



FAA ALASKA AVIATION SAFETY INITIATIVE INTERIM REPORT

Aviation in Alaska is a way of life and an absolute necessity for much of the state. The FAA has teamed with the flying community to develop a document to improve aviation safety in Alaska. A plan for managing current, planned and new approaches are discussed.

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Table of Contents

Executive Summary	2
Introduction.....	5
1.0 Challenges.....	8
1.1 Environment.....	8
1.2 Fleet.....	9
1.3 Infrastructure: Communications, Navigation, Surveillance (CNS)	10
1.4 Operations Safety Management	11
2.0 Current FAA Efforts	12
2.1 Weather.....	12
2.2 Infrastructure: Communications, Navigation, Surveillance (CNS)	14
2.2.1 Communications:	14
2.2.2 Navigation:.....	15
2.2.3 Surveillance:	16
2.3 Operations Safety Management	17
3.0 Planned FAA Efforts	18
3.1 Weather.....	18
3.2 Infrastructure: Communications, Navigation, Surveillance (CNS)	19
3.2.1 Communications:	19
3.2.2 Navigation:.....	19
3.2.3 Surveillance:	20
3.3 Operations Safety Management	20
4.0 Individual FAA Lines of Business Initiatives and Planning Summaries:	20
4.1 ATO Summary	20
4.2 AVS Summary.....	21
4.3 ARP Summary	22
5.0 Conclusions and Next Steps	23
List of Appendices.....	24
Appendix 1: Prioritized List of Initial Efforts.....	25
Appendix 2: Glossary of Terms	31
Appendix 3: NTSB and Safety Recommendation Report	32
Appendix 4: 14 Code of Federal Regulations: Parts 91, 119, 121, 135 and 139	33

Executive Summary

The Federal Aviation Administration Alaska Aviation Safety Initiative (FAASI) has its origins in the September 2019 National Transportation Safety Board (NTSB) Part 135 Roundtable discussion held at the University of Alaska Anchorage (UAA). During that discussion, the group focused on the relatively high accident rate in the Federal Aviation Regulation (FAR) Part 135 aviation community. The NTSB noted that between 2011 and 2017, Alaska operators experienced 22 aviation accidents that were split between 14 CFR Part 135 (Part 135) and 14 CFR Part 91 (Part 91) operations. Controlled Flight into Terrain (CFIT) accidents by Alaska Part 135 operators operating under Visual Flight Rules (VFR) and related unintended encounters with Instrument Meteorological Conditions (IMC) are two of the leading causes of aviation related fatalities in Alaska. A review of these accidents did not point to one specific cause, but it is clear that deterioration of meteorological conditions along with aircraft icing were contributing factors in most of the accidents.

In October 2020, the FAA Administrator (Administrator) hosted an Alaska Aviation Safety Summit that highlighted safety recommendations. The Administrator directed the Alaskan Region Regional Administrator (RA) to lead a cross-agency group of FAA experts to focus on safety issues specific to Alaska and to determine how the FAA is deploying resources, their effectiveness, and how the FAA can improve in delivering services and how to prioritize the delivery of the resources. Thus, the RA commissioned the FAASI. The FAASI team compiled information to produce this Interim Report including the analysis of the multiple challenges and current and planned programs to address those challenges. The agency will use the Interim Report as the foundation for future discussions with appropriate external stakeholders.

The FAASI team is made up of members from each of the FAA Lines of Business (LOB) in the Alaskan Region and the Air Traffic Organization (ATO) Western Service Center (WSC) located in Des Moines, Washington. There are five groups working to create the Interim Report that will be used to facilitate meetings with representative members of the Alaska aviation community. The goal is to deliver a fully-integrated report to the Administrator regarding safety program needs and priorities throughout Alaska. The five LOB currently participating are:

- Air Traffic Organization (ATO)
- Aviation Safety (AVS)
- Office of Airports (ARP)
- Office of the Alaskan Regional Administrator (AAL-1)
- Office of the Chief Counsel (AGC)

Each LOB on the FAASI team was tasked with developing a list of FAA efforts, projects, and programs that affect aviation safety. The inventory consists of programs and projects that the FAA has undertaken, or has proposed; the efforts made by the FAA to collaborate with the Alaskan aviation community; the areas where considerable efforts are underway; and areas where there are gaps to be filled as perceived by the Part 135 community and other external stakeholders. As a reference, the teams used information contained in multiple studies by the FAA and external entities related to aviation safety in Alaska. Going forward, the information will be shared with representative external stakeholders across the aviation community as an

integral part of determining valid conclusions and the identification of needs and best practices. While the emphasis is directed toward Part 135 operations across the state, the FAA believes all system users will benefit from safety efforts and risk-mitigation measures.

The areas of original emphasis developed by the FAA interdisciplinary team includes:

- Environment
- Fleet
- Communications, Navigation, Surveillance (CNS)
- Operations Safety Management

Each of these areas is further explored in the areas of:

- Challenges
- Current FAA Efforts
- Planned FAA Efforts

Remote communities throughout Alaska are served primarily by Part 135 commuter and on-demand operators who provide delivery of mail and cargo, as well as medevac, and passenger transportation service. Most of these certificate holders fly at lower altitudes due to leg distance, relatively low terrain in deltas and other flat areas, and weather limitations. These operations are a mix of VFR and Instrument Flight Rules (IFR) depending on the certificate holder's aircraft equipage, weather and the suitability of the IFR infrastructure. These operations constitute the vast majority of takeoffs and landings within the state of Alaska, with one flight often making between two and four stops before returning to the station of origin.

The fleet is most often comprised of single and small multi-engine general aviation aircraft. Many if not most of these aircraft are not equipped for IFR flight and are not equipped with aircraft deicing equipment.

The remote, mountainous terrain of Alaska presents technical challenges for the FAA with installing and maintaining a robust CNS system for low altitude en route service. Maintaining the extensive Alaska National Airspace System (NAS) infrastructure, which consists of a mixture of old and new components, is a daunting task for FAA engineers and technicians.

In fact, some components of the low altitude en route system are comprised of navigational aids (NAVAIDs) designed and installed in the 1950's, and though upgraded, remain dated and lack contemporary en route design and performance. Use of space-based navigational procedures remain limited due to lack of pilot/controller communications in many of the remote areas of Alaska.

These factors all combine to create an environment where aviation services cannot always be delivered in the same manner as within the Contiguous United States (CONUS). Delivery of aviation services in Alaska requires the FAA to develop and implement unique solutions and often relies on legacy systems no longer present in the CONUS. These challenges include policy application, aircraft equipage, and other safety programs in order to address the needs of this region, as well as continuing to ensure flight operations that are safe and efficient.

In addition to the challenge of maintaining a sprawling network of ground-based NAVAIDs and communications stations across the largest wilderness setting in North America, many airports in Alaska cannot meet the certified weather reporting requirements, and airport operators face difficulties gaining FAA approval of alternate weather reporting methodology, creating a barrier to conducting terminal instrument procedures. To address these shortcomings, the FAA has implemented a strategic focus on collaboration with airport sponsors to procure and install Automated Weather Observing Systems (AWOS) using Airport Improvement Program (AIP) funding. Operation and maintenance of AWOS units meeting FAA criteria will then be transferred to the FAA.

The FAA continues to engage with Part 135 operators in to order to improve operational decision making while encouraging the use of emerging technologies such as weather cameras to provide alternative weather reporting. The FAA is also evaluating the deployment of the Visual Weather Observing Systems (VWOS), a new technology to provide non-certified weather reports and allow its use by Part 135 operators for both IFR and VFR flight planning.

Through the AIP, the FAA provides significant funding to establish and improve airports throughout rural Alaska. Much like development and maintenance of the en route segment of the NAS, rural airports face significant environmental, geographic and cost-related obstacles compared to small airports established in the CONUS. Alaska-based Part 135 operators continue to evolve away from dated aircraft designs, and as more capable, complex aircraft predominate, airport operational needs change in order to make safe and efficient services available for rural communities.

There are additional efforts to improve Part 135 operator safety in Alaska, including but not limited to: improving the avionics certification processes, evaluating necessary regulatory flexibility, creating special instrument procedures, creating waypoint charting for mountain passes, improving outreach efforts through the Aviation Safety Action Program (ASAP), encouraging the adoption of Safety Management Systems (SMS) by small operators, and continuing education efforts via the FAA Safety Team.

Introduction

Alaska's population density is the lowest in the United States, with 82 percent of the communities in Alaska accessible only by air. Alaska spans nearly 600,000 square miles and is more than twice the size of Texas. The mountainous terrain and high latitude weather patterns create significant logistical environmental challenges for safe air travel. With most of the communities accessible only by air, annual enplanements in Alaska are 7.1 times the state population compared to 2.8 times the population in the CONUS. This results in a dependence on aviation that significantly exceeds the rest of the United States.

As of December 2020, Alaska has 396 public use airports (284 land based, 4 heliports, and 108 seaplane bases). The nature of public airports varies considerably, from sophisticated, contemporary airports near major population centers to small village airports with gravel operational areas and little to no weather stations or instrument approaches. Even urban airports have their own operational challenges because of terrain and the environment, some with no practical ability to use radar and others burdened by extreme weather conditions during the Arctic winter seasons.

Particularly for the General Aviation (GA) community and smaller Part 135 operators, Alaska's operational environment remains unique compared to the CONUS. The Lake Hood Seaplane Base in Anchorage is the world's largest and busiest seaplane base and the only seaplane base with primary airport status in the United States. Parts of southeastern Alaska are almost entirely dependent on seaplane and helicopter operations due to scarcity of suitable land areas for even the most rudimentary airstrips. Alaska has approximately 763 recorded landing areas in addition to the public use airports. Landing areas in Alaska are often a remote unpaved or gravel air strip in the middle of the wilderness or an isolated body of water. This demonstrates the extensive use and diversity of operations in Alaska.

Mountainous terrain and high latitude weather in Alaska underscore the need for reliable infrastructure that supports both IFR in low altitude airspace and VFR operations. These are commonly used for intrastate transportation of goods and passengers within Alaska by both commercial operators and prevalent Part 91 operations. Operators span the gamut from small GA aircraft equipped with "tundra tires" that operate on unimproved airstrips to larger, transport category aircraft that operate on frozen lakes. Alaska also has a significant role in national security which includes major Department of Defense installations, strategic missile defense systems infrastructure, designated training airspace, experimental and commercial missile launch facilities, search and rescue and other strategic programs related to the Arctic environment.

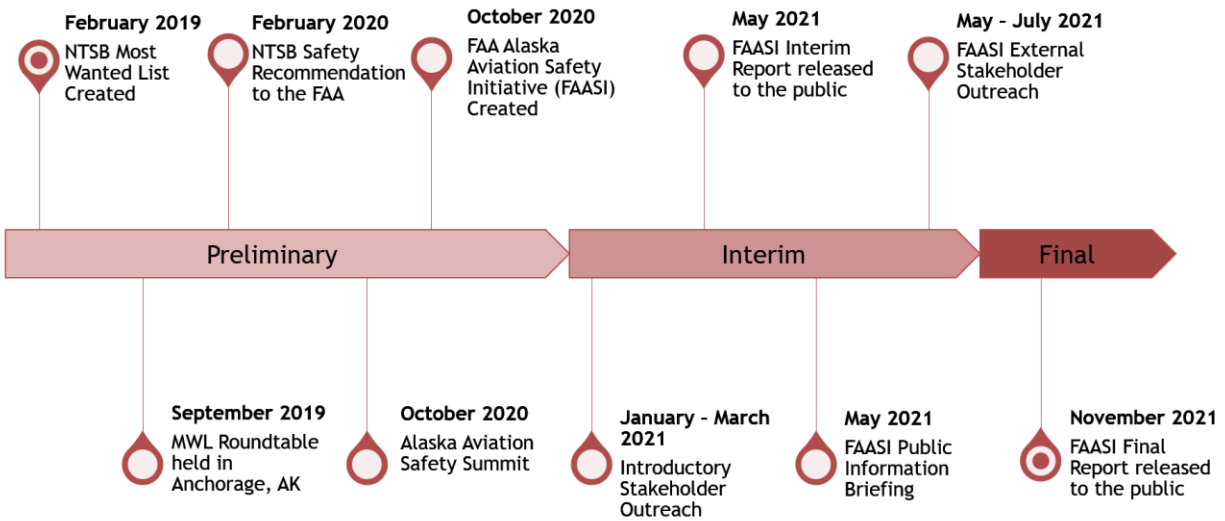


Figure 1: Timeline

Figure 1 provides a historical timeline of events leading up to the FAASI. In September 2019, NTSB Chairman Robert Sumwalt hosted a Most Wanted List Roundtable discussion in Anchorage, Alaska, “Alaska Part 135 Flight Operations – Charting a Safer Course”. The February 2020 NTSB Report ASR-20-02, noted that during the period from 2008 to 2017, the total accident rate in Alaska was 2.35 times higher than the rest of the United States with the fatal accident rate in Alaska being 1.34 times higher. The NTSB Report ASR-20-02 included Recommendation A-20-11 for the FAA to “work with the stakeholders that service the Alaska aviation industry to implement a safety-focused working group to review, prioritize, and integrate Alaska’s aviation safety needs into the FAA’s safety enhancement process”.

With a focus on the future, FAA Administrator Steve Dickson highlighted the NTSB A-20-11 Recommendation and directed the RA to begin development of an internal process to accomplish the NTSB recommendations. The FAA elements evaluated are the FAA’s past, current and potential programs. The RA is to work with Alaskan stakeholders to gain insight into the effectiveness of such programs. This will ensure those programs and alternative approaches are fully considered.

FAA Administrator Dickson and United States Senator Dan Sullivan convened an Alaska Aviation Safety Summit in October 2020 that was attended by aviation safety experts, government officials, Part 135 operators and other aviation users to discuss the many distinctive aviation safety issues of flying in Alaska. Based on concerns raised during the summit, along with the NTSB’s report, the FAA Administrator directed the RA to execute the following actions:

1. Lead a cross-agency working group of FAA experts to focus on safety issues particular to Alaska, by conducting an inventory of recent, ongoing, and planned FAA efforts in Alaska, then synthesize a plan for facilitating further discussion with the aviation community in Alaska.

2. With the working group's information, fully engage with a representative group of stakeholders, consisting of members of the aviation community within Alaska and the FAA, to determine how those efforts can be reviewed, prioritized, and integrated responsibly to have a substantial, positive, and rapid impact on aviation safety in Alaska.

The FAASI was formed to carry out the direction received from the Administrator. Over the long term, the FAASI will structure a mechanism for aviation stakeholders in Alaska to provide input and raise issues with the FAA. Through the FAASI, the FAA will continue its internal coordination efforts and collaboration with the aviation community to achieve the highest level of safety. This Interim Report dated March 19, 2021, addresses the first action item from the Administrator.

The FAASI team will structure a mechanism to identify the appropriate stakeholders representing a broad spectrum of the aviation community in Alaska aviation, to include air carriers and operators, general aviation, the military and governmental entities. The FAASI team will share this Interim Report and associated information with stakeholders and it will be the focus of scheduled individual interface sessions to gain factual knowledge and insight from those stakeholders. Once these sessions are complete, the FAASI team will integrate the additional information and analysis into completion of a Final Report to the Administrator later in the year.

This project will address how the FAA and Alaska aviation stakeholders can best support safety and a robust system of transportation in an aviation dependent state with innovative and practical approaches to the technical and environmental challenges in terms of CNS, infrastructure, and operational management. The FAASI process does not end with publication of the Final Report to the Administrator, but represents a continuing approach and process to improve aviation safety within the Alaskan Region.

1.0 Challenges

1.1 Environment

The geographic, topographic, and climatic environment in Alaska poses a number of strategic and tactical challenges to aviation safety. Alaska has almost twice as many landing areas as public use airports. Landing areas in Alaska are often a remote unpaved or gravel air strip in the middle of the wilderness or an isolated body of water.

Alaska has a very diverse topography. Southeast and southcentral Alaska are coastal areas with numerous mountain peaks. Alaska has approximately 34,000 miles of coastline, more than the rest of the United States combined. Weather patterns are unpredictable in mountainous coastal areas. Rapidly changing weather results in operational challenges for aircraft. Southwest Alaska and the Aleutian Islands are characterized by rugged volcanic mountains. Western Alaska has an immense tundra with numerous lakes and rivers. In low-light conditions, navigation is challenging as most geographic features appear similar. Alaska has over three million lakes larger than 20 acres which creates a vast network of highly suitable seaplane bases, sea-lanes, and landing areas for “those with floats”. The Arctic region of Alaska covers the mountainous terrain of the Brooks Range up to the Arctic Ocean. Of the 20 highest mountain peaks in the United States, 17 are in Alaska. Denali is the highest peak in North America.



Figure 2: Topographic Map of Alaska

Figure 2 reflects the remoteness and varying topography that limits the usability of ground-based navigation aids in the low altitude environment used for intrastate air commerce. Installation and maintenance of ground-based navigation and communications stations are difficult and expensive. Satellite based navigation, while powerful and continuing to rapidly evolve across both the safety and efficiency spectra, is only available to aircraft equipped with modern avionics.

Public use airports often lack power sources or transportation networks for installation and support of safety equipment. Where power and telecommunication infrastructure exist or can be

provided, the logistics of equipment installation can be both difficult and extremely expensive. Installation and maintenance is often inhibited by long winters and the associated weather conditions.

Alaska has fewer weather observing systems than the CONUS and those that exist are situated at greater distances from each other. This presents a myriad of challenges for both Part 135 and general aviation operators. Many airports do not have weather observing systems. Without certified weather reporting, or an approved alternative with adequate fidelity, by regulation, Part 135 operators cannot conduct IFR operations into those airports.

The relative sparsity of weather reporting stations inhibits forecasting models as more locations and a greater quantity of weather reports lead to more robust and reliable forecasts. Across the entire range of VFR operations, increased en route weather reporting allows for better pre-flight planning and encourages pilots and operators to make smart “go/no-go” decisions using safety risk-management tools before initiation of flight rather than making such decisions en route by individual pilots. Weather observations and forecasts are required for Part 135 operations. For flights flying under VFR, accurate weather reports and forecasts will significantly improve the safety of operations.

1.2 Fleet

Alaskans rely on daily air services for intercity/intervillage transportation, delivery of goods and services, emergency medical evacuations, and daily commuting. Infrastructure for automobile, bus, or train travel, common in the CONUS, does not exist in most of Alaska. In many areas, aviation is the sole method of transporting mail, cargo, and people. Aircraft owners and operators consider multiple factors when selecting their fleet of aircraft. Those factors include: the size of the community, distance between neighboring communities, topography, weather, ability to mix passengers and cargo, and airport infrastructure. Aircraft operator fleet selections determine the critical aircraft at each airport, and the subsequent AIP designations determine federal funding eligibility. As is evident, the aircraft fleet is interdependent with other aspects of the NAS in Alaska.

Most air carriers and intrastate operators in Alaska conduct operations under Part 135 and fly small, single engine, piston-powered aircraft in a low altitude environment. The majority of these aircraft are equipped only for VFR flight and serve destinations that are not supported by terminal instrument procedures. Much of the commercial fleet lacks the equipment to safely and legally fly in conditions conducive to icing, further restricting the use of IFR for Part 135 operations. However, of all Alaskan flight operations, there is still a significant number of IFR flights conducted.

As a result, operators often elect not to install IFR equipment since it would provide minimal benefit at great cost due to limited availability of more accessible instrument procedures and the inability to fly into known icing conditions. Therefore, a substantial segment of Part 135 operations in Alaska will remain VFR centric regardless of FAA efforts to enhance the use of IFR routes and suitably equipped aircraft.

CFIT accidents by Alaska Part 135 operators operating under VFR and related unintended encounters with IMC are two of the leading causes of aviation related fatalities in Alaska. Regulatory applications and avionics sensitivity discourages the use of Terrain Awareness and Warning Systems (TAWS) or other terrain awareness equipment in mountainous terrain when the operations are conducted in VFR conditions.

Beginning in 1997, the Alaskan Region, in cooperation with the aviation industry, developed terrain awareness and TAWS systems to be installed in small aircraft that operate in accordance with VFR and IFR. As part of this effort, the FAA equipped over 400 aircraft operating under Part 135 with TAWS. These systems included multiple modes with the majority of Alaska's operators flying under mode Class C or Helicopter Terrain Awareness and Warning System (HTAWS) for helicopters. In 2002, regulations changed and required all turbine powered airplanes with six or more passengers to have TAWS Class B systems installed. The TAWS Class B systems provide aural warnings to pilots encountering terrain. In accordance with the regulation, the equipment must be installed on the aircraft but pilots disengaged the system while in flight. Post-accident investigations revealed a significant number of instances where the pilot, while operating at a lower altitude, disengaged the system due to aural warning distractions. As aircraft operating under Part 135 are authorized to fly at 500' above ground level (AGL) and TAWS alerts activate at this altitude, these inapplicable warnings create an unnecessary distraction. This is just one example of operational constraints when regulations are not tailored for Alaskan operations.

1.3 Infrastructure: Communications, Navigation, Surveillance (CNS)

Alaska's airspace system and CNS air traffic management ground-based infrastructure is outdated and only covers a relatively small percentage of the low altitude en route airspace below 5,000' Mean Sea Level (MSL). To ensure reliable access and safety, Alaska requires a more robust infrastructure to enable low altitude en route IFR operations to meet the critical needs of its communities.

The primary beneficiary of improved Performance Based Navigation (PBN) operations in Alaskan low altitude airspace are Part 91 general aviation and Part 135 operators. Improved PBN operations would enable aviators to mitigate the risk of VFR operations by operating under IFR while remaining clear of icing conditions that would otherwise prohibit the use of IFR operations.

The challenges to a robust system are many. Communication and surveillance gaps exist for the Very High Frequency (VHF) Omnidirectional Radio Range (VOR) and Non-Directional Beacon (NDB) airways. The Global Navigation Satellite System (GNSS) and Wide Area Augmentation System (WAAS) provides 100 percent coverage for Alaska but communications and surveillance coverage is limited to approximately 50 percent of airspace below 5,000' MSL. Without future actions by the FAA, the full use of GNSS and WAAS navigation will remain limited.

Like GNSS and WAAS, Automatic Dependent Surveillance Broadcast (ADS-B) can enable PBN operations for all phases of flight. ADS-B out by regulation is required in the Ted Stevens Anchorage International Airport Class C Airspace. The use of this system provides a significant

increase in safety benefits for both IFR and VFR operations. Not only is navigation and surveillance enhanced but other situational awareness aspects are increased for flight crews depending on the avionics suite adopted by the operators. Adding ADS-B Ground Based Transmitters (GBT) and associated Remote Communications Air to Ground (RCAG) would enable increased PBN IFR operations in the remote areas of Alaska increasing safety for VFR operations. Unfortunately, this is difficult due to the high cost of installing, maintaining, and sustaining the ground based infrastructure in these remote areas.

Changes to aviation policies and authorizations related to aircraft equipment and development of both terminal and en route IFR procedures could encourage increased IFR operations across the region.

1.4 Operations Safety Management

The predominant strategy for reducing Part 135 accidents is to encourage more widespread use of IFR operations and improve the management of VFR operational safety by certificate holders. While infrastructure improvement is a key component of both goals, FAA outreach and certificate management remains an equally important piece. The commercial operators hold the most important keys to success. These keys include the development of good safety processes, effective operational control procedures, and above all, a robust safety culture. This safety culture must accept safety as the over-riding element in any decision-making by all employees, from upper management, to line operations and maintenance personnel.

With the exception of regulatory currency requirements, GA pilots operate outside of the more structured settings presented in 14 CFR Part 119 (Part 119) certificate environment in regards to training and proficiency. By operating in a less structured environment, GA operators require a different level of support from the FAA. The FAA needs to structure outreach and support services and the use of tools such as compliance initiatives to address not only pilot technical proficiency, but also the individual cultural norms which results in good decision-making through all phases of flight.

A significant element of the Alaskan Region Airports Division's mission is to support the regulation of subject airports under 14 CFR Part 139 (Part 139), *Certification of Airports*. In Alaska, this regulation applies to the 26 airports served by air carrier aircraft certificated for 31 or more passenger seats. However, safe airport administration by sponsors, in particular the State of Alaska Department of Transportation and Public Facilities, includes a much broader challenge than the more highly regulated Part 139 airports. The majority of public airports supported by the AIP must still comply with certain design and maintenance requirements to ensure safe utilization by Part 135 operators and the more numerous GA users of rural airports.

Elements of Part 139 regulation include operational issues specific to runway, taxiway, aircraft parking, and apron surface conditions; airfield safety area compliance, airfield lighting, signage and marking, snow and ice control, movement of surface vehicles and pedestrians on the airfield and airport, aerial obstruction marking and management, wildlife hazard management, airport condition reporting, and other elements.

2.0 Current FAA Efforts

2.1 Weather

Alaska has fewer weather observing systems than the CONUS with some airports and critical mountain passes lacking coverage. CFIT is one of the leading causes of aviation deaths in Alaska with weather being a significant contributing factor. The FAA is implementing initiatives to improve the coverage of weather observing systems, and other associated equipment such as weather cameras for the purpose of enhancing use of IFR and VFR flight planning. The overarching goal is to reduce CFIT accidents.

Some of the efforts the FAA has undertaken include:

The FAA refreshed seven of the Next Generation Weather Radar (NEXRAD) systems, replacing radar processors and refurbishing transmitters. Long range radar systems at Fairbanks and Kenai were also refurbished.

Alaska experiences large fluctuations in barometric pressure. Those fluctuations require precise settings of aircraft altimeters used to determine altitudes. Air traffic controllers routinely use low altimeter procedures and take the extra step to advise pilots when the altimeter is below 29.00. By using specific phraseology, this procedure has almost eliminated pilots inputting the wrong altimeter setting which can result in large discrepancies in altitude.

The FAA is working to identify the Pilot Report (PIREP) needs of aviators in Alaska. Increasing the quality and quantity of PIREPs will enhance the critical weather information being provided. In June 2020, a virtual four day PIREP Summit was conducted during which stakeholder focus groups convened to discuss shortfalls in PIREPs across the NAS. The objective of both the focus groups and the summit was to improve stakeholder understanding of the deficiencies in the PIREP submission and dissemination process and to develop a research road map that will inform end-to-end solutions targeted at increasing the number, quality, distribution, and accessibility of PIREPs.

The FAA conducted focus group discussions with stakeholders to obtain feedback on the PIREPs. The "Fiscal Year (FY) 2020 Top 5: PIREP Solicitation/Dissemination CAP" includes the following five strategies intended to address PIREP solicitation and dissemination issues:

Strategy #1: Encourage pilots to file more PIREPs.

Strategy #2: Improve automation capabilities with regard to PIREP solicitation, entry, and dissemination.

Strategy #3: Improve knowledge of PIREP processes, tools, and system impacts through Air Traffic Control (ATC) training and education.

Strategy #4: Align policy and procedures to provide consistent and sufficient guidance on PIREP solicitation and dissemination.

Strategy #5: Improve understanding of the deficiencies in the PIREP submission and dissemination process.

Additionally, the FAA Alaska PIREP Improvement Workgroup is holding routine meetings to continue this discussion in an effort to develop a strong network of members to establish goals and milestones. Using information from the PIREP Summit, the FAA is updating its PIREP Modernization and Strategic Plan (PMSP).

The FAA utilizes weather cameras in Alaska to give current visual weather information with near real-time video images. Pilots can access available weather cameras through the Alaska Weather Camera website. Weather cameras have been installed at some airports, mountain passes, along high use air routes, and in areas with elevated accident rates. This service is a widely-recognized flight decision tool in Alaska that allows pilots to make a better informed decision about weather conditions prior to departure. Pilots also use the weather cameras during flight for en route updates and briefings from Alaska Flight Service. Although weather cameras are not a certified weather product, they do provide critical information for VFR operations. Aviators supplement official weather products with Alaska weather camera images.

The Alaska weather camera program is providing measurable reductions in weather-related aviation accidents and increases in weather-related aviation efficiencies by reducing the number of inflight operational interruptions. The program also provides images directly to the National Weather Service, where they are used to enhance the development of weather forecasts. The FAA is conducting a business case analysis to determine options for expansion of the weather camera program throughout Alaska.

In Alaska, the FAA currently has 15 Flight Information Services-Broadcast (FIS-B) products in use, including several weather specific products. The FAA recently enhanced the transmission of ADS-B products to increase the pilot's ability to assess weather conditions on a more strategic basis, aiding aeronautical decision making and increasing aviation safety.

The continued deployment of ADS-B technology in Alaska allows operators to access vital aeronautical information that was previously much more difficult to obtain. ADS-B's FIS-B provides valuable meteorological and aeronautical data.

Prior to 2018, airport sponsors were hesitant to purchase new AWOS units utilizing AIP funding. This was partly due to the requirement for a cost/benefit analysis, and the high maintenance costs the airport operator would incur. These concerns were eliminated by the FAA Reauthorization Act of 2018 which removed the requirement for a benefit/cost analysis in low population density states, including Alaska, and required the FAA to assume operation and ownership of AWOS units that meet FAA specification.

In collaboration with the Alaska Air Carriers Association (AACA), airport sponsors, and other external stakeholders, the FAA has identified 35 potential locations for new AWOS installations. Plans are in place for the initial installation and certification of eight units to be completed during the summer of 2022. These AWOS units will be installed at Akiachak, Crooked Creek, Nulato, Tok, Coldfoot, Kotlik, Perryville, and Tununak.

The FAA is working with 14 CFR Part 121 (Part 121) operators to increase access to airports without approved weather reporting. The FAA and Part 121 operators are cooperating to obtain authorizations for special terminal operations procedures. To date, these procedure authorizations have been obtained for three Part 121 operators.

2.2 Infrastructure: Communications, Navigation, Surveillance (CNS)

CNS are critical to aviation safety. Communication and surveillance equipment allow air traffic controllers to see aircraft on their displays and communicate with aircrews. Navigation services provide the position and guidance information pilots use to fly published routes. The use of CNS technology for IFR operations is sometimes referred to as the CNS Separation Safety Triad, see Figure 3.



Figure 3: CNS Safety Separation Triad

2.2.1 Communications:

The FAA hosts an annual Alaska Communications Requirements Meeting where stakeholders have the opportunity to present new requests and give feedback. The Communication Facilities Sustainment Program typically funds eight to ten improvements annually, nationwide. There are over 280 requirements across the United States competing for this funding. Alaska currently has 33 requirements related to expanding communication coverage, two of which have received funding.

The FAA, in collaboration with the Matanuska/Susitna Midair Collision Advisory Group, realigned the Common Traffic Advisory Frequencies (CTAF) used in and around the Matanuska-Susitna Valley since mid-2014. The realignment reduced pilot confusion and significantly reduced the number of frequency changes needed during flight. This initiative has also led to improved charting and accuracy of flight frequencies on VFR sectional charts.

The Special Use Airspace Information Service (SUAIS) consists of frequencies used by GA pilots while transiting special use airspace under VFR. The pilot receives real-time information on the status of special use airspaces. This program has been extremely well received and is a mitigating factor to revise and expand special use airspace as mission needs change. It has increased the level of safety for both military and civilian users.

The FAA completed the Alaskan Satellite Telecommunications Infrastructure (ASTI) Modernization in September 2019. Forty-one Alaskan NAS Interfacility Communications System (ANICS) sites were modernized to ASTI. ASTI has improved system availability, information system security, and life cycle support. In 2021, the FAA is starting a project to replace the ASTI antenna and antenna controllers, with an estimated project completion of 2023.

2.2.2 Navigation:

In May 2019, the FAA hosted a major working group of designers, regulators, and users to develop recommendations on the redesign of many of the navigation routes in Alaska. The objective of the redesign is to remove legacy routes and develop satellite based area navigation (RNAV) T-routes to assist lower flying aircraft when flying under IFR. The development of new T-routes and optimization of existing T-routes will enhance safety, increase efficiency and access, and provide en route continuity that is not subject to the restrictions associated with ground-based airway navigation. The workgroup developed 48 recommendations, including 25 new T-routes and 23 amendments to existing T-routes. Over 400 route sections were analyzed to ensure the proper altitudes were prescribed based on air-to-ground communications capabilities. All new and amended routes are scheduled for publication by February 2023.

The FAA will continue to improve NAVAIDs that give visual guidance to pilots during the approach and landing phases of flight. All NAVAID sustainment/establishment efforts are completed with new equipment. Planned Visual Guidance Lighting Systems (VGLS) improvements include replacing 23 Visual Approach Slope Indicators (VASI) systems with Precision Approach Path Indicators (PAPI), establishing one new PAPI system, replacing four Runway End Identifier Lights (REIL), replacing four Medium Intensity Approach Lighting Systems with Runway Alignment Indicator Lights (MALSRs), and replacing 14 Runway Visual Range Systems with new PC-based Runway Visual Range (PC-RVR) equipment. These projects are planned from 2021 through 2026.

The FAA is replacing the VOR in Galena, which was destroyed in a flood in May, 2013. This newly-constructed VOR will re-establish critical navigation between Fairbanks, Galena, and Nome. The installation of the VOR is currently scheduled to be completed in winter 2021/2022.

The FAA and non-FAA service providers have published a total of 143 WAAS-based Localizer Performance (LP), and LP with Vertical Guidance (LPV) approaches in Alaska as of December 2020, including point-in-space procedures for seaplanes. Additionally, the FAA aided several passenger and cargo air carriers with installation of WAAS avionics in large air carrier aircraft.

The WAAS program has made improvements that will provide better service in Alaska by increasing coverage by geosynchronous orbit (GEO) satellites, transitioning WAAS ground

stations from terrestrial to satellite communications for improved reliability, and improving WAAS aircraft antenna placement for lower GEO elevations angles. Additional safety assessments of Global Positioning System (GPS) and WAAS have been performed. The FAA plans to publish WAAS LPV/LP approaches to every qualified runway end in the NAS, including Alaska, including fixed-wing and helicopter point-in-space approaches and special required navigation performance (RNP) approaches. The FAA has also modified the design criteria for LPV approaches to allow more runways to be qualified. The FAA will also transition WAAS to dual-frequency operation, which should improve instrument approach availability in Alaska.

Certification of several additional safety-enhancing pieces of equipment and modifications by the Aircraft Certification Service was accomplished to support installation of these systems by the Alaska aviation community. Equipment certified include synthetic vision systems such as WAAS/GPS, ADS-B, and low-cost Electronic Flight Instrument Systems (EFIS), all which increase situational awareness and promotes IFR operations.

The Alaska Mountain Pass Waypoint Charting initiative supports pilot situational awareness when flying in remote and mountainous areas and decreases CFIT incidences. The Mountain Pass Working Group consists of FAA, regulatory, and stakeholder representatives. The goals of the initiative are to identify mountain passes that should be charted, establish VFR waypoints to identify mountain pass entry and exit points, and remove unsafe or unused mountain passes from VFR sectionals. The group is recommending that altitude and terrain elevation data be incorporated into aviation charts to enhance pilot awareness.

The FAA continues to approve and authorize special instrument procedures which are a valuable tool in Alaska. Special instrument procedures can be developed where standard criteria can be difficult or impossible to apply or a special procedure can be developed for private-use airports. Often times, special procedures are developed and funded by the FAA; however, they may also be developed by non-FAA service providers as proprietary.

The FAA is establishing a workgroup to determine and assign ownership of the Alaska Chart Supplement data. Ownership will include analyzing currency and accuracy of the data and recommending updates and modifications as appropriate, based on the outcome of a Safety Risk Management Panel, if required. Alaskan pilots rely heavily on the supplements during flight. The revision and republishing of the supplements will enable greater situational awareness for pilots. Establishing ownership and a consistent process for updating the information will ensure regular review and update.

2.2.3 Surveillance:

The FAA is installing Airport Surface Surveillance Capability (ASSC) infrastructure at Ted Stevens Anchorage International Airport. ASSC improves surface surveillance, situational awareness, and conflict alerting to ATC through use of data from several sources to produce a highly accurate display for air traffic controllers in all weather conditions. Pilots equipped with ADS-B can also receive and use traffic data to avoid other aircraft. ASSC will provide Ted

Stevens Anchorage International Airport the added benefit of wrong surface landing detection and prevention. This new system is scheduled for initial operating capability in 2021.

A streamlined installation approval and certification of ADS-B was implemented to increase and encourage compliance where applicable (Ted Stevens Anchorage International Airport Class C airspace) and equipage in the rest of the state. FAA has provided extensive outreach to the Alaska aviation community encouraging pilots and operators to equip with ADS-B.

In 2015, the FAA developed the Enhanced Special Reporting Service (eSRS) to expedite search and rescue operations in Alaska. Pilots must establish a master flight plan and set up their satellite/GPS tracking device to participate in the program. The FAA begins search and rescue action upon receipt of a distress message from one of these satellite/GPS tracking devices. The tracking device augments the normal VFR/IFR flight plan search and rescue process, allows a quicker response and reduces the total search time by providing a known track or location from the distress message. The eSRS increases protection when a pilot files a round robin or extended duration flight plan for travel to remote areas without access to VHF radio communication outlets. An eSRS internal baseline release is anticipated for 2021, which will enhance the service with two-way text communications between pilots and Flight Service.

The installation of Micro En Route Analysis and Reporting System (MEARTS) displays and Wide Area Multilateration (WAM) equipment at the Juneau International Airport has reduced Traffic Collision Avoidance System (TCAS) alerts and has improved the issuance of timely traffic advisories.

A network of 17 Flight Service facilities provides both preflight and inflight meteorological and aeronautical information to pilots operating in Alaska using a mix of legacy and modern equipment. The FAA is evaluating the potential for an automation system that will improve voice switch system sustainability and supportability. The Alaskan Automation Capability (AAC) will address telecommunication infrastructure bandwidth limitations to improve operational resiliency and efficiency. The AAC will modernize the user interface, processing, data exchange, and integration of enhanced weather and aeronautical products. The FAA is developing a strategy for acquiring the AAC with an integrated solution to address the automation platform and voice switch, including establishing appropriate milestones on the FAA Infrastructure Roadmap.

2.3 Operations Safety Management

The FAA started the Bethel Tower Workgroup in 2019 to help mitigate and reduce the occurrence of Near Mid Air Collision Reports (NMAC) near the Bethel Airport. The primary focus of the workgroup is assisting with increasing pilot and air traffic controller situational awareness. The workgroup developed and implemented the Frequent Flyer Program Letter of Agreement, which increases utilization of discreet beacon code assignments to mitigate IFR/VFR conflicts. The workgroup also developed and implemented a VFR reporting point map and published 21 VFR reporting point fixes in the national navigational database. The current focus of the workgroup is examining Hot Spot Designations (areas of potential conflict on the airfield) to help reduce pilot deviations related to runway incursions.

The FAA and Federal Contract Towers Runway Safety Action Team (RSAT) convene to discuss surface movement issues and concerns at a particular airport and formulate a Runway Safety Action Plan (RSAP) to address those concerns. Regional and local RSATs include FAA personnel, airport operators, and other interested parties. These meetings are held at the nine airports in Alaska which have air traffic control towers.

The FAA Safety Team (FAAST), whose mission is to promote pilot safety practices through outreach, conducts seminars to promote safety principles. These principles include navigation, equipment, administration of the Pilot Proficiency Award Program (WINGS), and regular communications through the FAAST Blast, a biweekly FAA Safety Briefing. The FAA workgroups include industry and external aviation partners to address and improve safety challenges in Alaska, such as the RSAT. FAAST outreach efforts have included topics from ADS-B to air tour pre-season to digital charting.

The FAA in Alaska started an ASAP outreach initiative in January 2021. The goal of the ASAP outreach is to increase awareness and participation in the voluntary program. The FAA is contacting all of the Part 135 operators in Alaska to provide information about ASAP and to determine interest.

The CFIT Accident Prevention Initiative focuses on decreasing the aviation accident rate in Alaska through the introduction of cost effective terrain awareness systems and the development of TAWS. A systems safety approach is utilized to monitor and identify CFIT hazards. The initiative's outreach utilizes FAA and operator awareness education and training that focus on CFIT safety topics, multimedia presentations, and evaluations of accidents to determine lessons learned and identify hazards in the system.

3.0 Planned FAA Efforts

3.1 Weather

The Juneau Airport Wind System (JAWS) is a unique wind shear alert system for the Juneau International Airport which significantly improves safety for area users. JAWS gathers real time meteorological data from sensors located in the Juneau area, processes that data into estimations of current levels of turbulence, and distributes meteorological data and turbulence alerts. The turbulence alerts are provided through directly connected display consoles and through displays remotely connected by the internet. An upgrade to JAWS is currently planned to occur between 2024 and 2026.

The FAA's 89 AWOS stations are scheduled for an upgrade in 2026 which will extend their service life to 2029. In collaboration with the AACA, airport sponsors, and other external stakeholders, the FAA has identified 35 additional locations for new AWOS installations, eight of which are already in progress. The FAA will work with the airport sponsor of each of the planned 27 locations to prioritize and fund unit installation.

In 2019, the FAA replaced obsolete wind systems with new Surface Weather System (SWS) at five airports. The new SWS provide wind, temperature, and pressure readings. The FAA is planning to upgrade the five SWSs and 16 Stand Alone Weather Sensors (SAWS) systems. The current start for replacement is estimated in 2025.

A business case analysis for the installation of 140 more weather cameras and additional VWOS is planned.

3.2 Infrastructure: Communications, Navigation, Surveillance (CNS)

3.2.1 Communications:

The FAA is planning to conduct a technical refresh on all 118 Remote Communications Outlets (RCO) and 14 Remote Transmitter/Receivers (RTR) in Alaska by 2026. These plans include the installation of four more RCOs. The remaining Self Sustaining Outlet (SSO) is in the process of being refurbished with an anticipated completion in 2021.

The FAA is considering whether to allow communication gaps on some published routes. Allowing communication gaps on some routes would significantly lower the minimum IFR altitudes, while still providing obstacle clearance. This would provide flexibility for pilots that may have performance limitation or flight into known icing conditions restrictions. Additionally, the FAA is evaluating the feasibility of advanced communication equipment for aeronautical communications.

3.2.2 Navigation:

WAAS will make improvements that will provide better service in Alaska by increasing coverage by GEO satellites, transitioning WAAS ground stations from terrestrial to satellite communications for improved reliability, and improving WAAS aircraft antenna placement for lower GEO elevations angles. The FAA will also transition WAAS to dual-frequency operation, which should improve instrument approach availability in Alaska. Additional safety assessments of GPS and WAAS will be performed.

The FAA is planning to give clarification on Operation Specifications for Part 135 operators specific to the navigation equipment required for flying on airway, off airway, and during low altitude IFR operations. This clarification will aid operators when they equip their fleets and will increase their ability to fly under IFR. This clarification will include specifics regarding required navigation equipment and the combinations of navigation equipment that will be acceptable for IFR operations.

The FAA is considering evaluating existing specially designed routes in southeast Alaska which provide protected access to airports with special terminal instrument procedures. These routes which are not publicly charted, require specific equipment to be installed in order to be authorized for use. The FAA will evaluate amending the navigation equipment requirements for these routes, due to the advancements in navigation equipment and changes in procedure design

criteria and operations policy, to safely expand airspace capacity while increasing IFR operations.

3.2.3 Surveillance:

There are four FAA facilities using MEARTS. The Anchorage area NAS is the only user of the Flight Data Processing System (FDPS). These aging systems are expensive to maintain and slow to update. The FAA is working on a proposal to replace MEARTS and FDPS with an ERAM system. Doing so will provide numerous enhancement features not available with the current systems. If approved, the project would commence in approximately 2025.

The FAA is in the design phase to replace the Anchorage Airport Traffic Control Tower (ATCT). This replacement will improve air traffic controller visual line-of-sight at both Ted Stevens Anchorage International Airport and the adjacent Lake Hood Seaplane Base. Construction funding is contingent on the final investment decision which is planned for October 2023.

3.3 Operations Safety Management

The FAA is considering a modernization to the Notice to Airmen (NOTAM) system that will create a single technology system for entering, processing, and retrieving all NOTAM data. The modernization will also improve access to safety critical information. Included in the modernization is an initiative to retire the United States NOTAM System (USNS) and establish the Federal NOTAM System (FNS) as the sole repository. The NOTAM Modernization initiative also includes integrated training and outreach components for affected NOTAMs and aeronautical information for stakeholders. Previous improvements to the system include aligning coded departure routes and preferred route data across multiple sources and removing redundant information in the chart supplements.

An expansion of the “From the Flight Deck” (FTFD) video series is being considered for some airports. This video series provides pilots with actual runway approach and airport taxiway footage captured via cockpit mounted cameras. The videos combine diagrams and visual graphics to illustrate hot spots and other safety-sensitive items. FTFD videos specific to airports in Alaska will be produced in the near-term.

4.0 Individual FAA Lines of Business Initiatives and Planning Summaries:

4.1 ATO Summary

The NAS in Alaska is a complex system of infrastructure, automation, policies, procedures, and personnel. The ATO is responsible for much of this system, and provides many functions and services to Alaska aviators. The ATO’s primary focus is aviation safety, and reducing risk in the NAS.

In addition to air traffic control and flight services facilities and services, the ATO is responsible for the engineering, installation, maintenance, and technical refresh of aviation infrastructure in Alaska. This includes CNS, automation, weather equipment, and the facilities that support them. The ATO provides for the development, charting, maintenance, environmental review, and flight inspection of instrument flight procedures, airways, and oceanic routes.

FAA system engineers and technicians face a significant challenge in maintaining the extensive Alaska NAS infrastructure, which consists of a mixture of outdated and modern components. Remote infrastructure locations, accessibility challenges created by weather, and expansive distances across Alaska make maintaining the NAS infrastructure a demanding task. ATO personnel diligently work to maintain the high level of system availability in a difficult environment.

The ATO is constantly modernizing and expanding NAS infrastructure in Alaska. Over the years, the ATO has acted on recommendations from stakeholders such as RTCA, NTSB, and other organizations. This Interim Report contains a summary of the many recently completed, current, and planned efforts focused on maintaining aviation safety. Of particular focus are efforts to increase the frequency of flights under IFR. These include increased and upgraded communications, improved satellite navigation routes and procedures, T-Routes, improved weather radars, increased automatic weather observing systems, surveillance improvements (including ADS-B expansion), and modernization and improvements to Flight Service Stations and procedures. Other significant areas include ATC infrastructure improvements at airports, automation upgrades, unmanned aircraft systems (UAS) integration, and the introduction of space operations.

4.2 AVS Summary

The Alaskan Region is responsible for a vast area, nearly one-fifth the size of the CONUS. The aviation environment is complex and hazardous due to the mountainous terrain, limited road system, and vast remote areas coupled with often unpredictable weather. Air taxi operations in Alaska are prevalent in order to provide the link to hundreds of small, remote villages only accessible by air, the demand for wilderness excursions and air tours, and the provision of resource management. The majority of these air taxi operations have single-engine, often VFR-only equipped aircraft frequently flying to remote areas that are typically off-airport. Required altitudes on published routes can be based on communication and surveillance coverage and terrain clearance, but many of the smaller aircraft typically used in Alaska are limited from flying higher altitudes due to performance and icing. Alaska's terrain has similarly placed restrictions on the network of air-to-ground communication facilities. As a result, operators elect to fly VFR, avoiding performance limitations or icing conditions.

These factors all combine to create an environment where aviation services cannot be delivered in the same manner as they are provided in the CONUS. Delivery of aviation services in Alaska requires the FAA to develop and implement unique solutions and often relies on legacy systems that are no longer available in the CONUS. These include policy application, aircraft equipage, and other safety programs to address the needs of this unique region, in addition to ensuring flight operations that are safe and efficient.

This Interim Report contains a summary of the recently completed, ongoing and planned efforts focused on maintaining and improving aviation safety in Alaska. Flight Standards' work has focused on increasing airspace and airport access through Special Instrument Flight Procedures, weather reporting requirements, streamlining the ADS-B certification process, creation of waypoint charting for mountain passes, and improving education and community outreach through ASAP and the FFAST. Flight Standards continues planning efforts on providing updated guidance to policy and authorizations in regards to equipment requirements when using GPS for navigation, considering the use of communication gaps on some routes that would significantly lower minimum IFR altitudes, as well as evaluating amending navigation requirements for special routes in southeast Alaska. Aircraft Certification (AIR) has dedicated their efforts to further the certification of several safety enhancing equipment and modifications to improve the equipage of aircraft in Alaskan airspace. AIR leads many user groups, such as the deHavilland Beaver/Otter group, to increase communication on airworthiness concerns, as well as conducting an extensive outreach program.

4.3 ARP Summary

The mission of the FAA Office of Airports is to provide the safest and most efficient airport system possible. The role of the Alaskan Region Airports Division (Airports Region Office) in meeting this goal is to provide leadership in planning and developing an airport system that meets the needs of Alaskan aviation stakeholders. The Airports Region Office accomplishes this task while considering economics, environmental challenges, and local rights, while safeguarding the public investment.

The Airports Region Office collaborates with airport sponsors and other internal and external stakeholders to infuse approximately \$225M of federal funding annually via the AIP for capital development of, and infrastructure improvements to, public-use airports. In recent years, the Airports Region Office has infused additional monetary resources to its Alaskan airport sponsors via available AIP Supplemental funding and Coronavirus Aid, Relief, and Economic Security (CARES) Act federal grant funding. As a result, in federal fiscal year 2020, the Airports Region Office provided a total of \$398M in federal funding to airport sponsors throughout the State of Alaska.

In federal fiscal year 2021, the Airports Region Office is preparing to infuse an additional approximate \$51M within the Alaskan Region via federal Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (CRRSAA) funds.

Another significant element of the Airports Region Office's mission is supporting the regulation of subject airports under 14 CFR Part 139, *Certification of Airports*. In Alaska, this regulation applies to airports served by air carrier aircraft certificated for 31 or more passenger seats and the regulation applies at 26 airports.

Importantly, at Alaskan airports not certificated under CFR Part 139, the Airports Region Office provides AIP funding through airport sponsors for projects directly related to operational safety and safety of flight. Such projects typically focus on paved and unpaved runway and

taxiway surface rehabilitation, reconstruction, and maintenance; airfield lighting, signage, and marking; construction of airport parking surfaces; removal of obstructions on and in the immediate vicinity of the airport, and a number of other development initiatives.

A notable investment presently being made at uncertificated airports is the installation of AIP-funded AWOS units. This is of particular applicability to the FAASI and is consistent with Sections 553 and 147 of the FAA Reauthorization Act of 2018. The Airports Region Office is collaborating with airport sponsors to procure and install the first eight of a proposed approximate 35 units with the intent of enabling transfer of each to the FAA for operation and maintenance. The strategic and tactical importance of this project is significant and results directly in the augmentation of flight safety in Alaska. A number of CFIT accidents have occurred within the State for which the NTSB has noted lack of available, reportable weather as a contributing factor.

Collaboration with internal and external stakeholders in Alaska is a marker of the Airports Region Office success in implementing and executing its strategic and tactical programs. The Airports Region Office looks forward to continuance of the same, including receiving stakeholder input through this FAASI initiative.

5.0 Conclusions and Next Steps

As discussed in this document, there continues to be many challenges in maintaining aviation safety in Alaska. The FAA has evaluated our current and planned efforts to address these challenges. The FAASI Team made an initial prioritization of our efforts based on what will make the greatest impact to aviation safety. This prioritization is included in Appendix 1.

Hearing from individual stakeholders throughout this process will be vital in our information and fact finding efforts. While this initiative is not a document seeking consensus, stakeholder engagement will be essential in the interim as well as in the final stage of this initiative. The FAA commits to “early and often” communication with all stakeholders.

The FAA will employ various community engagement strategies following the release of this Interim Report in order to receive external stakeholder input. Strategies include the use of individual stakeholder meetings, as well as webinar style briefings via Zoom and teleconference. When permitted, the agency will convene in-person meetings including agency subject matter experts to discuss stakeholder concerns and answer questions in order to receive the most efficient feedback that reflect individual stakeholder views, priorities, and recommendations.

Following the release of the Final Report later this year, the FAA will undertake regular and continual outreach to keep stakeholders informed of the progress of the initiative with the goal of maximizing communications, transparency, and accountability.

List of Appendices

Appendix 1: Prioritized List of Initial Efforts

Appendix 2: Glossary of Terms

Appendix 3: NTSB Report and Safety Recommendation

Appendix 4: 14 Code of Federal Regulations: Parts 91, 119, 121, 135 and 139

Appendix 1: Prioritized List of Initial Efforts

AIR TRAFFIC ORGANIZATION

ATO Efforts	Description	Category
Alaska Chart Supplement	A workgroup has been established to decide ownership of Alaska Chart Supplement data and to analyze currency and accuracy of the information as well as establish processes for its continuous review and update.	Ongoing, Medium
Mountain Pass Working Group	This group is working on standardizing the names and locations of the Alaskan mountain passes for VFR sectional charts.	Ongoing, Medium
eSRS	Further enhancements to the eSRS program will enable pilots who have established a Master Flight Plan to participate in the program. This will allow pilots to participate when on flight plans to remote areas without RCO coverage.	Ongoing, High
Flight Service Station Pilot Outreach Safety Meetings	RSAT meetings are held at airports collocated with an active Flight Service Station.	Ongoing, High
FAAST	Disseminates aviation notices and information (such as Temporary Flight Restrictions, etc.) to general aviation pilots in Alaska.	Ongoing
Frequent Flyer Program	Assigns discrete transponder codes to individual general/commercial aviation aircraft at several locations throughout Alaska. Improves situational awareness for pilots and controllers.	Ongoing
Air Traffic Services Public Outreach Programs	Includes the Alaska Civil Military Aviation Council, Aviation Industry Council, Alaska Aviation Coordination Council, pilot/air traffic controller outreach meetings, RSAT meetings, numerous working groups, and collaboration with AOPA and the AACA.	Ongoing
Self-Sustaining Outlet Replacement Program	The 14th remaining SSO at Finger Mountain, Alaska is planned to be replaced in summer 2021, completing the technical refresh effort.	Ongoing
Anchorage Fiber Optic Telecommunications System	Anchorage replacement/establishment project has been an ongoing effort for the last five years. The entire FOTS will be established along with the new ATCT project; estimated completion 2029.	Ongoing
Galena VOR Replacement Project	The Galena VOR was damaged beyond repair due to an ice jam and flooding in 2013. Construction is underway to replace the VOR with an estimated complete by 2021-2022.	Ongoing

ATO Efforts	Description	Category
AWOS, SWS, and SAWS Upgrades	Will upgrade weather systems to extend service life.	Ongoing
NEXRAD Pedestal Refurbishment	Completed by fall 2022 at the remaining five sites: Biorka Island, Middleton Island, King Salmon, Nome and Bethel.	Ongoing
Advanced Technologies Oceanic Procedures Expansion	Currently have a group working on contingency procedures that will allow Oakland, CA and Anchorage the ability to assume either facility's airspace.	Ongoing
Standard Terminal Automation Replacement System Standardization	Planned upgrade of STARS standardized components at five ATCT to the latest hardware baseline.	Ongoing
Bethel Tower Work Group	The efforts of this workgroup are ongoing, and aimed at improving pilot and air traffic controller situational awareness.	Ongoing
Review of Alaskan Offshore Airspace	An effort is underway to examine compliance with FAA orders and directives related to offshore airspace including limiting domestic airspace outside of 12 nautical miles from the shore.	Ongoing
PIREPs	FAA is collaborating with stakeholders to increase the quality and quantity of PIREPs throughout the NAS, including in Alaska.	Ongoing
RSAT Meetings	RSAT convenes to discuss surface movement issues and concerns at a particular airport and formulate a Runway Safety Action Plan (RSAP) to address those concerns.	Ongoing
From the Flight Deck	This video series provides pilots with actual runway approach and airport taxiway footage captured via cockpit mounted cameras. FTFD videos specific to airports in Alaska will be produced in the near term.	Ongoing
Sustainment of VOR, DME, and TACAN (DVT) Program	Program is being established to sustain these navigational aids and enter into contracts or partnerships with industry to provide navigation services.	Ongoing
Alaska RVR Refresh	The FAA has a funded program to replace all Alaska RVR systems with newer PC based RVRs in 2026.	Ongoing
Publish WAAS LPV/LP Approaches to Every Qualified Runway End	Developing and applying new WAAS RNP 0.3 criteria to increase safety and incentivize WAAS equipage.	Ongoing

ATO Efforts	Description	Category
WAAS Equipage	Collaborating on Certificate of Authorization with specific focus on airspace planning, route structure, and transitioning airspace to and from approved and unimproved landing zones, airports and austere locations.	Ongoing
T-Routes	The development of new T-routes and optimization of existing T-routes will enhance safety, increase efficiency and access, and provide en route continuity that is not subject to the restrictions associated with ground-based airway navigation	Ongoing
Clear Air Force Station Airspace Proposal	The USAF is proposing to establish/modify restricted area airspace over Clear Air Force Station to provide the protective airspace required for a new Long Range Discrimination Radar.	Ongoing
PAPI Installations	Installation of PAPIs at 24 additional locations is planned by 2026.	Medium
Replace all VHF/UHF Radios at RTR & RCO Facilities	Planned radio replacement at all 118 RCOs in Alaska by December 2026.	Medium
ASTI Sustainment	An antenna and antenna controller replacement project will commence in 2021 and is scheduled to complete in 2023.	Medium
ERAM	This system, if approved, would be implemented in 2025-2026 and will replace the aging MEARTS and FDPS at Anchorage.	Medium
Establish RCO/RTR Facilities/ Frequency	The FAA's Communicating for Safety program plans to fund four more RCOs from 2021 - 2026.	High
Anchorage ATCT Replacement Project	The FAA is in the design phase to replace the ATCT at the Ted Steven International Airport. This replacement will improve air traffic controller visual line of sight at both Ted Stevens and the Lake Hood Seaplane Base.	High
ASSC	This new technology will significantly enhance airfield safety during periods of low visibility at Ted Stevens Anchorage International Airport. This system will also provide the airport with wrong surface landing detection and prevention capability.	High
ADS-B Radio Station Service Volumes	FAA anticipates making a final decision in June 2021 for new ADS-B service volumes which would supply additional coverage within 5 areas.	High

OFFICE OF AIRPORTS

ARP Efforts	Description	Category
Internal Collaboration	Collaborating with all FAA LOBs to enhance understandings of coordinating processes, procedures, and priorities.	Ongoing
External Collaboration	Collaborating with airport sponsors; airport stakeholders; aviation advocacy organizations; aviation interest groups; other federal, state, and local regulatory entities, and the general public engaging in strategic discussions/meetings regarding airport/airfield strategic development, airport system planning, airport planning and capacity initiatives, and best practices related to airport fiscal planning.	Ongoing
Airport Improvement Program (AIP)	Leading and implementing the regional AIP with a particular focus on funding capital development and infrastructure improvements meeting the unique needs of Alaskan airports, seaplane bases, and heliports.	Ongoing
Airports Capital Improvement Program	Identifying and prioritizing eligible development projects and initiatives within the constraints of available federal funding and project eligibility and justification criterion.	Ongoing
Airports Environmental Management Program	Consistent with the National Environmental Policy Act and other federal environmental laws and regulations, working with airport sponsors and other interested parties to make environmental determinations which serve as a foundation for execution of capital development projects.	Ongoing
Airports Compliance Program	Oversight of airport sponsor adherence with federal AIP grant assurances requiring sponsors to maintain and operate their facilities safely and efficiently and in accordance with specified conditions.	Ongoing
Alaskan Region Airport Safety Program	Oversight of general aviation airport safety, runway safety, and airports certificated under Part 139 regulations	Ongoing
AWOS AIP Grants	Collaboration with airport sponsors to procure AWOS utilizing AIP funding.	Ongoing

AVIATION SAFETY

AVS Efforts	Description	Category
ASAP Part 135 outreach	Expand the ASAP Initiative to attain 100% outreach with Part 135 Operators.	Ongoing, High
Weight and Balance Program Revisions	The FAA has amended the templates for OpSpecs/MSpecs/LOAs to ensure operators use updated information in maintaining FAA approval of their WBPs.	Ongoing, High
CFIT Accident Prevention Initiative	Outreach and education to reduce CFIT accidents.	Ongoing, High
FAAST Outreach	FAAST safety seminars, WINGS safety program, IA Seminars, and outreach activities.	Ongoing, High
HR 302 Section 322 approval process improvements	Continue to approve the stipulation in HR 302 Section 322 that allows operators to operate into airports without weather reporting systems.	Ongoing
Aircraft safety enhancing equipment and modifications outreach	Promoting the certification of several safety enhancing equipment and modifications.	Ongoing
DeHavilland Operators International Working Group	Lead for the DeHavilland Operators International Group	Ongoing
Operational safety oversight of aircraft fleet	Monitor Alaska's aviation fleet to promote continued operational safety of aircraft	Ongoing
ADS-B certification and approval process	Streamline the ADS-B certification and approval process.	Ongoing
VFR/GPS routes in Alaska mountain passes	Implementing VFR/GPS routes for Alaska mountain passes for high risk on demand carrier including Flight Risk Profiles/Dispatch Procedures.	Ongoing
Special procedures to remote Alaskan airports	Approve and manage special procedures to provide IFR access to remote airports in Alaska.	Ongoing
SMGCS approvals	Surface Movement Guidance Control Systems (SMGCS) approval at Anchorage and Fairbanks	Ongoing
Alaska Mountain Pass Waypoint Charting initiative	Leading an effort for the resolution on the Alaska Mountain Pass Waypoint Charting initiative.	Ongoing
Voluntary Safety Reporting Program expansion	Expansion of Voluntary Safety Reporting Programs to incorporate Safety Management System principles.	Ongoing
Navigation equipment and surveillance requirements clarification study	Identify opportunities to increase IFR operations to identified barriers for Part 135 operators.	Ongoing

AVS Efforts	Description	Category
Communication gaps and minimum IFR altitudes study	Identify regulatory, infrastructure, and equipage barriers to low altitude IFR operations for Part 135 operators.	Ongoing
Non-Part 95 Capstone Routes and Minimum En Route Altitudes	Normalize the Non-95 Capstone Routes through the waiver process or increased Minimum En route Altitudes	Medium
ASAP Initiative Expansion	Expand the ASAP initiative to include operators under all FAR parts.	Medium
ASAP Part 135 outreach	Expand the ASAP Initiative to attain 100% outreach with Part 135 Operators.	Ongoing, High

Appendix 2: Glossary of Terms

ADS-B – Automatic Dependent Surveillance Broadcast
ARP – FAA Airports
ASAP – Aviation Safety Action Program
ASTI – Alaska Satellite Telecommunications Infrastructure
ATC – Air Traffic Control
ATO – FAA Air Traffic Organization
AVS – FAA Aviation Safety
AWOS – Automated Weather Observing Systems
CFIT – Controlled Flight into Terrain
CNS – Communications, Navigation, Surveillance
CONUS – Contiguous United States
eSRS – Enhanced Special Reporting Services
FAA – Federal Aviation Administration
FAASI – FAA Alaska Aviation Safety Initiative
GA – General Aviation
GPS – Global Positioning System
IFR – Instrument Flight Rules
IMC – Instrument Meteorological Conditions
LOB – Lines of Business
LP – Localizer Performance
LPV – LP with Vertical Guidance
MEARTS – Micro En Route Analysis and Reporting System
NAS – National Airspace System
NAVAIDs – Navigational Aids
NTSB – National Transportation Safety Board
PIPEP – Pilot Report
RA – Alaskan Region Regional Administrator
RCO – Remote Communications Outlet
RTR – Remote Transmitter/Receiver
TAWS – Terrain Awareness and Warning Systems
UAS – Unmanned Aircraft System
VFR – Visual Flight Rules
VOR – VHF Omni-directional Radio Range
VWOS – Visual Weather Observing Systems
WAAS – Wide Area Augmentation System

Appendix 3: NTSB and Safety Recommendation Report

NTSB Report ASR-20-02 can be found at the following website:

<https://www.nts.gov/investigations/AccidentReports/Reports/ASR2002.pdf>

NTSB Safety Recommendation can be found at the following website:

https://www.nts.gov/_layouts/nts.recsearch/Recommendation.aspx?Rec=A-20-011

Appendix 4: 14 Code of Federal Regulations: Parts 91, 119, 121, 135 and 139

14 CFR – Part 91 GENERAL OPERATING AND FLIGHT RULES

<https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=3efaad1b0a259d4e48f1150a34d1aa77&rgn=div5&view=text&node=14:2.0.1.3.10&idno=14>

14 CFR – Part 119 CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=4d87705808eddb6d1f536f86f59ff284&tpl=/ecfrbrowse/Title14/14cfr119_main_02.tpl

14 CFR – Part 121 DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title14/14cfr121_main_02.tpl

14 CFR – Part 135 AIR CARRIER AND OPERATOR CERTIFICATION

https://www.faa.gov/licenses_certificates/airline_certification/135_certification/

14 CFR – Part 139 CERTIFICATION OF AIRPORTS

<https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=8313bccee050ec81d7e8fb3377331177&rgn=div5&view=text&node=14:3.0.1.1.14&idno=14>