocation? You talked about it kind of ties them to  
17 Matt, Mr. Zuccaro's, you know, the stakeholders' question.

18 MR. STOCKHAUSEN: Right. To my knowledge, we don't have  
19 any specific language in the contract itself outlining that  
20 relationship. We do obviously work with our hospital-based  
21 customers. If they're interested in a SMS, and we obviously  
22 encourage that, then, you know, one of the things we do is we  
23 promote the small operator SMS toolkit because it's a good  
24 resource for them to use. We have several that we work with.  
25 We'd like to work with all of them eventually and develop, you

1 know, help them develop, you know, their style of SMS so that it  
2 works, you know, seamlessly here and nearly seamlessly with what  
3 we have.

4 MS. KINKADE: Okay. Thank you.

5 MR. JOHNSON: If I could just add one comment for  
6 managers. One of the things that is part of the IHST effort is  
7 we've develop a website and that website has a lot of meaningful  
8 information for managers, including a copy of the SMS toolkit,  
9 computer training program, articles by safety professionals. You  
10 can pose questions on the website, and those are some things and  
11 some resources that are available to managers in the helicopter  
12 community, particularly the people that are running small  
13 businesses.

14 MS. KINKADE: Is it okay if he gives that website, Mr.  
15 Chairman?

16 CHAIRMAN SUMWALT: Say that one more time. I was  
17 preparing my notes for the Panel.

18 MS. KINKADE: I was just going to ask if it's okay if he  
19 gives that website.

20 CHAIRMAN SUMWALT: Absolutely.

21 MR. JOHNSON: [www.ihst.org](http://www.ihst.org).

22 MS. KINKADE: Great. Thank you, Mr. Chairman. Thank  
23 you all.

24 CHAIRMAN SUMWALT: Thank you very much. Ms. Kinkade,  
25 thank you. And now we turn to NEMSPA.

1           MR. SIZEMORE: Thank you. Thank you, Panel, for  
2 engaging in this conversation. Mr. Stockhausen, as I understand  
3 it, in order for a SMS to really work, culture is extremely  
4 important, that if the culture doesn't embrace it, it's probably  
5 not going to work. Having said that, what's your opinion of how  
6 the culture in your organization, the total culture has embraced  
7 SMS in the company?

8           MR. STOCKHAUSEN: Your Honor, it's a work progress.  
9 It's, you know, we've grown through inorganic growth so to speak.  
10 So there's, you know, we've brought in varying cultures into our  
11 organization, but we work very hard to make sure that those  
12 cultures are integrated through many of the same, you know,  
13 systems and programs we've already talked about. Communication is  
14 a huge key. So we're always working and looking at ways to, you  
15 know, improve our communication, make sure that everyone  
16 understands that, you know, they're a part of the system. I  
17 forget who mentioned it up here but, you know, someone mentioned  
18 that if it's, I think it was Mr. Arendt, but if the, you know, if  
19 the safety department is the one that's running the system, the  
20 program, then you don't have a good system.

21           So, you know, it's the employee system. So  
22 communicating with them, making sure that they understand that  
23 they need to report. I mean that's part of their obligation to  
24 us, you know, is make sure that we can get as much information as  
25 we can on what's going on out there. Our obligation is to try to

1 make sure that we, you know, we close that loop, that they can see  
2 that through their process, through their participation, that  
3 we've made changes. So we try to do that by posting information  
4 on the portal which is, like I said everyone has access to. So  
5 those are the kind of things that we try to do to, you know, to  
6 make sure that they understand again our expectations in the  
7 development of that culture.

8 MR. SIZEMORE: Okay. Do you feel like the company  
9 culture allows things like risk taking, flying in adverse  
10 conditions or something like that? And, if so, how does that  
11 enter into the SMS to bring it back to the top so it can be dealt  
12 with and then sent back to the bottom? Just kind of give me an  
13 idea of whether you feel that's something that goes on within the  
14 company and how you would manage that with your SMS?

15 MR. STOCKHAUSEN: Well, again, we don't know what we  
16 don't know. So if we're not getting the information in through  
17 whatever systems we have available, then it's hard to do anything  
18 with it. But if there was, you know, if there's something, if  
19 there's pleasure being applied to fly a flight that a pilot felt  
20 was inappropriate, then we would need to know that. You know, it  
21 can be done through our AIDMOR system. Again, it can be done  
22 anonymously. It can be done through, you know, telling, you know,  
23 a manager. I would hope, now I can guarantee you that the  
24 expectation from, you know, from the certificate team, from our  
25 CEO, COO, VPs, you know, on down, you know, corporately that

1 there's, you know, we don't indulge nor do we encourage, you know,  
2 risk taking inappropriately.

3           So the aviation factors or the factors are what they  
4 are. So that's what the decision needs to be based on, but I  
5 would hope again that if we know about it, if we have that  
6 information, then it would be given appropriately to, you know,  
7 what ever manager needs to fix that issue.

8           MR. SIZEMORE: And the SMS would allow for that to  
9 occur?

10          MR. STOCKHAUSEN: Yes.

11          MR. SIZEMORE: Okay. Within the integration of this  
12 system and everything, obviously your middle safety management  
13 would be a critical part of that.

14          MR. STOCKHAUSEN: Uh-huh.

15          MR. SIZEMORE: How long do you think it takes to train  
16 and bring a safety officer online that can deal with those issues?

17          MR. STOCKHAUSEN: Safety officer as in middle management  
18 type or --

19          MR. SIZEMORE: Yes.

20          MR. STOCKHAUSEN: You know, again, like I said, we're  
21 constantly trying to train, you know. Most of our middle managers  
22 have been through the TSI, Transportation Safety Institute, SMS  
23 class and risk management class. But that's, you know, that's  
24 only the beginning. So, you know, we educate in the root cause  
25 analysis process, depending on the nature of the occurrence. We

1 may do that directly out of the safety department or we may ask  
2 one of our safety managers out in the field or one of our regional  
3 ops or maintenance managers to take care of that for us. There's  
4 responsibilities written into the job descriptions for them, you  
5 know, for what they do and what they're accountable for. Really  
6 it's just an ongoing process. It's not something that you really  
7 stop doing.

8 MR. SIZEMORE: Okay. Mr. Johnson, are there roadblocks  
9 that you've seen to the development or the implementation  
10 specifically of SMS and do those appear to be cultural only or are  
11 there other issues, are there mitigation processes, kind of a best  
12 practice that can be utilized to overcome those?

13 MR. JOHNSON: Well, there certainly are roadblocks, and  
14 once again, I think some of the biggest roadblocks deal with  
15 culture. You can have all the best intentioned pilots. If you  
16 don't have management that clearly understands and is behind SMS,  
17 the program is not going to work. That leadership is absolutely  
18 critical.

19 And if I could go back to your initial question, you  
20 talked about SMS and implementation. One of the things that I see  
21 in the industry is that we often reward people for doing things  
22 that are, if you will, spectacular, lifesaving. You see people  
23 hanging around on the skids of helicopters, being rescued off of  
24 rivers, and that's not the way we wanted to do business, and the  
25 fact that we may have saved a life, but violated a lot of company

1 policies, FAA regulations, we have to stop rewarding people just  
2 because they got lucky and saved a life. That's a big part of the  
3 culture of the organization. Management needs to make that point  
4 very clear, and I will tell you from my standpoint, I stand guilty  
5 and I've seen the same thing happen within the Airborne Law  
6 Enforcement Association, where we're rewarding the wrong kind of  
7 behavior.

8           What we do need to be doing is patting people on the  
9 back every day, who make the decisions, just doing their job.  
10 That's also a part of the culture of the organization and clearly  
11 management's responsibility to make that happen.

12           MR. SIZEMORE: Okay.

13           MR. STOCKHAUSEN: And if I could add something to that,  
14 in that, you know, Keith is exactly right. One of the things that  
15 we try to do through our AIDMOR summary process is reinforce those  
16 good decisions that evolves primarily around weather, but when a  
17 report comes in and we ask the guys to report on, you know,  
18 weather aborts, deviations, those kind of things, and the reason  
19 that we track that as twofold, one because of our involvement with  
20 the Friends and Partners of Aviation Weather, just try to give  
21 them MOs, you know, what AWAS is working, what isn't, what's out  
22 there, what isn't, what's accurate, what isn't, but trying to  
23 reinforce those good decisions and anytime a good decision is  
24 made, options are found, crew resource or AMRAM was utilized and  
25 it's in the narrative, that we always try to put that up on our

1 portal and comment on that, to reinforce those good decisions.

2 MR. JOHNSON: I think it's kind of what you reward today  
3 is going to get done tomorrow.

4 MR. SIZEMORE: Thank you. That's all, Mr. Chairman.

5 CHAIRMAN SUMWALT: Thank you, Mr. Sizemore. And Air  
6 Methods.

7 MR. YALE: Thank you, sir. Dr. Arendt, one of the  
8 things that came to mind when I was hearing us talk about all  
9 these scalability and the need to have scalability, relative to  
10 this, is the conflict that may come between trying to have  
11 something that's flexible in dealing with the rulemaking process.  
12 Have you thought about that?

13 DR. ARENDT: We've thought about it more in terms of the  
14 standards that we've put together. I shouldn't say standards.  
15 The framework that we've put together for the voluntary systems  
16 and, of course, that's going to be a challenge for any rulemaking  
17 activity that occurs but, yes, we have. And the original model  
18 for what you see in AC12092 was based in the ISO standards partly  
19 for that reason. It's functional. It tells you what is needed,  
20 but was designed to apply to a broad range of types and sizes of  
21 organizations. So it's certainly, always when you're trying to  
22 put together, you know, documents of that nature, it's certainly  
23 always kind of a conundrum in between standardization and  
24 flexibility so that it's meaningful to the ones that are having to  
25 apply it, but it's certainly, you know, is a concern and it's one

1 that I think we've addressed though in the material that we have  
2 in the AC.

3 MR. YALE: And sort of a follow on to that, do you plan  
4 on publishing anything else soon relative to that? I mean I think  
5 AC12092 is very helpful but are there additional materials that  
6 are in the near future?

7 DR. ARENDT: Well, in the near future, we'll have a --  
8 it'll be kind of a plain white document and the reason I say that,  
9 it won't be under the cover of an AC. It'll be a pilot project  
10 related document, but it will be out of my office, the SMS Program  
11 Office. We're hoping in the very near future to get some space  
12 and a website or that is a webpage put together for SMS on the FAA  
13 public site, so these documents would be available. The first  
14 document is the ICAO reorganization of what's now in the appendix  
15 of the AC. We'll be beginning the process of updating the AC, but  
16 so that we can get it out faster. It'll be just a plain white  
17 program office pilot project document. Along with it, we're  
18 pretty much on short final to putting together an assurance guide.  
19 The assurance guide is how one would look at one of these systems  
20 to do a gap analysis, to do internal auditing, that sort of thing.  
21 Then probably a summer project is to take each one of those areas  
22 in that assurance guide and in that framework, as I say, those  
23 will all be in the ICAO framework, format, structure, is to put  
24 together the guidebook series I was referring to earlier that has  
25 some more explanatory information. And from that, we're kind of

1 relying on our participants in the pilot project to help us both  
2 directly through, you know, suggestions for the document as well  
3 as what we learned in the pilot projects, to look for practical  
4 methods of implementing. So we do have some plans to put out some  
5 more information.

6 MR. YALE: Are there any current U.S. 121 carriers that  
7 have full SMS programs in place?

8 DR. ARENDT: We have about 25 that we have worked with.  
9 About half of those are active, and they're in varying stages like  
10 we talked before. No one I could tell you in any of our projects  
11 has gone past the implementation planning stage, although some  
12 that we've looked at, there's not -- the plans were pretty --  
13 because they've got quite a bit in place.

14 MR. YALE: Mr. Stockhausen, just for clarity, when you  
15 were talking about a gap analysis that was done two years ago, and  
16 another one that was finished just recently, that's done by a  
17 third party. Is that correct?

18 MR. STOCKHAUSEN: That's not correct. We did it in  
19 house. The first one we did by the safety department. The second  
20 one was just recently completed, it went outside the safety  
21 department to safety representatives out in the field, brought a  
22 couple of those guys in and then one of our regional managers also  
23 came in to head the team up. So it was not company independent,  
24 but it was safety department independent.

25 MR. YALE: And have you used consultants or other

1 auditors outside of the company to be able to do safety audits of  
2 the company?

3 MR. STOCKHAUSEN: We have.

4 MR. YALE: You talked about root cause and being able to  
5 use that to help in this process. You shared with me that you  
6 used a root cause type of analysis to determine the equipment that  
7 you're going to put on board the aircraft from a standpoint of  
8 safety enhancement. Could you just describe that a little bit?

9 MR. STOCKHAUSEN: The root cause process?

10 MR. YALE: Not just the root cause process but how that  
11 was used to be able to determine what type of equipment you were  
12 going to use going forward with such things as the TAWS and the  
13 night vision and that type of thing.

14 MR. STOCKHAUSEN: I mean it's part of the whole process.  
15 We basically did an in depth look at our occurrences, our  
16 accidents as a company and determined that by looking at those  
17 numbers, that the majority of those happened at night, not  
18 necessarily with bad weather, but just the reduced visibility of  
19 night. So that's when the decision was made to look more closely  
20 and, you know, look at equipment like TAWS, equipment like night  
21 vision goggles, the ability to download weather into the cockpit,  
22 those kind of things.

23 So as part of that root cause process, that's where we  
24 decided we would get the most effect out of our resources.

25 MR. YALE: Okay. Thank you. I have no other questions,

1 sir.

2 CHAIRMAN SUMWALT: Thank you. Unless there are any  
3 compelling follow-up questions from the Parties, we'll now turn to  
4 the -- seeing none, Technical Panel, any follow up?

5 MR. BYRNE: No further questions, Mr. Chairman.

6 CHAIRMAN SUMWALT: Thank you. Board of Inquiry,  
7 Mr. Haueter.

8 BOARD OF INQUIRY QUESTIONS

9 MR. HAUETER: Yes. Dr. Arendt, you may have been here  
10 on Tuesday for our witness from Canada. He was indicating that  
11 when SMS was fully employed up there, that they saw a drastic  
12 reduction in the surveillance necessary by Transport Canada. Do  
13 you believe that will happen in the U.S. with the FAA?

14 DR. ARENDT: We don't intend that. Surveillance and  
15 oversight is not obviated by the SMS, one, because we have a  
16 statutory responsibility to do so. And, the other one is that in  
17 any healthy system, just like we've seen in quality management  
18 systems, independent review of those systems and independent  
19 auditing of those systems is still important to maintain the  
20 robustness of them. So we still have a commitment to do so.

21 I would say that what we do with that surveillance  
22 information though may change in its tone. We're building more  
23 analysis processes into our own processes to not only assure the  
24 safety of the primary operational systems. That's certainly  
25 important and continues to be important, but also so that we can

1 evaluate, using that as an indicator, of how well the company's  
2 able to manage. As I said, it's both a challenge and an  
3 opportunity for the company, but we have no immediate intent to  
4 have direct relationship between SMS implementation and amount of  
5 surveillance. As I said, it may change in its character and its  
6 focus, but it's still a commitment.

7 MR. HAUETER: Does this actually increase the amount of  
8 surveillance the FAA will need because now they have a new thing  
9 they have to provide surveillance and oversight for?

10 DR. ARENDT: No, I wouldn't say that necessarily. I  
11 think it provides really a new tool for interacting with the  
12 operator. If we just have two-way systems, a safety management  
13 system and an oversight system that are kind of looking over the  
14 operational processes in isolation for each other, I think that  
15 that's a missed opportunity for both of us. The ability to share  
16 information in between those systems I think is another key  
17 feature of SMS. So, yes, there's another program per se out there  
18 but I think the ability to interact with that mechanism is an  
19 overall gain in effectiveness.

20 MR. JOHNSON: If I could just comment on that briefly.

21 MR. HAUETER: Sure.

22 MR. JOHNSON: I think one of the trends we see in the  
23 industry right now is looking at accreditation, and I know the  
24 Airborne Law Enforcement Association, we just finished our  
25 accreditation program. HAI has done likewise, and CAMTS has been

1 around for a number of years now. I think this is another good  
2 form of oversight, and I'm not sure what HAI standards are, but we  
3 require there has to be a re-accreditation every three years. So  
4 that is effectively an outside assessment, and I tend to recommend  
5 that everybody ought to do at least one of these assessments every  
6 year within their own organization. So I think that's another  
7 form of oversight that we're beginning to see in the industry, and  
8 I think it's become more and more widespread.

9 MR. HAUETER: And then finally, unfortunately we've seen  
10 several ASAP programs and FOQA programs that have ended and maybe,  
11 we hope they'll be put back together again. One recently has.  
12 But how does that portend for SMS in the future when you see these  
13 ups and downs of cooperation?

14 DR. ARENDT: I think that's another challenge to watch,  
15 and I don't really have necessarily a good, closed form answer.  
16 That's part of the hard work. It's certainly disappointing to us.  
17 It's a disappointing thing that's somewhat of a cultural  
18 indicator, a cultural setback, but by the same token, the full-  
19 blown ASAP, it's a necessary requirement for SMS but as you point  
20 out, it does portend for other features and other factors of  
21 cooperation. So it's something I think we're going to have to  
22 constantly work on and continue to build trust.

23 CHAIRMAN SUMWALT: Dr. Ellingstad.

24 DR. ELLINGSTAD: If I could follow up on that a little  
25 bit, many of those scheduled Part 121 carrier have spent a lot of

1 money installing quick access recorders and developing data  
2 analysis capabilities for FDRs to support, FOQA and MOQA type  
3 programs. How integral do you see that in that community to the  
4 development of their SMS?

5 DR. ARENDT: We've treated a SMS develop, the non-  
6 required data sources as being that, as more or less an accessory,  
7 not required for SMS but certainly useful. Any data inputs are  
8 certainly just that. They're more information that we can use.

9 What we like to concentrate though, too, is making sure  
10 that any data that we acquire has a destination, that the data is  
11 analyzed, it's used and that it finds its way into the decision  
12 making, going back to my opening remarks. The -- opinion is it's  
13 really all about decision making. So FOQA can certainly, as we  
14 heard in yesterday's Panel, is an extremely valuable source, can  
15 tell us a lot about the system, but again if it's just put in  
16 place, the hardware and the software is put in place, and it's not  
17 integrated into the way the organization uses the information that  
18 they get, then it certainly isn't going to get its effectiveness.

19 DR. ELLINGSTAD: I certainly would agree with that and  
20 part of the question before was that many of these companies have  
21 spent quite a bit in terms of analysis to try to make that sort of  
22 data useable. What I'm trying to drive at is the extent to which,  
23 and I'll ask this to each of you, to the extent to which that kind  
24 of data, the more detailed performance data that would be derived  
25 from the kinds of recording systems that we've heard about, to

1 what extent is that being considered in the design of SMS systems  
2 as we go down the road? Let's start with Mr. Johnson.

3 MR. JOHNSON: I don't think we've done, and I'm going to  
4 speak for myself as part of the SMS committee. We probably have  
5 not done as much work as we should in terms of recovering data. I  
6 do think in looking at assessing the effectiveness of SMS, we're  
7 going to have to do that because if we can't measure it, we can't  
8 determine if we're getting any better. That was a very candid  
9 answer.

10 DR. ELLINGSTAD: Dr. Arendt?

11 DR. ARENDT: Well, and I think that's true really of all  
12 the data sources, whether it's the employee reporting system,  
13 whether it's ASAP or not, whether it's our internal auditing  
14 systems, our internal evaluations, how we combine the data, how we  
15 exchange information and the data. So I think we're right now  
16 just in the first steps of getting the overall organizational  
17 frameworks put together, but I agree with Keith here. As we go,  
18 we're going to have to look more into the specifics, the details  
19 of each data source and how it contributes to the whole.

20 DR. ELLINGSTAD: And, Mr. Stockhausen.

21 MR. STOCKHAUSEN: I would agree. You know, one of the  
22 things that we look at as a true benefit of the SMS is to be able  
23 to take, you know, to move from that reactive process although  
24 there's still a place for their reactive process in the SMS, but  
25 to look at the proactive process, be able to take that data that

1 you collect, whatever source it happens to be, be able to put it  
2 into a useful form, and then hopefully that data will be able to  
3 show you some trends or some things or even become predictive in  
4 nature so that you can then go out and identify issues or risks or  
5 factors that need to be addressed, you know, while they're small  
6 and haven't caused an occurrence before they cause that  
7 occurrence.

8 DR. ELLINGSTAD: Okay. And finally, we skirted around a  
9 little earlier today talking about operator fatigue and those  
10 kinds of things. Last summer the FAA sponsored a symposium having  
11 to do with fatigue in aviation and concentrated on a whole range  
12 of different kind of aviation operations but introduced the notion  
13 of a fatigue resource management system as sort of a subset of  
14 SMS. Has that, starting first of all with Dr. Arendt, would you  
15 expect to see that in a SMS that was offered up by a HEMS carrier?  
16 And Mr. Johnson and Mr. Stockhausen, have you considered that kind  
17 of a thing as a component of your SMS planning?

18 DR. ARENDT: I think fatigue risk management is, as you  
19 say, is a subset of safety risk management overall, and it  
20 certainly looks into the overall management of the company, that  
21 is how do we lay out our scheduling, how do we lay out our  
22 aircraft utilization, how do we assign pilots and other  
23 professionals, maintenance folks and in the case of VMS, the  
24 medical crews, dispatchers, if we have flight followers, whatever.  
25 I think that's just another one of the subsets that you mentioned

1 of risk and something that has to go into the overall planning of  
2 operations. It's just that factor in general. This is one  
3 specific factor that's part of the more general organizational  
4 planning of safety risk management.

5 DR. ELLINGSTAD: But would you expect FRMS to be on your  
6 checklist when you examine someone's SMS system?

7 DR. ARENDT: I don't know that we have any plans right  
8 now to call out any particular domains. Again, it would be more a  
9 part of the general system analysis and hazard identification  
10 trickle down for all sources of hazard in the system. So it  
11 certainly is an area to look at in your guidance material to  
12 supply additional guidance material on that particular subject  
13 such that it meshes with the SMS, but I couldn't say it would be  
14 one specific area of interest over any others. It would be just  
15 one of many.

16 DR. ELLINGSTAD: Okay. Mr. Johnson.

17 MR. JOHNSON: I think it's an area that we've typically  
18 under-evaluated. Over the course of the last several years, I  
19 think we've seen a lot of evidence of fatigue that has not been  
20 very well managed. I listened to a presentation a couple of days  
21 ago by Dr. Dudley Crawson (ph.) with NASA, and I thought it was  
22 very interesting. He made the comment after you've been awake for  
23 19 hours, your body and your mind is effectively at a .08 blood  
24 alcohol. That was kind of a shocking revelation. I never really  
25 thought about it in those terms before.

1           But certainly we're looking at it. We had a meeting a  
2 year ago with the NTSB. One of the things we asked them to  
3 provide us with some additional information on was fatigue because  
4 I think it is a really important component of SMS and one that's  
5 going to require a lot more attention in the future.

6           DR. ELLINGSTAD: Thank you. Mr. Stockhausen.

7           MR. STOCKHAUSEN: I agree with Mr. Arendt in that we,  
8 you know, we haven't looked at it from a formalized process. At  
9 this point, we certainly recognize that fatigue is a risk factor  
10 and is an issue in our industry. We look at it and take it into  
11 account in both our tactical and operational risk assessments. We  
12 address it through our training programs. We address it in our  
13 general operations manual and we address it in our AMRAM training  
14 as a module, but as a formalized process, as part of a SMS outside  
15 of the risk assessment and management portion of it, we haven't  
16 looked at it as a separate component.

17          DR. ELLINGSTAD: Thank you.

18          CHAIRMAN SUMWALT: Thank you, Dr. Ellingstad. Dr.  
19 Mayer, no questions. Ms. Ward.

20          MS. WARD: Mr. Chairman, I know that SMS is near and  
21 dear to your heart, so I defer my time to you.

22          CHAIRMAN SUMWALT: Well, thank you. I guess it's all up  
23 to me. So I will make it very brief. You know, I hear a lot of  
24 talk about SMS, been to conferences, listened to a lot of very  
25 talented speakers, and at the end of the day, I still scratch my

1 head and ask what is it? And I'm sort of a simple minded kind of  
2 guy, if you haven't noticed, and so I have to boil it down to  
3 language that I can understand. And, basically here's what I've  
4 boiled it down to, and that organizations pay attention to things  
5 that are important to them. For example, we hope that companies  
6 pay attention to finances. Apparently they don't all do that now  
7 but we, you know, a responsible company would pay attention to  
8 finance. They want to make sure that they're profitable. So  
9 therefore they appoint a chief financial officer. They appoint a  
10 corporate officer to look after the finances of the company. They  
11 have financial procedures. They conduct their auditing in  
12 accordance with GAP. What does that stand for? General Accepted  
13 Accounting Practices. They conduct internal audits and external  
14 audits. Every quarter, the CEO and the CFO sign a Sarbanes-Oxley  
15 statement to say that they attest, they certify that these things  
16 have been done and what they're reporting is correct. And why do  
17 they do these things? Because finances are important.

18           And that's what SMS allows us to do. It allows us, it  
19 allows a company to manage safety in a business-like approach, and  
20 if safety's really important to us, then we need to manage it in a  
21 business like approach.

22           Dr. Arendt, you are an expert in SMS. Do you disagree  
23 with that?

24           DR. ARENDT: No, sir, absolutely not. I agree  
25 wholeheartedly.

1           CHAIRMAN SUMWALT: Thank you. So that's really what SMS  
2 is. If you're scratching your head saying I hear a lot about it,  
3 but I don't quite get it, I think in a nutshell that's what it is.  
4 It gives us a structure to formally manage the safety just as we  
5 manage other things that are important to the company.

6           Now with that said, things that are important are  
7 nutrition and sleep, and so I think today has been a, just like  
8 the other two days, has been very informative. Once again, I want  
9 to thank the witnesses. I failed to do that I think for the last  
10 two Panels, but I think all of the Panels today have been very  
11 good. I want to thank the Parties for your great questions and  
12 for your cooperation. Again, it's a balance that we're trying to  
13 play between getting questions out, getting information on the  
14 table and keeping it running, and I think that we have achieved  
15 that.

16           I do want to finish tomorrow by lunch, and the reason  
17 being is if we go past -- we could go all day if you want to, but  
18 I think if we go much past 1:00, then from a physiological point  
19 of view, we need to take a break, and I've sat in this Board room  
20 until 2:00 without lunch, and I can tell you it doesn't work.  
21 It's not fair for those people who have to be testifying and be on  
22 their game. It's not fair for the people who have to ask the  
23 questions. It's not fair for the audience because they're here to  
24 learn and watch the proceedings. So I do feel fairly strongly  
25 that if we're here after about 1:00, we have need to take a lunch

1 break, and then we're here later in the afternoon.

2           So what I would like to do, I would like to start  
3 earlier. I like to start at 8:00 in the morning to increase our  
4 likelihood of getting out of here by lunch. Will that place an  
5 undue burden on anybody who's participating in this hearing?

6           Seeing none, this hearing will reconvene at 8:00 in the  
7 morning and the Board room will open at 7:30, okay. The Board  
8 room opens at 7:30. This hearing is adjourned until 8:00 in the  
9 morning. Thank you very much.

10           **(Whereupon, at 5:15 p.m., the hearing in the above-**  
11 **entitled matter was adjourned to reconvene on Friday, February 6,**  
12 **2009, at 8:00 a.m.)**

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CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: PUBLIC HEARING ON EMS OPERATIONS

DOCKET NUMBER: SA-530

PLACE: Washington, D.C.

DATE: February 5, 2009

was held according to the record, and that this is the original, complete, true and accurate transcript which has been compared to the recording accomplished at the hearing.

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Timothy J. Atkinson, Jr.  
Official Reporter