Editor: Andy Blackburn

Contents

Parish Notices

As I write (Friday 20th March), all pubs, clubs, restaurants, theatres, leisure centres and gyms have been told to close, so it looks as though we're in for the long haul, and this will probably be the last newsletter for a while. I think we can be sure that the Indoor Scale Nationals will not now go ahead in April, it remains to be seen whether the STC will re-schedule the event for later in the year, or will simply not hold one this year.

We can still fly outdoors, and we can still build stuff; I commend to you the idea of building something for the Elf competition and/or the Battle of Britain competition that we're still hoping to hold much later this year. The chances are that you'll be able to trim them in the local park.

There's also a Walt Mooney Design Cook-Up run by Pete Fardell on Hip Pocket Aeronautics which is very popular and seems to have nicely caught the mood of the people on HPA (Hip Pocket Builders' Forum > Indoor Free Flight Forum > Scale, Indoor > Topic: Walt Mooney Cook-up 2020).

An Important Update – John Winfield

Trinity have now – unsurprisingly, given recent school closures - cancelled all indoor bookings for the foreseeable future. However, this action does not impact

on our indoor meetings in the longer term and these will resume as planned when the current restrictions are lifted. Currently all invoices have been paid and cash reserves are very healthy. That's really all I can say at the moment; if I get any further information I will pass it on in the normal way. Meanwhile if anyone has any questions they are welcome to contact me directly.

Trinity Competition Update

As you know, there were two Free Flight competitions planned this year; the Elf competition was originally planned for May, and the Battle of Britain Walnut+ Scale competition was planned for September. However, because of the Coronavirus/Covid 19 epidemic and the control measures that have been taken to combat it, it's clear that we won't be able to stick to these dates.

So, what we're going to do is to commit to running both competitions when it's safe to do so, and an announcement will be made *at least* a week in advance through the usual channels (email and/or newsletter). The BofB Walnut+ Scale event will be moved if necessary in order to make way for the Elf event, which is planned to run first (a lot of people have Elfs or are building Elfs).

Contributors

I'd like to thank John Winfield, Robin Smith, John Holman and Lionel Haines for their input to this issue of the newsletter.

Banggood Sopwith Camel – Robin Smith

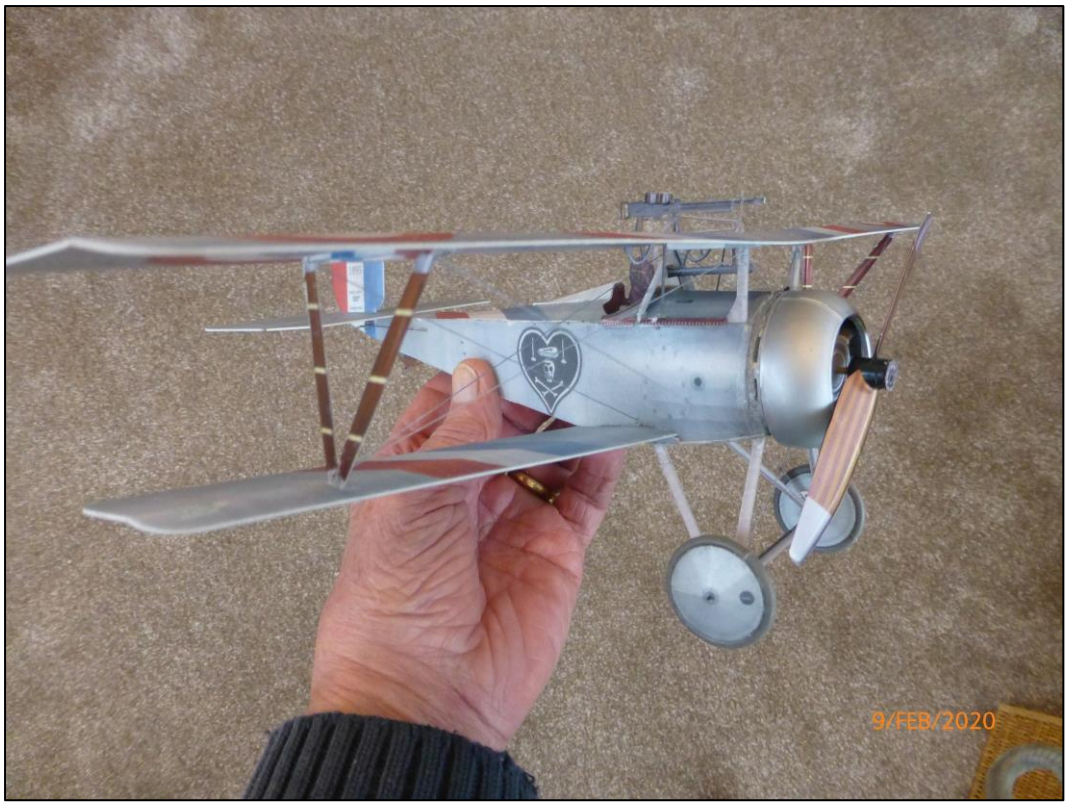
This Sopwith Camel was built from a 'cheapy' kit from Banggood, it cost around £25 post free including motor!

The build was similar to the more usual Micro Aces format but cheap is the operative word – it was very flimsy, very tricky to build with plenty of scope for errors (of which I managed many). The instructions - such as they are - appear online and have many omissions, adding to the list of errors.

The receiver is a Deltang Rx33 weighing .65g from Micron R/C and the two servos from Banggood weigh 1.7g each. Total weight of the completed model less battery is 44g. Span is 15" in old money.

The completed model looks OK (from a distance) but is quite 'variable' in trim so I have serious doubts about its flying capabilities particularly considering the total weight. If it flies, I suspect it will have a scale speed approaching Mach 1.

Micro Aces Nieuport 17 – Robin Smith



This Nieuport 17 on the other hand is from Micro Aces and is a much more compact build.

They also provide a comprehensive assembly guide which is very good although I did find 14 discrepancies in the guide, mainly incorrect numbering of parts. The errors are mostly obvious and did not cause any problems although I have written to Micro Aces pointing out the errors and await their response. In spite of this, the model went together nicely although anyone who has built one of their models will know how fiddley they are to do, especially fitting the radio controls.

I opted to buy their accessory pack of radio gear and motor to, in theory, aid this task as at least I knew the bits should fit! Yes they did – it's just that space is so limited that fingers just don't work too well and tweezers are essential.

The detail in the kit has to be wondered at and the conversion of a flat pack into 3d pieces is very clever.

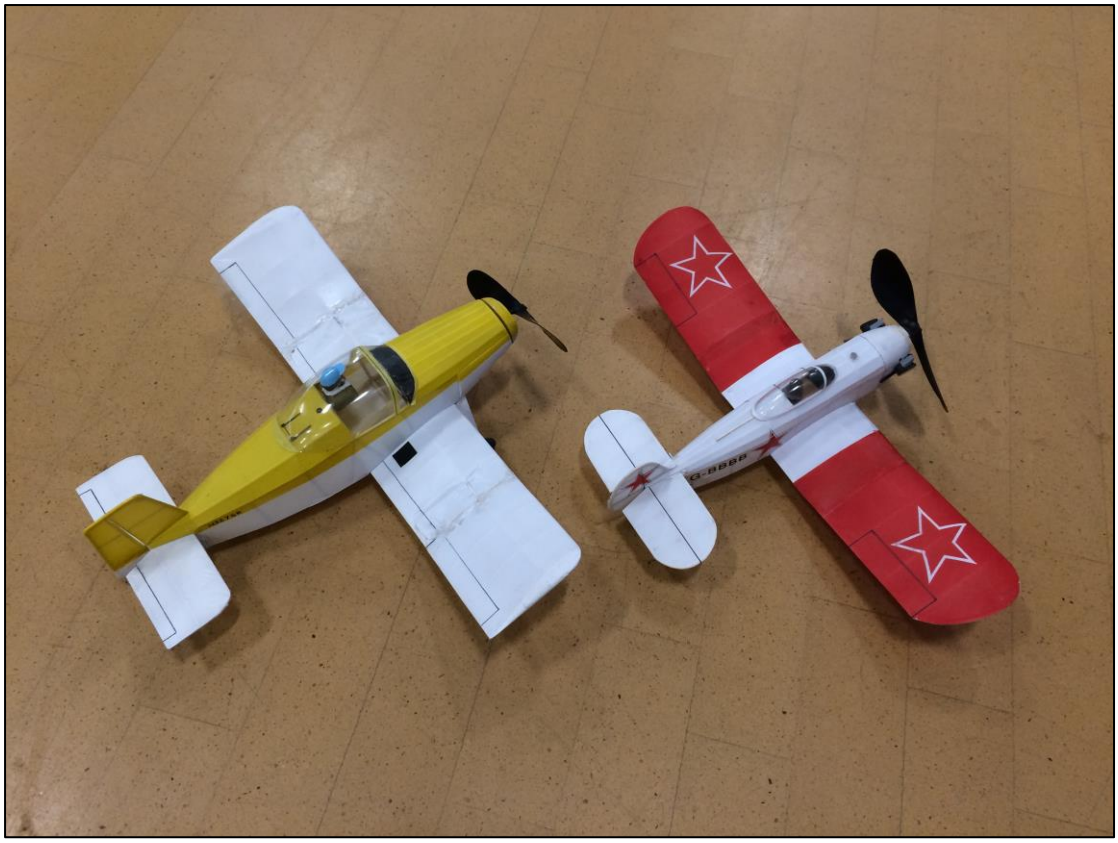
The model is 14" span and weighs 34g less battery. The flying surfaces all seem to align well so I have high hopes of getting some reasonable flights out of it although, once again, I expect the scale speed to be quite high. It does look good though and, yes, the rotary motor does spin with the prop. They say you get what you pay for and at twice the price of the Camel it's a far better prospect and was enjoyable to build.

Models at Trinity

Just a few pictures of models recently seen at Trinity…

Mick Langford's VMC Spitfire, 37 grams powered by 4 strands of 88 thou rubber 15 1/4" long. Has flown two circles, trimming is ongoing. A bit tricky to launch.

Dave King's own design Art Chester Goon No Cal, 16" span weighs 7.5 grams empty, has only done about 30 seconds so far but shows promise.



Peter Smart's Thorp T-18 Tiger peanut with his old Taylor Monoplane peanut in USSR 1941 winter colours. The T-18 has had some rather brutal surgery on the outer wing panels because, as built, it was laterally unstable.

Oh, the Shame… I'm Building a Lacey

This is extremely embarrassing but I brought it on myself - it's all my own work.

Lacey M-10. There is – so far – only one…

As some of you will be aware, I try not to miss the opportunity to have a good laugh and the Lacey M-10 is such a good target[1] that I felt that I'd be falling down on the job if I didn't take the mickey out of it at every opportunity, especially as

[1] We are talking, ladies and gentlemen, about an airframe *so* lacking in charisma that in spite of the fact that over 1100 sets of plans have been sold, none of them have resulted in a finished aeroplane; not one. The only one in existence is the prototype. And to cap it all, the joysticks hang down from the cockpit roof.

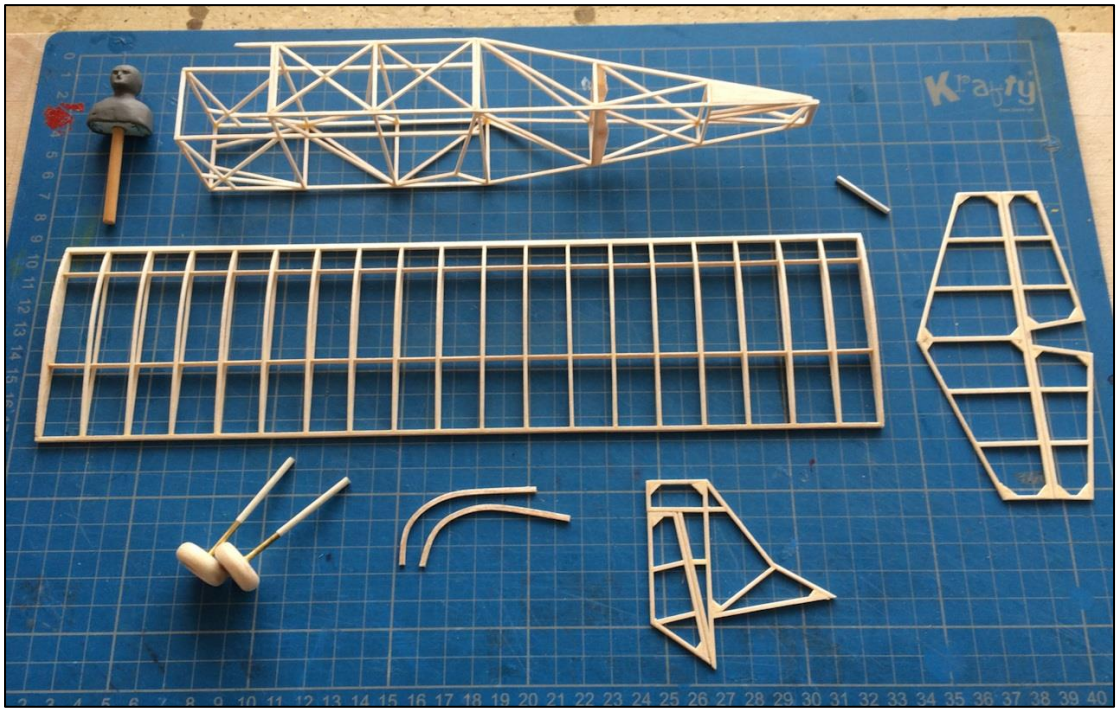
some Trinity regulars now possess a peanut scale example. The thing about the Lacey, of course, is that what it lacks in the looks department (and it lacks a considerable amount) it more than makes up for in performance – one would normally expect 50+ seconds from a ROG without breaking sweat.

Now, given the recent changes in Peanut and Pistachio scale rules it has become obvious that if you want to be anywhere in Peanut Scale you need a model that will fly for at least 50 seconds from a ROG.

I recently wrote an email that said – most unwisely, as it turned out – that if I couldn't get close to 50 seconds from my Tailwind at Trinity, I'd have to build a Lacey M-10 as my peanut entry for this year's Indoor Scale Nationals. Anyway, last time out, the absolute best time I could get was 42 seconds on about 1300 turns – any more than that and it was in the roof, and the next size of rubber down was too small. Even allowing for the fact that there will very probably be a bigger ceiling at the Indoor Scale Nationals, 42 seconds just isn't enough.

Oh dearie, dearie me…

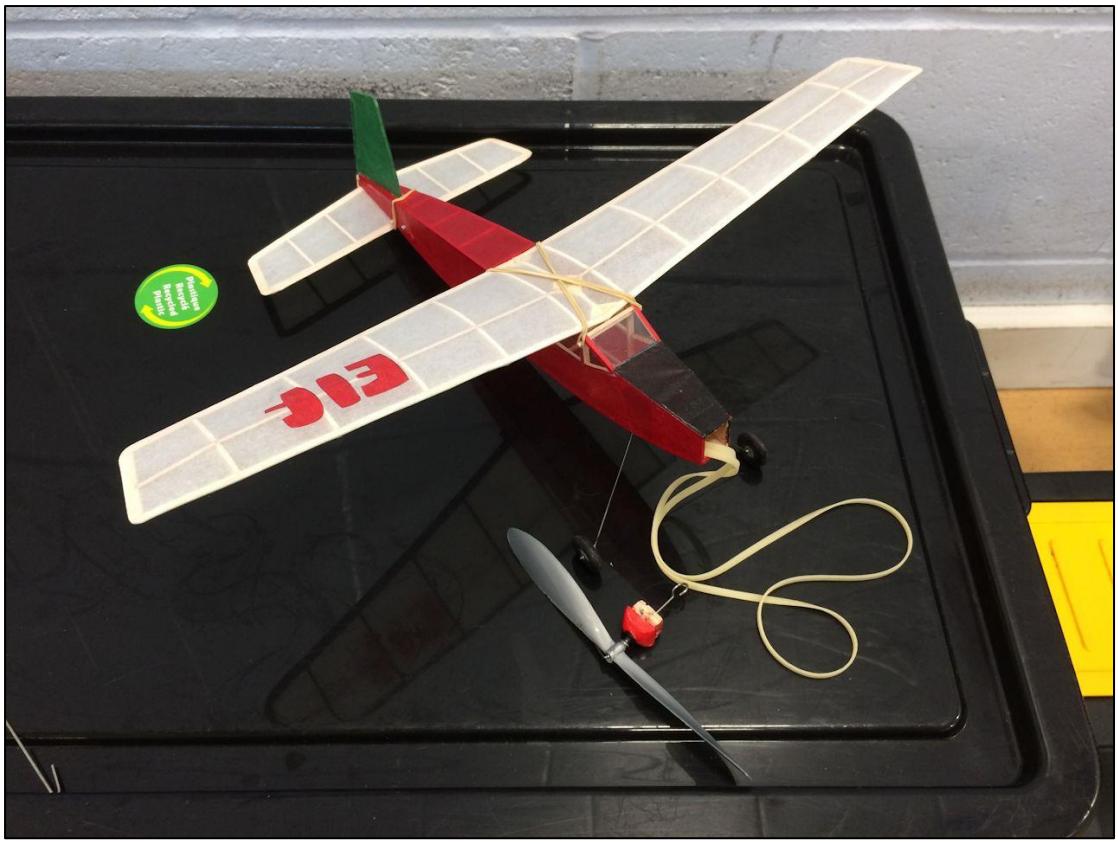
So I've had to swallow my pride and start building a Lacey M-10. This is, of course, acutely uncomfortable. Let this be a lesson to those of you who are inclined to take the mickey in an indiscriminate manner…



The only thing that might spare my blushes to some extent (for a while anyway) is that the Indoor Scale Nationals are at the very least on hold and might not take place at all, the earliest that they might be held is probably September so I have loads of time to finish this… aerial device.

Elf and Safety for RC Flyers (with thanks to Lionel Haines and John Holman)

After being bombarded with a letter (well, it was a forceful verbal request - that's very nearly a letter) on the subject and being reminded that some of you naturally-keen RC types might not have a background in small free-flight models, I thought it might be a good idea to say a few words about how to put the Keil Kraft Elf together in such a way that good flights are assured, and how to trim it to fly nicely.



John Holman's Elf illustrates some of the points made below.

Building Notes

Generally speaking, the building instructions on the plan are pretty reasonable, apart from frequent reference to balsa cement (PVA is much better and doesn't shrink) but there are some things that you may wish to change from the standard kit. In no particular order:

Rear Motor Peg

You can leave the rear motor peg where it is but it might not fit your winding stooge, so it's generally OK to move the rear peg forwards – just insert a piece of 1/16" balsa that looks like the original motor peg; you can move the peg forward a complete bay if you want, John Holman's Elf (see above) has the peg moved by a lot less, maybe 1/2" – 3/4".

Noseblock

The plastic nose plug will need about 1 to 1.5 degrees of downthrust, and (if you're going to set it up as described here) a smidge (about a degree) of right side thrust. The noseblock also needs to be a tight fit in the nose opening so that it doesn't move when the rubber is at maximum turns – add layers of balsa cement or sanding sealer and sand smooth.

Undercarriage

The original undercarriage supplied by Keil Kraft was 20 SWG (0.9 mm diameter), but VMC have taken to supplying thinner 0.7 mm wire in the Elf kits. The problem is that this does tend to make the undercarriage a bit bouncy and tends to interfere with the landings, so you're much better off using the original 20 swg wire.

Also, since Tony has specified that he wants to see a "proper landing" without the model tipping up on its nose, it's vital that the wheels run freely. What I recommend is that you solder or epoxy a tiny washer (such as those sold by SAMs as thrust washers) to provide a bearing face for the wheel as shown on John Holman's Elf, allowing the wheel to run free. It's also probably worth mentioning that if you're going to solder the wheels on, the time-honoured dodge of putting a piece of card behind the solder to protect the wheel does work, but since the wheels are plastic it works better if you dampen the card before soldering. And be really quick with the iron.

Banded-on Tailplane

The Tailplane is banded-on as on John Holman's example above, this is great if you're a bit nose-heavy and need to put a bit of packing under the leading edge of the tailplane, but the problem is that it can move at inopportune moments. If you don't actually *need* it to be adjustable, you're better off measuring/marking the position carefully and tacking it on with a few spots of CA.

Noseweight

Most Elfs seem to need around a couple of grams of noseweight, which is a lump of Plasticene about the physical size of a 10p piece, or getting on for double that if you're using Blu-tack. Don't be afraid to add as much noseweight as required to get a good glide.

Rubber

The advice on the plan is to use four strands of 1/8" flat rubber, which will give a fast climb outdoors but is *far* too much indoors. The recommended power is two strands of 0.100" (100 thou, available from SAMs) about 1.8x the hook-to peg distance. The maximum number of turns for continuous use (80% of break turns with a short recovery between flights) is about 1300-1350 turns, depending on how far you've moved the rear peg. Don't forget to run it in (normally done by the trimming process) and don't forget to lubricate it.

Trimming

I'm going to assume that you've built everything straight, or if you haven't you've twisted everything straight in the steam from a kettle before the trimming session.

Set-Up

I think the best trim for indoor is a left climb and a left glide, if you're testing it in the local park remember that the circle will have to be reasonably small in order to fit inside the hall at Trinity. The recommended set-up is a small amount (say 1/16") of washin (increased incidence) on the port wingtip, and either a small trim tab (e.g. folded masking tape) or an angled fin to induce a left turn – the

increased incidence on the port wing will increase the drag on that side and will tend to stop the wingtip digging-in at high power, and the rudder trim tab will help nudge it into a left turn.

Glide Trim

Balance the model where it says on the plan by adding weight to the nose or tail, and try several test glides – push the model forwards at a decent speed, aiming for a spot on the ground about 20 feet in front of you. If you're unsure what you're looking for, take some noseweight off until it stalls, then put the nose weight back a bit at a time until the stall goes away. Make sure the glide is turning left, and then leave the weight and all other trim adjustments alone – don't touch them for the power adjustment.

Power Trim

When happy with the glide, try about 150-200 turns, launch level and observe. What you're looking for is a left-hand turn, but it could go either way depending on how you've drilled the hole in the noseblock. If the turn is too tight to the left, shim the left of the noseblock with a bit of pre-prepared 1/64" or 1/32" ply (balsa usually crushes) to give a bit of right thrust, but hold it in place with a couple of dots of balsa cement or thick CA, otherwise it'll drop out when it lands or flies into a wall (shim the right hand side for left thrust if it doesn't turn enough). If it stalls, shim the top of the noseblock and if it looks as though it's diving too much, you might have over-done the pre-drilled downthrust so try shimming the bottom of the noseblock.

When you're happy with the flight path on 200 turns, try 300-400 and repeat the process, shimming the noseblock as necessary. When you've worked up to a decent number of turns (maybe 800-900 turns), try a takeoff (because the rules reward take-offs, and because it gives you more headroom to the ceiling.

Optimising for Performance

The basic rule for optimising performance is to *watch what the model is doing* and try to make each part of the flight better; some examples:

- Read up on how to stretch-wind; done properly, stretch-winding will give you a more consistent motor run, and more turns can be applied.
- You want it to get close to but not touching the ceiling furniture; if it gets there with turns to spare, the motor cross-section is too big and you can go down a size. But if its miles away even at max repeatable turns (e.g. 4-6 feet) then you need more rubber cross-section and can go up a size.
- Watch what's happening at the end of the flight when the glide trim has more influence – is it stalling, or is it coming down a bit too quickly? Adjust the noseweight and see what happens.
- Is it flying a bit fast on the climb? It might have a smidgeon too much downthrust, take off a little bit and re-assess.
- …and I'm sure you can think of others…

The other important thing, of course, when you're meddling, is to *change one thing at once* before re-testing…

Models from a Legendary Summer

I confess to being in a bit of a quandary about what to build for the (hopefully forthcoming) walnut+ scale Battle of Britain competition; for completeness, the rules are summarized as:

- Any airframe that was in squadron service with any air force between the official Battle of Britain dates of 10 July to 31 October 1940 is eligible (i.e. no prototypes, but contemporary 1940s USAAC, USN, Russian, Japanese etc. aircraft are all eligible).
- Single-engine model max span is 19", 22" for twins.
- Flying rules the same as "classic" peanut.
- You can enter two models if you wish, but they must be from opposite sides of the conflict.
- If the type fought in the battle as defined by the Battle of Britain Aircraft Wiki and has a colour scheme from the period, then it gets a small static placing bonus.

Obviously, duration will be very important (peanut scale flying rules) and whatever the airframe is, it will have to be *very* lightly built; in fact, if there's a retractable undercarriage then in spite of the 10 second ROG bonus I'd consider making the model "wheels up" in the interests of saving weight. The other thing that has recently dawned on me is that two (or three) seaters are a good bet because the nose often has to be longer in order to balance the weight of the second (or third) crew member and/or armament.

I think Peter Smart is probably still thinking about a twin (I expect he'll be dusting off a foamie), but that's a step too far for me – I could do my own plan, of course, but I have my hands rather full at the moment so that idea's a non-starter.

So, what to build? There are many possible candidates that should fly really well indoors (Curtiss P-40B, Douglas TBD Devastator, etc.) so to keep the survey to a manageable size, let's have a look at the single engine aircraft that could get the "fought in the battle" bonus that have been the subject of a plan or kit:

- Boulton Paul Defiant Mk. I
- Gloster Gladiator
- Hawker Hurricane Mk. I and Mk IIA series I
- Supermarine Spitfire Mk. I and Mk. II
- Westland Lysander
- Junkers Ju 87 B-1 and B-2
- Messerschmitt Bf 109 E series and F-1
- Fiat CR.42S Falco
- Fiat G.50 Freccia
- Macchi MC.200

I'm only considering really lightweight plans/kits because the lighter it is, the slower it will fly and the tighter it will naturally turn; anything that's Peanut, Dime Scale or pseudo-Dime scale with very little wood in it is usually a very good bet.

Boulton Paul Defiant

Of the list above, Dave King has already eyeballed the potential of the Boulton Paul Defiant and has (naturally, this being standard practice) banned anyone else from choosing it, and a very suitable plan is available in FAC news #169. Notwithstanding Dave's ban, it's a good, light model and I almost went for this one...

Ju-87 Stuka & Westland Lysander

It might be possible to reduce some of the wood sizes and use built-up tail surfaces for the Keil Kraft Lysander or Ju-87 Stuka (both available from Outerzone) and *if built extremely light* either of them would be a very decent bet. But they didn't quite make the cut in this instance…

Fiat CR.42S

A Fiat CR42 plan by Pres Bruning was published in FAC news #95, but will need shrinking down in size to about 16-17" or so for Trinity. Loads of wing area because it's a biplane, but it's a bit heavily built and there are better options.

Fiat G.50

There's a very nice pseudo-dime scale Fiat G.50 in FAC news #212, and here's possibly a slightly better plan (dime scale again) in FAC news #224 with parts in FAC news #225. The fact that two people have designed one suggests to me that it's a good flyer, and I very nearly went for one of these.

Messerschmitt 109E & Spitfire

Outerzone also has plans for Comet Dime Scale Messerschmitt 109 and Spitfire; both these need a little bit of work to make them look right and the Spitfire has the usual short-nose issues (often turns out heavy), but the 109 has quite a lot of

potential because the nose is reasonably long and if I get time, my second model will be a 109E. There's a Dime Scale 109E plan (an updated Comet kit plan) in FAC News #307 – drop me a line if you want a scan of the plan and printwood. There's also a really accurate 16.5" span plan by Doug McHard on Outerzone with a charming 3-blade balsa prop, but it will require a considerable amount of careful weight saving in order to be competitive.

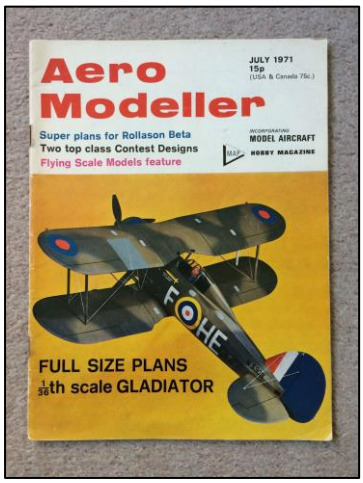
Hawker Hurricane

Hummingbird Model Products (now based in Cambridge) have a Dime Scale short kit of the Hurricane that's based on the old Comet kit which apparently flies really well. This is probably the easiest way to get a model into the air, and the printed tissue is for Bob Stanford-Tuck's Hurricane, so will get the static bonus. This Hurricane kit was the nearly the first choice, but in the end I went for something else.

Gloster Gladiator

After much deliberation, for reasons that are explained below, I'm going to build a peanut scale Gloster Gladiator.

Peanut Gladiator from 1973



One of the first peanuts that I built (circa 1973) when still a teenager was Doug McHard's Gloster Gladiator, published in the July 1971 issue of Aeromodeller.

Naturally, I made a pigs ear of it because – apart from the fact that it turned out pretty heavy (um. nearly an ounce – which at the time I thought was fantastically light) and the fact that I didn't bother with moulding the canopy – it was covered in some of that hard (Swedish) tissue that was supplied in Veron kits at the time.

This might have been OK if I hadn't meddled with it, but I tried to twist the wings straight whilst they were still a bit wet from water-shrinking, and since that tissue has no wet strength whatsoever, it produced a pock-marked surface and made a right mess. It kinda flew, though, just not very well.

The plan did have some issues and I think I got the top wing incidence correct more by luck than judgement, and tailplane fixing (two halves butt-joined to the fuselage) was also hit-and-miss. Mostly miss in my case (look, I was only about 13!). However, I still fondly remember it as my first Doug McHard designed model.

So at some point this year, I'm going to build another one with the plan enlarged from 12" to just less than 13"; it'll be my entry for the Battle of Britain competition and even if it turns out a bit heavy (it'll need a camouflaged finish

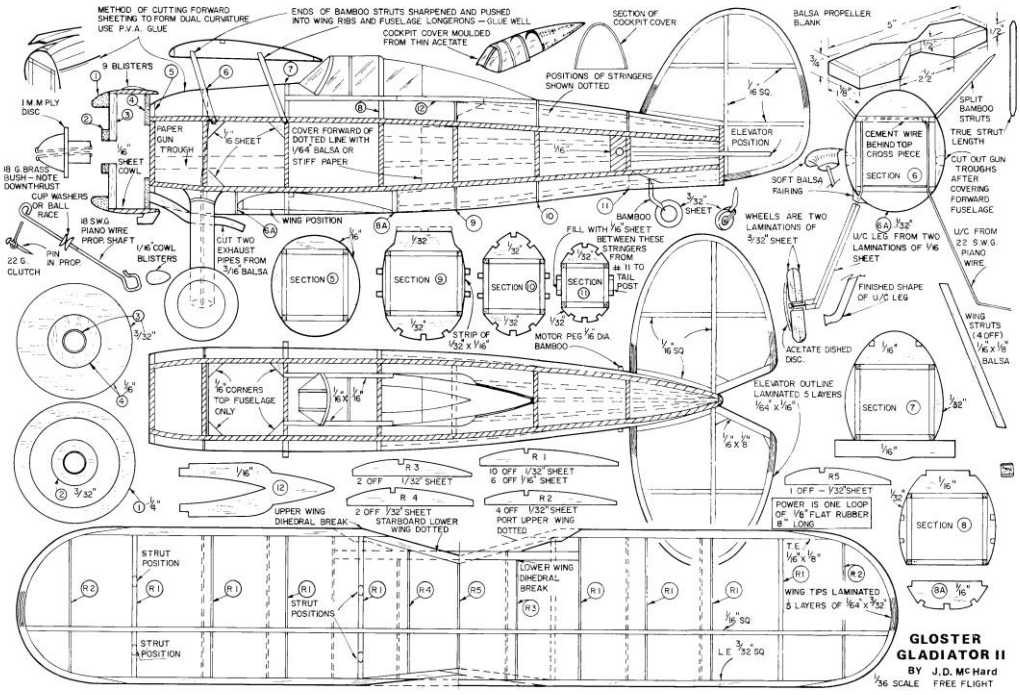
either done with printed tissue or applied with an airbrush in order to get the bonus), I'll have <ahem> one of the better-looking local peanuts[2].

If At First You Don't Succeed…

Luckily, I have since managed to acquire another copy of the magazine in question, and the plan is also available from Outerzone .

Obviously, there will be changes:

- Some of the wood sizes reduced (e.g. 1/16" sq → 1/20" sq).
- Moveable rudder to help with trimming.
- Lower wings washin/washout set-up like the Andreasson (because it seems to work).
- One-piece tailplane (two halves are tricky to align, and also a bit weak).
- Blue foam top front decking where there's a 3D curve (the original suggested 1/64" balsa sheet with darts cut in it!).
- Motor peg moved forwards a bit.



I don't honestly know if this is a wise thing to do or not, but I'm vaguely confident because, although it has a short nose with a draggy radial cowl and much drag-producing rigging, it does have about 10% *more* wing area than a Lacey M-10 (!!) so if I'm lucky it might be good for 30 seconds or so from a ROG.

But, most importantly, it'll be a nice build and a trip down memory lane.

[2] As well as one of the worst looking ones, as described earlier. Balance in everything…