UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

In the matter of:	*	
	*	
HAGELAND AVIATION SERVICES FLIGHT 3153 INVESTIGATIVE HEARING	*	Accident No. ANC17MA001
	*	Docket No. SA-540
	*	

Mid-Deck Ballroom
Captain Cook Hotel
939 West 5th Avenue
Anchorage, Alaska

Thursday,
August 17, 2017

APPEARANCES:

Board of Inquiry

EARL WEENER, Chairman, Board of Inquiry
NTSB Board Member
JOHN DeLISI, Director, Office of Aviation Safety, NTSB
LOREN GROFF, Ph.D., Safety Research Division, Office of Research and Engineering, NTSB

NTSB Technical Panel

SHAUN WILLIAMS, Investigator in Charge and Hearing Officer
KATHERINE WILSON, Ph.D., Human Performance Group Chair
MARVIN FRANTZ, Operations Group Chair

Party Spokespersons

JEFF GUZZETTI, Federal Aviation Administration
JAMES ALLEN, Honeywell
JAMES HICKERSON, Hageland Aviation
DAVE PREWITT, Medallion Foundation

WITNESS PANEL 1: CFIT Avoidance

NATOSHIA BURDICK, Check Airman, Hageland Aviation
CHARLES GILLESPIE, Principal Operations Inspector, Federal Aviation Administration
YASUO ISHIHARA, Senior Fellow, Honeywell
ANDREW McCLURE, Flight Service Information Area Group, Federal Aviation Administration
ERIN WITT, Chief Pilot, Hageland Aviation

WITNESS PANEL 2: Operational Control

CHARLES GILLESPIE, Principal Operations Inspector, Federal Aviation Administration
LUKE HICKERSON, Director of Operations, Hageland Aviation
GABE OLIN, Departure Control Agent, Hageland Aviation
GREG TANNER, Operations Control Center Manager, Hageland Aviation

APPEARANCES (Cont.):

WITNESS PANEL 3: Safety Management and Oversight

DEKE ABBOTT, Polaris CMO Manager, Federal Aviation Administration
STU GREENE, Director of Safety, Hageland
LUKE HICKERSON, Director of Operations, Hageland Aviation
GERALD ROCK, Executive Director, Medallion Foundation
DEBORA WALKER, Deputy Director, Medallion Foundation
CLINT WEASE, Division Manager, Federal Aviation Administration

I N D E X

I N D E X (Cont.)

P R O C E E D I N G S

(8:00 a.m.)

MEMBER WEENER: I will now call this hearing to order.

I'm Earl Weener and it's my privilege to serve as a member of the National Transportation Safety Board, and as the Chairman of this Board of Inquiry. I am here today on behalf of my fellow Board members, Chairman Robert Sumwalt, Board Member Chris Hart and Board Member Bella Dinh-Zarr.

Today we will hear testimony relating to an accident involving Flight 3153 that resulted in the death of three people. On behalf of the entire NTSB, I offer our condolences to the family and friends of those whose lives were lost. Our goal in this hearing, and throughout the investigation, is to determine what went wrong so that similar tragedies can be prevented in the future.

The accident occurred on October 2nd, 2016, about 11:57 a.m. Alaska Daylight Time. Hageland Aviation Services was operating Flight 3153, a turbine-powered Cessna 208B Grand Caravan airplane, under the provisions of 14 Code of Federal Regulations Part 135, and visual flight rules. Flight 3153 was flying to multiple stops within Alaska. The flight originated in Bethel, was scheduled to stop in Togiak and Quinhagak, then return to Togiak on its way back to the day's final intended destination, Bethel.

During the flight from Quinhagak to Togiak, Flight 3153 sustained substantial damage after impacting mountainous terrain

about 12 miles northwest of Togiak. On board the plane were the pilot flying the airplane, another commercial pilot and a passenger. All sustained fatal injuries as a result of the accident.

This hearing will identify additional factual information regarding the circumstances of this accident as part of our ongoing investigation. At a future date we will issue an accident report with a determination of probable cause, along with appropriate safety recommendations so that the parties involved and all other stakeholders can work together to continue to improve aviation safety.

On August 15th, 2017, two days ago, the NTSB conducted a prehearing conference for the NTSB's personnel and the parties to this hearing. At that conference we delineated the topics to be discussed at this hearing and identified and agreed upon the list of witnesses and exhibits. These broad issues will be discussed today in three panels: (1) Controlled Flight into Terrain, CFIT, Avoidance; (2) Hageland Operational Control; (3) Safety Management and Oversight in Alaska Flight Operations.

Before proceeding, I'd like to recognize the NTSB staff members who are part of this hearing. The Hearing Officer and Investigator in Charge is Mr. Shaun Williams. Shaun. Leading Panels 2 and 3 is Dr. Katherine Wilson, Human Performance Group Chairman. And leading Panel 2 is Mr. Marvin Frantz, the Operations Group Chairman. Additional support is provided by

Mr. Sean Dalton, Acting General Counsel; Mr. Tim LeBaron, Deputy Director of Office of Aviation Safety; Mr. Chris O'Neil, Chief of Media Relations; and Ms. Katy Chisom from the NTSB Office of Transportation Disaster Assistance is on site to assist family members and loved ones of those lost in the crash.

I would also like to introduce two other members of the Board of Inquiry: Mr. John DeLisi, the Director of Aviation Safety; and Office of Research and Engineering, Senior Research Analyst, Dr. Loren Groff. My thanks to both gentlemen who were instrumental in organizing this hearing.

I will now introduce the parties designated to participate in the investigative hearing. As prescribed in the NTSB rules, we designated as parties those organizations or individuals whose participation we deemed necessary in the public interest and whose special knowledge will contribute to the development of pertinent evidence.

As I call the name of the party I would like the designated party spokesperson to identify himself, explain his affiliation with the represented party, and then introduce the others seated at the party's table. Hageland Aviation Services, Incorporated, Mr. Jim Hickerson.

MR. J. HICKERSON: Good morning. Jim Hickerson, President of Hageland Aviation. At our table we have Stu Greene, Vice President of Safety; Erin Witt, Chief Pilot; Greg Tanner, Manager of our Operational Control Center; Luke Hickerson, Vice President

of Operations; and Morgan Campbell, Counsel.

MEMBER WEENER: Thank you, Mr. Hickerson.

The Medallion Foundation.

MR. PREWITT: Good morning, Mr. Chairman. My name is Dave Prewitt. I'm a board member for the Medallion Foundation. Accompanying me today -- with me today are Jerry Rock, the Executive Director of the Medallion Foundation; Deb Walker, the Deputy Director of the Medallion Foundation; Mr. Wilfred Ryan who's the Chairman of the Board of Medallion Foundation; and Gary Zipkin, our attorney. Thank you.

MEMBER WEENER: Thank you, Mr. Prewitt.

The Federal Aviation Administration, Mr. Jeff Guzzetti.

MR. GUZZETTI: Good morning, Mr. Chairman. I'm Jeff Guzzetti. I'm the Director of FAA's Accident Investigation Division for the FAA in Washington, D.C.

Seated next to me is Eric West. He is the FAA coordinator to the Hageland accident. And to his right is Mr. Deke Abbott, the manager of the Polaris Certificate Management Office. We also have across from him is Mr. [Charlie] Gillespie, who is the principal operations inspector for Hageland. And Mr. Clint Wease is seated next to him. He's the Alaska Region Flight Standards manager of the whole division. And then across from me is Mr. Mark Tomicich, our legal counsel.

MEMBER WEENER: Thank you, Mr. Guzzetti.

And Honeywell Aerospace, Incorporated, Mr. Jim Allen.

MR. ALLEN: Jim Allen. I'm the manager of accident investigation, based in Phoenix. With me is Senior Fellow Yasuo Ishihara and Steve Johnson and our counsel is Michael McQuillen.

MEMBER WEENER: Thank you, Mr. Allen.

I'd like to thank all the parties for their assistance and cooperation with the NTSB investigation thus far. There is still more work to be done in the investigation, but we appreciate your valuable time and we look forward to working with you as the investigation moves forward.

We will begin the hearing with a presentation by Investigator in Charge Shaun Williams, who will provide an overview of this accident. We will then proceed in sequence, one panel at a time.

For each panel the NTSB member leading each panel will introduce the witnesses who will testify under oath. The witnesses have been prequalified and their qualifications and biographical information are available on the NTSB website. The witnesses will be questioned first by the NTSB Technical Panel, then by the spokesperson for each party, and finally the Board of Inquiry.

The witnesses giving testimony and each person who asks a question will be limited to 5 minutes. After one round of questions, due to time constraints, a second round will be limited to pertinent questions that should clarify the record or to address some new matter raised. Please raise your hand and I will determine whether the issue warrants a second round of questions.

I must emphasize again the fact-finding nature of the hearing. NTSB investigations are, by regulation, fact-finding proceedings with no adverse parties. The Board does not assign fault or blame for an accident or incident. At this hearing witnesses may not speculate or analyze the facts, and questions are limited to the predetermined subject matter of the hearing, which is contained in the regular hearing agenda. Questions related to fault, outside litigation or legal liability in general will not be permitted.

If an exhibit has been redacted because it contains personally identifiable information, or other non-relevant information, the redaction will be noted with a gray box. The NTSB is authorized by statute to disclose information to carry out its mission, but we must do so in a way that protects confidentiality to the greatest extent possible.

While the NTSB has access to all of the information, the exhibits disclose to the public relevant materials that are part of the investigation and/or will be discussed at the hearing. A white paper explaining our authority to use proprietary information is available on the NTSB website.

At this time I will call on the Hearing Officer, Mr. Shaun Williams, to go over a few items and to discuss the exhibits to be used during the hearing. Mr. Williams.

MR. WILLIAMS: Thank you, Chairman Weener.

I'd first like to cover a few housekeeping items. Please at

this time silence all electronic devices. In the event of a fire alarm there are several ways to exit the conference room. You may exit to the outside by departing either of the two doors located at the front of the room adjacent to the Board of Inquiry, or either through the two doors located at the back of the room.

Today our first break will begin at 9:55 a.m. We will then have an hour lunch break starting around 11:00 and an afternoon break around 1:25 and 2:25, with a final break around 4:10. We plan to conclude the hearing by 5:15 p.m.

With respect to the microphones, when speaking please be sure to move the microphone close to you and switch it on by pushing the small button on the base. Be sure to switch the microphone off when you're done speaking to prevent interference. When speaking, please pull the microphone close, enunciate clearly, speak slowly and make your question short and concise to ensure optimal sound quality for the broadcast.

Moving on to exhibits. The exhibits entered into the record in any presentations, along with other records of the investigation, become part of the NTSB public docket and are available via the NTSB website, www.ntsb.gov. A transcript of the testimony taken during the hearing will be prepared and entered into the docket as soon as practical.

The parties will have the opportunity to submit proposed findings of fact, conclusions, and recommendations to the Board of Inquiry after the close of the hearing. Submissions will be made

part of the public docket and will receive careful consideration during the Board's analysis of the evidence and preparation of the final report. I encourage the parties to make use of this opportunity. Please note that proposals must be received by the NTSB within 30 calendar days of the NTSB's transmittal of the draft hearing transcript and copies must be provided to each of the parties to the hearing. The hearing transcript should be available to the parties by August 25th, 2017, thus submissions are due by September 25th, 2017.

I will now move to the Investigator in Charge presentation.

On October 2, 2016, a Cessna 208B Grand Caravan operated by Hageland Aviation Services impacted steep mountainous rocky terrain about 12 miles northwest of Togiak, Alaska. The two pilots and a sole passenger were fatally injured and the airplane was destroyed. The airplane was being operated as Flight 3153 as a scheduled commuter flight under the provisions of 14 CFR Part 135 and visual flight rules, or VFR.

The accident flight crew consisted of two pilots, even though only one was required by aircraft type design. Hageland elected to add a second pilot to some flights to allow the crew to be scheduled for up to 10 hours of flight time per day, as opposed to 8 hours for single-pilot operations. The pilot in command, or PIC, had been flying commercially in Alaska for several years and had accumulated more than 6,500 total flight hours. A review of his records indicated that he had completed company controlled

flight into terrain, or CFIT, avoidance computer-based training, as well as simulator training for compliance with the Medallion Foundation CFIT avoidance program.

The second in command, or SIC, had just started flying commercially and had accumulated about 277 total flight hours. Although he completed company CFIT avoidance computer-based training, no records were found that would indicate he completed simulator training.

The Hageland Aviation General Operations Manual states that a flight risk assessment must be completed prior to every flight and the risk value must be agreed upon by both the pilot and operations control agent, or OCA. It also stated that the OCA and PIC are jointly responsible for preflight planning, flight delay and release of a flight, in compliance with regulations, operation specifications and company procedures.

On the day of the accident the flight crew was scheduled to complete five legs under the flight number 3153. Prior to the first leg, the PIC spoke with the OCA regarding all five legs of the planned flight. According to the OCA, during this conversation he recommended the flight be operated under instrument flight rules due to the en route weather in the area. The PIC disagreed, however, because he believed that the weather conditions were sufficient for the flight to be operated under visual flight rules. At 9:25 a.m., the OCA released the flight to be operated under VFR.

The first leg of the day was from Bethel to Togiak. The cruise altitude flown during this leg was about 1,000 feet mean sea level, or MSL. The second leg of the day was from Togiak to Quinhagak. The cruise altitude flown was about 4,500 feet MSL. The flight crew did not communicate with the OCA before departing from Togiak.

The accident occurred during the flight crew's third leg of the day. They departed Quinhagak about 11:33 a.m. for the roughly 60 mile flight back to Togiak. The flight was conducted at an altitude of about 1,000 feet MSL and the accident occurred about 11:57 a.m. Again, the flight crew did not communicate with the OCA before departure.

This image depicts two separate routes flown on the day of the accident. The data was derived from on-board flight tracking systems. The track displayed in red is the accident flight. The track displayed in blue is from another airplane about 5 minutes behind the accident flight. As you can see, the second airplane was slightly west of the track of the accident flight and deviated around the mountain where the accident occurred.

These two images were taken from the south-facing FAA weather camera in Quinhagak, the departure airport, on the day of the accident. The image on the left was taken about 5 minutes before the accident flight departed and the image on the right was taken about 5 minutes after it departed.

This image from the west-facing FAA weather camera in Togiak

shows the weather conditions at the arrival airport about 1 minute before the accident. Based on the accident flight's expected route, the airplane would have approached the airport from the right side of the image about where the mountains are located.

The airplane was equipped with a satellite tracking device that reported the aircraft position, altitude, heading and groundspeed in 6-minute intervals. The last information was transmitted by the device about 4 minutes before the accident. At that time the airplane's altitude was reported as about 1,043 feet MSL traveling at 144 knots groundspeed on a heading of 140 degrees.

This picture, taken the day after the accident, shows the accident location as viewed from a helicopter southeast of the site looking toward the northwest. This white circle shows the location of the initial impact on the opposite side of the ridge, about 200 feet below the estimated 2500 foot peak. Witness marks on the vertical speed indicator showed the airplane was in a steep climb at impact. This circle marks the location of the main wreckage, about 800 feet below the initial impact point. Finally, this circle shows where the right wing came to rest, about 200 feet below the main wreckage.

At the time of the accident Hageland was a participant in the Medallion Foundation Shield Program. The Medallion Foundation is a not-for-profit organization with an Internal Revenue Service 501(c)(3) tax exemption status. It was created in 2001 by the

Alaska Air Carriers Association with the goal of improving aviation safety in the state of Alaska and is partially funded by FAA grants.

According to Medallion, in 2002 the Medallion Foundation signed a grant agreement with the FAA to launch a major statewide aviation safety program to establish safety standards that exceed regulatory requirements through the detection of safety trends or needs before the actual accidents occur.

The Medallion Foundation Shield Program was created to develop and maintain a higher level of safety through the use of system safety and safety management principles. In order to obtain a Shield, an applicant would first need to earn five Stars by completing specific training classes, produce a required manual and undergo an external audit to determine if the company has incorporated the information into its corporate culture. The five categories for Stars are CFIT Avoidance, Operational Control, Maintenance and Ground Service, Safety and Internal Evaluation. Hageland earned their first Star for CFIT Avoidance in June 2005. In April of 2014 they earned a Star for Operational Control and in June of 2016 they became a full Shield carrier.

Safety issues that will be explored in this hearing include, on Panel 1, CFIT avoidance, on-board terrain awareness technology, FAA oversight of the Hageland CFIT avoidance program, and Alaska weather sources, available products and limitations.

Panel 2 will discuss operational control guidance and

training, pilot authority, the role of departure control agents, and FAA oversight of Hageland's operational control program.

Panel 3 will discuss safety management and oversight, to include the Medallion Foundation Shield Program, Medallion's oversight of participating carriers, and Hageland's safety programs.

Mr. Chairman, that concludes the introductory presentation. Would you like for me to call the first panel witnesses?

MEMBER WEENER: Thank you, Mr. Williams. Yes, please call the first panel witnesses.

MR. WILLIAMS: Panel 1. When your name is called please proceed to the stand and remain standing to be sworn. Mr. Charlie Gillespie, Mr. Andrew McClure, Mr. Yasuo Ishihara, Ms. Natoshia Burdick, Ms. Erin Witt.

Please raise your right hand.

(Witnesses sworn.)

MR. WILLIAMS: Please be seated.

Chairman Weener, these witnesses have been prequalified and their respective experience and qualifications appear in the docket as exhibits in Group 1. I now turn the questioning over to the panel lead, Dr. Katherine Wilson.

DR. WILSON: Thank you Chairman Weener and Mr. Williams.

Good morning, panelists, and thank you for being here. Starting with Mr. Gillespie and moving to my right, please state your name, title and affiliation.

MR. GILLESPIE: My name is Charlie Gillespie. I work for the FAA and I'm the Principal Operations Inspector on the Hageland certificate.

MR. McCLURE: Good morning. My name is Andrew McClure. I'm a Staff Support Specialist with Alaska Flight Services for the FAA.

MR. ISHIHARA: Good morning. Yasuo Ishihara, Technical Fellow at Honeywell.

MS. BURDICK: Good morning. My name is Natoshia Burdick. I am a line pilot, safety pilot, instructor pilot, check airman and lead pilot for Hageland Aviation.

MS. WITT: Good morning. My name is Erin Witt. I'm the chief pilot for Hageland Aviation.

DR. WILSON: Thank you. We will now proceed with the presentations. I would like to remind the witnesses that there is a 5-minute time limit for your presentations and the countdown clock can be referenced for the time remaining.

Ms. Gagne, will you please pull up Ms. Witt's presentation?

You can start.

MS. WITT: I don't have the -- oh, great. Thank you.

Good morning, everyone. I'd like to start by saying I am very grateful for the opportunity to address the Board and to share the CFIT avoidance program at Hageland Aviation.

CFIT is an accident in which there is no indication of loss of control of the aircraft, such as a mechanical malfunction, yet

the aircraft has a collision with terrain. In other words, it is assumed the pilot inadvertently flew the aircraft under control into terrain. CFIT-A refers to the avoidance of CFIT. It is worth noting a CFIT avoidance program is not required by regulatory standards; however, Hageland recognizes that CFIT is an important issue facing the Alaska aviation community, so we have put a comprehensive CFIT avoidance program in place.

CFIT avoidance is embedded in all aspects of our training. From the moment you are interviewed, your CFIT avoidance training starts. Part of our interview process engages the applicant to answer the questions focused on decision making, judgment and risk tolerance. In addition to an online course, a 7-day ground school is conducted where the CEO, president, director of operations and the chief pilot all speak to the new hires and explain the importance of good decision making and the expectation of the company when it comes to cancelling flights, turning around and going back, or diverting to an alternate. A consistent and strong message of safety is delivered.

After 7 days of ground school, all pilots receive simulator training. CFIT scenarios, in addition to CRM, are embedded in each and every day of training. We conclude with a session on conflict resolution to test the CRM concepts taught in the program. Further, for pilot in command, or PIC, candidates we utilize a safety pilot program, which ensures all pilots have a company-designated safety pilot in the right seat until the new

PIC has a minimum of 50 hours in type. The safety pilot program focuses on local terrain features and continuing CFIT avoidance training in the local area in which the pilot will be flying. Sometimes this entire process can take up to a couple of months. It is very difficult to take a snapshot of our CFIT avoidance training because it is so in depth and extremely embedded in our entire operation.

Hageland is a member of the Medallion Foundation. We first received our CFIT Star in 2005 and passed our annual CFIT audit last year. As part of our Medallion CFIT Star compliance, Hageland completes audits each year on our CFIT avoidance program. The president and director of operations are included in the annual CFIT program reviews.

The CFIT Avoidance Training Program incorporates many scenarios, including flat light conditions, whiteout conditions and inadvertent flight into IMC, as well as real-life scenarios, such as navigation and communication shortcomings in the system and ATC errors. Outside of the simulator, TAWS policy is taught and discussed. Because the certification of the Class B TAWS unit differs from the FAR Part 135 regulations, the system produces nuisance warnings, making it imperative to have very clear expectations of how and when to inhibit the unit.

Consistent and constant evaluation and improvement are fundamentals at Hageland. We are working to reduce the risk that CFIT poses to operations in Alaska. In the last year we have

committed to install FOQA-type equipment on our entire fleet. The equipment needed for three out of four fleet types does not exist and our avionics engineers are literally building it from the ground up. Currently, approximately 10 percent of our flights are reviewed after completion to ensure regulatory compliance and company standards were upheld. The FOQA-type equipment installation will greatly help this compliance piece.

Alaska has a higher CFIT accident rate than anywhere else in the country. We have identified multiple factors we believe to be at the core of this issue. The state of Alaska lacks the infrastructure to conduct IFR operations to over two-thirds of the destinations that we serve. In addition, the historical lack of IFR infrastructure in Alaska has put undue pressure on the pilots to ensure passengers, mail and cargo get from point A to point B.

Culture and mindset are key. At Hageland Aviation we are working diligently to change a culture that has been present since the beginning of aviation in our great state. I believe our weather cancellation and turnaround rates speak to how we are moving the needle on culture. Our message has been clear, lack of infrastructure should not lead to an accident. It should lead to more cancellations and diversions. The management at Hageland has set the expectation of safe, legal, best practice every time, and the number of cancellations and turnarounds indicate that our pilots are listening.

At Hageland we have zero tolerance for risk taking and

operating outside the box. We are working with our FAA Certificate Management Team to continuously improve every aspect of our operation.

Thank you very much.

DR. WILSON: Thank you, Ms. Witt.

We will now proceed with Mr. Ishihara's presentation.

MR. ISHIHARA: Good morning. Good morning.

The accident aircraft had Honeywell KGP-560 EGPWS installed on FAA Form 337 with no terrain display and no radar altimeter connection. It was configured for Class B TAWS. The EGPWS unit was recovered from the accident, but was damaged such that the flight history data could not be retrieved from internal memory.

An estimated flight path profile was assembled using the provided Spidertracks data, as well as the impact location. And two simulations were used. The first has approximately the last 3 nautical miles of the flight to impact. The second uses the Spidertracks recorded flight data starting at the first data point at 676 feet mean sea level, or MSL. And this figure shows three Spidertracks data points, as well as impact location.

EGPWS simulation provides the following results. Based on the simulation, using an estimated aircraft flight path, caution terrain would have been given 46 seconds prior to impact. And "Terrain, Terrain, Pull Up" warning would have started 36 seconds before impact and it would have continued until impact. And this figure shows the simulation results.

Based on Spidertracks data, the aircraft appears to have flown at 1,000 feel MSL for most of the flight. A terrain clearance between 500 and 700 feet for most flight. Continuous EGPWS "Pull Up" warnings are given for most of the flight until the aircraft begins to climb to 2,300 feet toward the end. The Class B TAWS requirements do not support these type of operations.

NTSB also provided the recorded Spidertracks data from prior flight. This data was used to put together a flight simulation to see if EGPWS alerts would have been given. Based on the simulation, no EGPWS alerts were given, as the aircraft was well above terrain at around 4,500 feet MSL. And this figure shows four Spidertracks data points.

In summary, because of the low level VFR flight operations of between 500 and 700 feet above ground, the EGPWS would have given continuous "Pull Up" alerts. Current regulations require Class B TAWS for the aircraft type involved in this accident and the Class B TAWS requirements do not support these type of operations.

Thank you.

DR. WILSON: Thank you. Finally, we will proceed with Mr. McClure's presentation.

MR. McCLURE: Good morning, Mr. Chairman, ladies and gentlemen.

The primary job of Flight Service is to provide information to the aviation community in the interest of safety. We also

receive information from aviators and use that information to assist others as well.

The first three facilities listed at the top of this graphic, Kenai, Fairbanks and Juneau Flight Service Stations, are what we call parent facilities. They're open 24 hours a day, every day of the year. The remaining facilities listed are called satellites. When they close at night, or for the winter in the case of the seasonal facilities, their duties are taken over by their respective parent.

As you can see, our facilities are located throughout the state. The three green dots represent the parent stations.

This is a closer look at our duties. You can see we are oriented heavily toward providing in-flight services, but preflight is also a very important part of our job. In many locations we provide airport advisory service, which enhances safety at the airports where our Flight Service Stations are located.

A very important part of our job is to collect pilot weather reports, known as PIREPs, and disseminate them to aviators, National Weather Service and other users. Our Alaska PIREP Improvement Program has shown very good results in enhancing this vital service.

The FAA Aviation Weather Camera Program is one of our most valuable tools when we're assisting pilots. We can provide information from the imagery to pilots in flight and during

preflight briefings. We can render additional services, as shown on the slide.

This is an overview of our network of remote communication outlets, which we call RCOs. All together, we monitor over 200 frequencies located at more than 100 sites in Alaska.

This image was captured from the FAA weather camera website and, for reference, shows just the southwestern corner of the state. It does include both Togiak and Quinhagak in the lower portion of the middle of the image. The website is extremely popular with pilots. It has more than 230 camera sites statewide and the website receives roughly 200 million hits per year.

The Enhanced Special Reporting Service, something we're quite proud of, was developed by Flight Service in cooperation with user groups in Alaska to expedite search and rescue. Any pilot can use this program in combination with a relatively inexpensive satellite tracking device. Incidentally, among those is the Spidertracks device. The last known position of the aircraft then becomes the starting point for a dramatically reduced search area. This service significantly reduces the time and resources needed for a rescue.

Another way we support the aviation community is our Safety Outreach Program. We take every opportunity to disseminate aviation safety materials from a wide variety of sources to small groups, safety seminars and other venues, all the way up to the largest trade show in Alaska.

This picture is Kenai Flight Service Station, one of our parent facilities. It's also where we help train newly hired Alaska flight service specialists.

The in-flight work station shown here has the capability to access 60 separate frequencies using the modules on the right side of the picture.

This is a preflight work station used for pilot weather briefing. Pilots can call in on toll-free numbers, or get a face-to-face briefing. We strongly encourage pilots to visit us and learn more about our services and then use them.

This is Dillingham Flight Service Station, our newest building, designed to give the specialists working there the best possible view of the surrounding area.

And lastly, a picture of the work area at Dillingham where frequently only one person, possibly two, are on shift at a time. Prioritizing duties is a must.

And I'd be happy to answer any questions.

DR. WILSON: All right. Thank you very much for everyone who gave a presentation.

The Technical Panel will now begin questioning the witnesses.

Good morning, Ms. Burdick. As you've stated in your previous interview, you were flying between Quinhagak and Togiak about the same time as the accident flight. Walk me through the events of the day, when you came on duty and your interactions with the accident crew.

MS. BURDICK: As the safety pilot, I did not have as many duties as the PIC. When I arrived, I checked the weather, made sure that the aircraft was being fueled. Saw the accident pilots and said good morning. And we went on our flight. Went down to Togiak, picked up bypass. Then we went over to Quinhagak, dropped off the bypass. The accident pilot met us on the ground in Quinhagak, helped us unload, and then they departed. We finished up our weight and balance and paperwork and then we departed shortly after.

DR. WILSON: It's my understanding that the accident PIC had suggested to the OCA that the flight go IFR, his flight go IFR. Do you know if your PIC made a similar recommendation?

MS. BURDICK: I was not part of that phone call since I was not the PIC, so I'm not sure what that conversation entailed.

DR. WILSON: Okay. Prior to departing Quinhagak for Togiak, how did you check the weather in Togiak?

MS. BURDICK: When we were on the ground I checked the area forecast for the wide area, the FAA aviation cameras, and the METARs at both Bethel, Quinhagak and Togiak.

DR. WILSON: And how did you check the weather?

MS. BURDICK: There is a dedicated computer down in the same office that the DCA is in.

DR. WILSON: And this is -- when you say that you checked the weather, was this prior to departing Bethel, or when you were in Quinhagak?

MS. BURDICK: Prior to departing Bethel.

DR. WILSON: Okay. Prior to departing Quinhagak, did you get an updated weather briefing or check the weather yourself?

MS. BURDICK: No.

DR. WILSON: Okay. How often would you check the weather when you were in between -- you know, not at your base, but at a different village?

MS. BURDICK: It varied. If the weather was trending downward, I would check it a lot more than if the weather was trending upwards.

DR. WILSON: If you wanted to check the weather when you had been in Quinhagak, how would you have done that?

MS. BURDICK: I could call OCC on our company cell phones. I could also call the weather in the destinations. The AWOS reports every minute.

DR. WILSON: Did you see the accident PIC check the weather in Quinhagak?

MS. BURDICK: No. I was mostly watching the PIC of my flight.

DR. WILSON: Okay. So we know from the ADS-B data, as well as your previous interview, that a decision was made to go around the mountain due to weather. Who made that decision?

MS. BURDICK: That was the PIC.

DR. WILSON: Was there a conversation between you and the PIC, or did he just make that statement, that he was going to

divert his course around the mountain?

MS. BURDICK: He made that decision.

DR. WILSON: Okay. When he let you know that the path was going to divert, is there a standard communication that you would have expected him to share that information with you?

MS. BURDICK: Only if he had questions.

DR. WILSON: Are pilots trained on how to communicate when they see something that they're uncomfortable with, such as deteriorating weather?

MS. BURDICK: Yes.

DR. WILSON: What is that training that they receive?

MS. BURDICK: We have CRM training. That's during every ground school. It covers things like situational awareness, judgment, aeronautical decision making and the effects of fatigue and stress. So that would cover that.

DR. WILSON: So what if a pilot -- you have a two-pilot crew and one pilot disagreed with the decision making of the other pilot, is there training for that as well?

MS. BURDICK: That would also be in the CRM.

DR. WILSON: Is there specific language that you would expect a pilot to use to let the other pilot know that they disagree?

MS. BURDICK: There's no specific language, but it would always be a conversation.

DR. WILSON: After you landed in Togiak and were made aware of the ELT signal, you went to look for the accident airplane,

correct?

MS. BURDICK: Correct.

DR. WILSON: Were you able to reach the accident site?

MS. BURDICK: No, I was not.

DR. WILSON: And why was that?

MS. BURDICK: Because when I was over there where I thought the accident was, there was a cloud obscuring it.

DR. WILSON: Okay. Any other weather besides cloud cover?

MS. BURDICK: Not that I recall.

DR. WILSON: So, Ms. Burdick, as a flight instructor as well, how would a pilot determine deteriorating weather conditions?

MS. BURDICK: We have several things in place to determine if the weather is deteriorating in front of us. Per our training as a safety pilot, we're out there to show the local terrain features, weather patterns, the ATC environment in that area. And part of that is showing, okay, if you can see this landmark here, this is how many miles of visibility you have from this point. And there's also training during the ground school for in-flight visibility.

DR. WILSON: And if a pilot was unfamiliar with the geographical area that they were flying in, how would they be able to determine deteriorating weather? If you say that they're using a mountain range, let's say, or some other point to determine how far they are from that and whether they can see it or not, if you weren't familiar with the terrain, how would you do that?

MS. BURDICK: Well, all of our pilots get provided with the safety pilot in the local area, so they should all be familiar with the terrain. But if they weren't familiar, then they could use their GPS, their MX 200. All that has landmarks on them and they could determine using those how far landmarks were.

DR. WILSON: Thank you.

Mr. McClure, could you please describe the process by which a pilot can receive a preflight or en route weather briefing from AFSS in Alaska?

MR. McCLURE: Yes, ma'am. Typically pilots will call us on toll-free lines or local phone numbers to a flight service station. They can also show up in person. They can also accomplish the process from the cockpit via radio.

DR. WILSON: And were these services available along the accident route from Quinhagak to Togiak?

MR. McCLURE: All depends on where the aircraft was at the time and availability of communications.

DR. WILSON: What are the challenges in terms of weather when flying in Alaska?

MR. McCLURE: Could you be a little more specific there?

DR. WILSON: Well, are there additional weather challenges that might be different than flying in the Lower 48? Does weather change more rapidly than, let's say, other areas?

MR. McCLURE: I would have to say Alaska obviously has similar weather to areas in the Lower 48, but due to other factors

it may be more difficult to get that weather while en route.

DR. WILSON: How about the predictability of weather in Alaska, is that more of a challenge?

MR. McCLURE: Strictly based on my conversation with a research meteorologist 20 years ago in Southeast Alaska, his comment was that the weather in this part of Alaska, the southern half in particular in the Gulf of Alaska, is less predictable than most of the rest of the world.

DR. WILSON: What gaps exist in weather reporting in Alaska?

MR. McCLURE: We have very similar automated weather observation stations. We have all the same products that exist in the Lower 48. As -- what do you mean as far as gaps?

DR. WILSON: Well, are there geographical issues or maintenance issues that you might find make it difficult to get weather observations in certain areas?

MR. McCLURE: That depends largely on where you're talking about, but overall there are probably a lower density of observation stations in Alaska.

DR. WILSON: You explained the weather program briefly in your presentation. How is it determined where weather cameras will be placed?

MR. McCLURE: That information would probably best be directed toward the FAA Weather Camera Office.

DR. WILSON: Ms. Witt, what official and non-official weather sources are pilots trained to use at Hageland?

MS. WITT: All of our official weather sources are listed in our ops specs and GOM. And the OCC and pilots are all trained to use the Alaska Aviation Weather Unit website and all of the tools that are on that website.

DR. WILSON: Ms. Witt, in your presentation you discussed that pilots receive computer-based training as well as simulator training for CFIT. How would you describe the adequacy of that training?

MS. WITT: Could you be a little more specific please?

DR. WILSON: How would you describe -- how effective is the training?

MS. WITT: If you want to look at just the computer-based training and the simulator training and separate that from the entire program, I would say it's a tool -- those are two tools in our toolbox that we use when we train CFIT avoidance. To me, the biggest pieces of our CFIT avoidance program are culture and mindset of the pilot group, making sure we hire the correct pilots and teach them good judgment, decision making and aeronautical decision making.

DR. WILSON: And how is that done?

MS. WITT: Well, to start with -- kind of a long answer. Sorry. To start with, during our interview process we actually screen applicants based on the way that they answer questions, and things that we're looking at very closely are aeronautical decision-making judgment and really what their risk tolerance is.

I would say approximately 10 percent of our people that we interview for potential employment do not make it any further for one of these three reasons.

The next step is their online training. Again, they see the CFIT avoidance PowerPoint that we've shared with you. We also have a lessons learned PowerPoint that talks about history of the company.

The next thing is they're going to sit through a 7-day ground school. Again, I noted that four folks from management from the top down -- literally the CEO talks to every single new hire pilot and the four of us deliver a consistent strong safety message to all the new hire candidates. They'll finish off their ground school talking about -- if they're going to be a Caravan pilot, talking about our Caravan systems that we have in the aircraft to help us avoid CFIT.

The next step in that process is CFIT simulator training and both -- all Caravan candidates receive that training. Then we send them out for flight training and, again, additional training in the aircraft for CFIT avoidance. And again, the pilots in command get the safety pilot program.

And I think the last thing to mention is that our airplanes are equipped excellently. If I think about breaking down the tools that the captain and the co-pilot have inside the airplane for CFIT avoidance, we have the Honeywell equipment, the EGPWS. We have a Garmin moving map. We have at least one Garmin GPS in

the airplane, sometimes two. In addition to that, we have a radar altimeter. So I think the comprehensiveness of our program speaks to it's a comprehensive program.

DR. WILSON: When we reviewed the CFIT CBT training, it closely mirrors the Flight Safety Foundation CFIT training and education aid and is not specific to -- does not have any specific information regarding Hageland operations or Alaska flying. What benefit do you think could be added to the training program, if those elements were included?

MS. WITT: That's a really good question. Thanks for letting me answer that. I think if we look at our CFIT -- if we focus on the Flight Safety Foundation materials that we use to build our CFIT avoidance CBT, at the moment there's not FAA or 8900 guidance for 135 operators on what CFIT avoidance training looks like. So from our company perspective, the Flight Safety Foundation is extremely reputable, very well funded, and we were very pleased to have that material and be able to use it for our training program.

I think when you look past that CBT, we do have other CBTs and things taught in ground school that relate more to our local operation and operations in Alaska and Hageland. I guess I feel that our ground training is good and adequate, and if you're suggesting that maybe we could combine some of those and have one entire presentation that presents the information, we would definitely think about that if you think it would be of benefit.

DR. WILSON: Thank you.

So, Ms. Burdick, what actions should a pilot take when encountering inadvertent IMC?

MS. BURDICK: If you're in a VFR aircraft flying VFR and you get into IMC, you're expected to make an immediate 180 and, if there is terrain around, to execute an escape maneuver.

DR. WILSON: Do pilots encounter these scenarios in training?

MS. BURDICK: Yes.

DR. WILSON: Could you walk me through what a typical scenario, training scenario, for this type of encounter would look like?

MS. BURDICK: Yeah, during our CFIT sims the pilot will be flying along in VFR weather and then we'll slowly degrade the visibility to a point where it is no longer VMC conditions and they will execute basically an escape maneuver, either do a 180 or climb and pick up a approach into a local nearly airport.

DR. WILSON: As a part of the Medallion CFIT Star, in addition to deteriorating weather, you are also required to simulate flat light and whiteout conditions, correct?

MS. BURDICK: That's correct.

DR. WILSON: What challenges exist in re-creating those simulator scenarios?

MS. BURDICK: The flat light condition can be difficult to replicate.

DR. WILSON: In what way?

MS. BURDICK: It's hard to show actual conditions on a

computer screen when you're not actually out there looking at it.

DR. WILSON: And so how does Hageland compensate for the limitations in the simulator? So how are you ensuring that pilots are learning what they need to learn regarding those conditions?

MS. BURDICK: Well, we try to simulate it as best as we can. And then also, while we're out flying during the safety pilot and initial training they're getting some experience with the weather.

DR. WILSON: It's also my understanding that you performed the last CFIT check with the accident pilot, Mr. Cline. What were his greatest strengths during that training?

MS. BURDICK: That simulator session was one of many that I did that day and so I do not recall his personal performance, but I can say that if I -- I did sign him off and that means he was current and satisfactory at that time.

DR. WILSON: And would he have received simulator training on all three of those scenarios?

MS. BURDICK: Yes.

DR. WILSON: Would any of those scenarios have involved receiving a TAWS alert?

MS. BURDICK: No.

DR. WILSON: Ms. Witt or Ms. Burdick, how are pilots trained to use the TAWS?

MS. WITT: Pilots are trained how to use the TAWS using the Honeywell EGPWS manual as courseware in Cessna 208 and Beech 1900 ground school.

DR. WILSON: And under what conditions is the TAWS inhibit switch used?

MS. WITT: There are a few conditions under which the TAWS inhibit switch are used. The TAWS inhibit switch is authorized to be used when the pilot and aircraft are in VFR conditions and the pilots can ascertain that there is no chance that the aircraft will impact terrain visually.

DR. WILSON: And then when would a pilot be expected to un-inhibit the TAWS?

MS. WITT: The approach and landing checklist currently calls for the TAWS to be uninhibited on the Caravan.

DR. WILSON: You say currently. At the time of the accident was that an item on the checklist as well?

MS. WITT: No, ma'am.

DR. WILSON: Is there any documentation in Hageland manuals about when a pilot is authorized to inhibit or -- and then un-inhibit the TAWS?

MS. WITT: Just what I stated, which is in the Honeywell manual.

DR. WILSON: Okay. Is that the pilot guide?

MS. WITT: Yes, ma'am.

DR. WILSON: How does Hageland ensure that pilots are following the TAWS guidance provided to them?

MS. WITT: We track when the TAWS is inhibited in our FlightLogger program and through use of line checks and

observations with our line pilots.

DR. WILSON: Explain to me a little bit the tracking it in the FlightLogger program. How is that done and what information are you looking at?

MS. WITT: Okay. So at the end of the day when the pilots put in their flight log there is a dropdown box that asks during each flight leg whether or not the pilot had to inhibit the TAWS. If they did have to inhibit the TAWS, they check the yes box. That's what we're currently tracking. Our folks in IT right now are configuring some dropdown menus so we can get some more specific data points, such as location, the reason for it being inhibited and so on.

DR. WILSON: And again, you said currently. Is that something that is recent since the accident, or had that -- had you all been tracking that prior to the accident as well?

MS. WITT: That was since the accident.

DR. WILSON: So just so that I'm clear, this tracking of this data is based on self-report by the pilot. There's no way to automatically track this?

MS. WITT: Not to my knowledge, yes.

DR. WILSON: What procedure then would a flight crew follow if they did receive a TAWS warning? So let's say VFR and IFR.

MS. WITT: Okay. So if we run the VFR scenario first. The first thing the pilot's going to do is actually make sure it is a nuisance or false warning, and if they can verify that there is no

terrain to hit, they are authorized to inhibit the unit. If the pilot -- any questions before I move on to IFR? Okay.

If the pilot is in IMC conditions on an IFR flight plan, the policy states that the pilot will not inhibit the unit and will execute an immediate escape maneuver and, as time permits, contact ATC next.

DR. WILSON: Okay. Thank you.

MS. WITT: You're welcome.

DR. WILSON: Mr. Ishihara, good morning. What are the different levels of alerts that the TAWS provides to pilots?

MR. ISHIHARA: It's caution and warning.

DR. WILSON: And what is the difference between the caution and the warning?

MR. ISHIHARA: Caution requires your attention and correct flight path, if necessary. Warning requires escape maneuvers.

DR. WILSON: And in terms of reaction time, how does a caution versus a warning, what sort of reaction time is afforded to a pilot in those situations?

MR. ISHIHARA: I'd have to check the specifics and get back to you later with that.

DR. WILSON: Thank you. How is the system designed to minimize nuisance alerts?

MR. ISHIHARA: It's by meeting TSO Class B requirements.

DR. WILSON: And what is the purpose of the inhibit switch on the system?

MR. ISHIHARA: It's primarily to allow landing at airports that's not in the database. Also, in the pilot's guide it states that in terrain -- unique situations in VFR conditions.

DR. WILSON: You stated in your presentation that the alerts -- that based on the data we have, the alerts that this accident crew would have received would have been anywhere from 46 seconds to 36 seconds before the accident. Do we think that -- do you think that that is adequate time for the pilots to respond?

MR. ISHIHARA: I cannot speculate the pilots, but because the impact site was relatively close to the top of the ridge, it -- if the climb -- aircraft had a climb performance it would have been able to climb out.

DR. WILSON: And what are the benefits of TAWS Class C over Class B?

MR. ISHIHARA: Would you be able to bring up the last page on my presentation? It's easier graphically to see it.

DR. WILSON: Yes. That would be slide 12.

MR. ISHIHARA: So the table on the left is the Class B TAWS requirements and to the right is the Class C TAWS requirement. And I highlighted the top row. That's the major difference. In the Class B TAWS, during en route phase, the TAWS is required to have a warning level alert at 700 feet. And then when you switch to Class C, the FAA TSO calls it cruise phase for the similar environment and the required flight level reduces to 250 feet.

DR. WILSON: If a carrier wanted to switch from Class B to

Class C, is that an upgrade to the system?

MR. ISHIHARA: Not an upgrade. And first of all, the current regulation requires to have Class B. So the operator cannot freely switch to Class C because then that would violate the regulation requirements.

DR. WILSON: Ms. Witt, we mentioned the Honeywell's pilot guide. In addition to the pilot guide, how does a pilot learn the functions, alert levels, capabilities of the TAWS system on the aircraft?

MS. WITT: In Cessna 208 ground school.

DR. WILSON: Is there a specific module devoted to TAWS, or is it a part of a larger ground school module?

MS. WITT: I would have to look at the OTM to answer that accurately.

DR. WILSON: Is the Honeywell 560 pilot's guide provided to your pilots?

MS. WITT: Yes, ma'am. They're in every aircraft.

DR. WILSON: It's in the aircraft. And are they required to read it?

MS. WITT: Yes, ma'am. It's also up on our Litmus site, which the pilots have access to all of our training documents there.

DR. WILSON: How does Hageland evaluate their pilots' knowledge regarding the TAWS, its uses and capabilities?

MS. WITT: The first time we would evaluate that would be in

the Cessna 208 ground school during the test at the end. The second way we would evaluate that is actually out on the flight line during flight training, and then the third time we would evaluate that would be during their recency and proficiency checks.

DR. WILSON: Ms. Burdick, according to testing at Honeywell, using the available Spidertracks and ADS-B data on your flight between Quinhagak and Togiak, the TAWS in your aircraft would have alerted multiple times during the flight. How did the TAWS alert on your flight?

MS. BURDICK: We had the TAWS inhibited for part of our flight that we were around 700 feet AGL. Per our company and per regulations, we're allowed to fly as low as 500 feet, and that goes kind of in contrary to the TAWS.

DR. WILSON: How do you determine when to un-inhibit the TAWS?

MS. BURDICK: When I pass whatever terrain or obstacle, or if I have an alert, I'll usually wait a couple seconds and then un-inhibit it again.

DR. WILSON: Do you recall on your flight when the TAWS was uninhibited?

MS. BURDICK: No.

DR. WILSON: How often have you turned around due to deteriorating weather conditions?

MS. BURDICK: Too many times to count.

DR. WILSON: Okay. Have you ever received a TAWS in IMC?

MS. BURDICK: No.

DR. WILSON: Are pilots required to file a report if they receive a TAWS during a flight?

MS. BURDICK: A report to?

DR. WILSON: To the company. Does the company want to know if the TAWS sounds in an airplane?

MS. BURDICK: So we're not required to file a report, but at the end of the day we insert that in FlightLogger.

DR. WILSON: So entered into the FlightLogger would be if it sounded, as well as if it was inhibited?

MS. BURDICK: Yes.

DR. WILSON: Ms. Witt, going back to your discussion about tracking it in the FlightLogger. What does Hageland do with that data?

MS. WITT: Right now we're collecting the data to determine how many times the TAWS is inhibited during normal safe VFR operations. And again, IT department is working to help us better mine that data and collect data currently.

DR. WILSON: Good morning, Mr. Gillespie.

MR. GILLESPIE: Good morning, Dr. Wilson.

DR. WILSON: What oversight does the FAA have over Hageland's CFIT program?

MR. GILLESPIE: My assistant and I attempt to -- either he or I will attempt to go to every other -- all of their ground

schools. We'll attend a portion of the training. I've -- when I first got on the Hageland certificate, I viewed the CBT portion of it. And then I think I went out to the simulator at the university and observed, I think, the current chief pilot at that time, Willy Coon, administering training.

DR. WILSON: Do you recall the last time that you reviewed the CFIT CBT?

MR. GILLESPIE: It was probably when I initially got on the certificate.

DR. WILSON: And when was that?

MR. GILLESPIE: I believe that was in September of 2014.

DR. WILSON: Is the CBT reviewed on an annual basis, if not by you, then your assistant?

MR. GILLESPIE: No, ma'am.

DR. WILSON: In terms of oversight, do you oversee both the CBT and the simulator training?

MR. GILLESPIE: If I watch the simulator training, it's more to watch the procedures than to observe CFIT training.

DR. WILSON: And why is that?

MR. GILLESPIE: There is no regulatory requirement for the company to have CFIT training, so therefore I have no guidance on how to surveil CFIT training.

DR. WILSON: The CFIT CBT is a part of Hageland's approved training manual, correct?

MR. GILLESPIE: That is correct.

DR. WILSON: So you do have oversight of that, but what -- so that I'm not putting words in your mouth, but to help me understand, but there's no guidance for you on how to evaluate that?

MR. GILLESPIE: That is correct.

DR. WILSON: So when you're approving a training program that you don't have specific guidance for, what are you looking for?

MR. GILLESPIE: When the operator approaches me with a provision to add a module that is not required by regulation, the only thing I can do -- and if it improves safety I'm all for it. So the only thing I can do is view the material and make sure that it is not contrary to regulation or it is not unsafe.

DR. WILSON: What concerns do you have that the Hageland CFIT CBT is not tailored to some of the unique factors of flying in Alaska or specific to Hageland operations?

MR. GILLESPIE: Given the scope of their training, the CBT is just one aspect of it. The training -- to judge that, I would have to judge the entire training program and I think they have a very good training program.

DR. WILSON: What has the FAA done to encourage Hageland, and other carriers for that matter, to incorporate its CFIT simulator training into its training program?

MR. GILLESPIE: Well, the Medallion Foundation is currently the one that's pushing that, and the FAA is funding or provides some funding to the Medallion Foundation.

DR. WILSON: What benefit would there be to incorporating the CFIT simulator training into their approved training program?

MR. GILLESPIE: Again, Dr. Wilson, I don't have any regulatory guidance or guidance to ask them to do that.

DR. WILSON: Thank you.

Ms. Witt, how has Hageland reinforced its CFIT policy since the accident?

MS. WITT: If I can start from the day of the accident and the day after the accident. The director of operations, Luke, and I traveled to every single base on both shifts and talked to every single pilot face to face about what the company expectation is when it comes to following the rules. I have put out a memo reiterating what our TAWS policy is. We have put new policies in place regarding VFR flights and IFR flights. And we have worked for a very long time and a very -- a lot of hours with our FAA Certificate Management Team, and even the folks higher in the office at the FAA locally, to continuously improve what we're doing.

I think if I can go back to my presentation, to me there's a lot of pieces here when it comes to CFIT avoidance in Alaska and I feel very strongly that the biggest thing that Hageland is doing every day that will help prevent a CFIT accident is changing the mind and culture of every single employee, especially the pilots that have worked in Alaska with this culture.

DR. WILSON: Thank you.

Mr. Gillespie, how were the seven corrective actions in the FAA-Hageland Post-Accident Agreement decided upon?

MR. GILLESPIE: The CMT, we met with our office manager and frontline manager and sat down and discussed those issues. And like I said, it was a discussion that was -- took probably a couple of days.

DR. WILSON: Who was involved in that decision?

MR. GILLESPIE: That would be Deke Abbott, the office manager; Dale Hansen, the frontline manager; and the principal maintenance inspector and the principal avionics inspector.

DR. WILSON: And was this conversation with Hageland as well?

MR. GILLESPIE: Initially it was just us. We met and kind of hashed this out and then we presented it to Hageland.

DR. WILSON: Okay. Were there additional actions discussed or considered that were not included in the final agreement?

MR. GILLESPIE: There were.

DR. WILSON: Why weren't those included?

MR. GILLESPIE: Because it was not possible to do that in Alaska. We couldn't require them to go IFR on every flight simply because the infrastructure does not support that.

DR. WILSON: And these seven corrective actions, what is the status of these?

MR. GILLESPIE: I could look that up if you want me to do that.

DR. WILSON: Would it be more appropriate to ask Mr. Abbott

in Panel 3?

MR. GILLESPIE: Probably. And yeah, that would work.

DR. WILSON: Okay. Thank you.

Mr. Gillespie, after the 2013 St. Mary's accident there was a concern about FAA's oversight of Hageland due to the limited number of inspectors given the size of their operation. How valid is that concern today?

MR. GILLESPIE: Not at all.

DR. WILSON: Why is that?

MR. GILLESPIE: Because from the division manager down to my frontline manager, all I have to do is ask for resources, and I've never been denied resources.

DR. WILSON: Ms. Witt, Ms. Burdick mentioned CRM training at Hageland. I'd like to hear from you. What is Hageland's CRM philosophy? What are the principles that guide pilots' behavior?

MS. WITT: Okay. Thank you. Again, I think this is a really important piece of our program. It's the cornerstone of good judgment and decision making. And again, this starts right from day 1 when you're applying to be a pilot with Hageland Aviation.

We do have a CBT course and, again, the principles of CRM are embedded in our entire program. We talk to each and every pilot about their role as a commercial pilot and what we expect of them in the cockpit as far as professionalism, sound judgment and good decision making goes. We continue to explain that it's fundamental to stay inside the box that the management, myself

included, are a part of putting together.

And in addition to, I think, all of the ground training and flight training, we also have simulator training that focuses on CRM concepts for both SIC and PIC candidates.

DR. WILSON: How does Hageland train its pilots to perform pilot monitoring duties?

MS. WITT: We use both the simulator and the aircraft in addition to Caravan ground school, initial ground school.

DR. WILSON: What does Hageland train its pilots in regards to single pilot versus dual pilot operations?

MS. WITT: Again, all of our pilots that could either operate single pilot or a two-pilot crew are put through simulator training for both of those scenarios.

DR. WILSON: And regarding the accident flight, the SIC -- he was serving in the role as SIC, correct?

MS. WITT: Yes, ma'am.

DR. WILSON: How are Hageland's SICs trained in assertiveness skills?

MS. WITT: Again, if I can talk about the training program as a whole and then we'll circle back around to the specifics of the simulator training program.

Everybody is instilled with the confidence that it is not a request. It is an expectation to be a crewmember and exercise your commercial pilot privileges every time you sit in the right or left seat of one of our airplanes. That means you are

absolutely not asked, you are expected to speak up if you see something that you don't understand.

If I can reflect on when I was a new co-pilot up here in Alaska, there were a lot of things that looked outside the box to me. I had never shot an approach down to minimums before and I had questions for the captains I was flying with. And even back then, it was instilled in me it was expected of me to speak up and ask questions if I didn't understand or I thought something wasn't right.

We have a fourth simulator session for new SIC candidates that addresses dealing with somebody who is trying to operate the aircraft outside the box and gives us an opportunity to focus in on assertiveness training for new co-pilot candidates.

DR. WILSON: Can the SIC on the 208 be at the controls?

MS. WITT: Yes, ma'am.

DR. WILSON: Under what conditions?

MS. WITT: Under the conditions -- can you define at the controls?

DR. WILSON: Do they have to have an instructor pilot with them, or is it -- are they qualified to fly the aircraft with any PIC?

MS. WITT: Yes, ma'am. Sorry. To the second option, they're qualified to fly with any PIC.

DR. WILSON: Mr. Gillespie, how have you modified your surveillance of Hageland since the accident?

MR. GILLESPIE: We have not modified it.

DR. WILSON: What changes to Hageland's operational procedures have you asked for since the accident?

MR. GILLESPIE: We've requested that they increase their takeoff minimum visibility. There's a list of things, and a lot of them are included in that -- the seven requests that we made with the CFIT letter, on the original CFIT letter.

DR. WILSON: Ms. Witt, how does Hageland ensure that pilots don't become complacent, particularly in terms of weather?

MS. WITT: Would you please be a little more specific? I'm not sure what you mean by become complacent with weather.

DR. WILSON: Flying lower than the minimum altitude, inadvertent IMC.

MS. WITT: Okay. Let's talk about lower than authorized altitude first. We have tracking software in all of our aircraft in addition to the ADS-B equipment. And our -- we have a Flight Inspection Department that monitors flights after they happen to ensure compliance.

When it comes to inadvertent flight into IMC, again I think the biggest piece for Hageland is the mindset and culture of the pilot group to know that it's never acceptable to go inadvertent IMC. And if you see that the aircraft is going to become IMC while you're on a VFR flight plan, the company supports and expects and demands that you get yourself out of that condition.

DR. WILSON: Beyond the initial survey when hiring pilots and

the training, how do you ensure that pilots maintain that mindset that you're discussing?

MS. WITT: I think the key is consistent messaging. We, as a company, hired an outside consulting group called GHS and they've been working with us. They did a safety culture survey and have been working with us on implementing industry best practices into our operation.

We have a pilot call-in every shift, so at the beginning of every shift we get to talk to every single pilot on the shift. And again, this message is something that is unwavering and is a topic for every single flight. Being a chief pilot of approximately 120 pilots across 10 bases, it can be challenging, so we appoint a lead pilot at every base. And they're not necessarily the most senior pilot, but they are the most qualified pilot to lead the group. And one of the most important things that the lead pilots do is set the tone and culture and the expectation of the company at the base level.

DR. WILSON: Thank you.

And Ms. Burdick, I heard you say when you were introducing yourself that you are a lead pilot. At what base is that?

MS. BURDICK: Nome.

DR. WILSON: And how do you set the tone that Ms. Witt is describing?

MS. BURDICK: Through every morning meeting and any questions that arise.

DR. WILSON: What is your interaction with pilots outside of the morning meeting?

MS. BURDICK: I'm flying the line with them, so I hear them everywhere they go, and also live with them in the pilot house in the evenings.

DR. WILSON: Mr. McClure, what are the most important pieces of weather information that a pilot can acquire to help mitigate IMC encounters when VFR?

MR. McCLURE: I would say a thorough weather briefing, including area forecasts, current observations, METARs, terminal forecasts, when available. All of those would have an impact. Weather radar in the areas where it's available, which are very limited here in Alaska. Even satellite photos can be useful at times. So basically all the information that's out there.

DR. WILSON: And how important are publicly disseminated PIREPs to keep the pilot community aware of changing weather, terrain, obscurations, et cetera?

MR. McCLURE: Pilot weather reports are the main source of actual weather at any given location at any particular time, so extremely useful.

DR. WILSON: Mr. Ishihara, what indication would a pilot get if the TAWS was inhibited?

MR. ISHIHARA: It would have a light or a clear indication that inhibit is in progress.

DR. WILSON: And how conspicuous or salient is this cue?

MR. ISHIHARA: Would you be more specific about that question?

DR. WILSON: How obvious is this cue to a pilot? Is it in their line of sight, or would they have to look to the side and below to see the light?

MR. ISHIHARA: That would be based on the installation.

DR. WILSON: Are you familiar on how it was installed in the 208?

MR. ISHIHARA: No.

DR. WILSON: Ms. Witt, I will -- or Ms. Burdick, how conspicuous is the TAWS inhibit light in the aircraft?

MS. WITT: Extremely. It's directly in front of the pilot and it's in their line of sight.

DR. WILSON: Thank you.

MS. WITT: You're welcome.

DR. WILSON: I'd like to open this question to the entire panel, but we'll go one at a time in terms of answers. What is -- we'll start with Mr. Gillespie. What is one immediate change or improvement that you would make today, assuming money is no restriction, that you feel would lead to a reduction in CFIT accidents in Alaska?

MR. GILLESPIE: This is my "I get to be king for a day" question?

DR. WILSON: Correct.

MR. GILLESPIE: Well, the first thing I would do is mandate

that the state of Alaska be equipped with the same infrastructure that the Lower 48 enjoys. The second thing I would do would be require all 135 flights file an IFR flight plan and operate on an IFR flight plan when the weather is less than 3,000 and 3.

DR. WILSON: Thank you.

Mr. McClure?

MR. McCLURE: Flight Service needs the way -- needs more ways to get the information to the people who need it. Ideally we would have perfect communications throughout the state, all the way to the surface. Obviously this is kind of a dream technology at this time. We would like more pilots using our services. And finally, we would like more pilots using our eSRS, the Enhanced Special Reporting Service, system using the satellite trackers.

DR. WILSON: Thank you.

Mr. Ishihara?

MR. ISHIHARA: I would speak from a TAWS engineer standpoint. That would be the use of a compatible TAWS system with operations flown in Alaska with good pilot training and adherence to the policy.

DR. WILSON: Thank you.

Ms. Burdick?

MS. BURDICK: For a brief moment in our GOM we had an occasion where we were allowed to shoot approaches into Kotlik without any weather reporting there because it said that we could over in a nearby village. And I think having -- being able to

shoot those approaches without having reporting weather and still be authorized to do that would be a great help.

DR. WILSON: Thank you.

And Ms. Witt?

MS. WITT: I get to echo what everybody else has said. So firstly, the IFR infrastructure in Alaska, if we look at it as a whole, we're lacking communication, we're lacking navigation and we're lacking weather -- legal weather sources.

Like Natoshia just mentioned, there are a handful of approaches that do exist in the system that we are not authorized to use. It would be very helpful if we could use every single tool and the -- I believe those approaches should be one tool we can use to go IFR more often. I think if the -- I know if the infrastructure supported, we would go IFR all the time in our IFR capable aircraft.

I also agree that the TAWS regulations need to be looked at. Currently with the way they are set up it sets up -- it sets the system up for nuisance warnings, and I think it's no surprise that pilots can become conditioned to hearing the warning and thinking it's a nuisance warning, and I think that's dangerous. I think the regulations that we fly under should match the certification of the TAWS units.

And then I think, as a whole the industry, the culture in Alaska needs to change and I think that starts with at least one organization trying to move the culture. And again, the more we

go IFR, the more other people will go IFR. The more infrastructure we have to go IFR, we'll go IFR more.

And again, training. It all comes back to how we train and how we select pilots, and judgment and decision making and providing the training to the current pilot pool and future pilots to make good decisions is also very important.

Thank you.

DR. WILSON: Thank you. I will now turn the questioning over to Mr. Williams.

MR. WILLIAMS: I'd like to start with Ms. Witt. In your presentation you mentioned 10 percent of the flights were being reviewed or the flight data was being reviewed. When did this start?

MS. WITT: The formal process started in June; however, we worked on standing up the Flight Compliance Department immediately after the accident and it was done on a more informal basis.

MR. WILLIAMS: So June of this year?

MS. WITT: Yes, sir.

MR. WILLIAMS: Okay. And what data are you using for the reviews?

MS. WITT: At the moment we're using altitude; we're using either the Spidertracks or ADS-B data for altitude route flown, whether the flight was conducted under VFR or IFR, and then using all the flight release information as well.

MR. WILLIAMS: So that information has been available for

quite some time to Hageland. Why did it take this accident to begin reviewing that data?

MS. WITT: As a chief pilot, I can tell you that in former chief pilots we look at what our pilots are doing all the time. I think we looked at standing up a formal department after this accident. And I would say it's fairly nonstandard to have the amazing equipment in our aircraft that we have across 135s.

I think the most important thing that's come out of our flight monitoring is that what we're finding is we're verifying what we already know and that the pilots are doing what we've asked them to do, which has been very good.

MR. WILLIAMS: So you mentioned that the TAWS manual is provided to the pilots. What about the flight manual supplement?

MS. WITT: Yes, sir, that's also in every airplane.

MR. WILLIAMS: And do you expect the crews to follow the instructions that are given and the operating limitations contained within that supplement?

MS. WITT: Yes, sir.

MR. WILLIAMS: Ms. Burdick, how often do you test the TAWS system?

MS. BURDICK: With the run-up first flight items.

MR. WILLIAMS: So just once a day then?

MS. BURDICK: Yes.

MR. WILLIAMS: Ms. Gagne, can you please pull up the Exhibit 1J? And scroll down just a little bit to the last paragraph.

So if it's Hageland's expectation for management that the manual be followed and the guidance be followed, the guidance says perform a self-test on the ground prior to every flight. Why is it only contained in the run-up checklist then?

MS. WITT: May I take that one?

MR. WILLIAMS: Yes, ma'am. I'm sorry. That was for you.

MS. WITT: Okay. Thank you. If we look back up at the preamble, the last -- Section A. I'm going to read the last sentence out. It says, "These procedures are for guidance only in identifying acceptable operating procedures."

So the director of operations, the principal operations inspection team and I, between us, have collectively about 34,000 hours. It's industry standard to test the units once per day during the first flight items. It's my understanding that this language in here allows us to adapt this to our operation. Sometimes our operation can be as -- our flights can be as short as 3 minutes. Sometimes we have training flights. So when does a flight begin, when does a flight end? Is it power on, power off; wheels up, wheels down? I think generally industry-wide it's understood that these -- testing the unit happens once a day prior to the first flight.

MR. WILLIAMS: Is that industry-wide 121 or 135?

MS. WITT: I would say my experience, with both, and the principal operations inspector is with both as well.

MR. WILLIAMS: Okay. Have you ever gotten into the airplane

with the -- found the TAWS was still in the inhibit mode?

MS. WITT: I actually don't fly a Caravan right now, so are we speaking to when I was a line pilot about 5 years ago?

MR. WILLIAMS: If you can remember, yeah.

MS. WITT: Not that I remember, no.

MR. WILLIAMS: Okay. So I'll stick with you with -- I believe it's one final question that I have for you, Ms. Witt. Regarding the SIC program. You said that the pilots, the expectation is that they are a crewmember.

MS. WITT: Yes, sir.

MR. WILLIAMS: In the manuals, in the checklists there's no division of duties between pilot flying, pilot not flying, or pilot monitoring. So how can -- or not how can, but how do you ensure there's standardization among the crews?

MS. WITT: Well, our program currently stands and legally requires us to perform proficiency checks on the crews in addition to line checks on line duty, so I would say that's how we ensure standardization. We recently promoted a current Hageland check airman into the director of flight standards position, and one of his first duties will be putting together exactly what you're talking about and being more specific and prescriptive about exactly what we're already doing and documenting it.

MR. WILLIAMS: Okay. Thank you.

MS. WITT: Thank you.

MR. WILLIAMS: Mr. McClure, does the infrastructure currently

exist right now for IFR between Quinhagak and Togiak?

MR. McCLURE: That would better be directed at Flight Procedures than Flight Service. I do not know.

MR. WILLIAMS: Ms. Burdick, do you know -- do you recall going IFR at any point between those two airports?

MS. BURDICK: Yes, I have.

MR. WILLIAMS: Okay. Thank you. That's all I have.

DR. WILSON: Mr. Frantz.

MR. FRANTZ: Thank you. Good morning, Panel. My first question I would like Mr. McClure and Mr. Gillespie to address please.

We talked -- we've talked several times about infrastructure in Alaska limiting IFR operations. Could you both give me a list of a little more specifics, what you feel those infrastructure elements are that are lacking that would allow more or all flights in Alaska to be conducted IFR?

MR. GILLESPIE: Good morning, Mr. Frantz. Well, one issue that I know that the Hageland flight crews have brought up is leaving Mekoryuk, going to Toksook -- actually I guess it's going from Toksook to Mekoryuk. At some point in there they lose radio communications, and a lot of times ATC is reluctant to give them a clearance and they wind up losing radio communication before they receive a clearance to fly the approach, which at that point is lost communication procedures.

It was my experience when I was flying out there -- I've

flown the Quinhagak to Togiak trip many times in a Caravan, and if you didn't receive a clearance for the approach prior to losing radio communications with the Bethel area Air Traffic Control Center, you would have to fly to the beacon there at Togiak, and enter the hold and hope that the remote communications outlet to the Kenai Flight Service Station was working and call them and request an approach through them.

So there's other areas about that. I think Mrs. Witt could probably tell you a lot more about the infrastructure issues out there and more specifically where they're at.

MR. FRANTZ: All right. Thank you.

Mr. McClure.

MR. McCLURE: As far as communications, all RCOs, all communications with Center or Flight Service are subject to geographic limitations. So depending on location and altitude, you may or may not be able to talk to someone. Periodically there are maintenance issues. They're usually handled as quickly as possible, but, you know, weather dependent as well. You can't just automatically get to a place where something is broken due to weather.

MR. FRANTZ: All right. Thank you.

And I didn't include you initially, Ms. Witt, but -- and you've already talked about it. Is there anything else that you want to add about what's lacking in infrastructure to allow more IFR flights?

MS. WITT: I think the main thing I'd like to bring up is that if you look at the IFR infrastructure on paper it can appear adequate. We did an IFR infrastructure study in November and found out that a lot of things that we say are available on paper are not actually available or are inadequate. So we would be happy to share the results of that IFR infrastructure study with where we found either communication or navigation equipment that we think is operational isn't necessarily operational. And I think if you -- again, if you look at it on paper, it can appear to be a lot more adequate than it actually is. Thank you.

MR. FRANTZ: All right. Thank you.

Another question for you, Ms. Witt. Radar altimeters, is the 208 fleet at Hageland equipped with radar altimeters?

MS. WITT: Yes, sir.

MR. FRANTZ: Does that include the accident aircraft?

MS. WITT: Yes, sir.

MR. FRANTZ: For you, Ms. Witt, and Ms. Burdick, what percentage of flights that you fly or that you have -- what general awareness do you have among flights at Hageland are flown below 1,000 feet AGL typically?

MS. WITT: I'm not sure I can give you a percentage on that. I can tell you that when we do, frequently, especially in the wintertime, have great visibility with a ceiling that's 1200, 1100, 1,000, 900, and we do operate often with a lower ceiling with really good visibility. I'd say if the conditions exist

where we can fly higher, that's what we encourage our flight crews to do. And maybe Natoshia can answer that better as a current line pilot too.

MS. BURDICK: Pretty much what Erin said. It all depends on the condition. One month it could be 10 and clear and the next month could be great visibility underneath, but usually with the infrastructure we need to go VFR.

MR. FRANTZ: Would either of you describe it as uncommon to have flights flown below 1,000 AGL?

MS. WITT: No, sir.

MR. FRANTZ: So when that happens -- we've talked about the GPWS and what we're calling nuisance alerts. And when you fly below a certain altitude, in the case of a Class B TAWS, which you're required to have, you'll start receiving warnings --

MS. WITT: Yes, sir.

MR. FRANTZ: -- alerts --

MS. WITT: Yes, sir.

MR. FRANTZ: -- warnings or cautions. So is there an accepted strategy that's either taught or that's just corporate knowledge about how a pilot flying at a low altitude with good visibility, how he would avoid the distractions to himself and the anxiety that could likely be produced among passengers from hearing constant terrain warnings and alerts?

MS. WITT: I think so, and I think that's why we recognize that this -- and Honeywell does as well. There are times,

especially operating in and out of VFR airports, where we will have to inhibit the system. Because obviously, if you can look outside and ascertain that you're not -- you and the aircraft are not in danger, that's what we want the flight crews to do and I think that's why the system, it does allow us to inhibit so it is not a constant distraction.

MR. FRANTZ: Thanks.

Would either of you who are current pilots at Hageland, how easy is it for you or for other pilots to become accustomed and therefore tend to disregard perhaps that light, that inhibited light? You said that's prominently displayed, but if it's on a percentage of the time it becomes just another picture that the pilot is accustomed to and it won't necessarily draw his attention that perhaps something should be done here.

MS. BURDICK: No, it's -- as pilots we're trained any light that shows up in front of us, an enunciator panel or anything, we should get rid of it. Just like when we're departing, if we see any light, we pull back power that's not a green light. Same thing with that terrain inhibit light. It is a very bright white light. It can be obnoxious if we don't un-inhibit it.

MR. FRANTZ: All right. Thank you.

I think my final question. Ms. Witt, we talked about training that you -- that Hageland provides with the TAWS or for operation of the TAWS that you have and you talked about it's classroom training. Is the simulator that 208 pilots train in

equipped with a TAWS unit?

MS. WITT: No, sir.

MR. FRANTZ: Does the training that the pilots receive on TAWS involve actual contact with an actual unit and observing the function of the unit, listening to the sounds and the sights of the unit actually functioning?

MS. WITT: Yes, sir.

MR. FRANTZ: Before they get in an airplane for flight training are they getting any exposure to this TAWS unit?

MS. WITT: Well, the unit only exists in the airplane, which is why we offer the training on the TAWS unit on the ground inside the actual aircraft.

MR. FRANTZ: You train in the aircraft, but on the ground to give them -- or get training on the unit for --

MS. WITT: That's where the training starts, yes, sir.

MR. FRANTZ: During ground school. All right. Thank you.

I have no more questions now.

DR. WILSON: Thank you. I have one final question.

Ms. Witt, what are the hierarchy of priorities when a pilot encounters inadvertent IMC? So we've talked about escape maneuvers. We've talked about filing an IFR flight plan, if capable. We also know if the TAWS is inhibited, would there be a priority to re-inhibit that? What sort of -- what's the priority hierarchy for a pilot in those situations?

MS. WITT: I think it goes back to, if I think about it, my

initial pilot training. The priorities are always avigate -- excuse me -- aviate, navigate and communicate. So the first priority is for the pilot in command and the co-pilot, if we have one, to ensure the safety of the aircraft. So again, an escape maneuver could look different depending on where you are. Again, make sure that the aircraft is safe and you're safe and then navigate and communicate, as appropriate.

DR. WILSON: So that I'm clear, the escape maneuver would be a priority over re-inhibiting the TAWS?

MS. WITT: Yes, ma'am.

DR. WILSON: Thank you. Thank you, Mr. Williams and Mr. Frantz.

Chairman Weener, the Technical Panel has no further questions.

MEMBER WEENER: Thank you, Dr. Wilson.

We will now move the questioning to the parties, starting with the FAA, Mr. Guzzetti. And just a reminder, these are 5-minute rounds.

MR. GUZZETTI: Thank you, Mr. Chairman. I noticed the agenda calls for a break of 10 to 15 minutes, but I can certainly proceed ahead. Okay.

MEMBER WEENER: Yeah, we'll do parties first and then take the break.

MR. GUZZETTI: Okay. Let me just pull up my questions here.

Okay. Mr. Gillespie, is CFIT training required under Part

135?

MR. GILLESPIE: It is not.

MR. GUZZETTI: Okay. And, but would you say that having -- is having a CFIT CBT in a carrier's program or a pilot training manual, do you think that would be helpful?

MR. GILLESPIE: Yes, I do.

MR. GUZZETTI: To clarify an answer you gave to Dr. Wilson regarding how the oversight changed, I think you indicated nothing really changed. But there has been some -- there were actions that were taken after the Togiak in terms of the internal FAA reviews, were there not?

MR. GILLESPIE: There were. The communication increased for a time. We had several meetings -- we conducted several meetings with their 119 management. But as far as the oversight goes, we spend a lot of time with those guys anyway. We're a normal picture in their -- on their scene.

MR. GUZZETTI: And that was the way it was the weeks and months leading up to the accident also; is that correct?

MR. GILLESPIE: It's been like that since September of 2014, since I've been on the certificate.

MR. GUZZETTI: Okay. Chairman Weener, I can't seem to find the biography of the witnesses. I know that we were emailed them. They're not in the docket or the exhibit materials. So I just want to ask a quick question to Mr. Gillespie.

You do have experience flying in Alaska; is that correct?

MR. GILLESPIE: Yes, sir. All but about 1,000 hours of my flight time is in Alaska.

MR. GUZZETTI: And what are -- what do you feel are the challenges of flying in Alaska with regard to the weather?

MR. GILLESPIE: The challenges are like we've been stating. It's the lack of infrastructure, lack of weather reporting at airports that have instrument approaches, thereby prohibiting the operator from using those approaches.

MR. GUZZETTI: And is the topography also a challenge in this state?

MR. GILLESPIE: Oh, definitely, it can be. Flying around mountainous terrain is certainly different than flying around flat land.

MR. GUZZETTI: Captain Witt, I see in your biography that you have a lot of experience flying in Alaska also; is that correct?

MS. WITT: Yes, sir.

MR. GUZZETTI: And I noticed that you did a stint with Hageland from 2009 to 2011. When did you -- then you left and then you came back to fly for Hageland. What year did you come back to fly for Hageland?

MS. WITT: 2015.

MR. GUZZETTI: 2015. Did you notice a difference with the company back from 2009 to 2011 with respect to the company that you're flying for now?

MS. WITT: Absolutely.

MR. GUZZETTI: Can you just quickly list a few things that have changed in your view?

MS. WITT: Absolutely. So if I think back to when I was flying the line, I was -- it was completely up to me whether I took a flight or not as a line pilot. And the culture of the company was that operational control was held at the station level. It was very different to our model now. There were a lot of pressures self-induced and by the way our system was set up that were placed on the pilot.

So when I came back in 2015 and it was unbelievable to me how far the company had come in such a short period of time. And having an Operational Control Center completely removed from all of our revenue greatly increased safety and removed so many pressures that I had come to accept as normal as a line pilot when I flew the line back in 2009 through 2011. The talks that I have with pilots now, there are things that -- there are pressures that they will never know that I did know. And it's absolutely unbelievable to me the transformation that the company's gone through, especially with its culture. And having that OCC has been a big part of that culture shift.

MR. GUZZETTI: Thank you very much. I got a minute left.

Mr. Ishihara, what exactly do you mean by Class B does not support Alaska operations?

MR. ISHIHARA: What I mean was that if the flight below 700 feet AGL is normal operations and the Class B requires that alert

has to begin at 700 feet. So those are --

MR. GUZZETTI: But would -- what would be a -- what Class would be more -- you know, would be supportive of flying in Alaska?

MR. ISHIHARA: As I show in the figure last time, the Class C will have reduced terrain clearance requirement.

MR. GUZZETTI: So what would it take for operators like Hageland to retrofit their fleet with Class C TAWS, as opposed to Class B?

MR. ISHIHARA: Well, the KGB-560, with the latest software, -005 is capable of reconfigure to become Class C.

MR. GUZZETTI: Have you addressed this with the FAA with regards to a way for the FAA to permit that, or have you had discussions with how that might occur within the FAA infrastructure?

MR. ISHIHARA: No.

MR. GUZZETTI: Okay. Thank you.

That's all the questions I have.

MEMBER WEENER: Thank you. We will now move to the second panel, the Medallion Foundation.

MR. PREWITT: Thank you, Mr. Chairman. Excellent panel of professionals and I appreciate the information very much. We have no questions at this time. Thank you.

MEMBER WEENER: Thank you, Mr. Prewitt.

Mr. Hickerson.

MR. J. HICKERSON: Again, we'd like to thank the panel. We appreciate all of their insight and their knowledge and we have no questions.

MEMBER WEENER: And finally, the Honeywell panel, Mr. Allen.

MR. ALLEN: Thank you, Mr. Chairman. No questions.

MEMBER WEENER: Very good. We will now take a 10-minute break. Bear in mind that if you leave the room you have to go back through security, and so allow some time for that. We will reconvene in -- at 20 after.

(Off record at 10:03 a.m.)

(On record at 10:20 a.m.)

MEMBER WEENER: We're back in session again. The questioning now will continue at this point with the Tech Panel. Or the -- I'm sorry -- the Board of Inquiry. And we'll start with Dr. Loren Groff to my right.

DR. GROFF: Thank you, Chairman Weener. Thank you to the panel. My first question, you mentioned the excellent configuration, the equipment in the Hageland aircraft. Could we just detail again just to clarify what avionics package was in the accident aircraft?

MS. WITT: Yes, sir. So all of our 208 aircraft have the Honeywell TAWS unit, in addition dual GPS receivers, in addition to a Garmin MX-200 moving map, in addition to a radar altimeter.

DR. GROFF: And was all of that equipment functional on the day of the accident, do you know?

MS. WITT: I believe -- I would have to look back. I believe the ADS-B out was deferred and everything else was operational on the aircraft.

DR. GROFF: Okay. So the terrain display, for example, on the Garmin, the 200, would have been available and working?

MS. WITT: Yes, sir.

DR. GROFF: Thank you.

MS. WITT: Thank you.

DR. GROFF: Mr. Ishihara, you mentioned -- in your presentation you made a point that the installation in these aircraft did not have the terrain display and the connected radar altimeter. Would there be anything different about an installation that did include the integrated radar altimeter and the terrain display than what the accident aircraft would have had, given the Garmin unit with terrain information?

MR. ISHIHARA: So with the Honeywell terrain display hooked up to a KGB-560 would have given terrain display or pictures of the surrounding terrain. And radar altimeter is an option.

DR. GROFF: Okay. But functionally the -- generally you would say the information, if they had a multifunction display with terrain information, it would be very similar?

MR. ISHIHARA: Well, I do not know how the MX 200 works, so I cannot speak to the differences.

DR. GROFF: Okay. That's fair. Thank you.

And one final question for you. The software, you mentioned

it's a software change between the Class B and the Class C. Is there any other equipment change that would be required? Is it solely a software change, the difference between the two?

MR. ISHIHARA: It's not a software change. The same software contains both Class C and Class B capabilities. You have to reconfigure it to become one or the other.

DR. GROFF: Okay. But there is no additional hardware, additional equipment that would be required?

MR. ISHIHARA: That's correct, if you have -005 equipment.

DR. GROFF: Okay. Thank you.

Mr. McClure, you mentioned some of the challenges of distributing information and getting that information to pilots and maybe the density of the information available, but one of the things that has been highlighted as a benefit is the weather camera information that's available in Alaska.

How is that information made available to pilots, let's say, en route? How do you describe to a pilot what you see on a weather camera?

MR. McCLURE: The way that Flight Service uses the weather cameras, our specialists will look at the current imagery, which is updated somewhere in the neighborhood of every 6 to 10 minutes, and compare that to a clear day picture that is created by the Weather Camera Office. In places where such things are available, which is not uniform throughout the system, but if there are both distance markers we -- in concert with them, we've come up with a

system where they have close-in markers, medium distance and long distance as well. And those markers have both the distance fairly precisely and the altitude or MSL altitude of the top of whatever we're looking at.

So when we describe that to a pilot we generally -- you know, we're looking at the current picture, the current imagery. We will say if we cannot see the top of a certain obstruction or if we cannot see as far as a particular distance. So it's not quite like a METAR.

DR. GROFF: Okay. So are there -- for each of the cameras, are there a standard set of markers that are documented?

MR. McCLURE: I would not say that they're necessarily standard because some locations there's simply nothing to annotate.

DR. GROFF: Sure. Okay. Okay. Thank you.

I think that's my time.

MEMBER WEENER: Mr. DeLisi.

MR. DeLISI: Thank you, Mr. Chairman, and thank you to all the panelists.

It is a big challenge to take a very safe form of transportation and make it even safer. We've talked this morning on the panel about technology, training, information that's available to pilots to help avoid CFIT accidents like this one, but they didn't; this accident really happened. And I appreciate your willingness to roll up your sleeves and help us tackle taking

something that's very safe and making it even safer so accidents like this don't happen again.

It's been well established by the panel that CFIT training for a Part 135 operator is not required by the FAA, but that is something that the NTSB has recommended, and I'd like to give Mr. Gillespie, Mr. McClure an opportunity. Are either of you aware of any movement afoot at the FAA to develop a 135 CFIT requirement?

MR. GILLESPIE: I am not, sir.

MR. McCLURE: And that is not within the scope of Flight Service operations at all.

MR. DeLISI: Thanks. Ms. Witt, you talked about the training that a new Hageland pilot would go through with regard to CFIT. I'm trying to figure out, that training is something -- some of it must be what Hageland determined was appropriate training.

MS. WITT: That's partly true in that everything that we do is what Hageland establishes is appropriate, not just some of it.

MR. DeLISI: So you drew upon your own thoughts about what appropriate CFIT training would be. I think you may have also mentioned the Flight Safety Foundation as developing guidance for CFIT training. Did that factor as well into the program that Hageland developed?

MS. WITT: Yes, sir, it did.

MR. DeLISI: What about the Medallion Foundation, to earn the CFIT Star did they recommend some types of CFIT training that you

incorporated as well?

MS. WITT: Well, we use the Medallion standards to audit our own Hageland program against. What does Medallion bring to the table? Well, for us and for aviation in Alaska, simulator usage. And again, their audit points do help us audit our own CFIT avoidance program. Does that help?

MR. DeLISI: It does, and let me see if I have this clear. Did you have to go out -- did you have to develop any additional training points in order to earn your CFIT Star?

MS. WITT: So that was earned in 2005, so I'm not really sure. I wasn't in management at that point.

MR. DeLISI: Okay. Thanks.

MS. WITT: Thank you.

MR. DeLISI: There's been -- well, let me back up.

Ms. Witt, you mentioned something about loading the mail on an airplane as part of the routine that -- I'm not sure I understand that. What function does the delivery of mail play in the Hageland flight operations?

MS. WITT: Well, delivery of mail is a part -- a way of life up in Alaska. Because we don't have a road system up here, the boxes that your mailman delivers to your front door probably where you live get delivered by operators like Hageland and Hageland up here in the state.

MR. DeLISI: So is that a contract that Hageland has with the U.S. Postal Service to make those deliveries?

MS. WITT: You know, that's a really good question. I'm just not sure I'm the right person to answer it. I'm not sure I understand that whole process. Is that fair enough?

MR. DeLISI: Sure. Thank you.

MS. WITT: Okay.

MR. DeLISI: And I'm just trying to understand if there is any schedule pressure on Hageland flights such as the accident flight to make its route because of the delivery of mail.

MS. WITT: Oh, I see. I see your question now. No, sir, there's not.

MR. DeLISI: Ms. Burdick, you might have mentioned -- you used the term bypass, about loading up the bypass. What does that mean?

MS. BURDICK: Bypass is bypass mail.

MR. DeLISI: Okay.

MS. BURDICK: So it's boxes of food or store supplies that we deliver from, in this case, Togiak to Quinhagak.

MR. DeLISI: Got you. Great to hear about the use of weather cameras and what a great aid they are, 230 of them in service. They came about after a series of accidents, NTSB recommendations, a lot of effort put in by the FAA to make that happen. It's a great resource.

But now this panel has talked a lot about the infrastructure needed for IFR operation and it being perhaps the next thing that needs to be developed in Alaska. I would throw this open to the

entire panel. Do any of you have any thoughts about what it is that the NTSB could do to recommend and push for the types of infrastructure improvements that would make aviation in Alaska safer? Please.

MS. BURDICK: If I may. Here's one example. The approach plates sometimes will reference flight service stations, and there's many places out in Nome, like St. Michael, White Mountain, Golovin, all have published flight service stations that we can talk to on the ground, but there's no cell reception there and you cannot get a hold of these flight service stations no matter where you are on the ground at that airport. And they're very valuable resources that we would love to be able to use at every airport.

MR. DeLISI: Great. Thank you.

Anyone else with thoughts? Ms. Witt.

MS. WITT: I would -- you know, as the chief pilot of Hageland, I would love to operate a fleet of IFR aircraft to service the villages that we service and be able to operate IFR all the time. So from my perspective, I'm asking for something a little bit bigger than Natoshia is. I would like the ability to have either weather or an approach with weather -- an approved weather source off of the field and be able to operate IFR as much as possible in the state.

MR. DeLISI: Thanks.

Mr. Ishihara, I just want to clarify. The terms EGPWS, Enhanced Ground Proximity Warning System, were used, as well as

TAWS, Terrain Awareness Warning System. Can you explain EGPWS and TAWS?

MR. ISHIHARA: Yes. So we use them as interchangeably, but EGPWS is our product name which meets TAWS requirements.

MR. DeLISI: Got you. And in your EGPWS, as it is looking ahead the flight path that an airplane is on and prepared to warn about terrain that might be rising in front of an airplane, does it also look at terrain to either side of the airplane?

MR. ISHIHARA: Yes. The look ahead envelope has a width to it.

MR. DeLISI: Can you explain what that might mean? I'm envisioning a scenario where a flight is perhaps even VFR and seeing its route clearly, but there may be rising terrain on either side as you're flying in a perfectly safe fashion. Does that terrain on the side generate a GPWS warning?

MR. ISHIHARA: Possibly, if you get very close to it.

MR. DeLISI: Is there any software reconfiguration that could be done that might eliminate nuisance warnings about terrain that's not along the flight path of an airplane?

MR. ISHIHARA: So the Class C equipment, because it has a reduced terrain clearance or the monitoring vertical envelope, that can help.

MR. DeLISI: Okay. Thank you.

Ms. Burdick, when you're flying a flight, say, from Quinhagak to Togiak, can you help me understand, are you flying -- pointing

your nose at Togiak and just going straight there, or are you flying a route?

MS. BURDICK: That depends on the weather. If it's 10 and clear we might climb up and just go direct. In other situations you could go through the valleys between the peaks and, in that case, depending on how high you were, you would have to deviate from a direct line.

MR. DeLISI: Would your -- on a day where it was clear, would your goal be to get above the highest terrain that you would have to encounter and fly there, or --

MS. BURDICK: Yes.

MR. DeLISI: Okay. So I'm not sure I fully understand yet what the goal is for how high above the terrain Hageland is operating a flight versus what the TAWS is expecting you to be operating at. Ms. Witt, maybe you could help me?

MS. WITT: May I take that one?

MR. DeLISI: Thank you.

MS. WITT: Okay. The Part 135 regulations and our current GOM are in agreement that the minimum legal altitude for flight is at least 500 feet above ground level. Our current TAWS units that are in our Cessna 208 Caravans are certified to have a TAWS warning or caution when you are at or below 700 feet AGL. So there is an envelope there where it is legal by FAR standards and by our company standards to fly where we will get a warning. Does that make sense?

MR. DeLISI: Thank you. That's very clear.

MS. WITT: Okay. Thank you.

MR. DeLISI: I appreciate that.

I'm going to look to Mr. Gillespie. As you're surveilling an operation like Hageland, doesn't something like that jump out at you, where you're allowing this company to fly at an altitude that nullifies a required piece of safety equipment?

MR. GILLESPIE: I'll be honest with you. Every time I get in the airplane with somebody out there it's normally either, if the weather's low, they're -- we're on an IFR flight plan or we don't go. Typically people are on their best behavior when I'm sitting next to them.

MR. DeLISI: True that. I'll just wrap up.

Ms. Witt, you said something earlier about how culture and mindset are the most important elements in avoiding CFIT accidents and I certainly understand and appreciate that. I think that's one of the reasons that we're here today. I think the NTSB is doing our part today to join you in that effort, to talk about a tragic accident, to talk about the training and the techniques that are available out there, to give this a dialogue so that all sorts of pilots in Alaska might begin to shift their culture and mindset about being willing to do that 180 and get out of bad weather.

MS. WITT: I really appreciate that. Thank you very much.

MR. DeLISI: Thank you. No further questions.

MEMBER WEENER: Okay. Let me start with a question for Ms. Witt. The accident airplane had a radar altimeter in it; is that correct?

MS. WITT: Yes, sir.

MEMBER WEENER: Was it part of the operational -- was it on the MEL?

MS. WITT: Yes, sir.

MEMBER WEENER: Was it connected to the enhanced ground prox?

MS. WITT: I can't definitively say yes or no, sorry. I would have to confer with our maintenance department to answer that.

MEMBER WEENER: All right.

Mr. Ishihara, if the ground prox unit, the EGPWS, did not have radar altimeter, would it have been performing with the same kind of accuracy and capability?

MR. ISHIHARA: Accuracy is a very -- can be a relative term. However, the Class B TAWS, the primary function does not require radar altimeter.

MEMBER WEENER: Does not require radar altimeter. What is missing from the capability if there is radar altimeter missing?

MR. ISHIHARA: First I would have to check with the install manual as to if the Class B TAWS can take radar altimeter inputs and I do not know the answer to that currently.

MEMBER WEENER: Okay. Thank you.

Ms. Witt, you said earlier pilots are now able to record if

they had to inhibit the TAWS alert function. In your view, is there a time where inhibiting the alert function is necessary for flight safety?

MS. WITT: Yes, sir.

MEMBER WEENER: What would those situations be?

MS. WITT: Those situations would be what the TSO require -- excuse me -- refers to as nuisance warnings. So the guidance talks about where the aircraft is in a safe legal position and you still receive a warning or a caution.

MEMBER WEENER: And what would be an example of some of these nuisance alert conditions?

MS. WITT: So if we take Natoshia's flight, for example, from Quinhagak to Togiak, there were multiple times where she was at a legal altitude, between 500 AGL and 700 AGL, and received either a caution or a warning.

MEMBER WEENER: Okay. Given that you've inhibited it, and you said there was an indicator light in the pilot's field of view, how easy is it to ignore that?

MS. WITT: It's a really bright white light. I won't use the word impossible, but it's very, very difficult to ignore.

MEMBER WEENER: You say it's a white light.

MS. WITT: Yes, bright white.

MEMBER WEENER: What are other warnings in the flight deck that are also white, rather than red or amber? Ordinarily if it's a warning light it's not white. White would indicate that it's

just flight information.

MS. WITT: Natoshia, did you want to take that one?

MS. BURDICK: There is a low airspeed warning light that's white.

MEMBER WEENER: All right. Ms. Witt, how often have pilots self-reported TAWS alert inhibitions since you began tracking that? You say you track it on -- for every flight?

MS. WITT: Every flight leg, yes, sir. A lot. I can get you a number. It's in the hundreds.

MEMBER WEENER: And what do you do with that information?

MS. WITT: Right now our IT department is working to help us categorize so we can get some more details about each time it's inhibited. The crew can put remarks in, but there's no way to -- right now we're looking to improve the way that we collect the data so that it can be more meaningful.

MEMBER WEENER: What would you want to do if you had all of the data that was necessary? In other words, why are you collecting the data?

MS. WITT: I think for a few reasons. First of all, if we believe that the TAWS is going off outside of the Class B certification envelope, our maintenance department shares that information with Honeywell. And then in addition, to share that information with the FAA and the people at our company so -- and the pilot group as a whole, so we understand and try and understand any patterns in where we are getting the TAWS warnings

and cautions.

MEMBER WEENER: So you say you share the data with Honeywell. Is Honeywell responsive to your situations for nuisance alerts?

MS. WITT: Again, that's the -- the maintenance department does that. So we provide our information to the maintenance department and the maintenance department communicates with Honeywell.

MEMBER WEENER: Mr. Ishihara, what do you -- what does Honeywell do with fault data?

MR. ISHIHARA: I have not been involved in the communication with them.

MEMBER WEENER: Okay. Ms. Burdick or Ms. Witt, if a pilot inhibits the TAWS alert function, are there procedures required to assure that the alerts are uninhibited prior to landing or at the conclusion of the flight?

MS. WITT: Yes, sir. It's on the approach and landing checklist and it's also on the before takeoff checklist. So there would be two opportunities there.

MEMBER WEENER: Okay. It's on a written checklist?

MS. WITT: Yes, sir.

MEMBER WEENER: Thank you.

Ms. Burdick, I understand you can't give a precise number, but can you say roughly what percentage of flights that are turned around due to deteriorating weather en route?

MS. BURDICK: It depends on the month. Some months our

weather is 10 and clear and it's that way the entire month, and then other months we might have fog that roll into places and we'd have to turn around. So it's entirely dependent on seasonal weather.

MEMBER WEENER: What would be a typical situation where you would find yourself having to turn around?

MS. BURDICK: If you notice deteriorating weather conditions that you weren't expecting. Fog, any lower visibility than what's required on your instrument approach.

MEMBER WEENER: All right. Thank you.

Dr. Groff, would you like to ask a few more questions?

DR. GROFF: Yeah, a few more. Thank you, Mr. Chairman.

Ms. Gillespie [sic], you mentioned that you actually have flown the route of the accident -- or excuse me -- Ms. Burdick. You mentioned that you've actually flown the accident flight route IFR. On the day of the accident both you and the accident flight chose to fly that VFR. So if IFR was possible on that route and the OCC recommended IFR, can you talk about any additional pressures, any reasons why you chose to fly VFR rather than IFR?

MS. BURDICK: There were no pressures for us to go VFR. But as Mr. Gillespie mentioned, it is very difficult to fly that route IFR. If ATC doesn't give you your clearance right away, it's a whole lot easier with the current infrastructure that's out there for us to go VFR between those villages.

DR. GROFF: And just to the availability of both

communications and information at the villages, what -- if you wanted to check weather on the ground, what options do you have to check weather at the en route village stops?

MS. BURDICK: If there's a flight service station, then you could call them and they can give you a full briefing on the weather. And also we have our company cell phones and we can use those to call OCC or Flight Service or the AWOS stations.

DR. GROFF: Do you have cell coverage in all of the locations that you fly to?

MS. BURDICK: No.

DR. GROFF: And how about computer access, if you needed that, is that available anywhere? I mean, give me maybe a percentage of how often you could check some of the additional weather information, the weather cameras, things like that.

MS. BURDICK: At our base stations.

DR. GROFF: Okay. So only at the base stations, but any of those en route village locations?

MS. BURDICK: Then we could call Flight Service --

DR. GROFF: You'd have to call.

MS. BURDICK: -- or OCC, yeah.

DR. GROFF: Okay. Thank you for confirming that.

Ms. Witt, you mentioned that there -- before every shift there is a call-in and you talk with every pilot every day in some way. I mean, I'm assuming that's distributed through the stations. You don't personally do that, but it's each pilot is

talked to. Did I understand that correctly?

MS. WITT: So in two parts. I chair a meeting at the beginning of every pilot shift with every pilot on the phone and we have a teleconference in. And then every day at the stations there's a safety meeting as well and the lead pilot chairs that meeting.

DR. GROFF: Okay. And --

MS. WITT: Does that clarify that?

DR. GROFF: Yes, thank you.

MS. WITT: Okay. Thank you.

DR. GROFF: And is that something that was started since the accident, or has that been in place for a while?

MS. WITT: Been in place for a long time. Back to when I was flying the line.

DR. GROFF: Okay. And Ms. Burdick, were you involved in that meeting on the day of the accident?

MS. BURDICK: No.

DR. GROFF: And was there something special about that day, why that meeting didn't occur?

MS. BURDICK: Yeah. Sundays, meetings don't normally occur because everybody comes in at various times. Sundays usually are a day to sleep in, if we choose to. That day the flights that we did were completely voluntary. There's always different times that we can move that bypass from Togiak, and we just chose to wake up at an earlier time than what everybody else does on a

Sunday.

DR. GROFF: Oh, that -- so the actual schedule of the flights was noncritical or nonspecific on a Sunday? Is that what you're saying?

MS. BURDICK: So that scheduled run is not a critical run.

DR. GROFF: Okay. All right. Thank you. I think that's all the questions I have.

MEMBER WEENER: I have one follow-up question. The simulator training for CFIT response, can you describe how that's implemented in the simulation? Or when do pilots encounter CFIT alerts as part of their training process?

MS. WITT: I'm really sorry, I'm not sure I -- would you like me to walk you through our simulator process?

MEMBER WEENER: Yes.

MS. WITT: Okay. So we have simulator sessions that -- for initial new hires where the CRM and CFIT avoidance scenarios are, for lack of a better term, sprinkled throughout the entire program. So we focus on the three scenarios -- the inadvertent into IMC, the whiteout conditions, and the flat light conditions -- in addition to operational issues such as ATC outages, that we actually encounter every day out in the villages and how to deal with those, and focus on ATC errors that have happened in the past and led to other company's accidents. Lessons learned, and it's not -- for initial new hire training it's a lot of time and energy sprinkled throughout the entire

program. I think you'll find it's really similar -- I've done some 121 simulator training where you don't come in and one day is dedicated to CFIT; you see different scenarios sprinkled throughout the entire training. Does that help?

MEMBER WEENER: Yes. Thank you.

MS. WITT: Okay.

MEMBER WEENER: Does the Tech Panel have a small number of questions left?

MR. WILLIAMS: Yes, sir. I think we could do two questions.

MR. FRANTZ: Yes, one final infrastructure question, I guess to Ms. Burdick and Ms. Witt. How many, if any, airports/villages that Hageland flies to lack all of these things -- cell coverage, landline coverage, internet availability and radio communication capability to talk to, say, Flight Service?

MS. WITT: All of those together or just one of those components are missing?

MR. FRANTZ: No, are there airports that you service that lack all of those?

MS. WITT: Yes, sir.

MR. FRANTZ: Any idea number or percentage of airports that lack all of those?

MS. WITT: Approximately, I would say, 25 to 30 percent of what we service.

MR. FRANTZ: So just to clarify, a pilot on the ground at one of those airports would have no way to talk to his company, Flight

Service, any online weather services that he might want to, none of that would be available to him at 25 percent of the airports he services. Is that fair?

MS. WITT: So, sorry, my 25 to 30 percent number I was speaking about infrastructure, not about our pilot cell phones that we offer to the pilots. So if we add the pilot cell phones in there, I'm going to say it probably looks more like 5 to 15 percent of the airports that we service.

MR. FRANTZ: Where there'd be no cell phone coverage or any of the others?

MS. WITT: Yes, sir.

MR. FRANTZ: All right. Thank you.

MS. WITT: Thank you.

MR. WILLIAMS: We have time for one final question, Mr. Chairman.

Ms. Witt, if Hageland is aware that the floor on the TAWS is 700 feet, why set yourself up for failure or engrain into the pilots a complacency by allowing them to fly at 500, knowing that the alerts are going to be continuously going off unless they're deliberately inhibited?

MS. WITT: Well, the -- just to make sure I understand your question. The manufacturer allows for deliberately inhibiting the TAWS during a nuisance warning, nuisance meaning you can ascertain that the aircraft is not in a position to hit terrain. I think if you're asking why don't we change the 135 regulations to match the

Class B, I would say that's well outside of my purview. Could -- would you maybe clarify just a little bit what you're asking?

MR. WILLIAMS: Yes, ma'am. Instead of changing the 135 regulations, what about changing the company policy so that you cannot fly lower than 700, knowing that that's where the terrain alerts will begin?

MS. WITT: Okay. That's a fair question. It's a good question. I think the reason is because we're interested in not only operating to the level of safety of the regulations, we are interested in operating to the highest level of safety. I do not believe there is anything inherently unsafe about operating at 500 AGL. Frequently in Alaska we have weather conditions that are -- or we have a ceiling that doesn't allow us to operate above 500 to 700 AGL, and I believe each and every one of those operations is safe, legal and best practice.

So I think changing the way that we operate to fit a rule that doesn't necessarily fit is the wrong approach. And here's the bigger problem with that solution. It fixes what we do at Hageland, but it doesn't fix an industry-wide issue where the certification doesn't match the current regulations. So if Hageland decides we're going to up the VFR limits, again, I don't think that necessarily makes us any safer. How about all of the hundreds of other operators that operate these units under Part 135? I think it's really just a -- it's a small piece of the puzzle. And again, I don't -- as chief pilot I have full

discretion to operate at the highest level of safety and I'm not sure that me changing that to be a company policy would necessarily result in us operating any safer.

MR. WILLIAMS: Okay. Thank you.

MS. WITT: Thank you.

MR. WILLIAMS: Mr. Chairman, those conclude the questions by the Technical Panel.

MEMBER WEENER: Thank you. This concludes the questions for Panel 1. Are there any action items from this panel?

MR. WILLIAMS: Yes, sir. One item to Honeywell was to supply the reaction time afforded to pilots on cautions versus warnings.

For Hageland, the number of times the inhibit switch has been used and documented within your FlightLogger program. As well as to check with maintenance to determine whether the GPWS was connected to the radar altimeter on the date of the accident.

MEMBER WEENER: Thank you.

And this then ends the first session. We will break for lunch. We will reconvene precisely at 12 noon. We stand adjourned.

(Whereupon, at 11:00 a.m., a lunch recess was taken.)

A F T E R N O O N S E S S I O N

(11:55 a.m.)

MEMBER WEENER: I call this meeting back to order again. I trust everybody had an opportunity to get some lunch. We will now turn to Panel 2 for questioning. And go to Mr. Williams. Thank you.

MR. WILLIAMS: Thank you, Mr. Chairman.

Panel 2, when your name is called please proceed to the stand and remain standing to be sworn. Mr. Charlie Gillespie, Mr. Luke Hickerson, Mr. Gabe Olin, Mr. Greg Tanner.

Please raise your right hand.

(Witnesses sworn.)

MR. WILLIAMS: Thank you. Please be seated.

Chairman Weener, these witnesses have been prequalified and their respective experience and qualifications appear in the docket as exhibits in Group 1. I now turn the questioning over panel lead, Mr. Marvin Frantz.

MR. FRANTZ: Thank you, Mr. Williams.

Good afternoon, Mr. Chairman and members of the Board of Inquiry. Good afternoon, gentlemen.

Starting on the left, my left, with Mr. Gillespie, could you please introduce yourselves, provide your title, your organization and also just a brief summary of your aviation experience with special emphasis on your experience in Alaska?

MR. GILLESPIE: Okay. My name is Charles Gillespie. I work

for the FAA and I'm the Principal Operations Inspector for the Hageland certificate. Basically I arrived in Alaska in 1990 with about 1,000 hours of flight time and have flown in Alaska since then, and retired in 2011 and went to work for the FAA. I have roughly around 17- -- a little over 17,000 hours total time and about 16,000 of that in the state of -- within the state of Alaska.

MR. L. HICKERSON: Good afternoon. My name is Luke Hickerson. I'm the Director of Operations for Hageland Aviation. I've been flying for Hageland Aviation or working for Hageland Aviation since 2003. Most of my flying has been conducted in this state. I've accumulated over 10,000 hours flying the 207, the 208, F406 and Beechcraft 1900. I served as the chief pilot for Hageland Aviation from June -- excuse me -- January of 2014 approximately until I was assigned as the Director of Operations in the summer of 2015. Thank you.

MR. OLIN: My name is Gabe Olin. I'm a Departure Control Agent with Hageland Aviation. I've been employed with Hageland since 2008, and the entire time I've been based in the Bethel region.

MR. TANNER: Good afternoon. Good afternoon. My name is Greg Tanner. I'm the manager of the Operational Control Center for Hageland Aviation. I've worked for Hageland for about 10 years. I've been a dispatch supervisor for Frontier Flying Service, a station manager for Hageland Aviation. I'm a retired

Alaska State Trooper captain. I spent a lot of time in rural Alaska where I first became familiar with rural aviation operations.

MR. FRANTZ: Thank you. Mr. Hickerson, I believe you have a presentation to make. So if at this time you could call up Mr. Hickerson's presentation, please.

MR. L. HICKERSON: Good afternoon. Thank you for allowing me a brief moment to describe the operational control model that we have developed at Hageland Aviation.

Operational control, as defined by the FAA, is the exercise of authority of initiating, conducting or terminating a flight. Although that may seem simple at face value, we've created a very robust system, unlike any other Part 135 carrier here in Alaska.

Under Part 135 regulations, operational control guidance is general in nature. Furthermore, 135.77 provides operators the latitude necessary to design systems that fit the condition surrounding the operations being conducted. Hageland Aviation is the largest 135 carrier in the state and, as such, we have taken an industry leading approach to our operational control system. The ultimate responsibility of operational control is owned by the director of operations, which is me. Delegated through our system, we utilize a two-tiered approach to assure a shared responsibility between the company and the pilot.

In early 2014, we developed and built an operational control center in Palmer, Alaska. In doing so, we removed operational

control authority from station personnel and allowed them to focus on the business and customer service functions at our outlying stations. This removed any business pressures from the safe and legal conduct of all flight operations. The OCC has continuously evolved over the last 3 years to provide a 121-type dispatch process and state of the art flight locating and monitoring capabilities. Currently we release approximately 55,000 flights per year through the OCC.

The OCC is currently staffed with seven operational control agents, one supervisor and an operational control manager. Six have completed 121 dispatcher training or maintain a current pilot license. We train, test and evaluate each OCA to assure they meet the standard we demand. The primary focus of the operational control center is to guarantee operations are conducted safe, legal and in accordance with best practices. The OCC does not have any role in the business functions of the company. Whether a flight is profitable, whether passengers get home or whether freight gets moved is not the concern of the OCC. Let me be clear that there is no pressure on the OCC to ever release a flight.

The OCAs approve the aircraft, approve the pilot for a particular flight. They review the airport conditions, weather, NOTAMs and, prior to release, all flights are risked through a company-designed risk matrix. The pilot and the OCA will concur on an appropriate risk number and, depending on the level of risk, may have a company-designated manager for approval of the flight.

We utilize four levels of risk, with 1 being the lowest risk and 4 being the highest risk. If a flight is risked as a 1 or a 2, the OCA and the pilot are authorized to determine that the operation will take place. If the flight is risked as a 3, a conference call with a designated manager will take place to authorize, delay or cancel the flights. All flights that are risked as a 4 are delayed or cancelled.

Once the flights have departed, the OCC will monitor the progress of the flight. All Hageland aircraft are equipped with ADS-B and Spidertracks for use of monitoring our fleet. Where the infrastructure does not support ADS-B capabilities, we have been able to supplement Spidertracks for the flight locating and monitor functions.

The OCC has been instrumental in providing Hageland Aviation the foundation for a strong operational control model. Verification of an airworthy aircraft, a trained and qualified pilot, and safe, legal weather are the backbone of the OCC. We believe that the model we created fits our organization and provides safety assurance that all flights are operated safe, legal and by best practices. Thank you.

MR. FRANTZ: Thank you, Mr. Hickerson.

Referring to your slide then, you gave us a good -- your presentation, you gave us a good explanation of operational control. Can you tell me who at Hageland, by position or title, is authorized to exercise operational control and how are those

people designated?

MR. L. HICKERSON: All personnel that are authorized to exercise operational control are listed in the GOM. I'd have to look there for specifics. All of the operational control agents that work in Palmer are listed by name and duty, as well as the operational control manager. Any company-designated personnel that would be authorized for the RA-3 risk assessment, as you -- as I stated, are listed by name and title as well. A list of the pilots, given that they operate -- excuse me -- given that they are authorized for operational control for their part, are all maintained by the chief pilot.

MR. FRANTZ: Thank you. Are you familiar with the FAA concept of Tier 1 and Tier 2 operational control?

MR. L. HICKERSON: Yes, sir.

MR. FRANTZ: And could you just briefly describe what that means to you, Tier 1 and Tier 2?

MR. L. HICKERSON: The nature of Tier 1 and Tier 2 is to assure there is not a single point of failure, that no one individual is allowed to make the decision to operate a flight. The company maintains what would be considered in that model the Tier 1, with the pilots maintaining Tier 2.

MR. FRANTZ: Thank you. Do operational control agents working in the OCC, do they share equal, as in 50/50, responsibility for the planning and release of the flight with the pilot?

MR. L. HICKERSON: We have a policy at Hageland Aviation that it takes two individuals, the OCA and the pilot, to concur on a flight for it to go. Either of those individuals can make the decision that the flight does not go. So in that case, the answer would be yes, it is a joint responsibility with equal parts owned by both parties.

MR. FRANTZ: Thank you. If a pilot and an OCA when discussing a particular flight have a disagreement about an issue on the flight, for example, weather and whether a flight should be flown IFR or VFR, does it automatically default to the no-go cancellation position, or is there ever an occasion where that dispute or disagreement might be settled at another level at Hageland?

MR. L. HICKERSON: The pilot and the OCA have a discussion about the flight. For that flight to be released they would both have to concur that the flight was going to be able to be released under safe, legal, best practices. If there was ever a question that they were uncertain of that may not have been contrary to regulations or company policy, then they may entertain the idea of including a company-designated manager who would evaluate the decision and become part of that conversation. And again, all three would have to be in agreement that the flight could be conducted under safe, legal, best practices for that to go.

MR. FRANTZ: So just so I understand. Would an example of a case like that be when an OCA risked the flight at 3 and the pilot

risked the flight at 2 when they perform their risk analysis? So either way, 3 or 2, the flight could go, but they disagree on whether the flight should be a 3 or a 2. Is that a condition or situation that would be elevated to a management official to make a decision?

MR. L. HICKERSON: If the flight was ever risked at a 3 by any party, it would have to include the company-designated manager. Likewise, if one risked it as a 1 and the other as a 4, the flight would be cancelled, end of story. So it's the highest risk as based on the discussion between the OCA and the pilot.

MR. FRANTZ: Okay. Can you recall a time when you as a Part 119 or a company management official had to mediate or discuss a flight because an OCA and a pilot disagreed on some element of the flight?

MR. L. HICKERSON: I don't necessarily look at it as mediating. This is a discussion to find out what the risks associated with the flight are and including the company management to get the expectation from the company's perspective as to what's being included by including the manager.

Specifically, I can't think off the top of my head necessarily, but we get a lot of different phone calls with regards to some of the specifics that we operate. Whether a place has weather that's operating properly, can we use certain things for official weather. Those types of conversations come up all the time flying across this state. And so a lot of the specific

scenarios aren't necessarily arguments or me having to mediate between them. It's more of a clarification on what does the company want us to do with regards to a specific flight. And maybe Greg can give some specifics on that.

MR. TANNER: I do have such an example, if you'd care to hear it.

MR. FRANTZ: Please.

MR. TANNER: I also am designated as a RA-3 manager approval. Again, the majority of the time our pilots -- due to the fact that our pilots and our OCAs know the company expectations, what you're describing is rare, but it does occur.

There was one that comes to mind recently wherein a pilot was going to fly to Goodnews Bay, was the flight. The OCA didn't like the weather very much. In Quinhagak it was -- the ceiling was at about 500 feet. Beyond Goodnews Bay, down in Platinum, the ceiling was calling about 400 feet. We had weather cameras in Goodnews Bay that showed that the flight could probably proceed to Goodnews Bay and we had PIREPs that indicated that if the pilot stayed toward the coast that they could be in greater than 1,000 foot ceilings. The OCA wasn't real comfortable with it though, given what they were seeing on the official weather reporting. So they did raise that to an RA-3 and I participated in that discussion, and the three of us decided that we were going to just hold that flight until the weather improved.

MR. FRANTZ: Okay. Thank you. Can you -- Mr. Tanner,

staying with you. Could you describe the steps involved in planning and executing a flight at Hageland starting from the beginning --

MR. TANNER: Absolutely.

MR. FRANTZ: -- and the OCC's role in all of those?

MR. TANNER: Absolutely. So the -- that process will start with the chief pilot's office. The chief pilot is going to present pilots to the stations for their 2-week tour. Those pilots are going to come qualified to fly with medical certificates and current check rides. Maintenance is going to provide aircraft to the station that are airworthy.

When the pilots arrive there's a number of ways that they can be designated into which aircraft they're going to fly. Sometimes the lead pilot will make those determinations. Sometimes they will work that out amongst themselves, on which aircraft they're going to be assigned, and sometimes station personnel participate in that.

When a flight is planned or proposed at the station level, it is presented to the OCC. The OCC makes any necessary adjustments and ultimately either approves or disapproves the flight. And then there is that discussion with the pilot about the risk of the flight and if it is determined that the flight is within our risk tolerance and is safe, legal, and in our best practices, then the flight will proceed. If not, then the flight is delayed or cancelled.

MR. FRANTZ: Does the -- well, let me back up. You mentioned -- you used the term proposed and station levels. Can you clarify those? By proposed -- who does the proposing at the station level? Who is that -- what's that entity that proposes the flight to the OCC?

MR. TANNER: Generally it is a role -- and we have 10 stations and that can be a rather full-time job at some and it could be more of a part-time job at others. But it's the role of the departure control agent generally, and they are charged with the business decisions involved in moving revenue and they will make a proposal on moving revenue with an aircraft and a crew. That's presented to the OCC where, again, adjustments are made to that proposal, as necessary, and ultimately approved.

MR. FRANTZ: So the proposal includes specific named individuals and a specifically identified aircraft; is that correct?

MR. TANNER: That's correct.

MR. FRANTZ: Thank you.

Mr. Hickerson talked about the risk analysis process that Hageland uses and I'm still a little unclear. I understand that the pilot and the OCA both have to agree what the risk is and then the flight is released. Does the OCA perform a separate risk analysis and then compare his answer to the pilot who has performed a separate risk analysis, or is it one risk analysis that they jointly compile?

MR. TANNER: We do not want a single point of failure, so to that regard the pilot when they call for a flight release has already determined what they see as the risk level. And then the OCA goes over the flight and the information and they too determine what level they want to apply for the risk of the flight. There's examples when a pilot may call and say I believe I am a, for instance, a risk level 1-A and an OCA may say, well, actually it looks like you're going to be a 2-D because there's a brand new NOTAM that an AWOS is out of service at one of your destinations, so then they become a 2-D.

MR. FRANTZ: All right. Thank you.

What is the job of the OCC and the OCA once a flight -- once the risk is agreed upon and a flight actually departs? What goes on then at the operational control center?

MR. TANNER: The operational control agents monitor the progress of the flight.

MR. FRANTZ: How do they do that?

MR. TANNER: Our software system allows us to track the flight. It's moved along on a progress bar. Also we have ADS-B, Spidertracks, TAMDAR, all tracking apparatus to watch our flight move across the state.

MR. FRANTZ: All right. Thank you.

Mr. Hickerson, how is it determined whether a flight will be released VFR or IFR?

MR. L. HICKERSON: I believe the simplest answer for that is

the weather. The weather's going to determine whether it has to, by regulation, be conducted under IFR or VFR. After that the conversation takes place between the OCA and the pilot to determine whether we're comfortable releasing it under each one of those scenarios. Both pose individual risks and those need to be evaluated on a case-by-case basis.

MR. FRANTZ: All right. Thank you.

Is there a safety benefit to flying all flights, to flying a flight IFR versus VFR?

MR. L. HICKERSON: Under certain conditions, absolutely.

MR. FRANTZ: Does Hageland have a policy of favoring one type of flight over another, IFR versus VFR, if it's possible to go VFR? I mean IFR.

MR. L. HICKERSON: I would say -- if you're asking me if we had the infrastructure, weather, aircraft, pilots and such to conduct all flights IFR, I believe I -- it's safe to say the company position would be yes, we would like to conduct all flights under IFR. Given the state that we operate in and the weather conditions that we're faced with on a daily basis, that's just not reality.

MR. FRANTZ: Understand. If you have a particular flight that for which all of those conditions exist, would it be then favored -- would it be the position of the company that that flight should go IFR regardless of the weather, or in spite of the weather, or what's the guidance? If you have all the capabilities

to fly a particular flight IFR.

MR. L. HICKERSON: Yes.

MR. FRANTZ: If a flight is flown VFR, how is the route chosen for the flight?

MR. L. HICKERSON: Route is chosen -- we advise the pilots obviously to conduct their flight with the most direct route, with safety being the number one concern. Many routes we conduct where it's much safer to -- or legal, rather, to take a route that's not direct. Given that a lot of our flying takes place along the coastline of Alaska, we operate single engine airplanes that cannot conduct flights on a direct route.

So again, we leave that somewhat to the pilot's discretion with safe, legal and best practices in mind, and then they do have the latitude under 135 to use flight visibility to make those decisions. We're operating completely, under most circumstances, under uncontrolled airspace and it is dependent on the pilot to make that good decision and follow the regulations to assure that we're operating under VMC conditions while flying VFR.

MR. FRANTZ: What are designated VFR routes?

MR. L. HICKERSON: I'm not sure what you're referring to.

MR. FRANTZ: In your op specs, I believe it's B050, Operation Specification, there's a section about designated VFR routes between airports that are to be flown at night, for example. Could you just tell us what that term "designated VFR route" means?

MR. L. HICKERSON: Yeah. So in 2014 we established night VFR routes. We recognized that night VFR flying posed a greater risk than day VFR flying. What we did is applied the 135 regulatory requirement for night VFR flights and actually published them in B050. For non-mountainous terrain, that would be applicable for a 1,000 foot above the highest point for the intended route to be flown, and for mountainous terrain 2,000 feet above the highest point for the intended route to be flown. We established those and listed them in B050.

We later followed up, understanding that not every single route that we conduct, which is over 6,000, could be listed in B050. We allowed then a provision for the OCC or the OCAs and the pilot to determine what the night VFR minimum altitude and visibility would be, and that would be listed in our flight management software and discussed between the two of them prior to a flight being released under night VFR.

MR. FRANTZ: Are there advantages to -- would there be advantages to designating VFR routes between airports for day flight?

MR. L. HICKERSON: We spent a considerable amount of time having this discussion over the last year or more. We've run this through a company SRA process and have found that there is some risks that are posed that we didn't foresee when we started this discussion of just a simple route. We have many multi-leg segments, so doing point-to-point flying on established routes

wasn't necessarily realistic. Also, we wanted to take more the measure of discussing with the pilot group and training the pilot group that we can put all of these regulations into a manual, but the most important piece is, is that VMC flight must be maintained.

What we want our pilots doing is looking out the window when on a VFR flight. There's a see and avoid concept for traffic that needs to be maintained. We felt that by providing what would be a quasi IFR infrastructure without being tested and then requiring our pilots to maintain a certain route looking down in the cockpit provided inherent risk. As such, we've just been in discussions in the last month with our CMT to discuss how we are going to address VFR flying at Hageland Aviation and what we think best practices are, and that's still in discussion.

MR. FRANTZ: In your view, would having designated routes, designated VFR routes that you would fly day and night, would that have an impact on decreasing the probability of CFIT accidents?

MR. L. HICKERSON: I would say what has an impact on decreasing that with regards to VFR flights is that whatever is established is followed.

MR. FRANTZ: Are you familiar with the Medallion Foundation Operational Control Star requirements?

MR. L. HICKERSON: I am.

MR. FRANTZ: Has Hageland been awarded an Operational Control Star from Medallion Foundation?

MR. L. HICKERSON: Yes, sir.

MR. FRANTZ: Could I have Exhibit 2R, page 6, please?

Okay. Thanks. Could you zoom in so we could look at line 15 just a little more carefully? Thank you.

So referencing line 15 on this exhibit, Mr. Hickerson, are they speaking of the same type of VFR routes that we were just discussing?

MR. L. HICKERSON: Yes. I think a lot of the points established here have been points set by Hageland Aviation over the last couple years, given that we started originally with these night VFR routes. Again, I think our proposal to the FAA and our discussion with the Medallion Foundation about how we intend to meet the spirit and the intent of what this audit point is will create a higher bar of safety than just simply stating a line and an altitude and a visibility.

MR. FRANTZ: Okay. Thank you.

Does Hageland meet the requirement, number 15?

MR. L. HICKERSON: I'm sorry? If you're asking do we currently have defined routes for every single route, the answer is no.

MR. FRANTZ: Could you recap? Did you say a moment ago that you're still -- the company is still conducting analysis to determine if it's feasible or reasonable to define VFR routes for all the flying that Hageland does?

MR. L. HICKERSON: No, sir, that's not what I stated. What I

stated is that the company has taken a position that we do not believe that establishing 6,000 specific routes would be the best way to accomplish this goal and actually fit our operation. We're taking a proactive step to fit our operation and that includes the establishment of special airport or airports or routes that require special consideration. These would be airports that pose greater risk to VFR operations. But it is our position that a "one size fits all" blanket policy for the entire state of Alaska would not best serve our operation or the passengers flying with us.

MR. FRANTZ: All right. Thank you.

So when a flight currently is released and flown VFR, a Hageland flight, what weather minimums are required for the flight to be released, and then, once airborne, for the flight to continue?

MR. L. HICKERSON: Are you talking the Hageland policy?

MR. FRANTZ: Yes.

MR. L. HICKERSON: Currently 600 foot ceilings are required at a minimum for the release and 2 miles visibility. And that does differ from the Part 135.

MR. FRANTZ: And do those requirements apply everywhere, departure, en route and arrival airport?

MR. L. HICKERSON: Yes, sir.

MR. FRANTZ: So recognizing that you could -- through the FAA and weather reporting systems you can determine those numbers at a

departure and an arrival airport, how is the pilot to determine before he leaves and then once he's airborne that he's going to be able to maintain those requirements en route?

MR. L. HICKERSON: I think going back to the last panel talking about the very low density of weather reporting, we utilize all available resources, whether official or not. We call -- we have people in the different villages we're traveling to. We'll call them, say hey, what are you seeing; what does it look like? We're trying to utilize all available resources. We use the TAFs. We use area forecast. We use METARs. Again, not that it's official, but the weather camera system has been absolutely instrumental in making those decisions. Once the flight departs, the pilot is the only person that can tell me based on in-flight visibility what it's actually doing though.

MR. FRANTZ: How are pilots trained to determine in-flight visibility?

MR. L. HICKERSON: Well, again, I think this begins at the private pilot level, given that there's visibility minimums for all flying, whether it be commercial or not. At Hageland we have a lot of capabilities in our aircraft with the usage of GPSs and our safety pilot program to give pilots a knowledge of the local area that they're flying in and then use the GPS for indicators. There's also paper charts and we do still use those.

MR. FRANTZ: Okay. Thanks.

Do all the villages, the small landing strips and villages

that Hageland services, have official FAA weather reporting capability?

MR. L. HICKERSON: Through our IFR infrastructure study, which ties into that, we found that over two-thirds of the destinations that we service do not have full IFR capabilities. Most of that is due to lack of weather. It's typically found in the Bethel Yukon-Kuskokwim region. The North Slope is served fairly well, as is the Northwest Arctic and Bering Strait region, including the Interior. We find that the Yukon-Kuskokwim Delta lacks severely weather reporting and IFR capabilities.

MR. FRANTZ: If a pilot then is destined to one of these airports, how does he know before he departs and how could he determine en route that he has the required 2-mile visibility and 600 foot ceiling to arrive at that airport if the airport doesn't have weather reporting capabilities?

MR. L. HICKERSON: Again, we utilize all available resources. We're looking at METARs from other airports that are nearby. What you'll find is typically a village -- or excuse me -- a cluster of villages, three or four, are usually located close to each other. So although there may not be a METAR on the field at one particular village where that pilot may be destined to go, there's typically weather within -- oh, as close as 4 or 5 miles and usually within 20 miles of that particular airport.

So we're using all available resources. We'll call local folks at the villages. We'll call folks from the DOT to ask them

what the weather's doing. Again, there's not a lot of official weather reporting, but we lean strongly on the local knowledge of the people that live out there to provide us with valuable information, which we make decisions off of.

MR. FRANTZ: Okay. Thanks. I think the last question for now: What would cause two pilots flying the same route roughly the same time to take different paths?

MR. L. HICKERSON: The same time, or 5 minutes separating?

MR. FRANTZ: Okay. Five, 10 minutes apart.

MR. L. HICKERSON: It's my belief and my experience after flying in this state for 10,000 hours that 5 to 10 minutes can make a very drastic difference in weather, especially with regards to rain showers. Rain showers do provide obscuration to visibility, and to say that a rain shower couldn't have been present 5 minutes ago would be absolutely false. So I think that only the pilot on board that flight can make that determination.

MR. FRANTZ: Okay. Thank you.

Mr. Tanner, does an operational control agent have any input into pilot route selection when flying VFR?

MR. TANNER: The OCA uses the term routing to apply to the sequence of villages that they may stop at. But as far as whether you're going to fly through a valley or around a mountain, no.

MR. FRANTZ: Okay. Thank you.

May I have Exhibit 2S, page 9, please? Thank you. Could you scroll and zoom into the bottom paragraph on the page please?

Thank you.

Mr. Hickerson, looking at that paragraph that's entitled Special Flight Restriction and looking down to the sentence that starts with "While airborne." Could you just read that sentence and tell me what that means to you?

MR. L. HICKERSON: Stand by, let me find that here.

MR. FRANTZ: This is an excerpt -- for the other members, this is an excerpt from Operation Specification B050, which was issued to Hageland from the FAA.

MR. L. HICKERSON: Understood. "While airborne, if a special VFR operation is required on arrival, the PIC has the approval authority and must comply with the limitations of this paragraph." Would you like me to continue?

MR. FRANTZ: I'm asking -- my question would be, how do you interpret that sentence in the special requirements that begins with "While airborne"?

MR. L. HICKERSON: Oh, got it. Understood.

MR. FRANTZ: Yeah.

MR. L. HICKERSON: So what we require for a release of a special VFR flight is specific approval by the OCC. Understanding that weather changes and we would -- we do not want to have any undue risk to the crew, we do want to allow the crew to return under special VFR conditions. And that's what's specifically referenced here is the 600 and 2 requirement. To get a special VFR or requiring a special VFR would mean 1,000 feet or 3 miles

from a controlled airport. So if we did not allow them to come back in under special VFR at 600 and 2, we would end up with aircraft circling outside while weather was deteriorating. We wanted to make sure that safety was the priority here and that's why we allow the flight crews to have to be released under special VFR conditions approved by the OCC, but the arrival down to 600 and 2 is authorized.

MR. FRANTZ: Thanks. You mentioned a moment ago that you use that same limitation for all elements of Hageland, or all parts of Hageland flights. Is that published or written anywhere in Hageland documents or pilot guidance or training? Where -- how would a pilot know that he has those limitations, other than word of mouth?

MR. L. HICKERSON: We would not release the flight. 600 and 2 -- and it's stated in the op specs there, 600 and 2 is the lowest VFR and special VFR minimums for the company.

MR. FRANTZ: It states that for special VFR, which is for departing or arriving an airport. I'm asking where in Hageland's manuals or policy or company guidance to pilots does it state that they need to maintain 600 and 2 en route between airports. Because you said that was one of their limitations. Is that published anywhere?

MR. L. HICKERSON: Well, the intent of the 600 and 2 is it's required 600 and 2 for the dispatch of the flight, understanding that the FARs require an aircraft to be at least 500 feet above

the ground at all times. So how could one be 500 feet above the ground if the weather was reporting at 500 feet? Therefore, the only way the company could find to be in compliance with the regulations was to require a 600-foot ceiling so as to allow the crews to be at, at least 500 feet above the ground at all times.

MR. FRANTZ: But the 600 and 2 requirement is not written anywhere in company GOM, training material, guidance.

MR. L. HICKERSON: No, it's written in the federal regulations, if you're below 1,000 feet, the minimum visibility is 2 miles of visibility, which is where we came up with 600 and 2. You'd have to have a minimum of 600 feet so as to be able to maintain above 500 feet. The requirement for visibility under Part 135 is 2 miles if you're lower than 1,000 feet.

MR. FRANTZ: All right. Thank you.

Could you put that exhibit back up please, 2S, page 9? And I'd like to ask Mr. Gillespie how he interprets that sentence that begins with "While airborne."

MR. GILLESPIE: Good afternoon, Mr. Frantz.

MR. FRANTZ: Good afternoon.

MR. GILLESPIE: When that went in there, actually that went in there -- was put in there by Luke and my predecessor. The way I interpret that is if a pilot were to launch on a VFR flight, say, the weather's 1,000 and 5 miles. It's a VFR flight, so he takes off and goes on that, and upon his return, the weather's gone down to 900 and 2. He doesn't have to have OCC approval to

request a special VFR clearance and come in and land. However, when he does, he has to -- if you read the paragraph, he has to call a 119 management official.

MR. FRANTZ: Okay. Thank you.

You could remove that exhibit, and I think one more exhibit, 2 -- Exhibit 2M, page 3, please.

This is a copy of an agreement that was made between Hageland the FAA subsequent to this last accident. And it -- I believe it's a list of actions that the FAA and Hageland agreed upon would be implemented with some target dates. Specifically looking at number 4, item 4 on this list. No, I'm sorry, not -- yes, item 4.

Mr. Gillespie, is Hageland meeting -- at this time are they meeting the requirements of item 4?

MR. GILLESPIE: That is where we're stuck on right now. We're -- they're up to that point. They are encouraging people to fly IFR at every opportunity. And like Mr. Hickerson said, they have conducted several RSAs and -- or SRAs, thank you. Risk analysis, and are coming up with something similar to that, and we're working with them.

MR. FRANTZ: Thanks.

Mr. Hickerson, same question. Are you doing what item 4 calls for? Specifically the second sentence, you'll begin flying the night routes that you have in the op spec both day and night.

MR. L. HICKERSON: So the route that we took here was to require pilots in an IFR-capable airplane, an IFR-capable route

and an IFR-capable pilot to conduct operations under IFR, unless the night VFR minimums could be maintained.

MR. FRANTZ: So if the flight is dispatched VFR because the weather is suitable and it's between two of the cities where you have designated night routes, does the pilot -- does the airplane, as required, or as specified by that paragraph, do they have to fly the VFR route --

MR. L. HICKERSON: Yes.

MR. FRANTZ: -- that's designated?

MR. L. HICKERSON: Yes.

MR. FRANTZ: And you're current -- and Hageland's currently following that?

MR. L. HICKERSON: Yes.

MR. FRANTZ: Okay. Thanks.

Mr. Olin, can you describe the role of the departure control agent in Hageland flight operations?

MR. OLIN: Yes. The departure control agent is tasked with gathering revenue information to propose a flight to the OCC for review between OCC and the pilot.

MR. FRANTZ: Does proposing the flight include selecting crews and airplanes to fly a particular flight?

MR. OLIN: The chief pilot assigns crews to each base and usually planes go first-come/first-served. Pilots generally pick their own aircraft.

MR. FRANTZ: And so at the base level, and at your level as a

DCA, what processes are to ensure that the pilots are current, legal, ready to fly and that the aircraft are airworthy per Part 135?

MR. OLIN: That is all reviewed by the OCC.

MR. FRANTZ: What's the departure control agent's role in obtaining and analyzing and distributing weather to pilots before they depart?

MR. OLIN: Departure control agents gather weather information from the village agents and then they pass it along to OCC for analyzing.

MR. FRANTZ: Do the departure control agents collect weather and distribute it or pass it to pilots at the base?

MR. OLIN: We do keep a copy of the weather that we get from village agents for the pilots to review and then they review that again with OCC when they call for their release.

MR. FRANTZ: Do departure control agents have any training in aviation weather?

MR. OLIN: None.

MR. FRANTZ: And so how does a departure control agent know what weather products, where to look and what pieces of information to gather that he's going to present to the pilot and the OCC?

MR. OLIN: They're not gathering any official weather. It's village agent weather.

MR. FRANTZ: Do you ever get -- as a departure control agent

do you get any feedback or comments from pilots on either the quality or the quantity of the weather that they are reviewing there at their base before they depart? Do they request -- wish they had other pieces? Are there things missing that they wish they could get?

MR. OLIN: I think they all wish that there were official weather stations at every village.

MR. FRANTZ: What's the job of the departure control agent once the flight departs?

MR. OLIN: We use our proprietary software to mark the flight on or off. And then any flight monitoring that we do is to communicate between the aircraft and the village agent or between the aircraft and OCC, when needed.

MR. FRANTZ: So what reasons would you have to communicate with the aircraft once it's in flight?

MR. OLIN: To pass any weather information along from OCC, to let them know how many passengers will be at the airport, if there's any routing changes that have been approved. Any information like that.

MR. FRANTZ: So is all updated weather that you would pass to a flight once it's airborne, does that weather all come to you from the OCC with a request, please pass this to this flight?

MR. OLIN: Not all the time. Sometimes we get a call from a village agent that the weather's changing rapidly and we'll go ahead and relay to the plane. And then we'll go ahead and call

OCC afterwards to let them know that the plane got the updated information.

MR. FRANTZ: All right. Thank you.

Is there any decision making occurring by the departure control agent once a plane is in flight? Decision making as far as the continuation of the flight or the nature of information that should be passed to a flight.

MR. OLIN: If you're asking if the DCA has any kind of operational control, the answer is no. We're an information conduit sometimes between OCC and an aircraft, but we make no decisions on whether the aircraft turns around or continues.

MR. FRANTZ: And what kind of interaction -- once a flight is airborne, what kind of interaction does a DCA have with the OCA, the operational control agent, that's responsible that flight?

MR. OLIN: If revenue dictates that the flight change its routing, DCA will contact OCC first to see if that routing can be changed and re-risk the flight before they contact the aircraft. Any other thing -- we do talk to them sometimes about passenger loads and stuff as well, so --

MR. FRANTZ: Okay. Thanks.

Mr. Tanner, similar question to you. What is the nature of routine interactions that an operational control agent would have with a departure control agent for a particular flight?

MR. TANNER: In addition to what Mr. Olin described, there would -- it would -- information would flow the other direction.

There's a number of ways that we contact crews after departure. We've heard about some of those limitations, but one of the ways we do that is through the station personnel. They do have better radio communications and so oftentimes they can relay information from the OCC to the pilot.

MR. FRANTZ: So in the big picture of operational control at Hageland, who has the responsibility for ensuring that planes and pilots that depart for a specific 135 flight are qualified?

MR. TANNER: The operational control center.

MR. FRANTZ: And how do they do that?

MR. TANNER: Well, I'm not sure I understand the question because I think I've answered it. Perhaps you can restate the question?

MR. FRANTZ: You receive a proposal from the departure control agent for a flight; is that correct? And the proposal includes pilots' names and an airplane; is that correct?

MR. TANNER: That's correct. The chief pilot presents the pilots to the station who are qualified. The OCC does additional work and looks back the day before to make sure that the pilot hours are appropriate, what the assignment for the pilot is going to be, how many hours they flew the day before, and they're also looking at our databases and our real-time status of our aircraft to make sure that they're airworthy.

MR. FRANTZ: Okay. That's good. Thanks.

Mr. Hickerson, so we've -- down a deep end of the OCA/DCA

discussion here. On a high level can you just give me a summary of the distinction between an OCA and a DCA, departure control agent and an operational control agent, at Hageland?

MR. L. HICKERSON: Yes, absolutely. Thank you. The departure control agent serves the business function of the company. If you look at our organizational chart, Gabe and the rest of the departure control agents report to the station manager, who report to the director of stations, who report directly to the president. I have no control over the departure control agent or any business function as far as revenue management and revenue planning for the company. I solely supervise the operational, which looks at safe, legal, best practice.

The operational control agents are designated the authority to exercise operational control through the OCC process. To make it very simple for you, the only people that need to show up for a flight to operate would be the operational control agent and the pilot. The system is not dependent on having the business function of the company in operation for a flight to take place. If either of those two parties don't show up, the flight cannot go.

MR. FRANTZ: Okay. Thanks.

If a pilot in flight then, if he receives weather, probably sounds like likely relayed from a departure control agent. But if he receives weather that indicates that his destination is not

going to be doable anymore, and at that point, before he makes a decision to either turn around or divert, is he required to contact the OCC to discuss options or discuss additional weather, or is -- can he make the decision totally on his own at that point?

MR. L. HICKERSON: No, they make that decision completely on their own. A lot of these places we're going to, again, don't have weather reporting and so the last thing I want is them to try to relay information while continuing into deteriorating conditions. So we train the pilots to make the decision. That's what they're trained for. They're professional pilots. Make the decision safe and legal and then relay, when practical, back through, whether it be another aircraft, whether it be through -- we have some 1900s in a sister company, Dash 8's that fly high. We can relay back to the OCC or via the village agent back to the base. But no, we do not do flight following for these aircraft. That's not the concept of what we're working with here and we have very limited capabilities.

MR. FRANTZ: Good. Thanks.

During the worst weather months in Alaska, and you would know those much better than I, approximately what percentage of VFR flights would you say end up turning around or diverting because of weather?

MR. L. HICKERSON: I'm not sure the exact number. I can tell you in January and February of 2017 Hageland Aviation cancelled

approximately 3,000 flights in 2 months.

MR. FRANTZ: Okay. Thanks.

Mr. Tanner, do operational control agents, then, do they routinely monitor weather knowing that they probably won't be able to get in touch with the airplane because of the location, but do they monitor weather, or do they rely on departure control agents to pass updated weather to them?

MR. TANNER: They continually monitor the weather. The weather that Mr. Olin described to you that's passed to the OCC is unofficial weather. It comes from areas where there is no AWOS, no official weather reporting. That's where a village agent will provide them with what they feel the weather is doing and it's simply used as reference material. It's not used as official weather. It's used in addition to AWOS readings at other locations, area forecasts, radar, if that's available to us, all of our resources. That is just one small thing that we can look at and see what they're indicating the weather's doing in the village.

MR. FRANTZ: Okay. Thank you.

MR. L. HICKERSON: If I may.

MR. FRANTZ: Please.

MR. L. HICKERSON: It's used much like in the sense where the gentleman that was here from the Flight Service earlier said, PIREPs give the most accurate depiction of what's happening right now. We do get a lot of fog in the springtime on the coastal

areas and it's not uncommon to have a village agent call and inform the station that, hey, the fog just rolled and it went from clear to zero zero. They're giving us real accurate right now, but just based on a "Is it good or bad?" scenario. So it's very valuable information, but it's used in totality to make a decision.

MR. FRANTZ: Okay. Thank you.

Mr. Gillespie, what techniques or what methods do you use to conduct oversight of the operational control system and the operational control center at Hageland?

MR. GILLESPIE: We utilize a oversight system called Safety Assurance System, or SAS.

MR. FRANTZ: And can you briefly describe what that consists of?

MR. GILLESPIE: You know, I answered that question so poorly last time you asked me that, I wrote something out for it. Stand by.

Okay. SAS is an oversight tool utilized by the FAA to identify hazards with a certificate holder in a certificate holder's environment and assist us and the certificate holder in eliminating or controlling the associated risk. Quarterly the CMT will meet and review the certificate holder's assessment tool module in the -- in SAS, or anytime the certificate holder experiences significant events, such as an incident or an accident. Sometimes the CHAT is changed; sometimes it's not. It

is dependent on risk factors determined by the Certificate Management Team.

The CHAT module has a bank of risk indicators, I think it's around 40, such as accidents, incidents, occurrences, enforcement actions, voluntary disclosures, management changes or turnover in personnel. Some are focused on airworthiness risks and some are focused on operations risks. By selecting or deselecting a risk indicator and selecting the update link, SAS will generate a Data Collection Tool, or DCT, that addresses the risk indicators you selected. A DCT is a list of questions that can be used to collect and record data from observations made during surveillance and activities. The recorded data is then analyzed, assessed and an action plan is then executed to address any issues discovered by the DCT. The action could range from sending the certificate holder a letter, pursue enforcement action, or generate another DCT to dig deeper into the risk area.

MR. FRANTZ: Okay. Thanks. Have you ever observed -- spent time observing operations at the OCC at Hageland?

MR. GILLESPIE: I have.

MR. FRANTZ: I'm sorry, you have?

MR. GILLESPIE: I have observed OCC operations.

MR. FRANTZ: And have you ever observed OCA, the specified training that the operational control agents receive?

MR. GILLESPIE: I have not observed the ground training. I believe my assistant has. But I have observed OJT training.

MR. FRANTZ: All right. Is it part of your job, your oversight job, to observe operations at the bases?

MR. GILLESPIE: Yes, sir.

MR. FRANTZ: All right. Have you ever observed DCA, department control agents, performing their duties at the bases?

MR. GILLESPIE: I have.

MR. FRANTZ: From any of these observations do you have any sense that departure control agents play any role in controlling or dispatching or in any way engaging in operational control over a Hageland flight?

MR. GILLESPIE: I can comfortably answer that, no.

MR. FRANTZ: Okay. May I have Exhibit 2P, page 3, please?

Mr. Gillespie, are you familiar with this letter from the FAA dated May of 2016?

MR. GILLESPIE: Yes, sir.

MR. FRANTZ: Okay. This is a letter from the Flight Standards Division, the Alaska Region, to all operators, and the topic is CFIT avoidance and CFIT reduction. Can you tell me what, if any, of the improvements --

And if you could scroll down please.

What, if any, of the items that are listed in this letter as suggested improvements have been accomplished at Hageland, to your knowledge?

MR. GILLESPIE: Both of those have been implemented.

MR. FRANTZ: Okay.

MR. GILLESPIE: May have began, or they're almost concluding their work on the VFR routes. They've implemented most of those. I can say that.

MR. FRANTZ: Okay. Thank you.

You can remove that exhibit. Considering -- could you -- I'm sorry. Could you bring up Exhibit 2M, page 3, please?

This is going to be the seven-point agreement entered into between the FAA and Hageland. So looking at this, Mr. Gillespie, these seven points -- and a lot of these are carryovers from the letter that we just looked at, can you tell me has Hageland -- what progress in your view Hageland has made, or have they accomplished or have they achieved any of these -- any or all of these points?

MR. GILLESPIE: Looking at that, they have everything there except the FOQA, and they have begun working on that and they gave us a very specific timeline on when that would be implemented during our last meeting, but I didn't bring that information with me. And the Flight Operations Compliance Monitoring Department I don't think has stood up yet, but they still do that with the basic equipment that they have. I think Erin Witt testified to that earlier.

MR. FRANTZ: Okay. Thank you.

Do you know if there's a more current copy of this agreement with maybe perhaps updated target dates to complete these, or is this the -- this document that you would say Hageland and the FAA

are still working off of?

MR. GILLESPIE: This is the document we're still working off of.

MR. FRANTZ: All right. So have some of those dates shifted? Some of the target dates, for example, the FOQA, the GPS, VFR routes, are all those dates still valid target dates for accomplishment, do you know?

MR. GILLESPIE: You know, I know that they were planning on having some of the FOQA equipment installed in a 207, I believe, by the end of next month, or they're going to begin working on that. The issue with the FOQA equipment is it's being designed, or it's brand new to the -- to their type of aircraft. So it's -- there's going to be some engineering required to install all that. So some of the stuff has been pushed out. We're working with them on that.

MR. FRANTZ: Okay. Thanks. I'd like to -- leave the slide up, please. I'd like to go down the line and ask each of you, starting with you, Mr. Gillespie. From an operational control standpoint, which is what this panel's looking at, is there one step, one change, one improvement, either something on this list or not, that you would view as most critical to reducing the chances of CFIT accidents like this in the future?

MR. GILLESPIE: Well, I would like to see them fly IFR all the time. That's the one thing, and -- but that's obviously not a possibility yet. Hopefully you folks can help us with that.

MR. FRANTZ: Okay. Thanks.

Mr. Hickerson.

MR. L. HICKERSON: I would echo that sentiment. I think that it's a very big indicator that CFIT accidents were a -- posed a serious risk to the rest of the industry 40 years ago throughout the Continental United States. I think that the technological advances that have been made and the infrastructure improvements that have been made in the Continental United States should be replicated here so as to create the exact same scenario. Thank you.

MR. FRANTZ: Okay. Thanks.

Mr. Olin.

MR. OLIN: I'm going to echo what both Mr. Gillespie and Mr. Hickerson said. IFR infrastructure needs to be in place to help eliminate CFIT accidents.

MR. FRANTZ: Thanks.

Mr. Tanner.

MR. TANNER: To add to everything that's been said, from the OCC standpoint I think that it would be advantageous if we did have direct communications with our flight crews during flight. And I know that is something that may come to us at some point in the future with new technology and abilities.

MR. FRANTZ: All right. Thank you very much, Panel. I'm going to turn the questioning over to the other members of the Tech Panel here and see if they have any questions.

Mr. Williams.

MR. WILLIAMS: Chairman Weener, at this time this concludes the questions from the Technical Panel.

MEMBER WEENER: Thank you, Mr. Williams. We will now begin questioning by the parties and we will be starting with the Medallion Foundation. Mr. Prewitt. Turn your mic on.

MR. PREWITT: Mr. Chairman, the Medallion Foundation has no questions at this time. Thank you.

MEMBER WEENER: Understand.

Mr. Hickerson from the Hageland?

MR. J. HICKERSON: No, we have no questions. Thank -- we'd like to thank the panel.

MEMBER WEENER: Mr. Allen, Honeywell?

MR. ALLEN: No questions. Thank you, Mr. Chairman.

MEMBER WEENER: And last, but not least --

MR. GUZZETTI: I have several questions, Chairman Weener.

Captain Hickerson, Captain Witt testified in Panel 1 that since January 1st, 2016, Hageland had 607 flights turn back or divert due to un-forecast weather and 3,564 flights that were cancelled due to weather issues. And I don't know whether you got the dates mixed up, but are you -- you indicated that January and February of this past year alone, those 2 months alone there were over 3,000 flights.

MR. L. HICKERSON: I believe it was 30- -- you said approximately 3600 since January of 2016?

MR. GUZZETTI: Correct.

MR. L. HICKERSON: As the slide stated. That's -- that is correct. We had a -- some extremely poor weather here in January/February of this year as well. I would say that in the past we didn't do as good of a job to capture the flights that were cancelled because they never actually got inputted into the system. We've taken it upon ourselves to capture every single flight, even if -- on the days where it's less than a quarter mile for the entire day, those flights are being inputted into our daily software and then shown as cancelled due to weather, so we can try to capture the data of exactly how many flights are being cancelled. Therefore, I think it is a true statement to say there was multiple thousands of flights cancelled in January and February of this year.

MR. GUZZETTI: Well, that's a large figure. So that -- would that generate into potentially lost revenue, or -- because you have to reschedule the flight and the mission doesn't occur, so does that affect a revenue of an air carrier?

MR. L. HICKERSON: The good news, my position is it's not my concern. Our concern is safely going best practice, and whether the revenue gets flown or not is for somebody else in the organization to consider.

MR. GUZZETTI: I think that's the right answer. Inspector Gillespie or Captain Hickerson, the operational control audit point that Captain Frantz brought up on the screen, was that in

effect at the time Hageland earned its Operational Control Star?

MR. L. HICKERSON: No, sir, that was not.

MR. GUZZETTI: Okay. And were you aware that that audit point was changed in the spring of 2016 and carriers were given a year to come up to compliance with that?

MR. L. HICKERSON: My understanding originally, that that was a proposal that was made. It became clear later on, not necessarily this spring, that that had been instituted into the final draft of the audit points. Again, I think the chief pilot, Mrs. Witt, eloquently stated that ultimately managing the risk at this organization is the company's responsibility. It's our intent to show Medallion that we have a better system that will meet the spirit and the intent of what that audit point is, and I think they'll find that the bar of safety is raised much higher at Hageland Aviation.

MR. GUZZETTI: Okay. Thank you.

Inspector Gillespie, what airspace is a special VFR clearance required?

MR. GILLESPIE: Controlled airspace, surface space echo and delta.

MR. GUZZETTI: Okay. And what are the regulatory minimums for special VFR?

MR. GILLESPIE: Regulatory minimums for -- to obtain a special VFR clearance is 1 mile and clear of clouds.

MR. GUZZETTI: And finally, do you know what -- Hageland's

definition of the weather required for special VFR?

MR. GILLESPIE: 600 and 2, departing and arriving.

MR. GUZZETTI: Okay. Thank you.

That's all the questions I have, Chairman Weener.

MEMBER WEENER: Okay. Thank you. At this point we'll take a brief 10-minute break. We'll reconvene at 25 after the hour. We stand in recess.

(Off record at 1:08 p.m.)

(On record at 1:20 p.m.)

MEMBER WEENER: We're back in session again. At this time the questioning will be by the Board of Inquiry, and we'll lead off with John DeLisi.

MR. DeLISI: Thank you, Mr. Chairman, and thank you to this panel.

Mr. Hickerson, can I start with a question? Can you describe what a flight is for Hageland? Is it one takeoff and one landing?

MR. L. HICKERSON: Hi, good afternoon. No, sir. Our flights are such that there's typically multiple stops. A very common practice amongst Alaska aviation is these villages are clustered somewhat close to each other. So in the sense of we'll say Hooper Bay, Scammon Bay and Chevak are all within about a 25-nautical mile radius of each other. They're about 130 miles from Bethel. So our flight would be released with multiple destinations on that route back to Bethel, typically departing and arriving back to the same primary airport.

MR. DeLISI: So I heard other words like route, segment, multi-leg segment. How does all of that terminology play together?

MR. L. HICKERSON: Yeah, when we look at a route, we're looking at the sequence that we are flying in between these destinations typically. Again, a flight departing from Bethel would be routed Bethel, Hooper Bay, Scammon Bay, Chevak, and then back to Bethel. The typical flight segment would be any individual segment flown between these two destinations.

And again, for clarification, the route changes. A lot of times in those villages we don't know exactly what we're picking up, and that's why they would change. We may get a call from the village agent that says our competitor showed up a few minutes ahead of us and took all the passengers that we were planning on picking up and so there's no reason to stop there anymore. That would be relayed back to the OCC, a conversation coordinated between the OCC and the aircraft usually relayed and then the route would be changed.

MR. DeLISI: Interesting. So when we get -- when we talk about the accident flight, I think we've spent a lot of time with the other panel talking about this Quinhagak to Togiak. Maybe we were calling that the flight, but can you better describe what flight the accident airplane was on?

MR. L. HICKERSON: The flight was -- departed Bethel with the routing Bethel-Togiak-Quinhagak-Togiak-Bethel.

MR. DeLISI: How long would a flight like that take?

MR. L. HICKERSON: I would say that the approximation, if you will, would be approximately 30 minutes in between each destination -- and again, I'm approximating. It's been a while since I've flown the line between Quinhagak and Togiak.

MR. DeLISI: So perhaps from the time that airplane takes off from Bethel, makes all of those stops, completes its flight, gets back to Bethel, could be 3 or 4 hours later?

MR. L. HICKERSON: Yes, sir, that'd be correct.

MR. DeLISI: So during the course of that 3 or 4 hours in and out of Togiak, say, a few times the weather's going to change a lot. You talked about in a rainstorm the weather changing in 10 or 15 minutes. Wouldn't it be more advantageous to scope out the predicted weather at each one of those stops along the way, as opposed to just releasing the flight over the course of the next 3 or 4 hours and all of the weather changes that will occur?

MR. L. HICKERSON: Yeah, I -- we did take that into consideration. We're looking at our operation as a whole over the entire state. A lot of our legs where we're operating multi-legs, 30 minutes may be one of the longest. We may operate a flight out of Bethel to four or five stops and be back in Bethel within 45 minutes. So that's not uncommon. Some of the destinations are literally across the river from Bethel, so a 3-minute leg.

So to get a weather report on each side wouldn't necessarily be practical for our operation. We do have flights that are

released, again, for longer flights, again, out of -- let's say out of Palmer to Kotzebue, which is a 3-hour flight. It's a direct from here to Kotzebue, 3-hour flight moving a Caravan. Again, so the aircraft is still airborne for 3 hours, not required for any additional conversation or weather analysis.

MR. DeLISI: Yes. And a flight that takes off from a departure point to a destination point, perhaps the weather forecasting ability -- you know what the conditions are at the departure point, you have a prediction 3 hours later what it will be for your one landing, but when you're in and out of Togiak, Quinhagak all day, isn't the weather going to be changing constantly during the 3 or 4 hours that the airplane may be in those airports?

MR. L. HICKERSON: Yeah, I would say that's a true statement, that it could. Again, the forecast that we're going to get 30 minutes later is typically the same forecast we got prior to releasing the flight. So we've -- we're not opposed to any of these. We're just trying to see how they would fit the operation.

Again, a lot of these locations we don't have any way to communicate, so if we designed a system that would require at each stop to make communication to the OCC for a new weather briefing, most of them don't have official weather and then the communication piece has proven to be very challenging.

MR. DeLISI: At our agency we've dealt with a number of accidents involving helicopter air ambulance service and we talk

about the mission pressure that a pilot doing such a critical lifesaving mission. State Troopers flying rescue missions are under that same sort of pressure. And a key safety release in that is to take some of the decision making out of the cockpit, out of the person who's under that critical pressure and give it to someone outside of the airplane who may be able to take a more clear-eyed view of the weather and the circumstances. That seems to be an important safety element in helicopter air ambulance service.

I'm just thinking about having one conversation with OCC at the start of a five or six segment trip that may take place over the course of 3 or 4 hours and multiple weather changes. Doesn't that then just -- one time, once, you get the okay from the OCA, but now it's all on the pilot who's in the airplane, in that weather, with those passengers, with that cargo. Wouldn't it be helpful to have checkpoints along the way that require that conversation to take place again and get updated?

MR. L. HICKERSON: Yeah, as I stated, I'm -- we're open to all suggestions with that. But what we found is typically the weather that the pilot is seeing there out the windscreen is much more accurate given the inadequate weather reporting that the OCC's going to have available to them. So the most accurate report that we're going to have is from the pilot.

And typically we may see that, based on all available resources we have, that a flight looks like there's no reason it

couldn't be completed and the flight ends up turning around and coming back. The OCC manager does analyze each of those turn-backs to find out why, to see if we missed something from the operational control point. And typically what's found is that there's not data to support that weather reporting and that the pilots are making good decisions, turning around and coming back when they see -- I don't want to call it un-forecasted weather, but --

MR. DeLISI: Sure.

MR. L. HICKERSON: -- weather we couldn't depict.

MR. DeLISI: Thank you. I appreciate this conversation.

And tying into Panel 1, which talked all about CFIT, CFIT accidents take place in IMC conditions. And it would be great to have the infrastructure. We're going to do our part to help make that point. There's certainly a level of safety that's offered.

But I'm a pilot. I'm not instrument rated. I only fly in VMC conditions, and that's a very safe way to operate. It's extremely safe to fly only in visual conditions. I don't fly when the weather isn't clear. But it seems like it's a combination of mission pressure and bad weather that become the recipe for CFIT accidents.

MR. L. HICKERSON: I would say historically that that would be an accurate statement. What we've tried very, very hard to do with the removal of the business stress on the operational control function is to remove that from the station personnel altogether.

There is not a flight that can be released unless the operational control center releases it. They don't have any idea how many passengers are in the lobby or how much mail is there or any of those types of business functions. So we've removed that altogether.

In addition to that, we've changed up our compensation that -- our pilot compensation package to where there is absolutely no additional funding. The pilot doesn't get anything more for creating a flight. It would actually be much better for them, they could go home and still get paid the same that day, regardless.

So they're -- we have done everything we can, because I think you're spot on that historically that business pressure has driven risk to an unacceptable level, and I believe our model has been such that we've tried to address each of those.

MR. DeLISI: Thanks.

Mr. Gillespie, we heard earlier 600 foot ceilings, 2-mile visibility. Am I characterizing that as saying that's in the operational control spec for Hageland?

MR. GILLESPIE: Yes, sir, it is. Their minimums to obtain a special VFR clearance for departure and arrival is significantly higher than what regulatory standards are.

MR. DeLISI: Is the FAA comfortable with the fact that that's in their operating specs, yet they're going to be relying on non-aviation sources to try to determine if the 600 foot ceilings and

2-mile visibility is available?

MR. GILLESPIE: I don't understand. Can you restate that question?

MR. DeLISI: Well, I think I heard earlier that you get information from unofficial sources, people in the local village, other resources on the ground. Those are not certified aviation weather forecasting reporting stations. Is the FAA comfortable with integrating non-official weather reports in order to determine if the company is operating within their specs?

MR. GILLESPIE: Again, Mr. DeLisi, could it be improved? Yes, it could be improved, but that's what they have to work with, and the only time they need official weather is to operate IFR, which they are unable to do. So they can take the unofficial weather and conduct a VFR flight. That's why they're doing the flight VFR.

MR. DeLISI: Very good. Thank you.

No further questions.

MEMBER WEENER: Dr. Groff, you have questions?

DR. GROFF: Yes. Thank you, Mr. Chairman, and thank you to the Panel.

Mr. Hickerson, just to put in context. We had a couple of indications of like the size of the operations of Hageland. You mentioned, I think, 6,000 routes, one of the largest or the largest 135 operator. Can you put in context how many flights either by week, month, year? I know that obviously changes

probably seasonally, but can you give me some kind of a context of how many flights you operate?

MR. L. HICKERSON: Yes, we currently release approximately 55,000 flight releases, of which we typically have approximately 2.5 destinations, if that makes sense, per release. So we're looking at somewhere in the ballpark of 150,000 takeoffs and landings per year, excluding any training events.

DR. GROFF: Thank you. That's -- and as far as tracking the cancellations and turn-backs, it sounded like you've sort of ramped up the tracking and recording of that. So is it fair to say that we'll have to maybe check back with you in a year or two to know whether they're increasing or decreasing?

MR. L. HICKERSON: Yeah, I think as the technology advances and as the company makes technological advances for data tracking and data mining, we'll be able to provide a lot better information to you. Again, like I said, the -- I know January and February was multiple thousands of flights cancelled. I believe those numbers are probably the -- mirror what happened the last year, but we didn't track it the same.

We see these big swings based on our flight time. You know, the 207 fleet is VFR only and flies about 50 percent the amount of flying in December that they do in months like July when the weather is much better. So it's an indicator of the weather patterns in Alaska and the night operations that were dealt with and those types of things that we end up just flying a lot less.

DR. GROFF: So really to compare if it's increasing or decreasing, it's almost a year over year, rather than I can't compare to last month; I can compare to maybe this month last year?

MR. L. HICKERSON: Yeah, we see very seasonal patterns, and what we're trying to do is take the tribal knowledge out of it, and that -- you know, I've been at the company now since 2003. I can tell you that the weather in Unilakleet in May has some morning fog that typically burns off by 3:00. But we're trying to create a computer system that can track that to where it's not dependent on me being there, that we can forecast that much ahead of time in our proprietary software.

DR. GROFF: Understood. Thank you.

And whether to either you or Mr. Tanner, I think you mentioned there's six OCAs; is that right? So how -- on, let's say, on a given day middle of the summer when you would be presumably at a high level of activity, how many OCAs would you have working in the OCC and how many flights or operations would they be monitoring at any given time and --

MR. TANNER: Certainly. There's a total of six OCAs, a supervisor -- or, I'm sorry, there's seven OCAs, a supervisor, myself, for nine total. We generally, Monday through Friday, have five people. We work 6 a.m. until about 9 p.m. We'll have three people on at a given time at our busiest times and then fewer at the slower times. And at the busiest times of the morning we may

have as many as 30, 35 airplanes airborne at the same time.

DR. GROFF: Okay. And I think you mentioned this, but maybe just to clarify. What you're -- what Hageland is doing with the OCC is -- it's not a requirement; it's something that you've more or less created and developed?

MR. L. HICKERSON: Again, I think the 135 regulations allow the latitude to the carrier. Our operational control model was built and designed specifically for our operation. I don't believe that it may fit at much smaller operations, and obviously much larger operations would take much more. So we've -- to say that it's not required, it is required to have an operational control model, but it's specific to each individual operator to find what works for that operation, and I think that's what we've done here.

DR. GROFF: Okay. And how long has the current model been in place?

MR. L. HICKERSON: We opened in January or February of 2014.

DR. GROFF: February of 2014. The risk assessment, the four-point risk assessment, was that developed at the same time, or did that precede the development of the current OCC model?

MR. TANNER: Some elements of it preceded it. It's been -- we're constantly evaluating that and modifying it. I think we're at revision eight of it now. We had some version of that before. But when we ramped up the OCC, our current POI, Dan Larson at the time, actually helped us build it and be in compliance with 119

requirements for operational control.

MR. GROFF: And you actually -- you anticipated that in my questionnaire. I was just interested to hear a little bit about the development of the risk ratings, the elements that is it a 1, is it a 2, what -- and maybe how it was developed first, and then we can talk about how it's been modified.

MR. TANNER: And again, our former POI, Dan Larson, was a big part of that. One of the things that we identified from my prior 121 dispatch experience is, we used to hand a pilot a dispatch release that had a risk number of 26, as an example, which really had no significant meaning to the pilot, what that number meant. So one of the things we wanted to do was develop something that was very meaningful to the pilot. They know what a number 1, number 2 is, and they also know what that letter associated with that risk is. And again, it's something that we've been working on and ever changing to better meet our needs.

DR. GROFF: Yeah, go ahead Mr. --

MR. L. HICKERSON: Again, we're pulling in information from a lot of different places that combine into this. When things happen at other carriers that maybe we didn't foresee, we may put that into our risk assessment. When we've gone to different conferences -- there was a conference we went to recent -- or a few years back in 2014 when this came out, and one of the presenters had made a statement that 35 percent of accidents under Part 135 happen on Part 91 legs. That's a statistic that was

astounding to us. So we thought, you know, that's something that needs to be put in the risk assessment. These are true statistics. So we're constantly evaluating the level of risk that different operations pose and it's kind of a living document.

DR. GROFF: Thank you. And that's actually the remainder of my question. I mean, I was interested in how you monitor and how you've updated. You said it's on version eight, you said? Okay.

MR. L. HICKERSON: Yeah, it is on version eight. And again, as we -- when we first stood this up there was a lot of pieces of the risk assessment that took 119 management approval. As you can imagine, at that time I was the chief pilot, but the DO and myself were getting a lot of phone calls. We've been able to modify that and look at really where the risk at our operation is and tailor it specific to the operations that we conduct.

DR. GROFF: And so finally, just one more clarification. The PIC does this risk analysis and then they communicate that to the OCA and they compare notes and if there's a difference in how those ratings fall, then perhaps they bring in management to have another point of view?

MR. TANNER: Correct. And it's important that we don't want a single point of failure. So when the pilot calls, we expect them to be prepared, to have gone over the weather and whatever sources they have available to them. And then the OCA is going to do that independently. So the two of them are both looking at the same thing, coming to an agreement, and they both have to be in

agreement before there can be a release of the flight. And yes, if it's a level 3 risk, then it's elevated to a third set of eyes, that being the designated manager.

DR. GROFF: And is the risk assessment process and the justification for any changes in that risk assessment process, is that part of recurrent training for all pilots?

MR. L. HICKERSON: Yeah, typically we take a lot of the input from the pilots themselves. One of the large changes that's been made recently, we made a change saying -- you know, it used to be that day VFR was risk 1, and one of our pilots, very senior pilots, pointed out, you know, he thought that IFR should be risk 1 and that VFR should actually be risk 2, that it actually posed a greater risk. We're able to evaluate things like that.

So we're taking information based off of the end user saying where are you seeing the risk in our operation and let's evaluate that. We try real hard not to dictate that from an office and more get down on the ground with the people using the risk assessment to make sure that it's a valuable tool and not just something that we create to look at.

DR. GROFF: And finally, have you made any changes based on external input, either from FAA or Medallion Foundation audits?

MR. L. HICKERSON: Specific to their risk assessment?

DR. GROFF: To the risk assessment.

MR. L. HICKERSON: Well, I know that anytime that we change the risk assessment, Charlie and myself are in constant contact.

So Charlie is a wealth of knowledge and has vast experience operating in Western Alaska. So there's typically not a whole lot that goes on at our operations as far as changes like that that Mr. Gillespie wouldn't know about.

As far as specific changes for Medallion, I don't recall any specific changes. But again, the input is always requested and valued. It's trying to capture what the industry best practices are and see how they apply to our operation, and that's something that Medallion brings to the table.

DR. GROFF: Thank you. That's all my questions.

MEMBER WEENER: Thank you, Dr. Groff.

I understand that Hageland no longer flies the Quinhagak to Togiak route. Was that a business decision or a safety decision, or what kind of decision if something else?

MR. L. HICKERSON: That is correct, that we're not offering scheduled service between Quinhagak and Togiak, and it was a combination of those decisions. We did lack the aircraft after this accident to conduct those operations out of Bethel.

MEMBER WEENER: Another question for you, Mr. Hickerson. To clarify, the DCA is on the business side; is that correct?

MR. L. HICKERSON: That's an accurate statement, yes.

MEMBER WEENER: But they're the ones who are calling the villages and the departure control agents for weather updates and other information, which is really operational?

MR. L. HICKERSON: Yeah, a lot of times -- and Gabe can

correct me if I'm wrong here. A lot of times, a lot of these villages don't call in by phone. It's actually by VHF radio. So actually radioing in what the weather is on the VHF radio, and that's -- it's very commonly used throughout Western Alaska, an actual VHF radio at each of these places. But this is all unofficial weather, trying to gather, again, just a perspective from the ground what are you seeing, what does it look like, because we don't have any other way to ascertain that information.

MEMBER WEENER: Mr. Tanner, once a flight is released -- and assume for a moment there's been an air turn-back. What's the role of the OCC once that flight is released?

MR. TANNER: Regarding an air turn-back?

MEMBER WEENER: For example, an air turn-back.

MR. TANNER: Well, if there's an air turn-back, either the departure control agent or the pilot themselves is going to report that to us after the fact. We're going to capture the data and analyze that to -- again, what we're looking for is did we make a good decision to release the flight and, you know, is this a case where the fog has come in off the coast and it wasn't something that we could have foreseen.

MEMBER WEENER: Along that same line, can you talk a little bit about flight following and who's responsible for flight following, who does it, what does it really consist of, how far does it go?

MR. TANNER: Certainly. We have proprietary software that

incorporates all of our flight following tools into one screen so we can see our aircraft anywhere they are in the state. We've recently upgraded our 207 aircraft to have both Spidertracks and ADS-B. Some prior to that, they only had ADS-B in the 207s, but now everything has -- all of our aircraft have both ADS-B and satellite-based tracking devices. And so we're able to monitor those aircraft anywhere that they are in the state.

MEMBER WEENER: And in the case of an air turn-back, again who makes the decision to do an air turn-back?

MR. TANNER: That is with the pilot, and the only reason that they're going to do an air turn-back is because they've encountered weather that won't allow them to continue. So either they're IFR and they don't have the minimums and they need to divert to an alternate, or they're VFR and they recognize IMC conditions ahead and they will either turn back or divert to an alternate.

MEMBER WEENER: So flight following is strictly advisory?

MR. TANNER: That's correct.

MEMBER WEENER: Okay. Does the Tech Panel have more questions?

MR. WILLIAMS: Yes, sir, we do.

MEMBER WEENER: Proceed.

MR. WILLIAMS: So, Mr. Tanner, just to start off, in the presentation earlier, or maybe it was that you said it, you said that eight OCAs had completed dispatcher training. How many

actually have their license?

MR. TANNER: We have nine OCAs and I'm -- if I misspoke, six of the nine, and that includes myself, have either received 121 dispatch training or they hold a private pilot's license. Of the ones that have received 121 dispatcher training, all but one of those has actually received their certificate. One OCA successfully completed the training, but has not yet obtained a certificate.

MR. WILLIAMS: Okay. Another question for you. Mr. Hickerson had talked about the importance of PIREPs out there for the operations. When these PIREPs get received by the OCA, do they go into the national system?

MR. TANNER: The PIREPs that go into the national system are submitted by the pilots themselves.

MR. WILLIAMS: Okay. So if they just call one in to the OCA, that doesn't get into the national system then?

MR. TANNER: That's correct.

MR. WILLIAMS: Okay. We've heard a lot today about the infrastructure that's out there and how if the infrastructure existed there would be more flights operating IFR.

Mr. Hickerson, when Mr. Frantz was out in Bethel and did a ride-along flight, the infrastructure existed, the aircraft was capable and the pilot was capable. Pilot elected to go VFR anyway. Is this something that would concern you, or could there be other factors that play into the decision?

MR. L. HICKERSON: I'd need more information. I think the -- again, as the chief pilot, Mrs. Witt, had stated, that on paper a lot of these routes appear to be IFR-capable routes. Through our route study we've determined that two-thirds of the destinations we serve are not actual IFR-capable routes. So again, I would need another specific location, weather and such. And again, as we stated, you will go IFR unless you can meet the night VFR minimums. And so again, some more specifics I could probably speak to that, but --

MR. WILLIAMS: Okay. And I think Mr. Frantz can probably speak a little bit better to it.

And one last question for you. Kind of along the same line of thinking, when Ms. Burdick was up and she said sometimes it's the time it would take to get the clearance to go IFR, say, from Quinhagak down to Togiak when the infrastructure exists, the pilot and the airplane. So at what point does the timing for taking an extra 5 or 10 minutes to get the clearance outweigh the safety concerns for being able to go higher?

MR. L. HICKERSON: I think it's an assumption to make that it would be 5 to 10 minutes. It could be substantially longer. What we found during this IFR study -- because we did, as you know, when we -- we had our conversations I believe it was in December, we put out fairly hasty policy that all flights that could go IFR, to what appeared on paper would be conducted IFR, and it was an utter disaster. It did not work. We had aircraft flying around

lost coms.

It became quite apparent to us that lost com procedures, if you were going to operate IFR to all of these airports, lost com procedures would be a normal procedure and that's not what it was intended to be. It put our crews and our aircraft at a higher risk to demand IFR flight in this state because it lacks the infrastructure to conduct those operations.

MR. WILLIAMS: Okay. Thank you. You fly out there more than I do and that's why I wanted to find out as far as, you know, how long it actually takes and to kind of help us understand that. So thank you.

MR. L. HICKERSON: You're welcome.

MR. WILLIAMS: Dr. Wilson.

DR. WILSON: Thank you.

Mr. Tanner, you said that once a flight departs the base that the OCAs will monitor those flights. What is the purpose of monitoring the flights?

MR. TANNER: The purpose of the OCA monitoring the flights is just to -- is for safety, to ensure that the flights get to their destination safely and get -- and return to base safely.

DR. WILSON: Okay.

MR. TANNER: There are other people in the company that monitor the flight for business interest, but not the OCC.

DR. WILSON: So in terms of monitoring the flights to ensure that they reach their destination, when would the OCA take action

regarding a flight? What information are they looking for in the software to let them know that a flight has not arrived?

MR. TANNER: We have a number of things that we're looking for. Our tracking systems have airplanes that are yellow while they're actively reporting destinations information, flight information. If a plane has not reported or -- excuse me -- or pinged with some tracking device for 20 minutes, it's going to turn blue. That would be one indicator.

When an OCA sees a blue airplane on the map they know that they need to find out what's going on. And that happens from time to time, especially with ADS-B coverage not for the entire state. So then they will immediately start to research where that airplane is, contact the base and other sources to find out where the airplane is.

We also have our progress bar in our software system. If the aircraft has not been moved along on its village routing for 30 minutes, then they get a flag that appears on the screen that tells them the airplane has not been moved for 30 minutes and then we're going to initiate steps to locate that and verify where it is.

DR. WILSON: The Spidertracks data that we received for the accident flight, the data points came at 6-minute intervals. How is it determined that Hageland will use 6-point -- 6-minute intervals versus a shorter or a longer interval?

MR. L. HICKERSON: They're the options through Spidertracks.

My understanding is it's 6 minutes and 2 minutes.

DR. WILSON: And why did Hageland choose to go with 6 minutes versus 2 minutes?

MR. L. HICKERSON: I'm not aware of the answer to that at this point. We do have ADS-B coverage that covers most of the state and so the -- this is, again, supplemental to where that coverage is not at -- the state is fairly well-covered, but there's a handful of places that still lack sufficient coverage, ADS-B coverage.

DR. WILSON: So are all aircraft equipped with ADS-B?

MR. L. HICKERSON: Yes, as well as Spidertracks.

DR. WILSON: The village agents, who are they employed by?

MR. L. HICKERSON: They're employed by the company.

DR. WILSON: So they're employed by Hageland?

MR. L. HICKERSON: Yes.

DR. WILSON: What is the reason for not giving them some sort of weather training if they're going to be reporting on weather at these villages?

MR. L. HICKERSON: Again, the role of the village agent is to move the mail or freight from the airport down to the local village, to the stores. The operation's not dependent on whether the village agent's there or not. We may have different people fill in. Trying to find a workforce that's there 7 days a week can be a challenge from time to time. And so again, even if it's not the village agent that we're calling for weather, if we're

doing charters for, let's say, the school, we may call the principal and say, hey, what -- just what does it look like? We know that there was fog there this morning, does it look like there's still fog? I mean, these -- we're trying to utilize all available resources where there is absolutely zero resources. So our options are none or something.

DR. WILSON: Mr. Tanner, what benefits would there be to requiring licensed dispatchers?

MR. TANNER: Well, there's always a benefit to greater enhanced training. Yeah. Yeah, there would always be a benefit to that. I think it could make it a little more difficult to find people. I don't know if we have an abundance of licensed dispatchers in the state. I think that when I got my 121 dispatch license and certificate the examiner told me that I had now earned a license to learn. And I find that to be true. I think that most of the learning happens during OJT, and if I hire intelligent, reliable people we can use the training available to us to get them well prepared.

MR. WILLIAMS: Chairman Weener, we've extended the time, or we have exhausted the time that was left over from the Board of Inquiry. We are ahead of schedule. Would it be okay to go for another 5 minutes on the timer?

MEMBER WEENER: That would be fine.

MR. WILLIAMS: Thank you, sir.

DR. WILSON: Mr. Gillespie, what changes have you suggested

to Hageland regarding operational control since the accident?

MR. GILLESPIE: Somebody coughed right when you were in the middle of that. Could you repeat that?

DR. WILSON: I was asking what changes have you suggested to Hageland regarding operational control since the accident?

MR. GILLESPIE: Well, the changes that are in that letter are -- and what we've been working on is the changes that we've recommended to them.

DR. WILSON: So there's been nothing additional from that letter?

MR. GILLESPIE: No, ma'am.

DR. WILSON: Mr. Hickerson, has Hageland shared any information with the OCC or OCAs and DCAs in terms of reinforcing policies since this accident to try to prevent something like this from happening again?

MR. L. HICKERSON: Yes, ma'am. I think Mrs. Witt hit on that this morning, that we have brought in multiple agencies, and I think the director of safety in the next panel will discuss that, bringing in a company like GHS and having George Schneider's expertise, bringing in company best practices. Also, Mr. Greene will enlighten you on the voluntary SMS program that Hageland has decided to be part of. That's going to company-wide. So we're trying to improve all aspects of the company, not just one particular. I think this, as was stated earlier, is a -- we're up against a large cultural issue. We're taking it head on and

there's not one small fix for this.

DR. WILSON: Thank you. I have no further questions.

MR. WILLIAMS: We're -- Mr. Guzzetti, we're not done yet please. If you could please wait until the end. Thank you.

Mr. Frantz.

MR. FRANTZ: Yes, thanks.

So Mr. Hickerson, I'm going to give you the quick sketch of the flight that Mr. Williams was referring to and then I'll let him re-ask his question.

I was at a -- I was observing on a flight from Bethel to Russian Mission. It was flown VFR and we were flying roughly 1,000 feet AGL. As we approached Russian Mission visibility appeared to be still within what the requirement was. The ceiling was indefinite, but it was near 1,000, perhaps a little higher.

As we approached Russian Mission we got a TAWS warning, a caution warning, and I looked at the display and I recognized -- I saw the terrain ahead. So did the pilot. He did exactly what he should have done. He decided, you know, I can't climb higher because of this weather, I'm VFR, I'm going to turn around. He executed a 180 and we returned to Bethel.

And on the way back I had the discussion with him, you know, well, what about going IFR, couldn't you have gone IFR to this airport? Was this -- did you have what you needed? He said yeah, we could have gone IFR, but as is the case with a lot of destinations, we are concerned with once we're IFR in clouds,

accumulating ice. And many of these stations did not have deicing capability, so the airplane may end up landing at one of these villages with ice on the airplane and then, by regulation, not able to depart because there was no way to deice it.

So that was the way it was explained to me and that was the nature of the flight. We returned VFR to Bethel and that was the conclusion.

So now I'll let Mr. Williams re-ask his question.

MR. WILLIAMS: So, Mr. Hickerson, in this situation it almost appears that it's not the infrastructure that was lacking. It was at the station being able to remove the ice. And that may not have been something that had been encountered before. Is that something since then that has been taken into account by Hageland, and this equipment's been distributed out there?

MR. L. HICKERSON: Yeah, I -- thank you. I do -- this is a problem that faces Alaska aviation at every single village. These aren't stations. We're talking about dirt strips typically not supported by anything there. So there's not anyplace to have deicing capabilities. There's not power at the airports in a lot of cases.

What Hageland has done, and we have had in place for a number of years now, we created our own deice sprayer that can be carried in the aircraft. It's a very, very limited quality. Or -- excuse me -- very limited quantity of deice fluid, approximately 5 gallons. So getting a -- getting some fairly small amounts of ice

off of the airplane would be capable.

But no, there is not a good answer for the removal of ice, and it's something when we talk about the risk to our operation and managing the risk at our operation, deicing is one of the things that we have to deal with that I don't think other folks maybe in the continental United States deal with in the same facet.

MR. WILLIAMS: Okay. Thank you.

Mr. Chairman, that concludes the Technical Panel questions for Panel 2.

MEMBER WEENER: All right. Very good. Now --

MR. GUZZETTI: Mr. Chairman, may I ask just one quick follow-up question to --

MEMBER WEENER: If it's a follow-up or clarification, yes, go ahead.

MR. GUZZETTI: It's a clarification for Mr. Gillespie. In the discussion about the VFR, for commercial VFR operations can the pilot make their own observations of the weather?

MR. GILLESPIE: Under 135 they can, yes, sir.

MR. GUZZETTI: And can the weather observation provided by a village agent or someone on the ground supplement the pilot's assessment of that weather?

MR. GILLESPIE: Yes, it can.

MR. GUZZETTI: Okay. Thank you. That's all I have.

MEMBER WEENER: All right. Thank you.

This concludes the questions for Panel 2.

Mr. Williams, do we have any action items from this session?

MR. WILLIAMS: Yes, sir. We have one. We would like for Hageland to provide the reasoning behind the 2-minute interval versus the 6-minute interval for the Spidertracking.

MEMBER WEENER: That concludes Panel 2. We will now take a 10-minute break, returning at 2:20.

(Off record at 2:03 p.m.)

(On record at 2:20 p.m.)

MEMBER WEENER: Ladies and gentlemen, we'll now start our final panel, Panel Number 3, Safety Management.

Mr. Williams, the floor is yours.

MR. WILLIAMS: Thank you, Mr. Chairman. Panel 3, when your name is called please proceed to the stand and remain standing to be sworn. Mr. Stu Greene, Mr. Luke Hickerson, Mr. Jerry Rock, Ms. Debora Walker, Mr. Deke Abbott, Mr. Clint Wease.

Please raise your right hand.

(Witnesses sworn.)

MR. WILLIAMS: Please be seated.

Chairman Weener, these witnesses have been prequalified and their respective experience and qualifications appear in the docket as exhibits in Group 1.

I now turn the questioning over to panel lead, Dr. Katherine Wilson.

DR. WILSON: Thank you, Mr. Williams.

Good afternoon, panelists, and thank you for being here. Starting with Mr. Greene and moving to my right, please state your name for the record, title and affiliation.

MR. GREENE: My name is Stu Greene. I'm the Director of Safety for Hageland Aviation.

MR. L. HICKERSON: And good afternoon again. My name is Luke Hickerson, Director of Operations, Hageland Aviation.

MR. ROCK: Jerry Rock, Executive Director for Medallion Foundation.

MS. WALKER: Debora Walker, Deputy Director, Medallion Foundation.

MR. ABBOTT: Deke Abbott, Manager, the FAA Polaris CMO.

MR. WEASE: Clint Wease, Alaska Region Flight Standards Division Manager.

DR. WILSON: Thank you. We will now proceed with the presentations.

Ms. Gagne, can you please pull up Mr. Greene's presentation?

MR. GREENE: Okay. Good afternoon. As I stated earlier, my name is Stu Greene. I'm the Director of Safety for Hageland Aviation. I'd like to thank the Board for the opportunity to speak today. I will be presenting information on Hageland's safety initiatives and safety programs.

I'd like to start by saying that Hageland is fully committed to implementing and maintaining a formal and proactive safety program. In alignment with SMS and risk-based decision-making

processes, as we analyze our risks and develop policies and procedures to mitigate those risks, we ensure that they meet or exceed all FARs and Medallion Foundation standards. Most importantly, we understand that those risks are ours and we have the responsibility to manage them to the highest level of safety possible.

In 2014, Hageland started its operational control center, as discussed in the previous panel. We believe it is one of the most extensive OCCs among Part 135 operators in the state.

On May 19th, 2017, Hageland formally committed to enter into the FAA's voluntary SMS program, demonstrating our management and company commitment to safety and continuous improvement. In conjunction with this commitment to SMS, Hageland is also in the process of developing and executing a 16-month action plan that will culminate in IATA ISSA certification.

In early January of this year, Hageland developed a seven-point CFIT mitigation plan and committed formally to the FAA to put that plan into action. Outlined on this slide are the seven areas where Hageland has committed to focusing resources and driving improvements to further mitigate CFIT risks.

Hageland has committed to creating a department tasked with monitoring daily flights, reviewing flight release procedures, and verifying operational performance through data acquisition and compliance monitoring.

Currently our entire fleet is outfitted with GPS tracking

systems, and the OCC reviews flight data daily for inconsistencies or abnormalities. One of the many great benefits of this for our company is that our pilots now know that we are able to monitor their flights and ensure they are in compliance with filed flight plans and company procedures.

Going forward, our company has committed to create a Flight Safety Department, which will be nested in the Safety Department, which will ensure -- which will assure compliance with company procedures through data analysis, similar to a Part 121 operation.

Hageland is committed to installing FOQA-type equipment in its entire fleet. Apart from our Beech 1900s, there is currently no off-the-shelf solution for FOQA equipment for the majority of our fleet. Hageland is currently working in partnership with the FAA on its engineering study to identify solutions to this issue. Once developed, data from these systems will be fed into our Flight Safety Department.

Hageland has converted all of its current approved manuals to electronic format in order to facilitate improved interfaces between its manuals and expedite the manual revision process with the FAA.

VFR routes are being developed, where appropriate, and are being risk assessed. In November of last year Hageland conducted an extensive IFR study which identified significant infrastructure challenges with IFR operations in rural Alaska. As a result, Hageland recognizes that in order for it to be able to continue to

support the rural communities of Alaska, it must maintain its ability to operate VFR, when appropriate, but operate IFR when and where it is supported.

In alignment with that understanding, Hageland has put in place policies that promote IFR operation to the max extent that is safe and supported by available infrastructure. Hageland has assigned a risk 3 rating to inoperative GPS systems, which requires specific management approval.

Finally, Hageland has implemented and continues to refine a Professional Pilot Continuing Education Program. The company has enlisted the support of professional organizations, like Doss, USC, and Convergent Performance, to provide training and support on human factors, leadership, professionalism, SMS and CRM. Hageland is committed to developing its pilots and understands the importance this development plays in a successful company and safety culture.

Thank you.

DR. WILSON: Thank you, Mr. Greene.

We will now proceed with the FAA's presentation by Mr. Wease and Mr. Abbott.

MR. WEASE: Thank you, Dr. Wilson, and good afternoon, everyone. The FAA appreciates this opportunity to participate in this hearing.

Today I want to briefly describe the efforts of the FAA and industry to reduce accidents in Alaska. The success of these

efforts is mostly due to voluntary collaborative efforts that go above and beyond the basic regulatory requirements. These efforts gave rise to risk controls meant to assure safer flight operations that include single engine IFR rulemaking, the Capstone Program, weather cameras, the Medallion Foundation, and enhanced surveillance programs, just to name a few.

The first series of slides illustrates the results of our efforts. I won't have time to go into details on each slide, but I will hit the high points and answer any questions on them later, as needed.

As you can see from this slide, there has been an overall reduction of the total number of accidents in Alaska since 2000. The overall rate of accidents in Alaska is on the decline, given the total number of flights hours flown each year in Alaska, as calculated from the FAA Annual Air Carrier and GA Survey, which strives for 100 percent sampling of all pilots and operators in Alaska.

Since 2000 the trend has gone down in the number of fatal and serious injury accidents, or FSIs. This chart illustrates a downward trend in the total number of all CFIT accidents in Alaska, both commercial and private operations, since FY02. However, there is -- there was an increase in CFIT events from 2014 to 2016, which caught our attention.

As you can see from this slide, the total number of CFIT accidents involving only Part 135 commercial operators, fatal and

nonfatal, has remained relatively flat for the past decade, with one or two each year.

This slide shows that when you fold in all the other types of commercial accidents in Alaska, in addition to just CFIT, you can see that there -- a dramatic reduction since FY 2000. This validates the efficacy of risk controls initiated by the FAA and industry in Alaska to reduce accidents. When compared to the previous chart, note that all Part 135 CFIT accidents made up only one-sixth of all Part 135 accidents in FYs '14, '15 and '16.

Since 2000, the total number of fatal accidents for commercial operators has declined slightly. However, more dramatic decrease can be seen in the number of fatalities associated with these accidents.

The Hageland accident data has not followed the trend for the rest of Alaska. This results -- the results for this carrier would seem somewhat cyclical and may correlate to the timeline shown. The blue bars are for all Hageland accidents and the red bars are for the fatal and serious injury ones.

This slide provides some of the higher level actions the FAA has taken to improve safety in Alaska overall. We've engaged with the industry, implemented effective programs, worked to increase coverage of weather reporting across the state, and hard targeting CFIT avoidance initiatives along with the Medallion Foundation.

Perhaps the most significant action was standing up a dedicated Certificate Management Office named the Polaris CMO. I

would now like to hand it over to the manager of the Polaris CMO, Mr. Deke Abbott, to discuss some of the specific actions the FAA has taken to improve safety with scheduled Part 135 air carriers, and specifically Hageland Aviation. Deke.

MR. ABBOTT: Thank you, Clint. Thank you, Clint.

MR. WILLIAMS: Before you get started, it seems we're going to exceed the 5 minutes allotted for the FAA party to complete their presentation. We are running ahead of schedule, Member Weener. Would it be okay to allow another 5 minutes to complete the presentation?

MEMBER WEENER: Yeah, that -- excuse me -- that's approved.

MR. WILLIAMS: Thank you.

Mr. Abbott, you can continue.

MR. ABBOTT: Thank you, Shaun.

The Polaris CMO houses a Certificate Management Team for Hageland which consists of five inspectors dedicated solely to the oversight of Hageland -- two operations inspectors, two maintenance inspectors and an avionics inspector. These five inspectors have almost daily interaction with the Hageland officials.

During a 6-month period in 2016, Hageland was inspected 117 times by our inspectors. That equates to an average of one inspection every business day. The few findings that we did discover were immediately resolved by Hageland.

Following the St. Mary's accident in 2013, we saw to it that

Hageland implemented changes and we're continuing to ensure those changes have taken hold.

Following the Togiak accident, in addition to our normal robust surveillance the FAA CMT reevaluated the carrier's level of risk, as per our normal business process. We validated that we are following our proper documentation procedures for surveillance to ensure we captured all the risks by using the new Safety Assurance System, or SAS. We conducted an internal assessment of Hageland's system design for high risk and we initiated an external audit by inspectors from outside of Alaska to assess the performance of Hageland against their manual system. All this was done to validate that we are following our processes and looking at the right place with the carrier.

As was previously mentioned in their presentation, Hageland entered into an agreement with the FAA following Togiak. Hageland has committed in writing to voluntarily implement SMS into their operation. They implemented a Professional Pilot Program by bringing in outside consultants to provide training in new hire and recurrent ground training. And they have almost finished converting the entire manual system to an electronic format.

In the area of operational control, Hageland has committed to installing FOQA, which is Flight Operational Quality Assurance, equipment on all of their aircraft to monitor flight parameters for every flight. They are developing a department that will analyze the FOQA data to ensure compliance with manual

requirements. Hageland has already elevated the risk of an inoperative GPS, requiring specific management approval to fly. They have modified their Cessna 208 checklist to verify that the TAWS is selected "on" prior to every flight.

The agreement also addresses VFR routes. Hageland has committed that all VFR routes will be conducted on a GPS route with minimum altitudes, visibility and ceiling assigned for day/night operations. Most routes will use direct routing flown with GPS. Route parameters will be entered into the management software system for an authorized flight release.

The safety culture -- and this was captured at a blog and I think this shows the culture challenge that we're working against. I want to conclude by showing this slide, which are excerpts of actual blogs from two pilots with differing perspectives. The first blog in red is the culture challenge. Fortunately, the next generation of pilots are open to an improved safety culture, which are depicted in the second statement in green.

This concludes our presentation and we are happy to answer any questions you may have. Thank you, Mr. Williams.

DR. WILSON: Thank you. We will conclude with Medallion's presentation.

MS. WALKER: Thank you, Dr. -- well, let me get this. Thank you, Dr. Wilson.

Medallion Foundation appreciates the opportunity to participate in this hearing. Medallion is a nonprofit

organization. Our members volunteer to participate in our safety programs. These programs are rooted in SMS principles and intended to foster a positive culture in -- positive change in safety culture.

In an effort to reverse the tragic legacy of the 1990s fatal commercial aircraft accidents, the Alaska Air Carriers Association formed the Medallion Foundation in 2001 to establish safety standards that exceed FAA requirements. Our mission is to reduce aviation accidents by fostering a proactive safety culture and promoting higher safety standards through one-on-one mentoring, research, education, training, auditing and advocacy.

The list of safety benefits Medallion provides is very long: Mentorship by providing carriers with resources, knowledge and experience. Management engagement and participation creating effective programs, which promote positive safety cultures. Courses, such as TapRooT Causal Analysis, Human Factors, Safety Management, are all offered at small cost to the carrier.

Our programs are proven success in scalability. Whether the carrier has hundreds of employees, or five, Medallion is arguably the most impactful voluntary safety effort in Alaska aviation and it comes at a minimal financial cost to the carriers that participate. These programs are designed with input from the FAA, operators and others in the industry to address the unique operational environments here. Each is designed to challenge a carrier to develop a system that exceeds the federal regulations,

to identify and manage their unique environments and risks, and provide a structure for success.

Our auditors work separately and independently from our program managers. The program manager assists the carrier to ensure requirements are maintained to our standards and the carrier requirements. If a carrier fails the audit, we require a timeline to fix or provide additional data. Medallion's goal is always to continue to move the carrier forward. Removal or suspension is a last resort.

It is important to note that joining Medallion does not guarantee that an operator achieves a Star or a Shield. Some carriers work for years using the tools we provide without achieving a single Star.

Our CFIT avoidance guidance provides a framework to build an effective training program for all pilots. It is a combination of classroom training blended with the use of aircraft training devices or aircraft flight simulators. The scenario-based curriculum focuses on the operational aspects and recognition and avoidance of flying into areas of flat light, whiteout and deteriorating weather conditions. These ATDs and simulators prevent -- permit pilots to safely practice maneuvers that are not possible in the aircraft.

Medallion has been very proactive in working with carriers, our FAA partnership and other safety organizations. Recently Medallion has accomplished the following: Hosted the first annual

commuter summit to address Western Alaska commercial aviation safety issues and CFIT accidents. Ordered and installed a new full-motion flight simulator for crew resource management training. Contributed to an FAA safety video addressing CFIT concerns, which has been presented at our safety events around the state. Formed a CFIT Avoidance Committee focusing on technologically advanced aircraft, training with the equipment and decision-making processes. Developed training video to create a standard for setting up various weather scenarios for CFIT avoidance training. Another video focused on the Capstone navigation equipment used in Southeast Alaska. And developed an improved safety reporting app for smart phones. We are proud to be part of a unique organization producing such impactful safety improvements that have not occurred -- would not have occurred otherwise.

While I have explained what Medallion is, let me share with you what we are not. We are not an enforcement body or agency, nor are we a reporting conduit to the FAA. Medallion was not designed to actively oversee member carriers' operations. Ultimately our member carriers must take responsibility for implementing, managing, overseeing the programs we help them develop and adopt.

Medallion is successful not only because of the programs, but because our operating partners trust us. They trust us with their confidential information and that are we working in their best

interests alone. This element of trust, I cannot emphasize it enough, is the foundation of our success and the success of our partners.

The Medallion Foundation is successful because we provide a valuable service to our members. It is more than a membership. It is a partnership that is intended for the long-term. Our success is continuing to attract interest from other commercial aviation operations in other states.

Due to the limited time provided, it's not possible for me to go into depth on the numerous ways our carriers have taken our programs and expanded and improved them to fit their operation. But I encourage you to talk to our members. Ask them if they feel that Medallion is making a difference in their operations. I encourage you to read the letters sent in by our member carriers where they discuss they've used Medallion programs to make their operations safer.

We believe we are making a difference every day. Our weather is extreme. Our aviation infrastructure is a challenge and the seasonal nature of some our carriers' operations make it difficult to reach out to all of their employees. However, because air travel is essential for so many Alaskans, we know that safety would suffer if we did not offer our services.

Thank you very much.

DR. WILSON: Thank you very much for your presentations. We will now proceed with questioning of the witnesses by the

Technical Panel.

Mr. Abbott, I will start with you. We've heard the term robust used to describe programs throughout the day. Could you define robust for us?

MR. ABBOTT: Is that in the context of the manuals, inspections, whatever I want it to be?

DR. WILSON: Does it have different definitions?

MR. ABBOTT: Well, I think it does. I mean, I think if you look at for what we do for inspections -- you know, for example, we did over 180 inspections in 1 year on Hageland. Depending on how you measure the data, it actually could have been over 200. So, you know, that is a significant look at a carrier of the amount of man hours.

So from a inspection perspective, I would call that robust. From another perspective, from the manual perspective, you know, where does that end? You know, the manuals can always be improved. You're always looking for that one piece that you can pull out of the system that is that little piece of trap that helps make it better. So that would be my answer to your question.

DR. WILSON: Acceptance of risk has been attributed to a number of accidents in Alaska. How is the FAA addressing this, or how should this best be addressed?

MR. ABBOTT: Is that for me?

DR. WILSON: Yes.

MR. ABBOTT: Okay. So the acceptance of risk is -- there's risk inherent in flying airplanes. And anybody who gets -- basically essentially get out of bed, you have to accept some sort of amount of risk. So when we walk up to the airplanes, the piece that I see is what is the risk; is this flight worth it? Is the launch of the airplane worth the risk that's sitting out there?

So does that answer your question, or am -- because it's -- you know, the risk is different for each person when they walk up to the aircraft. And I think, you know, in this particular case I think Hageland's put in controls that help quantify what that looks like for each pilot as they walk up there. A very high time pilot might have a different level of risk than a very new pilot, yet the conditions are identical. So it's how it's viewed through the lens of whoever's going to make that assessment.

DR. WILSON: Is there additional risk that pilots must take flying in Alaska?

MR. ABBOTT: I think not actually. I think that the rules are consistent across the country. I think weather is weather. I think visibility is visibility. The rules of physics apply everywhere. Hard mountains are still hard mountains. So I don't think it's a different risk. I think it's a willingness to accept or even, I guess for a better word, tolerate worse conditions that increase the risk.

DR. WILSON: Thank you.

Mr. Greene, the different safety programs that are in place

at Hageland, what is the primary safety reporting system that pilots would use?

MR. GREENE: The primary safety reporting system that we use at our company is WBAT.

DR. WILSON: And about how many reports does Hageland receive related to flight operations, let's say, every month or every quarter? What would be the appropriate time frame to use?

MR. GREENE: Let's see. I think for the year last year -- I think last year we had about 800. This year, to date, we've had an increase of 80 percent from January of 2017.

DR. WILSON: Do you have any ideas as to why you have the increase in reporting?

MR. GREENE: I'd like to attribute it to myself, but I can't take all the credit. I think it's been -- you know, as Erin has talked to, we've had a really focused effort on safety culture, safety reporting, and it's really getting hammered in from all levels within the company.

DR. WILSON: You mentioned in your presentation the Professional Pilot Advancement Program. Could you explain a little bit more about that and where it is in its phase of implementation?

MR. GREENE: Sure. So we committed to the FAA to build a Professional Pilot Development Program. And then off -- right off the bat we incorporated -- or we went out and we researched and we found professional organizations that could assist us with that

training. We gave the initial training. We met the initial commitment. Where we're at right now is developing that as a steady state program. So we want it to -- we want to then incorporate that in and make it our program that we can then continue to give down the line.

DR. WILSON: Has any training been provided yet as a part of that program?

MR. GREENE: Yes. There was significant training before I got here with Doss Aviation. We've had -- as part of our safety forum and safety week we had representatives from USC, from Convergent Performance, come talk to all different levels within the organization about professionalism, the importance of safety and how to build a positive safety culture.

DR. WILSON: You also mentioned in your presentation that Hageland was tracking inconsistencies and abnormalities in flight plans.

MR. GREENE: Correct.

DR. WILSON: What might that look like? What are you looking for in terms of inconsistencies and abnormalities?

MR. GREENE: So we have some limitations with the data that we're getting right now because we're using basically GPS trackers and we're extracting everything we can from those systems. So right now we're able to look at flight paths to make sure pilots are flying the flight path that they should. We're able to look at altitudes, airspeeds, those types of things.

Obviously, as I also discussed in the presentation, we've made the commitment to incorporate FOQA and to have a Flight Safety Department, and as those processes and as those pieces come together we'll obviously be able to paint a much broader picture of our operations.

DR. WILSON: And when you mention that to make sure that they're flying the flight path that they're supposed to be flying, is that following the VFR flight routes, or what flight path are you looking for them to follow?

MR. GREENE: Mostly a direct route at this point. We are in the process of developing or coming to agreement through our SRA process on what our VFR flight routes will look like. And, yeah, I -- we're in that process right now, so --

DR. WILSON: Thank you.

Mr. Abbott, you mentioned in your presentation that there was an internal assessment of Hageland regarding high risk areas.

MR. ABBOTT: Right. Actually what we did was we brought in inspectors from outside of Alaska to come take a look at how we were doing our job, and then we took their recommendations and then we actually did another 12 different areas of operation, and then went and did extra inspections of those areas. And then, once we finished those areas, then we brought in outside inspectors to see how are we doing reference the design. So the answer to your question is yes, we looked at 12 separate areas of operation functions, for -- I guess for a better word.

DR. WILSON: And that was internal to the FAA, not at Hageland?

MR. ABBOTT: Well, that's sort of true. I mean, we gave them the inspection of what we were going to look at. There's no -- you know, it's 100 percent open. There's no value in us keeping it to ourselves. So yes, we gave that to them. The CMT, the Certificate Management Team, the principal inspectors worked with Luke and Erin, the 119 officials, to work those together, to take a look at it. Now we did our own inspection and we did our own findings, but as we came across items, we worked with the 119 folks to make adjustments as we -- as that came up.

DR. WILSON: And if you could just clarify for me when the time frame of that process was?

MR. ABBOTT: Well, that's a good question. I'm going to -- what do you think, spring? I'm going to say March, March of this year.

DR. WILSON: Mr. Hickerson, you had stated in a previous interview that at one point you had been the CFIT Star manager. What does being the CFIT Star manager entail?

MR. L. HICKERSON: Being the CFIT Star manager or any Star manager, you oversee the actual interface with Medallion and how the program that we have or the -- rather, the audit points that they have match up to our program. I think Mr. Greene had stated that each of these individual programs are ours to manage. The risk is ours to manage at the carrier level. And so what my

interaction would be as the CFIT Star manager for Medallion, how does that match up to what our operation is.

DR. WILSON: And what guidance are you following?

MR. L. HICKERSON: We get a list of audit points from the Medallion for their specific program.

DR. WILSON: So we heard from Ms. Witt in the first panel about how Hageland is ensuring that pilots don't become complacent. I'd like to hear your perspective. Did you have anything to add on how Hageland's ensuring that pilots do not become complacent or take unacceptable risks?

MR. L. HICKERSON: I think one of the most important things here is a consistent message. We've been absolutely unrelenting in our message of safe, legal and best practice. It's much easier to write policy than it is to change hearts and minds, and that's what our task is at this point, is to change hearts and minds of aviators that may have been doing this for a long time. We've spent considerable effort in changing a culture that has existed since the first aircraft flew over this great state and we're just in the process of right now I think it's going to be an industry-wide effort and I think this is part of it.

DR. WILSON: And I believe in Panel 1 we heard that you have 10 bases?

MR. L. HICKERSON: Yes, that is correct.

DR. WILSON: So how do you maintain that consistent message across all of the bases where you might have smaller cultures that

are forming that may be different than management's culture that they're trying to instill in these pilots?

MR. L. HICKERSON: Very good question. Yeah, that's -- that is -- you find it typical in many industries, right, the further away you get from headquarters. So what we've done is we've -- we have started for the -- on the pilot side of the house, on the flight operations, as Ms. Witt pointed out, we have monthly call-ins with each individual shift to convey the message. We have quarterly meetings at this point with the management pilot group. We meet with them during ground schools, for recurrent ground schools. Again, at the initial ground school everybody from the CEO on down comes in to talk. That way there's absolutely no confusion as to what the company's expectations are. It is sent from a top-down message.

On the other side, on the more business side of the function, the station managers have quarterly meetings where all management group is involved to set the expectation so they understand from the flight operations standpoint that safe, legal, best practice is what drives this company. And then just being out in the bases and visiting the bases. It's got to be a grassroots effort and everybody's got to be on the same page, and that's where we spend our efforts.

DR. WILSON: From your perspective, how well are Hageland pilots adhering to SOPs, particularly regarding CFIT, your CFIT avoidance policy?

MR. L. HICKERSON: That's the number one primary objective of my job, I'm in charge of the operational control for the entire organization. Again, we've made considerable efforts to assure that our pilots are listening to what the message is. We've been unrelenting in that message and I believe that the pilots of this company, and other companies for that matter, are listening to what the message is. I think they see what value that has, and that has been a message that the company's sent out. We've worked extensively with our Certificate Management Team. It has been the exact same message from them. We've worked with Medallion. It has been the exact same message from them.

DR. WILSON: So I appreciate that answer. I don't think you quite answered my question. Attitudes are different than behaviors. So they're getting the message, they believe in the message, but are they actually putting that into practice?

MR. L. HICKERSON: I have every reason to believe that they are putting that into practice, yes.

DR. WILSON: And what information do you use to determine that?

MR. L. HICKERSON: We have lead pilots at every base that we discuss this with. We have station managers. We discuss pilot communications with the operational control center and the agents there, what kind of attitudes or conversations they're having. We discuss this with the station managers themselves, the mechanics.

Typically what we find, and I think this is not uncommon to

aviation, you've got to listen for the little whispers in the system. There's typically not a very big event that you're going to be able to capture and say that right there is unsafe. You've got to be able to listen to the whispers in the system, and that takes getting out, communicating with the employees. It also takes the employee reporting system that we've got and being able to capture data and mine it and come up with something with some of sort of meat behind it to be able to make those changes.

So I do believe that they're following the expectations that this company has set and, if not, then they're probably not working for me at this point.

DR. WILSON: We've heard a lot from Panel 1. We discussed a little bit about turn-back data. And help me understand what you're looking at and how you're using that data.

MR. L. HICKERSON: Well, what turn-back data indicates to me is every time we have an air turn-back it means that a pilot made a good decision. That's what the company looks at it as. The analyzation process of it that you reference, that Mr. Tanner does, analyzes it from the company standpoint saying is there anything we could have done to foresee that that flight in particular was not going to be able to make it from point A to point B? Mind you, I didn't say successful because that's not what drives the success rate. We look at that saying, did we make a good decision and did we put a pilot in a position that would have been at a higher risk that this company will tolerate?

DR. WILSON: So how would you go about knowing if a pilot made a bad decision, continued into IMC conditions when they were VFR, or didn't do a turn-back?

MR. L. HICKERSON: For single pilot operations with that specifically, with the visibility piece, there is absolutely no way to know that. Again, that's why we have to listen for the whispers in the system because typically hazardous attitudes aren't just in the cockpit. We are looking for hazardous attitudes in every single avenue of those pilots' lives and that's how we can determine is this somebody that is risk tolerant, maybe have a risk tolerance that exceeds that of the company's expectations and what we demand.

MR. GREENE: I would add to that though, that in the future as our FOQA program develops and gets going we'll have a better and better picture of what exactly is going on inside the cockpits of our aircraft.

DR. WILSON: So, Mr. Hickerson, I feel like we've touched on this issue a little bit, but I'll ask you directly. What is the risk of your pilots not following SOPs?

MR. L. HICKERSON: I'm sorry, can you state that again?

DR. WILSON: What is the risk of pilots not following SOPs?

MR. L. HICKERSON: There's always a risk. Are you talking about what's the worst-case scenario? It's an airplane parked where it shouldn't be.

DR. WILSON: Mr. Greene, you're currently the Medallion

Shield manager; is that correct?

MR. GREENE: That is correct.

DR. WILSON: And what does that entail specifically?

MR. GREENE: So basically the focal point of the program manager for Hageland, there are five individual Star managers, each of the Star programs. I'm also the Safety Star program manager, but I'm the overall Shield program manager, and I coordinate with Medallion to make sure that we maintain open lines of communication, that we are communicating on best practices, and then, of course, I coordinate all the pre-inspections and actual audits, those types of things.

DR. WILSON: So you oversee the Shield and then there's individual Star managers as well?

MR. GREENE: That is correct.

DR. WILSON: And does each Star manager coordinate with Medallion, or do they coordinate through you?

MR. GREENE: They coordinate through me.

DR. WILSON: Mr. Wease, the FAA published a letter signed by you regarding CFIT accidents. We saw in your presentation the driving force behind that was the increase in CFIT accidents from 2013 to 2016. What has the impact of that letter been on aviation safety in Alaska?

MR. WEASE: First of all, let me say that there was a strategy behind the letter to begin with. And we had identified best practices out there in the industry. We kind of huddled

together ourselves and we come up with a strategy to, first of all, work with the Medallion Foundation, since Medallion works with about 50 some odd operators in the United States, or in Alaska, that have the CFIT program. So we thought no better place than to try to infuse some of those strategies within their -- the program. We met with Medallion. Medallion was agreeable. They took a look at it. They went back and wanted to integrate some of those strategies in with -- where they saw fit, you know, either within the CFIT Star or the Operational Control Star.

We then follow on to that, we had our annual commuter summit sponsored both by the Medallion and the FAA, where we bring in the larger commuters in Alaska. And we had a discussion with them about CFIT avoidance and we kind of took some of the highlights out of the letter. And then of course Medallion made a presentation on the changes they were proposing to make to the CFIT Star.

And then subsequently we published the letter. The letter was really more of not this is how you're going to do it, but here is the hazard and have you looked at this, this and this. Because we recognized that there may be carriers out there that have some best practices that we may be able to learn from. And so we wanted our -- we wanted to put the message out there. We wanted to have the CMTs and the office managers follow up with an initial contact and then follow up again. You know, make sure the carriers were aware and then follow up again to see how well

they've done and then document that.

And for example, I can tell you that, you know, I keep touch with all the office managers, and I know that Mr. Abbott here has been working with every one of his carriers to see what they've been doing about that and what changes they have made. And so yeah, we've done that kind of follow-up there to see if we can -- you know, again, it's a hazard and what are you doing to mitigate the risk. And we want to make sure that there's -- there was an awareness out there and create desire to want to make changes, if needed.

DR. WILSON: Have you seen that desire to want to make changes?

MR. WEASE: Well, absolutely. I think the industry is behind trying to do things. And there are some best practices out there. Every one of these operators has a different size and scope to their operation and, therefore, they need to have different controls in place tailored to their organization. So that's why we didn't want to make it kind of a finite deal, you will do this. We didn't want to be prescriptive in the letter. We wanted to allow the carriers to tailor it to their needs.

DR. WILSON: Ms. Walker, you mentioned in your presentation the TapRooT analysis. Could you please explain what a TapRooT analysis is?

MS. WALKER: We are a licensed agency to teach systems, improvements, TapRooT Route Cause Analysis and Investigation

course. So we provide that as an opportunity for training for all our carriers. We require all our carriers to at least have two TapRooT trained individuals. We send our own staff to the 5-day train the trainer course so that they're qualified to start training and start working with the carriers.

We track all the training that we provide for our carriers to make sure that they at least have those TapRooT trained individuals. On top of that, we also provide a service to our carriers that if they do have an accident or an incident or if they just wish to be proactive that we will facilitate a TapRooT.

DR. WILSON: So taking it maybe to a more basic level, just what specifically is done as a part of a TapRooT analysis? If a carrier was to do a TapRooT analysis, what would they be doing?

MS. WALKER: Oh, I'm sorry. We expect them to conduct an investigation prior to sitting down in a group. Then once the investigation they believe is completed, no matter what they pull together, then we'll sit down and work through the system itself. We'll devise a timeline. They will devise a timeline, they'll agree to what that timeline is, and then they start working down through the process of answering the questions that go along with the system of TapRooT. From there they'll develop causal factors and ultimately maybe some root causal factors of which they can develop some corrective actions and develop a corrective action plan.

DR. WILSON: And are carriers, Medallion carriers, required

to do this following an accident?

MS. WALKER: Our carriers are all now required to conduct a TapRooT. Prior to, what was it, 2016, February, it was only our Shield carriers who were required.

DR. WILSON: So was Hageland then required to do a TapRooT analysis following this accident?

MS. WALKER: They were required, yes.

DR. WILSON: And have you had any interaction with Hageland regarding their TapRooT analysis?

MS. WALKER: I had numerous conversations with the director of safety at the time, and then when Stu came -- Mr. Greene came on board, I had a meeting with him about the TapRooT.

DR. WILSON: So Mr. Greene or Mr. Hickerson, what is the status of the TapRooT analysis regarding this accident?

MR. GREENE: So we have completed a root cause analysis, TapRooT.

DR. WILSON: Can you share the findings from that?

MR. GREENE: I would say that none of the findings that came from that were inconsistent with a possible cause of CFIT, but we are still awaiting the results of this investigation and we'll then fold those findings into our corrective actions.

DR. WILSON: Ms. Walker, is there a time frame when a TapRooT analysis must be completed?

MS. WALKER: There is now since we implemented an administrative hold policy in which we're requesting our carriers

to conduct a TapRooT within 30 to 45 days following an accident.

DR. WILSON: And what if a TapRooT analysis is not completed in that time frame?

MS. WALKER: I'll let Jerry answer that question.

MR. ROCK: Well, it's a requirement of the program, so if they do not complete it, then I'll be advised of that and we'll take some action. Usually we give everybody 30 days to correct an action. So they can correct the action. If they don't correct the action then they'll probably look at either suspension of the Star or revocation of the Star.

DR. WILSON: Okay. So that I'm clear -- so they would have the 30 to 45 days to do it. Then if they miss that mark they would have 30 days to complete it based on a corrective action.

MR. ROCK: Yeah, and the reason is, is -- you know, luckily in my career I've only had to go through one accident, but you're pretty busy, with the NTSB, the FAA. So the board gave us some guidance to go out to 60 days, and if -- you know, depending on how involved they are with it.

DR. WILSON: Mr. Rock, how does Medallion encourage its carriers to include the Star elements into their approved training programs?

MR. ROCK: Back when the program first started there was no guidance as far as from the FAA on the program and so a lot of this got put into manuals. And so a lot of the carriers had these manuals that kind of said how they dealt with the Medallion

program.

You know, we started as a board, and I've been on the board of directors since Medallion started, to kind of push the move away from these manuals. And when I took over executive director, I instructed our program managers moving forward that we wanted to see these incorporated into the carriers' manuals.

To date -- and to be fair, you know, the FAA really has no guidance for that. So when you have inspectors that don't have any guidance it's a little troublesome. And Mr. Wease and me have been talking about that for the past few months, that we're probably going to have to look at some guidance that those can actually be put into those manuals.

Some of the carriers, for some of the easier things when you look at maintenance, CAST systems, when you look at our ground handling, they -- that's pretty easy to put into their manuals without, you know, affecting the guidance. But when it comes to operations, and especially with the CFIT, there's some difficulty there with how that would -- how the oversight would look within FAA.

But this spring I started traveling with the program managers to make it aware to every one of our carriers as we did pre-audits that we expected them to start moving that into their programs, that we weren't going to continue to accept these manuals. And really I sent out a letter that talked about that back this year, that we were having -- we were going in the operators and we were

seeing change in personnel that really created an issue of the new person coming in not understanding the program, even though they're required to have somebody as a backup in the program. And so that was kind of a push to where when they come in it's not that they're having to look at another separate program, that they're -- it's already embedded.

DR. WILSON: What benefit do you see by a carrier including the Star elements into their approved training programs and approved manuals?

MR. ROCK: I think I answered that. It's basically everybody that -- whether it's in their pilot training, their maintenance training, that's going to be already built into their program so there won't be this other manual that might get overlooked or might be taught in another class.

DR. WILSON: Do you think there's any safety benefits from including them?

MR. ROCK: Yes, I do. I think, you know, that's what we're about, so we would hope those programs are embedded into their programs.

DR. WILSON: Mr. Wease, when auditing the Medallion Foundation what is the FAA looking at?

MR. WEASE: We conduct basically kind of an audit that's -- it's -- it looks at an operational area, then it does look at finances. Under the agreement that we have with Medallion we conduct semiannual audits of their programs, and the way the

agreement's laid out, they have programmatic areas that they have funding for and responsibility to execute.

Our auditing team develops a list of questions and then they go over and look for objective evidence from Medallion that they've actually completed this task or have spent X amount of dollars. So they not only work on the operational side of the house with Medallion, but they also work on the financial side of the house to conduct a comparison to see that, okay, if you said you spent $500 to go out and do this training, you know, where's the receipts, did it actually occur.

So we conduct that audit. And part of making up and preparing for that audit, we -- our auditors have copies of the quarterly reports required by the Medallion Foundation they're required to provide. And then in addition to that audit, from the financial side of the house, Medallion is required to have an independent OMB certified auditor come in and audit their financials annually. And then they provide us that data and then we forward it on to our -- the contracting officer responsible for overseeing -- or responsible for administering the contract piece of it.

DR. WILSON: How does the FAA evaluate the effectiveness of the Medallion Shield Program in improving aviation safety?

MR. WEASE: Well, I think when you look at all the -- when you look at the reduction in accidents across the state, Medallion has had to have had an impact. In other words, they are not a

regulated entity, like Hageland, that we would go out and conduct inspections on. We have no statutory authority to be able to do that, other than the -- we have the other transactional agreement with them.

But, you know, when you look at all the programs in Alaska, and you have to kind of take a look at what -- how Medallion has contributed to that, you have to be -- you know, they had to have had an impact. I mean, when you start a program such as Medallion it takes time, you know, and over the years Medallion not only has -- with their Star Shield Program, but has contributed to reducing accidents in Alaska through the fatal and serious injury accident efforts that that they do, the simulator training devices that they have out there, so -- circle of safety. So there's a multitude of programs that they collaborate with us on to develop and execute.

And so has -- have they -- do we have, you know, hard numbers? No, we don't have hard numbers. But do we know that they're a key element in reducing accidents? Absolutely. The data shows that there's -- the accident trend is going in the right direction. Does that mean that we don't have more work to do? Absolutely, we all have more work to do. It's all about continuous improvement. And Medallion is no different, we're no different, Hageland's no different. All the people sitting around the table, you folks included too, we're all trying to solve a huge safety problem here.

So yeah, no, I would think -- I would say that, you know, Medallion has been effective at what they've been doing.

DR. WILSON: Mr. Rock, how does Medallion conduct an internal evaluation of its Shield Program to determine its effectiveness?

MR. ROCK: We -- so our auditors and our program managers meet quarterly and we look at trends. We look at things they see. We pretty much discuss the audits of the carriers. You know, we average about 50-some audits a year. They're pretty spread out, except probably for in the Southeast.

But we come together. We talk about those. We come up with some thoughts for changes. The way our program is set up, any changes to any of the Star, any of the audit points, requires input or approval from the board. So usually when we see that we want to make changes to one of the programs -- like we did Safety probably 2 or 3 years ago. We just finished up CFIT here ago. We're getting ready to work on operational control. We have a team of not only the program managers and the auditors, but we also bring in carriers that are probably flying in that risky type of environment. We'll have two or three people from the carriers. And, you know, we'll sit and talk about what they're seeing.

You know, one of the -- I can see one of the, one of the big ones I think is a good example on CFIT is we really saw down in Southeast Alaska, and with interviews with pilots, that pilots are coming up in the tourism type of operations that they're here for 90, 120 days, and really were getting very little training on the

TAWS equipment. Most of them weren't familiar with that equipment, weren't familiar with the Capstone equipment.

And so we made some changes to the CFIT that people -- to put stuff in there as far as directed how was the carrier training these folks, the training they were receiving, and looking at all the aspects, at how they would handle a situation if they flew out there and they were to get in trouble, that they had plans ahead of time, prior to getting themselves into it, to either turn around or turn back.

So that's basically how we make the changes to it. Like I say, that's on a quarterly. Those recommendations go to the board of directors. There's a final input from the board of directors and that's how the changes come about.

DR. WILSON: Does Medallion have any -- use any tangible metrics or look at the safety trends or the safety rates of its carriers versus non-Medallion carriers?

MR. ROCK: That's a good -- I like that question. So that hasn't been done in quite a while. If you look at it, the last report that came out was in 2009. That was a joint effort of NIOSH and UAA. And to tell you the truth, that report was finished in 2005. As a federal agency it took them that many years to decide to release. It was kind of unfortunate.

So we've been -- I've been talking with Mary O'Connor. She's the NIOSH rep here in Alaska, probably for about 2 years. We wanted to update that 2009 report. We had to send in a proposal.

We were a partner with her to send in a proposal to NIOSH to get a grant to do that. We got that grant about 3 months ago. And I'm actually just talking about this because I got approval from NIOSH to talk about it a couple days ago.

But specifics in not only looking at the differences and going around the state -- UAA conducts that part of the survey, meet with the carriers, we also put in there to look at the Medallion carriers versus the non-Medallion carriers. We put in there to look at CFIT, for the carriers that have CFIT programs versus the carriers that don't. So we put in a pretty extensive list, which I'd be happy to share with you now that I know I can, that's really going to dwell down on what effect Medallion not only has had on the industry, but, you know, the changes to what we feel. And hopefully to come up with some ideas on maybe things that we could do better too.

DR. WILSON: So I think what's not clear to me now, we have what Mr. Wease said, that there's been a lot of programs in place, Capstone, the weather cameras and the Medallion Foundation, but how do we separate out Medallion's impact separate from these other programs? So do you feel that this new research that's being done, this new survey, that we'll be able to parse that out more clearly?

MR. ROCK: Yes, because we've put pretty much a major -- we've separated it out from the rest of the survey that'll be done.

DR. WILSON: Mr. Hickerson, how would you characterize the turnover of pilots at Hageland?

MR. L. HICKERSON: I would say leading up to or through 2016, turnover rate was, I want to say, four and a half or five pilots per month, statistically speaking. And since February when we reevaluated and adjusted our compensation policy, we are at approximately one.

DR. WILSON: Prior to adjusting the compensation that you're discussing, do you think that the turnover rate of pilots had any effect on the culture at Hageland?

MR. L. HICKERSON: Good, bad or indifferent?

DR. WILSON: Yes.

MR. L. HICKERSON: I think there's a couple of different ways you can look at changing cultures of a company, and to that effect I think that turnover has the potential to be a very good thing. You're bringing in new ideas, new people, people without or employees without preconceived notions about how things are supposed to be done. But at the same time, you can't get rid of all of your long-term employees and lose the experience.

So there's a fine balance between maintaining employees and maintaining pilots that have a high level of experience and making sure that they're operating inside the box that the company has built for them, so to speak, but also bringing in new blood, to make sure that the newer pilots coming in the door understand what the expectation is. And it's a very multi-step process to change

the culture, but that -- you know, turnover is one way that you can change culture.

DR. WILSON: Mr. Rock or Ms. Walker, going back to what was discussed in the presentation about putting a carrier on an administrative hold. How long -- first of all, what does that entail? What does that mean to be put on an administrative hold?

MR. ROCK: I'll go ahead and answer that. So when a carrier has an accident, in the past we've just required a TapRooT and for them to come up with causal factors and then to come up with corrective actions. And our program manager follows those and then at the audit we see -- each year that we do, we kind of see where those are.

We made some changes basically because a lot of this was defined in our policies and procedures. It kind of gave the executive director a lot of leeway in how to deal with accidents and carriers that were in trouble, and I wasn't comfortable with it. The board understood where we were coming from. They saw the accidents were happening, and it took us probably about a year, year and a half to get pretty much kind of concurrence to where we weren't going to run carriers out of the program, but that we could continue to keep them in the program, but not give them any recognition until we saw the corrective actions working.

So basically if they have an accident they have to notify us within 10 days. As I told you on the TapRooT, we give them time to do that because we know you folks and everybody else in there.

Once the TapRooT is completed they have to come up with the corrective actions. We'll go back and look at them in 6 months. We want to see that the corrective actions are working. And then we'll look at them again after 6 months, either at their base month of their audit or within 6 months later. And if we do not see that the corrective actions are working or in place, then I'll take it back to the board of directors and we'll made a -- a decision made on whether the carrier will remain in the program.

But during that time the carrier still is required to maintain all their Stars. They're required to maintain the Shield. They're removed from any recognition as far as from our website. We ask that they take it down and we email them. But we don't want them -- we don't want to be a negative thing. We don't want carriers to lose interest or -- in the program because they feel like they're -- you know, someone's coming in to beat them up. We don't do that. That's the FAA's job. We're here to try to keep the culture moving forward.

Didn't mean anything there, Clint.

DR. WILSON: The administrative hold has been changed since the Togiak accident, correct?

MR. ROCK: Yes, ma'am. It went in effect I believe the 1st of May. We have -- we've had two accidents since then, so we have two carriers currently in it.

DR. WILSON: Was there a discussion about putting Medallion CFIT Star on hold given the accident? Sort of retroactively.

MR. ROCK: For who?

DR. WILSON: For Medallion putting the Hageland Star.

MR. ROCK: We didn't have a process in place for that. And when they had that accident, you know, we looked at their programs. They only had the CFIT Star until 2014, and from 2014 to last July, they got four more Stars plus the Shield. And it takes quite a bit. They dedicated quite a bit of resources to doing that. Our program manager at that time, who had been with us for about 10 years, was over there quite a bit working with them, helping them get the programs in place, and we saw a huge change.

When they had the accident in Togiak I went over and met with Mr. Hickerson, Mr. Hajdukovich. Our board president went with me. And we talked about, you know, our concerns of having another accident, what changes were taking place, what corrective actions were going to be put in place, and they did a -- I mean, they explained to us what, you know, they felt they needed to do. We felt pretty comfortable with that.

When you look at all the CFIT accidents in the state in this last 10 years, I mean, every one of them has the same first line in it, the pilot's decision to fly VFR in the IMC conditions. If you look at every NTSB report, except one, it was the pilot's decision.

We've looked at their programs. We've looked at their programs pretty intensely and to date they still maintain their

programs and have them in place. So, you know, now we have the administrative hold, but prior to that we didn't.

DR. WILSON: Mr. Greene, you mentioned in your presentation that Hageland had -- was entering into the SMS program voluntarily.

MR. GREENE: That is correct.

DR. WILSON: At what stage is Hageland in the process of developing its SMS program?

MR. GREENE: So as far as the formal process, we submitted a letter to the FAA indicating that we were committed to entering into that program, and we began our initial indoctrination training on September 25th. However, I will say that we have a lot of the processes of an SMS program already in place at our company and we have the benefit of having a sister Part 121 operator whose director of safety sits right opposite me. And again, we benefit from a lot of the shared services that we have between those two companies.

DR. WILSON: I'd like to go back to the Medallion audits of carriers. If you could clarify for me, Mr. Rock or Ms. Walker, when a carrier is audited each year, are they audited on just one particular Star, all of the Stars, the Shield as a whole? How does that work?

MR. WALKER: It's depends -- I'll answer -- you want me to answer that? I'll answer that. It depends on what that carrier holds. If they hold only one Star, we'll only look at that one

Star. If they hold multiple Stars, we'll look at those multiple Stars, talking to each one of the program managers with the company as they manage that Star. Look at the document that they have that supports their program, what their program requires, what evidence there may be or that they have or that they say they're going to have to support their processes and their procedures. We look at whether in fact they have conducted their own audit of that program and whether there's been a senior management review of that program, which requires the program manager to sit down and look at their entire program, not just the way the document's written, but look at the feedback that they've received from the participants. Look at the safety reports that may have come in. Look at whatever trending information they may have, whatever those little bits of information that may be floating out there, and how does that affect their program.

That review ultimately may result in some changes. Hageland's, I've seen them change them over the years. It's a continuous process. With the Shield Program, the program manager is primarily responsible for touching bases with each one of those Star managers at the company to see how it's fitting, see if the process are in place, see if the internal audit program that the company has developed. Because that's the last piece, is in fact working and looking at those programs. Because ultimately that internal audit piece is what takes over the job that we have been performing for that carrier for the previous years. So then the

auditor will go back in and fulfill their piece, after the program manager provides that recommendation, by going in and validating that, yes, in fact, the safety program is strong and working or the IEP is strong and working, depending on where the focus is because that changes from year to year.

And then we also do -- with our Shield carriers we do a safety culture interview with as many employees as we can capture. We capture them from the line staff that are part-time, that just came on yesterday, to those that have been embedded in the company for a long time. We go to management. We go to middle management. We go to rampers. We go out into the villages and conduct interviews. We vary that from carrier to carrier. Depending on where they're operating and how they're operating, we may balance that over the course of a few weeks based on whether we can get out there or not. We also try to work with the carrier to make sure that we're not interfering too much with their on schedule.

We provide the results of that -- those interviews. We encapsulate it into statistics so that it's basically raw data we're presenting. We're not giving them any names. We try to de-identify any particular sentences or phrases that might be identified with a particular individual so that it becomes not personalized, but it still has the impact of what the individual has to say about the company. That's provided to the management and we let the management figure out what to do with that

information.

DR. WILSON: As I was reading through the audit points, each of the -- within the purpose of each of the audit points it lists or it states that the purpose is to -- one of the purposes is to determine the effectiveness of that particular Star. What specifically determines that a Star is effective?

MS. WALKER: You know, as a program manager or as an auditor we can only capture one single point in time. We can look at what the company has written down to drive their processes to support their policies. We can look at the evidence that they can provide us, either through training documents or a risk assessment plan or any trending information or safety reports and what they're doing with that. Committee meeting minutes, quarterly reports, you know, whatever evidence they have that supports that. And if they're fulfilling their own promises to themselves which meet our requirements, that's really in a sense how we determine whether it's effective or not. When they reach the Shield point and it's talking to the individual employees, that's a extra validation that -- on whether it's effective or not.

DR. WILSON: So would an accident indicate potentially that a Star is not effective?

MS. WALKER: Not necessarily. You know, we all hate to have accidents happen out there, but if we can -- you know, from our perspective, if the training is -- at the point in time that we look at it the training's being completed in accordance with the

program as it's been written, you know, we'll look at that as being effective.

Myself, when I go out and visit with my operators, you know, I'll have conversations with them on how things are working. I'll look through their program. I'll take best practices that I have seen and heard through the industry, either with my other operators or through participating with safety councils or some of the trade shows that I go to, and I'll make suggestions saying, hey, you know, this program's working good, but have you ever thought about doing X? Or, you know, I saw this, would you be interested in seeing how operator Y does this? And if they're interested, I'll get the two companies together, you know, asking permission from company Y and company X, and let them have that discussion together. I'll step back to help both companies improve.

DR. WILSON: As a part of the audit points for the safety Star, it asks if a carrier has had an accident in the past 12 months. What is Medallion's response if a carrier has had an accident and what is the corrective action that would typically be taken? What would you expect to see on this audit sheet regarding that?

MS. WALKER: It's not the first time I've asked a carrier have they had an accident in the last 12 months and I get the answer yes. And I'll go, did you conduct a TapRooT? Sometimes the answer is yes; sometimes it's no, we did a 5 Whys or we did

the fishbones diagram or they did something else. I go, so what was the result of that analysis, and they'll tell me. They may even come out with this great big sheet of paper or multiple pages saying this is what we did, these are the corrective actions we put in place, and this is -- and these are our deadlines and this is how we validated it.

We leave it up to the carrier to work that process themselves. Like I said earlier, we're always available to facilitate a TapRooT if a company asks for it.

DR. WILSON: Mr. Hickerson, one of the audit points with -- also within the Safety Star states that a carrier is to assess hazards. I would like your opinion on whether CFIT risk would be a hazard and, if so, has Hageland assessed that risk?

MR. L. HICKERSON: Recognize I'm not the manager of the Safety Star, correct?

DR. WILSON: Yes.

MR. L. HICKERSON: Okay.

DR. WILSON: But you are the director of operations.

MR. L. HICKERSON: Absolutely. It's -- we've said this time and time again, that the management of risk is up to the carrier. It's not up to Medallion, it's not up to the FAA to manage our risk. Medallion gives guidelines if we want to volunteer to be part of their program for what we need to do to conduct ourselves accordingly to be part of their program, but it's not their job or duty to manage our risk. Likewise, the FAA determines if we want

to have a certificate that there's certain guidelines we're going to have to abide by if we'd like to have a certificate to operate.

Outside of that, it's our duty to manage our own risk. We take a look at all risks and CFIT, obviously, given the statistics of high CFIT accidents in this state, is high on that risk register.

DR. WILSON: So do you know, has CFIT been -- has that risk been assessed and what the outcome of that was?

MR. L. HICKERSON: The actual risk of CFIT we have, as you've seen earlier, a seven-point mitigation plan of what we think could mitigate part of those. Again, I think Mr. Rock's comment about decision making is very, very important. CFIT accidents don't just happen to 135 carriers in Alaska. This is something that happens outside of just Alaska. We're looking at how to address that in our operation and, of course, given that this is a small community, although a large state, how to address that industry-wide, and anything that we can do in our assessment of the risks that we have, we share through Medallion with the other carriers and hoping that no other carriers have to deal with what we're dealing with today.

MR. GREENE: And I would just like to add, as we are examining our company's risk we hold -- we have a suite of safety meetings that we hold, and during our safety action team meetings we have -- we discuss our risk 3-plus item or reports that we get through WBAT, but we recognize that those WBAT reports are

frequently -- are usually high frequency, low severity type issues for the company.

In conjunction with that, we also have a visual risk register or a heat register where we map out what are those low frequency, high impact hazards or risks for the company, and CFIT is right at the top of that for us. So we understand that it is a significant risk for this company and we're analyzing our ability to mitigate that risk on all levels of the company.

DR. WILSON: Thank you, Mr. Greene. And I have time for one more question before I get the red screen.

So Mr. Abbott, I just want to shift gears a little bit. Hageland's operational control program, how does that compare to other Part 135 carriers in Alaska?

MR. ABBOTT: There are not really any other carriers in Alaska that have a system that's comparable to what Hageland has.

DR. WILSON: What are some of the -- just really quickly. I know we're -- our time is up, but what would you say are some of the best qualities of the OCC at Hageland?

MR. ABBOT: I'd say, you know -- okay, so I think I'd actually have to go to the risk assessment. I'd start there. That's a common document between the -- I always get the DCA and the OCA mixed up, but let's just call it the OCC person so I don't get the terminology wrong. So the OCC person and the pilot are talking off the same common document on risk assessment. I think it's also very helpful that the pilot and the OCC person have to

compare notes prior to release. I think it's also very helpful that they have one-stop shopping. I mean, at any time they can call OCC, which is very similar to what I was accustomed to when I was flying for a living, which is one-stop shopping at a dispatcher. They're not dispatchers, rule doesn't require dispatcher, but it's one-stop shopping. You know, they can always get what they need and they do have people watching them. I think it's -- I think the system they put in place is a powerful system. I think it's very helpful and I don't see that at any other carrier in Alaska actually even close.

DR. WILSON: Thank you very much to all of the witnesses.

The Technical Panel is out of time, so we can move on to the parties.

MEMBER WEENER: Thank you to the Technical Panel. Now we will move questioning to the parties involved, and I think we're starting out with Hageland. Mr. Hickerson.

MR. J. HICKERSON: Thank you, Mr. Chair. I have a few questions to ask. First one, Mr. Hickerson, you were asked a question from Dr. Wilson regarding risk and CFIT. We've talked a little bit about turn-back, so go back 3, 4 years ago. Do you have any numbers regarding turn-backs, what's your experience tell you and what is happening now regarding turn-backs and how it applies to potential CFITs?

MR. L. HICKERSON: The company did not have the ability or make the efforts to track turn backs at that point. In the last

3, 3½ years since I was involved in management, so far we have been developing more and more systems to track turn-backs.

I started flying in this state in 2003 and I can tell you the cultural shift in the pilot group industry-wide has changed substantially, not just at Hageland Aviation, but across the industry. The idea of turning around 10 years ago was an unheard of concept and shunned by not only the other pilots at that individual company, maybe other companies and carriers alike.

I think what we're seeing now is just the beginning of an exciting cultural shift where not only companies are supporting the pilots making good decisions, but more importantly the pilots are supporting pilots making good decisions. And I think that is instrumental in changing the outcome of these CFIT type accidents. I think it's instrumental in driving a culture of safety.

MR. J. HICKERSON: Thank you. My next question is for Mr. Greene. Regarding safety, the last panel was asked questions regarding pings and tracking in 6 minutes, and one of the additional safety initiatives we put in place is regarding that. So would you care to update the Board on that?

MR. GREENE: I would. I do have an update on that. So I think the question was regarding why the 6-minute interval was selected for the Spidertracks units initially. Basically it was selected because all the aircraft had ADS-B on board and basically the Spidertracks were just filling the gap in between. There was significant coverage on the state. So we felt that having that

intermittent coverage, the 6-minute interval was sufficient.

However, in March of this year we went and readdressed that and actually currently our Spidertrack pings every 10 nautical miles. And the benefit of that is it's -- you know, if you have a faster moving aircraft you're not having more distance between each ping, right? So you're getting consistent pings for those aircraft.

MR. J. HICKERSON: Okay. Thank you. My next question is for Mr. Wease. Are there any efforts being conducted by Flight Standards to improve weather reporting in Alaska?

MR. WEASE: Yes, that's a good question. We have sponsored several initiatives. One was we looked at the gap in terminal forecast out there, products, and we worked with our folks, our line of business, to identify 157 airports that have need of area forecast. That got routed up through to the National Weather Service. National Weather Service is working on what they call forecast guidance, additional forecast guidance. There's been some briefings to the Alaska industry council on that and I think in the near future here we plan to see some additional forecasting through a system they call LAMPS.

In addition to that, we -- because we set the standard out there for carriers to operate, there is -- we sponsor 20 additional AWOS sites through the program office. And just recently here we heard that there's a possibility of an additional -- or a total of 40 are being programmed in for 2020, I believe

was the date.

So yeah, no, we understand that. Our 220 branch, our -- we call the NextGen branch is very active in flight procedures and have been working that issue.

MR. J. HICKERSON: Okay. Thank you.

I've got some real quick ones. Mr. Rock, one of the questions was asked regarding how quickly carriers should do TapRooTs analysis, that kind of stuff. Considering that the FAA and the NTSB take months to do their investigation and the carriers during that first 30 to 60 days are very, very busy, do you consider it to be -- would it be -- would you agree it's not realistic for a carrier to complete a full investigation within 30 to 60 days of an accident?

MR. ROCK: No, because you don't -- you probably don't understand why we require it. We require it because we want you to look at those causal factors and come up with an action plan, not 2 years from now, we want you to come up with an action plan right now and we want to see that in place.

MR. J. HICKERSON: Okay. My time's up. Thanks.

MEMBER WEENER: Thank you, Mr. Hickerson.

We'll now move to the next panel, Honeywell.

MR. ALLEN: Thank you, Mr. Chairman. No questions.

MEMBER WEENER: Mr. Guzzetti, FAA.

MR. GUZZETTI: Thank you, Mr. Chairman.

Mr. Wease, is there a difference -- have you seen a

difference in the safety culture with Hageland today as compared to the 2012-2013 time frame?

MR. WEASE: Absolutely I have. In 2012 -- or 2012-2013 time frame they had a series of accidents. And I think somebody mentioned today that their -- each one of their stations had their own kind of company culture. And at the time when we were conducting investigations we thought that the leadership of the carrier was setting up a system to kind of operate that way, when in fact we found that, that there was the poor pilot culture as well.

We worked with management of Hageland. They of course adopted the Medallion -- worked with the Medallion Foundation. They made the -- they developed the OCC and several other initiatives that they had. And I think what was really striking when I read the factual report and I read the -- some of the interview summaries of the employees was there was a cultural shift there with regard to turning around. There was no pressure for them to go. The flight crews enjoyed working for the company. As a pilot myself with 16,000 hours of experience, two-thirds of that in Alaska, I've been there, done that, got that t-shirt, and I understand when there's the pressure on you to fly. Okay?

I can tell you this, that there -- the sense that I get from going out there -- I've attended their daily pilot meetings. Prior -- you know, Mr. Abbott and I took a trip out there last summer, couple summers ago there, and we attended the pilot

briefings that they have. We saw -- we see a real commitment from the management of the company on down to the pilots to conduct safe operations.

MR. GUZZETTI: Okay. Well, in that regard, then, so sometimes when accidents happen it could come down to the actual pilot. And so Mr. Abbott, I'd like to ask you, you know, from a -- someone that has a little different background than Mr. Wease, you're kind of a transplant to Alaska. You did a lot of your flying in the Lower 48, you're a Marine Corps combat veteran, you were the -- in the Lower 48 you were a director or a chief pilot of a very large 121 air carrier. You come to Alaska a few years ago. So as someone that's kind of new to Alaska, I'm interested in your perspective about the notation of this bush pilot culture. Do you see that that continues, that could continue to be a major challenge to CFIT accidents?

MR. ABBOTT: I think it's frankly the bulk of the cause. Well, let me back up. I think it's important for a little bit of history. You know, aviation Alaska is about 100 years old. And back when that started, the need for an airplane to show up at XYZ village was actually possibly life threatening. If they didn't get in there in the next week or two, you know, food was going to run out. There were actually major reasons that had to happen.

Therefore back then, 100 years ago, let's just say for sake of the discussion, people applauded that behavior. That was good behavior. That was this is the kind of person you want to hire.

And as we forward, today that's not necessary. I mean, Hageland I don't think is delivering life-threatening stuff out to the villages. They're delivering non-life-threatening stuff for the very most part.

But that culture has come down through and I believe still exists today. The culture of a 121, which is very much the rules are there, they're non-negotiable, they're not open for interpretation. Whereas, what we see here is we see -- because when I first came -- you're right, I am new. I mean, I was shocked. I was like, I'm -- wow, this must be a one-off; I'm having a hard time understanding this. But then as I watch more and more it is an attitude of, you know, we push the airplane to get where we're going. I think that's a leftover from decades and decades and decades, and we haven't truly gotten it to the point where folks understand the rules are there for a reason and if we stick to them we can drive this problem down. But it's got to be a desire. The procedures are there. These airplanes are beautiful, they're very well-maintained, but at the end of the day if a pilot makes a choice, that's a conscious choice.

MR. GUZZETTI: Okay. Thank you.

And Mr. Rock, how do you respond to some people that might say that all Medallion is, is just some shallow rubberstamp, like a Good Housekeeping seal of approval? You take a bunch of money from a carrier, you give them a Good Housekeeping seal of approval and you just ignore them. What would you say to those critics?

MR. ROCK: Well, they're not involved with the Medallion program. But the -- I mean, our fees are quite low. I mean, Alaska Airlines is our biggest carrier. We spend more money going and auditing their stations than what they pay us. You know, they pay us $3500 a year. Most of our carriers are probably in the $600 range, and for them too we have to travel around the state, we have to inspect their operations as part of the Shield Program, make sure that culture exists not only here, but at those other bases.

If you look at IOSA, ISBAO, I mean you -- they give you an audit point, they tell you tell us when you're ready to be audited. They probably -- the company probably hires someone to get them prepared for that and, you know, the audit probably costs them $10,000 or $12,000. We don't do that. We'll audit any company as many times as they want.

I did want to clarify that. Where we once -- where we did only audit once a year, that also has been a change to the program. We're going to not do the pre-audits. We're going to do the reviews at 6 months and then we're going to do the audits once a year. But no, it's quite different.

MR. GUZZETTI: Thank you very much.

MEMBER WEENER: Thank you, Mr. Guzzetti.

And the Medallion table, Mr. Prewitt.

MR. PREWITT: Yes, sir. Just get this -- this is for Mr. Wease. We've heard today that there's no regulatory

requirement for a CFIT program. There's no official guidance really out there to build one. How would you assess the CFIT program that the Medallion Foundation has put in place in terms of quality and effectiveness towards reducing the risk here in the state of Alaska?

MR. WEASE: The challenge that you have with something like that is now you're building a program, if you would, based on best practices throughout the industry in Alaska and taking a audit -- developing an audit system based on -- that goes in, takes a look at what the -- the carrier builds the program, okay? Then Medallion goes in and does the -- audits the carrier's program. So the carrier really owns that program.

But I think when you look at what we're doing here is we're really trying to put a control in place to change the culture of an organization or change the culture of a pilot out there. So I would -- you know, Medallion has been -- in my opinion, Medallion has been very effective at building a CFIT program where they integrate the scenario-based training into the flight training program for their member carriers.

MR. PREWITT: Thank you. So you think it's an effective program and an added value?

MR. WEASE: Yes.

MR. PREWITT: All right. Thank you.

This is for Deb or Jerry. A little discussion on the administrative hold, why we chose that word over suspension,

revocation or some other more negative term. Could you provide a little more clarity on that?

MR. ROCK: I guess I'm not quite sure of your question.

MR. PREWITT: Well, the fact that it's not -- doesn't have any negative or positive --

MR. ROCK: Oh, okay. Yeah.

MR. PREWITT: -- inference.

MR. ROCK: Yeah. It -- yeah, it's not meant to be a negative or positive to the carrier. I think I covered that, is we don't want the carrier to get discouraged and drop out of the program. We want them to maintain their Shield, we want them to maintain their Stars, and we want to work with them to get back to where they were.

MR. PREWITT: Okay. Thank you.

Mr. Rock, you said you had a meeting with the president of the air carrier after the accident, Mr. Hickerson. What were the results and what were your feelings after that meeting?

MR. ROCK: Me and Mr. Ryan both met with them. We felt that it was a very productive meeting. We wanted to make sure we had a clear understanding of where they were going, how they were going to get there. I think Bob kind of put it in perspective. You know, he builds -- you build a box, you give -- as we've talked about, some of the best equipment you can imagine in an aircraft and you still have pilots that go out there and you make the wrong decisions and, you know, how do we deal with that?

MR. PREWITT: Thank you. That's all my questions, Mr. Chairman.

MEMBER WEENER: All right. Thank you. We are set for a break here. Let's reconvene at 15 after. Thank you.

(Off record at 3:54 p.m.)

(On record at 4:15 p.m.)

MEMBER WEENER: We will now start with the Board of -- excuse me -- Board of Inquiry. We'll start with Dr. Loren Groff.

DR. GROFF: Thank you, Mr. Chairman, and thank you to the panel. First question I'll ask to both Mr. Abbott and Mr. Wease, but I'd also be interested to hear from Mr. Greene and Mr. Hickerson.

This morning, and actually throughout the day, we've heard of the variety of challenges of infrastructure and supporting systems, communications, things like that, that aviation in Alaska face. And it's also been pointed out to us that it goes even beyond the availability of internet and deicing services, but in some locations there's no building, there's nothing there to support the pilot. So one of the things that we heard in this panel was an intent to adapt SMS or to voluntarily join the SMS program. I know that system was born out of the scheduled commercial aviation world.

Is it feasible to adapt SMS to aviation in Alaska and how do you think that might go? Any changes that might be necessary to adapt sort of the FAA model of SMS to Alaska?

MR. WEASE: Yeah. No, that's a good question. And I think that really all it would take would be a change to the applicability of Part 5. Okay? To require schedule -- well, actually you could require scheduled air carriers and air tour operators to have an SMS. And I think I believe in the human performance report there, there was a safety recommendation from the Transportation Board to have SMS for all Part 135 carriers. And I believe that's a -- I believe that's a must. Because, number one, you identify the hazards; you run through a risk management program and you appropriately mitigate those risks.

So no, I would -- if I was king for a day that would be my one wish. In addition to all the infrastructure things that we're talking about, because I think pilots need to have -- be able to make good decisions. They need to have -- they make those good decisions based on data. Data means they got to have good weather. They got to have weather reporting points to be able to make those decisions. So I think, yeah, from my perspective, no, I would agree with that.

DR. GROFF: Any additional comments that anyone would like to add to that?

MR. ABBOTT: I'd say on the SMS piece, you know, the SMS recognizes the hazards that are out there. You know, the building or lack of a building, then that would be addressed through the SMS. You know, you look at, okay, that's a problem. How would we fix it? What would we do to make that problem go away?

So I think 135 scheduled SMS -- and, you know, there's not very many of them out there either. You know, we're going to have to learn as we go through that. But I don't -- I see no reason that that model can't be applied to 135 scheduled.

MR. GREENE: Yeah, I would agree. You know, in the environment that we operate up here we have additional hazards. We have less infrastructure. We have just across the board, communication, weather reporting, those types of things, and the SMS process is that closed-loop process allows you to identify those, assess them, manage them and then monitor them to make sure that those barriers or those mitigations that you put in place are effective. So, you know, I think integrating those processes into our company in the environment that we operate are absolutely critical.

DR. GROFF: Thank you. And I want to make a distinction between sort of a required SMS program that 121 now has and the formal voluntary program option for 135. And I think that's really what we were talking about is that. So if an operator such as Hageland has stated their intent, wants to participate in FAA's formal SMS Voluntary Program, how do they go about submitting an SMS implementation plan to the FAA to make that happen?

MR. ABBOTT: Okay. So it essentially starts out with a letter of intent, and the reason for the letter of intent in simple terms is that we, FAA, don't spend a lot of man hours on someone who's not actually committed. And so the letter of intent

says, yes, we are committed both intellectually, philosophically, financially to doing this.

The next piece, which is we, the inspectors in Alaska, we don't have SMS expertise. So we bring in the FAA SMS office who does have that expertise, and they will absolutely work with the principal inspectors, with me, and the certificate holder to bring us forward in SMS. It will be a big learning experience for FAA. It'll be a learning experience for Hageland. I think it'll ultimately be a model for what a large 135 SMS looks like in the country.

DR. GROFF: Thank you. And so once the Part 135 operator's voluntary SMS would gain an acceptance, you said you'd bring in the experts presumably from other areas within the FAA, but it would still then eventually revert back to the oversight would be local in a sense, right? So how would the oversight of the voluntary program be performed then? Would you anticipate that it would be similar to FAA's current oversight of the required 121 SMS programs?

MR. ABBOTT: Okay. I would -- I mean, I would anticipate it would look the same. That piece -- you know, what we're doing with 135 voluntary SMS is pretty unusual. And so we will be -- we will have to work with the SMS office, the FAA SMS office, and help the CMT develop the right kind of questions to go into the Safety Assurance System that, you know, we initially talked about because that's the system we use. Ultimately we'd have to figure

out a way, how does all that look, so that the inspectors can verify that the SMS is doing what it's designed to do.

MR. WEASE: Deke, if I could add to that.

DR. GROFF: Yes, go ahead.

MR. WEASE: Yeah. Yeah, the principal inspectors are an integral part of the SMS process. So you just can't have the operator develop an SMS and then not have our principals involved. So the expertise and skill, you know, gets built along as the company's developing their SMS and with the interaction with the principals.

DR. GROFF: So if -- to go back to something that Mr. Rock mentioned earlier. If a Part 135 operator decided that it wanted to use its Medallion manuals, or parts of that procedures, as part of its safety risk management component of an accepted SMS program, would compliance with those manuals and procedures then also be subject to oversight?

MR. ABBOTT: Okay. I'm going to say the answer to that's no. If it's inside a Medallion program, we do not oversight in any shape or form Medallion programs. If they wanted to have an SMS that would be -- ultimately it has to be accepted by the CMT. So we would accept that and that would be therefore in a document -- a manual that we would look at. What they would have on the Medallion side would not be something we would look at.

DR. GROFF: So if I'm -- I want to make sure I'm understanding your answer then. Those elements being added to

their manual, those would just be -- no matter where they came from, they would just be elements added to the manual and they would no longer be -- the oversight would not be of the Medallion, but it would be those elements as they were added to the manual?

MR. ABBOTT: Right. So I'm going to be specific with the language. They would be, you know, subjected to the FAA accepted manual, versus a Medallion document. So an FAA accepted manual, that is where we would look. That's what we would do the inspections and the audits against. We would not go and look at what Medallion had.

Ideally we would simply have everything simply be in just the FAA accepted documents and stop right there. And then if Medallion wanted to audit against that, that would be up to them how they work that. But for us, we do not touch, look at, deal with in any shape or form the Medallion manuals. We do -- because they're not FAA approved or accepted.

DR. GROFF: Okay. Thank you.

MR. WEASE: Can I -- just a --

DR. GROFF: Yes, please.

MR. WEASE: I thought I heard a different question there, so I just want to make sure for clarity sake. So you're talking about regardless of what manual, how it was developed, if they're utilizing it as part of their SMS. Is that the question you were asking?

DR. GROFF: Yes, if they were --

MR. WEASE: How would we look at it then?

DR. GROFF: Right, if they would include it.

MR. WEASE: Okay. All right. Good. So under SMS the carrier has the ultimate responsibility to ensure compliance with rules and safe operations in conducting risk management. So whatever program they use in that, for us we would do the safety assurance piece to make sure the output of that is reaching the desired goal of the company. Okay? So yeah, I would think that's -- in that regard, that would be how you would integrate policy and procedures from -- into your program from let's say Medallion.

DR. GROFF: Okay. So in that case, if they were to include that as part of -- that is included in the FAA's acceptance of their SMS program, it would be their adherence to those elements of the Medallion manual would be what the FAA would be overseeing?

MR. WEASE: Yeah, because we would be looking at the output --

DR. GROFF: Right.

MR. WEASE: -- of their system at that point there. And keep in mind too we would have different -- we would probably have different or custom DCTs to develop to do the data collection piece of it. So yeah, no, I think we would look at it.

DR. GROFF: Okay. Thank you. Thank you for the clarification. I'll pass it on, my time.

MEMBER WEENER: Mr. DeLisi.

MR. DeLISI: Thank you, Mr. Chairman.

Mr. Greene, you mentioned once again the FOQA program that's being installed, the equipment being installed at Hageland. I can't sing the praises loudly enough for that decision. I think it's a brilliant one.

A little background. The Board recently concluded the investigation of a nine fatal Part 135 accident in Akron, Ohio. ExecuFlight was the operator. They were flying a Hawker and the airplane was required to have a CVR, but no FDR and there was no flight data monitoring capability. So to do our investigation we had to take the radar hits and do a full performance study to try to figure out how this airplane was being flown. And what we found was shocking.

First of all, it was in violation of the FARs, exceeding 250 knots below 10K. They set up an unstable approach with a sink rate of over 2500 feet per minute less than 1,000 feet above the ground. Flaps -- full flaps were deployed long before they broke out of the clouds and saw the ground. They busted minimums. Yet what was most disconcerting about all of that was the cockpit conversation between the two crewmembers made it seem as if nothing was unusual. It seemed like the way they flew that airplane every day. And why not; no one would ever know. Without any flight data monitoring there's no insight to see whether your standard operating procedures are being followed, how the crews are actually flying the airplane.

So we made a recommendation to the FAA which I thought was

kind of groundbreaking. It was not for the requirement to put a flight data recorder on the airplane that would have made our job easier in the event of an accident, no. It was to put a low cost flight data monitoring recorder, to require one on all Part 135 operations. The FAA's initial response was a big fat no, they don't see the way clear to ever requiring a regulation for a flight data monitoring capability on a 135 operation.

But I think, as we've talked about today, it is so key to safety for pilots to know that the way they're flying the airplane can be monitored in some level. The identified aggregated trend monitoring, that's maybe the way to make sure that pilots who are faced with that individual private decision that day on how to fly that airplane. They -- if they know in the back of their heads that someone can keep tabs on how they're doing that may really help shift the culture. So I thank you for that corporate decision.

Along those lines, to our Medallion friends, any aspect of the Medallion Star audit points, does any one of them look at whether or not an operator has a flight data monitoring program?

MS. WALKER: I'll answer that. No, we don't. We can put -- you know, we've got in like operational control maintenance nothing that specifically drives to some sort of avenue in which to gather information.

MR. DeLISI: Is that something you might consider in the future?

MS. WALKER: I don't see why we wouldn't.

MR. DeLISI: I think we might come out very strongly in suggesting that that might be a key. And I think it just would be so cool that in order for you to have your Medallion Shield you had to be engaged in some sort of flight data monitoring. So I appreciate that you might give that some thought in the future.

Ms. Walker, you talked about certain entities being members of the Medallion Foundation, versus others that are Star holders and perhaps some that have the full Shield. Do you have any sort of a breakdown for the population --

MS. WALKER: Oh, our numbers?

MR. DeLISI: -- that fits in those categories?

MS. WALKER: So everyone who joins Medallion, it's a voluntary organization. They pay a membership. I believe the numbers are we've got 56 members. Participating members are those who are -- either already hold a Star or have the Shield or multiple Stars, or that they are actively working toward a goal to achieve their first Star.

MR. DeLISI: Okay.

MS. WALKER: And I think those numbers are probably 40, 42. And like I said in the briefing I gave earlier, that we do have a number of members who take our tools, they embed pieces of them into their system, but they're not actively working with a program manager to move forward. They like where they're at, they like the tools they have. Sometimes it's their resources that they

have that they can't have a person dedicated to promoting, documenting, building, actively participating and managing any of the programs. These small 135 operators, you've got the head of the organization who's also a pilot, you know, he's the managing pilot is what he is, so --

MR. DeLISI: Understand. Thank you.

Mr. Greene, does Hageland provide any confidential information to the Medallion Foundation?

MR. GREENE: Well, we -- as we go through our internal audit process we do have the standard, the checklist that we use to do our internal audit, and I believe that the Medallion Foundation purges those after 6 months. I don't know if you would consider that confidential information.

MR. DeLISI: Well, I was asking whether Hageland considers any information that they provide to Medallion to be company confidential information?

MR. GREENE: I mean, safety information by nature can be confidential. I mean, when you're doing critical analysis of yourself it's -- you know, it's nice to know that you can throw spitballs up on the wall without that coming back to haunt you. Right? But I can't think of any specific confidential information that we share with them.

MR. DeLISI: Thanks.

So, Ms. Walker, when you talked about the need for the Medallion Foundation to be very protective of the confidential

information that operators provide you, what sort of information is that?

MS. WALKER: So they don't provide us or necessarily hand over safety reports. Through our audits and through the review processes the program manager, we're exposed to a lot of confidential information. Whether it's the way they've designed their program, whether it's information coming through their safety reporting system, whether it's documentation that they've developed to support their safety committees and the output of the safety committees, their SRAs. That's all confidential to that operator. We see it, observe it, say this looks great, their corrective action plans, and that's where we leave it at.

MR. DeLISI: Sure, I understand that you might see that information and you probably have a confidentiality agreement that you execute with your members, but are you provided that information? Do you take ownership of confidential information?

MS. WALKER: No, we don't. There is the ASAP program that we facilitate. We're the administrator for the ASAP MOU for the carriers across the state, but we don't own that information.

MR. DeLISI: Okay.

MS. WALKER: If that's what you're getting at.

MR. DeLISI: Yep.

MS. WALKER: Okay.

MR. DeLISI: Mr. Hickerson, when Hageland set out to gain the CFIT Star from the Medallion Foundation, did you have to do

anything different, or was it that whatever you were already doing met the requirements for the Star?

MR. L. HICKERSON: I'm going to have to reach back quite a ways. The CFIT Star was gained in 2005. I was a line pilot for a year or two.

MR. DeLISI: Got you.

MR. L. HICKERSON: So I'm not completely familiar with exactly what the company had to do from their normal practices to what they did to gain that Star.

MR. DeLISI: All right.

Mr. Wease or Abbott, when you talk about overseeing the Hageland certificate, aren't there a number of different names that operators use that are flying under the Hageland certificate? Ravn, Era, are those entities all part of the Hageland certificate?

MR. ABBOTT: No, the Hageland -- so that's a misnomer. The -- they have multiple operations under one corporation, but we only oversee the 135 Hageland certificate. They have another certificate, which is a 121, but my office does not have anything to do with them. We only oversee the 135 certificate.

MR. DeLISI: Okay. Mr. Greene or Hickerson, I'm sorry, maybe there was a better person to have asked this question, but I'm trying to get the lay of the land. When we talk about Hageland, are there multiple 135 carriers?

MR. L. HICKERSON: No, it is a single 135 carrier

certificate. There's a parent company that owns two certificates, a 121 and a 135, that are exercised independently of each other.

MR. DeLISI: So what is Ravn?

MR. L. HICKERSON: Ravn is the business name.

MR. DeLISI: It's the business name.

MR. L. HICKERSON: The parent company.

MR. DeLISI: Got you. And is Era a name that still exists anymore?

MR. L. HICKERSON: That is not.

MR. DeLISI: Okay. Got you.

Helicopters. One final question, and Mr. Rock, I'll steer this to you. We have investigated accidents for a number of operators that have participated in audit programs, the IOSA program, ISBAO. Folks have Wyvern audits, ARGUS audits. The TOPS program has some audit standards. We sometimes hear people say that safety is what takes place in the cockpit, that an audit program just creates the illusion of safety, the paperwork is there for safety. How would you react to this concept that an audit program just gives you the illusion of safety?

MR. ROCK: Well, in our program you can't join the program until the owner of that company sits down, talks with me, and we see a commitment that management believes in safety and is going to provide the assets, the people to, from a top to the bottom down look.

So, you know, in our case when we go in and do an audit,

especially of a Shield carrier, that's probably a 24-hour audit. We go during the day and then we go at night and we meet with the ground people at night, during the day. But part of the culture part that we look at is we sit down with probably 20 percent of the employees, depending on the size of the carrier, and go through and make sure that they understand the reporting process for any kind of safety hazards that they have. We look at the culture as far as do they understand their entire safety program and do they understand management's view of the safety program. So we want to know that they're being taught from the top down that the safety program's embedded within their operation.

MR. DeLISI: Great. Thank you all very much.

MEMBER WEENER: A question for Mr. Wease. You indicated that the improvement of the crash rates in Alaska are proof of the Medallion's effectiveness, but were there other safety programs and safety advocates going on at that same time?

MR. WEASE: Yeah, I think I -- what I actually said was that, you know, it's a combination of -- or what I meant to say was there was a combination of all these different programs that are going on: Capstone, Medallion, weather cameras. Every one of them has -- is part of a safety chain that we have, if you would, and you -- if you change that in any way you may impact the reduction in accidents that we have. So we -- but Medallion is part of that, part of that accident reduction.

MEMBER WEENER: Have you worked to try to segregate some of

the effects so that you understand the effectiveness of one program versus another?

MR. WEASE: You know, that's a good point. Because I wrote down here early on -- I think it was Dr. Wilson up there was talking about the -- or somebody mentioned the cultural change, how do you measure -- and really how do you measure the effectiveness of cultural change, you know, or behavior of a carrier. That's the challenge. It's easy to measure how a piece of equipment impacts something, but it may -- it's a little more difficult to measure the change in behavior of an individual or a company or such that -- I mean, we have to continually look at their performance.

It's easy to see with Hageland, you know, over the last -- past 3 years the change in behavior of the management, the change in behavior of the pilots. However, the individual out there, that's the one thing that all carriers, including Hageland, need to be able to trap is that pilot culture that Mr. Abbott was talking about that doesn't follow the rules. You know, so I would think that -- and so that's the -- everybody's -- it's the carrier's responsibility to have systems in place that trap that behavior. So -- and that's a challenge to do that. I mean, if you could give me Dr. Wilson for a few months I'm sure we could probably come up with a way to do that, but we need to assess that.

MEMBER WEENER: So the answer is it's difficult.

MR. WEASE: Absolutely.

MEMBER WEENER: Yeah. In the 121 world in the Lower 48, well, not entirely, the same forcing function back in the late '90s that drove the creation of Medallion also drove the creation of CAST, Commercial Aviation Safety Team. Now, it uses a very different model than what you have here. I'm just wondering if you've looked at the effectiveness of doing a CAST-like model where you get government, industry, the pilots, the safety community all working collaboratively, but in particular working with the data to where -- find out where your worst problems are and work on those first. And then move to identify what the effects were and see what your measurable outcomes are so that you in fact are doing things that are effective. Have you considered some sort of manifestation of that kind of model?

MR. WEASE: Well, I think the first half of that model, we work collaboratively here within the region. Using the data, kind of a data informed approach or data driven approach to identifying the high risk areas that we need to deal with, I think is an avenue we need to look at.

MEMBER WEENER: Because you've got pieces of this that are starting to form. The -- I presume WBAT is a confidential reporting system. You also mentioned the ASAP, and both of those are one of the data sources that go into ASIAS, which is really the basis for the data residents in CAST. FOQA is another big part of that. But having all of that data doesn't do you any good

until you really understand what's in the data, and what's in the data only comes out when you come up with the right questions to ask the data.

In fact, Mr. Abbott, you made the comment that Alaska air operations are capable of achieving the same level of safety as in the Lower 48, producing the same improvements in fatal accident and serious accident rates as any other state. I'm just curious your thoughts about why that doesn't seem to have happened.

MR. ABBOTT: I believe deep down it's a function of this long-term culture that exists in the pilot community. Not just commercial pilot community, but also the private pilot. Maybe it might not be private pilots as a certificate, but pilots not for hire. Where it's a different attitude towards compliance with the rules. And I believe it goes back to -- it's my own personal belief that it goes back historically the 100 years ago and now what you have is you have this has moved forward to where we are today where people are willing to take risks that they wouldn't take anywhere else based on historically this is how I've seen these people do it and generations prior, and now we are here where we are today. And I think we've finally gotten to a place where it's being recognized that's not such a good thing. Just because you can get there is not necessarily good because you took an unnecessary risk to make that happen.

MEMBER WEENER: So basically what you're saying is it's a culture change and culture changes occur slowly?

MR. ABBOTT: Oh, I think it's -- absolutely. I mean, what I think, we're trying to turn a 100-year culture. That's what I believe. I think we're trying to turn a 100-year culture and get it in line with the rest of the country to help get us where we are today, where we need to go away from where we are today. It's very difficult.

The comments and the questions that we get asked as inspectors are, they show that that's still out there. You know, those blogs, I put those blogs in for a reason in my -- in the presentation because it showed this is kind of what's sitting out there. The joy of bush flying, this is a -- you know, flying is joyful, I've been doing it a long time, but this is a job. This is a profession and professions have discipline and rules and the joy piece of it is really not -- it's really not relevant. And we need to pull that out and have folks recognize this is a business and people put their trust in you when they get in the airplane. And that's a culture change.

MEMBER WEENER: Thank you.

Do we have another round for the Board of Inquiry?

MR. WILLIAMS: Yes, sir.

MEMBER WEENER: Yeah. Go ahead.

DR. GROFF: Question for either Mr. Rock or Ms. Walker or both. Given your orientation and the industry where it is voluntary participation and you do get to see sort of the inside workings of an operator as part of the audit program, is there any

capability of comparing or giving an individual operator information about how they compare to the whole? Say, for example, do you compile any information, aggregated, de-identified information about how all of the other audits have gone so that you can give some feedback to an individual operator without identifying any other carriers, except the one you're auditing at the moment, if that makes sense?

MS. WALKER: It does make sense and if you don't mind, Jerry, I'll answer this. It makes sense. We do not aggregate any of the findings or any of the concerns or any of the issues that commonly crop up during the audits or any of the pre-audit activities. They're -- a lot of times they're pretty typical. You know, things aren't signed off as they should be or, you know, the amount of hours weren't accounted for on two or three records.

Where we do accumulate data and present it back to the industry that are participating is through ASAP. So once a year we have a meeting with the FAA, with our participating ASAP members, and the data that we finally started gathering since inception of this ASAP MOU among the carriers is now starting to add some value back to the carriers. So now we can see some numbers that can demonstrate that there's maybe ATC issues. I don't remember what some of our numbers -- off the top of my head. I don't manage that program. We can see where there's, you know, maybe a heightened reporting of weather issues or checklist issues or preflight planning issues that are occurring.

Or a typical one that came out a couple years ago was the number of instances the tail stand had been left in place by the carriers who had tail stands on either the Beech 1900 or on the Caravan. And we announced -- I remember Kent did it. I think he sent out even a notice to the carriers saying, hey, we've seen this increase in this last year of this occurring, we suggest that all the carriers participating implement some sort of program that's going to reduce the number of these reports.

MR. ROCK: Get my answer --

DR. GROFF: Go ahead, yes.

MR. ROCK: -- to some of that to Dr. Groff.

You know, the Medallion Program was built off the sharing ideas. Alaska Airlines was a big supporter of that and we still do that today. When we see trends or we see someone -- our program manager sees someone doing something a better way, we always share that information.

And really ASAP has been a tremendous change in Alaska. You know, I've been in aviation in Alaska for probably 38 years and we've had the ASAP program. It was a pilot project started in 2005 and to date probably, as we've trended it, 93 percent of the reports would have never been known about by the FAA if we did not have the ASAP program. And the other big number, and kind of growing up in aviation in Alaska, is nobody ever wanted to make any changes to their maintenance or their ops manuals. It was almost like forbidden not to touch them. And since the beginning

of ASAP we now see, we have solid numbers of normally about a 64 percent change in the ops and maintenance manuals just off ASAP reports.

DR. GROFF: Thank you. And I think that's actually sort of the basis of the question. We've heard a lot of questions about effectiveness and monitoring effectiveness and actually having measurable information about effectiveness. These are knowable answers to questions, so I think that's an example of implementing that, so the reason for my question.

Mr. Wease, I wanted, just wanted to clarify. You made a statement about the carrier's responsibility regarding safety culture. Would you say that the decisions and actions of an individual or an employee of an operator would be indicative of the safety culture of that operation?

MR. WEASE: It could be, yes.

DR. GROFF: Thank you. And one final question that I had. I know Mr. Rock mentioned some of the trends they see are things like pilots getting very little training, having low experience, having no plans for turn around. Today we heard a discussion of the OCC program at Hageland that is unique. We heard a variety of things that are -- have been put in place, yet in this case the accident pilot was by all accounts not low experience, had had training, had that experience, had a plan to turn around, and yet we still had an accident. I'd just open up to the panel if you have any ideas of how you would explain that.

MR. ROCK: You know, we provide -- we try to provide human factors training every year and, you know, we struggle to get, you know, the right people in those classes. And, you know, if we could provide that to all the pilots maybe we could get them to start thinking about that. You know, I pretty much start every safety meeting that -- and probably in a couple of my newsletters, that there's absolutely no reason to have a CFIT accident ever because if you follow the regulations and you follow the operator's operating GOM you'll never have a CFIT accident.

MR. L. HICKERSON: Yeah, I would echo that as well. Message has been clear from our top management, myself included, any pilot that operates with inside the GOM we can defend all day long. Take one step outside the GOM or outside the regulations and they're completely on their own making decisions not supported by the company, the industry or the FAA. That's something that we're spending a lot of time and trying to capture to make sure that's what each and every one of our pilots are doing.

MR. GREENE: Yeah, and I would add that, you know, just because that individual is a high time pilot doesn't mean necessarily they have a low risk tolerance. Right? So it's our responsibility as a company to own that risk, to build the box, to ensure that our pilots are flying inside that box and then to double down on the safety culture to make sure that pilots understand what the expectation is and that we expect them to be professional pilots and comply with all our procedures.

DR. GROFF: No further questions.

MR. WEASE: I'd like -- did you want to add something, Deke?

MR. ABBOTT: Go ahead, Clint.

MR. WEASE: Yeah, I think it kind of goes to looking at the depth of background or the background of the pilot you're about -- your hiring practices. The interesting thing about both the St. Mary's accident and the Togiak accident, both pilots had quite similar backgrounds, came from a similar operator. And they're all highly experienced. They all were flying IFR-equipped aircraft. They were all flying in underlying IFR airspace, which they could have picked up a clearance.

The interesting thing about the Togiak accident, and I think the thing that carriers or, you know, carrier like Hageland or Hageland needs to really look at and duplicate is the pilot that deviated to the south and west, and figure out why that pilot did that and duplicate that throughout their organization because that was the right decision to make that day.

I mean, you know, there's a lot of pressure, sometimes self-induced pressures that people put on themselves to operate aircraft. And I was thinking as we were -- they were talking about that deviation, I was thinking about my 121 days flying down south. You're on arrival somewhere or you're having to deviate around weather. I mean, you might fly 500 miles just to deviate around weather, but at the end of the day some of those deviations don't add that much more to your flight time or overall operation

because everybody -- you know, the cost, the benefit to the people on board the aircraft, everybody gets there safely in one piece. So that's the key is to duplicate that behavior and figure out what that is.

Go ahead, Deke.

MR. ABBOTT: I mean, you're kind of asking the ultimate question, right? I mean, that's the question, why did that pilot make that choice? I don't know. I think at some point we have to say that if you want to be in this profession then the rules have a reason. You know, almost all the rules are written because of something bad that's happened and if you want to be in this profession this is the behavior that you must display on everything. And it's really -- it's not just the airplane. It's every part of their professional demeanor has to be looked and say -- you know, use speeding tickets, use -- I mean, there's all sorts of measurements there. Do you -- are you willing to say at 2:00 in the morning at the red light do I stop? Yes. And that's what we have to find. We -- I don't have the magic answer, but I do know that's a piece that we have to look at.

MEMBER WEENER: And wrap-up. Do we have a few comments from the Tech Panel?

MR. WILLIAMS: Yes, sir. The Technical Panel has a couple more questions. We'd like to ask for 5 minutes if that's okay.

MEMBER WEENER: Go ahead.

MR. WILLIAMS: Mr. Wease, I understand your explanation that

in your opinion Medallion must have been effective, but at the same time it's difficult to separate the Medallion Foundation from other advances that have taken place over the same time frame. Can you explain within the context of the goals and objectives written into the contracts or cooperative agreements governing this grant relationship what specifically measurable performance outcome data the FAA has collected from Medallion over the past 15 years?

MR. WEASE: I'd have to get back to you on that. Okay? And I tell you why. I mean, I can anecdotally tell you, you know, based on my experience as an aviation safety inspector in Alaska watching Medallion work with carriers that there's been -- how they've been effective in turning around carriers and how they've been effective at not turning around carriers. It's been the carrier's decision in each case. But yeah, we just, I don't think we grab that kind of data.

MR. WILLIAMS: Okay. But you feel that's something you could probably be able to provide? You said you'd be able to get back to me and think you could.

MR. WEASE: I mean -- well, I'll tell you what I'll promise to do. I'll promise to take a look at it and see if we have the data available to get back. Because it might just not be there.

MR. WILLIAMS: And my last question. Mr. Rock, you indicated after an audit you give corrective actions and follow-ups to the participant or the carrier. How long do you maintain these audit

records for each carrier you work with?

MR. ROCK: The audits that we do with the carrier, the audit sheets, they keep those. We don't keep the audit sheets. Those are internal to the carrier. We go in and just audit off our sheets and that's it. We keep the latest report on whether they pass the audit or whether they failed an audit.

MR. WILLIAMS: Okay.

MR. ROCK: And at the next audit we change out that. We keep it on file.

MR. WILLIAMS: Thank you.

Dr. Wilson.

DR. WILSON: I have no questions.

MR. WILLIAMS: Mr. Frantz.

MR. FRANTZ: Thank you. I have a couple follow-ups.

For Mr. Greene, I want to circle back to just specifically actions that Hageland is taking in lieu of this accident. In one of your slides in your presentation was a compilation of the seven-point agreement and it was similar, but not exactly matching to the seven-point agreement that I showed that was -- came out I believe in January of this year.

But there are three points on there I wanted to ask you about, steps that Hageland has committed to taking and where they're at. The first one was the VFR routes. The seven-point agreement that I showed stated that Hageland -- let me just read it here. "Hageland is committed to fully implementing GPS VFR

routes for all flights." And I understand that that's further qualified by the fact that Hageland has, and this notes 7,600 possible city pairs. So that's a lot of designated GPS routes and it would be a significant undertaking. But I'm just not clear, is that commitment still in place? Is Hageland still dedicated to developing designated GPS routes for all flying, day and night?

MR. GREENE: So we are committed to developing a comprehensive solution to this issue. As we went through our SRA process we identified some unintended consequences as we analyzed that commitment. As a result of that, we are in the process, in conjunction with the CMT and with the FAA, of developing a solution that manages this issue to the highest level of safety.

MR. FRANTZ: The second point I wanted to ask you about was in the seven-point agreement -- I'll read it again. "Hageland currently has 213 non-GPS night routes with altitudes in their OpSpecs. Hageland will immediately begin flying these routes utilizing GPS guidance, both day and night, when VFR conditions are present." Is Hageland currently flying the routes that are contained in OpSpec 050 that are -- B050 that are specified for night flying, are they currently flying those routes during the day as well?

MR. GREENE: Yeah, it'd probably be better for the DO to answer that.

MR. L. HICKERSON: Under certain conditions, again, yes. What we weren't going to do is put ourselves at more risk if we

determined that that would do that. So under certain conditions, yes, that is an accurate statement.

MR. FRANTZ: All right. Thanks. And the last one was the point seven from the agreement. Hageland agreed they're committed to operating all flights with GPS operative and that intent -- or I guess the intent would -- they would -- you would remove it from your MEL, you wouldn't be able to fly without it. Now I understand that you modified that to Hageland flights are able to operate without a GPS with management level approval. Why the change?

MR. GREENE: I did notice on the slide that was brought up as part of this hearing that it did not marry up with the one that we had. I don't know, the verbiage that we had was from a January 10 letter. Is that the same letter?

MR. FRANTZ: It's not a letter. It's the -- I could tell you. It's one of the exhibits and the exhibit is titled Seven-Point Agreement, FAA and -- between the FAA and Hageland. And it's the one -- the seventh point is that you would fly all flights with GPS, and now I believe my understanding is now you are authorizing flights to go without the GPS operative with certain levels of approval.

MR. GREENE: Correct. So the --

MR. FRANTZ: And I'm wondering why that change.

MR. GREENE: Well, the letter here that is from the FAA, from Deke, dated January 10. Our final agreement was that flights

without an operable GPS will be elevated to a risk 3 on the current risk assessment worksheet, which specifically requires management approval. So the reason for that is, you know, some of the routes that we have you can -- as soon as you lift off you can see the destination where you're going. Obviously those are very specific situations and we want to control those situations. But there are unique situations and I'm sure Luke could further amplify those, that we didn't want to lose the capability of using.

MR. L. HICKERSON: This also did not address IFR flying. So there is -- there are routes that do not requires GPSs or GPS capabilities to be conducted solely under IFR. And under that current agreement that did not say VFR or IFR, so it had to be adjusted accordingly.

MR. FRANTZ: Okay. Thank you. My time is up. Thank you.

MR. ABBOTT: I can add one more, if you don't mind, on that.

MR. FRANTZ: Please.

MR. ABBOTT: That came about when we initially had the conversation, it was we needed lateral guidance, we needed vertical guidance, we needed altitudes. And so that went in the initial language. The GPS therefore would not be -- would be -- not be deferrable. So in the absence of a GPS airplane only has one way to get home. We're at two. He can fix it there, or he can ferry it home, but it would not be a revenue trip.

After that agreement we sat down, Luke, myself, couple other

folks, and they brought up a couple scenarios which made a lot of sense. Some of them were so close that literally by the time you took off you were on the base to land at the other airport. So did we really have to have a GPS for such an incredibly short leg event? And that made sense and so that's why that language changed is for very specific -- you know, I hate to -- these guys tease me when I -- city pairs, but that city pair piece is so short, that leg, a GPS didn't need. That was the reason for that change.

MR. FRANTZ: All right. Thank you, Mr. Abbott. That's all I have.

Thank you. Mr. Williams.

MR. WEASE: I'd like to circle back around to Mr. Williams' question, if that's at all possible.

MEMBER WEENER: A short?

MR. WEASE: Yeah, real short. You may remember when you were an inspector we had the air carrier risk assessment tool. Thinking about it, we may be able to take that data and compare risk of peer group like carriers to see -- Medallion carriers versus non-Medallion carriers and then compare that against Medallion's quarterly reports for all the other activity that they do to kind of see -- measure their effectiveness that way. So we'll take a look at it from that perspective.

MR. WILLIAMS: Thank you.

MEMBER WEENER: Okay. This concludes questions for Panel 3.

Mr. Williams, are there action items from this session?

MR. WILLIAMS: Yes, sir.

From the Medallion Foundation, we'd like to request that NIOSH list that you offered up to us. Thank you, sir.

From the FAA, Mr. Wease, like you just spoke about, as far as any measurable data for the grant agreement.

And from Hageland we'd like to request that copy of the updated letter of agreement between Hageland and the FAA.

MEMBER WEENER: Okay. Thank you.

So all of the witnesses have now testified, so this hearing on the NTSB investigation into the October 2nd, 2016, accident involving Hageland Aviation Services Flight 3153 is now concluded. The record will remain open for additional materials requested during the hearing.

On behalf of my fellow Board Members and the NTSB staff, we extend our appreciation to the participants at this hearing. My thanks to each of the witnesses for their testimony. Also thank you to the parties and party spokespersons for your cooperation not only at this hearing, but throughout the investigation.

I also want to thank all of those here in Anchorage and the larger Alaskan community for their cooperation and support. Finally, I'd like to acknowledge the NTSB investigators, legal staff, Office of Communication and others from throughout the agency who worked hard to support this hearing.

The transcript is scheduled to be available within 7 days of

completion of the hearing and will be made available to the parties and witnesses electronically. Any corrections to the transcript by witnesses or parties should be sent to the Hearing Officer, Shaun Williams, within 30 days and that's September 18, 2017.

Any documents or information identified during the hearing that a party agrees to furnish to the NTSB should also be sent to the Hearing Officer within 30 days. Again, that's September 18th, 2017.

The archive of the hearing webcast will remain on the NTSB website for several months after the hearing. The transcript of the hearing and all of the materials entered into the record will become part of the public docket, along with other records of the investigation.

Today we've heard valuable information about air operations, oversight, safety culture and decision-making processes affecting Hageland Flight 3153. We've gained a greater understanding of the facts and circumstances surrounding this tragic accident. Our investigation is ongoing and we'll continue to work diligently to finalize our report. We hope that this hearing and our subsequent final report will provide critical information to the parties involved, oversight agencies, air carriers and the flying community of Alaska.

We stand adjourned.

(Whereupon, at 5:06 p.m., the hearing was adjourned.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	HAGELAND AVIATION SERVICES FLIGHT 3153 INVESTIGATIVE HEARING
ACCIDENT NO.:	ANC17MA001
DOCKET NO.:	SA-540
PLACE:	Anchorage, Alaska
DATE:	August 17, 2017

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.

Debra Mack
Official Reporter