

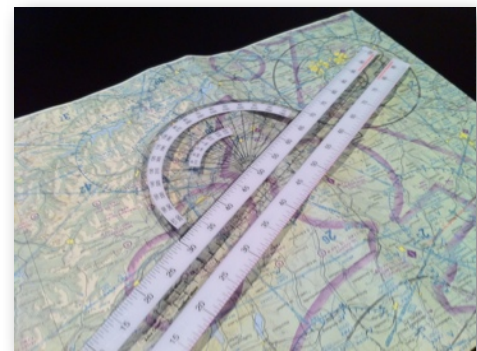


## PILOTAGE

*A cloud does not know why it moves in just such a direction and at such a speed, it feels an impulsion....this is the place to go now.*

*But the sky knows the reason and the patterns behind all clouds, and you will know, too, when you lift yourself high enough to see beyond horizons. -Richard Bach*

The J-3 bounced as I journeyed into a pocket of air, uninvited. The clouds were within arms reach, the autumn hues lighting up the countryside. I felt as if I were thrust into one of Richard Bach's novels. I glanced over my right shoulder, I was alone. As I looked to the right a prominent factory located on the west shore of one of the Finger Lakes came into view. I was right over my first checkpoint. A couple sailboats on the lake revealed the wind direction. I glanced at the magnetic compass and turned 5 degrees to the left. That wind correction should work for awhile.



I was armed with a sectional chart and the airplane's Magnetic Compass. No GPS, iPad, or VOR to use. I plotted a simple True Course and the rest was now up to me to find the aerodrome located almost a hundred miles away from my starting point.



### Welcome

*This is our 1 year anniversary issue. It has been a wonderful journey so far and I look forward to next year.*

*To continue bringing you a quality product Instructor's Wing will become a bimonthly publication starting January 2012. I would like to wish you all a happy and safe holiday.*

*Till next year, safe flying*

*Ruben Alconero*

# INSTRUCTOR'S WING

Technology has advanced to the point where small general aviation aircraft are now equipped with state of the art avionics and autopilots. With the ability to view roads, lakes, and approach plates overlaid on a moving map, a pilot simply pushes a button and like their brethren at the airlines, the aircraft suddenly appears on a magenta line. No need to figure wind correction, the plane's GPS computes your track to the destination and takes you there with incredible accuracy. Even iPads now show winds aloft and can show your position and track overlaid on a sectional chart. Fuel burn is also computed on a trip log.

The practice of looking out the window and selecting a visual point of reference is slowly dying, much like the NDBs that used to cover the U.S.

This art needs to be passed on to the next generation of pilots. There is still, at least for the time being a requirement in the Private Pilot PTS (Practical Test Standards) to demonstrate Pilotage and Dead Reckoning.

Pilotage is the use of fixed visual references and the use of a map or chart to guide oneself to their destination.

Dead Reckoning is the process of calculating one's current position by using a previously determined position, or fix, and advancing that position based upon known or estimated speeds over elapsed time, and course.

I like to introduce pilotage to my primary students in a two-stage approach.

The first exposure is to fly a triangle from our home airport to two airports additional airports within 25 NM.

Simple landmarks such as lakes, ponds, railroads and small towns are introduced.

A course is picked and then flown while basic speed, time and distances are computed.

The second exposure to pilotage and dead reckoning occurs on my students' first dual cross-country flight.

I have them plan a trip and show me their selected checkpoints. As this is a new exercise I find it important to allow my students to use "any" landmarks they choose, and then demonstrate in flight which ones are optimal for good situational orientation and which ones are not. A small tower north of course on the sectional chart looks great, however at 5500 feet near a small town it hardly recognizable.

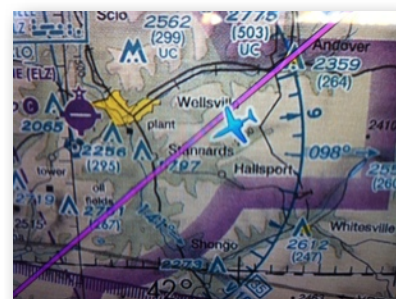


It is important to demonstrate and explain how distinctive landmarks such as large lakes, smoke stacks, power lines and curved bends in a river are excellent visual references.

The first leg of the cross-country flight will utilize pilotage along with VOR navigation as a way to pinpoint location. It will also include a basic introduction to GPS if installed. These forms of navigation coupled with "flight following" give students an opportunity to see all tools available to them.



On the return portion of the dual cross-country my students are allowed to only use the sectional chart. He/she will plot a true course and utilize pilotage and dead reckoning to find their way back home.



Wind correction is made through visual cues such as smoke from a factory, or wave direction on a lake.

As the flight progresses home it always rewarding to show how accurate this form of navigation still is. A quick view of our position geo-referenced on the iPad shows us off course by a mere half nautical mile.

# INSTRUCTOR'S WING

A great resource to learning all the symbols on a VFR Sectional chart is the FAA's Aeronautical Chart User's Guide (see the link in the lower left corner of this page to obtain your free copy).

A basic distance/ time formula is used to compute a groundspeed. Once the groundspeed is computed it is utilized to compute the time to the next checkpoint.

We could use an E6-B or electronic flight computer to more accurately figure groundspeed, heading and wind direction, however the goal of this exercise is to use the bare minimum of equipment to accurately navigate from point A to B.

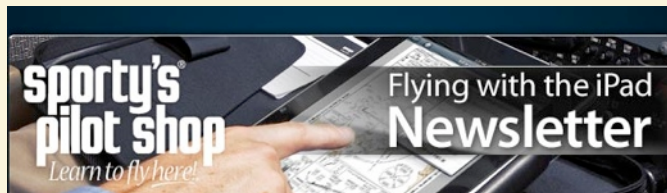
Some common errors I have noticed and ones CFIs' need to be alert for;

\*Take a macro view of where you are going. I have seen many students get caught up in immediately looking for checkpoints, and not flying the plane. Aviate, Navigate, and Communicate. Make certain your students understand and apply this critical concept.

\*Understand the difference between aircraft heading and track. While the nose of an airplane could be pointed in a direction away



[http://aeronav.faa.gov/content/aeronav/online/pdf\\_files/VFR\\_Chart\\_Symbols.pdf](http://aeronav.faa.gov/content/aeronav/online/pdf_files/VFR_Chart_Symbols.pdf)



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from a selected checkpoint, the aircraft's track may be right on course if proper wind correction has been applied. While this concept is explained in certain private pilot maneuvers, it may need to be refreshed during cross-country planning and flying.

With my ongoing project of "building a better pilot" I encourage even active rated pilots to take a break from the GPS and VOR. Leave your iPad at home and get back to the basics.

If you are flight instructor consider a review of VFR sectional charts and pilotage while giving your next flight review.

This exercise should be fun and educational. You never know when the GPS will fail, the iPad runs out of batteries, or the VOR along your planned route is out of service. Pilotage may be all you have left.

Train Like A Professional, Fly Like a Professional.....

# INSTRUCTOR'S WING

## Say Again?

One of the biggest challenges for new flight students is learning how to communicate on the radio. There are a couple aids that can help. If you are a member of AOPA there is an excellent online communications course. Take the course and print a graduation certificate for yourself and your instructor.



The other aid is a website called LiveATC and can be found at <http://www.liveatc.net/>.

This tool allows students to select which air traffic control facility that would like to listen to, from approach control to tower operations.

The site also allows users to select a specific time range, giving student pilots the ability to listen to their actual radio transmissions after the flight is complete.

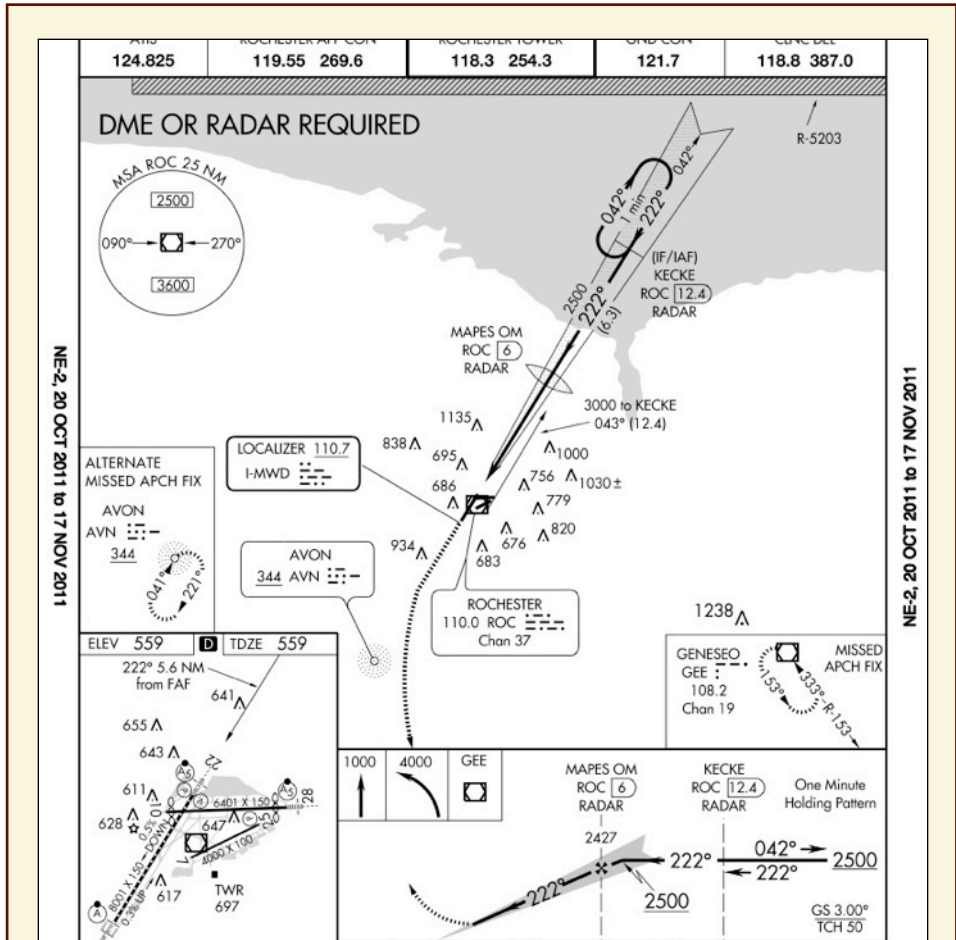


### Ask the Instructor-

Do you have a question you would like answered in the next issue?

Please contact:

Ruben Alconero [AAflyer@mac.com](mailto:AAflyer@mac.com)



### Next Issue: Briefings

Take-off and Approach briefings can be heard on the flight deck of every airliner in the world, yet they are hardly used in general aviation aircraft.

In our next issue we will take a look at how student pilots, instrument pilots and even CFIs can incorporate briefings into their daily flight operations.

Tailwinds and Blue Skies

