NEWS AT THE TOP

AUGUST 2024

From the Editor

We had another great turn out at the August meeting at Hardyston Field. Members enjoyed the Pizza and some got a few flights in despite the fact that the grass was high and not mowed. We had a couple of guests at the meeting that left prior to the meeting.

Our next meeting is at Andover borough Senior Center at 7:30pm. Check the meeting schedule for the date and the dates for the rest of the year. I hope to have coffee and some sot of cake as I serve at just about all of the indoor meetings.

Pat asked again for members to bring in some sort of project for a show and tell or maybe a few suggestions as to what you want to see at a meeting.

As the flying season comes to an end for the most of us, many will purchase an ARF for the next season. If the ARF is not made of foam, there is a nice article I copied from the Internet that goes over the best practices. In some cases, the manual you get with your new plane goes over these techniques, but, one of my last planes did not have any instructions at all. So, check it out.

That article and some others can be found at the following link:

Flight Basics Archives - Fly RC Magazine

Check the other articles out.

See you all at the next meeting.

Storing LiPo Batteries

Back in the day with NiMh or NiCd batteries you fully charged them then maybe put them on a charger with a trickle charge to store them for the next use. Also, you cycled them by discharging them then charging them to determine their capacity. Well, LiPo batteries are somewhat different.

Storage Guidelines

Store LiPo batteries at a voltage of around 3.85V per cell. This storage voltage helps prolong the lifespan of the battery and prevents degradation. Just about all chargers have a mode to put batteries into storage. Keep batteries in a fireproof container to minimize risk.

To maintain battery health during long periods of inactivity, cycle your LiPo batteries once a year. Cycling involves fully charging and then discharging the battery to its storage voltage. This practice helps prevent the buildup of internal resistance and keeps the battery cells balanced and functioning optimally.

By incorporating cycling into your yearly maintenance routine, you can ensure that your LiPo batteries remain in good condition, ready for use when needed.

August 2024 Meeting Minutes

The meeting was called to order at Hardyston Field at 7:00pm. There were 15 members present including 2 club officers. Pat could not make the meeting. There were also 4 guests present. Members and guests enjoyed pizza and soda prior to the meeting. A few of the members flew before and after the meeting. The minutes from the previous meeting were read and approved with no corrections.

Treasurers Report: The July beginning balance was $12,172.47. After debits and credits, the result is an ending balance of $11,929.92

Field Reports

Reynolds field is in great shape and the road is holding up fine.
Hardyston field is not in good shape it was not mowed prior to the meeting. Members present complained about mowing in general

Safety Report – Please don't fly over the pit area. Don't take off if someone is on the field. Don't fly if the field is being mowed.

Membership Report – Bob Grodeska passed away on August 8, 2024. Neal Fox passed on July 29, 2024. There was a moment of silence for both of them

Unfinished Business

Stem program proposed by Frank

New Business

Next meeting is at the Andover Senior Center at 7:30 on September 19

At the September meeting we will be taking nominations for Club officers

Bring in items of interest for a show and tell.

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Meeting Schedule for 2024

January 18th	Andover Borough Senior Center
February	No Meeting
March	No Meeting
April 18th	Andover Borough Senior Center
May 16th	Reynolds
June 20th	Hardyston
July 18th	Reynolds
August 15th	Hardyston
September 19th	Andover Borough Senior Center
October 17th	Andover Borough Senior Center
November 21st	Andover Borough Senior Center
December	No Meeting

The next meeting will be on September 19th at 7:30 pm at the Andover Borough Senior Center.

Treasurer's Report
August 2024

The July beginning balance was $12,172.47. There were no collections for the month. Expenses for the month totaled $243.45 represented by mowing Reynolds Field $150, and Pizza and soda at the last meeting for $93.45.

The result is an ending balance of $11,929.92

Reserves are as follows:

Encumbered for 2024 Operations	$3,082
General Reserve	3,847
Reynolds Field Reserve	3,000
Business Reserve	2,000
Total	$11,929

Assembling Your New ARF

Fly RC Staff July 25, 2011 **Flight Basics**

Although modern ARF aircraft are remarkably complete right out of the box, there are still many steps that require some workmanship to complete the model. This month's article will cover some of the different techniques to finish the airframe assembly, allowing you to match your efforts to the kit's high quality.

RE-SHRINKING COVERING

I recommend a covering iron for smoothing the wrinkles in your first few ARFs as it is much easier to control the heat.

Your model was almost assuredly built and packaged in a different temperature or humidity than where you live. It was also likely loaded on a ship for a journey across an ocean before reaching your door. As wood can be significantly affected by differences in climate, the model will likely change as it normalizes to your locale. The most noticeable effect is usually a slackening of the covering material in the form of wrinkles or bubbles. If you don't own a hobby iron and protective fabric sock, you'll want to pick both up the next time you are at your local hobby shop.

Start at a relatively low temperature on the iron, slowly testing the wrinkles for activation of the covering. Find the minimum temperature that will shrink the covering and place a mark on the dial for future reference. You'll want to do this testing in open areas, avoiding seams. The most common mistake is using too much heat on the seams between two colors. This can cause the edge to release and create a wavy line or even a gap between the two. Work slowly, and avoid the seams if at all possible.

A heat gun can shrink the covering much faster than a covering iron, but you also run the risk of melting through your covering or having seams open up.

I also use a heat gun, but its proper use takes some practice and skill, so approach heat guns with extreme care. You will want to practice on scrap material with a heat gun, as it is very unforgiving. Once you're comfortable with it, though, a heat gun is much quicker than an iron. The best technique I've found is to move the gun relatively quickly holding it at an angle to the part so you can instantly see the shrinkage. Varying distance and speed will allow you to adjust the heat that reaches the surface almost instantly. The heat gun is even less forgiving around seams, so avoid them completely. Placing wet paper towels over the seams can protect them from excess heat that might release the edges. I've also used pieces of cardboard as masks when using a heat gun.

COVERING RELIEFS

A soldering iron makes a great tool for opening up cutouts for installing servos.

Your model probably arrived with the fuselage, wings and tail covered, but with no reliefs to mount the tail, servos and wings. You'll probably need to remove the covering over those areas and there are several techniques that work great. The first step is to fully secure the covering with a sealing iron around the areas that you intend to remove. If you skip this step,

it is likely that the covering will release at the edges. Second, any time you're cutting covering, be sure to use a sharp blade and replace it frequently. The covering material will tear if your blade is less than sharp.

My favorite technique, once the edges of the area to be relieved are sealed, is to use a clean soldering iron to cut the covering away. This technique seals the new edge, eliminating the need to come back later and tack down any remnant flaps of covering. This works well for larger servo openings, cabin window areas, wing tube holes and smaller stab and fin slots.

A soldering iron also makes a great tool for removing the covering for a cooling air exit.

For the servo openings, cut an X diagonally from corner to corner and simply push the servo into the opening. The edges will fold into the servo pocket and will be held in place by the servo. A soldering iron or a sharp blade can also be used to remove the covering over the area if you prefer. Be sure to add cooling holes if your model is electric powered. I generally cut out several small holes on the bottom of the fuselage to help promote good airflow through the fuselage.

FLIGHT CONTROL HINGING

CA hinges are the most common ARF hinge because they work great and are easy to install. Your kit may include a sheet of CA hinge material to cut hinges from, they may be pre-cut and they can even be preinstalled in the control surface. CA hinges are a two-part hinge with a flexible plastic inner portion that is adhered to an external fabric coating. The fabric coating is very porous and absorbs thin CA readily. Thus, you should only use thin CA with this style hinge. Thin CA sets almost instantly, so you have basically zero working time for alignment. The surfaces to be hinged need to be completely aligned before you add glue to the joint. Also, as thin CA runs like water, I recommend adding a small extender tip to your glue bottle to better control the flow.

Two T-pins center a CA hinge in place during installing.

Start by confirming that the precut slots in each flying surface and its matching flight control are deep enough to accept at least half of the CA hinge's thickness. Each hinge needs to be centered about the hinge line with roughly half of its width in each surface. The easiest way to center the hinge is to insert two Tpins centered on the hinge line and spaced apart from each other. With the hinge installed in the wing for instance, the T-pins rest on the hinge line keeping the hinge from being pushed farther into the wing when you install the aileron. The T-pins also help to set a reasonable hinge gap by not allowing the wing and aileron to fully touch.

Once you have the control and fixed surface mated, remove the pins, flex the surface to the maximum desire deflection, and apply thin CA directly to the hinge as recommended.

With the two surfaces fitted together with CA hinges and T-pins, check to ensure that the aileron is set correctly at its tip and root. The wing graphics can also be a good tool to help set this spacing. You'll also want to ensure that you have a reasonable gap between the wing and aileron. I find 1/16-inch works best. This should allow full bevel-to-bevel control throws. Once you're absolutely sure that the flight control is aligned to your liking, remove the T-pins in one hinge and place two small drops of thin CA on the hinge. The CA will wick into the hinge

and adhere almost instantly. Working methodically, remove the T-pins, and glue each hinge in sequence, ensuring that the hinge gap and alignment stay constant. With one side of the hinges glued, flex the hinge several times and add a few small drops of thin CA to the opposite side of the hinge. Again, more glue is not better. Thin CA can be a real mess if it runs onto the covering or your hands, so be careful!

SQUARING THE TAIL

Before you can go out and fly our new creation, you must ensure that the final assembly is straight. Each pair of dimensions should be equal.

The hardest step in any ARF assembly is generally installing the horizontal stabilizer. It needs to be slotted into the fuselage in the correct order with the elevator and squared in several axes before gluing. Do this wrong and the stab will be misaligned, which can alter the flying performance of the model, and will definitely mar its appearance. The technique that I use is to first level the stabilizer with the wing tube or complete wing.

I rarely find any stabilizer perfectly level with the wing tube, and often find the stab slots slightly loose, requiring a small shim to tighten it up for best adhesion. In the case of a loose slot, adding a 1/64 or 1/32 sheet balsa shim to the opening will tighten it up nicely. To level the stabilizer, you'll need to first compare it to the wing tube or wings viewed from in front of or behind the model. It is usually very obvious if the stab is askew when viewed from this angle. You'll need to shim the top of one side of the stab and the bottom of the other to adjust for level. In the case of a perfect fitting stab slot, you may need to sand the material opposite the shim to allow the stab to level fully. For this step, a Popsicle stick with sandpaper glued to one side makes a nice sanding tool. My favorite shim material is cardstock, as it is easy to layer, very thin, and readily adheres to wood and covering materials.

With the stabilizer shimmed level and centered in its slot in the fuselage, you now need to square it with the wing when viewed from above. I prefer to eyeball it initially as I generally get the alignment very close using this method. Once close by eye, I use four T-pins placed into the stabilizer against the fuselage at the leading and trailing edges to temporarily lock it in place. This ensures that if I accidently bump something I don't have to start the process over.

As a final confirmation, I measure from the aileron hinge line at the tip of one wing to a point on the stab, typically the elevator hinge line or an obvious point on the tip of the stabilizer. Compare with the other side, making small adjustments until I'm happy mathematically and visually with the alignment. A secondary measurement technique is to use string attached to a single spot on the firewall and measured aft to the tips/hinge line of each stab. I find that by combining both physical measurement and visual observation that I'm able to align the components extremely close to perfect every time.

I prefer to wick thin CA for the final gluing instead of epoxy, but if you choose slow setting glue, you'll need to adequately mark the location on the stab itself for reassembly once the glue is applied. As a side note, if you are required to remove any covering, use a soldering iron to cut the covering instead of a hobby blade. It is very easy to score and weaken the wood with a blade.

CONCLUSION

These are just a few of the many steps required to complete a typical ARF, but they are definitely the more critical steps that can noticeably affect the final outcome. Be sure to take your time and you'll be rewarded with a high quality, straight model that flies as designed. We will revisit this topic in the near future, touching on a more points worthy of your attention as you assemble your new model. Until next time, remember that learning is fun and fun is what this great hobby is all about!

ZEEE Batteries

Zeee RC Lipo Battery official store
zeeebattery.com

I have had a lot of luck with Zeee batteries. They are better than any I bought so far. Check them out by clicking the line in the illustration above.