

# 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. Chapter 1098 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 November issue of EAA Chapter 1098 newsletter.

Please mark your calendars, our annual Tri-Chapter Christmas party is rapidly approaching and scheduled for Saturday 07 December at 4:30pm. It will be hosted by Karen and Gary Manning at their hangar, Twin Lakes (2OK2) airport, 13801 Chandelle Dr, Newalla, OK, 74857. Everyone with an interest in aviation is welcome. Please bring a side dish. The Oklahoma EAA chapters will provide meat and beverages.

### Members Corner

#### **New Aircraft in the Chapter**

We had 2 members take possession of aircraft this month. Doug Lomheim flew his RV-7A back from Texas. It is powered by a Mazda Wankel rotary engine(N767TX). He had a very smooth flight back. See attached pictures showing his initial touchdown at Twin Lakes airpark, along with airplane safely parked in hangar.



Greg and Dianne Chapman took ownership of N99V, a 180HP, constant speed RV-6A. This airplane was located in Amarillo, TX. It is now at Twin Lakes airpark. We look forward to seeing both during our December gathering at Twin Lakes.



### **23-26Oct24 - Oshkosh Leadership Camp**

Don, Kyle and Stuart took a trip to Oshkosh for the EAA fall Leadership Camp. The weather was beautiful, so we decided to fly. Don took his RV-9, Stuart flew up in his RV-9A with Kyle. This was my first flight into Oshkosh, so it was nice to arrive without thousands of other aircraft forming lines of traffic. We got to stay in the Lodge, food was awesome along with the camaraderie. The training is always informative, I've attended it over 3 times now and learn something new each time. The highlight of the trip was the ability to sit in the cockpit of a DeHavilland Mosquito. The P-51 Mustang was pretty cool too !



Social Media and Web – Tracy Chaddon

### **Temporary Flight Restriction (TFR).**

As pilots, we should always update our charts and check NOTAMs when planning our flights. NOTAMs will discuss a TFR and your flight planning app, such as ForeFlight will display active and upcoming TFRs. The FAA has a dedicated page just for TFRs to show them all in one place. TFRs can be displayed in a list or on a map. Click on the TFR of interest and get all the needed information including issue date, beginning/end times, coordinates of the center of the TFR and radius and operating restrictions and requirements. The link to the FAA TFR page is:

<https://tfr.faa.gov/tfr2/list.html>

Attached is an informative article from the FAA about TFRs:

[https://www.faa.gov/sites/faa.gov/files/pilots/safety/notams\\_tfr/tfrweb.pdf](https://www.faa.gov/sites/faa.gov/files/pilots/safety/notams_tfr/tfrweb.pdf)

Upcoming Events
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**Current Events Scheduled for EAA Chapter 1098**

Date	Event
7 <sup>th</sup> December	Monthly Gathering- Tri-Chapter Christmas Party 4:30pm at Karen and Gary Hangar, Twin Lakes Airpark

Date	2025 Monthly Gathering
January	Fly out to Oshkosh - EAA Leadership – The trip and what we learned. Stuart to present
February	TSI Accident investigation Gary to organize
March	An FAA Build Inspection – What to expect. Kyle to organize (James Wurtz)
April	Aircraft Fire Safety Gary to organize
May	General Aviation Flying with a Mazda Wankel Rotary Engine. Doug to present.
June	22nd June Tri-Chapter Summer B-B-Q 4:30pm at Karen and Gary hangar, Twin Lakes Airpark
July	TBD
August	Aircraft Insurance - Things to know as we age. Stuart to arrange.
September	Introduction to Instrument Flying for General Aviation. Kyle to present

October	TBD
December	Monthly Gathering- Tri-Chapter Christmas Party 4:30pm at Karen and Gary Hangar, Twin Lakes Airpark

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

<b>Date</b>	<b>Event</b>
April	Visit to NOAA weather facility in Norman, OK
May	Fly out to Hutchinson, Kansas to visit Cosmosphere Museum.
June	Breakfast at Stearman Field Airport (1K1).
July 21-27	Oshkosh AirVenture
August	Fly out to Tulsa Air and Space Musum
August	Fly out to Weatherford, Stafford to visit Museum.
September	Breakfast at Westheimer Airport (KOUN).
October	
November	

VMC and IMC Section

**VMC Question:** You are making a daytime VFR flight from Hyannis, MA to Martha’s Vineyard, MA as shown below. Conditions include a 1,000 foot overcast and 10 miles visibility. What is the highest altitude at which you can legally fly this trip under these stipulated conditions?



**IMC Question:** You're flying in IMC on an IFR flight plan when you determine you have a radio problem. It seems you can hear transmissions, but you are unable to transmit. What can you do to alert ATC to your situation?

### Safety Corner

#### Vestibular Illusions

Which way is really up? To some, this may sound like a silly or odd question, but for pilots, this can be a real concern. Statistics show that between 5 to 10% of all general aviation accidents are attributed to spatial disorientation, and 90% of those are fatal.

Spatial orientation is our natural ability to maintain our body's orientation and/or posture in relation to the surrounding environment (physical space) at rest and during motion. This #FlySafe topic examines the vestibular illusions that you may encounter and what you can do to avoid these dangerous situations.

<https://medium.com/faa/vestibular-illusions-40ce147aac5f>

## Reliability and Availability

We occasionally hear of aircraft owners making modifications to their experimental aircraft to make them more safe, more reliable, etc. This article is to highlight that sometimes what appears to be a good idea, might not actually be the case.

### Example: Dual Battery System with Improper Isolation

While adding a dual battery system usually improves reliability, there are scenarios where it could actually reduce overall system reliability. This typically happens due to poor design, increased complexity, or added failure points. Let's walk through an example.

In this case, consider a situation where two batteries are added in parallel, but **there is no proper isolation between them**. Instead of each battery being able to operate independently in case one fails, they are wired in such a way that if one battery develops a fault, it can potentially take down the other battery as well.

#### Scenario:

- **Failure Mode:** One battery experiences a short circuit (or drains excessively).
- **Impact:** Since there's no isolation, the healthy battery also starts draining or is affected by the fault in the faulty battery.

This creates a scenario where adding a second battery doesn't increase reliability—it can, in fact, decrease it. Here's how:

### Calculation: Decreased Reliability with Poor Isolation



For simplicity, let's assume both batteries have the same failure rate  $\lambda = 1/10,000$  (one failure per 10,000 hours). The system is configured in such a way that if **either battery fails, both are affected** (due to improper isolation).

In this case, the dual battery system behaves as though both batteries are in **series**—that is, the failure of either battery brings down the entire system. The reliability of a system with components in series is **lower** than the reliability of each individual component.

The reliability of a series system is calculated as:

$$R_{\text{system}}(t) = R_{\text{battery1}}(t) \times R_{\text{battery2}}(t)$$

With the same failure rate  $\lambda = 1/10,000$ , the reliability of each battery after 100 hours is:

$$R(t) = e^{-\lambda t} = e^{-(1/10,000) \times 100} = e^{-0.01} \approx 0.9900$$

For the series configuration:

$$R_{\text{system}}(t) = 0.9900 \times 0.9900 = 0.9801$$

So, the **reliability of the dual battery system** with improper isolation is approximately **98.01%** over 100 flight hours, which is lower than the reliability of a single battery at 99.00%.

### Why the Reliability Is Lower:

- **Interdependence of Batteries:** Without proper isolation, one battery's failure or fault can affect the other, making the system more fragile and less reliable overall. Instead of having redundancy, you've effectively created a situation where both batteries can be knocked out by a single fault.
- **Increased Complexity:** The additional wiring and connections needed for a dual battery system can introduce more points of failure (loose connections, wiring shorts, etc.), further reducing system reliability.

### Conclusion:

In this example, **adding a second battery without proper isolation** results in reduced reliability. The system behaves like the batteries are in series, where the failure of either battery results in total system failure. This configuration results in a **reliability of 98.01%** over 100 hours—**worse than a single battery system**, which had a reliability of 99.00%.

The key takeaway is that redundancy can improve reliability, but only if the components are intelligently designed and isolated. Poor system design can negate the benefits of adding more components and even make the system more prone to failure.

#### VMC and IMC Answer

**VMC Answer:** You must remain below 700 feet MSL – the ceiling of the class G airspace where you can legally fly remaining clear of clouds. Above this, you enter the class E airspace and must remain 500 feet below the clouds.

**IMC Answer:** AIM 6-4-2 explains how to proceed with regard to route, altitude, and clearance limit. However, it also discusses the transponder code for such an emergency. Based on this, one possibility is to set your transponder to squawk 7600 and ident in order to alert ATC to the fact you have a radio problem. You might then consider resetting your transponder to your previous ATC-assigned transponder code.

#### **Source: AIM 6-4-2. Transponder Operation During Two-way Communications Failure**

- a. If an aircraft with a coded radar beacon transponder experiences a loss of two-way radio capability, the pilot should adjust the transponder to reply on Mode A/3, Code 7600.
- b. The pilot should understand that the aircraft may not be in an area of radar coverage.