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Single Pilot Cockpit Resource Management

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Quote of the month

"With you, 11,000"
-Idiot

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Thank you for taking the time to read this safety message.

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Thanks for your continued support,
Darren

Single Pilot IFR

After we become instrument rated, the FAA considers us qualified to go out into IFR conditions, alone if you like, and conduct IFR flights. Most of those flights will include a non-flying passenger. The result is a "single pilot IFR" flight in which you are the end-all and be-all of the safe conduct of that flight. The problem: Single Pilot IFR is a juggling act. Between answering the radio, programming the GPS, and figuring out where you are, you also have to fly the airplane. There are a few ways to make your life easier in the cockpit:

1. Use the autopilot to hold a heading or a course that you are sure of.
2. Establish a sterile cockpit. The airlines have a policy that when the aircraft is below 10,000 feet, only essential communications can occur in the cockpit. You can establish the same procedure when you are taking off or landing, and when you get in range of your airport (close enough to hear the ATIS). That will give you some time to think.
3. Have a switch installed on your aircraft that will allow you to power up only your GPS/radio so that you may program it on the ground when you have received your clearance.
4. Have approach plates ready for your departure airport. Know the weather at your departure airport to determine if an approach could safely be performed if you needed to return with an emergency.
5. Ask yourself constantly: "Where are you and what comes next"
6. Then ask yourself: "What if?" This will help you to become spring loaded for an alternate option to complete the flight safely.

Each phase of flight has tasks that might need to be accomplished. More information on this topic in the article: [Flying the Profile](#). Prior to beginning each phase of the flight you should prepare for it. For example:

- Before taxiing: have your taxi diagram out and on your kneeboard, this is especially true at unfamiliar airports, night, and low visibility situations. Brief your passengers on the exits, smoking, portable electronics, and safety equipment.

- Before takeoff: Have you programmed your GPS? Are your passengers asking questions? Do you know the approaches in use at your departure airport? Do you have the approach plate ready for your departure airport in case you have an emergency and need to return. Can you safely execute that approach? Do you have your enroute charts ready? Do you know exactly what you will do with the clearance you've been given? Just how bad is this weather you are about to fly into? Are you familiar with your avionics? Does the radio really work?
- Climbout & level off: What comes next in your clearance? Where are you now? Do you know how you are going to get onto the enroute structure? Were you just given an amendment to your clearance? Do you know how to execute the new clearance or do you need to ask for a heading while you 'set up for it'?
- Approach: Did you get the ATIS as soon as you were in range to hear it? What approaches are being conducted? Have you briefed the approaches? With the current weather can you safely conduct the approach? Will it be a missed approach? How are you going to execute that? Are your radios set up with the proper frequencies (approach, tower, ground)?
- Before landing: Is the gear down? Are you spring loaded for a missed approach? What if there's a cow on the runway? Did you perform the pre-landing checklist? Are you at a stabilized approach speed? (see below for Safer Approaches)
- After landing: after you have completed your after landing checklist, have that taxi diagram ready as you navigate your destination airport. This is especially true at unfamiliar airports, night, and low visibility situations. If you don't have your taxi diagram out at an unfamiliar airport, ask for progressive taxi.

Manage the Risks of Your Flight

Here are five tools to refocus your efforts to make your next flight safer:

1. Read the article: [IFR Risk Management](#)
2. Review and use the [Personal Minimums Checklist](#). A good pilot has reviewed the risk factors and understands his own limitations and knows when he's at those limits.
3. Make sure you do a good flight plan for your proposed flight. Review the enroute charts and approach charts for your departure and destination airports.
4. Get a [Weather Briefing!](#)
5. Preflight yourself: Are you ready for a difficult IFR flight? Take the IM SAFE checklist and review it. I've included it in my version of the [Personal Minimums Checklist](#)..

It sounds simple doesn't it? You'd be surprised how many people don't do these steps. And they pay with their lives.

Keeping Your Skills Sharp

Instrument flying is one of those skills that if you don't use it, you'll lose it. There's a world of difference between being instrument current (6 approaches in the last 6 months) and being instrument proficient. How do you keep your skills sharp? Go out and fly some approaches! Not the same old ones you've been doing all this time, but something new. At a place where the approaches will make you look twice. Techniques

for keeping your skills sharp:

- Go get a safety pilot and do some practice approaches. Read more in the article: [How to Log Safety Pilot Time](#)
- Get an [IPC](#) from your favorite instructor and focus on partial panel flying. You'll do some approaches, holding, intercepting/tracking courses, maybe a steep turn under the hood, and some unusual attitude recovery. Failures lead to spatial disorientation and its usually fatal. How frequently do you fly IFR? Your answer will dictate how often you need to go practice those approaches.
- Undertake a training program that will expose you to the real world of IFR flying, different weather systems, and actual IFR experience. Try the [IFR Adventure](#).

Resource Management

Good cockpit resource management includes understanding and using the equipment in the aircraft to make your IFR flight easier. Things like autopilots, GPS, multi-function displays will enhance your situational awareness which increases your personal safety. You'll need to know more than how to use this equipment. You'll need to know the failure modes of each piece of equipment with the method of recovery you'll need to follow.

In addition, you'll need a way to stay organized. I recommend that you have a kneeboard with a notepad with your clearance, your flight planning form, a flashlight if flying at night (cheap ones at home depot), and stash pens/pencils everywhere (because you can never have enough). An organized cockpit will not only keep you sane, it will keep you safe. Having a single pencil, that you just dropped somewhere on the floor isn't going to be good for you or your passengers.

Use ATC. Beyond the tips offered in the article [General Rules of Radio Communication](#), use ATC to give you advisories on the weather in front of you. They can tell you about radar returns ahead of you, where to deviate, and pilot reports of those ahead of you as well as those who took the deviation.

The Ultimate Checklist: Pilot's Rules of Thumb

The ultimate checklist that every pilot needs. Ten years in development, this is a product that pilots of all levels of experience can immediately use. This tool covers 30 normal and non-normal situations and has 9 special tools that you'll use on every flight. This high-quality plastic ruler/checklist measures approximately 3.75" x 9". Click the picture to see a larger picture of this tool or click the link for [more information](#). Price: \$3.99 (Free Shipping to US addresses).

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Introductory Price: \$2.44 until 5/1/2010



Get the simple tool which can prevent CFIT Accidents

Use the safest, airline-proven flying technique for non-precision approaches that minimizes aerodynamic surprises and virtually eliminates the possibility of Controlled Flight Into Terrain.

Safer Approaches will teach you how to conduct Instrument Approach Procedures to a higher standard of safety and precision.

You will learn:

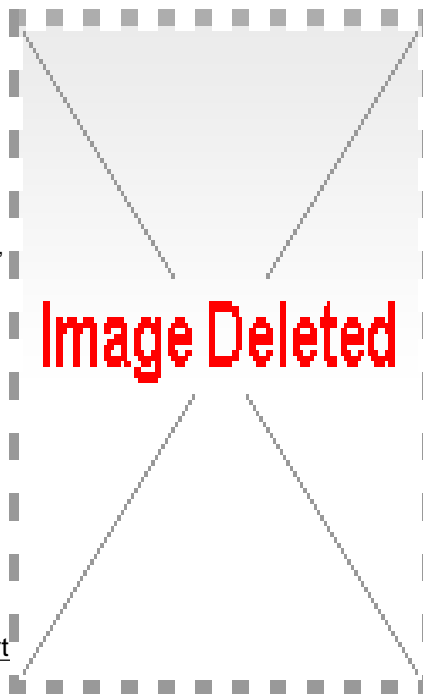
- Four Fundamentals of Safe Approaches,
- How to virtually eliminate possibility of CFIT of Controlled Flight Into Terrain,
- How to perform a Constant Angle Non-Precision Approach (CANPA),
- How to calculate a Visual Descent Point (VDP),
- How to practice building your flying precision.

What's in the Package?

1. The Safer Approaches Booklet - a tutorial on performing safer, stabilized approaches. 14pp.
2. Stabilized Approach Descent Rate Table, a kneeboard sized 4" x 6" plastic, IFR tool that eliminates the mental math applying these techniques during your IFR flying.

Price: \$7.95 (free shipping to US addresses)

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Visi-Hold™ - Know Instantly

Never wonder about holding entries again! Works with standard holds and non-standard holds (left turns). The Visi-Hold™ package comes complete with Visi-Hold™ template, directions, and two articles on holds: All About Holding and Holding Simplified. You'll pay no less than \$14.95 for a complicated sliderule holding pattern calculator made by ASA. That's not even including shipping! Those of you who know what real IFR is like know that you can't fool around with a sliderule while the airplane is bouncing around. Instead, get the original Visi-Hold™, helping pilots know the holding pattern entry since 2000.

Price: \$9.95

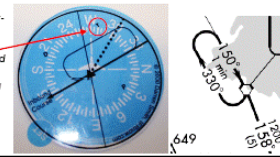
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ISBN:978-0-9823940-6-9

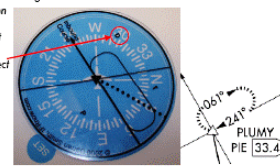
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Examples:

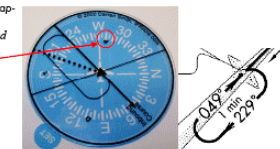
Teardrop Entry—Heading is 270° direct to the VOR to enter the hold. Point the arrow at 150° and Visi-Hold shows a teardrop entry and a recommended outbound heading of 300° after station passage.



Direct Entry—Heading is 270° direct to the PLUMY intersection to enter the hold. Point the arrow at 241° and Visi-Hold shows a Direct entry.



Parallel Entry—Heading is 270° direct to the VOR to enter the approach. Point the arrow at 049° and Visi-Hold shows a Parallel entry.



Rotorheads: Wire strikes bother you?

According to the Federal Aviation Administration, wire and obstruction strikes are the top operational cause for fatal rotorcraft accidents. Over the last decade there has been an average of one aviation obstruction strike every five days in the U.S.

Helicopter Association International (HAI) has released a new, online aviation wire strike safety awareness video. "Surviving the Wires Environment" is posted as a streaming video on the HAI Web site and can be viewed for free by HAI members and nonmembers. See the video at:

www.rotor.com/Default.aspx?tabid=2736,

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