

Tower Talk

John Livingston Chapter

March 2015

Upcoming Events:

March Events

- **3 - Tuesday, 7:00:**
Board Meeting, Airport Conference Room
- **7 - Saturday, 8:30:**
Breakfast, Cedar Falls Family Restaurant
- **17 - Tuesday, 7:00:**
Chapter Meeting, Airport Conference Room
- **21 - Saturday, 10:00:**
Ground School Seminar- Emergency Management Sponsored by FAASTeam
Walter Aviation
Independence, IA
www.faasafety.gov

Iowa DOT Calendar:
www.iowadot.gov/aviation

June Events

- **11-14:**
B-17 Aluminum Overcast
Tour Stop, Waterloo

Inside this Issue:

Chapter 227 to Host B-17 Aluminum Overcast	2
Back by Popular Demand...	3
Tech Notes - Prop Wash Too by Mike Lewis	4
B-17 Part of Huge DC Flyover	6
The Safety Checklist - Engine Failure at Night by Dave Hummel	7
Membership Dues are Duel	8
Chapter Classifieds	9
Leadership Contacts	10



Join us for an unforgettable experience aboard one of the few remaining airworthy B-17s in the world. Visit B17.org or call 800-359-6217 for more information and to reserve your flight.

EAA Members: \$409 **Non-Members: \$449**
(Includes a FREE 1-year EAA Membership)

Waterloo Regional Airport – June 12-14, 2015
Hosted by EAA Chapter 227

Chapter 227 to Host B-17 Aluminum Overcast June 11-14

**“We need
your help
to make
this event a
success!”**

The beautifully restored B-17G Flying Fortress *Aluminum Overcast* is one of only 12 Fortress's still flying. This aircraft is an icon of the Allied strategic bombing effort that helped turn the tide of battle in World War II. Unlike reading a history book, take a mission back in time and feel the might of this magnificent machine, just as those brave young men did more than 60 years ago.

Chapter 227 has been selected to host the *Aluminum Overcast* at the Waterloo Regional Airport June 11th - 14th. This year will bring even more excitement! 2015 marks the 70th Anniversary of the end of World War II in Europe and the Pacific.

The flight experience lasts one hour which includes a briefing, nearly a half hour flight, and debriefing. Once the aircraft is in the air, you will be allowed to move about freely to visit the various compartments like the nose, bomb bay, navigation/radio, cockpit and waist sections. Ground Tours will be available during the afternoon. Ground tours are free to all active military or veterans and discounted for classrooms. B-17 merchandise will be available for purchase on site and at the B-17 website. Proceeds from the tour help keep *Aluminum Overcast* flying and will assist the continuing restoration, maintenance and preservation efforts of EAA.

We ask for your help to make

the *Aluminum Overcast* visit a great success. Opportunities for sponsorship to cover the costs of the tour stop are available. Complimentary rides are available to sponsors whose donations meet the EAA eligibility requirements. Other sponsor benefits may include advertising before and during the event. To become a sponsor for the visit, go to bl7.org. If you know of a business or individual who would be interested in becoming a sponsor for this event, please contact Marty Hoel or Chris Roberts.

We need your help to make this event a success. Please let us know your ideas to help promote the event and boost attendance. We want to attract veterans and their families so they can bring real-life experiences and other special moments. Most importantly, we wish to recognize this deserving group. We are also looking for other groups that could draw attention to the B-17 to join the event at the airport. Please contact Marty Hoel or Chris Roberts if you have any ideas for groups or organizations that you think might be appropriate during the visit.

We ask your help spreading the word about this extraordinary visit and encourage your participation that day.



Marty Hoel, Tour Stop Chair

We will need volunteers to help with crowd control/ security, ground tours, and merchandise sales. If you would like to volunteer, please contact Marty Hoel or Gary Witcombe. Details about volunteer shifts will soon be available.

Thank you to Marty Hoel for volunteering to be the Tour Stop Chairman. If you have any questions about the visit or have ideas to share, please contact Marty Hoel, Tour Stop Chair at hoelm@mchsi.com, Chris Roberts, Marketing Chair at chrisr@cfu.net, or Gary Witcombe, Volunteer Chair at garywitcombe@wildblue.com. You can also learn more on the Chapter 227 website.

More information about booking flight experiences will be available on the EAA B-17 website.

**“We wish to
recognize
this deserving
group.”**

Back by popular demand...

B-17 Aluminum Overcast



Waterloo Regional Airport June 11-14, 2015 (save the dates!)

The B-17 Flying Fortress *Aluminum Overcast* visited ALO for one day last June. Even though it arrived late (due to weather) and left early (due to weather) and the merchandise truck never made it, the event was still such a huge success that we felt our community deserved more. *Aluminum Overcast* is more than just an airplane. It is a traveling museum, a connection to the past, and a living tribute to the "greatest generation" who built and served heroically on these magnificent warbirds. An event such as this projects a positive message about aviation and brings positive media coverage to the airport and chapter.

Friday, June 12 - Sunday, June 14

Mission flights at 10:00, 11:00, 12:00 & 1:00

Ground tours 2:00 - 5:00

Merchandise available on-site

We need your help to make this event a success! If you have any ideas to help promote the B-17 visit, to get people out to the airport while it is here, and/or would like to serve on the planning committee, please contact:

Marty Hoel at hoelm@mchsi.com or 319-231-1367

Tech Notes - Prop Wash Too

by Mike Lewis

“I know there are those that will argue with that point...”

“That translates to a kick in the seat of your pants...”

Last month I rambled on a bit about propellers; specifying geometry etc. The other hot topic for homebuilders is propeller materials, primarily wood verses aluminum. So let's look at the trade offs.

One of the significant positive factors for a wood prop is cost. Generally you can have a prop carver carve a wooden prop for significantly less money than you can buy an aluminum prop. If you are a fairly respectable wood worker you might even carve your own. Some of you might remember Dallas Aldredge. Dallas carved several props for his Taylor Monoplane. I think if you are buying a certified wood prop the cost difference may be significantly less though. Those guys at Sensenich probably get paid better than a hobby businessman, in addition to the FAA documentation etc. that is required.

Perhaps the next advantage of wood is significantly less weight. If however your homebuilt leans toward the tail heavy side, you couldn't find a better place to add weight!

There is another factor that you will hear debated. Van's aircraft says that a wood prop is smoother. I know there are those that will argue that point, but from

my own experience, having run both wood and aluminum props on the same airplane, I agree with Van. There is some logic for that too. Primarily, the wood is a better damper. The wood prop theoretically flexes more with each power stroke with some damping. Also since it is much lighter, the wood blades can accelerate faster on each power stroke (and decelerate faster on each compression stroke). In either case the prop is not truly running at a constant speed, but rather constantly accelerating and decelerating as it goes around. Since the aluminum prop is heavier, it more closely approaches a constant speed. Sounds good doesn't it. But if the prop doesn't accelerate as much when the engine fires, what does? The engine and airframe undergo that acceleration. That translates to a kick in the seat of your pants, i.e. vibration.

How about efficiency? The wood prop must have a thicker blade. That should result in poorer efficiency. I'm sure it does in most cases. On my RV-4 if I really cranked up my imagination, I would say that it flew slightly faster on the aluminum prop, but any difference was practi-

cally imperceptible.

Probably one important factor is safety. Wood props are virtually immune to fatigue damage. Aluminum props can be very sensitive to fatigue damage, and a thrown prop blade can ruin your whole day! With a certified aluminum prop and engine combination, the risk is virtually nil. The problem comes when the homebuilder takes a certified prop, and has it shortened and re-pitched. You now no longer have the prop that Sensenich, McCauley or Hartzell spent thousands of man hours and mega bucks on in testing to insure that normal operation would not be in a resonant frequency range. Personally I would never run a modified aluminum prop.

OK, so what are the down sides of wood props? I think the most obvious one is that they require more attention to detail in maintenance. Prop bolt torque is critical. If torqued too much, you crush the fibers. If too little bolt torque, the prop will slip on the driving flange of your engine – for a few minutes! After that you will have the opportunity to demonstrate your glider flying

Continued on page 5

Tech Notes from page 4

skills. It has been proven that a wooden prop is driven by friction with the crankshaft flange. If the friction is inadequate, the driving lugs on the engine flange will wallow out the holes in the prop hub, the prop bolts will break. The added maintenance burden comes because wood is somewhat dimensionally unstable with respect to humidity. I think most wood prop makers will tell you to re-torque your prop bolts at least twice a year. When you do that, it is recommended that you loosen the bolts and let the prop sit for a day or two before re-torquing.

There is another subject that has been bantered around regarding maximum horsepower for a wooden prop. I have heard it said that 150 hp is the maximum that can be used with a wooden prop. Sorry, I don't buy that. There have been many airplanes of higher horsepower that successfully ran wooden props. The PT-19 ran 200 hp on wooden props, and even many of the British Spitfires ran wooden bladed props. The more appropriate consideration is the hub design. For the standard Lycoming prop flange, I think that 150-160 hp neighborhood is about the limit. The O-320 Lycoming has six bolts on a 4 3/4 bolt

circle. There has been enough concern about this issue that there are prop shaft extension manufacturers that are making their extensions for some of the larger Lycomings with a larger bolt circle, and/or more bolts. If I were building again with an O-320 or O-360 and a wood prop, I would go with one of these extensions.

As an illustration of the hub design, consider the Franklin powered Stinson 108 series. Many (if not all) of these Stinsons had wooden props. The Franklin engines were 150 to 165 hp. As I noted earlier the Lycoming O-320 has a prop bolt pattern of six bolts on a 4 3/4 in bolt circle. The Franklins in the Stinsons had an eight bolt pattern on a 5 1/4 in bolt circle. Now also consider that the Franklin is a six cylinder instead of a four cylinder, so the torque impulse is considerably less than on the Lycs. That adds up to a considerably more conservatively designed hub situation on the Stinson that what many of our homebuilts have with a 160 hp Lycoming.

In addition to all this I have two personal acquaintances with 180 hp Lyc. Powered homebuilts and wood props and they both had props part company in the air.

There is another big negative to the wooden props. They do not tolerate operating in rain very well. It takes very little running at normal cruise rpm to do significant damage to a wood prop. The first time I got caught in rain with the Diamant it was quite light rain and I was in it for less than ten minutes, but I still had some significant repair to do when I got home. I soon wised up and realized if I throttled back to around 1800 rpm I would get by without significant damage. I really took care of the rain problem when I put an aluminum prop on the RV – never got caught in rain again!

In more recent times, there is another material option – composites. When it comes to composites I would have to stand with Sergeant Schultz – “I know nutzink!”

Obviously both aluminum and wood each have their own advantages and disadvantages. The one think I might suggest is that if you are pushing the limits of a budget, the wood prop can get you in the air sooner. You can do a lot of good flying behind a wooden prop and you can always change to aluminum at a later date.

“...I don't buy that.”

“...there is another material option...”

EAA's B-17 Part of Huge D.C. Flyover in May

Arsenal of Democracy event part of Spirit of '45 activities from eaa.org

“... 70th anniversary of the Victory in Europe...”

EAA's B-17 bomber *Aluminum Overcast* will be part of the biggest flyover in the nation's capital in decades when the “[Arsenal of Democracy](#)” event takes place in Washington, D.C., on May 8. This unprecedented event will commemorate the 70th anniversary of Victory in Europe (V-E) Day that marked the end of the World War II conflict in the European Theater.



Aluminum Overcast will participate in the large Arsenal of Democracy commemoration ceremonies set for Washington, D.C. in May. Photo credit: Jim Koepnick

Many members of the [EAA Warbirds of America](#) will also be participating in the flyover, which will feature 15 historically sequenced warbird formations representing the major battles of WWII, from the attack on Pearl Harbor to the end of the war. This flyover is also part of the year-long “Spirit of '45” festivities throughout the country to mark 70 years since the end of the war.

“We are honored to have our B-17 participate in this flyover, which will be seen by thousands of people in Washington that day and by millions around the world via television and online video,” said Sean Elliott, EAA's vice president of advocacy and safety, who is responsible for EAA's air operations. “Our B-17 makes annual tours to honor the people who sacrificed during the war and to present the nation's flying history. It is fitting that this aircraft also participates in this unprecedented event that has the same goal.”

“...which will feature 15 historically sequenced warbird formations...”

Many of the aircraft flying in this salute will also attend [EAA AirVenture Oshkosh 2015](#) on July 20-26, which is the nation's largest annual warbirds gathering. At Oshkosh, attendees will not only see the airplanes fly, but can get up-close to them and hear from the veterans and aircraft owners themselves during the popular Warbirds in Review program.

“We fully support all events that recognize these aircraft and, more importantly, the people of The Greatest Generation who built, flew, and maintained them,” said Bill Fischer, executive director of the Warbirds of America. “In addition, we encourage the owners of all warbirds aircraft to participate in the Spirit of '45 activities throughout the year, whether it's participating in their hometowns or here at Oshkosh.”

The [Spirit of '45 activities](#) will peak on August 15, when all warbird owners are encouraged to fly in honor of the end of all WWII hostilities. EAA and Warbirds of America will continue to release information on ways to be involved in the coming months and especially during EAA AirVenture Oshkosh 2015.

The Safety Checklist : Engine Failure at Night

by Dave Hummel

This month I want to talk about night operations, especially if engine failure occurs at night. Being in a plane crash at night several years ago, I thought this would be an important topic.

If engine failure occurs at night, what procedures should be followed? (FAA-H-8083-3)

If engine failure occurs at night, the same procedures apply as when dealing with the situation in the daytime:

- ⇒ Maintain positive control of the airplane - do not panic.
- ⇒ A normal glide should be established and maintained and the airplane turned toward the airport or away from congested areas.
- ⇒ A check should be made to determine the cause of engine failure, such as position of magnetos, fuel selectors, or primer.
- ⇒ If unsuccessful in restart procedures, select 7700 on the transponder and 121.5 on your radio. Declare an emergency, stating **WHO** you are, **WHERE** you are, and **WHAT** your intentions are.
- ⇒ In some cases, where radar is available (Approach Control, Center, etc.) you may obtain a quick vector to the nearest airport if within gliding distance.

If you have done your homework, you planned your route within gliding distance of lighted airports. If not, two (2) possibilities exist for emergency landing areas:

Lighted areas: interstate highways, roads, parking lots, etc. Advantages include being able to see where and what you are landing on and having a relatively improved surface to land upon. Disadvantages include all kinds of obstructions to deal with, such as wires, poles, traffic, etc.

Unlighted areas: dark areas with relatively few lights indicating an open area such as a field, lake, etc. Advantages include few or no obstructions to deal with. Disadvantages include not being able to see what you have selected to land on until illuminated by your landing light and the higher possibility that you where have selected is unimproved, rough terrain, etc.

As nearly as possible:

- ⇒ Land into the wind with flaps at minimum approach speed.
- ⇒ Complete a pre-landing checklist.
- ⇒ Immediately before touchdown, secure all systems (electrical, fuel), and
- ⇒ Open the doors.

Whatever your decision, maintain positive control of the aircraft all the way down. A controlled crash will always be more survivable than an uncontrolled crash.

**“Maintain
positive
control
of the
airplane...”**

**“A controlled
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2015 Membership Dues are Due!

DON'T FORGET TO RENEW YOUR CHAPTER 227 MEMBERSHIP IF YOU HAVEN'T ALREADY DONE SO.

ACCORDING TO THE BYLAWS, ANYONE WHO HASN'T PAID DUES BY MARCH 31ST SHALL FORFEIT MEMBERSHIP PRIVILEGES.

IF YOU HAVEN'T ALREADY PAID YOUR DUES, PLEASE MAKE YOUR CHECK TO:

EAA CHAPTER 227

SEND/GIVE YOUR DUES TO:

**DAVE HUMMEL
621 EAGLE RIDGE RD
CEDAR FALLS IA 50613**

AND INCLUDE ANY UPDATES OR (BETTER YET) FILL OUT A NEW MEMBERSHIP FORM!

[Click here for a downloadable/printable membership application](#)

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EAA227.COM

OR ASK ANY CHAPTER MEMBER

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with remote switch
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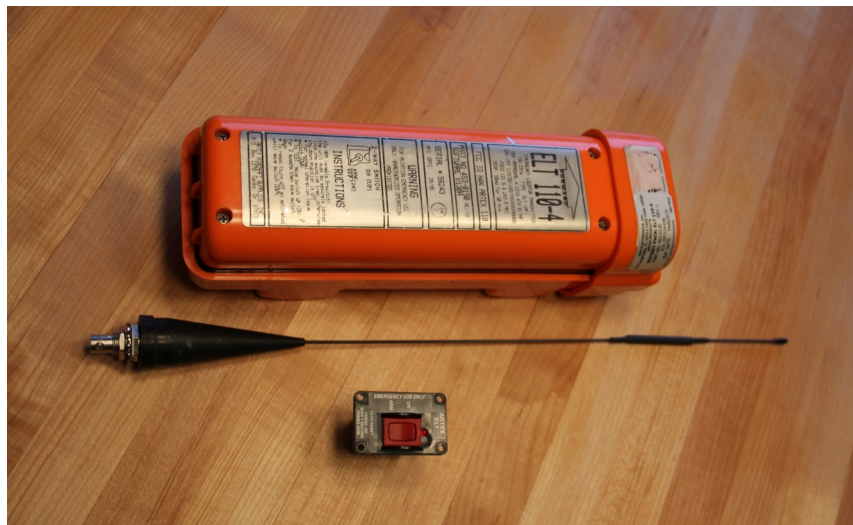
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Contact

Dave Roberts

drdave@cfu.net or

319-277-8128



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looking to buy,

please send your Classified Ad(s) to
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And be sure to let me know when it sells!

NEWSLETTER INFORMATION

If you have an article, picture, or anything else you would like to share in a future newsletter, please contact:
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Visit our website:
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Do you have anything aviation related that you would like to sell? Please let us know so we can include items in our new
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Experimental Aircraft Association Chapter 227 publishes Tower Talk for the use education and enjoyment of Chapter members and others to whom it is provided. Chapter and national events, news of members, member projects, activities and general aviation items of interest to the membership are included. Editorial content is the opinion of the contributor and does not necessarily reflect the position of Chapter 227 or EAA and no claim is made for technical accuracy of material presented. Meetings are normally held the third Tuesday of each month in the Airport Conference Room. Please contact any officer for information about Chapter activities.

