USHST All Hands Webinar
January 20, 2021

Personal Minimums/Limits

David Dziura and Chris Young
Risk Management for Personal and Private Operations

• Reducing negative outcomes is equally important for you.
  o Understand the hazards and their risks
  o Helping to make better decisions

• It all starts with a personal commitment to prioritizing safety
  o You must be honest with yourself
  o Hold yourself accountable

• Next, implement some process to keep safety at the forefront of each flight
  o Here, we will focus on two simple and important strategies
    • Mitigating Risk
    • Personal Minimums
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
  o 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:
  o “Am I ready for this trip?” in terms of experience, recency, currency, physical, and emotional condition.
  o 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**

- [ ] Illness
- [ ] Medication
- [x] Stress
- [ ] Alcohol
- [x] Fatigue
- [ ] Eating
Risk Management: PAVE Checklist

Aircraft
- Performance Margins
- Equipment or lack thereof
- 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
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
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?
Personal Minimums Guidelines

• Setting your minimums / limits

  • 1st - 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
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
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.
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
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
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
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?

David Dziura
david.dziura@gmail.com

Chris Young
chris@cyconsultingsolutions.com
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

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!

Developed in cooperation with:

King Schools, Inc.
3840 Calle Fortunada
San Diego, CA 92123
1-800-854-1001

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: _____ 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

**AIRCRAFT**

Fuel Reserves (Cross-Country)

- VFR Day: ______ hours
  - Night: ______ hours
- IFR Day: ______ hours
  - Night: ______ hours

Experience in Type

- Takeoffs/landings: _____ in the last _____ days

Aircraft Performance

Establish that you have additional performance available over that required. Consider the following:
- Gross weight
- Load distribution
- Density altitude
- Performance charts

Airplane 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

**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)