

## Which VOR?

The only positive method of identifying a VOR is by its Morse Code identification or by the recorded automatic voice identification which is always indicated by use of the word "VOR" following the range's name. Reliance on determining the identification of an omnirange should never be placed on listening to voice transmissions by the Flight Service Station (FSS) (or approach control facility) involved. Many FSSs remotely operate several omniranges with different names. In some cases, none of the VORs have the name of the "parent" FSS. During periods of maintenance, the facility may radiate a T-E-S-T code (- •••• -) or the code may be removed. Some VOR equipment decodes the identifier and displays it to the pilot for verification to charts, while other equipment simply displays the expected identifier from a database to aid in verification to the audio tones. You should be familiar with your equipment and use it appropriately. If your equipment automatically decodes the identifier, it is not necessary to listen to the audio identification.



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## Night flying, night-time logging and night landing currency

By: Mihai G Sirbu

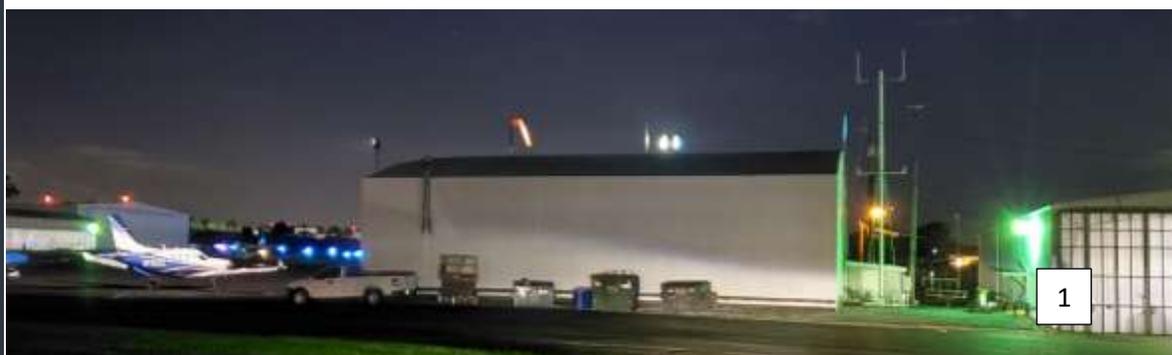
To fly at night, the plane has to be night equipped - as all CFC planes are. Between sunset to sunrise your position and anticollision lights need to be on. To find sunset/sunrise times, just google "sunset KGAI", "sunrise KGAI", or the airport of your choice.

To log night time, you count the time between the end of evening civil twilight to the beginning of morning civil twilight. For example "Weather Underground Gaithersburg" gives you the civil twilight times.

To fly passengers, during the time of 1 hour after sunset and 1 hour before sunrise, you need to be night landing current. For that, you need to make at least 3 takeoffs and 3 landings to a full stop in the preceding 90 days during the period beginning 1 hours after sunset and ending 1 hour before sunrise.

The definitive data for sunset, sunrise, civil twilight resides on the US Naval Observatory website, [here](#)

More night flying details can be found [here](#) and [here](#).



## Landing in Low Light Conditions.

When landing in a low light condition - use extreme caution. Look for intermediate reference points, in addition to checkpoints along each leg of the route for course confirmation and timing. The lower the ambient light becomes, the more reference points a pilot should use.

## Airport Landings.

Look for features around the airport or approach path that can be used in determining depth perception. Buildings, towers, vehicles or other aircraft serve well for this measurement. Use something that will provide you with a sense of height above the ground, in addition to orienting you to the runway.

Be cautious of snowdrifts and snow banks - anything that can distinguish the edge of the runway. Look for subtle changes in snow texture or shading to identify ridges or changes in snow depth.

## VASI vs PAPI

Landings in general can be a challenge, especially when you are flying into an unfamiliar airport. Terrain angles and varying widths of the runways can make you believe you are too high, or too low.

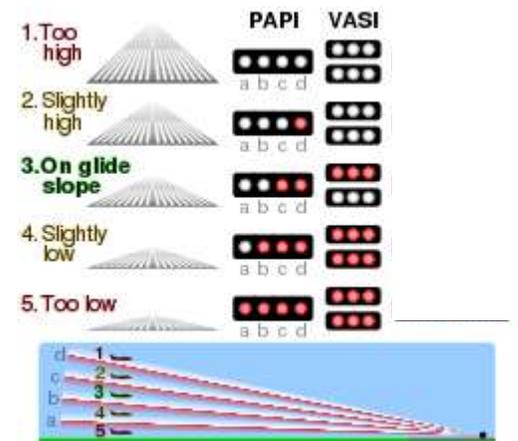
To aid the pilot, visual references on the runway itself tell you the width (the number of lines in the threshold markings indicate width;

- 4 = 60 ft;
- 6 = 75 ft;
- 8 = 100 ft,
- 12 = 150 ft;
- 16 = 200 ft

But at night, the challenge increases. Hence the elevated importance during night time of the visual lighting aids – PAPI or VASI.

The only difference between a PAPI and a VASI (functionally) is the precision you can get from a PAPI. Precision Approach Path Indicators (the four lights in a single row that change from white to red as you fall below the glidepath) allow you to refine your touchdown point using the visual cue. You can nominally have 3 touchdown points with PAPI.

For a two-bar VASI, you have only one touchdown point; for a three-bar VASI, you can have 2.



[https://en.wikipedia.org/wiki/Visual\\_approach\\_slope\\_indicator](https://en.wikipedia.org/wiki/Visual_approach_slope_indicator)



## Aviation Safety: Illusions

ASRS's award winning publication CALLBACK is a monthly safety newsletter, which includes de-identified ASRS report excerpts with supporting commentary in a popular "lessons learned" format. In addition, CALLBACK may contain features on ASRS research studies and related aviation safety information. Editorial use and reproduction of CALLBACK articles is encouraged.

The excerpt in italics to the right is reprinted from NASA's ARSR database

*It was completely dark with no horizon. There was no other traffic in the airport vicinity. I applied full power, and then released the brakes and executed a short field takeoff, rotating at 54KIAS and climbing at 62KIAS. After climbing to 200 feet I retracted the flaps as normal.*

*That's when the problem began, as the aircraft seemed to be climbing too much, and I lost my situational awareness, the aircraft descended, and the other pilot assisted me in recovering. I attempted again, and again the aircraft went from a climb to a descent and I asked the other pilot to take the controls, which he did.*

*We then climbed and turned right, out of the traffic pattern, after which I took the controls again and flew back to home base, where I was able to perform the three full stop night landings there, with no further incident.*

*I believe what happened was a somatogravic illusion, where acceleration in IMC or night can make a pilot feel that they are climbing too much, and they push forward when they shouldn't.*

Who doesn't like night flying? The sights of an airport at night are quite beautiful, and with calmer air, cooler temperatures (in the summer) the flights are typically calm and very enjoyable.

But there are traps in night flying. Some of these traps are hiding in the dark (rising terrain, unlit towers, unseen clouds) and some we bring with us. The human body is a miracle of engineering; chemical, mechanical, and electrical engineering all combine to form a sentient machine that is incredible.

Our machine even has input sensors to perform useful tasks, just like any other machine. Our sensors are eyes, ears, and sense of feeling. However, they can be fooled and can fool each other too.

According to the AIM (8.1.5.B.1), "Various complex motions and forces and certain visual scenes encountered in flight can create illusions of motion and position. Spatial disorientation from these illusions can be prevented only by visual reference to reliable, fixed points on the ground or to flight instruments."

At night, those ground reference points can disappear, just like they did with our incident pilot. He wrote in his report that he believes he suffered from the somatogravic illusion.

The AIM defines that as (8.1.5.B.2.D) "A rapid acceleration during takeoff [that] can create the illusion of being in a nose up attitude. The disoriented pilot will push the aircraft into a nose low, or dive attitude. A rapid deceleration by a quick reduction of the throttles can have the opposite effect, with the disoriented pilot pulling the aircraft into a nose up, or stall attitude."

On a dark night in your future, ask your flight instructor to take you aloft and put on the foggles (to hide an errant ground lighting) – then, without watching the instruments, throttle to idle and see what happens to your senses. Or, establish a slow speed in level flight and then add full throttle. That nose will pitch up because of the additional power, but your senses will think it's too much. Pushing down close to terrain can be disastrous.

Be prepared for the illusions that your body perceives and the lies that your senses tell each other and the brain.

Learn to rely on the flight instruments and what they are saying, even if you don't have an instrument rating. It might just save your life.



## Editor's Note

If there are activities you would like to have added to the Upcoming Events Page, please let AI Secen know before the 25<sup>th</sup> of the month (publication date of the newsletter).

## Upcoming Events

- **Wings, Wheels, And Pancakes**

Sep 28, 2019 8:00 AM - Sep 29, 2019 12:00 PM  
1130 Chambersburg Road, Gettysburg, PA, 17325

- **Rusty Pilots at College Park Airport**

Sep 28, 2019 9:00 AM - 12:00 PM  
1909 Corporal Frank Scott Drive, Operations Building, College Park, MD, 20740

- **Chapter 36 Young Eagles Flights & Breakfast**

Oct 19, 2019 12:00 AM - 11:59 PM  
Showalter Rd , Hagerstown , MD, 21742

