

The Aviation Safety Inspector – Alaska Style

The DSI in the Last Frontier

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ASI-Flight Dispatcher

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History

The Early Years (1913-1940)



- Down in *America*, a social and material infrastructure was well-established when aviation was born, and it was integrated with horses, trains and autos.
- Alaska had little infrastructure, particularly in winter. The first airplanes and pilots changed that.
- Aviation was the core of the Territory and later the State. Few people or goods moved without it.

History

The Early Years (1913-1940)

- James Martin made the first Alaska flight in Fairbanks on July 4, 1913.
- Subsequent flights proved that air travel could help solve the problem of access and supply in the remote Interior.
- The Alaska Railroad was dedicated in 1923, and in 1924, Alaska's first commercial airmail service began. Fairbanks to McGrath took 20 days by dog team, but only four hours by air.



History

The Early Years (1913 - 1940)



However, there were problems -

- Pilots (often with minimum training and/or experience) did the ground handling and hopefully took off in the right direction. They had:
 - No Flight Plans
 - Little (if any) weather info
 - Little or no navigation equipment
 - Little or no communications nor flight following
 - No reliable ground support or airfields

History

The Early Years (1913 - 1940)



Accidents were accepted as a normal part of Alaska aviation, and they reduced the ranks of those less-skilled. Unfortunately, a lot of passengers died with those pilots.

History

Middle Years (1941 – 1970)



- **WW II brought many changes to Interior Alaska. Many residents did not welcome them.**
- **The Civil Aeronautics Administration had extended its authority to Alaska just before the war. Alaska pilots protested the switch from uncontrolled to federally-regulated air traffic.**
- **The territory also built and maintained airports and seaplane bases by the 1950s.**

History

Middle Years (1941 - 1970)



- Fairbanks built a new international airport, but pilots were dismayed at the new regulations and fees.
- They persuaded the territorial legislature to fund smaller satellite fields. However, most Alaskans appreciated the added convenience and higher safety standards that resulted from federal regulation of aviation (see slide 5).

History

Middle Years (1941 - 1970)

- Some intrepid operators grew into scheduled carriers first under Part 135 and later Part 121- Peninsula Airways, Era Helicopters, Wein, Reeve Aleutian and Alaska Airlines.
- They also became fast friends with powerful political figures, persuaded to “promote air commerce” with a laissez-faire attitude.
- It didn't work very well (see slide 5).



History

Later Years (1971 - 2000)

There were numerous studies.

One stated that, “The seriousness of aircraft accidents as a leading contributor to morbidity and mortality in Alaska can be placed in perspective by comparing aircraft and motor vehicle accidents.”

➤ In 1978 AK had 283,733 licensed drivers and 280,457 registered vehicles.

➤ There were 137 fatalities from 122 fatal accidents; 15,030 motor vehicle accidents were reported.



History

Later Years (1971 - 2000)

- There were 10,171 certificated pilots and 6,554 aircraft.
- 265 reported aircraft accidents, with 100 fatalities from 48 accidents and 58 people seriously injured.
- The fatality rate per operator was 0.048% for motor vehicles compared to 0.98% for pilots - a 20-fold increase. Alaska pilots are a small group with a risk of accidental death 20 times higher than motor vehicle operators.

Piper PA-32 Cherokee Six (crash)



History

Later Years (1971 - 2000)

A study was proposed to:

- Conduct a basic accident analysis to define time, place, and person.
- Identify high-risk sub-groups for specific preventive measures to reduce the number and severity of Alaska aircraft accidents.
- Establish ongoing collaboration with the FAA and NTSB for information and prevention.
- Establish credibility in scientific investigation of Alaska aircraft accidents, and become an ongoing resource for aircraft accident prevention.



History

Later Years (1971 - 2000)



- In 1980, the NTSB published a special study on the air taxi industry in Alaska.
- Issued 10 safety recommendations to the FAA and the State concerning the planning and development of Alaska's aviation system and infrastructure, weather observation and dissemination of weather information, regulatory surveillance and operator safety oversight.

History

Later Years (1971 - 2000)

Later accident investigations indicated that many safety issues identified in 1980 were unresolved.

In 1995, the Board published a second study and issued 23 new safety recommendations to the FAA, the NWS, and the State of Alaska on:

- Weather observing and reporting
- Airport inspections and condition reporting
- Pilot flight, duty, and rest time
- Visual and instrument flight rules
- Needs of special aviation operations in Alaska



History

Recent Years (1990 - 2000)



- A result of that effort (and others) was that Alaska continued to have the highest annual aviation accident rate.
- In the 1990s, the National Institute of Occupational Safety & Health statistics showed Alaska had an accident every other day, and a fatality every nine days.

History

Recent Years (1990 - 2000)



“Between 1990 and 1998, there were 1,510 aviation accidents, an average of one accident every 2 days, that took the lives of 355 people. The commercial aviation accident rate in Alaska is three to four times greater than that of the other 49 States...aircraft accidents are the leading cause of occupational fatalities in Alaska.”

James LaBelle

Chief, NTSB NW Field Office, before the Transportation Subcommittee

Committee

Alaska

on Appropriations United States Senate, Regarding Aviation Safety in
December 14, 1999

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History

Current (2000 - 2008)

- In 2004, Alaska had 11,027 licensed pilots, six times the per capita number in the lower 48, and 14 times as many planes per capita.
- Alaska Air Carriers transported the equivalent of 4 times the state's population annually, compared to about 1.7 times the U.S. population carried in the lower 48.
- There were 4,000 planes just in the Anchorage Bowl, and Lake Hood is the largest seaplane base in the world.



History

Current (2000 - 2008)



But by 2004, the number fell to the lowest in 20 years.

WHAT HAPPENED?

Capstone

- The Alliance for Safety was initiated in 1995 to form a partnership with industry for aviation safety.
- 1997 - FAA developed Flight 2000. Envisioned that advanced avionics would lead to a 38 percent reduction in Alaska's commercial aircraft accidents.
- Capstone - Congressional mandate to introduce advanced electronics systems and reduce the fatal accident rate due to navigational errors and mid-air collisions, particularly in the FAR Part 135 environment.
- NTSB/SS-95/03 (Aviation in Alaska) recommended using GPS and satellite-based communications to meet Alaska's air transportation system needs.

CAPSTONE



- **Participating carriers would install ADS-B for flight-following in non-radar areas. Pilots had a moving map displaying other equipped aircraft, terrain and weather to improve pilot "situational awareness."**
- **1999 - the Capstone office was established and staffed and planning began, funded with \$11 million.**
- **2000 - 78 aircraft modified with Capstone avionics.**
- **2001 - Increased to 140 aircraft.**
- **2004 - 2008, nearly 100 percent of operations for the type of aircraft being used.**

Capstone



- Pilots had in-cockpit information on terrain, weather and air traffic.
- PFD had real-time 3-D terrain modeling, airspeed, groundspeed, altitude, altitude above ground and other information.
- A secondary display featured an aeronautical map with weather and air traffic information.
- Incorporated Wide Area Augmentation System (WAAS) capability.
- Flight checked in a Cessna Seneca.

Capstone



- **The new equipment permitted aircraft to fly at lower Minimum Enroute Altitudes.**
- **Opened 41,000 miles of airspace over 1,521 NM of existing routes.**
- **A Special Federal Aviation Regulation (SFAR) (specifically for Alaska) permitted trained pilots to use the GPS receivers as the sole means for enroute navigation.**

Capstone

System safety was introduced into FAR Part 121 operations through Air Transportation Oversight System (ATOS) and Certification Standardization and Evaluation Team (CSET) programs. The Alaskan Region actively introduced system safety to local FAR Part 135 operations and a Capstone systems evaluation provided an opportunity to apply these principles to that program.

Results? The lowest accident rate in the test area for commercial flights since the beginning of the accident baseline in 1990. The accident rate for the area fell below the rest of the state for the first time in 2003 and remained below in 2004.

Capstone

- **Phase I: The FAA worked with industry (!) - it was the first time government equipment was installed in private aircraft. Accidents decreased by 47 percent.**
- **Phase II: Offered to Southeast Alaska carriers free. Capstone partners include: AOPA, Alaska Airmen's Association, Alaskan Aviation Safety Foundation, Alaska Air Carriers Association, APA, UPS Aviation Technologies, Cargo Airline Association, UAA, MITRE Corporation, the Small Aircraft Manufacturing Association, AK DOT, Free Flight Incorporated, Chelton Flight Systems, and the US Air Force.**

<http://akweathercams.faa.gov/>

The Alaska Weather Camera System

- Installed at 65 locations satellite-linked to the Internet.
- Pilots can view real-time weather in the comfort of their office or home.
- Helps make better decisions about when and where to fly.
- Available to FSS specialists who use the information in pilot briefings.

<http://akweathercams.faa.gov/>



<http://akweathercams.faa.gov/>



Merrill Pass on a Clear Day

OCT 20, 2008 18:10

Merrill Pass on 20 Oct at 1810Z

Medallion

➤ Medallion Foundation was created by the Alaska Air Carriers Association in 2002.

Mission Statement:

The mission of the Medallion Foundation is to reduce aviation accidents in Alaska by fostering a new safety culture and by promoting higher safety standards through research, education, auditing and advocacy.



Medallion



Medallion Program:

- **Safety**
- **CFIT Avoidance**
- **Operational Control**
- **Maintenance and Ground**
- **Internal Audit**
- **Administers ASAP Program, and assists Part 135 operators transitioning to Part 121.**

Medallion



- Focused on changing the culture and attitude of operators and pilots flying in Alaska.
- Established stringent standards above the regulatory minimums for air carrier operation, training and maintenance.
- Funded by a Congressional appropriation.
- Carriers that attained Medallion Shield status could market themselves as special and appeal to customers with their safety record.

Medallion



**Shield Program (Voluntary) -
Focused on establishing and sustaining
a higher level of safety to promote and develop:**

- **A safety culture holding safety as a core value**
- **Continuous professional development of individual skills and competence**
- **Proactive sharing of operational control responsibilities**
- **Hazard identification and risk management techniques and trend analysis**
- **Management practices that support safety objectives**

Medallion



- **FAA approved single-engine airplanes for commercial, passenger flights under IFR.**
- **The FAA and the State trained and equipped ground personnel (including maintenance) to provide near real-time information directly to pilots.**
- **The FAA fully staffed its Alaskan Region airport certification office, and worked with the State to improve the inspection program for State airports.**
- **The FAA implemented state-wide program to collect and disseminate information about Alaskan airport conditions provided by pilots and unofficial observers through the automated flight service station network.**

Medallion

- **The goal of this joint effort was to reduce the number of aviation fatalities in Alaska by 50 percent for the years 2000 through 2009, and to substantially reduce the number of aviation accidents and resultant deaths in the State.**
- **Determined that over 90 percent of the accidents in Alaska are attributable to human factors and operational errors.**
- **Acknowledged that the ultimate responsibility for a flight lies with the pilot, and a good educational program helps eliminate unwarranted risk-taking and human errors.**

Medallion

- Most commercial operators are dedicated to providing the public with the highest level of safety. But accident investigations show that:
- There is often inadequate pilot training for the environment in which they fly.
- Less than adequate management oversight.
- A less than aggressive safety program *or no safety program at all*. To decrease the 90 percent human error figure, the *change must come from within industry.*

Lack of Expert Oversight



- Organizations (ADF) lobbied for and obtained an experienced Dispatch Inspector to adequately oversee Dispatch operations.
- The Dispatch profession is now acknowledged within the FAA hierarchy, but still not really understood.
- ATOS placed additional burdens on already over-taxed CMTs.

Lack of Expert Oversight



- **Until last year, the Alaska Region had no experienced dispatcher in the inspection force; only a “Regional Dispatch Resource” to help oversee carrier’s operational control function and licensed dispatchers.**
- **Over - worked and under - qualified Ops inspectors were unable to effectively provide oversight for a carrier’s dispatch operations or training.**

Lack of Expert Oversight



- **1 May 2001 the FAA began to employ individuals as *Aviation Safety Inspectors-Aircraft Dispatcher* at selected FAA Flight Standard District Offices (FSDOs). Alaska didn't have one until June 2007.**
- **Actively pursuing a 3-day Dispatch course in OKC for POIs that trains them to understand and better utilize Dispatch ASIs.**

How I (Dispatch Inspectors) can help...



- Identify areas that need improvement.
- Assist in complying with applicable regulations and FAA guidance.
- Ensure that safety is the first priority.
- Provide support for Dispatchers.

Questions?

