



The Transmitter

Suburban RC Barnstormers - P.O. Box 524, Bloomingdale, IL 60108

AMA CHAPTER 640

April 2021

<http://www.suburbanrcbarnstormers.com>

Coming in April and May

April 5th, Monday, Member Meeting, ZOOM, 6:45pm login, 7:00pm meeting start.

April 19th, Monday, Board Meeting, ZOOM, 6:45pm login, 7:00pm meeting start.

May 3rd, Monday, Member Meeting, ZOOM, 6:45pm login, 7:00pm meeting start.

May 17th, Monday, Board Meeting, ZOOM, 6:45pm login, 7:00pm meeting start.

Passing of Ron Hilger

It is with great sorrow that we announce the passing of Ron Hilger, one of the founding members and cornerstones of our club for decades. Ron was a master craftsman and frequent winner at building events in which he participated. Even now his models are used as examples of construction techniques for those club

members who are lucky enough to have picked one up at a swap meet or been given one by this generous man.

Ron was always open and a pleasure to talk. He was always willing to share his experience and ideas with anyone that asked. He will be greatly missed! A service was held for Ron on March 20th.

Need a Hand? Here is an Idea!

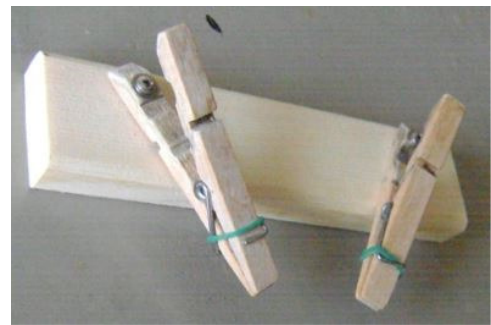
By Kurt Krempetz

Attached is a picture of a simple yet effective soldering jig that anyone can build. As I get older my hands shake and my eyesight is fading so I need all the help I can get!

Two pieces being soldered MUST NOT MOVE or a cold solder joint could result causing anything from increased resistance to a joint that completely fails. I saw that happen to another flyer just recently and hope it never happens to me!

Assemble the components as shown in the picture.

Please Note: I have reversed the clothes pins so the ends normally used to pinch the pin open are used to hold the wires in place.



“Zoom” Meeting for April

Topic: SRCB Membership Meeting
Time: Apr 5, 2021 06:45 PM Central Time (US and Canada)

Join Zoom Meeting
<https://us02web.zoom.us/j/86931560809?pwd=dERrRmFTWlJ1NnNBbStab0tYZTNTQT09>

Meeting ID: 869 3156 0809
Passcode: 572933
Dial by your location
+1 312 626 6799 US (Chicago)
Meeting ID: 869 3156 0809
Passcode: 572933

Meeting Notes for Membership Meeting

March 1, 2021

Membership Meeting was called to order on March 1, 2021 at 7:05 PM.

Attendance: There were 18 people connected to the online meeting held through the Zoom application hosted by Scott Taylor.

OFFICER REPORTS

President: Hector Rivera thanked everyone that was in attendance. He confirmed that we will be meeting by Zoom for a while still. Hector wanted everyone to get started on the Whipper Wiz for the Postal Fun Fly. The next meeting will be held on April 5th and the next board meeting will be March 15th.

Vice President: Paul Kramer updated everyone on the LOA. He was going to go to the Fox Valley Swap meet but the event was cancelled. Paul is going to keep in touch with his contacts as they may be planning a swap meet later in the year and it would be helpful to know how they handled the COVID-19 issue.

Secretary: Scott Taylor was busy with a project and did not have an update.

Treasurer: Larry Amiot did not have any updates.

COMMITTEES

Fun Fly Co-Chairman: Les Arnold wishes we all could meet at the field as he has some good ideas. Ernie B. stated that only 4 pilots have registered for the Postal Fun Fly. Everyone was encouraged to get the plans and build the plane and start flying it. The best of three flights should be recorded.

NEW - OLD BUSINESS

Hector is working on taking pictures of the Club items that he has so members can see what is available and purchase if interested.

ENTERTAINMENT

Larry showed a video of a pilot flying an airplane in a gymnasium, very impressive and interesting.

Paul showed some pictures of his Spitfire airplane that he is scratch building. Paul gave some tips on how he did some of the work.

DOOR PRIZES

Our door prize winner for this meeting was **Douglas Penney**. The "turkey" went to **Brian Doughty**.

Letter of Agreement between DuPage Control Tower and Suburban RC Barnstormers

Paul Kramer provided a summary of some of the agreements in our LOA that members should be aware of. It is our club's responsibility to make sure members flying at our field are aware of these points.

1. The LOA establishes responsibilities, limitations and procedures for operating at Pratts Wayne Woods and at Kress Creek Farms flying fields.
2. FAA may terminate or suspend flying if safety is compromised or agreement is violated.
3. Flying site locations are identified.
4. The LOA includes definitions of key terms.
5. Our club is solely responsible for its members. Club must make all members familiar with procedures; distribute this LOA and operate per laws (listed).
6. Club agrees to:
 - a. Maintain open communications and operate in good faith.
 - b. Recognize ATC authority.
 - c. Be responsible for members and guests operating in accordance with AMA docs 105 & 540-D.
 - d. Register with FAA and properly display your registration number.
 - e. Provide and maintain primary contacts and phone numbers. Authorized representative will sign this LOA.
6. Procedures are identified such as:
 - a. Hours of operation are from sunrise to sunset
 - b. Pilots must remain within 1000 feet of center of field and below 400 feet. Follow all federal, state, and local regulations.
 - c. No night flying
 - d. Priority of this LOA and local regulations.
 - e. Club members are exempt from prior flight notification to DuPage ATC if these procedures are followed. Club fields are considered active sunrise to sunset.
 - f. Club members must immediately notify DuPage ATC (630-587-7823) if control is lost and UAS is heading toward DuPage ATC that "an out of control UAS is headed their way".
7. This Agreement is effective Sept 1, 2021 until further notice.

Balsa Wood Selecting the Right Piece for the Job

By K. Krempetz

Balsa wood is a very interesting material and is typically used for construction of model airplanes. Balsa is technically a hard wood, because of the shape of the leaves on balsa trees. It is not the lightest wood, but it is the lightest wood which has some strength. Some sheets of balsa have a stiffness to weight ratio that is better than any man-made material that I am aware of. You can find balsa whose stiffness to weight ratio is better than Carbon fiber! In general balsa wood is not considered to be a great material to use for the design of most things because its properties vary greatly. It's impossible to find another sheet that is exactly the same as the one you just used. Since the properties vary greatly, if you just blindly purchase balsa wood you might not optimize what you're looking for. There are 3 important parameters which you can sometimes specify to the vendor when purchasing balsa wood, or you can just go to your local hobby shop and measure/feel for yourself.

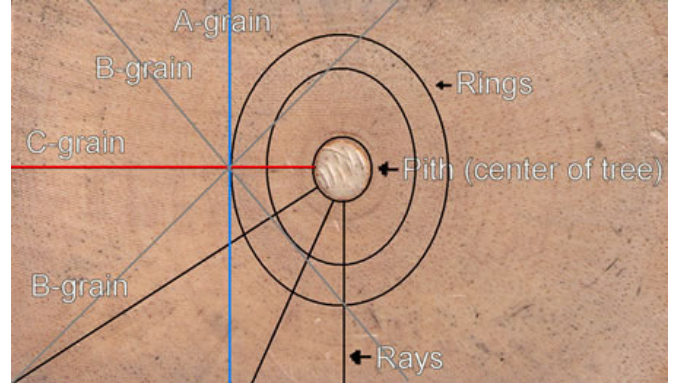
It should be mentioned that the balsa wood properties requirements vary greatly depending on the type of model you are building. A high-powered RC model that has a built up structure will require strong wood and it does need to be light wood, where an RC glider will need lighter balsa that has some strength. Indoor free flight gliders and microfilm free flight models need extremely light and fairly stiff wood. Individuals that build these indoor models spend hours and sometimes even days measuring and picking out the correct wood for their model.

Of these 3 important parameters, the easiest parameter to measure is the density of the balsa wood, usually referred to as, so many "pound" wood, for example 8 pound wood. This is not technically correct and is just a short way of saying the density of this wood is 8 pounds per cubic foot or 8 lbs/ft³. Most of the balsa you find in a hobby shop is about 10-12 pound wood, but there is the occasionally "find" of some 4 to 6 lb wood. Super light wood is below 4 lbs and is very rare. If you have a scale you can measure the weight of the sheet of wood in grams, and measure the thickness, width and length and use the following formula to get the density of the balsa wood in lb/ft³.

$$3.815 * \text{Mass(g)} / (\text{Thickness(in)} * \text{Width(in)} * \text{Length(in)}) = \text{Density(lb/ft}^3\text{)}$$

So here is an example: A 30g sheet which is 1/8" thick and 3" wide by 36" long, the density is: $3.815 * 30 / (.125 * 3 * 36) = 8.4 \text{ lb/ft}^3$ wood or 8.4 pound wood.

The second parameter that is typically specified is the wood grain. There are typically 3 different wood grains referenced or named. They are referred as A grain, B grain, and C grain. The wood grain is defined by where sheet was cut out from the log or the tree. Below is a cross section view of a log of balsa and shows where A, B and C grain wood comes from.



The perfect A grain sheet is cut right along the blue line, the perfect C sheet is cut on the red line. If you are making sheets of balsa from a log and want to get a lot of perfect A, B or C grain then there is a lot of waste. For example to get a C grain sheet you must cut the sheet out radially from the center of the log. However, some combination of AB or BC grains can be made with little waste or effort. Since manufacturer's that cut sheets from logs wants to sell the wood as cheap as possible, most of the balsa wood that is available is AB or BC.

The grain of the wood changes the sheet's properties. "A" grain balsa is flexible or weak in the width dimension of the sheet, and C grain balsa is strong in the width dimension of the sheet.

The third parameter is stiffness or measuring the young's modulus of the wood. This can be done a bending test or buckling test. This is a very important parameter but very hard to measure and

get a quantified number. Describing these measuring methods is for another write up.

Other less critical parameters are the sheet's density uniformity, the wood's grain uniformity, and the wood grain straightness. These properties can be examined by placing the wood behind an extremely bright light.

Finally, you should look for wind checks. When Balsa trees are growing, they are subject to storms and wind bending the tree. This bending if extreme can compress the grain in some sections, causing internal damage to the tree and will make the sheet weak or crack in spots. To identify wind-checked sheets hold it up to a bright light. Wind checks show up as a spider web.

So, when I want to balsa purchase, I decide what balsa properties I am interested in having and that depends on the type of model I am building and where I am planning to use that sheet of wood. I decide on the thickness, width and length of the sheet, and then think about what weight and strength is needed. Next, I think about what directions I desire some strength. Here are some examples: if I am planning to make wing ribs out of a sheet, C grain would be my choice. If I am planning to use the wood to sheet over the ribs from the leading lead to the high point of the airfoil, A grain or AB grain would be my choice. If I am planning to use the balsa to sheet from the high point to the trailing edge, BC grain would be my choice.

Once I decided the parameters I need, if I am ordering online from a vendor, I specify, density and grain. Not all balsa wood vendors will allow you to do this, but I typically only purchase from vendors that do. Some vendors will allow you to go in their stockpile and pick out what you want. You can also go to the local hobby shops where you can pick out your choice of sheets, unfortunately hobby shops stock is typically limited.

When I go to the vendor or hobby shop to purchase balsa, I try to remember to bring a small scale. I measure the wood and calculate its density. If I forget to bring a scale or I am just too lazy to bring one, then I try to feel the weight of the wood. Next, I look at the grain of the wood, C grain has a very glassy checker look, BC is less. B, AB and A you can typically see the longitudinal grain lines very well. See below:



“C” Grain wood

“A” grain wood

You can also look at the end of the sheet to see if you can see the tree's growth rings. Once I picked out a few pieces that have about the right density and grain I am looking for, I hold them by one end and look at how much they droop down, the less droop the stronger the sheet.

For models where I am looking for the absolute best performance I purchase many sheets using the method I described above, then once in the workshop I do the detailed density calculation, the grain inspection and young's modulus measurement, to make my final selection of which sheet and sometimes even which section of the sheet I am going to use.

I hope this write up has provide you some information about balsa, happy building!!!!

Trimming Your Whipper Wiz

Ernie Blenkle says he has received a lot of questions about trimming the Whipper Wiz. To provide some guidance and what to expect from you model, he has provided a link to some great trimming information. Check it out, and get you plane flying!

<https://1drv.ms/x/s!AtVmRu9UCxQggmXhT5RQO1GNmQl5?e=iJ5sqA>

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This newsletter is published monthly by the Suburban RC Barnstormers, Inc.

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Articles must be received by the 3th Saturday of the month to be included in the following month's newsletter.

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