# Tale Feathers - October 2003

**Wagga Model Aero Club Inc.**
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Welcome to the October 2003 edition of *'Talefeathers'*. Our distribution difficulties are now behind us. We have had a positive response to web based distribution – if you would rather get your newsletter off the net, let Greg or Wayne know. The web based colour version is always available 3 – 5 days before the B&W hard copy – why wait?

## Club Competitions

The Presentation of the Club Trophies for the 2002 / 2003 flying year were made at the September Club Competition on Sunday 28th September.
Recipients were:

1. Kevin Little
2. John Tonks
3. Laurie Talbot

Most Improved – Mark Weatherspoon

## Website

Remember, you can down load your copy of *Tail Feathers* off the Club web site from the documents page. http://www.waggamac.org.au/documents.html (or reach it from the *site map* page).

- The ARF information page has been updated with more repair hints, tips and pics.
- A new page has been added with the latest information on the Riverina Fun Fly. Note the change of date
- The instructor page has been updated with the latest Club Training Policy

## WW2 & Military Scale – 2004

It's time again to start preparing for the biggest and most famous annual event that the Club runs – the

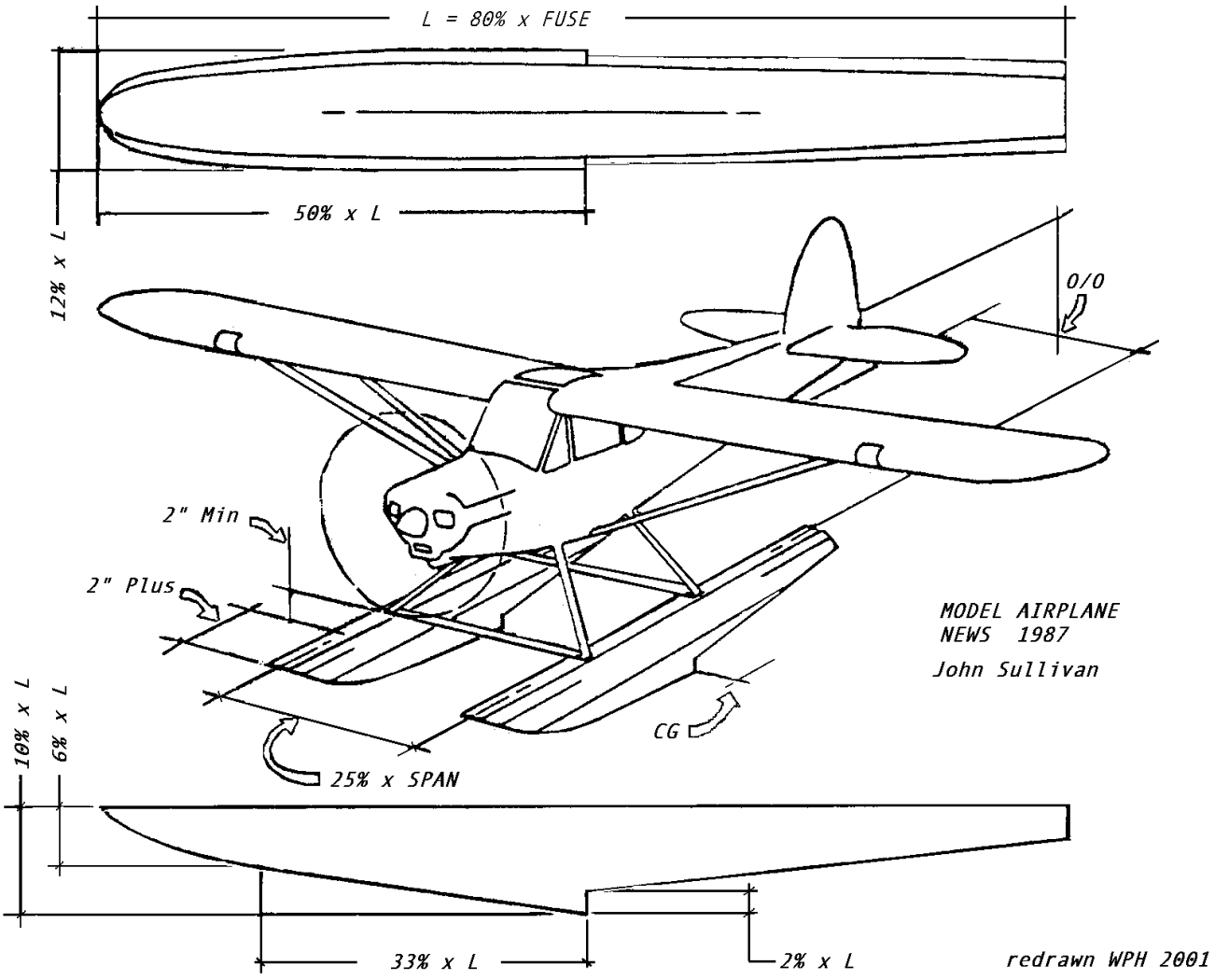
World War 2 and Military Scale competition, held on the 1st weekend after ANZAC Day.

Craig Keys has been appointed to lead the organizing Sub-Committee, assisted by Kevin Little. If you wish to be involved in the Sub-Committee or can help in any way, please let Craig or Kevin know.

## *Float Flying Anyone?*

With the Twin Cities Float plane event on over the weekend of October 11+12th, it's timely to review some basic info to help you convert your existing land plane into a sea plane. There is still time!?!

The information presented here is based on several articles by John Sullivan in "Model Airplane News" in the late 1980's. Having used these principles for many years, I can attest to their validity and your very likely success!?!




The calculations shown will produce a float almost directly proportional to the EDO 1650A series of fullsize floats

- The step is located at the 50% position to handle weight distribution
- The volume will provide an 80% buoyancy factor
- To determine float dimensions, multiply fuse length (prop washer to rudder hinge line) by 80% (0.8) – this gives "L" (or the length of the float)


*Quadra powered ¼ scale clipped wing Cub, using floats designed in accordance with the principles presented here. Owned by Tim Nolan from Sydney, it was a true delight to fly off water.*

One exception to this formula:

- The float step must be under the C of G AND
- The float bow must extend past the prop at least 2" to stop digging in when throttling up
- Since nose moments vary from model to model, it is sometimes necessary to move the 33% breaking point on the forward bottom portion of the float until you have the required extension, then redraw the profile. Much better than designing a proportionally larger float just to satisfy the 2" extension requirement.

Floats can be constructed from any of the usual materials

- Remember to:
- Keep the bottoms smooth
- Keep the area forward of the step perfectly straight, and the edges sharp

Floats with "Vee" bottoms:

- Track better
- Produce somewhat smoother runs & landings, BUT
- They also increase wetted area (more drag)
- Are less maneuverable (keel effect)
- Produce more spray
- Are more difficult to build

Weakest points on a float are generally:

- the side area above the step, and
- the strut attachment points, so
- add reinforcement in these areas to spread the loads

The dimensions shown will support any average to heavy weight plane

- Juggle dimensions to suit relatively lighter or heavier models
- What looks right usually works!?!
- If you want to calculate flotation – every:
- Cubic inch of float below the waterline will support 0.036 lb
- Each Cubic cm (cc) of float below the waterline will support 1 g of aircraft mass

Establishing the correct attitude at which the floats will sit on the aeroplane

- Full size practice – 3-4 deg incidence negative to the flight attitude of the plane (ie. Hanging down at the nose). Done to present high angle of attack at take off - TOO MUCH DRAG

Since models have higher power to weight ratios – mount the floats parallel to the normal flight attitude

- Best achieved by paralleling the top of the float with the tailplane
- Can always add shims after flight testing
- Set your model up on a level surface and measure from that
- Block up the floats first with tops parallel to table
- Then position aeroplane over the floats with C of G over (or just in front) of float step
- Then measure for strut lengths
- Standard aluminium or composite undercarriage blanks make good struts

Water looping caused by:

- Inadequate air rudder (ie fin) area
- Increased wetted area forward of the C of G

Distance between the floats and the plane

- To keep the prop out of the float spray
- Practical minimum is 2" between prop tip and float top deck
- Floatplanes that are too "tall" tend to 'porpoise'

Floats have to be:

- Positioned directly opposite one another
- Spread by 25% of the plan's wingspan

Most converted 'land' planes will benefit from increased fin area

- Max. 25% increase is OK
- Sub-fins can be attached to tailplane, fuse bottom or float top deck

Water rudders are essential for maneuvering on the water

- For .20 size - A pair 1 x 1.25 inches
- For ¼ scale – A pair 2 x 2.5 inches

- Sizes in between can be extrapolated from above
- Can be connected to the rudder or ailerons using pull-pull, 'snake' cables, push rods, etc

Waterproofing:
- Battery & Rx in plastic bags
- Splash guards at push rod exits – moulded ABS, celluloid, drink bottles, etc
- If aeroplane covered with film – seal joints with clear polyurethane, clear tape, zap, etc

Operating a float plane
- MUST have a reliable idle – floatplanes maneuver best at slow speeds
- Usually land further out than when operating on land
- Higher wing loading, so need to land a little faster
- Always have a retrieval boat

*Ian Strachan's converted ARF about to touch down at a Club floatplane day / Club Comp several years ago – how about a sea plane day instead of another Fun Fly??*

Always service your plane straight after a spill
- Flush engine out with fuel then run for about 10 minutes
- Get water out of the plane
- Wring out the foam!!

In summary
- Equipping and operating an R/C floatplane is not a difficult task
- Building and hanging a set of floats seldom takes longer than building a fuselage
- The Payback is far beyond the effort

## ***Wave Flying?***

Lifted off the internet…

*Two California based R/C soaring pilots have utilized the power of fast moving ocean swells for sustained flight for the first time. Though Pelicans and other ocean birds have long utilized the upward motion of air in front of large ocean swells for lift and forward thrust, this is the first time aircraft have utilized this power. The 10 foot ocean swell pictured here moving at 25 knots combined with a 10 knot offshore breeze creates strong upward moving air currents more than strong enough to support high performance R/C sailplanes.*

*When conditions are right, these remotely controlled aircraft can fly from moving crest to crest, often flying for an hour or more at a time. If the winds subside or swells fall in size, the pilots land their aircraft back on the nearby beach. The gliders are either launched from the nearby cliffs or towed up by powered winches to gain enough altitude to reach the reef area where the waves gain height quickly.*

*Tremendous forward speed can be attained by riding the pressure wave of air pushed in front of the cresting breaker. The air is rising far faster on the face of the wave than the plane is falling due to gravity. One glider has been estimated to be going over 100 miles per hour across the swell. With this speed, the pilot can pull up, trading the speed for altitude, often gaining 300 feet of height, more than enough to soar until the next swell peaks.*

*The spot where this photograph was taken and the names of the pilots remain secret as the crew are completing a video film project for release soon. When asked about what happens if the plane runs out of lift, one pilot replied, "That is never allowed to happen".*
*John Addams ST magazine*

*WH - There are 2 gliders in this picture, but it looks a little 'contrived' to me?!? In theory, it's possible – the ocean wandering albatross has certainly proved that!!*

## Interesting Links to try

http://www.bumpygreen.co.uk/frames.htm
http://www.wram.org/
http://slowflyworld.de/internetseite/videos/ultimate_competition.wmv

## Picture this – something different??

Ever wonder how to turn a VW Combi into a convertible?


If you are in the German Air Force, it would appear to be quite easy – just use a special Sepcat Jaguar wing mounted 'combi converter'

## From the Committee

- There will be regular (monthly?) WMAC updates in the *Leader* newspaper's *Sports Roundup* column
- An instructional policy, based on the MAAA Instructor's syllabus and methodology, was adopted at the September meeting. Contact Bill Lampe (CFI) or a Committee member (or check out the Instructors Page on our web site) for full details.
- A reminder to all members to obey & police the unauthorized presence of non-members in the pit area. Under the Regulations, visitors may be invited in, any children must be accompanied by an authorized adult and all people in the pits should be directly associated with flying activities for insurance purposes.

## Alternative Aeroplanes and Materials – pt2

In the August *Tailfeathers*, I mentioned constructing aircraft from 25mm thick sheet foam - *Perhaps one of the simplest airframes you can make is out of 25mm thick styrene foam sheet. Cover it with brown paper and watered down PVA, then paint it. If you want to get fancy, you can radius the LE and TE, but they fly without this refinement!?!*

In search of something quick and different, and I guess, to prove the point, I knocked up this delta from sheet foam. I literally started it on Saturday after lunch – when the weather turned on Sunday I lost interest (since I wasn't able to fly it that day), so gear installation and other fiddly bits took place during the week. I test flew it the following weekend.

Performance is **very** satisfactory – typical of deltas, the roll rate is high & slow speed handling is also very good (probably aided by CG being 10mm forward of the theoretical ideal position).

If you want to try something like this, basic details are:

- Span = 1150
- Length = 750
- Structure – 25mm foam sheet. LE 2 laminations of 5mm balsa & TE 1 lamination of 5mm sheet balsa. Hinge faces on all control surfaces 5mm balsa - All glued to

foam with PVA. "Spars" are 2 bands of 50mm wide re-enforced packaging tape.

- "Fuselage" – 5mm sheet balsa
- Covering – Solarfilm & Profilm ironed straight onto the foam.
- Power - .40 cu.in with 10 x 6 prop
- Total cost, using left over covering and hardware – under $20

I used iron on covering for expediency – brown paper & PVA would have been better – it's much stronger than iron on plastic, which doesn't stop the foam 'bruising', but paper & glue takes longer to apply & dry.

## Coming Events

- ***RIVERINA FUNFLY - SUNDAY 30th NOVEMBER*** – ***note the change of date.*** Start at 10:00 AM; lunch will be available - our local Club Competition Day will be incorporated into this event.
- APA - (Australian Pattern Association) Championships will be held at our field on 4th and 5th October. We are expecting 30-35 competitors, including several WMAC members. Kitchen hands are needed – contact Ronda
- **Heli Heatwave –** March 6 & 7, 2004. Contact Brendan Tucker 0409 443 495 (a/h)

## Bits & Pieces

- Following positive feedback on the ARF repair article last month, it has been suggested we seek pictures of member's models under construction. ***Send us a picture of your current project with a brief description & we'll show off your handy work in the Newsletter and/or the web site!!***
- Slope soaring anyone??

*At Charlotte's Pass in early January 2001 – absolutely awesome lift to well over 500m above the hill – the slope continued to the left behind the flyers, & the valley floor was over 300m below !!!*

**NEXT GENERAL MEETING**

**13/10/03 starting at 8.00 PM at the Wagga Leagues Club**

**General meeting (limited to 1 hr) then 2 videos (30-40mins each) – come along and make it a social night**

**Next Club Social Event – Sunday October 26th – B-B-Q and special presentation to Neville de La Rue in recognition of Neville's many behind the scenes contributions to WMAC Inc. - EVERYBODY WELCOME!!**

**Next Club Competition**

**Sunday 26/10/03 - starting at 11.00 AM. B-B-Q lunch provided**