

How to Get the Best from your A.R.F.

By Les Marriner

How lucky are we? We can front up to the aero-modelling shop, view a vast product range, make our purchase and by the following weekend we can fly our latest pride and joy. We now live in an ARF society, and why not. If you take a minute to think about the choices, affordability and quality of the product, there is little wonder why the aero-modelling world has welcomed the ARF with open arms. Continual improvements in quality has also made buying sight unseen either online or a mail order a task that can be undertaken with confidence. I intend to cover several subjects in this article that will assist you get the best out of your ARF, and ensure that it is around and giving you enjoyment for many years to come. What can we do to increase the longevity of our models?

AIRFRAME COVERING

The first thing that will detract from any model, is allowing fuel/oil to get under the covering and proceed to destroy the airframe. In this case, prevention is far better than a cure that will only have minimal success after the damage is done. The majority of today's ARFs are covered with either polyester or plastic film covering that can be tightened or sealed with a modelling iron. The first thing we need to understand is, that most ARFs are manufactured in Asia where the weather conditions are very different to ours. Hence, when the

This model logged lots of flights as a club trainer. Eventually oil and moisture works it's way under the edges of the covering, into the small gaps so a touch of clear enamel when brand new pays off in the long run. The model is still serviceable, but it's no longer pretty.



model is covered in the factory it will be tightened or shrunk to fit the airframe in the local conditions. It then gets packed into a container and has a boat trip to Australia and during this trip, it will be subjected to extremes of temperature. In most cases the model arrives to the customer in pretty good condition, however this is the time that the modeller needs to be mindful, and the first thing to do is acclimatize it to our local condition.

This is best done before any of the assembly commences and especially before any decals are added or applied to the covering. To establish what heat settings are safe to apply to the model, I obtain a sample of the covering from the airframe and try it out on a scrap of balsa or ply wood. The sample covering material can usually be obtained from areas such as servo cutouts or where the tailplane covering is removed before attaching it to the fuselage.

I recommend that the unassembled airframe be placed in the sun for an hour or so, ensuring that all surfaces are exposed to the direct sunlight. If any parts have gone saggy or have slackened off, this can be addressed with careful use of the hobby iron, set at the previously obtained safe setting. If you follow this procedure, you will

avoid any disappointment at the first public viewing of your latest pride and joy at your club field.

FUEL SEEPAGE

Leading and trailing edges of the main wing, tailplane and engine bays are the most vulnerable areas as they are subjected to strong air pressures and fuel residue. The leading and trailing edge can be very effectively protected by overlapping the covering joint with a strip of clear magic tape or sticky tape, purchased from the Newsagent or stationery store. The tailplane leading edge can also get the same treatment. Engine bays can be sealed by painting with a clear lacquer. All the wooden exposed areas get a coating that extends for at least 5mm onto the surrounding covering.

ENGINE POSITIONING

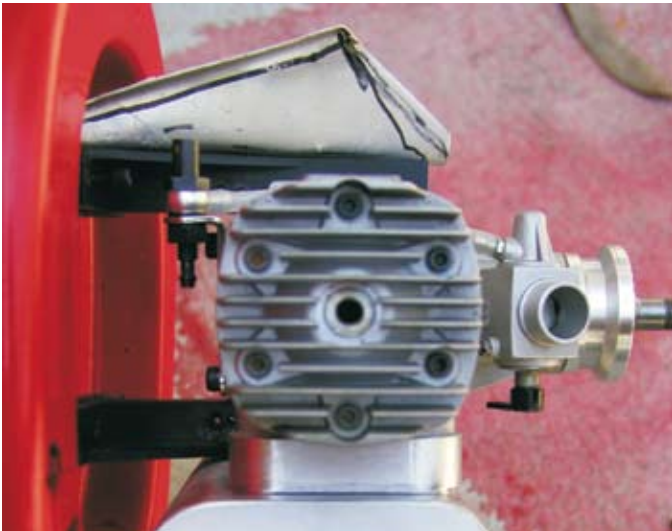
With most trainer type aircraft, the engine placement is predetermined by the factory and is usually mounted in the vertical position. However, with many of the scale models, scale aerobatic and pattern aircraft, the decision of how and where to mount the engine is left up to the modeller. I have a dislike for inverted engines, as they can be difficult to start by hand because the glo-plug gets soaked with fuel and oil, as



Some clear tape or better still, clear lacquer or enamel on the edges of this two piece wing.

The covering is often joined by overlapping at the trailing edge of the tail plane fin and control surfaces.

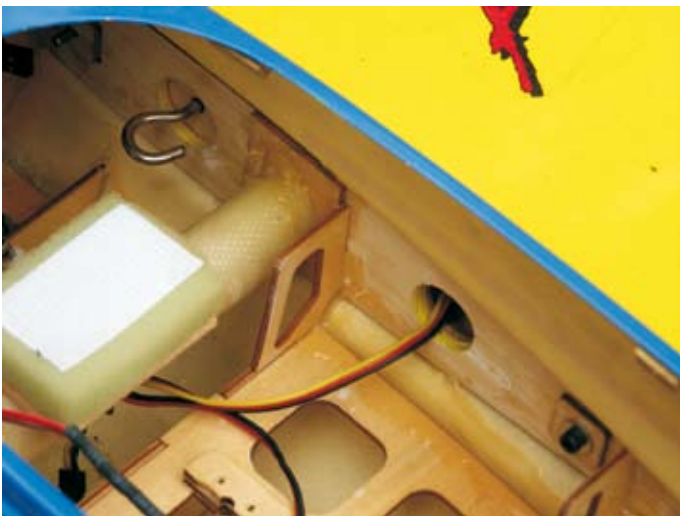




Moving the engine forward or back can make quite a difference to the Cof G.

any fuel remnants will gravitate to the lowest point. Another disadvantage of inverted engines is that the exhaust residue usually ends up over the port side wing.

Engines mounted in the 45 degrees down position have a number of advantages; firstly it is the ideal position to line up the spray bar in the carburettor with the centre of the fuel tank and secondly, it helps balance the model laterally as the muffler is sitting centrally underneath the engine bay and not hanging out



Plenty of glue in the vital areas on this model but the subject underneath could do with some extra. The easiest thing is to run thin or medium into the joints.



to one side. The third advantage is very important for getting the exhaust residue away from the airframe via the use of a rubber extension tube. My first review model was a .46 powered Mustang, which was set up this way by the factory. To my delight after the test flight, there was no fuel residue at all on the model. When I looked at the set up, I realized that the position of the engine and muffler extension had placed the exhaust exit outside the prop wash.

The second review model to receive this type of engine set up was a 61 powered Diabolo, which also stays free from engine residue for the same reason. If the fuel doesn't get on the airframe in the first place, you have conquered the biggest single factor that can effect the lifetime of you model.

MODEL BALANCING

I am a great believer in the saying "BRICKS DON'T FLY". Lower overall weight = lower wing loading = the model is able to be flown at a slower speed before stalling = the model can be landed slower, with complete safety = less strain on the landing gear and mounts = you get to fly the model for a greater period of time before it passes its use by date. If adding excess weight to either end of the airframe is required to obtain the correct Centre of Gravity, then you are not getting the best performance out of your model. With a bit of thought into the placement of the radio gear and engine positioning on the beam mount the amount of weight can be reduced significantly.

Many designs incorporate both two stroke and four stroke engines and it may not be possible to achieve this without adding weight although in the case of a four stroke, in many cases moving the battery pack behind the servos is all that needs doing.

GLUE JOINTS

Today's laser cutting is very accurate and the fits of components is exceptional. Laser cutting does leave a glazed finish which does making harder for glue to penetrate right into the wood. I do take the time to run cyano into the glue joints around the high stress areas such as the fire-wall and undercarriage. Airframe failures in flight are the issue here but this little extra work can pay dividends when the model tips over after running off the end of the strip or cartwheels after a poor landing.

BALANCING THE PROPELLER

I first realized what damage an out of balance propeller can cause was when I started flying quick electric models. I had a speed 400 can motor in a very slippery model that obviously had an out of balance propeller. The vibrations were transferred to the airframe, which ultimately failed by shedding it's tailplane in flight, something that I am not proud of. I built another model and this time ran a more powerful brushless motor on metal cells. A fellow club mate said to me, "You are not going to fly that until we balance the prop are you?" Because the engine was pulling about 18,000 rpm static on a 5.5 X 4.5 prop it certainly did not sound good.

After balancing on his magnetic apparatus, the motor ran smoothly, at higher revs and absolutely no vibration transferred to the airframe. Every propeller that passes through my hanger doors gets the "Full Monty" balancing treatment. (I remain fully clothed during the task) RCM News Scale Forum columnist Frank Curzon, makes mention of prop balancing in issue number 77 on page 98. It is well worth a read.

KEEPING YOUR WHEEL PANTS HEALTHY

Wheel pants certainly add to the overall good looks of a sport or scale model aircraft. Keeping them looking good can be a bit of a challenge, as they usually succumb to rough grass airfields and

the occasional rabbit hole. I use a method that adds greatly to the support of the structure without detracting from the scale appearance.

The majority of ARFs use 4mm bolts as axles, however I prefer to substitute the 4mm bolts with a pair of Du-Bro spring steel axle shafts, 5/32" or 3/16" in diameter and 2 inches in length. The axle can be cut to length so that it protrudes through the outer side of the wheel pant, approximately 4mm. An 8mm length of silicone fuel tubing is slipped over the outer end of the axle, and the outside hole of the wheel pant is drilled out to match the fitted diameter of the fuel tubing. The use of the solid axle gives tremendous support to the outer side of the pant and the fuel tubing helps absorb shock and is rattle free.

IS IT WORTH IT.

For the many modeller who only go the field occasionally and have a couple of flights when the weather is calm and dry these enhancements may never be needed. There is a percentage of people who fly one model for a while then change it so the airframe does not accumulate much time and niggling things like the edges

Drilling the spat oversize then installing it on silicon fuel tubing provides extra shock protection.



lifting don't appear. Modellers who have been around for a while and have built from kits or from plans would probably automatically spend the little bit of extra time on an ARF airframe. I do a lot of flying and being Club President do my share of teaching as well and see lots of models come and go.

Although I have built a lot of models after reviewing a few ARF the quality does impress and it seems to be ever

improving, rapidly. It is getting more difficult to find things wrong with product these days and if manufacturers add these little enhancements there will be nothing much left to write about, it's hard enough now.

That's all I have for this issue, but if anyone needs any help or advice on any of the subjects covered, please feel free to contact me at marriner@alphlink.com.au
Regards, Les Marriner.



JR
new item

what channel are you on?
PLL-SYNTHESIZER

RS10DS SPCM 10ch
RS77S SPCM 7ch
RS70 FM 7ch



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