ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ARCTIC POLICY,
ECONOMIC DEVELOPMENT, AND TOURISM
March 26, 2019
11:06 a.m.

MEMBERS PRESENT

Representative Sara Hannan, Chair
Representative Jonathan Kreiss-Tomkins
Representative Chris Tuck
Representative Sara Rasmussen

MEMBERS ABSENT

Representative Zack Fields
Representative John Lincoln
Representative Josh Revak

COMMITTEE CALENDAR

PRESENTATION: FROM THE ARCTIC TO SOUTHEAST - PRESENT AND FUTURE ALASKA MARITIME OPERATIONS BY CAPTAIN ED PAGE

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

ED PAGE, Captain (Ret.)
United States Coast Guard;
Executive Director
Marine Exchange of Alaska
Juneau, Alaska
POSITION STATEMENT: Gave a presentation on the present and future of Alaska maritime operations.

PAUL FUHS, Board President Emeritus
Marine Exchange of Alaska
Juneau, Alaska
POSITION STATEMENT: Testified and answered questions about the Marine Exchange of Alaska.

ACTION NARRATIVE

11:06:49 AM

CHAIR SARA HANNAN called the House Special Committee On Arctic Policy, Economic Development, and Tourism meeting to order at 11:06 a.m. Representatives Rasmussen, Tuck, and Hannan were present at the call to order. Representatives Kreiss-Tomkins arrived as the meeting was in progress.

Presentation: From the Arctic to Southeast - Present and Future Alaska Maritime Operations by Captain Ed Page

11:07:50 AM

CHAIR HANNAN announced that the only order of business would be a presentation from Captain Ed Page of the Marine Exchange of Alaska (MXAK). Chair Hannan prefaced Captain Page's presentation by encouraging those in attendance to learn more about MXAK.

11:08:42 AM

ED PAGE, Captain (Retired), United States Coast Guard; Executive Director, Marine Exchange of Alaska, introduced the idea of "the blue economy." He discussed Alaska's economic dependence on maritime activity relating to tourism and resource-development. He provided some background information about his career in the United States Coast Guard (USCG) and his time in Alaska. He mentioned that he previously served as Captain of the Port of Los Angeles and had helped clean up after the 1989 Exxon Valdez oil spill. He described how he and Executive Director Emeritus Paul Fuhs established MXAK in 2001 to help ensure safe, secure, efficient, and environmentally responsible maritime operations.

11:10:10 AM

CAPTAIN PAGE began his PowerPoint presentation [included in the committee packet] and addressed slides 2 and 3. He explained that marine exchanges are not a new concept and have existed in various forms since the 1800s. He said that, during his time with USCG, he would contact marine exchanges to learn the locations of ships. He discussed the value of maritime information, which he said facilitates trade, protects from environmental harm, and saves lives. He explained how marine exchanges collect and communicate maritime information. He called MXAK "the most progressive, expansive marine exchange in

the country." He described the progression of marine exchange technology from semaphore, megaphones, and spyglasses.

11:11:05 AM

CAPTAIN PAGE addressed slides 4 and 5, titled "Marine Exchange of Alaska: A 21st Century Operation." He described MXAK's operations. He noted that MXAK is the biggest marine exchange in the country and the biggest vessel compliance and monitoring system in the world. He said MXAK is fortunate receive State of Alaska (SOA) support via cruise ship head tax funds amounting to about $400,000 each year. He noted that some of the Exxon Valdez oil spill settlement money was allocated to help get MXAK started. He said SOA is only one of many stakeholders in MXAK; SOA contributes only about 11 percent of MXAK's total revenue needs. He said USCG is one of MXAK's biggest contributors, but the marine industry pays the lion's share.

CAPTAIN PAGE said MXAK's operations center is active 24 hours per day. He called MXAK "brokers of maritime information" and an advocate on behalf of the maritime industry for regulatory programs that make sense, are cost-effective, and impose no undue burdens. He described the process through which MXAK helps the maritime industry comply with regulations. He added that MXAK information is invaluable for port planning. He explained that MXAK installs environmental sensors that measure weather, wind, and current across the state to aid maritime safety. He said mariners with better information are less likely to have an accident. He noted that MXAK is much more agile than the National Oceanic and Atmospheric Administration (NOAA) which does not have the ability to quickly install systems.

11:13:30 AM

CAPTAIN PAGE addressed slides 6, which featured a pie chart detailing sources of funding. The maritime industry was shown to have contributed 48 percent. USCG was shown to have contributed 41 percent. SOA was shown to have contributed 11 percent. He said the diagram demonstrates how the nonprofit MXAK operates as a public-private partnership. He said approximately 450 shipping companies and several thousand vessels pay into the system.

CAPTAIN PAGE addressed slide 7, which displayed a list of people on MXAK's Board of Directors. He said the board features representatives from different segments of Alaska's maritime

community. He said diverse representation on the board ensures MXAK fulfills its mission statement in the most cost-effective way.

CAPTAIN PAGE addressed slide 8, titled "The Community We Serve." He said, "If you're on the water, we basically have a relationship with you to some degree." He noted that MXAK information is even used by recreational vessels. He explained that the automatic identification system (AIS) used by MXAK to track vessels updates every six seconds. He remarked that if every car on the highway were checked every six seconds, no one would speed. He explained that both the International Maritime Organization (IMO) and USCG require any commercial vessel over 65 feet to have an AIS transponder. He compared this system to the one that tracks aircraft. He said MXAK built the network throughout the state that receives AIS signals and displays the information so that safety information can be communicated to and from vessels. He read through a list of different types of vessels that depend on the system. He spoke to its importance, explaining that if "we turn the system off right now, we'll get a call from the Coast Guard right away." He noted that USCG built a similar system with Northrup Grumman Corporation for the lower 48 states but overran the budget before it could continue on to Alaska. He explained that the United States Congress did not provide additional funds for an Alaska system, so MXAK built it instead. He discussed how MXAK uses its relationship with the maritime community to obtain access to lighthouses, pilot stations, and other sites.

11:15:50 AM

CAPTAIN PAGE addressed slide 9, titled "Maritime Information Services of North America (MISNA)." The slide featured a list of other marine exchanges across the country that MXAK helped build. He said all the data from these nationwide marine exchanges comes to MXAK's headquarters in Juneau. He said MXAK is "the nerve center" for the national AIS. He relayed that he receives e-mails every day from around the globe from organizations that pay to access MZAK's data for reasons relating to international shipping. He said brokering this data helps pay the costs of maintaining the system. He noted that this makes Juneau a location of global importance. He said the Secretary General of IMO has visited Juneau to learn how MXAK, an organization with only 20 employees, manages to operate such a vast system and take in so much data. He added that the Commandant of the United States Coast Guard and Alaska's congressional delegation have all visited MXAK. He said MXAK

manages to "squeeze the most out of technology" and that it only came online once the right technology was available.

CAPTAIN PAGE addressed slide 10, titled "MXAK Automatic Identification System (AIS) Network." It featured a map of Alaska with red dots signifying the locations of MXAK's AIS receivers. He noted that MXAK has also built sites on the Galapagos Islands and Northern Canada.

11:17:39 AM

REPRESENTATIVE TUCK asked how the AIS sites work.

CAPTAIN PAGE said each site is uniquely tailored to its environment. He said the receiver located in Dutch Harbor operates on a 110-volt circuit and an internet line. On the other hand, he explained, a receiver located atop a mountain or in some other remote area requires solar power, wind generators, wireless bridges, a cell network, and/or satellite dishes. He added that each site is unique in how it transfers data.

REPRESENTATIVE TUCK posited, since any vessel over 65 feet is required to have a transponder, that information is transmitted to and from the vessels through the locations displayed on the slide.

CAPTAIN PAGE said vessels are able to transmit information to and receive information from other vessels. He noted that they also communicate with MXAK on matters related to safety information such as adverse weather. He said the MXAK receivers pick up signals from the vessels and transmit the information to Juneau.

REPRESENTATIVE TUCK asked how big the units are and how far they can transmit.

CAPTAIN PAGE said the on-vessel equipment is not so big and costs about $500. He compared the units to VHF radios and said they operate on the same frequency band. He said the range is quite significant and depends on the height of the antenna. For example, he said, a cruise ship with a tall antenna and the best class of AIS technology can transmit 200 miles offshore. He said a fishing vessel with a lower-powered system can typically transmit from 25 to 50 miles offshore. He noted that there are sometimes terrain-masking issues. He spoke to satellite technology that can also pick up data from the vessels, though not on such a granular level. He said MXAK operates a hybrid

system of satellite and terrestrial communications, though noted that the only way to transmit information is through terrestrial-based stations.

REPRESENTATIVE TUCK asked for clarification that "25 miles offshore" means 25 miles from one of the onshore receivers.

CAPTAIN PAGE said yes.

11:21:19 AM

CAPTAIN PAGE addressed slide 11, titled "Pacific Vessel Traffic Today." The slide featured a map of the northern Pacific Ocean overlaid with icons signifying vessels and vessel traffic. He said the map is a snapshot of what things look like today. He drew attention to a line of vessels traveling through the Aleutian Island. He said vessels travel between the American Pacific and the Far East via this "great circle route through our backyard." He added that 99 percent of those vessels do not stop in Alaska ports, but on occasion will break down, which could impact Alaska's blue economy. He spoke to the myriad negative consequences of marine casualties and stressed the importance of preventing them.

11:22:36 AM

REPRESENTATIVE RASMUSSEN asked for his insight on a recent incident in Norway involving the cruise ship Viking Sky.

CAPTAIN PAGE explained that ships are not much different from cars; they do break down on occasion. He said the incident in Norway drew international attention because the ship broke down with over 1,000 passengers in rough seas and with no way to tow it to shore. He spoke to the importance of keeping vessels a safe distance offshore so that, in the event that something goes wrong, there is enough time to things before the situation becomes dire. He noted that MXAK has implemented a variety of measures accepted by the international community to keep vessels further offshore. He listed the various consequences of a vessel breaking down a mile offshore: loss of cargo, loss of oil, and loss of life.

CAPTAIN PAGE said the incident in Norway shows that ships are not perfect and do break down. He noted that another ship near Viking Sky had sunk so rescue helicopters were diverted from the Viking Sky to assist the other ship's crew. He discussed the process by which MXAK investigates irregularities and

facilitates a swift response. He said Norwegian authorities quickly recognized that they could not get vessels on the scene, which is why rescue helicopters were deployed. He added that there are no helicopters that big available in Alaska to carry so many people from a vessel. He said it was fortunate that Viking Sky's anchor held, and that the engineer got the engine working again. He noted that the people involved had enough time to work things out, and that time is critical with any situation like that. He said cruise ships in Alaska are different in that they operate mostly in inside waters and are not exposed to rougher seas. He added that cruise ships only operate in Alaska in summer.

11:25:35 AM

CHAIR HANNAN asked about a maritime incident in Alaska that occurred at the same time as the Viking Sky incident but did not make news.

CAPTAIN PAGE said that an 1,100-foot container ship broke down in Alaska waters. He shared how MXAK detected it and notified all relevant parties. He said the ship drifted for 24 hours and the closest tugboat was 5 days away, but the engineer, with help from modern communication technology, was able to fix the problem. He noted that the ship had been drifting toward Russia.

11:26:29 AM

REPRESENTATIVE RASMUSSEN asked if Alaska is less at-risk because its waters are more protected, so the storm conditions that caused the Viking Sky incident would not be an issue.

CAPTAIN PAGE said that is true to some extent, though he noted that ships traveling in and out of Dutch Harbor and the Gulf of Alaska face considerable risks. He said, generally speaking, [cruise ships] spend more time in protected waters. He said if he were concerned about safety, he would choose an Alaska route over one that spends more time farther offshore.

11:27:35 AM

CHAIR HANNAN noted that Alaska's maritime tourism industry operates during the summer in inside waters. She said the year-round maritime commercial industry presents a greater risk. She considered the continuous risk of major cargo ships going adrift. She said it is fortunate that there has not been a

recent major tragedy, though noted that there has been loss of life. She noted that Alaska has not had a major cruise ship disaster. She mused on the cruise ship industry's promotion of "the shoulder season" in September. She called the conditions in September "unpleasant."

CAPTAIN PAGE said he thinks the Viking Sky incident will spur the cruise ship industry to conduct further risk assessments. He said USCG, the Norwegian Coastal Administration Coast Guard, and the industry will all treat it as a lesson learned.

11:29:19 AM

REPRESENTATIVE RASMUSSEN noted that the airline industries are heavily regulated in terms of weather and flying conditions. She asked if there is a similar standard for the maritime arena.

CAPTAIN PAGE said the only time USCG would weigh in is if it considered something a "manifestly unsafe voyage," which he noted is a high bar to reach. He said there are many variables that determine whether a voyage will occur, including the competence of the crew and the type of vessel. He said insurance underwriters, owners/operators, on-ship masters, and weather advisers all have a say in determining whether a transit is unsafe. He referenced the vessel SS El Faro, which sank with all hands after sailing into Hurricane Joaquin in 2015. He said sometimes people do not make the most prudent decisions, and often that is because they do not have the most up-to-date and accurate information at hand. He said the solution is better information and more people involved in risk-assessment. He advocated for reflection on maritime disasters. He said, "When bad things happen, sometimes good things happen as a result."

11:31:34 AM

CAPTAIN PAGE addressed slides 12 and 13 which featured maps illustrating high-traffic areas in Alaska waters and areas of MXAK AIS signal coverage, respectively. He noted that the map on slide 13 does not show MXAK's range, but rather locations where MXAK detected vessels. He discussed tools that allow MXAK to analyze this data.

CAPTAIN PAGE addressed slide 14, titled "Alaska Maritime Community Support of AIS Network." He ran through a list of places where AIS sites are located. These include lighthouses, pilot stations, harbor offices, fish hatcheries, tug offices, shipping companies, fish processing plants, tribal offices, oil

facilities, science centers, and oil spill response organizations.

CAPTAIN PAGE addressed slide 15, titled "Remote Self-Supported AIS Sites." The slide featured photos of an AIS site installation on an island near Ketchikan. He drew attention to a photo of the installation of solar panels and a vertical axis wind turbine.

CAPTAIN PAGE addressed slide 16, titled "Cape St. Elias Marine Safety Site." He said the site pictured on the slide is located on Kayak Island in the Gulf of Alaska. He discussed installing an AIS site there. He noted that the site now utilizes a cell network for data communication.

11:33:33 AM

CAPTAIN PAGE addressed slides 17-19, titled "Unimak Pass." He drew attention to a photo of a container ship traveling near Unimak Island in the Aleutian Islands to the Far East. He described the logistics and equipment necessary to construct an AIS site on Unimak Island.

CAPTAIN PAGE addressed slide 20, titled "Maritime Safety." He opined that a 99.99 percent success rate is not good enough and remarked that the Exxon Valdez oil spill was the result of a 0.01 percent failure rate. He noted that the public is rightfully still upset about that incident 30 years later. He said it is important to utilize technology to reduce the risk of marine causalities and avoid the resultant consequences.

11:34:38 AM

CAPTAIN PAGE addressed slide 21. He described an incident that occurred in 2004 during which a wayward ship, Selendang Ayu, ran aground off Unalaska Island. He said USCG called MXAK "late in the game" and requested it track the vessel's drift. He described how MXAK tracked the vessel. He said, despite best efforts, Selendang Ayu ran aground and broke in half, resulting in loss of cargo, loss of life, and a major oil spill. He described how USCG deployed a helicopter to rescue the crew, but the helicopter crashed after being hit by a wave. He said the Selendang Ayu disaster reinforced the need for better marine safety. He said, at that time, MXAK did not have maritime domain awareness or management. He noted that it does now. He spoke to USCG limitations, noting that it only has "governance" up to 12 miles offshore. He said there is not much navigational

restriction beyond that 12-mile threshold except for industry agreements based on measures implemented by MXAK out to 200 miles offshore. He said vessels that do not abide by those measures are in breach of contract.

CAPTAIN PAGE addressed slide 22, titled "Maritime Domain Awareness," which featured a photo of a cargo ship operating dangerously close to shore in a remote area near Attu Island. He said, if that vessel were to break down, the closest tugboat would be five days away and the resulting consequence could be 40 miles of containers and oil floating in the ocean, plus crewmember deaths.

CAPTAIN PAGE addressed slide 23, titled "Improving Prevention & Response." He listed various technologies and measures that have been adopted to improve prevention and response efforts, including the Internet of Things, machine to machine technology, and artificial intelligence.

11:36:59 AM

CAPTAIN PAGE addressed slide 24, titled "Los Angeles / Long Beach." It displayed a photo of a cargo ship exiting the Port of Los Angeles. He said that if you took the containers that arrive annually in Los Angeles and Long Beach and put them end-to-end, they would wrap the equator twice. He noted that the ship in the photo is a similar size to the one discussed earlier that recently broke down in Alaska waters. He said the containers on that ship, arranged end-to-end, would stretch around 40 miles. He explained that these ships carry a phenomenal amount of cargo and value added, though also present a major risk should the contents end up in the ocean. He noted that the ships leaving Los Angeles do not stop in Alaska as there is no port in Alaska that can accommodate them, but "they're driving through our backyard."

CAPTAIN PAGE addressed slide 25. He described the Alaska Maritime Prevention & Response Network, which he called "a spinoff network." He described how the network uses technology to enhance maritime safety in the Arctic and across the state.

11:38:14 AM

CAPTAIN PAGE addressed slide 26, titled "Alaska Waters," which featured a world map with icons signifying each ship enrolled in MXAK's system. He noted that a ship may be in Africa today, but its operators know it will be in Alaska at some point during the

year, which is why they enroll in and pay into the system. He introduced the idea of "Sea Traffic Management," which he explained is a heightened focus on maritime activity beyond the ports. He noted that he has traveled around the world to discuss the Sea Traffic Management concept, which he said has only recently been enabled by new technology.

11:38:54 AM

CAPTAIN PAGE addressed slide 27-28, titled "LAURA MAERSK." He provided an example of what MXAK does when a container ship breaks down. Slide 27 featured a report sent by MXAK to USCG which displayed a ship's location, attributes, current status, and drift trajectory. He said the owners/operators of LAURA MAERSK were not moving fast enough to mitigate the risk of a major incident, so USCG opened the Oil Spill Liability Trust Fund (OSLTF) to contract tugboats to rescue the vessel. He said this is the process that results "in a save." The slide indicated that the vessel had "approached to 5 miles offshore" before the tugboats arrived.

CAPTAIN PAGE addressed slide 29, titled "Vessels of Concern," which featured a list of concerning vessel behaviors that draw MXAK's attention, such as reduced speed, erratic maneuvers, moving too close to shore, traveling through an unauthorized pass, loss of propulsion, loss of steering, loss of stability, and cargo broken free. The slide featured a map of the Aleutian Islands with dots signifying incidents that occurred from 2015 to 2017. He described the process through which MXAK communicates with vessels that behave irregularly. He remarked that the map demonstrates how often ships break down.

11:40:00 AM

REPRESENTATIVE TUCK asked a question about the Oil Spill Liability Trust Fund. He asked if the financial expenses incurred by USCG are the responsibility of the ship.

CAPTAIN PAGE explained that the Oil Spill Liability Trust Fund was established to allow USCG to spend federal money to respond to an emergency when a vessel is not responding, and then send the bill to the operator. He said most companies wince when that happens because the costs are substantial and because it is like "a black mark" indicating that a company has not fulfilled its responsibilities. He said the fund is only opened in "in extremis" situations.

11:41:37 AM

CAPTAIN PAGE, addressed slides 30 to 31, titled "Example: CMA CGM AQUILA." He identified CMA CGM AQUILA as the aforementioned vessel that drifted in Western Alaska with a broken engine at the same time of the Viking Sky incident in Norway. He noted that CMA CGM AQUILA is over three football fields in length at 1190 feet, carries 43 miles of containers, and also carries several millions of gallons of oil. He pointed to a nautical chart displayed on slide 31 and walked through how MXAK identified the issue and tracked the vessel. He said it is fortunate that MXAK's routing measures disallow vessels from navigating close to land because they can break down and not be in extremis immediately, which allows time for rescue or repair. He noted that it was also fortunate that the ship was drifting toward Russia rather than toward one of Alaska's islands. He said this incident is one example of what MXAK monitors and acts upon, and how MXAK prevents disruptions to the blue economy.

11:43:13 AM

CAPTAIN PAGE addressed slides 32, titled "Monitoring Compels Compliance with Risk Mitigating Measures." The slide featured a photo of a roadside "Your Speed" sign displaying the driving speed of a pickup truck. He noted that no one has ever pushed back when contacted by MXAK. He compared MXAK to one of the speed signs displayed in the photo, a reminder of requirements.

CAPTAIN PAGE addressed slide 33 and noted that AIS has been identified as a key component in maritime safety by the Arctic Marine Shipping Assessment Report put out by the Arctic Council and by the Aleutian Islands risk assessment report done by the Transportation Research Board.

11:44:33 AM

CAPTAIN PAGE addressed slide 34, titled "IMO Polar Code." He said IMO has created higher-level restrictions and criteria for the new maritime frontier in the Arctic. He described taking part in international meetings to ensure a holistic and integrated approach to managing maritime activity in the Arctic.

CAPTAIN PAGE addressed slide 35, which featured an excerpt from IMO literature detailing the premium placed on ship monitoring and tracking in remote polar waters. He said MXAK is currently tracking vessels and enforcing routing measures in the Arctic.

CAPTAIN PAGE addressed slide 36, which featured a chart illustrating Arctic maritime activity through the Bering Strait in 2018. He said MXAK collects Arctic maritime data that is of great interest to various governmental and non-governmental organizations.

CAPTAIN PAGE addressed slide 37, titled "Arctic Maritime Safety Net Project." He explained that the indigenous peoples of the Arctic are concerned about ships "coming through their backyard" and interfering with subsistence operations. As a result, he said, MXAK has worked with them to create a system through which all vessels are aware of other vessels' locations.

CAPTAIN PAGE addressed slide 38. He explained that IMO is concerned with the future protection of Arctic people, especially those in Arctic coastal communities and their traditional lifestyles. He said Alaska's AIS system is more proactive, comprehensive, and sophisticated than similar systems in countries such as Norway and Iceland.

CAPTAIN PAGE addressed slide 39, titled "Arctic App." He explained that MXAK developed an application so that people who reside in Arctic areas can receive information about maritime activity. He said MXAK continues to work with these communities to utilize technology and minimize the adverse impacts of vessels operating in the Arctic.

11:47:50 AM

CAPTAIN PAGE addressed slides 40, titled "Bering Strait Transits 2009-2019." He said traffic trends in the Arctic have not increased as much as is believed and that traffic is currently steady. He noted that Russia has taken advantage of Arctic routes and utilizes icebreakers to transport raw materials.

CAPTAIN PAGE addressed slide 41, titled "Bering Strait Transits," which featured a diagram measuring traffic through the Bering Strait. He noted that some previous increases were due to oil exploration efforts. He said there was more activity in the Bering Strait during 2010 than during 2018. He clarified that much of the traffic through the United States Arctic was transportation of food and supplies to Native Alaskan communities.

11:48:42 AM

REPRESENTATIVE TUCK asked a clarifying question about the diagram on slide 41.

CAPTAIN PAGE said the red bars on the chart indicate northbound transit and the blue bars indicate southbound transit. He noted that "most people come back from the Arctic." He added that a lot of the activity featured on the 2010 chart was due to exploration by Royal Dutch Shell. He noted that traffic has increased on the Russian side of the Bering Strait because the Russians have mobilized to take advantage of raw materials. He said there is economic opportunity in the Arctic, including liquified natural gas (LNG) and other raw materials.

11:49:33 AM

CAPTAIN PAGE addressed slide 42, titled "The New York Times." It featured an excerpt from an article in that publication from 2017 titled "With More Ships in the Arctic, Fears of Disaster Rise." He noted that he was interviewed for the article and shared one of his quotations: "We should stop worrying about what we're going to do when things go wrong ... We should prevent things from going wrong." He cited his experience of spending three years addressing the Exxon Valdez oil spill as a reason why he is passionate about disaster prevention. He reiterated the important role of information in preventing disasters and protecting Alaska's blue economy. He recalled seeing images of Alaska salmon packed in oil in the wake of the Glacier Bay oil spill in 1987, and that these images made national news. He noted that this impacted Alaska's fisheries.

11:51:00 AM

CAPTAIN PAGE addressed slide 43, titled "USCG - MXAK CRADA (Cooperative Research & Development Agreement)." He reported that USCG is also looking at the Arctic as the next maritime frontier. He noted that USCG has not previously had much of an Arctic presence. He spoke about the Arctic Next Generation Navigational Safety Information System, a cooperative effort between MXAK and USCG to enhance maritime safety in the Arctic. He said the gist of the system is that buoys and lighthouses are outdated technologies and the challenges of securing the Arctic are best met by new technology. He listed the types of information communicated through the system, including the location of whales and whalers, environmental data, vessels in distress, and areas to be avoided.

CAPTAIN PAGE addressed slide 44, which featured a map of Alaska and displayed the locations of AIS aids to navigation (ATONs) which broadcast safety information to vessels.

CAPTAIN PAGE addressed slide 45, which featured a map of Cook Inlet and featured the location of a virtual buoy installed by MXAK made possible through AIS. He said MXAK can and has done the same thing in the Arctic.

CAPTAIN PAGE addressed slide 46, titled "Nome Environmental Data: Current and Waves." He discussed MXAK efforts to measure environmental data and weather information in Nome.

11:52:40 AM

CAPTAIN PAGE addressed slides 47 through 50. He explained that the City and Borough of Juneau employed MXAK to conduct a study to help with efforts to expand its docks to accommodate larger vessels. He said MXAK also developed sensors that provide real-time environmental information to marine pilots and ship masters for the purpose of making safer approaches. He noted that MXAK is developing similar current and weather sensors for the City of Ketchikan.

CAPTAIN PAGE addressed slide 51, titled "Juneau Alaska AIS Weather Data Distribution Project." He said MXAK has installed 50 weather stations across the state that collect data that is of great use to fishermen. He noted that funding for weather stations comes from the cruise ship head tax as well as the Alaska Ocean Observing System. He said these stations enhance maritime safety by gathering information from locations not covered by the National Weather Service. He noted that it also provides MXAK additional information to broker.

CAPTAIN PAGE addressed slide 52. He explained how, using vessel-tracking data and information from the ship's logs, MXAK can determine whether or not a ship discharged materials in unauthorized areas. He said this is another way MXAK can help ensure that vessels are being compliant. A map on slide 52 relayed discharge information for the cruise ship Star Princess.

11:55:27 AM

CAPTAIN PAGE addressed slide 53, titled "Changing Technology." He characterized MXAK as a group of "technology whizzes" with about 150 cumulative years of USCG experience, though noted that most employees do not have a USCG background. He spoke to his

employees' experience and their knowledge of various maritime industries. He described how MXAK builds and tests its own equipment. He said MXAK leverages technology to enhance maritime safety without huge resources. He called MXAK's operations "unprecedented" in the world.

CAPTAIN PAGE addressed slide 54, titled "The Future: Safe, efficient, environmentally responsible maritime operations." He restated that Alaska is the most maritime state and that it is reliant on a blue economy that requires protecting.

11:57:06 AM

REPRESENTATIVE TUCK asked from where MXAK's primary funding comes.

CAPTAIN PAGE answered that it is mostly through the maritime industry. He said MXAK's biggest customers are foreign flag vessels that travel through Alaskan waters. He described how MXAK serves those vessels. He said the second biggest revenue stream is USCG. He added that SOA provides 11 percent of MXAK's funding. He characterized MXAK as a "true public-private partnership." He noted that he first developed the MXAK model when overseeing the Port of Los Angeles.

11:58:24 AM

REPRESENTATIVE RASMUSSEN asked what is MXAK's total budget.

CAPTAIN PAGE answered approximately $4 million.

REPRESENTATIVE RASMUSSEN asked for verification that MXAK receives approximately $400 thousand in state funds

CAPTAIN PAGE verified that.

11:58:49 AM

REPRESENTATIVE TUCK asked if MXAK services are ever paid for out of the Oil Spill Liability Trust Fund (OSLTF).

CAPTAIN PAGE answered no. He said MXAK tries to avoid those kinds of fiduciary discussions. "When it comes to saving a life," he explained, "we don't charge anything." He said USCG already pays into MXAK's system. He noted that LAURA MAERSK was not enrolled in MXAK's system, though that did not mean MXAK was not going to help it. He explained that any casualty is going

to have an impact on the maritime industry, so MXAK does not limit its services to those who pay into its system. He added that LAURA MAERSK was not required to enroll in MXAK's system and explained the concept of "innocent passage."

CHAIR HANNAN noted that USCG was already MXAK's client.

CAPTAIN PAGE said yes. He noted that USCG has access to all of MXAK's data. He reiterated MXAK's role as an information broker and said, when it comes to rescue efforts, MXAK "gets assists" while USCG gets the goals.

12:02:05 PM

REPRESENTATIVE TUCK asked if the marine exchange is uniquely American. He asked, "How far back does it go?"

CAPTAIN PAGE asked if he meant MXAK or marine exchanges in general.

REPRESENTATIVE TUCK clarified that he meant marine exchanges in general.

CAPTAIN PAGE said marine exchanges date back to the mid-1800s. He offered some brief historical tidbits. He said European ship spotter organizations operated under the same idea. He described the Maritime Information Service of North America (MISNA), for which he previously served as president, and the effort it took to construct a national AIS system. He said the "tech support" for MISNA is located in MXAK's Juneau office. He explained how MXAK brokers that nationally-sourced data to create revenue.

12:05:28 PM

CHAIR HANNAN thanked Captain Page and his staff.

12:06:00 PM

PAUL FUHS, Board President Emeritus, Marine Exchange of Alaska (MXAK), addressed several issues that were raised. First, he said, state-licensed marine pilots make determining decisions related to voyaging in potentially-dangerous conditions. He also spoke to MXAK's ability to use technology to more effectively and cost-efficiently perform the duties of the Ocean Rangers program. He acknowledged that there have been discussions related to that topic. He noted that, while there

is relatively little maritime traffic in the Arctic compared to that through the Aleutian Islands, 85 percent of the cargo that moves through the Arctic is petroleum products. He said the Arctic "is a loser for us, money-wise" but stressed the importance of covering the entire coast, especially considering the high-risk cargo traveling through the Arctic. He spoke to the possibility of transporting LNG from the North Slope through the Bering Sea on special icebreaker vessels. He also discussed MXAK's protection of fiberoptic communication systems.

12:08:34 PM

CHAIR HANNAN discussed her experience visiting the MXAK headquarters and viewing real-time data on maritime activity in Alaska and around the globe. She spoke to the beneficial aspects of technology on understanding Alaska's reliance on the blue economy.

12:09:38 PM

CAPTAIN PAGE invited all committee members and their staff to visit MXAK's headquarters. He remarked that Alaska is "a can-do state." He discussed how USCG depends on private mariners to assist in times of distress. He said USCG uses MXAK technology to identify vessels traveling near an emergency and asks them to intercede. He said the [2001] sinking of Arctic Rose with all hands sparked the genesis of MXAK because Alaska needed a better system. He reiterated the role technology plays in saving lives. "If someone is in trouble," he said, "it's nice to know where they are."

MR. FUHS noted that when the Arctic Rose sank, its sister ship was only six miles away and nobody knew it.

CHAIR HANNAN recognized that MXAK manufactures charts and thanked Captain Page for providing an Arctic regions navigation chart to her office.

CAPTAIN PAGE discussed how MXAK got into the business of selling charts. He noted that it is a loss leader, but said it is important that mariners have accurate, up-to-date information.

12:12:55 PM

CHAIR HANNAN thanked the presenters.

ADJOURNMENT

There being no further business before the committee, the House Special Committee On Arctic Policy, Economic Development, and Tourism meeting was adjourned at 12:13 p.m.