

# Topic of the Month February Personal Minimums



Federal Aviation  
Administration

Presented to: Salem Area Pilots  
By: Thomas Gorski CFI  
Date: February 7, 2015



2014/10/01-063 (I)PP Original Author, FAASTeam; POC Kevin Clover, 562-888-2020.

Modified by Thomas Gorski CFI 503.551.1700 for FAASTeam Seminar presentation in Salem, Oregon USA 01-25-2015

# Welcome

- Interactive Presentation
- Restrooms
- Exits & Emergency Evacuation
- Sponsor Acknowledgment
- Seminar Recording
- Breaks



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**Set the Tone-** being warm and welcoming the people to my hangar for an Interactive presentation. My style is getting you comfortable with asking relevant questions frequently. It is important to address your concerns and your questions. We have a holding pattern for unanswered questions. We can learn much from each other. Questions and answers are very important, so frequent Q/A interaction is encouraged.

Restrooms, exits, evacuation.

Acknowledge Sponsors.

Seminar / Webinar engineering with priority on Seminar. Webinar is running in the background.

10 Min break.

**(Next Slide)**

# Outline

- **Presenter's Background**
- **Brief Overview of FAASTeam**
- **1<sup>st</sup> Hour: Personal Minimums**
- **2<sup>nd</sup> Hour: Quiz Game**  
(Based on FAA Risk Management Handbook 2009)

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Presenter's Background

Brief Overview of FAASTeam

1st Hour: Focus

2nd Hour: Focus

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## Presenter's Background

- 1976 – US Army Avionics Technician
- 1984 – 2008 CFI & Charter C414A, LR-JET, CE-500
- 2008 – 2013 Evergreen Airlines B-747-200, LCF, 400  
Director of Flight Standards
- 2013 – Present Contract Pilot, CFI, FAA Volunteer

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Discussion of my background.

1976 – US Army Avionics Technician

1984 – 2008 CFI & Charter C414A, LR-JET, CE-500

2008 – 2013 Evergreen Airlines B-747-200, LCF, 400  
Director of Flight Standards

2013 – Present Contract Pilot, CFI, FAA Volunteer

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# Safety Seminars

FAASTeam Website  
[www.faasafety.gov](http://www.faasafety.gov)

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Activities of the FAASTeam are organized and indexed through the Website  
FAASAFETY.GOV

Faasafety.gov is a portal between the FAA and the aviation community.

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# Mission Statement

Improve the Nation's aviation accident rate by conveying safety principles and practices through training, outreach, and education; while establishing partnerships and encouraging the continual growth of a positive safety culture within the aviation community.

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**The mission of the FAASTeam is:**

Improve the Nation's aviation accident rate by conveying safety principles and practices through training, outreach, and education; while establishing partnerships and encouraging the continual growth of a positive safety culture within the aviation community.

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## Relationship With Aviation Community

Individuals who makes a conscious effort to promote aviation safety and become part of the shift in safety culture:

Pilots – participate in WINGS - Pilot Proficiency Program

Mechanics – participate in AMT Awards Program

Everyone who attends FAASafety Team Seminars

# Thank You!

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Our relationship with the aviation community is made up of individuals who make an effort to promote aviation safety. Those individuals, by virtue of their conversations, their knowledge and experience serve to facilitate a shift in the safety culture.

I am talking about Pilots who participate in the WINGS Pilot Proficiency Program.

Mechanics who participate in the AMT awards program, and everyone who Attends Safety Seminars

On behalf of the FAA Safety Team I want to thank each one of you who are here today. Thank you!

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# Overview

- **Personal Minimums**
- **Pilot performance assessment**
- **Adjusting minimums for specific conditions**

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In this presentation we will discuss the concept of personal minimums. We'll talk about assessing your aircraft performance, and your own performance as a pilot. We will also talk about defining your personal minimums in various environmental conditions. And then we'll talk about adjusting those minimums in response to specific conditions.

**Presentation Note:** *If you'll be discussing additional items, add them to this list (Next Slide)*



# Limitations

P  
A  
V  
E



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“A man’s got to know his limitations”. Clint Eastwood as Dirty Harry said it 40 years ago and it’s still true today. But how do we know what our limitations are? Our aircraft limitations are found on placards, on instrument markings, and in the POH. But what about our own capabilities as pilots? Pilot capabilities are not fixed in stone. Our ability to cope with wind and weather changes from year to year, day to day, and even hour to hour. That’s why many successful pilots develop personal minimums for all their flying activities. **(Click)**

Chapter 8 in FAA’s Risk Management Handbook shows us how to set Personal Minimums. Parameters to consider are associated with the acronym PAVE. **(Click)**

We’ll discuss the meaning of the letters and the curious case of the misaligned V in the following slides,.

**(Next Slide)**

# Limitations

**P**ilot  
**A**ircraft  
**enV**ironment  
**E**xternal Pressures



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P represents the pilot. **(Click)**

A stands for Aircraft **(Click)**

V represents the environment within which we'll be operating **(Click)**

And E has to do with external pressures and distractions. We'll take a more in depth look at each of these areas in following slides.

**(Next Slide)**

# Pilot

- **Certification Level**
- **Total Experience**
- **Recent Experience**
- **Health**
- **Fatigue**
- **Stress**



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To assess pilot capabilities we want to look at **(Click)**

Certification Level **(Click)**

Total experience including time in make and model and **(Click)**

Recent Experience – overall and in make and model **(Click)**

Pilot health is obviously important and should be a no brainer but we include it here because a recent study revealed

that there were over the counter or prescriptions found

in post mortem toxicology screens of 80% of pilots in fatal accidents.

We're not saying that those drugs were the cause of the accidents but the surprising high percentage does make us wonder about what medical conditions those pilots were treating and how those conditions may have affected pilot performance.

**(Click)**

Fatigue is another big issue these days. Accident investigation data show that fatigue is often a pilot performance degrading factor. **(Click)**

Finally we have stress. We'll also address this under external pressures but internal – self imposed – stress is something most pilots live with and, if it's excessive, it can contribute to reduced pilot performance.

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# Aircraft

- Performance
- Range
- Instrumentation
- Navigation Equipment
- Wx Avoidance Equipment

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With regard to the aircraft:

**(Click)**

Naturally, we want to consider aircraft performance parameters with respect to the mission.

**(Click)**

Range, instrumentation, navigation and weather avoidance equipment must also match the mission.

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# enVironment

- Topography
- Runway & approach aids
- Wind and Weather
- Lighting Conditions

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And of course pilots must carefully consider the environments they fly in. Topography, lighting conditions, wind, weather, runways and approach aids. All of these taken together provide environmental challenges on every flight

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# External Pressures

- Employers & Passengers
- Schedules & Deadlines
- Expenses



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Employers and Passengers can exert enormous pressure on pilots to complete their missions on time regardless of changing conditions

Schedules & Deadlines can place enormous pressures on pilots, as can concern over expenses.

And we've seen accidents that could have been prevented if the pilot had only purchased 10 gallons more of that unexpectedly expensive fuel at the destination airport. We've also seen accidents where the pilot should have gone to the expense of remaining overnight but took off into darkness and marginal weather instead.

**(Next Slide)**

# Assess Experience and Comfort Level

Experience and "Comfort Level" Assessment Wind & Turbulence			
	SE	ME	Make/ Model
<b>Turbulence</b>			
Surface wind speed	10 knots	15 knots	
Surface wind gusts	5 knots	8 knots	
Crosswind component	7	7	

Experience and "Comfort Level" Assessment Performance Factors			
	SE	ME	Make/ Model
<b>Performance</b>			
Shortest runway	2,500	4,500	
Highest terrain	6,000	3,000	
Highest density altitude	3,000	3,000	

Experience and "Comfort Level" Assessment IFR & LIFR		
Weather Condition	IFR	LIFR
<b>Ceiling</b>		
Day	500-999	< 500
Night	800	—
	999	—
<b>Visibility</b>		
Day	1-3 miles	< 1 mile
Night	1 mile	—
	3 miles	—

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Developing a personal minimums document is a matter of assessing your pilot experience and comfort level with respect to various mission and environmental conditions. You'll complete several tables like the these and together they'll comprise your personal minimums.

Let's take a look at each of these tables separately, so they will be easier to see.

**(Next Slide)**

Experience and “Comfort Level” Assessment				
Combined VFR & IFR				
Weather Condition	VFR	MVFR	IFR	LIFR
Ceiling	Day	2,500	800	
	Night	5,000	999	
Visibility	Day	4 miles	1 mile	
	Night	8 miles	3 miles	

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Most people think of personal minimums primarily in terms of weather conditions, so begin with a quick review of weather definitions. The regulations define weather flight conditions for visual flight rules (VFR) and instrument flight rules (IFR) in terms of specific values for ceiling and visibility.

IFR is defined as a ceiling less than 1,000 feet above ground level (AGL) and/or visibility less than three miles.

Low instrument flight rules (LIFR) is a subcategory of IFR.

VFR has ceiling greater than 3,000 feet AGL and visibility greater than five miles.

Marginal visual flight rules (MVFR) is a subcategory of VFR.


One of the most important concepts that safe pilots understand is the difference between what is “legal” in terms of the regulations, and what is “smart” or “safe” in terms of pilot experience and proficiency. By establishing personal minimums, pilots can take a big step in managing risk.

**(Next Slide)**



Experience and “Comfort Level” Assessment			
Wind & Turbulence			
	SE	ME	Make/Model
<b>Turbulence</b>			
Surface wind speed	10 knots	15 knots	
Surface wind gusts	5 knots	8 knots	
Crosswind component	7	7	

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In the article, “Getting the Maximum from Personal Minimums,” (May/June 2006 FAA Aviation News), the FAA indicates six steps for establishing personal minimums.

**Step 1—Review Weather Minimums**

**Step 2—Assess Experience and Comfort Level**


**Step 3—Consider Other Conditions**

Ceiling and visibility are the most obvious conditions to consider in setting personal minimums, but it is also a good idea to have personal minimums for wind and turbulence. As with ceiling and visibility, the goal in this step is to record the most challenging wind conditions you have comfortably experienced in the last 6–12 months—not necessarily the most challenging wind conditions you have managed to survive without bending an airplane.

**(Next Slide)**

Experience and “Comfort Level” Assessment			
Performance Factors			
	SE	ME	Make/ Model
<b>Performance</b>			
<b>Shortest runway</b>	2,500	4,500	
<b>Highest terrain</b>	6,000	3,000	
<b>Highest density altitude</b>	3,000	3,000	

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**Step 1—Review Weather Minimums**

**Step 2—Assess Experience and Comfort Level**

**Step 3—Consider Other Conditions**

In the consideration of other conditions, performance factors are very important.

What are some of the triggers that make us look closely at performance? In other words, at what point do you start looking at density altitude?

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Baseline Personal Minimums				
Weather Condition	VFR	MVFR	IFR	LIFR
<b>Ceiling</b>				
Day	2,500		800	
Night	5,000		999	
<b>Visibility</b>				
Day	4 miles		1 mile	
Night	8 miles		3 miles	
<b>Turbulence</b>				
Surface wind speed	10 knots	15 knots		
Surface wind gusts	5 knots	8 knots		
Crosswind component	7	7		
<b>Performance</b>				
Shortest runway	2,500	4,500		
Highest terrain	6,000	3,000		
Highest density altitude	3,000	3,000		

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#### Step 4—Assemble and Evaluate

Now you have some useful numbers to use in establishing baseline personal minimums. Combining these numbers, the Baseline Personal Minimums this slide shows how the whole picture might look.

Here are baseline personal minimums, including ceiling and visibility, wind and turbulence, and performance.

Notice what's not included? Locations, Flight durations,  
(Next Slide)

# Adjust for Specific Conditions

	If you are facing		Adjust baseline personal minimums by
<b>Pilot</b>	Illness, use of medication, stress, or fatigue; lack of currency (e.g., have not flown for several weeks)	Add	At least 500 feet to ceiling
<b>Aircraft</b>	An unfamiliar airplane or an aircraft with unfamiliar avionics or other equipment		At least 1/2 mile to visibility
<b>enVironment</b>	Unfamiliar airports and airspace; different terrain or other unfamiliar characteristics	Subtract	At least 500 feet to runway length
<b>External Pressures</b>	"Must meet" deadlines, pressures from passengers, etc.		At least 5 knots from winds

- **Never adjust to a less conservative level**

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**Step 5—Adjust for Specific Conditions** Any flight you make involves almost infinite combinations of pilot skill, experience, condition, and proficiency; aircraft equipment and performance; environmental conditions; and external influences. Both individually and in combination, these factors can compress the safety buffer provided by your baseline personal minimums. Consequently, you need a practical way to adjust your baseline personal minimums to accommodate specific conditions. Once you have established your personal minimums, you can adjust them for specific conditions as we can see here. One caveat and it's very important. **(Click)** If you're going to adjust a previously determined minimum always do so in a more conservative direction. In other words if you want less conservative minimums you must acquire pilot and aircraft capability to ensure safety. An example would be a flight operation that wants to operate to Category II approach minimums must have specially trained crew and navigation equipment as well as recent experience, to fly the Cat II approach. Keep all other variables constant. For example, if your goal is to lower your baseline personal minimums for visibility, don't try to lower the ceiling, wind, or other values at the same time. In addition, you never want to push the baseline if there are special conditions (e.g., unfamiliar aircraft, pilot fatigue) present for this flight. You might find it helpful to talk through both your newly established personal minimums and any "push-the-envelope" plans with a well-qualified flight instructor.

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# Proficiency & Peace of Mind



## Stick to the plan



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**Step 6—Stick to the Plan!** Once you have done all the thinking required to establish baseline personal minimums, all you need to do next is stick to the plan. As most pilots know, that task is a lot harder than it sounds, especially when the flight is for a trip that you really want to make, or when you are staring into the faces of your disappointed passengers. Here's where personal minimums can be an especially valuable tool. Professional pilots live by the numbers, and so should you. Pre-established hard numbers can make it a lot easier to make a smart no go or divert decision than a vague sense that you can "probably" deal with the conditions that you are facing at any given time. In addition, a written set of personal minimums can also make it easier to explain tough decisions to passengers who are, after all, trusting their lives to your aeronautical skill and judgment. **(Click)**

Finally – once you've documented your personal minimums, validate them with your favorite flight instructor. Your CFI can coach you to your peak performance and you can win a Wings proficiency award in the process.

**(Next Slide)**

# Personal Minimums Assessment Search Results

Results 1 - 10 of about 2100 for **risk management handbook**. Search took **0.35** seconds.

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**Handbooks & Manuals**  
[http://www.faa.gov/regulations\\_policies/handbooks\\_manuals/](http://www.faa.gov/regulations_policies/handbooks_manuals/)

1 of 1 FAA-H-8083-2 **Risk Management Handbook** Updated ... **[PDF]**  
 Page 1. 1 of 1 FAA-H-8083-2 **Risk Management Handbook** Updated January 25, 2013 Errata as of January 25, 2013 1. In ... | 3k  
[www.faa.gov/regulations\\_policies/handbooks\\_manuals/aviation/media...](http://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media...)

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Go to [faa.gov](http://faa.gov) and in the search field enter “Risk Management Handbook” then click search. **(Click)** You can then download the .PDF file from the link.

General aviation pilots enjoy a level of responsibility and freedom unique in aviation. Unlike the air carrier, corporate, and military communities, most GA pilots are free to fly when and where they choose. They are unencumbered by the strict regulatory structure that governs many other flight operations. However, the GA pilot is not supported by a staff of dispatchers and meteorologists, or governed by rigid operational guidelines designed to reduce risk. Pilots should not be lulled into a false sense of security simply because they are in compliance with the regulations. Judgment and aeronautical decision-making serve as the bridge between regulatory compliance and safety. Deciding if or when to undertake any flight lies solely with the pilot in command (PIC). GA pilots should remember that FAA regulations designed to prevent accidents and incidents come out **AFTER** the accident or incident.

Now are there any comments or questions?

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## Questions?

Portland FSDO  
3180 NW 229th Avenue  
Hillsboro, Oregon 97124

Phone: (503) 615-3200 or  
(800) 847-3806 Fax: (503) 615-3300

Office Hours: 7:30 a.m. to 4:00 p.m.,  
Monday - Friday

Office visits appointments only  
recommended



Tom Gorski  
503.551.1700

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Break  
10  
Minutes Remaining

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Break  
9  
Minutes Remaining

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Break  
8  
Minutes Remaining

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Break  
7  
Minutes Remaining

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Break  
6  
Minutes Remaining

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Break  
5  
Minutes Remaining

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Break  
4  
Minutes Remaining

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Break  
3  
Minutes Remaining

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Break  
2  
Minutes Remaining

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Break  
1  
Minute Remaining

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Break  
0  
Minute Remaining

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