ROTORUA MODEL AIRCRAFT CLUB (INC)

JULY 2023 NEWSLETTER

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Welcome to the July 2023 newsletter

Once again the annual Tauranga MAC auction was held last month. It sounds like it was a smaller event than last year. I haven't heard if any of our team attended.
Welcome to our new members. I hope you get to do a little more flying than recently. Although the weather is doing its best to keep us indoors there has been small bursts of activity.
This month we are starting a series of articles for beginners with hints and tips on how to set up, build and trim models.
During the winter months when we can't get to do as much flying as we would like to it's a good time to carry out some preventative maintenance on our models.
So what should we check?

- Remove the push rods from each control surface and check they move freely rust on the hinge pins can cause problems. Are any of the hinges coming loose?
- Load up each servo by pushing down on the centre of the output arm and check there are no click or bands (damaged gears)as it moves or it doesn't move at all.
- Check all the mounting screws are tight and all there. Are all the mounting rails secure.
- All the nuts and bolts tight on the engine mount.
- Check the receiver is well mounted and isolated from vibration.
- Cycle the batteries and replace if suspect.
- Check the prop for nicks and scratches. These can be carefully sanded out with 220 grit sand paper and finished with 400. Balancing will be required.
- Secure anything loose and repair any damage to the covering.
- Fix any fuel leaks and clean fuel filters. It's not a bad idea to replace the fuel tubing.
- Are all the wheels free. Rust can build up on the axles and restrict rotation
- Give the Tx case a through clean with a rag dampened with water and dish washing liquid. (Avoid petroleum based products as these can damage plastic)
- Open up the Tx battery hatch and clean out the accumulated rubbish.

While you will be doing most of these checks as pre flight checks every time you fly a winter maintenance check will save many wasted hours at the field fixing problems

when you could be flying.

A Word From The Pres

As expected this time of the year, not a lot of flying has taken place, apart from the usual hard core half a dozen or so members and even then it is often only the first hour or so before the breeze gets up.
Anyhow with that, I can report that on one of those typical mornings, between morning tea and lunch time (when most of us went home) we had a quick tidy – up working bee where rabbit holes were filled in, folding tables returned to the tower and the clubhouse tidied up.
The runway itself was too soggy to mow, but was still OK for ROG (Rise Off Ground), the issue was that unless the landing was smooth, wheels were liable to “dig in” and even bend some undercarriage struts. Bring on the dryer summer the weather experts are predicting!

Some other “random stuff”.....

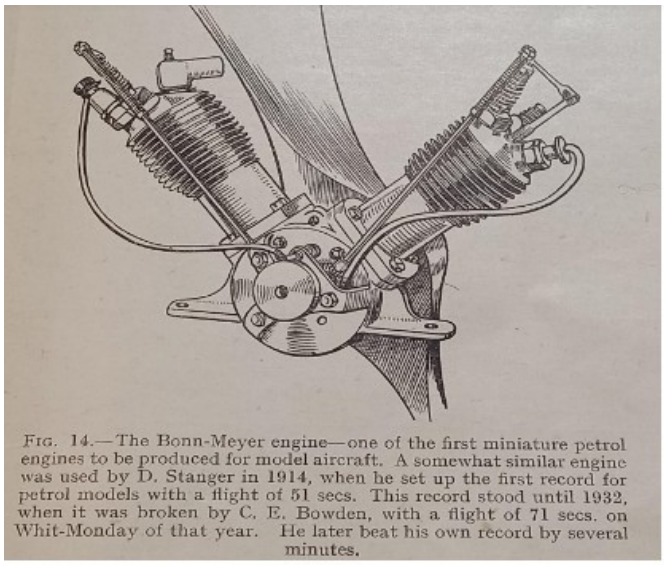
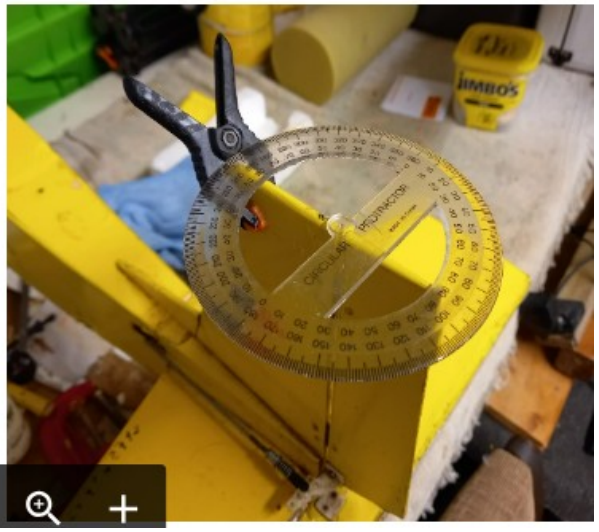


FIG. 14.—The Bonn-Meyer engine—one of the first miniature petrol engines to be produced for model aircraft. A somewhat similar engine was used by D. Stanger in 1914, when he set up the first record for petrol models with a flight of 51 secs. This record stood until 1932, when it was broken by C. E. Bowden, with a flight of 71 secs. on Whit-Monday of that year. He later beat his own record by several minutes.

Who would've thought, 1914!

We've come a long way!

Clubhouse tidy up



A way of checking control throws.

BEGINNERS CORNER

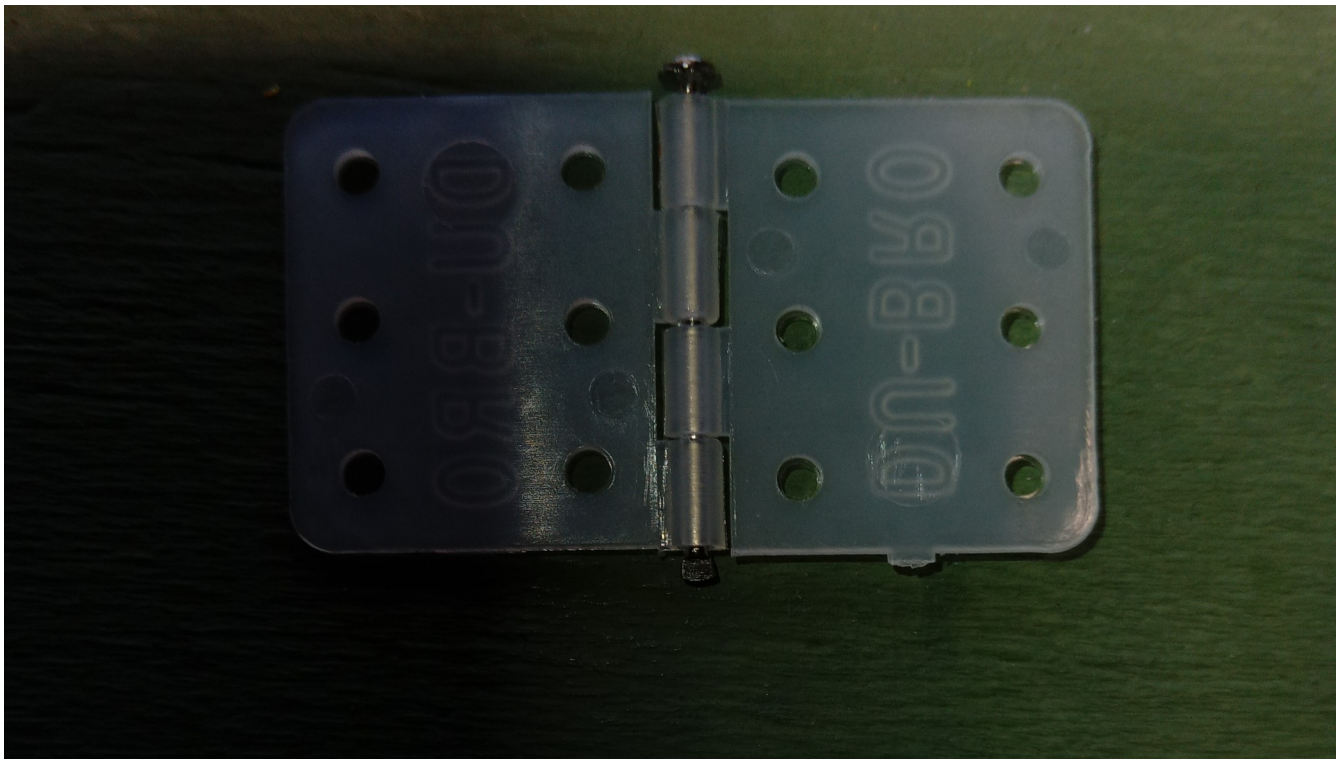
Whether you have purchased a secondhand model, have an ARF , kit to put together or have elected to build a model from plans how you set it up in the workshop has a massive effect on the following.

- How well it flies
- How easy it is to make changes
- How well the engine preforms
- Which all comes down to how much fun you have

Attention to just small details add up to making an enjoyable flying model.
So lets have a look at how to go about installing the radio.

This month we'll have a look at installing the radio in the model.

For the purposes of this exercise we will assume we are starting with a straight warp free model.
Starting with the fuselage make sure the elevator and rudder move freely.



Unfortunately some ARF manufacturers use very stiff hinges and short of replacing them there is no way to free them up. If you are building a model DO NOT use flexible hinge tape its stiff and only loads up the servo use hinges like these Du Bro ones shown above. When correctly hinged the control surface should drop under its own weight.

CONTROL HORNS

Next we attach the control horn to the control surface. The trick here is to position it so the holes for the push rod clevis is in line with the hinge line. This is particularly important on the ailerons otherwise you can end up with different amounts of movement on each. This can result in the model roll response different in each direction or worse a model that will only do barrel rolls and won't roll about its longitudinal axis.

Horn Aligned With Hinge Line

PUSH RODS

Push rods connect the servo to the control surface horn and should be kept as straight as possible. A common problem with ARFs is that they use solid wire rods inside plastic snakes these often have a few bends in them which create a lot of friction. Bend the rods until they move freely in the snakes. The down side of any friction here is that

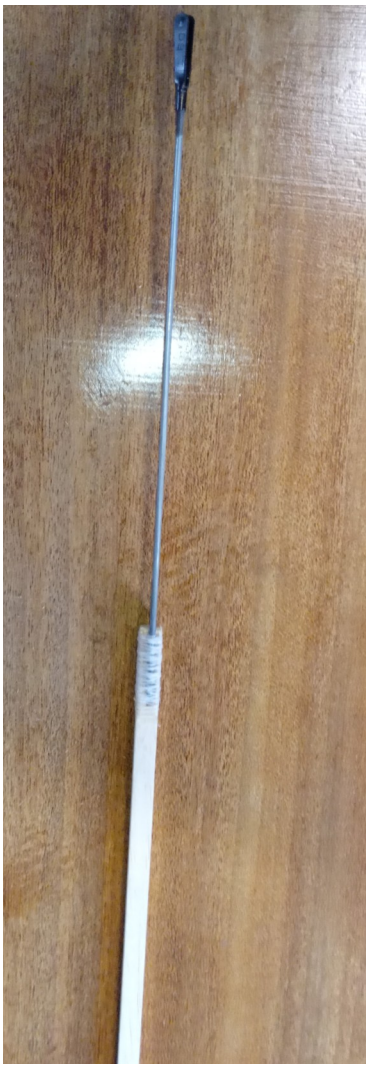
- The control surface won't centre correctly
- The servo has to work a lot harder causing wear
- Excess current is drawn by the servo which discharges the battery and in an extreme case can fry the servo
- The model will be difficult to trim for hands off flying

The message to understand here is that easy to move control surfaces and push rods make a LARGE difference to how well the controls respond.

MAKING PUSH RODS

For sports models up to 46 size push rods can be made from 1/4” sq hard balsa or 1/4” dowel. These have the advantage that in a crash they will usually break before any damage is done to the servo gear box. An example is shown below.

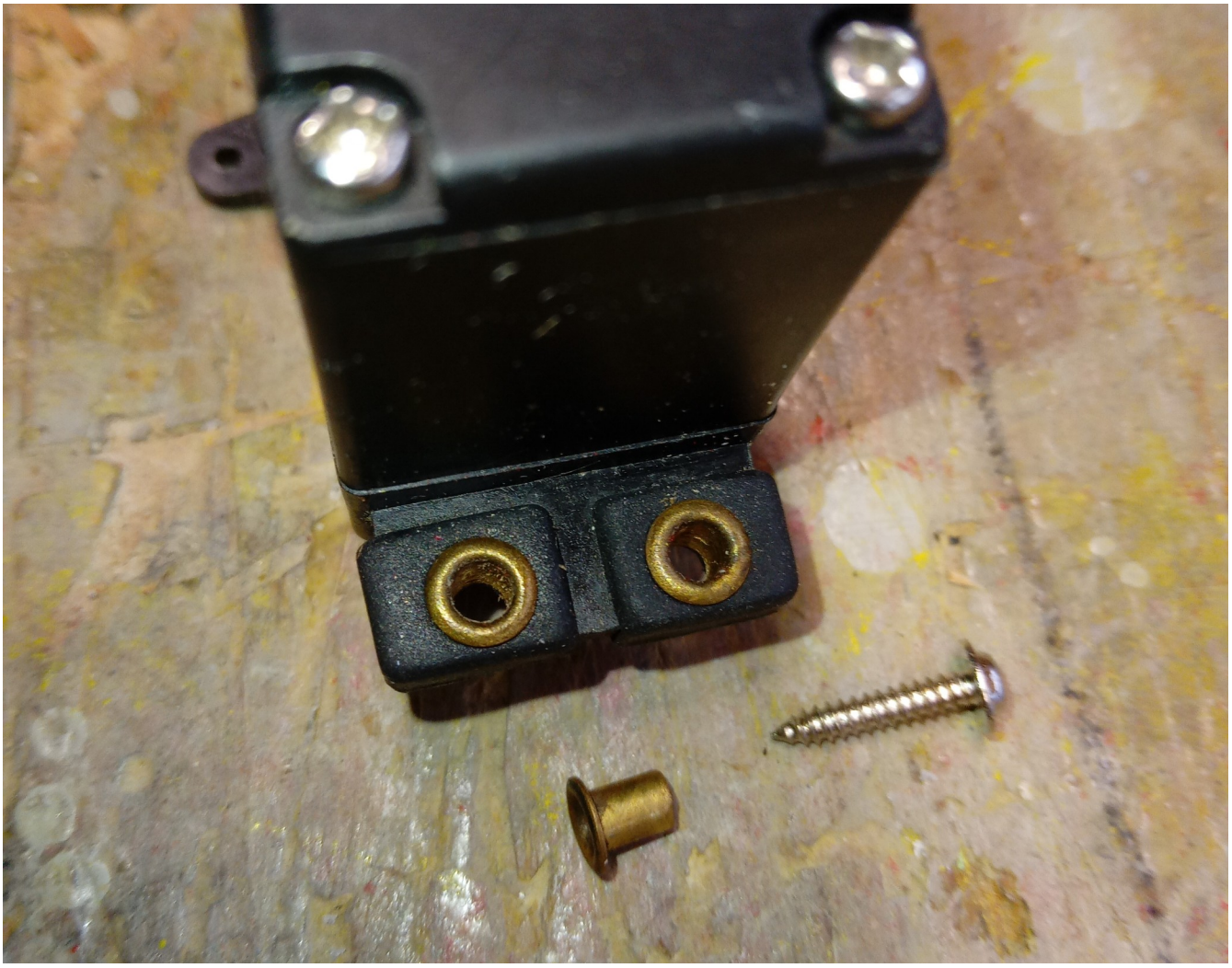
Showing each end of a push rod made from 1/4”sq hard balsa. The servo end has a Z bend. The control surface end has an



adjustable clevis. The end of the wire rod has a right angle bend which is pushed into the balsa then bound and glued.

MOUNTING THE SERVOS

Servos are supplied with mounting grommets, bushes and screws. The important thing here is to use the grommets and install the bushes correctly. They go with the flange against the mounting rail in the model.



When the screw is done up tight against the bush it compresses the grommet just the right amount to insulate the servo from vibration.

Vibration is one of the biggest destroyers of radio gear so anything we can do to reduce or eliminate it is important.

SETTING UP THE SERVOS

Having mounted the servos connect the elevator servo to the receiver.
Next on your transmitter select the model you are going to use or create a new one.
Now and this is most important

- Set all the trims at 0
- Set all travel settings to 100% each way
- Set sub trims to 0 (Using sub trim can cause unintended problems so don't use it)
- Set all high rates to 100%
- Set all exponential settings to 0%

Turn on the receiver and check that the servo rotates when the stick is moved.
With the stick centered and trim at 0 see if the output arm is at 90deg to the C/L of the model. If it isn't remove the retaining screw pull off the arm and rotate 90deg and try again. The splines on the arm allow for four slightly different centre positions. Select the position which gives the nearest to 90 deg to the C/L

Servo Arm in correct position when Tx stick is centered

Failing to do this will result in the control surface having more movement in one direction than the other.
Now check that the servo rotates the same amount when the stick is moved in both directions. If it doesn't there's a problem with your Tx settings. Sort this before going any further.
Connect the push rod to the servo (try one hole in from the furthermost out for a start). With the Tx stick in the centre hold the elevator in its central position and adjust the clevis until it the connecting pin lines up with the holes in the horn and connect to the outer hole on the horn. Check the elevator deflects up and down the same amount and the push rod is free of any obstructions.
Now check the instructions for the model and find out how far the elevator should deflect with full stick deflection. Move the clevis in to increase the movement.

The rudder and ailerons are a repeat of the above. However the throttle is slightly different. If you are using an electric set up follow the instructions for the ECS. REMOVE THE PROP before trying to set up anything electric otherwise there is always BLOOD SPILT!

SETTING UP THE THROTTLE ON A GLOW ENGINE

- Set the stick in the centre
- Set the throttle ½ open
- Adjust the clevis to and connect to the throttle
- Very carefully move the stick and make sure the throttle doesn't jam. The aim is to adjust the clevis and use the holes on the servo arm to limit the amount of travel.
- Finally use the Travel volume settings on the Tx to set the full and idle throttle positions. These should be very similar numbers so you have very linear movement. If you end up with say 60% on throttle high end and 40% on the low end go back and adjust things mechanically so you end up near to 50% each way otherwise you'll end up with some very strange throttle responses.

FOR SALE

FOR SALE

- Restored Skyraider complete with ASP46 and servos.
- All set up and test flown. Just install your receiver and go flying
- A good buy for a beginner or someone wanting a straight forward tidy model

FOR SALE

- Arising Star
- Complete with servos and ASP 46
- Test flown and ready to fly just requires a receiver and battery pack.
- Another good beginners model.
- Has had a bit of use but has plenty of life left

If you are interested in either of these models we can arrange a buddy box trial flight.

Contact John on 020 4118 5597

FOR SALE

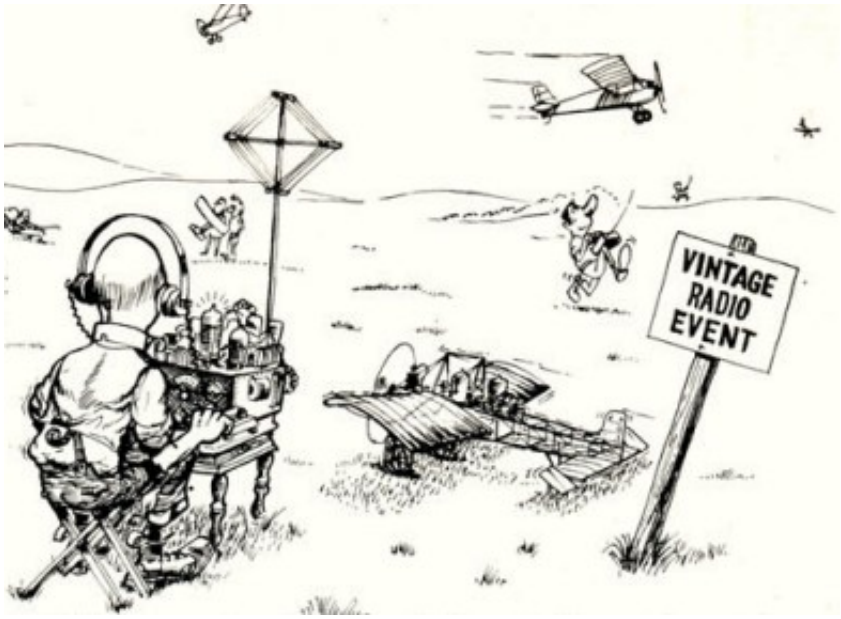
Electric model complete with servos ECS , G60 motor and Batteries

Very well built and never flown (radio not included)

FOR SALE

Another very well built model With ECS and motor and servos

For more details on any of this gear contact
John on 020 4118 5597



John and Dave having fun with some new gear
(You should see what they used before)

COMING EVENTS

August	NDC Vintage Precision & Duration R/C
Sept	NDC 1/2 A Texaco

North Shore Model Airplane Club

After the success of its last Vintage Day, the North Shore Club is pleased to announce that it will hold a further two Vintage Days next year.
All dates and wind-dates are Saturdays.

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3rd February 2024
Wind date 10th February 2024

13th April 2024
Wind date 20th April 2024