

Flying in Alaska



Aviation Guide
Participate In Your Organization's Safety



Circle of Safety
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Circle of Safety
AVIATION GUIDE HANDBOOK
SECTION 1
INTRODUCTION AND BACKGROUND

MISSION STATEMENT:

Circle of Safety is a Federal Aviation Administration (FAA) program designed to educate passengers and organizations that contract for aviation services, on their shared rights and responsibilities regarding aviation safety.

VISION STATEMENT:

The FAA recognizes that the longstanding focus on regulating pilots and air carriers is no longer sufficient to continue reducing aviation accidents. We believe that passengers also have a role in the Circle of Safety. Through the education of the flying public, we can further reduce aviation accidents in Alaska.

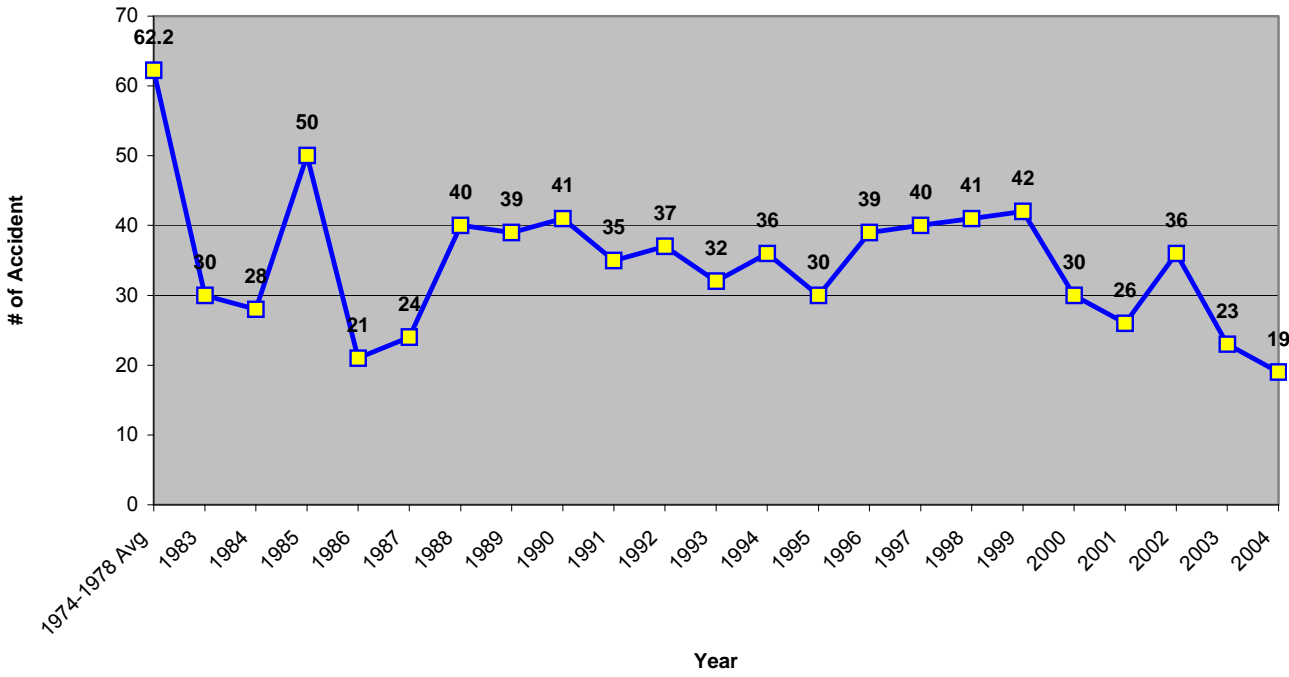
This guide is intended to be a tool to enable individuals and organizations to make informed choices about air carriers and the flying conditions for their employees.

Background:

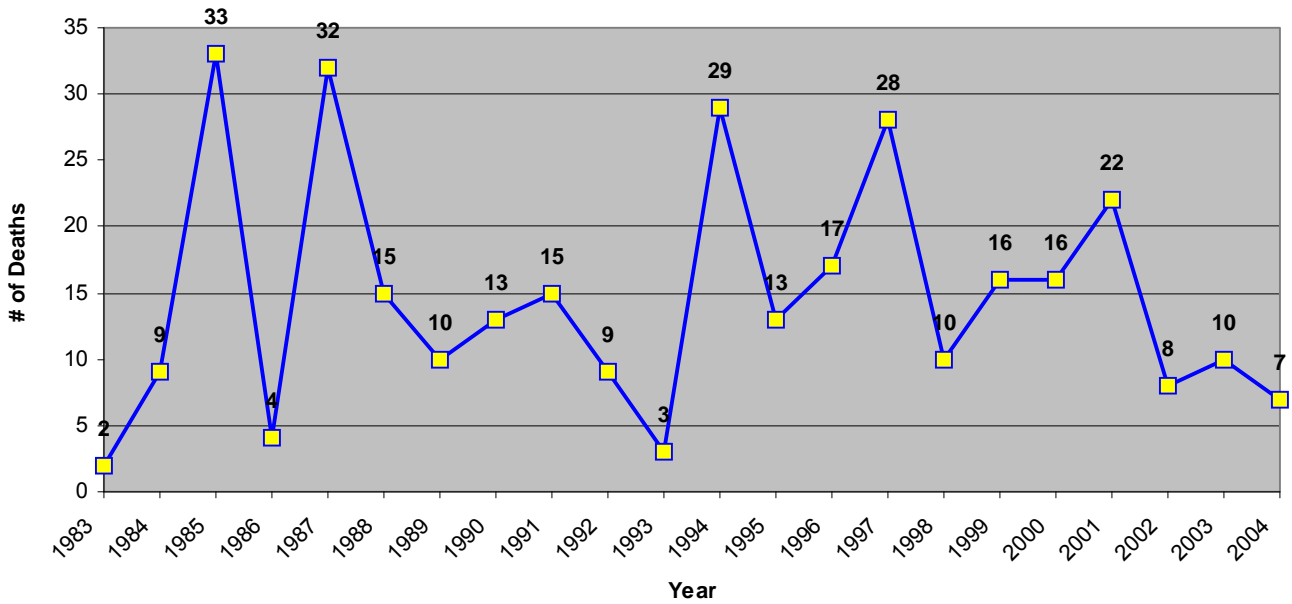
It has been said; Alaska is the “Flyingest State in the Union.” Alaskans use airplanes the way New Yorkers use the subway to get to school, the doctor, and to attend a variety of entertainment functions. About 225 commercial air carriers provide transportation services in Alaska. Every year our carriers have accidents; the five-year average for accidents from 1999 to 2003 was 29.2 commercial aviation accidents. Accidents result in loss of property, injury and sometimes loss of life.

When an air taxi flight crashes and the pilot and/or passengers are killed, real families suffer the loss. If a scheduled commuter flight carrying villagers to a meeting or a medical appointment has a fatal accident, everyone in that village is touched by the tragedy, to say nothing of the enormous economic impact the accident has for all involved.

**Commercial Accidents in Alaska
Part 135 & Part 121**



**Commercial Fatalities in Alaska
Part 135 & Part 121**



In 1980, the National Transportation Safety Board (NTSB) published a study of aviation in Alaska. That study, which has become a benchmark, pointed to three elements that contributed to aviation accidents. These were pilot attitude, inadequate airfield facilities and inadequate weather monitoring and communications systems. In the two decades since then, the FAA, the State of Alaska and aviation industry have taken many steps to improve commercial travel. More than \$1 billion has been invested in building runways and taxiways and installing lights and navigation aids at airports across the state. The FAA and the National Weather Service have installed over 100 automated weather observation systems to supplement human weather observers. New improvements continue to be made every year. The FAA established its own satellite communications system to provide reliable communications among facilities. The agency developed a system of weather video cameras at 54 remote airports and mountain passes that provide real-time images of weather conditions. Another 12 weather camera installations are currently in progress, with a total of 138 proposed sites across the State in the next few years. Additionally, numerous instrument landing systems and wind measuring devices have been installed at locations around the state.

Most recently, an FAA demonstration program called Capstone (see Appendix A) has placed video displays in commercial aircraft that show pilots moving maps of the terrain, weather reports and information about the positions of other Capstone-equipped aircraft in their flight vicinity.

The Alaska Air Carriers Association (AACA), with federal grant funding, established The Medallion Foundation, to reduce accidents in Alaska by fostering a new safety culture and promoting higher standards through research, education, auditing and advocacy. The Medallion Foundation asks air carriers to voluntarily adopt higher standards than the minimums in government regulations. The Medallion Flyers Program calls for more training of general aviation pilots in hands-on skills and risk management.

One area still needing attention is that of Alaskans' attitude toward risk. The NTSB identified acceptance of risk as one of the main factors contributing to accidents.

The responsibility for safety is shared by the many entities in aviation. Government has set basic standards. Individual pilots and air carriers have responsibility to meet those standards and provide quality service to customers. Organizations who contract for aviation services have a vested interest, if not a responsibility to see that the safest mode of transportation is the standard for their employees. Customers, those who pay for a flight, have the right to a safe journey. They are also responsible for following the safety rules. All of these parties are part of the Circle of Safety.

Any business, agency or organization that contracts for aviation services are entitled to negotiate features above the basic standards published in regulations. For example, one Alaska school district stipulates the use of twin-engine aircraft for transporting students. As a matter of policy, some organizations require a certain level of insurance for any carrier wishing to provide them service. Usually a corporate safety officer or contract administrator oversees such policies and works with the air carriers to assure that the company gets the quality of service it requires.

Organizations can take a role in ensuring that the carrier they choose for their employee's flights operate consistently above the standards set forth by the FAA. They do not have to accept the risk of flying in unacceptably stormy weather. This is a nontraditional view, which requires developing some new skills when traveling. The Circle of Safety Program involves you, and your consumer purchasing power, in important decisions involving your flight.

Circle of Safety

SECTION 2

HOW CAN MY ORGANIZATION BEST CHOOSE AN AIR CARRIER FOR OUR EMPLOYEES?

With a number of independent air carriers in Alaska – and even more assorted aircraft – it can be difficult to find the right carrier for your organization. There are a number of things that you can do to ensure that your organization contracts with a consistently safe, reliable operator. This section is intended to guide your organization in choosing from air carriers that are willing to meet the requirements that you establish for yourself, your agency or organization.

In order to be certified by the FAA, an air carrier must meet the basic minimum standards of the Federal Aviation Regulations (FAR's, Appendix D). Some carriers have committed to establishing even higher levels of training, maintenance and operation by participating in **The Medallion Foundation's Five Star Shield Program**. (Appendix A). Once they meet all program standards, they will be able to display the Medallion Shield on their aircraft and in their advertising services.

In Alaska, some businesses have policies requiring employees to fly only in turbine aircraft when on company business. They may also require all aircraft and pilots to be instrument equipped and rated. Your organization has the right to set such standards. A school district, for example, may choose to have students fly only in twin-engine aircraft. The choice of carrier may vary from a "single pilot" operation, one pilot who operates one aircraft, to larger commercial carriers that use several types of aircraft depending on the type of flight. Because larger carriers require training that is more stringent and have more equipment capabilities, and must comply with additional regulations, they are generally safer and have lower accident rates. This general criteria, as well as more specific accident data (available at <http://www.alaska.faa.gov>) can be used to select a carrier based on lowest risk.

One of the most direct and effective methods your organization might consider is interviewing the Director of Operations of potential carriers that serve your area (typically, very small companies or operators may not use the term Director of Operations). This offers a number of benefits for both your organization and the operator. It first establishes direct contact with a person who actually has *Operational Control* of the airline. Operational Control, according to the FAA, with respect to a flight, means a person that exercises the authority over *initiating, conducting or terminating a flight*. In the case of a single pilot operator, operational control would rest with the owner/operator. For a larger air carrier it includes *any* personnel who are delegated that authority.

In this meeting you can clearly convey what your organization's transportation needs and safety concerns are, and the operator can provide you with information about their operation and aircraft fleet. This dialog will be very important in establishing which carrier will best be able to meet your company's requirements. The following are a sample of some pertinent questions you may want to pose to the operator at your initial meeting:

Potential questions for a meeting with an air carrier:

- How long have you been in business?
- What type of aircraft do you fly?
- What communities do you service?
- What is your safety record?
- What kind of survival gear is carried in your aircraft?
- Are you flying IFR or VFR operations? (See Section 6: Weather)
- What are your company's weather minimums?
- How do they differ from the FAA's minimum standards?
- How long have most of your pilots and mechanics worked for you?
- What qualifications must they have to work for you?
- How much Alaska flying experience do you require your pilots to have prior to employment?
- What kind of training do you provide?
- Who has operational control in your company?
- Does your company hold regular safety meetings?
- Are you a Medallion Carrier or have you obtained any Medallion Stars?

Once your organization has set the requirements, a questionnaire such as the one provided on page 15 may be used to identify air carriers that meet those requirements. Making a copy of this questionnaire and bringing to your interview could be valuable. (See APPENDIX F for a sample questionnaire.)

Circle of Safety

SECTION 3

PASSENGER RIGHTS AND RESPONSIBILITIES

As with any service you pay for, you have the right to expect professional service when buying an airline ticket. The FAA believes that regardless of where the flight occurs, you should have the same protections and be guaranteed the same safety standards for operation of the flight.

Consumers today think nothing of returning an item if it does not meet their expectations. If you pay for a service and you are not satisfied, you ask to have the job done correctly. This is the same attitude the FAA believes you and organizations that contract for aviation services should take toward air travel.

At the same time, passengers have the responsibility to listen to, remember, and follow all safety-related instructions. These items are required by regulation to help insure safety, but they are useless if not observed and retained.



YOUR ORGANIZATIONS AND INDIVIDUAL PASSENGER'S RIGHTS

1. Your Organization's passengers have the right to a thorough preflight briefing which covers:
 - a. The location of the Emergency Locator Transmitter (ELT) and survival equipment.
 - b. Locations and operation of emergency exits.
 - b. Operation of the seatbelts.
 - c. Location and use of the fire extinguisher.
 - d. Prohibition of smoking.
 - e. Use of oxygen (if required).
 - f. Use of flotation devices.

2. Your Organization's passengers have the right to ask the pilot certain questions such as:
 - a. Will this flight be done visually (VFR) or on instruments (IFR)? (See Section 6: Weather)
 - b. Have you calculated the weight and balance for this flight?
 - c. Have you obtained a weather forecast for the intended flight?
 - d. Is the airplane equipped properly?
 - e. Are you licensed, rated and current for this flight? Do you have your certificates with you?
 - f. Have you made a flight plan and filed it with your company or the FAA?
 - g. Where are the aircraft airworthiness and registration certificates located?

RAISING CONCERNS

Asking questions of an authority figure such as a pilot does not come naturally to most people. The Circle of Safety concept says your passengers have some responsibility for minimizing their exposure to risk. It requires that passengers overcome ingrained habits. It challenges passengers to be willing to ask questions in a polite way if they feel uncomfortable about something, or have questions. The idea of such a situation can be intimidating to most people. In small communities where the pilot may be a longtime friend, it is even less likely that a passenger will want to challenge the pilot's judgment.

As passengers, you can ask these questions in a non-threatening manner that demonstrates you are interested in the safety of everyone on board a flight. If you are uncomfortable about something, there is probably a reason, even if you are not sure what it is. It is important to act on these "gut feelings," or intuition, and raise your concerns. The pilot may have a simple answer to your question that restores your comfort level. On the other hand, asking a question may be all it takes to refocus on safety and avoid a mishap later on.

YOUR ORGANIZATION'S PASSENGER RIGHTS AND RESPONSIBILITIES

PASSENGER RESPONSIBILITIES

In addition to rights, passengers have the responsibility to be proactive about safety.

- a. Pay attention to the pilot during the passenger briefing, In fact insist on a complete passenger safety briefing if one is not automatically given.
- b. School districts should emphasis to your students the importance of sitting quietly and listen to the pilot's briefing. You might want to do some 'play acting' with your students to show them what is expected.
- c. Tell the pilot that you can fly at another time if the weather is questionable. You should NOT ask the pilot to fly into unsafe weather.
- d. Accept the air carrier's decision to delay or cancel a flight due to weather.
- e. Do not ask the pilot to overload the airplane.
- f. Be alert to pilot fatigue. Be aware that the pilot has flight and duty time limitations. The pilot may have already flown many flights. Federal regulations allow a pilot to fly 8 hours in a 14-hour duty day, and that this flight might be the end of a very long and hectic day.
- g. Dress properly for a flight according to the weather, in case of an unplanned landing. (See Appendix C, Survival Information)
- h. Do not ask the pilot to fly below 500 feet above ground level, or to buzz people or fly close to things on the ground.
- i. Do not insist that a pilot land at an airstrip that a pilot believes is risky, marginal, or inadequate.
- j. Remember that pilots are human and can make mistakes; if you have a question about the flight, ask.

**The “Circle of Safety” includes your organization’s passengers
For their own safety, organizations should insist that their personnel always observe the
following tips:**

DO:

- Keep your seatbelt/shoulder harness BUCKLED at all times.
- Listen to and follow the pilot’s briefing and instructions.
- Dress properly. Wear warm clothing as appropriate.
- Follow the pilot’s instructions in the event of an emergency.
- Review the passenger-briefing card.
- Make mental note of the emergency exit locations and make sure you know how to open them.
- Know where the fire extinguishers, Emergency Locator Transmitters (ELTs), first aid kits and other survival equipment are located.
- Safely secure all carry-on items, such as a purse or backpack per the pilot’s or air carrier’s instructions.
- Ask the pilot questions if you are uncomfortable about the weather, aircraft conditions, etc.
- Question the pilot if the aircraft looks overloaded or unsafe.
- Be an extra set of eyes, looking out for other aircraft.

DON’T:

- Pressure the pilot to fly when he or she says she does not have the ceiling and visibility requirements. NO reason is worth risking your life or the life of others.
- Pressure the pilot to carry a payload beyond the weight and balance limitations of the aircraft.
- Distract or disturb the pilot during critical times such as take-off and landing.

Circle of Safety

SECTION 4 POLICY

Air carriers certified by the FAA agree to operate according to the minimum standards set out in federal regulations. Organizations that purchase aviation services are entitled to have their own standards above the regulatory minimums. The FAA believes that by adopting a policy and setting procedures, an organization can reduce the risk of accidents and exercise consistent control over certain aspects of air travel. This has been demonstrated successfully by a variety of government agencies, such as the U.S. Forest Service, which as set specific standards for all flights and air carriers with whom they contract.

A policy sets standards and provides guidelines for decisions. It eliminates some of the decision-making pressure that comes with choosing an air carrier by making it a company decision. It provides the single passenger or a group a basis for expressing safety concerns. It should be concise and tailored to your organizational expectations for safe, reliable transportation for your members, school children or employees. Safety Program Managers have a variety of sample policies and experience with air carriers that you may find useful as you develop your policy. We encourage you to contact them for assistance.

(See APPENDIX E for a sample policy in the selection of an air carrier)

Circle of Safety
SECTION 5
HUMAN FACTORS

No one ever intends to have an accident. Many accidents result from poor judgment brought on by fatigue. For example: A pilot flying several trips throughout the day grows steadily behind schedule due to late arriving passengers or other delays. The last flight of the day, the weather starts to deteriorate, but the pilot thinks another flight can be squeezed in; after all it is only ten minutes until the next stop. However, by the time, the cargo is loaded and the flight begins, the pilot cannot see the horizon as the flight continues out over the terrain. The pilot feels that there is a need to forge on since the village agent has been told that the flight is coming. Clouds thicken. The pilot loses perspective and flies the aircraft into the ground.



Photo: National Oceanic and Atmospheric Administration (NOAA)

HUMAN FACTORS IN ACCIDENTS

In the scenario above, a chain of events results in the pilot making a poor decision. The pilot exerts pressure on himself to complete the flight. The pilot proceeds into weather conditions that are unsafe. Without visual reference the pilot becomes confused, and may cease to trust the instruments.

PRESSURE TO FLY- THE PASSENGER

Some of the most common accidents occur when people feel they must get to their destination as quickly as possible and think they do not have the option to wait for better conditions. They have commitments; they need to make airline connections or just want to get back home. These concerns may cause a passenger to ask the pilot to fly when the pilot is uncertain about weather conditions and how quickly they are changing. At times customers encourage a pilot to take more freight than is allowable because they do not want to pay for an additional flight. Or a customer may expect a crew to fly when fatigued. Passengers aware of human factors such as fatigue can be proactive in reducing the pressure to fly.

PRESSURE TO FLY- THE PILOT

Pilots place demands on themselves to “get the job done”. Their job is to fly and often their egos push them to “go take a look at the pass or over the next hill.” Company management may put unreasonable pressure on pilots to fly. Pilots may also feel peer pressure to fly when their colleagues are flying, even though personally they are uncomfortable with conditions that day.

When the air carrier has a dispatch system with established criteria for launching a flight, the decision should not be up to only one person. It rests with the system; it rests with the operational control of the company. Your organization can choose to do business only with a carrier that has an objective system for assessing weather, landing strips and equipment along with pilot experience.

When passengers shop around for an air carrier that will take them in questionable weather, they exert economic pressure on a pilot or carrier, prompting them to try flying in unsafe conditions rather than lose a fare.

WATCHING YOUR WEIGHT

A pilot hoping to avoid having to make a second flight, or under pressure from a passenger, might be tempted to add more cargo than the aircraft can safely handle. Be aware that every aircraft manufacturer specifies the amount maximum of weight for flight. Often, the airplane may be capable of "lifting the load." However, the climb performance or ability to leave the runway in time to clear the trees at the end cannot be determined in advance because the aircraft's performance charts do not include data for operating at such a high weight. As a result, the safety of the flight cannot be assured, and should not be attempted.

Circle of Safety
SECTION 6
WEATHER- WHEN CAN YOU FLY?



INTRODUCTION

Weather can affect travel, especially when the airplane is the only source of transportation in rural Alaska. The FAA has regulations concerning minimum weather requirements, aircraft limitations and pilot training.

In Alaska, the fleet of commercial aircraft consists of hundreds of planes of various kinds; this is an ever-changing fleet of aircraft. Single engine aircraft such as Cessna 207's and twin engine Piper Navajos are among the workhorses of Bush aviation. The type of aircraft used depends upon the distance to be flown, the length and condition of the airfield and other terrain conditions.

Multi-engine aircraft like the Navajo are designed to carry larger loads, more people and make longer flights. Multi-engine aircraft are equipped with instrumentation and navigational equipment that allows the pilot to fly in clouds and poor visibility. This is called Instrument Flight Rule (IFR) conditions (See Appendix A).



FAA weather camera photos. Right photo shows clear day image of Anaktuvuk Pass. The image on left shows poor weather.

FLIGHT VISIBILITY

When single engine airplanes are used for air carrier flights, pilots must have 2 miles forward visibility if the cloud ceiling is less than 1000 feet (Federal Regulation Part 135.205 VFR: Visibility requirements). However, the minimum altitude a pilot can fly is 500 feet above the ground or water (Federal Regulation Part 135.203 VFR: Minimum altitudes). For example, if a person is at an airport with a 3000-foot runway, the pilot must be able to see roughly three times the length of that runway. That would be the basic minimum visibility. For more in-depth visibility, information (See Appendix A)

OTHER WEATHER CONSIDERATIONS

Frost and Ice

Frost and ice on an aircraft pose dangers and should ***always be completely removed*** before flight. Ice affects the shape of the wing, which disrupts the airflow. This reduces the wing's ability to produce lift and also adds weight to the aircraft. Even a little can affect the performance of the aircraft. If you see ice on an airplane, mention it to the pilot.



Aircraft covered with snow and ice.

Extreme Cold

Most air carriers have temperature limitations for their operations, based on recommendations by aircraft manufacturers. Each manufacturer recommends minimum temperatures for operation by type of engine. Typically a piston engine may not be operated below minus 35 degrees. A turbine engine has a wider range of capability and can be operated in temperatures as low as minus 60 degrees. In addition, many organizations such as school districts have minimum temperature standards for any student travel for survival factors in the case of an emergency.

Wind and Waves

Much travel in rural Alaska involves the use of seaplanes. A pilot must be able to make a judgment about how the wind, waves and current will affect takeoff and landing. The pilot must also observe objects in the water and avoid them.

IMPORTANT

You have the right to a safe flight. If your organization's passengers have concerns about the weather, discuss the issue with the pilot before departure. **Ask questions.**



SURVIVAL AWARENESS

One consideration should be are you on a scheduled flight or a charter flight? Scheduled flights are not required to carry the same survival equipment as chartered flights, so the survival gear carried by passengers should be given careful consideration. It would be prudent to ask to see the operator's standard survival gear as a part of your organization's air carrier consideration.

Why? Alaska is a harsh environment. When emergencies occur, advance preparation can make all the difference in survival. The State of Alaska even has a state statute requiring pilots to carry specific survival equipment in their aircraft. (See Appendix C) Educate your employees that they have a responsibility for dressing appropriate to the weather and having personal survival items when flying in remote areas.

Circle of Safety

SECTION 9

IMPLEMENTING A CIRCLE OF SAFETY PROGRAM

The FAA would like organizations that use air travel frequently to adopt the Circle of Safety concept within their organization, and implement policies and procedures for air travel. FAA Safety Program Managers or FAASafetyTeam personnel can provide training and work with you on policy development and implementation. They can also issue certificates to document training. The FAA welcomes cooperative agreements with organizations for ongoing support and implementation of this program.

The following steps should be used as a process for implementing a successful Circle of Safety policy within your organization:

IMPLEMENTING A CIRCLE OF SAFETY PROGRAM:

- Contact your FAA's FAASafetyTeam personnel (safety program managers) for training in the concepts of Circle of Safety and air carrier operations in Alaska.
- Assemble key personnel within your organization for this training. Using school districts as an example, key policy makers might be boards members or senior executive staff. Key stakeholders might be administrators or staff who make travel arrangements for others. It is very important to include actual travelers, such as athletic directors, team coaches, or others who might travel with school children on field trips.
- Review and discuss the different sections within this guide and develop your own company's policies and procedures as they relate to your employees air transportation.
- Develop criteria within your organization for selecting air carriers to carry your school children or employees.
- Involve the air carriers in policies & procedures development.
- Frequently use this guide and the resources of the FAA's FAASafetyTeam to help evaluate the effectiveness of your polices and procedures.

The following FAA personnel are available to conduct briefings for key decision makers and educate your company as to the use of this manual to train your travelers.

FAA SAFETY PROGRAM CONTACTS

The following FAA Flight Standards District Offices are available to assist you in your area: Ask to speak with a FAASafetyTeam Managers (Safety Program Manger) contact points:

Anchorage Flight Standards District Office
4510 West International Airport Road
Anchorage, Alaska 99502

1-800-294-5116
or (907) 271-2000

Fairbanks Flight Standards District Office
6450 Airport Way, Suite 2
Fairbanks, Alaska 99709

1-800-294-5119
or (907) 474-0276

Juneau Flight Standards District Office
3032 Vintage Park Blvd. Suite 106
Juneau, Alaska 99801

1-800-478-2231
or (907) 790-7304

Circle of Safety
SECTION 10
SAFETY REPORTING PROCEDURES

REPORTING SAFETY ISSUES

If things appear to be unsafe during a flight, travelers are encouraged to ask the pilot about what they observe. Safety concerns need to be reported as soon as possible and preferably before the flight occurs.

Elements of a Procedure for Traveler Incident Reporting

The purpose of this written procedure is to assure that there is an adequate system for the gathering of information regarding the safe conduct of travel by air, specifically in relation to the principles set forth in the Circle of Safety. The feedback gathered from this process assesses the effect the Circle of Safety training has on the traveler and helps influence decisions regarding the relationship of the consumer and the operator. It is paramount to realize the traveler is the crucial element here and therefore it is important that they receive proper training in the company's expectations regarding the safety of flight. The receipt of an incident report assumes that the traveler is not the problem and that a trained passenger perceived the incident to be a reportable one. The organization should develop a plan for the dispersal of the information gathered or a method of determining a course of action in solving the problem. Most issues can be resolved in a cooperative effort between the consumer and the operator. Occasionally the Federal Aviation Administration's Safety Team should be involved. Foremost on everyone's agenda should be the safety of the organizations passengers; the days of letting another near occurrence go unattended are in the past. With this as a basis, an organization will be able to develop a comprehensive procedure, which identifies problems and sees them through closure. The process should contain the following:

- 1) A form for the use of the trained passenger, which should answer specific questions.
 - a) Time and Date
 - b) Name of Carrier
 - c) "N" number of charter aircraft or flight number of scheduled service
 - d) Approximate location of incident. If a physical description is not available such as, "about halfway across Turnagain Arm", then time should be noted in relation to a phase of the flight such as, "10 minutes after we took off from Galena enroute to Kaltag".
 - e) A detailed description of the incident. Make notes as soon as possible to capture the facts while they are fresh in your mind.
- 2) The passenger needs to know who to report to within the company.
 - a) This could be a committee comprised of frequent travelers.
 - b) Management personnel must be involved.
- 3) A designated person within the company must decide what to do with the report.
 - a) This is where the rubber meets the road and passenger safety is taken to a higher level. There are many ways to take up an issue with the operator and the consumer is encouraged to use imagination in working out the issues.
 - b) The report needs to be given to management personnel within the air carrier. If satisfaction is unable to be reached, then other avenues can be considered.

- c) If the carrier is a Medallion member, then the Medallion Foundation needs to be included in the discussions.
 - d) This program is about educated consumer relations with those selling a service. The desired outcome of this relationship is to create a safer environment for the valued employees of the organization.
- 4) Federal Aviation Administration (FAA) involvement.
- a) FAA participation with the consumer is educational, and conducted annually through the Aviation Safety Program.
 - b) Contact the Safety Program when issues arise. The Safety Program can be involved in the counseling and education of both the operator and the consumer.
 - c) There could be a point in the process, however, where the FAA becomes involved in a different way, if there has been a violation of the rules, which set the minimum standards for every flight. Some occurrences may be serious enough that they need to be reported immediately to the FAA for investigation. If you are unsure of how to deal with a specific incident, a Safety Program Manager should be consulted. They can discuss issues confidentially with you before a decision is made.

These are the basic elements of what should be contained in a written feedback procedure. The user must develop this procedure; the user is the only one that can make it work for their particular situation. Make a simple usable system that gets the right information to the right people. Through training provided by the FAA's Circle of Safety Program and a periodic review of these procedures, an organization can develop a great incident reporting form and a proactive safety relationship with the chosen air carriers.

Aviation Accidents and Complaints Toll-Free Number

1-800-478-7233

[FAA Aviation Accidents contact the FAA Regional Operations Center:](#) 1-800-271-5936

Circle of Safety
APPENDICES

APPENDIX A
GLOSSARY

VISUAL FLIGHT RULES “VFR”

The Code of Federal Regulations includes rules of flight for aircraft under visual meteorological conditions (VMC). The rules states a pilot must be able to see a certain distance under various cloud conditions to meet his responsibility to see and avoid other aircraft and terrain.

INSTRUMENT FLIGHT RULES “IFR”

In the Code of Federal Regulations there are also rules governing the procedures for conducting flight with the use of navigational instruments. Usually instrument flight requires more than one engine powering the aircraft. The only single-engine aircraft certified for flying under these rules is the Cessna Caravan. This aircraft may be flown according to IFR in good weather (during IMC), but they must be flown IFR during IMC.

WEATHER OBSERVATIONS

Ground visibility can be defined as the prevailing horizontal visibility near the Earth’s surface as reported by an accredited observer. Ground visibility is measured at some airports by the National Weather Service, a FAA Flight Service Specialist or by a trained weather observer. However, many of Alaska’s airports do not have human weather observers. Pilots may have to use automated weather system reports or the reports of other pilots who have recently traveled through an area. Some air carriers contact village residents for an estimate of visibility. Those observations are only suitable for VFR flights.



Ground blizzard. Photo: NOAA



Photo: NOAA

MEASURED DISTANCE

The best way to determine visibility for takeoff is to measure the distance of prominent landmarks. As an example, on the Alaska Aviation Weather Camera System (www.akweathercams.faa.gov) the FAA annotates physical features around the airport or mountain pass. These appear on the clear day image. Pilots can compare that image with a real-time photo and features, which are visible and will give the pilot some idea of the visibility distance and cloud cover.

With the use of local knowledge, certain landmarks around communities could also be measured and used for determining ground visibility. Outbuildings, rivers, hills and other obvious landmarks can be used. Many airports are a distance away from the village. For instance, if the airport is one mile away from the village, that could be used to estimate the visibility. For another example, an average runway measures 3000 feet long, so a person would have to see two times the distance of the runway to have a mile visibility.

FLIGHT VISIBILITY

Flight visibility is defined as the average forward horizontal distance that a prominent unlighted object can be seen and identified by day from the cockpit of an aircraft in flight. Pilots must have at least 2 miles visibility if the cloud ceiling is less than 1000 feet. Except for takeoff and landing, a pilot may not fly lower than 500 feet regardless of visibility.

Methods of determining in-flight visibility range from using time and distance calculations to the use of electronic equipment like Global Positioning Systems (GPSs).

Time and Distance Calculations

Pilots learn early in their flight training how to use time, distance and speed calculations. For determining flight visibility, a pilot selects a prominent object at the farthest distance visible. Then he notes the indicated air speed. He notes the time in seconds it takes to reach that object. In a rule of thumb, if the airplane is flying at 120 miles per hour, it will take 1 minute to go 2 miles.

Global Positioning System (GPS) Calculations

Pilots can set their GPS to display miles that remain to the next "waypoint". Then they look for the farthest prominent object and note the mileage displayed on the GPS. When directly overhead the object, they note the mileage displayed and subtract the previously noted miles. The sum will be the distance of flight visibility.

CAPSTONE

The Capstone Program is a joint industry and FAA effort to improve aviation safety and efficiency by putting cost effective, new avionics equipment into aircraft supporting satellite dishes and weather measuring equipment on the ground. The demonstration areas are non-radar environments where most of the air carrier operations have been limited to Visual Flight Rules. The FAA is equipping commercial aircraft in the area with a Global Positioning System (GPS) based avionics package. In addition to the guidance systems, Capstone is deploying equipment for weather observation, data-link communications, surveillance, and Flight Information Services (FIS). The FAA has also increased the number of airports served by an instrument approach and now enables radar-like IFR air traffic control services.

Highlights:

1. Capstone I began in Southwest and Western Alaska and was successful in reducing that area's aircraft accidents by 40%.
2. Installation of new automated weather systems enables commercial operators to perform GPS instrument approaches at airports in the Yukon-Kuskokwim area.
3. GPS instrument approach procedures have been completed and published for a number of remote village airports within the Yukon-Kuskokwim area.
4. Introduction of a new data link network allowing participating pilots to see aircraft traffic via a cockpit display to aid in collision avoidance.
5. An interface with the existing radar tracking system provides radar-like services in participating aircraft in the Yukon-Kuskokwim delta region.
6. Capstone II has now been implemented in Southeast Alaska, and Capstone III is expected to soon extend throughout the State of Alaska.

MEDALLION FOUNDATION

The Alaskan Air Carriers Association established the Medallion Foundation to improve aviation safety in Alaska through standards above the regulatory minimums. The overall objective of this voluntary program is to change the aviation safety culture in Alaska. The specific goals are to reduce commercial aviation accidents in Alaska by at least 50%, increase the reliability of air transportation in rural Alaska and reduce the insurance rates for the Alaska aviation industry.

The following areas are addressed:

1. Written safety programs will have an added accident response system with safety officers and a reporting system that allows anonymity.
2. Flight simulator training, which includes instrument flying techniques to enhance the skills of all pilots who may encounter poor weather when flying VFR.
3. The emphasis will be on operational control where the flight dispatcher and the pilot will work together in analyzing all safety aspects of any given flight.
4. Emphasis on establishing minimum training and staffing for maintenance personnel and a standardized training program for ground service personnel.
5. Internal audit programs that can establish the existence of a problem/hazard, and can also resolve the issue. It can be determined if the fix is actually working. The use of systems safety tools and root cause analysis is emphasized.

OPERATIONAL CONTROL

With respect to a flight means, any person exercising the authority over *initiating, conducting or terminating a flight*.

COMMONLY USED ACRONYMS

The following is a list of commonly used acronyms by the aviation industry:

CFIT:	Controlled Flight Into Terrain
ELT:	Emergency Locator Transmitter
FAA:	Federal Aviation Administration
FAASTeam:	FAA Safety Team
FAR:	Federal Aviation Regulation
FSDO:	Flight Standards District Office
GPS:	Global Positioning System
GPWS:	Ground Proximity Warning System
IFR:	Instrument Flight Rules
IMC:	Instrument Meteorological Conditions
NTSB:	National Transportation Safety Board
NWS:	National Weather Service
ROC:	Regional Operations Center
SPM	Safety Program Manager
VFR:	Visual Flight Rules
VMC:	Visual Meteorological Conditions

APPENDIX B WEB RESOURCES

<http://aawu.arh.noaa.gov>: Alaska Aviation Weather Unit, National Weather Service.

<http://akweathercams.faa.gov>

This Web site provides actual video pictures from FAA weather camera locations. In most cases, these are locations where weather observations do not exist. It provides real-time images for pilots that are updated as often as every 10 minutes. The cameras give the best indicator of weather most relevant to airplane traffic.

www.alaska.faa.gov

This Alaskan Region Web site contains information for pilots and the public. It contains information such as weather, safety information and flight tips for pilots. It also contains links to the Flight Standards District Offices and agencies within the State of Alaska. **Circle of Safety Program** materials are available here.

www.faa.gov

This Web site contains descriptions of all FAA divisions, traveler safety and aviation education information, links to regulations, as well as the latest aviation news.

http://www.faa.gov/education_research/education

This web site contains aviation, space, and career information, and links to other education and partnership resources.

www.faasafety.gov

This site includes safety events and other important safety information, and is searchable by airport or zip code for events in other locations. This is now the preferred information delivery channel of the national FAA Aviation Safety Program for pilots, mechanics, and other interested parties.

www.medallionfoundation.org

Established by the Alaska Air Carriers Association as a separate educational organization, the Medallion Foundation promotes standards for operations, maintenance and training above the federal regulatory minimums. Individual carriers must apply for membership and meet the standards to be considered an applicant. Once they adopt the standards, the carrier must be audited to demonstrate implementation. Additional information on the program can be found in the Appendix A Glossary.

www.nasdac.faa.gov

This web site provides easy access to the National Transportation Safety Board and other searchable accident databases, information and statistics

APPENDIX C SURVIVAL INFORMATION

State Of Alaska Statutes: Title 02. Aeronautics

Chapter AS 02.35.110. Emergency Rations and Equipment

Alaska State law requires that no pilot may make a flight in Alaska without carrying emergency equipment during the summer months. This equipment includes:

- Food for each person in the aircraft sufficient to maintain life for two weeks
- One hatchet or ax
- One first aid kit
- An assortment of tackle such as hooks, flies, lines and sinkers.
- One knife
- Two small boxes of matches
- One mosquito head net for each person
- Two small signaling devices, such as colored smoke bombs, signal mirrors, railroad flares, or "Very" pistol shells stored in sealed metal containers
-

In addition, of the above, the following items are required for winter travel, October through April:

- One pair snowshoes for each person
- One sleeping bag for each person
- One woolen blanket for each person

Although an air carrier may provide minimal survival gear when traveling in rural Alaska many people choose to wear a survival kit on their person. This can be accomplished by wearing a backpack or a fishing vest with multiple pockets in which to place survival items. This personal kit should cover the necessary basics such as fire starting materials, shelter, water procurement, signaling devices and medical items. Many people pack the following in their personal kits:

- Waterproof matches
- Candle
- Space blanket (shelter, windbreak, ground cover, cape)
- Small mirror (for signaling airplanes)
- Compass
- Hard candy or bullion cubes
- Combined fishing and sewing kit
- Ball of string
- Whistle (for signaling)
- Insect repellent

The above may be the only survival equipment available in the event of an unplanned landing. This will ensure that the barest minimums for survival will be met if a rapid egress from the aircraft is necessary and the onboard survival kit cannot be retrieved.

(Please note that since the terrorist attack of 9/11/2001, the Transportation Security Administration (TSA) has placed additional restrictions on carry-on items, which may affect a portion of your flight. Be sure to check with the carrier before packing any flammable or hazardous materials.)

**APPENDIX D
FEDERAL AVIATION REGULATIONS**

§ 135.205 VFR: Visibility requirements.

(a) No person may operate an airplane under VFR in uncontrolled airspace when the ceiling is less than 1,000 feet unless flight visibility is at least 2 miles.

(b) No person may operate a helicopter under VFR in Class G airspace at an altitude of 1,200 feet or less above the surface or within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport unless the visibility is at least --

(1) During the day -- 1/2 mile; or

(2) At night -- 1 mile.

[Doc. No. 16097, 43 FR 46783, Oct. 10, 1978, as amended by Amdt. 135-41, 56 FR 65663, Dec. 17, 1991

§ 135.203 VFR: Minimum altitudes.

Except when necessary for takeoff and landing, no person may operate under VFR --

(a) An airplane --

(1) During the day, below 500 feet above the surface or less than 500 feet horizontally from any obstacle; or

(2) At night, at an altitude less than 1,000 feet above the highest obstacle within a horizontal distance of 5 miles from the course intended to be flown or, in designated mountainous terrain, less than 2,000 feet above the highest obstacle within a horizontal distance of 5 miles from the course intended to be flown; or

(b) A helicopter over a congested area at an altitude less than 300 feet above the surface.

APPENDIX E
SAMPLE ORGANIZATIONAL POLICY

<p style="text-align: center;">(SAMPLE – Your organization’s name)</p> <p>CIRCLE OF SAFETY POLICY LETTER</p>	<p>Number (If desired)</p>
<p>Subject</p> <p>(Organization’s name) policy for selection of an air carrier for all (employees/school children) that travel by air.</p>	
<p>File Number</p> <p>(If desired)</p>	<p>Date</p>
<p style="text-align: center;">Policy Statement</p> <p>Effective ___(date)_____all lines of business within (organization’s name) shall apply the following criteria in the selection of an air carrier for the transportation of employees/school children.</p>	
<p>Applicability</p> <p>This Policy Letter is to inform all employees within our organization that we have implemented the FAA’s Circle of Safety concepts and shall apply them in all aviation services that we contract for. Effective (date)</p>	
<p>Background</p> <p>The FAA established a program called Circle of Safety that was started in 2002, to help reduce aviation accidents in Alaska. The intent of Circle of Safety is to educate passengers and organizations that contract for aviation services in Alaska, as to their role in aviation safety. Until the Circle of Safety Program, passengers’ role in safety had not been addressed. Up until now, we have not had a policy for our own (employees/school children) establishing criteria in selection of an air carrier that raises the bar of safety for our air transportation. This policy shall establish criteria for the selection of air carriers that transport our employees/school children.</p>	
<p>Policy</p>	

Many of our transportation needs require a diverse variety of aviation services, often to some very remote destinations to perform their jobs. (Organization's name) recognizes that in some cases there is no choice of air carriers as only one carrier may service some of the more remote sites. However, in the case that there is a choice of air carriers, this policy establishes the following criteria that an air carrier shall meet in order to transport our (employees/school children). All air carriers must fill out the air carrier Circle of Safety questionnaire contained in the Circle of Safety Guide. The guide will be used in training and provided to all departments. The completed questionnaire shall be kept on file in (location) office, and updated annually.

- a. The air carrier shall conduct no Special VFR departures when the weather is less than 500-foot ceiling and 2 miles visibility when transporting our employees/school children.
- b. When there is an option, an air carrier that is a Medallion applicant shall be chosen.
- c. The air carrier shall file a flight plan for every flight that transports employees/school children and with any internal dispatch system that may be in place.
- d. For every flight the carrier shall keep a manifest of the our organization's passengers aboard the aircraft.
- e. The air carrier shall have access to the Alaskan weather cameras, and where applicable, the pilot in command of the flight and a person with operational control of the company shall avail themselves of all available weather cameras along the proposed route of flight and the destination.

The intent of this Policy Letter is to establish criteria in the selection of an air carrier that operates to the highest standard of safety, in an effort to assure the safest air transportation for our (employees/school children). All (organization's name) travelers shall be trained in the Circle of Safety concepts, initially by the FAA's Safety Program's FAAS Team, and annually within their own departments.

Future Disposition

This Circle of Safety Policy shall be implemented in all departments, reviewed annually and remain in effect until further notice.

Reference Number

This Policy Letter is designated (if desired)

(Name and signature of person with approving authority)

(Organization's name)

APPENDIX F

SAMPLE AIR CARRIER QUESTIONNAIRE

Air Carrier Questionnaire

Our (school district/ organization) frequently utilizes air transportation. We seek an air carrier that consistently operates above the minimum standard for safety. So that we may evaluate your company’s ability to meet our safety needs, please provide the following information:

Air Carrier Certificate number: _____

Check the types of operations authorized by your Operations Specifications:

- Single-Engine VFR
- Single-Engine IFR
- Multi-Engine VFR
- Multi-Engine IFR

Insurance provider(s) and insurance coverage per seat _____

Briefly describe any accidents or incidents that your company has been involved in within the past 3 years. Include information on company actions taken to prevent the same or similar situations from occurring in the future. Be advised our organization will routinely check responses against accident databases.

What special training or flight checking do pilots and flight followers/dispatchers receive regarding inadvertent entry into IFR conditions while on a VFR flight? How often do they receive this training?

Does your company hold regular safety meetings?

- YES
- NO

How often are these meeting held?

Our organization has established the following requirements.

- Minimum flight visibility _____
- Minimum temperature cutoff _____
- Minimum pilot training and experience requirements _____
- How much Alaskan flying experience are they required to have prior to employment?

- Minimum situational awareness equipment (e.g. Capstone (see Appendix A), graphical display Global Positioning System (GPS) units, Ground Proximity Warning Systems (GPWS) units, etc).

Can your company meet these requirements?

Yes _____ No _____

List the people within your company that have operational control.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

List other things we should take into consideration when reviewing your application (e.g. pilot training above the minimum regulatory standards, maintenance training, special navigational equipment found in your aircraft, local pilot experience, accident free history, special survival equipment, and participation in the AACA's Medallion Program (see Appendix A)

Additional Comments:
