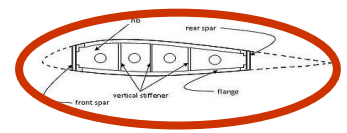


The Spare Rib News



**The monthly newsletter of the
Kapiti Aeromodellers Club**

November 2024

www.kapitiaeromodellersclub.org.nz



Kapiti Aeromodellers Club group

Notes from the Scribler



It's raining. Again. It's blowing. Again. The fact that I got sunburnt at the strip a couple of weeks ago seems impossible given the garbage weather in recent times. The Vintage events at Levin have been postponed. Twice. When we have had a flying day, they've been pretty good and the last BBQ day was one of the few we've had this year that coincided with a flying day. So things were looking good. For a few days at least. We did manage to get the fun aerobatics day done on a lovely Saturday. That stirred the flying juices, but not much since.

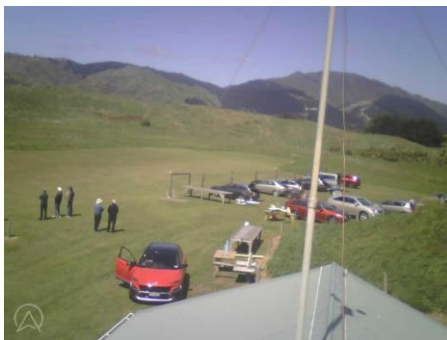
So, given the crap weather (even mowing is impossible at the moment), time in the shed has been a bonus. In the last few weeks I've more or less finished the rebuild of the Edge (which has been on the backburner for far too long), spent a couple of days on the undercarriage of the Smith, spent quite a bit of time getting to grips with the Pitts build again and working out how to finish the Harvard. The Smith undercarriage needs a bit of a refurb every few years. The spats are quite heavy and only mounted on the inside. Overtime, the leverage on landing eventually loosens the spat mounts. It can't really be modified. It's just annoying and a few hours set aside to fix it every few years isn't a biggy, just something that's hard to get motivated for. When I look back at the log, I note I've had this in the air for 6 years now and its done 375 flights.

November. Christmas is just around the corner. I hope you have all had a chat with the other half and agreed on the new model that is a must have or the parts needed to finish what's on the bench.

Have a good month.

Steve

Other bits



For once, a great day for the BBQ. Our best turnout for some time and some great flying enjoyed by many.

Some people think flying is difficult and adopt a suitable pose!



Some may have noticed electric fence standards on the hill behind the club house. GWRC have been marking rabbit warrens and gassing the population.

When the weather is suitable, we will be spraying the field for broadleaf.

Presidential thoughts

It's been another wet and windy month with no forecast looking much better. I guess we can only hope!

James Farrow ran a successful introductory day to aerobatics the other weekend, one of the few really fine days we have had. About 6 turned up and flew a basic schedule. It's one of those disciplines where practice is required, but really good training for learning how to put a plane where you want it.

The vintage event at Levin has now been delayed 3 times and may run on 2 November if we're lucky.

This coming months' club night we will discuss how to improve safety at the northern end of the field near the walking and cycling track. Options which have been under discussion include: doing nothing, starting take offs further south on the existing strip so planes are higher when they cross the track, extending the strip to the south so we take off further south, and moving the flight box south to facilitate more southerly take-offs.

Another option is to shorten the strip at the northern end so that southerly landings are higher as they cross the track.

All ideas are up for discussion at the next club night. If we are to make changes it requires good input from as many flying members as possible.

Not the flashiest of flying weather, but I have been down twice in the past month.

Till next time.

John Pfahlert
0211509763

October Club Night

Warren Tatham, a long-time friend of the club, gave us the low down on his vacuum forming machine which he built himself and has made several cockpits with.

Warren built his own vacuum forming machine and although didn't give us a live demonstration, gave a really good run down on its construction and how it works.

Warren spoke from some well-prepared notes, and these are re-printed here, as they do better justice to the night than my failing recollections.



What is Vacuum Forming?

It is the process of heating a suitable type of plastic material to a workable temperature and soft state then placing that plastic onto a former/plug and using a source of vacuum to remove the air between the plastic material and the plug. Once the plastic has been allowed to cool it will have taken on the shape of the plug.

Examples: Canopies-wheel spats-cowl noses-gun blisters etc

Plastics: PET-G, ABS, polycarbonate materials are some of the plastics suitable for vacuum forming, these are readily available and not too expensive.

Molds/plugs: I have used laminations of custom wood, balsa and plywood etc to make plugs.

When making the plug allow for the thickness of the finished part. Make the profile about 1mm undersize BUT make the base deeper to allow for final trimming of the finished item. I use an electric planer to generate the basic shape, then finish with progressively finer grades

of sandpaper. Remember to wear a dust mask to avoid breathing in the dust from the sanding process.

Match the shape of the plug to the plan. Ensure the plug is clean and dust free before attempting the moulding process.



Parts of the vacuum former

Heat source: In this case the heat source is a repurposed grill element and fan from a microwave oven. The fan ensures an even distribution of heated air over the captive plastic sheet. This section can be lifted clear of the frame.

Foil covered strips (4): These are thin plywood strips covered with aluminium foil intended to reduce heat loss from that area

above the plastic sheet during the heating process

Plastic holding frame: This part consists of two matching pieces between which the plastic material is clamped by a series of bolts and wing nuts. The plastic sheet needs to be drilled to match the holding frame bolts and this ensures the plastic is securely gripped in the frame. The gap between the heat source and the plastic can be adjusted using the pegs on the vertical dowel rods that are fixed to the base of the former. The plastic sheet may have a protective membrane on one or both sides to protect the sheet during storage and transport. This should be removed before heating the plastic.

Base of the former: The base of the former serves 2 main functions:

Airtight chamber which seals the base of the former to the plastic sheet holding frame; and supports the perforated steel plate onto which the plug is positioned. To prevent the plug from moving it should be secured with pins

Adhesive foam draft prevention strip has been added to the base to ensure an air tight seal between the base and the plastic holding frame. There is provision for the vacuum hose to be fitted into the chamber using my Karcher shop vacuum cleaner. The shop vac provides more than enough vacuum to pull the softened plastic onto the plug.

Support frame: The heating unit is clamped to this frame to prevent it from following the holding frame downwards towards the plug during the vacuum forming process.

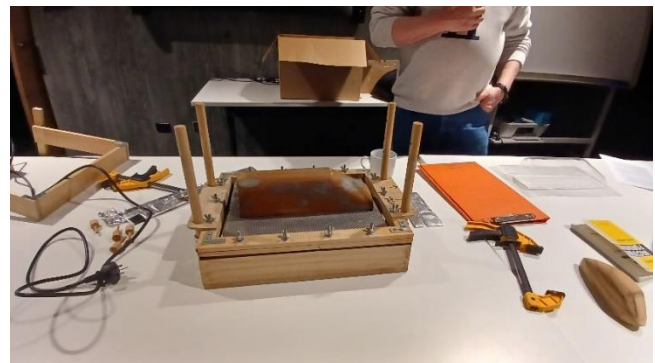
Vacuum source: I use my workshop vacuum cleaner (Karcher WD 2) to provide the source. Any good household vacuum cleaner should be suitable.

Other useful tools: I use a non-contact digital reading thermometer to measure the temperature of the plastic while it is being heated. Temperatures around 150 degrees C are in the ball park (PET G) and the thermometer can give quick spot readings to ensure the plastic is uniformly heated. Another indicator is the behaviour of the plastic as the temperature approaches a workable state. The plastic starts to shimmer and shows some slight uneven movement. At this point the plastic sheet is ready to be lowered onto the lower frame and plug, with the vacuum cleaner connected to the base and running. As soon as the frame and base make contact the vacuum will pull the softened plastic sheet onto the plug. Allow the work to cool before attempting to remove the newly formed piece from the former and plug.

Sturdy snips: These to trim the excess material from the piece, to allow for final trimming to fit the model.

Other references: There are many YouTube videos that cover vacuum forming, with examples of designs of vacuum formers and step by step procedures in making parts. There are books on the subject; one that I would recommend is "Do it yourself vacuum forming for the hobbyist" written by Douglass E Walsh.

Ali Express advertises a small purpose made vacuum forming machine that could have application for making model parts.



Vintage

Reminder - Levin Vintage – John Selby Memorial Event

Saturday 2 November 2024 – 9.30am start. Levin flying site – Tararua Road

Open Invitation to attend Levin Glider Fun Fly

Saturday 30 November 2024 - 9.30am start (Wind date Sunday 1 December)

Format: Fun fly for soarers. Dig out those gliders or electric soarers that may have been tucked away for months or years! Bring along your electric, winch, bungee or hand launched glider and go soaring. All welcome. The day is about having fun flying soarers together no matter what your ability or sophistication of model. We anticipate Radians/Gentle Ladies right through to F3B soarers. Help available on the day, don't hesitate to ask the organisers.

Location: Levin flying strip, Tararua Road. Coming from the south, having turned right over the railway line opposite the Allied fuel pump and then immediate right at the T intersection, continue along Tararua Road past JB's on the right and Trayla on the left. The field turnoff is on the right about 50 metres past the 80km speed sign – you can see the clubhouse and the hay barn from the road.

BBQ: The Levin MAC will be running a sausage sizzle at lunchtime at purely nominal cost so bring a few coins.

Cancellation notification: The lower NI Glider Email List will be notified of any postponement on the Friday afternoon (if you want to be added to this Glider Email List please advise Stew at Flierstew@gmail.com). This will also be advised on the Levin Club website [Levin Model Aeroplane Club - Home \(sporty.co.nz\)](http://Levin Model Aeroplane Club - Home (sporty.co.nz))

If uncertain on the day, feel free to ring Stew Cox on 027 548 1894 or Kevin Daly 027 446 3822

Hope to see you there!

Thermals

Stew Cox & Kevin Daly

Rally 2025

The date for the 2025 rally has now been set.

The rally for 2025 will be held on the 3rd weekend of March, 2025

Sat 15th and Sunday 16th March.



Have your say - November club night

As President John says in his spiel, November club night will be given over to discuss our current strip and flight behaviours.

It's important that members have their say and are constructive in their thoughts.

A decision that many are part of becomes a workable decision.

As well as that, to replenish the body after, supper will include Mrs H's world-famous Christmas cake.

This will be our last club night for the year.

LiPo batteries and fire risk.

We have heard numerous stories over the years of LiPo failure and fire. Some members have had some bad experiences.

So, it just goes to show, that taking care is essential.

The following has been submitted by Pierre.

Fire in the Hole

We all know that LiPo batteries can be dangerous if not handled correctly, but frequently we have a "it will never happen to me", type attitude, with the belief that, providing that we don't do something "stupid" we will be OK...well that was me...

I was not using a flameproof charging bag, nor was I charging on a flameproof surface.

Here's how it all went "pear shaped"...

I was planning on an electric day and had all my packs charged up. I did not have many packs, but I had some 2S, 3S and one 4S pack. I had to change my charger program for each pack as I could only charge one pack at a time (IMAX B6 clone). They were all balance charged.

Anyway as it turned out, the wind came up and it was not suitable for flying, and the following week was not looking good either. This being the case I decided that I should put all my packs back to storage charge.

I started putting the packs back to storage charge. I found that on my charger, when selecting storage charge, the balance lead is not active, and so the cell count is not automatically selected. This being the case, I did not connect the balance lead and I had to select the cell count and the charge/discharge rate for each pack.

I was working my way through my packs, and was quite relaxed...after all what could go wrong?...they were being discharged at a low rate, and not charged.

Then at about 9pm the smoke alarm in my hallway went off. I opened the garage door to see my workbench ablaze, with flames reaching almost to the ceiling. I emptied my small garage fire extinguishing onto the flames, and then took a spade and threw the, still smouldering remains onto the driveway. My wife called the fire brigade, just too be safe. They arrived and proceeded to drench everything in water.

So, what went wrong?

I believe this is what happened...

I previously had only one 4S battery...a black one. Balance charging takes me a lot longer and most advice is that balance charging is only required now and again (say one in charge in 5 or 10). This being the case, I was familiar with changing the cell count and charge rate to suit the various packs (I generally stick to 1C for charging). I had recently procured an additional 3S pack...and this one was also black (oops...warning bells..)!

With the balance lead not active on Storage Charge mode, and with this pack being black, I believe that I inadvertently set this 3S pack, to storage charge as a 4S pack. This would mean that in place of charging to 3.8V per cell, it would attempt to charge to 5V per cell...a sure-fire recipe for disaster.

It is possible that the charger gave me a "low voltage" message before starting the charge...I can't remember...but if I did, it is likely that I just overrode it. I was not able to check with my charger as it was "toast", but I have just checked using my new charger (HTRC T240 Duo), and have found the following.

3S Battery, No Balance lead, Storage Charge/Charge

- Charger allows user to set to 4S
- Charging starts with no error messages...on the path to disaster.

3S Battery, Balance lead, Storage Charge/Charge

- Charger allows user to set to 4S
- Low cell voltage warning on start...will not charge

Now I can't say that all chargers will react in the same way, but generally they tend to use similar software, so my take on this is that if you charge without a balance lead, you are leaving yourself open to making an error and inadvertently putting in the wrong cell count, which could lead to a fire.

Lessons Learnt

- Always use the balance lead...even if not balance charging.
- If no balance lead is available...double, triple check.
- Use flameproof bag/box

- Charge on flameproof surface.

Pierre Daigneault

Kapiti aerobatics fun day.

The long-term forecast for the day was rubbish. On the previous Monday I had made alternate arrangements for the day, but the closer we got to the weekend, the better the forecast. (changed alternate arrangements).

The day dawned bright and sunny. Wind was unpredictable, but so little of it most of the time, it didn't matter.

James briefed us on a simple aerobatic routine and flew a demonstration fort us.



First up was President John. He had to leave early so would only get the one flight in. What showed up here and throughout the day was flying a planned routine improves our flying as well as encourages us to be more disciplined in our flying. John's routine went well but he did



invent a new manoeuvre which Andrew christened 'the crankshaft'.

Although not many of us competed, there were a number of members who came out for a general fly on a brilliant day. We all learned something, and I've noticed some of us practicing those manoeuvres since.



KAMCI

Events schedule 2024-2025

Event	Event Director	Saturday Primary date (Sunday rain day)
Kapiti Aerobatics intro Day	James F	19 October 2024
Kapiti Scale Fun Day	Andrew F	23 November 2024
Vintage rally day	Wayne?	7 December 2024
Warbirds day "Thunder over Kapiti"	Andrew F	18 January 2025 (Wellington anniversary weekend)

Kapiti Aerobatics intro Day



If you can loop and roll your model you have qualified in this introduction to basic aerobatics. Any type of aeroplane will do but we recommend an aerobatic type. James Farrow will direct the action and happily tutor those who want any help. Celebrity guest judge will be watching and there will be prizes.

The schedule will be based on NZ Pattern Clubman class and will comprise of the following manoeuvres.

- | | |
|-----------------------------------|--------------------------|
| • Take off | Half Reverse Cuban eight |
| • Two-point roll (two half rolls) | Stall Turn |
| • Loop | Full Roll |
| • Landing | |

Field will not be closed to general club flying but event flying will be prioritised.

Kapiti Scale Fun Day

“From a distance it definitely looks like a Cessna”

If you can convince us that your model is an accurate representation of a full-size aeroplane you are invited to show us what you got. Static displays welcome too.

Secret judging may culminate in finale of breathtakingly valuable prizes.

Field will not be closed to general club flying but event flying will be prioritised.

Vintage rally day

“Pre 1970 models – for reasons”

Organisational details TBC

Warbirds day

“Thunder over Kapiti”

Calling all old Fokkers. This is your reason to blow the dust off that Spitfire that you’ve had gathering dust for years. See what it actually looks like with wings on in the bright light of day. Amaze everyone when you able to still start the engine after all this time. If you are too nervous to fly it that’s OK, static display is very welcome too. Or simply hand the controls to someone who doesn’t give a damn.

Pilots will have opportunity to vote for their favourite models whose owners may be presented with highly coveted but worthless prizes.

Tomboy day

“Top Gun action spectacular”

Prepare for action as several barely controllable lightweight models battle it out to occupy the same piece of sky. And get your earplugs in as the Tomboys challenge the sound barrier.

Organisational details TBC

And that’s it from me.

As Don would say, ‘*Fly hard, land soft*’.

Steve