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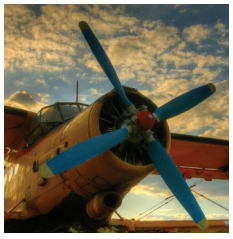
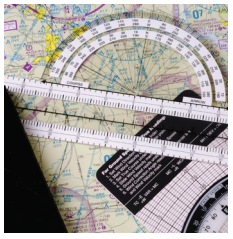
FALL 2016



I Would Never Do That! P1



The Lost Art Of Pilotage P3

Free Avemco Webinar P5

I WOULD NEVER DO THAT!

By Thomas P. Turner, Master CFI, CFII, MEI, Mastery & Flight Training

Author's note: All mishap reports mentioned here are courtesy of the www.ntsb.gov website.

A student pilot in a Cessna Skylane takes off for a 20-mile hop to another airport to take his Private Pilot Practical Test (checkride). There's a 900-foot ceiling and visibility is limited. A quarter mile from takeoff he loses control, crashes and burns.

A 17,000-hour ATP flying a Beechcraft A36 Bonanza lands with about eight gallons of fuel remaining. After dropping his passengers, he asks for "15 gallons a side" to be added, and the FBO correctly fills his order. With a total of under 40 gallons of fuel on board the ATP then launches on a three-hour trip back home--in an airplane that burns about 23 gallons per hour in climb and 17 gallons per hour in high-speed cruise. The airplane runs out of gas and crashes, killing the pilot.

Another Bonanza pilot nears his planned destination, where surface winds have increased far above what was forecast--now at 30 gusting to 40 knots, almost directly across the runway. The pilot loses directional control during landing and substantially damages the aircraft, although luckily he was not hurt. Near the end of a long cross-country trip while descending visually after dark, a commercial pilot of a third Bonanza (I track Beech crashes closely, which is why so many of my examples involve this type) flies into a hillside less than 10 miles from his destination.

Reading these examples of real crash reports, some pilots might have the same reaction: "I would never do that!" It's easy for me to dismiss these as "stupid pilot tricks," in my opinion something no competent pilot

would probably do. Yet with the exception of the student pilot in the Skylane, all the pilots had at one time demonstrated their ability to the FAA's satisfaction. The student pilot, by virtue of being endorsed to take his Practical Test that day, met the FAA standard at least in the opinion of his flight instructor. Yet, they all crashed. And it's pretty certain they each believed they could safely complete the accident flight. Instead of dismissing these events (and the many, many others like them) as what I refer to as "stupid pilot tricks" or something you would probably never do, think of them as something you might accidentally do under the right (or wrong) circumstances.

Pilots almost never intentionally attempt visual flight in instrument conditions, run out of gas, roll an airplane into a ball trying to exceed their crosswind capability or that of the aircraft, or fly the airplane under control into an obstacle.

These types of crashes aren't really stupid; they are in my opinion evidence of two common pilot issues: **failure to plan**, and **failure to monitor**.

FAILURE TO PLAN In my opinion, three of the examples show a clear deficiency in preflight planning. The student Skylane pilot knew the weather conditions existed, but had been told (by the pilot examiner he was flying to meet) that the weather was expected to improve. The 17,000-hour ATP obviously did not take on enough fuel for the trip he was about to make. The last Bonanza pilot, descending in hilly terrain after dark, had not planned a terrain-avoiding route for his descent.

The student pilot was under self-imposed pressure to take his checkride because the Skylane had to go in for annual inspection in two days. The ATP told the FBO where he fueled he was "in a hurry" to get home, which may have negatively affected his flight planning. The last Bonanza pilot who descended into terrain was at the end of a six-hour transcontinental trip that was in itself the contraction of a two-day flight from Europe, and had been cruising at 12,500 feet without supplemental oxygen before beginning his descent. All four pilots exhibited the "go" mentality common to most pilots.

FAILURE TO MONITOR All four pilots failed to monitor indications during their flight, and to alter the flight as necessary to suit the actual conditions. The student pilot should have seen before he ever took off that the expected improvement in ceiling and visibility had not yet occurred. The ATP did not continually update his fuel status while en route, computing expected fuel remaining at destination and comparing fuel gauge and other inflight indications to expectations. The second Bonanza pilot, who lost control trying to land in a 30 to 40 knot crosswind, had not updated his preflight weather briefing en route or listened to the AWOS at his destination. The Controlled Flight into Terrain pilot lost track of his precise position and his height in relation to obstacles beneath him, likely in part due to fatigue and the effects of hypoxia.

Pilots almost never intentionally attempt visual flight in instrument conditions, run out of gas, roll an airplane into a ball trying to exceed their crosswind capability or that of the aircraft, or fly the airplane under control into an obstacle. And in my opinion the resulting accident can be boiled down to failure to plan and failure to monitor, influenced by (usually self-imposed) stress. You can usually avoid performing "stupid pilot tricks" by approaching every flight with the same level of planning you demonstrated on your very first pilot certificate checkride, and then cross-checking that planning against the real world once you're in the air. Commit to planning and monitoring, and you will increase your chances of "never doing that".

Holder of an ATP certificate with instructor, CFII and MEI ratings and a Masters Degree in Aviation Safety, 2010 National FAA Safety Team Representative of the Year, 2015 Inductee into the NAFI Hall of Fame and 2008 FAA Central Region CFI of the Year, three-time Master CFI Thomas P. Turner has been Lead Instructor for Bonanza pilot training program at the Beechcraft factory; production test pilot for engine modifications; aviation insurance underwriter; corporate pilot and safety expert; Captain in the United States Air Force; and contract course developer for Embry-Riddle Aeronautical University. He now directs the education and safety arm of a 9000-member pilots' organization. With over 4000 hours logged, including more than 2500 as an instructor, Tom writes, lectures and instructs extensively from his home at THE AIR CAPITAL--Wichita, Kansas. Subscribe to Tom's free FLYING LESSONS Weekly e-newsletter at http://mastery-flight-training.com/

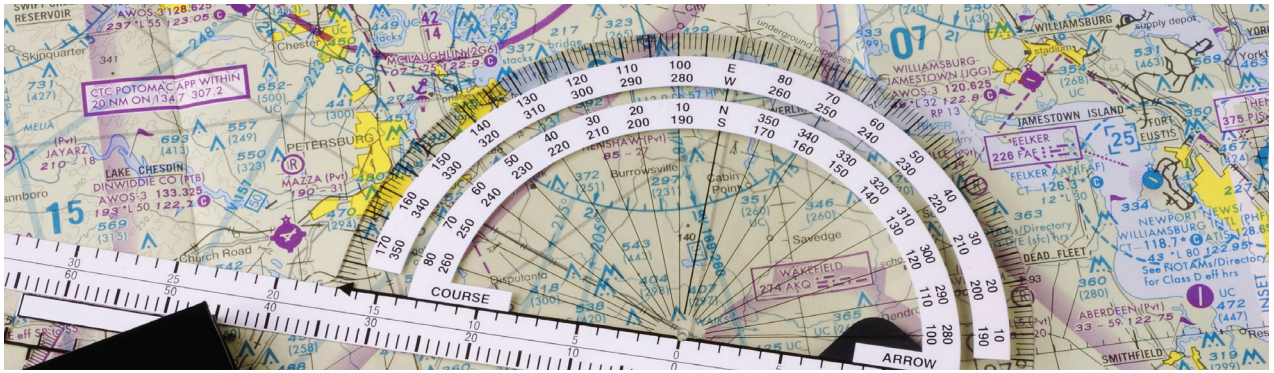
THE LOST ART OF PILOTAGE: FINDING YOUR WAY WITH VISUAL CUES

By Jason Blair, ATP, CFI-I, MEI-I, FAA Designated Pilot Examiner

I KNOW THIS MAY SOUND STRANGE CONSIDERING ALL THE COOL TOYS WE HAVE IN OUR PLANES, INCLUDING GPS SYSTEMS AND IPADS, BUT SOMETIMES A PILOT MIGHT WANT TO NAVIGATE BY LOOKING OUTSIDE THE WINDOW.

There are fantastic landmarks out there, that match up with what is found on paper or digital charts, to allow you to fly from point to point, ending up at a destination. It is also possible to use these landmarks as a way to avoid getting lost, or even, to get un-lost!

The skill of navigating using landmarks that you can visually identify and match up with on your charts is really a skill. A skill that is not exercised is one that a pilot is less proficient in using. I challenge you on your upcoming flights to not just trust the GPS and not just follow the magenta line on the iPad. Start looking outside the window, pick out points and match them up on your VFR navigation charts to hone your pilotage and dead reckoning skills.



A few tips you can use when working to hone or refresh your skills, or simply to challenge yourself, include the following:

THINK BIG WHEN IT COMES TO NAVIGATION POINTS. Trying to find the corner of 32nd Avenue and 24th Street from 5000 AGL in the middle of a city can be pretty tough. But finding the city itself should be easier. When navigating using VFR pilotage, use bigger points to get a general idea of your aircraft position. Pick things that are going to stick out from a distance.

Major lakes, cities, expanses of forest, or big rivers are great examples of things that will always stick out when you over fly them. It is hard not to notice crossing the Mississippi River when you fly over it at 4000 MSL. This is an example of a big landmark clue that is not only noticeable, but will be on your charts. If you took off from central Illinois and were headed west, a 5 or 10-degree course error isn't going to cause you to miss crossing this river. When you do cross it, you have an enroute opportunity to check your course and see if your crossing point is where you originally intended it to be. If you planned to cross 5 miles north of a city and you see the city 5 miles north of you instead, it's time to adjust your course based on your pilotage. Recognize the deviation of your intended course to your actual course flown based on reference

to these large, then smaller landmarks.

REFINE TO SMALLER POINTS. Once you have broadly identified the aircraft position, you can now refine yourself down to smaller points. If you are looking for the quarry that is marked on a chart 3 miles to the north of a town, it will be easier to find the town first, and then navigate from there to the specific smaller point. If you use larger and more identifiable points, and then reference them to find a smaller one, you refine your navigation efforts. The same holds true of airports. A smaller air strip in the middle of a city may be hard (or impossible) to see from 50 miles away, but if you notice that a major highway you are flying over along your route goes right past the airport, use it to follow and navigate until you are able to see the smaller point you are trying to find.

You can also find points by using larger landmarks to "radiate out from." There is no requirement that you must always fly a straight line directly to the point where you are going. Using landmarks that are more clearly identifiable will, many times, only add slight percentages of distance to your overall route, but may drastically increase the ease of navigation along the route when using pilotage.

RIVERS, RAILROADS, SHORELINES, AND HIGHWAYS TYPICALLY LEAD SOMEWHERE. When navigating VFR and using charts, I always try to find major rivers, railroads, and highways to help me along the way. These all tend to lead somewhere, typically to a city that uses them as transportation infrastructure. There is no reason a pilot can't follow them from above to navigate between cities.

These great visual points can lead a pilot to other points, many times in and around cities. They can help a pilot identify other more refined points such as water towers, airports, lakes, or bridges that can also be found on our charts.

Shorelines of big lakes or ocean fronts are not only great visual landmarks to follow, dotted by cities you can identify, but they are also very scenic!

BIG LANDMARKS SHOULD NEVER BE DISCOUNTED. Where I live in Michigan, if you go east, west, or north, you will run into a great lake. If you go south, you will cross two major highways (I-94, then I-80) both running east/west. These are large, distinct landmarks to think about when navigating around my home area. I am not saying you can't get lost here, but you probably can't get lost by more than 50-100 miles without a very large visual cue appearing. Hopefully you will make a course correction if you encounter one of these major landmarks that you weren't planning to see along your route.

THINK ABOUT WHAT THE MAJOR LANDMARKS ARE IN THE AREA WHERE YOU ARE FLYING AND CONSIDER HOW THEY CREATE BOUNDARIES THAT CAN BE SIGNIFICANT CUES TO WHETHER YOUR NAVIGATION EFFORTS ARE ON COURSE.

Major landmarks like these exist throughout the United States (and no doubt in other countries) and can be considered in a broad contemplation of VFR navigation. In Florida again there is water to the east and west. On the east coast, the Atlantic Ocean is in one direction and, for much of the area, mountains (the Appalachians) are to the west. In Colorado the mountains are west and broad open plains are to the east. You get the picture. Think about what the major landmarks are in the area where you are flying and consider how they create boundaries that can be significant cues to whether your navigation efforts are on course.

I would be remiss if I didn't mention that flying with reduced visibility or ceilings lessens the ability of a pilot to see longer distances in order to identify potential landmarks and to climb to an altitude to remain clear of obstacles. It is prudent to avoid flying when only basic VFR minimums are present if you will be navigating using pilotage and dead reckoning. If you do find yourself flying with less than clear conditions, know that your pilotage will have to become more accurate than when points can be viewed from greater distances and altitude.

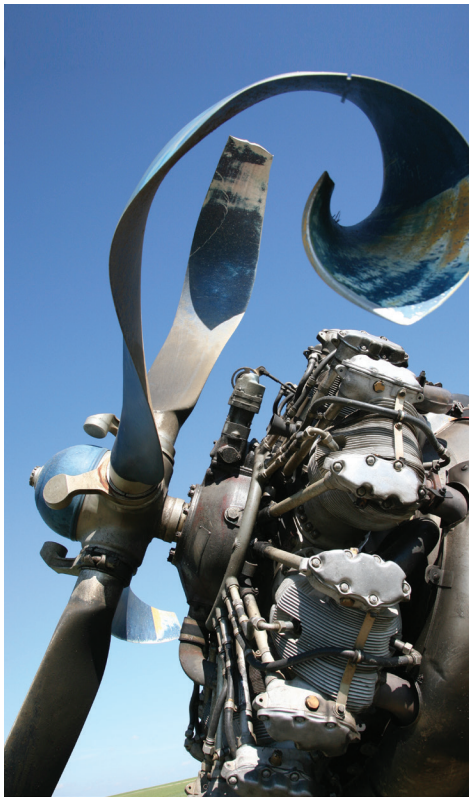
Taking the time to hone your VFR navigation point identification skills in no way degrades the utility of GPS, VOR, or other ship-mounted navigation systems, or even the use of moving map displays on EFB devices such as an iPad. These great tools can be supplemented by making sure your basic navigation skills remain sharp. It is all too easy to become reliant on programming the "direct to" button and sitting back in the aircraft until you reach your destination instead of actively working our navigation skills. The skill of pilotage can be important in the event of a system failure, or even just a programming error by the pilot.

So before your next flight, dig that old chart out again (or pull it up on your iPad) and start exploring 'from the air again'. It might be interesting to see what's on the ground first before you match it up on the air while in flight!

Jason Blair is an active single and multi-engine instructor and FAA Designated Pilot Examiner with 4,900 hours total time and 2,850 hours instruction given. In his role as Examiner, over 800 pilot certificates have been issued. He serves on several FAA/Industry aviation committees and is the past Executive Director of the National Association of Flight Instructors. He also consults on aviation training and regulatory efforts for the general aviation industry.

FREE AVEMCO WEBINAR: SURVIVING AFTER THE CRASH

No matter how much we train not to crash, sometimes the worst happens. Please join us on Monday, November 7 at 8:00pm Eastern for an important webinar presented by 2016 FAA Flight Instructor of the Year (Western Pacific Region) and friend of Avemco, Gary Reeves. Gary will share his wealth of knowledge on surviving after an airplane crash in this exclusive webinar for Avemco customers. He will help you be prepared to survive after the forced landing, instead of becoming one of the all-too-many people who survive a crash, only to pass away from injuries, environmental extremes, or other preventable causes. This webinar is a must attend for all pilots, no matter where you fly.



Gary Reeves is the founder of PilotSafety.org and a Chief Safety Officer with over 6000 hours as an ATP, Master Flight Instructor, Mountain Flying Expert.

Stay tuned for Registration Details.

READBACK

Readback is your chance to tell us what you think about everything we have to say and do – including our PIREPs, articles, emails and previous issues of the *On Approach* newsletter.

Several years ago I received an AVEMCO hat through the Alaska Airmen Show or some AVEMCO promotional. Though I did not have a plane at that time I wore it often. A few years back at another Alaska Airmen Show the AVEMCO representative thanked me for wearing the hat. Recently I purchased my first plane and AVEMCO was who I turned to for insurance. Very shortly after obtaining the insurance I needed to file a claim. With embarrassment to call AVEMCO I found that I was treated with respectful professionalism and expediency to solve the problem with the plane. Thanks AVEMCO. Now I wear your hat with even greater appreciation, as you have lived up to what you have stated in your advertisement and Air Show pitches.

--Ken McCarty

RESPONSES TO THOMAS P. TURNER'S "THE FORCE OF THUNDERSTORMS"

The best PIREP I have seen. Have been there and done that. Actually I believe the 20 mile avoidance recommendation is not sufficient. Maybe 30 to 40 miles would be better.

--Rex Minter (insured with Avemco for more than 35 years)

That was a timely and informative Pirep. I once hit a column of water coming out of a thunderstorm at FL390. At first it appeared to be ice, but luckily was just water. Topping big thunderstorms is not always the best idea. Great Pirep.

--Dean Wollaston

I would add to the sentence "Don't trust the visual appearance....." the following. "However, pay particular attention to the evil looking ones. The benign looking ones can be really bad, and the bad looking ones are truly terrible."

--Jerry L. Robinson, PhD, Designated Pilot Examiner (Ret.)

Very helpful, I printed for a reference checklist.

--Mike Pettaway

I got my student license in 1952 and received no real instructional information on the dangers of thunderstorms. Much later in 1959 I was flying a Bellanca with retractable gear and encountered problems of flying too close to the trailing edge of a single cell. I was flying from Orange County airport to Fullerton airport. I was ready to take-off when I could see that thunderstorm cell over what I thought was the area of Fullerton. I turned the radio to Fullerton tower and asked about the weather over there. Tower answered that the cross winds had just dropped on the runway from about 50mph now down to 10 or 12mph. In my mind I had already practiced those kinds of cross winds in the Bellanca. Tower also commented that the cell was now east of landing patterns.

I waited another 5 or 6 minutes - then fired up and was on my way to Fullerton. A Bellanca closes that distance from Orange to Fullerton in real quick time. As I approached the Airport pattern after contacting tower it seemed like the plane was settling in--a glance at the R-C and it read 600ft dn. My adrenalin kicked in--full power-nose up back to 800ft.--then a right wing dn like a start of a snap roll --hard left on the aileron--R-C shows "0" and I think its over. Just then a kick in the pants and the plane and I are climbing flat at1000ft/min--control wheel full down-full power again now approaching the final and lined up for landing--Tower was so nice- they advised only 5 to 10 mph cross wind --and I let out a big sigh of relief as the plane settled over the numbers lined up with the center line.

All of a sudden I had this sick feeling as the planes belly not the gear contacted the runway. Just then I remembered that I had started to lower the gear just as all the fun started and my

brain took over just to get me down alive. I want to give thanks to the two mechanics who showed up within two minutes with a mobile cherry picker and we had the plane off the runway in about 10 minutes. They were pilots from the Mission Aviation Fellowship that came out to help after they quit laughing as they stood by to see my perfect landing.

That's my encounter with a T-cell.

--Stan Kee, owner now of a LSA called Longster [fixed gear]

I read the PIREP concerning thunderstorms and agree with most of the content. However the statement, "Do keep your eyes on your instruments. Looking outside the cockpit can increase danger of temporary blindness from lightning." is not entirely accurate.

Case in point, on two legs (NGF3005) I flew on 07/28/2016 ATC gave me waypoints or vectors directly into thunderstorms. I knew because I looked outside the cockpit to monitor the situation – typically squinting my eyes to minimize temporary blindness if such should occur.

One has to be alert and declare an emergency if ATC is unwilling to allow pilot deviations. This will get ATC's cooperation.

My own experience in Florida (over several years) is radar depiction via my ADS-B in and at ATC could be old as 15 to 30 minutes. This presents a dangerous situation, especially when the winds are moving the storms above 15 knots per hour.

--Alan M. Hoffberg

RESPONSES TO MAX TRESCOTT'S "RISK MANAGEMENT"

This was very helpful, I like the logic. In this fast paced world we live in, one must slow down before every flight and assess all factors involved.

--Jesse Gage

Thank you for the night flying PIREP. Navy flight training requires that students become instrument qualified before VFR night flights. On my first solo night flight as a Navy cadet I could very well have lost control without prior instrument training when I accidentally entered a haze layer.

The Navy had a series of training booklets called "Grandpa Petty Bones". These were small 10 page advisory books that focused on a specific hazard. In one booklet Grandpa Petty Bones said, "the first thing bad about night flying is you can't see".

--Charles Violette

This month's presentation [Risk Management] is well worth a few minutes of time to think about the subject matter presented; more important is taking the information and applying it to my flying.

Thanks again

--Pilot of N24GL

Great article. Although this is something known by ALL pilots, reiterating the risk of drug and alcohol use before any flight needs a special reminder.

--Ertha Anaton

COMING TO A HANGAR NEAR YOU!

The most fun we have all year is meeting our customers in person and strengthening our ties within the aviation community.

Avemco continues to be a proud sponsor of the Bonanza & Baron Pilot Training clinics. For a listing of clinics remaining in 2016 click here*. The courses are custom designed for pilots and owners of Bonanzas, Barons, Travel Airs, Twin Bonanzas and Dukes.

Avemco will be exhibiting at the following aviation tradeshows in 2017:

FEBRUARY 25-26
Booth #812
34th Annual Northwest Aviation Conference & Tradeshow
Washington State Fair Events Center Showplex
Puyallup, WA

APRIL 4-9
Booth #C-56
Sun 'n Fun International Fly in & Expo
Lakeland, FL

JULY 24-30
Booth #1159/1160
EAA Airventure
Oshkosh, WI

Check our website and Facebook pages for more information as it becomes available.

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