

# USHST All Hands Webinar

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## Personal Minimums/Limits

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## Risk Management for Personal and Private Operations

- Reducing negative outcomes is equally important for you.
  - Understand the hazards and their risks
  - Helping to make better decisions
- It all starts with a personal commitment to prioritizing safety
  - You must be honest with yourself
  - Hold yourself accountable
- Next, implement some process to keep safety at the forefront of each flight
  - Here, we will focus on two simple and important strategies
    - Mitigating Risk
    - Personal Minimums



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Personal / Private Ops Risk Management

## Risk Management

**A pre-flight risk assessment is a crucial part of safe flight operations**

- Write it down or have a discussion with a peer
  - Organization of ideas is important. Risks “stack up” – just looking at one at a time does not give a complete picture
- Or Use an online tool or app

## PAVE Checklist

**Pilot:**

- “Am I ready for this trip?” in terms of experience, recency, currency, physical, and emotional condition.
- IMSAFE: Physical and mental well being



- 1. Illness**—Am I sick? Illness is an obvious pilot risk.
- 2. Medication**—Am I taking any medicines that might affect my judgment or make me drowsy?
- 3. Stress**—Am I under psychological pressure from the job? Do I have money, health, or family problems?
- 4. Alcohol**—Have I been drinking within 8 hours? Within 24 hours?
- 5. Fatigue**—Am I tired and not adequately rested?
- 6. Emotion**—Am I emotionally upset?

Use the  
**IMSAFE**  
checklist to  
ensure you  
are *fit to fly*





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## Personal / Private Ops Risk Management

# Risk Management: PAVE Checklist

### Aircraft

- Performance Margins
- Equipment or lack there-of
- Fuel Reserves
- Recently returned from Maintenance

### enVironment

- Weather
- Terrain, congested surfaces, remoteness
- Wires and obstacles, bird activity
- Airspace, busy air traffic, high workload ATC

### External Pressures

- Time limits / pressures.
- Mission mentality, Get-home-itis
- Incoming night or weather
- Financial or social pressures, previous cancelations or postponements



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Personal / Private Ops Risk Management

## Risk Management: TEAM Process

- How much risk should I accept? ALARP = As Low As Reasonably Practicable
  - The assumption is all actions to mitigate risk will be taken, unless the action poses a non-feasible/unreasonable burden
- Apply mitigation to identified Risks: TEAM
  - Transfer
    - “outsource” the risk to another party/pilot/provider – not often preferable in Personal/Private, but still effective
  - Eliminate
    - Reroute, cancel, delay/postpone, take a different aircraft: actions that eliminate an identified risk
  - Accept (with limits)
    - Identified Risk is acceptable now – but what if it changes? Must set personal limits for the flight
  - Mitigate
    - Selected routes and altitudes, training, rest time, additional crew or resources, additional planning, backup plans



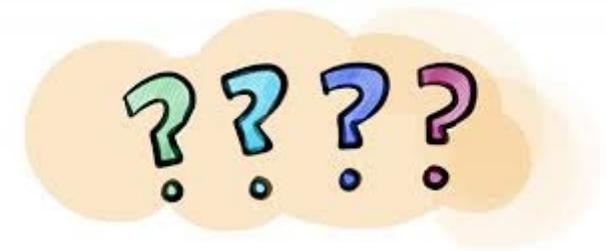
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## Personal Minimums

- Risks may be deemed “acceptable” - but until when?
- Pressures and task loading affect the quality of our decisions.
- Is it possible to make decisions when pressures/high workload are not present?

YES : Personal Minimums

- Common Questions we hope to answer today:
  - What if I feel that on a given flight that I can accept more or less risks than others?
  - Is it ever ok to break/compromise my personal minimums?





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## Personal Minimums Guidelines

- Setting your minimums / limits
  - 1<sup>st</sup> - consider all limitations placed on you by other entities
    - FAA, Insurance, Manufacturer, company limits, etc. These are good starting points.
    - Personal Minimums should not conflict with any of these
  - Sit down on a non-flying day/time to think without distraction or pressures
  - For setting limits, consider a flight when all other factors are ideal, and only the one factor is present – what limit is acceptable?
    - Example: calm winds, familiar location, recent experience, unlimited visibility: what cloud layer/ceiling would you accept?
  - Write down the worst condition you deem reasonable to accept, but in which you can guarantee a safe outcome based on your experience
  - You can never compromise the limit under any circumstances



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## Setting your Personal Minimums

- Visibility
  - Cloud layer height
  - Winds/ gusts
  - Other options:
    - pilot recency
    - fuel reserves
    - performance margin (HIGE/HOGE)
    - hours of sleep
    - Duty/flight hours
    - cruise altitudes AGL
    - anything you feel could create a risk when exceeded
  - Different limits may need to be set for
    - Make/Model
    - Day vs Night
    - VFR vs IFR operations
    - other profiles
- Be creative: what pressures will you face?
- Predetermined limits can reduce the influence of pressures or passengers



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## Personal Minimums

- Be familiar with the limits you wrote down.
  - You will need them under duress.
  - Make sure they are available to reference when under pressure.
- Use resolve to never compromise these limits
  - under any conditions
  - no matter how favorable other factors or flight
  - No matter how much pressure is encountered

**GREAT!**

But those will not be good enough to keep you safe on any given flight.

Now we must adjust them prior to lift-off, each flight.



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## Personal Minimums

- Multiple Risks “stack up” and multiply your exposure
  - Rarely is there only one risk present on a flight
  - Limits must be adjusted “down” to account for the cumulative effect
- What limits can you accept ON THIS FLIGHT, and still guarantee a safe outcome?
- Adjust minimums only “Down” – more conservative
- Many limits may stay as previously defined
- Example: high pilot fatigue, high DA, small performance margin = less windy/gusty conditions can be accepted – adjust down



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## Scenarios

- How might you adjust Personal Minimums for the following?
  - Long flight to unfamiliar off-airport landing area with loved ones on board
  - Flight in mountainous terrain to high DA location, with few alternate airports





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## Personal Minimums Guidelines

- Establish what you will do if you encounter your limits before or during the operation.
  - Divert / Return to Base
  - Land and Live (Precautionary Landing)
  - Transfer to other more capable aircraft or pilot
  - No-go / Delay for better conditions
- Share your limits and plans with your passengers before flight
- Mutual expectations and understanding reduces pressure in flight



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## Personal Minimums: Updating

- Re-evaluate personal minimums (never for a specific flight) –
  - were there any close calls or dangerous events?
    - Make more restrictive as necessary (any time)
  - Has your experience allowed you to safely increase them?
    - Consistently safe/low risk operations at your defined limits
    - Training with an instructor
    - Only do this on the ground, on a day not flying: use caution and talk with peers

# QUESTIONS?

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# EXTERNAL PRESSURES

## Trip Planning

Allowance for delays ..... \_\_\_\_\_ minutes

## Alternate Plans for Diversion or Cancellation

Notification of person(s) you are meeting

Passengers briefed on diversion or cancellation plans and alternatives

Modification or cancellation of car rental, restaurant, or hotel reservations

Arrangement of alternative transportation (airline, car, etc.)

## Personal Equipment

Credit card and telephone numbers available for alternate plans

Appropriate clothing or personal needs (eye wear, medication...) in the event of unexpected stay

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### Importance of Trip

The more important the trip, the more tendency there is to compromise your personal minimums, and the more important it becomes to have alternate plans.

## Your Personal Minimums Checklist—

- An easy-to-use, personal tool, tailored to your level of skill, knowledge, and ability
- Helps you control and manage risk by identifying even subtle risk factors
- Lets you fly with less stress and less risk

## Practice “Conservatism Without Guilt”

Each item provides you with either a space to complete a personal minimum or a checklist item to think about. Spend some quiet time completing each blank and consider other items that apply to your personal minimums. Give yourself permission to choose higher minimums than those specified in the regulations, aircraft flight manuals, or other rules.

## How to Use Your Checklist

Use this checklist just as you would use one for your aircraft. Carry the checklist in your flight kit. Use it at home as you start planning a flight and again just before you make your final decision to fly.

Be wary if you have an item that’s marginal in any single risk factor category. But if you have items in more than one category, you may be headed for trouble.

**If you have marginal items in two or more risk factors/categories, don’t go!**

Periodically review and revise your checklist as your personal circumstances change, such as your proficiency, recency, or training. You should never make your minimums less restrictive unless a significant positive event has occurred. However, it is okay to make your minimums more restrictive at any time. And never make your minimums less restrictive when you are planning a specific flight, or else external pressures will influence you.

## Have a fun and safe flight!

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# PERSONAL MINIMUMS CHECKLIST

*Think...*

**PILOT**  
**AIRCRAFT**  
**ENVIRONMENT**  
**EXTERNAL PRESSURES**

Pilot: \_\_\_\_\_

Date Revised: \_\_\_\_\_

Reviewed with: \_\_\_\_\_  
 (if applicable)

# PILOT

## Experience/Recency

Takeoffs/landings..... \_\_\_\_\_ in the last  
\_\_\_\_\_ days

Hours in make/model ..... \_\_\_\_\_ in the last  
\_\_\_\_\_ days

Instrument approaches ..... \_\_\_\_\_ in the last  
(simulated or actual) \_\_\_\_\_ days

Instrument flight hours ..... \_\_\_\_\_ in the last  
(simulated or actual) \_\_\_\_\_ days

Terrain and airspace .....familiar

## Physical Condition

Sleep ..... \_\_\_\_\_ in the last  
24 hours

Food and water ..... in the last  
\_\_\_\_\_ hours

Alcohol .....None in the last  
\_\_\_\_\_ hours

Drugs or medication.....None in the last  
\_\_\_\_\_ hours

Stressful events .....None in the last  
\_\_\_\_\_ days

Illnesses .....None in the last  
\_\_\_\_\_ days

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# AIRCRAFT

## Fuel Reserves (Cross-Country)

VFR Day ..... \_\_\_\_\_ hours  
Night..... \_\_\_\_\_ hours

IFR Day ..... \_\_\_\_\_ hours  
Night..... \_\_\_\_\_ hours

## Experience in Type

Takeoffs/landings..... \_\_\_\_\_ in the last  
in aircraft type \_\_\_\_\_ days

## Aircraft Performance

Establish that you have additional performance available over that required. Consider the following:

- Gross weight
- Load distribution
- Density altitude
- Performance charts

## Aircraft Equipment

Avionics..... familiar with equipment  
(including autopilot and GPS systems)

COM/NAV..... equipment appropriate  
to flight

Charts ..... current

Clothing..... suitable for preflight and  
flight

Survival gear ..... appropriate for flight/terrain

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# ENVIRONMENT

## Airport Conditions

Crosswind ..... \_\_\_\_\_ % of max POH  
Runway length..... \_\_\_\_\_ % more than POH

## Weather

Reports and forecasts .....not more than  
\_\_\_\_\_ hours old

Icing conditions .....within aircraft/pilot  
capabilities

## Weather for VFR

Ceiling Day..... \_\_\_\_\_ feet  
Night ..... \_\_\_\_\_ feet

Visibility Day..... \_\_\_\_\_ miles  
Night ..... \_\_\_\_\_ miles

## Weather for IFR

### Precision Approaches

Ceiling ..... \_\_\_\_\_ feet above min.  
Visibility ..... \_\_\_\_\_ mile(s) above min.

### Non-Precision Approaches

Ceiling ..... \_\_\_\_\_ feet above min.  
Visibility ..... \_\_\_\_\_ mile(s) above min.

### Missed Approaches

No more than ..... \_\_\_\_\_ before diverting

### Takeoff Minimums

Ceiling ..... \_\_\_\_\_ feet  
Visibility ..... \_\_\_\_\_ mile(s)

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