

# EXPERIMENTAL AIRCRAFT ASSOCIATION

## CHAPTER 1098

### SHAWNEE, OKLAHOMA

The Shawnee, OK, EAA Chapter 1098 is an official chapter of the EAA, Wittman Airfield, Oshkosh, Wisconsin 54903. Phone 414-426-4800. Chapter1098 was organized to promote aviation in the community, provide camaraderie, sharing of aeronautical knowledge and skills among those with interest in grassroots aviation and who share the objectives of the EAA. Chapter dues are \$20.00 per year, payable on 01 January. Normally our meetings are held on the fourth Saturday of the month at 2:30pm at Gordon Cooper Tech Aviation Campus, 2600N Airport Dr, Shawnee, OK 74804, Shawnee Airport (KSNL). Time, date and place are subject to change. Please check newsletter for latest meeting information.

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Welcome to the February 2024 issue of EAA Chapter 1098 newsletter. Our next meeting is scheduled for Saturday 24<sup>th</sup> February 2024, 2:30pm at the Gordon Cooper Aviation Tech Center, Shawnee Airport, Shawnee, OK. We plan to have coffee and some snacks for all. John Wise has kindly agreed to present his experience gained from off airport landings. It's an excellent presentation and gives some areas to be thinking about during our general aviation flying.

### Members Corner

**Chapter Recruitment:** Tracy is doing an excellent job with the EAA Chapter 1098 Facebook, YouTube and website. Please don't forget to share your pictures and videos with her so she can add them to our chapter social media. We also ask you to like and share her work, so it gets shared with your social network and gets the chapter visibility to the larger aviation enthusiast community.

**Airplane upgrades.** Stuart has been working on his instrument rating and in parallel has completed several modifications to his Vans RV-9A to make it easier to fly as well as IMC compliant. Some of these enhancements are not necessary for IMC flight but anything to reduce pilot workload is greatly appreciated. Monitoring weather, navigation, radio calls, accurate heading and altitude pilotage all add to workload during IMC flight.



Garmin 175 **WAAS GPS** and GI-106A CDI. There are two different techniques one can choose for navigation in IMC conditions, either navigation radio or WAAS GPS. I decided to go for a WAAS GPS as my primary navigation. The navigation radio pilotage via VOR radio stations and

Localizers for ILS approaches is being phased out and restricts flight path and airports available for landings.

I chose to minimize my downtime during panel upgrade so selected the Garmin 175 GPS and 106A CDI. This system wiring install is kept independent of the rest of the panel. One simply



selects the airport to fly to and approach procedure and the route is sent to the CDI. You pilot

the plane, keeping the needles in the center of the CDI and you will be navigated along the selected route and down the glide slope of the desired approach to your chosen airport.

Make sure you do the necessary power consumption calculations when adding electrical equipment so you don't exceed the power bus limit. You don't want to blow a fuse or circuit breaker during flight shutting down your entire instrument panel.

**Garmin G5 HSI:** The FARs are quite ambiguous with respect to glass cockpit instrumentation and what level of redundancy is required for IMC flight. Upon research and guidance from the FAA, it was decided to have redundant 6 pack instruments and navigation equipment. I therefore decided to add a redundant HSI. My primary HSI is a Dynon D180. I therefore decided to add a Garmin G5 with internal battery. This is a GPS driven system along with static and total pressure inputs. The display gave the panel redundant attitude, altitude, track, slip, heading, rate of climb, ground speed and air speed.

My aircraft came with an **autopilot**. I thoroughly recommend anyone wanting to fly in IMC conditions have an autopilot to minimize pilot workload. Finally, don't forget to add a heated pitot probe and replace the standard non-heated tube.



The following enhancements were to aid with pilotage and not necessary for IMC flight:

**Improved engine cooling:** Work started with upgrading the baffles around the engine cowl to improve airflow and engine cooling. This made a significant improvement but still didn't keep the cylinder head temperatures (CHT) from exceeding 400F during climb out. A pair of anti-splat cowl flaps completed this project. It gave an additional 40F reduction in CHT during climb out.



**ADS-B Out:** The primary purpose for flying IFR routes is to aid with longer distance cross country trips. The ability to fly into larger airports such as class B, C and class E airspace above 10,000ft requires the aircraft to have ADS-B out transponder. The uavonix tailbeacon was added to the aircraft, replacing the tail light. This is a simple modification and is set up using an app on your cell phone. Make sure the dimensions of the aircraft in the app are completed in the correct units otherwise you can get duplicate signals or missing signals. ADS-B in was achieved using a stratux puck and Foreflight digital flight bag using iPad. These were powered by adding USB power ports to the panel. This gives weather information along with location of other aircraft.



**Fly LED Wig Wag landing lights.** The original landing lights were low voltage halogen spot lights similar to those used in kitchens for down lights. These have been upgraded to the Australian Fly LED lights along with the wig wag switch for easier aircraft observation. These lights are considerably brighter than the originals. The brighter landing lights aid with flair during landing at night. The airplane is also much easier to spot in daylight in wig wag mode.



**Anti-Splat nose job.** There are many reports of Vans aircraft having issues with the nose leg bending on heavy landing or bumpy airstrips (grass fields). The Anti-Splat nose leg strengthening beam is a simple addition to the nose leg. The fiberglass cowl is removed, the



strengthening beam is cramped around the nose leg and fiberglass replaced. This beam allows the nose leg to flex normally, but restricts the motion once a limit is reached.

#### Upcoming Events

**Evening Fly Out** - We are in the process of setting up some fly out events. Members at both Twin Lakes and Ellis Harvey air parks are planning to host fly out events. Ellis Harvey members have been getting together on a Wednesday evening to discuss upcoming projects and work on members planes. We are in the process of setting up something similar at Twin Lakes on a Thursday evening. We will let you know more in a future newsletter. If you are interested in participating in the gathering at Ellis Harvey, please reach out to Stuart. For Twin Lakes gathering, please reach out to Kyle.

#### Current Events Scheduled for EAA Chapter 1098

| Date                       | Event                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------------|
| 24 <sup>th</sup> February  | Monthly Gathering – Off Airport Landings<br>John Wise                                                 |
| 23 <sup>rd</sup> March     | Monthly Gathering – Trip to GAMI<br>Doug Lomheim to arrange.                                          |
| 27 <sup>th</sup> April     | Monthly Gathering – Fire Department - Aircraft Fire Safety<br>Gary to arrange.                        |
| 18 May                     | Learn to Fly Event<br>Stuart to organize.                                                             |
| 25 <sup>th</sup> May       | Monthly Gathering - Fly out to Hutchinson Liberal Museum<br>Stuart to arrange.                        |
| 22 <sup>nd</sup> June      | Monthly Gathering- Tri-Chapter Summer B-B-Q<br>4:30pm at Karen and Gary hangar, Twin Lakes Airpark    |
| 27 <sup>th</sup> July      | Monthly Gathering - FAA Academy - Hypoxia Altitude<br>Chamber Survival Skills<br>Tracy to arrange.    |
| 24 <sup>th</sup> August    | Monthly Gathering - Thunderbirds Crew Chief<br>Robert to arrange.                                     |
| 28 <sup>th</sup> September | Monthly Gathering- Aviation Weather<br>Bill McWhirter                                                 |
| 26 <sup>th</sup> October   | Monthly Gathering- RV-7 Build<br>Alan Bumbaugh                                                        |
| 14 <sup>th</sup> December  | Monthly Gathering- Tri-Chapter Christmas Party<br>4:30pm at Karen and Gary Hangar, Twin Lakes Airpark |

### Fly Out Events We Can Support (Looking for Volunteers)

| Date                                                                           | Event                                          |
|--------------------------------------------------------------------------------|------------------------------------------------|
| 27 <sup>th</sup> January<br>20 <sup>th</sup> April<br>24 <sup>th</sup> October | EAA Oshkosh Leadership Training                |
| 7 <sup>th</sup> September                                                      | Guthrie Open House / Young Eagle Flights       |
| 1 <sup>st</sup> June                                                           | Chickasha Open Day / Young Eagle Flights       |
| 28 <sup>th</sup> September                                                     | El Reno Open Day / Young Eagle Flights         |
| September                                                                      | Girls In Aviation<br>Will Rogers World Airport |
| September                                                                      | Fly the Caucus                                 |
| December                                                                       | Women In Aviation<br>Will Rogers World Airport |

**EAA Chapter 1098 Logo Merchandise** - We are focusing on hats and T-shirts. Kyle has been working with a printing company to create art work for a chapter logo. We hope to have some samples to share at the February meeting.

#### VMC and IMC Section

#### **VMC Question:**

**Question:** What is the difference between three- and four-digit identifiers for military training routes (MTRs) charted on a sectional chart?

#### **IMC Question:**

**Question:** When transitioning from instrument to visual flight at the end of an instrument approach, what factors might make a pilot inadvertently fly lower than intended?

#### Safety Corner

Aero Educate – EAA now offer a free aerospace curriculum for school children, which compliments the Young Eagle events. If folks are interested in getting involved, there are approximately 87 schools in the Oklahoma area now offering some form of aerospace program. Please check out: [www.aeroeducate.com](http://www.aeroeducate.com)



FAA Wings Safety Program – As part of a pilot's continuous learning journey, the FAA has a website full of great tips. The WINGS - Pilot Proficiency Program is based on the premise that pilots who maintain currency and proficiency in the basics of flight will enjoy a safer and more stress-free flying experience.

You select (in your Airman Profile) the category and class of aircraft in which you wish to receive training and in which you wish to demonstrate your flight proficiency. Requirements for each aircraft category and class include specific subjects and flight maneuvers. To ensure you receive a well-rounded learning experience, only certain flight activities fulfill specific credit requirements. More information about how these subject areas are selected is available on your MY WINGS page.

The program encourages an on-going training program that provides you an opportunity to fly on a regular basis with an authorized flight instructor. The program is most effective if the training is accomplished regularly throughout the year, thus affording you the opportunity to fly in different seasons and in different flight conditions.

Please check out.: [www.FAAsafety.gov](http://www.FAAsafety.gov)

#### VMC and IMC Answer

##### **VMC Answer:**

**Answer:** A four-digit identifier is used for routes that are entirely between ground level and 1,500 feet AGL (generally flown VFR). A route with a three-digit identifier (or less) has at least one segment above 1,500 AGL (generally flown IFR). It should be noted that military aircraft may operate on these routes at speeds in excess of 250 knots, even when below 10,000 feet MSL. Width of MTRs can vary from 4 to 16 miles.

**Source:** FAA Aeronautical Chart User's Guide, P. 19

##### **IMC Answer:**

**Answer:** Three factors can all create the illusion that a pilot is higher than (s)he thinks. According to FAA-H-8083-15B, *Instrument Flying Handbook*, page 3-9, these include the following:

###### **Water Refraction**

Rain on the windscreen can create an illusion of being at a higher altitude due to the horizon appearing lower than it is. This can result in the pilot flying a lower approach.

###### **Haze**

Atmospheric haze can create an illusion of being at a greater distance and height from the runway. As a result, the pilot has a tendency to be low on the approach. Conversely, extremely clear air (clear bright conditions of a high altitude airport) can give the pilot the illusion of being closer than he or she actually is, resulting in a high approach that may cause an overshoot or go around. The diffusion of light due to water particles on

the windshield can adversely affect depth perception. The lights and terrain features normally used to gauge height during landing become less effective for the pilot.

**Fog**

Flying into fog can create an illusion of pitching up. Pilots who do not recognize this illusion often steepen the approach quite abruptly.