



**Federal Aviation
Administration**

General Aviation Pilot's Guide to Online Safety Resources



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Introduction

Welcome! Flying can be a magical experience, but there is no mystery or magic involved in safe flight operations. Safe flying involves using knowledge, skills, and attitudes to manage risk. That's why federal regulations have long required pilots to "become familiar with all available information concerning that flight" (14 CFR 91.103).

The specific examples of what that information "must" include list several important preflight actions (e.g., checking the runway lengths at airports of intended use). There are many sources for this kind of technical information, but "all available information" is a much broader term. It includes information and knowledge about all other aspects of the flight, including the vitally important risk management and decision-making components of flight planning and flight operations.

This guide is intended to help the general aviation community navigate more efficiently to online sources of knowledge and tools for safe flying. The guide is designed for use as an online "direct-to" navigator, but all topics are accessible via www.faa.gov. Links in this guide are organized according to the PAVE Checklist, which includes four key parts of the general aviation safety system:

- P** **Pilot**

- A** **Aircraft**

- V** **enVironment**

- E** **External pressures**



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FAA's General Aviation Safety Goals



General aviation involves pilots operating in a much less strictly regulated environment than the commercial sector, experiencing unique and joyous freedoms: freedom to rent, buy, or build your own airplane, freedom to fly it slow, fly it fast, fly it over mountains and across the water, fly it at night, even fly it upside down. All of these cherished freedoms carry risk. For the most part, this risk is skillfully managed, but failures to manage risk are still persistently reflected in the accident statistics.

General aviation accidents decreased from 1,741 in 2003 to 1,614 in 2004. There were 312 fatal general aviation accidents, down from 352 the year before. The accident rate decreased from 6.77 per 100,000 flight hours in 2003 to 6.22 in 2004. The fatal accident rate decreased from 1.37 to 1.20. In short, 2004 was general aviation's safest year ever.

The FAA Strategic "Flight Plan" begins with our commitment to do even better. The first goal is simply stated: ***To achieve the lowest possible accident rate and constantly improve safety.*** Eight specific objectives are detailed under this goal. The first objective is to reduce the commercial airline fatal accident rate; the second is to reduce the number of fatal accidents in general aviation.

The GA objective comes with a specific performance target: ***By FY 2009, reduce the number of general aviation and nonscheduled Part 135 fatal accidents to no more than 319 (from 385, which represents the average number of fatal accidents for the baseline period of 1996-1998.)*** Aviation safety is about saving lives. Accountability to that goal means measuring and monitoring results, so these numbers, along with other safety targets, are continuously reviewed at the highest levels in the FAA.

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Risk Management Concepts



Safety is one of the most fundamental considerations in flying. Every pilot can agree that safety is paramount, and everyone wants to be safe. But what does “safety” really mean? How can a pilot ensure safety in flight activities?

According to one definition, safety is the freedom from those conditions that can cause death, injury, or illness; damage to/loss of equipment or property, or damage to the environment. Regulations are intended to promote safety by eliminating or mitigating conditions that can cause death, injury, or damage. These regulations are comprehensive, but there has been increasing recognition that even the strictest compliance with regulations may not be sufficient to guarantee safety. Rules and regulations are designed to address known or suspected conditions detrimental to safety, but in any system – defined as the combination of people, procedures, equipment, facilities, software, tools, materials that operate in a specific environment to perform a specific task or achieve a specific purpose – there is a high probability that some new combination of circumstances not contemplated by the regulations will arise.

That is where risk management comes in. Risk management is a decision-making process designed to systematically identify hazards, assess the degree of risk, and determine the best course of action.

The risk management decision path shows a simple, easy-to-remember “3P” model for practical risk management:

Perceive, Process, Perform.

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Risk Management Decision Path



PERCEIVE hazards
PROCESS to evaluate level of risk
PERFORM risk management

To **perceive** (cross-check) the hazards in all critical areas associated with a flight, use the **PAVE** checklist.

P ilot	experience, recency, currency, physical/emotional condition
A ircraft	fuel reserves, experience in type, aircraft performance, aircraft equipment (e.g., avionics)
e n V ironment	airport conditions, weather (VFR & IFR requirements), runways, lighting, terrain
E xternal pressures	allowance for delays and diversions

To **process** (interpret) the possible impact and likelihood of each hazard identified through the PAVE checklist, use the **CARE** checklist:

C onsequences	Think through the possible outcomes (consequences) posed by each of hazards identified in the first phase, and determine (or “guess-timate”) the level of risk involved.
A lternatives	Develop a mental list of alternative courses of action.
R eality	Acknowledge reality and avoid wishful thinking that might lead to poor decisions
E xternal pressures	Be mindful of external pressures, especially tendencies toward “get-home-itus.”

To **perform** (control) risk management, use the **TEAM** checklist:

T ransfer	Should this risk decision be transferred to someone else (e.g., should you consult an A&P mechanic?)
E liminate	Is there a way to eliminate the hazard?
A ccept	Do the benefits of accepting risk outweigh the dangers?
M itigate	What can you do to mitigate the risk?

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P ilot	A ircraft	e n V ironment	E xternal Factors
<u><i>Pilots</i></u>			

General aviation pilots fly for a variety of reasons, and have different degrees of skill and experience. To make it easier to find safety resources for the kind of flying that you do, this guide organizes links to pilot resources according to pilot certificates and ratings.

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- [Commercial Pilots](#)
- [Flight Instructors](#)
- [Instrument-Rated Pilots](#)
- [Private Pilots](#)
- [Rotorcraft Pilots](#)
- [Sport Pilots](#)
- [Student Pilots](#)

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P ilot	A ircraft	e n V ironment	E xternal Factors
<u>Pilots</u>			

Commercial

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • Aircraft Type Clubs • Aviation Industry Groups • FAA • Other USG
<u>References & Databases</u>	<ul style="list-style-type: none"> • Accident Databases • Airman and Aircraft Registries • FAA Regulatory and Guidance Library • Graphical TFRs • National Transportation Library • NOTAMs
<u>Tools and Training Courses</u>	<ul style="list-style-type: none"> • Airspace • Aviator's Model Code of Conduct • CFIT Avoidance Information • Crew Resource Management • Decision-Making • FAA/Industry Training Standards (FITS) • Human Factors Awareness • Icing • Instrument Flying • Night VFR • Personal Minimums (PAVE) Checklist • Risk Management Guide • Runway Safety • Stall/Spin Awareness • Terrain Avoidance • Wake Turbulence

Links to these topics are available via www.faa.gov ("online resources")

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P ilot	A ircraft	enV ironment	E xternal Factors
<u>Pilots</u>			

Flight Instructors

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
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Instrument

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
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Private

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • Aircraft Type Clubs • Aviation Industry Groups • FAA • Other USG
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Rotorcraft

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • Aircraft Type Clubs • Aviation Industry Groups • FAA • Other USG
<u>References & Databases</u>	<ul style="list-style-type: none"> • Accident Databases • Airman and Aircraft Registries • FAA Regulatory and Guidance Library • Graphical TFRs • National Transportation Library • NOTAMs
<u>Tools and Training Courses</u>	<ul style="list-style-type: none"> • Airspace • Aviator's Model Code of Conduct • CFIT Avoidance Information • Crew Resource Management • Decision-Making • FAA/Industry Training Standards (FITS) • Human Factors Awareness • Icing • Instrument Flying • Night VFR • Personal Minimums (PAVE) Checklist • Risk Management Guide • Runway Safety • Stall/Spin Awareness • Terrain Avoidance • Wake Turbulence

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Sport

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
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<u>References & Databases</u>	<ul style="list-style-type: none"> • Accident Databases • Airman and Aircraft Registries • FAA Regulatory and Guidance Library • Graphical TFRs • National Transportation Library • NOTAMs
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Student

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • 8710-A Certificate & Rating Application • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • Advisory Circulars (menu, checklists, examples) • FAA Handbooks • 14 CFR Regulations • Medical Certification Information • Practical Test Standards • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • Aircraft Type Clubs • Aviation Industry Groups • FAA • Other USG
<u>References & Databases</u>	<ul style="list-style-type: none"> • Accident Databases • Airman and Aircraft Registries • FAA Regulatory and Guidance Library • Graphical TFRs • National Transportation Library • NOTAMs
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	<u>Aircraft</u>		

These links provide information on aircraft and airworthiness issues.

Type	Examples
<u>Airworthiness</u>	<ul style="list-style-type: none"> • Aircraft Registry • Airworthiness Definition and FAQs • Industry Safety Mailings • Learning and Diagnosing Engine Problems • Minimum Equipment Requirements
<u>Forms</u>	<ul style="list-style-type: none"> • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • FAA Handbooks • 14 CFR Regulations • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • Aircraft Type Clubs • Aviation Industry Groups • FAA • Other USG
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		<u>enVironment</u>	

These links provide information on aspects of the flight environment, including airports, runway safety, and weather.

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • FAA Handbooks • 14 CFR Regulations • Risk Management • Security for General Aviation
<u>Organizations</u>	<ul style="list-style-type: none"> • FAA • Industry Groups • Other USG
<u>References & Databases</u>	<ul style="list-style-type: none"> • FAA Regulatory and Guidance Library • National Transportation Library • NOTAMs
<u>Tools and Training Courses</u>	<ul style="list-style-type: none"> • Airspace • CFIT Avoidance Information • Graphical TFRs • Icing • Instrument Flying • Night VFR • Personal Minimums (PAVE) Checklist • Risk Management Guide • Runway Safety • Terrain Avoidance • Wake Turbulence
<u>Weather</u>	<ul style="list-style-type: none"> • Aviation Digital Data Service (ADDS) • Aviation Weather Information (NASA) • Aviation Weather Service AC (FAA) • DUAT • Hazardous Mountain Winds • Icing • National Center for Atmospheric Research • National Climactic Data Center • Skyspotter Course (AOPA Air Safety Foundation) • Weather Resources Menu (FAA)

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Pilot	Aircraft	enVironment	External Factors
			<u><i>External</i></u>

These links provide information on dealing with external factors. The FAA’s human factors information course, risk management tools, and the Aviator’s Model Code of Conduct may be of particular interest.

Type	Examples
<u>Forms</u>	<ul style="list-style-type: none"> • PDF Fill-in Forms
<u>Guidance, Standards, Regulations, and Handbooks</u>	<ul style="list-style-type: none"> • FAA Handbooks • 14 CFR Regulations • Risk Management • Security for General Aviation
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