

# FAA/Industry Training Standards Personal and Weather Risk Assessment Guide

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## INTRODUCTION

As a general aviation (GA) pilot, you are the head of *your flight department*, and as such have multiple roles. You are the organizational management: selecting the proper airplane for the mission, ensuring adequate pilot training, and establishing of personal weather minimums for the pilot (and if you are also the airplane owner, you are responsible for maintenance). You are the dispatcher: gathering weather and other flight information, planning the flight, and ensuring adequate fuel for the mission (and perhaps actually fueling the airplane). You are the pilot in command: responsible for the safety of the flight, including making in-flight weather decisions. In commercial air carrier operations and corporate flight departments, these responsibilities are assigned to different persons. Air carriers are required to have standardized procedures to aid the responsible persons in accomplishing their role, and corporate flight departments typically do the same. Adopting similar safety procedures (standardized procedures) for non-corporate GA operations could lead to similar safety results obtained by corporate and airline operations.

This Personal and Weather Risk Assessment Guide (Guide) will assist you in developing *your own standardized procedures* for accomplishing the dispatch and pilot in command responsibilities of *your flight department* (you) and of making better pre-flight and in-flight *weather decisions*. Frequent review of the Guide will refresh the information so it will be easier to recall the information when you need it and it will increase your ability to recognize the conditions when a new risk assessment should be made. The latter is discussed in AC 60-22, Aeronautical Decision Making (ADM), as a key element in the decision process. That is, pilots must recognize a change has occurred or they do not know they need to make a decision. This is how you know it is time to change to “Plan B” or even to consider other options. Refer to AC 60-22 for additional information on ADM.

**Chapter One** provides guidance on establishing the pilot’s personal weather minimums. It should be completed first, and then reviewed and possibly revised whenever there is a significant change in the pilot’s certification, training, or experience, but at least once a year. It contains a form for compiling the pilot’s certifications, training, and experience, which is assessed to determine appropriate personal weather minimums. It also contains a form, for both VFR and IFR pilots, with a sample set of personal minimums for pilots with limited experience. The example VFR pilot is a new private pilot with 100 hours of total time; the example IFR pilot is a new IFR pilot with 300 hours of total time. The completed personal minimums form should be attached to the pilot’s logbook for quick reference.

**Chapter Two** provides guidance on assessing the risk of a particular flight and planning a safe flight given the weather conditions, and should be referenced before each flight. This chapter contains three established risk assessment tools which all require the assessment of the pilot, the aircraft and the environment for the mission. The first tool, “PAEDU” (Pilot-Aircraft-Environment-Duration-Urgency), is the quickest to apply and results in a numeric result. The second tool, PAVE (Pilot-Aircraft-enVironment-External), is more detailed (and these details also apply the PAEDU method) and results in a more detailed but qualitative analysis. The third tool, Flight Risk Assessment Form, applies a numeric factor to each relevant risk element, and produces a number that is used to make the decision to either: 1) Go; 2) consult with a flight instructor or mentor; or 3) wait until later or cancel the flight. These three tools are presented because of the variety of pilots and the different way they make decisions. You should determine which best suits your decision making style and then incorporate it into your preflight planning process.

**Chapter Three** also contains a Best Practices Weather Planning guide. This guide explains how to get a weather briefing and develop a plan to complete the flight safely given the weather conditions. This guide stresses the need to have a backup plan, “Plan B”, before embarking on the flight. The last step in every flight planning process should be to evaluate your planning. That is, consider the mental process you used to plan your flight, ask yourself if there was another way this flight could have been planned, then determine which way is better. Examining alternatives will help prepare you for making decisions when changes occur both before and during the flight. Remember completing the flight as planned is not your primary objective, completing the flight safely is.

The **Appendix** contains a scenario flight for the pilot with a set of all of the above elements filled out to provide a model of how to use this guide.

## **CHAPTER ONE: PREPARATION: PERSONAL ASSESSMENT AND WEATHER MINIMUMS**

Each pilot should establish personal weather minimums, which may be (and often are) above FAA legal minimums for a VFR or IFR flight. Airlines and corporate flight departments have personal minimums above FAA weather minimums where pilot experience is limited, and have operational minimums that apply when the aircraft has less than full operation of all systems necessary for dealing with weather. Pilot personal minimums are based on an assessment of pilot certification, training, and experience. When you obtain new ratings or upgrade your certificate, or when your current experience level changes, you should review and, if appropriate, revise your personal minimums (and it should be reviewed at least annually). The following forms may be used to assess your certification, training, and experience level, and to record your personal minimums. They should be cut, folded, and placed in the pilot's logbook for ready reference.

<b>Certification, Training and Experience Summary</b>		<b>Assessment #1</b>	<b>Assessment #2</b>
<b>Certification (e.g., commercial, multi-engine; instrument rating)</b>			
Highest certificate level and ratings (incl. Complex aircraft)			
<b>Training</b>			
Flight review: e.g., certificate, rating, Wings Program completion, etc.			
Instrument Proficiency Check			
Time since checkout in airplane:			
Time since checkout in airplane:			
Time since checkout in airplane:			
Variation in Equipment (GPS navigator), number of different panels			
<b>Experience</b>			
Total flying time			
Years flying			
Hours in the last year			
Hours in this or identical airplane in last year			
Landings in last year			
Night hours in last year			
Night landings in last year			
High density altitude hours in last year			
Mountainous terrain hours in last year			
Strong crosswind or gusty landings in last year			
IFR hours in last year			
Actual hours in IMC in the last year			
Approaches (actual or simulated) in last year			
<b>Cut and Fold</b>	<b>Cut and Fold</b>	<b>Cut and Fold</b>	<b>Cut and Fold</b>
<b>PERSONAL MINIMUMS</b>			
Condition	Example 1: 100 Hour VFR Pilot	Example 2: 300 Hour IFR Pilot	<b><u>Your Personal Minimums</u></b>
Minimum Visibility – Day VFR	5 miles	3 miles	
Minimum Visibility – Night VFR	7 miles	5 miles	
Minimum Ceiling – Day VFR	3,000 feet	2,000 feet	
Minimum Ceiling – Night VFR	5,000 feet	3,000 feet	
Surface Wind Speed & Gusts	15 knots 5 knot gust	Same	
Maximum Cross Wind	7 knots	Same	
Other VFR (e.g., mountain flying, over water beyond gliding distance)	Consult instructor/mentor	Same	
IFR Approach Ceiling	N/A	Minimums + 500 feet	
IFR Approach Visibility	N/A	Minimums + ½ mile	
Other IFR (e.g., icing)	N/A	Consult instructor/mentor	

## CHAPTER TWO -- BEST PRACTICES FOR THE ACTUAL FLIGHT

### A. Risk Assessment: Three Methods to Choose From

#### 1. "PAEDU" Risk Assessment Methodology

PAEDU (Pilot-Aircraft-Environment-Duration-Urgency) is the risk assessment methodology of the FAA's Aeronautical Decision Making (ADM) program; it enables the pilot to assess the risk of a flight by evaluating the presence of risk factors in each of these five areas and then assessing the risk for the area on a scale of 1 to 4.

**P** -- Pilot. Risk factors include:

- physical condition
- illness
- taking over-the-counter drugs
- psychological condition
- death of a spouse or divorce or other marital conflict
- losing job
- children in trouble
- fatigue

**A** -- Aircraft. Risk factors include:

- inoperative equipment
- unreliable avionics
- lack of de-ice, if ice is an issue
- lack of weather radar, if thunderstorms are an issue
- lack of climb performance
- range, if circumnavigating weather is an issue

**E** -- Environment. Risk factors include:

- weather
- terrain
- night
- security restrictions (TFRs or ADIZs)

**D** -- duration, hours of flight time, the longer the flight, the more the condition of the pilot, airplane or environment may deteriorate unexpectedly, thus increasing any of the above risk factors.

**U** -- Urgency, or pressure to complete the flight as planned, which often leads the pilot to interpret risk factors in more favorable light than is warranted and initiate or continue a flight when it is really too risky.

Assign a value from one (the lowest risk) to four (the highest risk) for each risk area (**P**, **A**, **E**, **D**, and **U**), based on the above factors. Add the values of **P** and **A** and **E**, then add the values of **D** and **U**. Finally, multiply the two total sums, (**P** + **A** + **E**) times (**D** + **U**) to get the value for total risk, ranging from 6 to 96. Typical flights when pilots have no stress factors, the airplane is in good working order and suitable for the mission, the weather is good, flight duration is less than ½ the maximum endurance, and the flight has no urgency results in the minimum risk level of 6. Add the urgency of a make-or-break business meeting or important personal function (e.g., your wedding) on a maximum endurance 6-hour flight will result in U=4 and D=4, and the risk level rises to 24. Adding icing and convection and low IMC conditions with an airplane not equipped for these forecast weather hazards would increase risk to 48. Add some pilot stress (e.g., from a recent fight with your fiancée) to this situation and the risk rises to 64 (see below) – over 10 times as risky. Use this to determine if the risk is warranted by the purpose of the flight.

<b>(P +</b>	<b>A +</b>	<b>E)</b>	<b>X</b>	<b>(D +</b>	<b>U)</b>	<b>Total</b>
3	1	4		4	4	64

## 2. PAVE (Pilot-Aircraft-enVironment-External)

The PAVE Checklist works like any checklist that you would use in your aircraft. However, you should expand the use of the PAVE to your flight planning as well, and take special consideration to each line item before your final decision to fly. The PAVE checklist will give you a step-by-step approach to assessing your knowledge, but leaves the final go-no-go decision to the PIC.

**Appendix B** contains the FAA's PAVE risk assessment form, which contains instructions for use. This form contains a larger number of risk factors than the PAEDU tool, but is more qualitative.

## 3. Flight Risk Assessment

The Flight Assessment Form, below, assigns a number to various risk factors regarding the pilot, aircraft, and environment. Each element is scored for the flight, and the totals and Grand Total determined. Then, the pilot is advised on the appropriate course of action depending on the Grand Total and whether the flight is VFR or IFR. These actions are: Go, for lowest Grand Total; Consider Alternate Actions; Consult Experienced CFI or Mentor; and Don't Go, for the highest Grand Total. See the attached form.

**Appendix A** contains a scenario which uses the Personal Minimums Inventory and Checklist, and the Flight Assessment Form. This is to provide an example on how to use these forms.

**Appendix C** contains the Flight Assessment Form. We have designed it on one page for ease of printing and use.

## B. Best Practices Weather Flight Planning

### 1. Sources of Information for Flight Planning

There are many sources of weather information for flight planning.

- Telephone: FAA FSS 1-800-WX-BRIEF
- Television: Weather Channel, News
- Internet:
  - DUATS
  - Association weather pages, e.g., AOPA, EAA
  - National Weather Service (NWS)
  - Aviation Digital Data Service (ADDS)
  - Private weather services
  - Airline Dispatchers Federation

### 2. Review the Information and Your Readiness for the Flight

The quantity and quality of your weather information will have a direct affect on your weather planning. The factors that affect the adequacy of the quantity and quality of weather information for your decisions include:

The severity of the consequences of being wrong. For example, what will happen if you inadvertently encounter:

- IMC conditions?
- Icing conditions?

- Embedded thunderstorms?
- Other significant weather hazards?

Your degree of certainty about information may be affected by:

- FAA approved source (e.g., DUATS, FSS, NWS, etc.)
- The duration of your flight
- The distances between reporting reports
- The proximity of the weather conditions to your personal minimums
- Your degree of confidence that you understand the weather situation.

### 3. Prepare Your Weather Map

You should develop a weather picture over your intended route of flight.

- Using the information you have obtained, can you state or visualize a picture, both in plan view (from above) and in cross-section view (from the side, including terrain) of all the relevant weather on your flight/route, with other information, all of which are related to time. The information may include:
  - Terrain (topography that includes natural and man-made obstructions).
  - Cloud bases and tops.
  - Icing levels.
  - Winds aloft.
  - Areas of IMC.
  - Thunderstorm movement.
- Visualize your flight by drawing a “weather picture” of your flight.
  - Draw a straight line between your two points.
  - Draw an ellipse (actually a rough boundary line on either side of the straight line, the resulting lines will probably form an elliptical border around your intended route) to show an area where you will need information about weather that may affect your route of flight.
  - Note the weather patterns within the elliptical area.
  - Apply the information to your weather decisions. Construct a route to avoid weather that is hazardous to you and your airplane (given the capabilities of you and your airplane).
- Develop a primary flight plan (Plan A) to conduct your flight safely using your weather picture, by asking yourself.
  - What is the best plan to make the flight, within your personal minimums, considering:
    - Your aircraft and its capabilities
    - The environment, weather and terrain
    - External factors, such as security restrictions, e.g., Temporary Flight Restrictions (TFRs) and Air Defense Identification Zones (ADIZs).
  - The plan is defined by:
    - The route,
    - The altitudes en route, and
    - Time of departure

- d. Develop an alternative flight plan (Plan B), to be executed when the actual weather you find en route is not what your weather picture was believed to be when you made Plan A. Determine under what conditions you will abandon Plan A and execute Plan B, based on changing weather conditions en route. Know your methods of exiting from weather hazards when conditions deteriorate by activating Plan B in order to remain within your personal minimums. Plan B is defined by:
  - The new route,
  - Changes in altitude, or
  - The new destination.

**4. Develop “Plan B” Your Alternative Actions**

*Proposed alternative action(s) to be taken*

*At departure airport*

Unplanned decision event \_\_\_\_\_

Action(s) to be taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Expectation of Success \_\_\_\_\_

*Enroute*

Unplanned decision event \_\_\_\_\_

Action to be taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Expectation of Success \_\_\_\_\_

Unplanned decision event \_\_\_\_\_

Action to be taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Expectation of Success \_\_\_\_\_

*At destination*

Unplanned decision event \_\_\_\_\_

Action to be taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Expectation of Success \_\_\_\_\_

- a. Your decision whether to execute Plan A, or to go to Plan B, will be based on a risk assessment.
  - 1) This is a continuous process of evaluating the actual weather against your “picture” and deciding if the actual weather still meets your personal minimums.
    - If you are within your personal minimums, you may stay with Plan A.
    - If you are not within your personal minimums, or looks like it is not developing as you expected, you should immediately go to plan B.
  - 2) Timely decisions are of utmost importance because a large number accidents are caused by pilots waiting too long to execute Plan B
- b. You must always have a safe “out”. If you are a relatively new VFR pilot, and Plan A has failed, and you have execute Plan B, and now it too is failing, you should realize that you may not have adequately assessed the weather conditions initially, and that Plan C should be to land as soon as practical. Then you can develop an entirely new set of plans in an environment where you have access to weather information from more detailed discussions with weather briefers on the phone and from computer weather graphics at the FBO. After plans A and B have not worked, you may not be able to construct a good Plan C in the air and simultaneously cope with adverse weather conditions at the same. In these circumstances, it is best to land and reassess the situation.
- c. During pre-flight preparation, should involve outside review at a specified risk level, independent, objective, knowledgeable review of your risk assessment using Peer review by fellow pilots, or consulting with an instructor or mentor (more experienced person) review. Once you re en route, the only outside review is likely to be Flight Service Station personnel, some of whom are experienced pilots as well as weather briefers.



## **APPENDIX A: SIMULATED VFR SCENARIO**

A VFR pilot, flying simple, single engine airplane on a personal transportation cross-country flight.

### **Pilot**

- a non-instrument rated, VFR pilot
- pilot is a 49 year old male
- pilot has 235 hours total time, 50 in the last year, and 30 in this or an identical airplane
- pilot has four years flying experience (since receiving first flight lesson)
- it is single pilot operation (no other pilots on board)
- flight will be commenced after the end of a work day
- pilot has not flown in one month, has 25 landings in the last year, only two strong crosswind or gusty
- pilot has 3 night hours in the last year, and 2 night landings.
- Pilot has no high density altitude or mountainous terrain operations in the last year
- pilot has a total of three hours hood time and no actual (IMC) experience
- pilot will be taking his family to the beach

### **Aircraft**

- aircraft is a Cessna 172
- aircraft has two Nav/Com radios each with a VOR
- aircraft does not have a stormscope or an autopilot

### **Mission**

- June 21 departure at 1730 from Montgomery County Airpark, Maryland (KGAI) to First Flight Airport, Kitty Hawk North Carolina (KFFA) (both non-towered airports)
- estimated enroute time is three hours
- pilot is unfamiliar with destination
- there is no weather reporting at KFFA
- pilot plans to stay at hotel that requires check-in by 2100

### **Weather**

- VFR is not recommended
- visibility is forecast enroute to be 4 to 5 miles
- forecast includes possible ground fog in KFFA area

### **PILOT FACTS**

#### **Pilot Condition**

Fatigue?

- |                               |              |
|-------------------------------|--------------|
| • Sleep within last 24 hours? | 6 hours      |
| • Sleep deficit (long term)?  | No           |
| • Workday preceding flight?   | Yes, 8 hours |

#### **Food and water**

- |                       |      |
|-----------------------|------|
| • When was last meal? | Noon |
| • When last water?    | 4 PM |

#### **Alcohol**

- |                         |      |
|-------------------------|------|
| • Within last 24 hours? | None |
|-------------------------|------|

#### **Drugs/Medication(s)**

None

#### **Stressful event(s)?**

- |                       |                  |
|-----------------------|------------------|
| • Daughter's marriage | Previous weekend |
|-----------------------|------------------|

**Illness(es)? yes**

- What 24 hour flu
- When one week before
- Still affecting? Yes, still a little weak

**Pilot Qualifications** (update as necessary)

- Private ASEL, no instrument rating
- Total time 235 hours
- Total instrument time 3 hours (all hood time, none in aircraft)
- Total time in aircraft 100 hours

**Pilot Proficiency and or Recency** (update as necessary)

- Last Flight Review July, 12 months earlier
- Last recurrent training Private rating, four years earlier
- Last 90 days
  - ◊ Flight time
    - Total 2 hours
    - In aircraft 2 hours
    - IMC time none
    - Simulated IFR none
    - PCTAD 4 hours
    - Take offs & landings 3
    - Day 3
    - Night 0
    - Significant crosswind no

**Personal Weather Minimums** (comfort level)

VFR

- Visibility 4 miles
- Ceilings 2500 feet
- Winds 10 knots
- Turbulence moderate
- 

**AIRCRAFT FACTS****Fuel reserves** (for proposed flight)

- VFR, Day 2 hours

**Performance** (for proposed flight)

- Gross weight at gross weight
- Load distribution within limits
- Density altitude 2500 feet

**Equipment** (for proposed flight)

- Avionics - familiar and proficient? marginally proficient
- COM/NAV - appropriate to flight? yes
- Charts - current? yes
- Alternate landing sites yes – Elizabeth City, NC
- Survival gear - appropriate for flight/terrain? none

## ENVIRONMENT

### Airport(s) Conditions (for proposed flight)

- Departure airport
  - ◊ Crosswind - % of maximum POH                      less than 50%
  - ◊ Runway length - % more than POH                    more than 200% greater than required
- Destination airport
  - ◊ Crosswind - % of maximum POH                      less than 50%
  - ◊ Runway length - % more than POH                    more than 200% greater than required
  - ◊ Weather reporting?                                        none
  - ◊ ATC services?    none
  - ◊ Radar services?     none

### Weather (for proposed flight)

- Reports and forecasts – how recent                      current
- For VFR flight or portion of flight
  - ◊ Ceiling
    - Day (feet)    3500 feet
    - Night (feet)    1000 to 3000 feet
  - ◊ Visibility
    - Day (miles)    3 to 5 miles with haze
    - Night (miles)     3 miles with haze

## EXTERNAL PRESSURES CHECKLIST

### Trip Planning

- time allowance for delays                                    15 minutes (plan to arrive 2030,  
15 min. walk to hotel)

### Diversion/Cancellation Plans

- Notification of concerned persons?                      no
- Passengers briefed on possible changes                    no
- Hotel reservations    none if late arrival

### Personal Equipment or Information Necessary For Alternative Plans

- Contact telephone numbers                                    none
- Cash and/or checks    yes
- Credit cards    yes
- Clothing (extended stay)                                        no

## Personal Minimums Inventory and Checklist

Certification, Training and Experience Summary		Assessment #1	Assessment #2
<b>Certification (e.g., commercial, multi-engine; instrument rating)</b>			
Highest certificate level and ratings (incl. Complex aircraft)		ASEL, Hi Perf.	
<b>Training</b>			
Flight review: e.g., certificate, rating, Wings Program completion, etc.		7/2000	
Instrument Proficiency Check		N/A	
Time since checkout in airplane: CE-172		7/2000	
Time since checkout in airplane:			
Time since checkout in airplane:			
Variation in Equipment (GPS navigator), number of different panels		9/01: 3 panels	
<b>Experience</b>			
Total flying time		235	
Years flying		4	
Hours in the last year		50	
Hours in this or identical airplane in last year		30	
Landings in last year		25	
Night hours in last year		3	
Night landings in last year		2	
High density altitude hours in last year		0	
Mountainous terrain hours in last year		0	
Strong crosswind or gusty landings in last year		2	
IFR hours in last year		0	
Actual hours in IMC in the last year		0	
Approaches (actual or simulated) in last year		0	
Condition	Example 1: 100 hour VFR Pilot	Example 2: 300 hour IFR Pilot	<b><u>Your Personal Minimums</u></b>
Minimum Visibility – Day VFR	5 miles	3 miles	4
Minimum Visibility – Night VFR	7 miles	5 miles	5
Minimum Ceiling – Day VFR	3,000 feet	2,000 feet	2500
Minimum Ceiling – Night VFR	5,000 feet	3,000 feet	4000
Surface Wind Speed & Gusts	15 knots 5 knot gust	Same	15 knots 5 knot gust
Maximum Cross Wind	7 knots	Same	7 knots
Other VFR (e.g. mountain flying, over water beyond gliding distance)	Consult your instructor/mentor	Same	Consult your instructor/mentor
IFR Approach Ceiling	N/A	Minimums plus 500 feet	N/A
IFR Approach Visibility	N/A	Minimums plus ½ mile	N/A
Other IFR (e.g. icing)	N/A	Consult your instructor/mentor	N/A

## FLIGHT ASSESSMENT

### (1) Pilot Personal Factors Assessment Form

VFR = VFR pilot on VFR flight plan

IFR = IFR current pilot on IFR flight plan

PERSONAL FACTOR ITEM	VFR Pilot	IFR Pilot	Score
Less than 100 hours in type - <i>has 100 hrs</i>	+ 2	+ 3	0
Unfamiliar destination – <i>yes</i>	+ 1	+ 2	+ 1
Fatigue (less than normal sleep prior night) <i>yes</i>	+ 2	+ 3	+ 2
Flight after end of work day – <i>yes</i>	+ 2	+ 3	+ 3
Scheduled commitment after flight – <i>yes</i>	+ 2	+ 2	+ 2
Recent death of close family member – <i>no</i>	+ 2	+ 2	0
Major domestic problems – <i>no</i>	+ 2	+ 2	0
Illness in family – <i>no</i>	+ 1	+ 1	0
Second pilot who is rated and current – <i>no</i>	- 1	- 1	0
Alcohol within the last 24 hours – <i>no</i>	+ 2	+ 2	0
Taking over the counter medication – <i>no</i>	+ 3	+ 3	0
Inadequate food prior to flight – <i>no</i>	+ 2	+ 2	0
Inadequate water prior to flight/ no water on board - <i>no</i>	+ 2	+ 2	0
Day > 10,000' PA with no supplemental oxygen – <i>no</i>	+ 2	+ 2	0
Night > 5,000' PA with no supplemental oxygen – <i>no</i>	+ 3	+ 3	0
Flight duration more than 3 hours – <i>no</i>	+ 2	+ 2	+0
<b>TOTAL PILOT SCORE</b>			<b>+8</b>

### (2). Aircraft Operational Assessment Form

OPERATIONAL FACTOR ITEM	VFR	IFR	SCORE
Fuel calculation completed for flight with reserves for day/night conditions - <i>yes</i>	-1	- 1	-1
Total fuel required for flight with reserves for day/night conditions less than 60% of available fuel – <i>no</i>	- 2	- 3	0
Weight & balance calculation made – <i>yes</i>	- 1	- 1	- 1
Weight w/in 10% max. gross – <i>yes</i>	+ 2	+ 2	+ 2
Takeoff or landing distance more than 50% of intended runways to be used – <i>no</i>	+ 2	+ 2	0
<b>TOTAL AIRCRAFT SCORE</b>			<b>0</b>

## (3) Environment Assessment Form

ENVIRONMENT FACTOR ITEM	VFR	IFR	Score
Visibility 3 to 5 miles – <i>yes</i>	+ 2	0	+ 2
Visibility 1 to 3 miles – <i>no</i>	+ 5	0	0
Destination visibility less than 1 mile – <i>no</i>	+ 20	+ 1	0
Ceilings less than 3,000' AGL – <i>yes</i>	+ 3	0	+ 3
Destination ceilings less than 1,000 feet AGL – <i>no</i>	+ 10	+ 1	0
Destination ceilings less than 500 feet AGL – <i>no</i>	+ 20	+ 2	0
Convective activity within 20 NM of flight – <i>no</i>	+ 5	+ 3	0
Convective activity with no storm scope or other means of detection capability – <i>no</i>	+ 10	+ 3	0
Convective activity with detection capability – <i>no</i>	0	- 2	0
Destination dew point spread less than 3° – <i>yes</i>	+ 5	+ 1	+ 5
No de-icing equipment surface temperatures less than 40° F and clouds or precipitation– <i>no</i>	+ 30	+10	0
Icing forecast (AIRMET more than light) at altitude required to fly with de-icing equipment – <i>no</i>	N/A	+ 2	0
Operational control tower at destination – <i>no</i>	- 2	- 2	0
VASI/PAPI at destination – <i>no</i>	- 1	- 1	0
Radar environment at destination – <i>no</i>	- 1	- 1	0
Mountainous terrain – <i>no</i>	+ 3	+ 3	0
Approach/departure over water – <i>yes</i>	+ 1	+ 1	+1
High bird hazard – <i>no</i>	+ 1	+ 1	0
Unpaved runway – <i>no</i>	+ 1	+ 1	0
IFR and only approach is non-precision	N/A	+ 2	
Weather reporting at airport - – <i>no</i>	- 1	- 1	
Precipitation causing obstruction to visibility - <i>no</i>	+ 2	+ 1	0
Wet runway – <i>no</i>	+ 1	+ 1	0
Ice on runway – <i>no</i>	+ 2	+ 2	0
Cross wind in excess of 90% demonstrated maximum cross wind in Pilot Operating Handbook – <i>no</i>	+ 2	+ 2	0
Using flight following or radar advisories in high density traffic areas – <i>no</i>	- 1	n/a	0
On IFR Flight plan in VFR conditions – <i>no</i>	- 1	n/a	0
<b>TOTAL ENVIRONMENT SCORE</b>			<b>+11</b>

**(4) VFR Pilot Scoring**

<b>Total Pilot Factor Score</b>	<u><b>8</b></u>
<b>Total Aircraft Factor Score</b>	<u><b>0</b></u>
<b>Total Environment Factor Score</b>	<u><b>11</b></u>
<b>Grand Total of Points</b>	<u><b>19</b></u>

**(5) Action to be Taken Based on Flight Assessment**

<b>Risk Factor</b>	<b>Grand Total</b>	<b>Action</b>
<b>Minimal</b>	<b>Less than 7</b>	<b>Go</b>
<b>Low</b>	<b>7 to 10</b>	<b>Consider alternate actions to reduce risk</b>
<b>Medium</b>	<b>11 – 15</b>	<b>Consult a CFI experienced in the type of flight you propose to make</b>
<b>High</b>	<b>More than 15</b>	<b>Don't go</b>

**Based on the above score, the pilot should not to make the flight.**

**OTHER SCENARIOS**

- An IFR pilot flying complex, single engine airplane in icing or thunderstorms
- An IFR pilots flying complex, single engine airplane or multiengine airplane with ice protection equipment and airborne weather radar, and
- Various typical rotorcraft operations

## APPENDIX B, PERSONAL MINIMUMS CHECKLIST



# 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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# EXTERNAL PRESSURES

## Trip Planning

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

## Diversion or Cancellation Alternate Plans

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 an unexpected stay

▶ \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### 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 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. 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!**



<http://www.faa.gov/avr/news/ppams.htm>



# PERSONAL MINIMUMS CHECKLIST



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

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

Reviewed with: \_\_\_\_\_

(if applicable)

FAA-P-8740-56  
AFS-810(1996)

## Appendix C Flight Assessment Form    VFR = VFR pilot on VFR flight    IFR = IFR current pilot on IFR flight

### Pilot

Factor	VFR	IFR	Score
Less than 100 hours in type	+ 2	+ 3	
Unfamiliar Destination	+ 1	+ 1	
Fatigue (less than normal sleep prior night)	+ 2	+ 3	
Flight at end of work day	+ 2	+ 3	
Scheduled commitment after flight	+ 2	+ 2	
Recent death of close family member	+ 2	+ 2	
Major domestic problems	+ 2	+ 2	
Illness in family	+ 1	+ 1	
Second pilot who is rated and current	- 1	- 1	
Alcohol within the last 24 hours	+ 2	+ 2	
Taking over the counter medication	+ 3	+ 3	
Inadequate food prior to flight	+ 2	+ 2	
Inadequate water prior to flight/no water on board	+ 2	+ 2	
Day > 10,000' PA with no supplemental Oxygen	+ 2	+ 2	
Night > 5,000' PA with no supplemental Oxygen	+ 3	+ 3	
Flight duration more than 3 hours	+ 2	+ 2	
<b>TOTAL</b>			

### Aircraft

Factor	VFR	IFR	Score
Fuel calculation completed for flight with reserves for day/night conditions	- 1	- 1	
Total fuel required for flight with reserves for day/night conditions less 60% of available fuel	- 2	- 3	
Weight and balance calculated	- 1	- 1	
Weight within 10% of maximum gross	+ 2	+ 2	
Takeoff or landing distance more than 50% of runway length	+ 2	+ 2	
<b>TOTAL</b>			

### Environment

Factor	VFR	IFR	Score
Visibility 3 to 5 miles	+ 2	0	
Visibility 1 to 3 miles	+ 3	0	
Destination visibility less than 1 mile	+20	+ 1	
Ceilings less than 3,000' AGL	+ 3	0	
Destination ceilings less than 1,000' AGL	+10	+ 1	
Destination ceilings less than 500' AGL	+20	+ 2	
Convective activity within 20 NM of flight path	+ 5	+ 3	
Convective act./ no storm-scope/detection capability	+10	+ 3	
Convective activity with detection capability	0	- 2	
Destination dew point spread less than 3°	+ 5	+ 1	
No de-icing equipment, surface temperature less than 40° F, and low clouds or precipitation	+30	+10	
Icing forecast (AIRMET more than light) at altitude required to fly with de-icing equipment	N/A	+ 2	
Operational control tower at destination	- 2	- 2	
VASI/PAPI at destination	- 1	- 1	
Radar environment at destination	- 1	- 1	
Mountainous terrain	+ 3	+ 3	
Approach/departure over water	+ 1	+ 1	
High bird hazard	+ 1	+ 1	
Unpaved runway	+ 1	+ 1	
IFR and only approach is non-precision	N/A	+ 2	
Weather reporting at airport	- 1	- 1	
Precipitation causing obstruction to visibility	+ 2	+ 1	
Wet runway	+ 1	+ 1	
Ice on runway	+ 2	+ 2	
Crosswind 90% of max POH	+ 2	+ 2	
Using flight following/radar advisories in high density traffic areas	- 1	N/A	
On IFR flight plan during VFR conditions	- 1	N/A	
<b>TOTAL</b>			
<b>GRAND TOTAL</b>			

	VFR Grand Total	VFR Action	IFR Grand Total	IFR Action
Minimal	Less than 6	Go	Less than 7	Go
Low	6 to 8	Consider alternate actions	7 to 10	Consider alternate actions
Medium	9 to 14	Consult experienced CFI	11 to 15	Consult experienced Instrument CFI
High	More than 14	Don't go	More than 15	Don't go