WLMAC Newsletter March 2018

Editor – Andy Blackburn

The February WLMAC meeting was held in the new venue at Uxbridge Golf Club. Notice that some members do not have coats on; some are even in shirtsleeves.

Parish Notices

WLMAC Meeting 8th February

The February WLMAC meeting was held at Uxbridge Golf Club on Thursday 8th February, and I think the new venue met with general approval; it was a warm room (what luxury!) and the bar was well-appointed. Club rules will be amended to take account of the new venue and will be re-issued shortly.

Chairman Mat has spoken to the carvery at the golf club and if they have enough interest (they need about a dozen people), they will be prepared to do some basic food (e.g. pie & chips, ham, egg & chips or similar) before the next meeting; Mat had a show of hands and lots of people are planning to turn up about an hour early for the next meeting (7-ish) for some pre-meeting nosh – feel free to come along, the more the merrier.

Gate Left Unlocked

Graham Nye (local landowner) gave us the heads up and sent the picture – his tenant landscapers found the gate like this, some person with the keys had left the gate unsecured with the silver lock clipped on gate, and the chain and combo lock just hanging. We have no idea who was responsible (checked with Suez and it wasn't them). The last WLMAC person at the field from the day before was 100% certain that it was locked with the silver lock.

So, just a reminder – please be vigilant when locking up, and report any similar incident or anything you're not sure about to Chairman Mat.

Equine Pitch Invasion

The committee was rather startled by a recent report that there were horses at the patch and - after a brief moment of shock and discombobulation – dispatched a crack team to assess the situation and report back. When the team (that is, Tony Parrott) arrived at the WLMAC patch they/he discovered a couple of equine quadrupeds who had clearly got through a broken fence from one of the adjacent properties.

Tony got out of his van and went forth to investigate the situation, and then rapidly moved back to his van and got back in again when the horses started trotting towards him. Mr Parrott was contacted for comment and when asked if it was true that he ran back to his van as fast as he could, pursued by horses replied "do I look like I can <expletive deleted> run"? Mr Parrott was also unable to deny that he made his report on the situation with the van windows shut and the doors locked… Now, so of you may be inclined to snigger a bit here but to be fair to Tony, there *have* been a number of historic reports of carnivorous horses, for instance, "The Man Eater of Lucknow" was said to have been presented to Maharajah of Oudh by King George IV, sometime in the 1820s.

The situation was being dealt with by Suez because a member of the public complained about horses running wild (what normally happens in situations like these is that lots of notices are put up around the site to give the owners a chance to recover the animals, then if they're still there after a few days the horses are caught - by professionals - and re-homed in a horse sanctuary) – but Richard Orr advised they escaped into an adjacent farm and were last seen heading towards Harefield! So they're gone, for the moment.

On the Workbench

Nijhuis P-51D Mustang – Roger Freeborn

Roger's P-51D before covering; no idea how much it weighs but Tony Nijhuis' original was about 9lb.

The P-51 covered and ready to go – not much scale detail, but in the air it's definitely a Mustang. Power is from a 6s5000 LiPo, the 4-max 360 kv motor turns 16" x 10" prop. Flight time is 6 minutes with plenty of battery left so 8 minutes of warbird-type flight should be achievable.

The plan and build instructions for the Tony Nijhuis P-51D were fairly easy to follow. This was my 5th model built after a couple of DB Sports and Scale (Auster J1 and Sopwith Pup) and another Nijhuis model (Boeing B17). If you are new to balsa builds, it is easier than you may think - and the electrical setups are ready designed by 4-Max. I don't bother to add scale detail - I just want a plane that looks vaguely like the real thing. If I were to start again I would pay more detail to the wing retracts - more strength and possibly mount on a ply plate rather than beech bearers.

The most difficult part was the steerable retractable rear wheel (which is sold as a retractable nose wheel) because the geometry of the pushrod has to be quite precise. Chairman Mat is using a pushrod connected to the rudder, but I thought that was too difficult so I opted for another servo to steer the wheel. Originally, I mounted the wheel and then put in the servo, but it is very difficult to get the angles right, and it proved unreliable. I have now cut it open and started again; this time I mounted the servo and the retract unit on a ply plate and got it all working on the bench. Then it was a simple (!) matter of taking the whole assembly and inserting it into the rear fuselage.

Of course it is too difficult for me to fly at the moment so I will be calling on my mentors (Matt, Tony -the biscuit eating one, John and Len) to crash it for me. Then I will have room to start on the Nijhuis Lancaster.

{From Chairman Mat: Roger selected me as chief test Guinea Pig and after a small amount of fettling, the usual pre-flight checks etc., it was time to give it a go. Apart from having the ground tracking of a supermarket trolley (loose tailwheel, as discussed above) it all went very smoothly, in fact I do believe it's the first warbird I've ever test flown that didn't need any trimming. It's a lovely flyer and all the credit to Roger's building skills which are really coming along.}

Warbirds for Beginners – Andy Blackburn

There are a number of people building warbirds at the moment and I'm sure there are several other members who have thought about having a go at a large (60"+, 9lb+) WW2 Warbird, but for whatever reason – lack of time, lack of confidence or whatever – haven't got round to it, so I thought a few words on the basics of Warbirds might be useful.

The thing about WW2 aircraft of this general size is that they are *different* to normal models in a way that you really have to experience to understand; they demand a level of attention that other models don't, and the visual impact is often quite remarkable. As a result, they are very rewarding to fly and can be quite addictive.

Sensible Rules for Warbirds

Warbirds have a reputation for being very tricky to fly and whilst this *can* sometimes be the case, it often isn't if you follow a few simple rules;

1. **Set up the control movements carefully** – this means "do it *exactly* as it says in the instructions"; this is no place for approximations and you can always go off-piste later.
2. **Don't take liberties with the balance point** – a sport model is not demanding in this respect, but scale models usually are and large, heavy warbirds *always* are. Measuring the balance point on large models can be tricky so I tape a couple of matchsticks to the top of the wing just forward of the middle balance point and add ballast to the nose until the model balances level – usually gear up – inverted with fingers on the matchsticks. Then I add another 2 ounces for luck - it can always be removed later if it's not necessary.
3. **Make sure the power system works properly** – there are a couple of things that you really do need to pay attention to;
    - Engine cooling; for I.C. you can often get away with quite a small air inlet but you need an air exit of at least 2 times (preferably 3 times) the area of the inlet. Otherwise, what happens is that the expanding, hot air tends to block up the exits which turns the cowl into an oven, which cooks the engine, which eventually stops. And for a sport warbird, it's *OK* to have the cylinder head sticking out into the airflow a little bit, and it will make your life a lot easier.
    - Prop diameter and pitch; often, there's a temptation to use a new engine in a Warbird and "run it in in the air", usually with a "running in" prop with relatively low pitch that won't put a lot of load on the engine. However, if your engine turns (say) a 14" x 6" propeller at (say) 8000 rpm then the pitch speed (the speed at which the model will be pulled through the air) will be about 6 (inches) x 8 (thousands of rpm) = 48 mph. This is *far too slow* for a heavy Warbird – you will normally need a pitch speed of about 65-70 mph in order to commit warbird-aviation safely.

The electrickerists amongst you will by now be congratulating yourselves on your superior choice of power plant - electric is often easier (although flights are often shorter) but in a Warbird, it's often not *quite* as exciting as I.C. unless you make the engine noises yourself.

4. **When flying the model, treat it with a degree of respect** – it'll weigh 1 ½ to 2 times what a normal sport model of that size will weigh, so it'll have a higher wing loading and – importantly – more momentum. Don't take liberties, fly it smoothly, give it some time and space to change direction and it'll be a beautiful machine to fly; get it right and it'll make the hair on the back of your neck stand on end.
5. **Flaps are a very good thing** – flaps make a huge difference to how easy it is to present the model at the end of the runway at the correct speed and altitude to make a good landing (see later), they're not difficult to add and they will make your life a lot easier.
6. **Get some help for the first flight** – I always get someone to stand next to me for a first flight, they can provide measured advice if required and (if necessary) they can look after the retracts and flaps; this reduces stress and makes life a lot easier.

Getting Yourself a Warbird

Many warbirds are built from plans but the Top Flite Gold Edition kits are worth looking at, the instruction manuals are really, really good; all you have to do is follow the instructions and a finished warbird with Monokote and decals (!) pops out at the end of the process.

Many of the Tony Nijhuis plan/wood packs/kits are very good indeed and if you want to build it yourself that's the route I'd recommend, but if you don't want to invest that much time and effort then I think there's at least one readily-available ARTF that really is dead easy to build and fly, with a couple of caveats (see below).

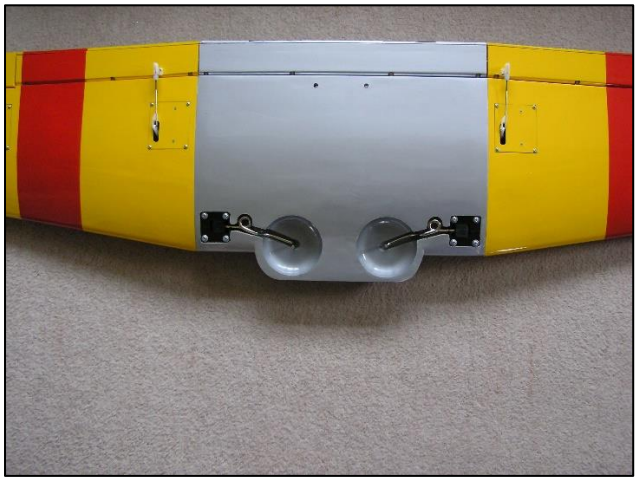
Before we get onto that, though, there are a couple of additional practicalities to do with ARTFs that should perhaps be mentioned;

1. **ARTF Fuel Proofer Usually Isn't** – the engine bay of ~~most~~ every ARTF that I've ever had has been given a quick flick-over with a brush that's been partially-loaded with varnish that isn't actually fuel proof. The best way to fix this problem is to coat the entire engine and tank bay in either thinned 30-minute epoxy or epoxy finishing resin. In every case where that's been done, it's worked.
2. **ARTF Retract Mounts are Designed to Fail** – every ARTF that I've ever seen has had a weak undercarriage because – not unnaturally – they want you to buy another one or at the very least, some spares. What I normally do is to reinforce every rib, spar and bearer that I can find in the undercarriage area with hard ¼" balsa sheet (connecting the top and bottom wing skins helps a lot) and then the exposed bottom of the top skin is reinforced with medium-weight glass cloth and epoxy. So far, that's worked.

An Easy Warbird – the Top Flite AT-6 Texan

All the Top Flite ARTF 60-size warbirds are well-designed and reliable, but the AT-6 is probably a little bit easier to handle as it's a little bit bigger and lighter than most of the others in the range. If you don't want to spend all that money on a kit then you might be able to find one second-hand. I imported one from the U.S. back in (I think) about 2009 (via Tower Hobbies) before it was generally available in this country, and in spite of a dodgy engine installation it turned out to be an easy model to build and a very easy model to fly.

Highlights of Building the Texan



The wing went together really easily, even the mechanical retracts. The flaps are in three sections with the middle section (which is arguably the most effective) linked to the outer two sections. Looks a bit heath-robinson, but it worked every time.

The (plastic) birdcage structure between the pilots was just cyano'd to the (plastic) cockpit cover, and needless to say it quickly vibrated loose. I had to take the canopy off, pin everything back in place and replace the canopy.

The only really tricky bit is where the stabilizer is epoxied in place and the excess squished-out epoxy wiped away before it sets; there are lots of ways for this to go wrong but I invited a mate round to monitor proceedings/check alignment and did exactly what it said in the instructions, used kitchen roll soaked in Iso Propyl Alcohol (IPA Surface Cleaner) and it worked out absolutely fine.

This is the engine set-up; for reasons that now escape me (but were probably related to the fact that it would fit entirely within the cowl) I elected to use a ***new*** *RCV-91, an engine that I knew could easily gain 1500 rpm during the running-in period. The implications of a potential lack of power for safe flight seem to have escaped notice. Needless to say, I have now learned my lesson.*

Flying the Texan

The Texan was my favourite model for a while, at least until its oil-soaked demise (see below). The first flight (without cowl but with about 3 oz of compensating balance weight) was a tad stressful as the engine was brand-new and was only turning the 14" x 6" master airscrew prop at about 8000 rpm which (as discussed above) just didn't provide enough power for a 9¼ lb warbird, so it would only climb out of ground effect – very, very slowly – when the undercarriage was retracted, and I managed to bend a u/c leg slightly on landing; my excuse is that I was quite stressed and the light was failing, so I couldn't really see what I was doing.

When it was properly run-in, though, with a good propeller (Graupner G-sonic 14"x7", which it turned at about 9300 rpm) the RCV had about the right amount of power and it was a real pleasure to fly.

- Take-offs were easy – hold back stick, smoothly advance the throttle with a touch of right rudder to keep it straight, whilst easing off all the back stick so that the tail comes up, then ease back on the elevator a tiny bit and it would fly itself off. The gear switch could be toggled as soon as there was a good climb.
- General handling was really nice, it needed about 55-60% throttle to cruise around at scale-ish speed and required a tiny bit of rudder for really nice turns; I mixed about 5% of aileron-rudder mix on a switch so that it could be switched out for aerobatics. Stall behaviour was exemplary (it's a well-designed wing), I don't remember what the spins were like; they must have been OK otherwise I'd have remembered. There was enough

power to do all the usual advanced-trainer-type aerobatics, even power-sapping manoeuvres like a Cuban-8 after a short dive for speed. Basic aerobatics were straightforward, for example:

  - Loop – full throttle for a few seconds then pull smoothly up through the vertical, the nose starts to fall on its own as it goes onto its back so gradually release the back-stick, by the time it gets inverted at the top of the loop the elevator should be at neutral and it will fly over the top in a ballistic arc. Throttle back to idle as it goes over the top and pull back gradually on the elevator so that the fuselage comes level at the point where the first pull-up was made, and pick up cruise power.
  - Stall Turn – full throttle for a few seconds then pull smoothly up to the vertical, reducing elevator to zero as the fuselage becomes vertical and let it continue upwards. At the correct point (discovered by practice at altitude!!), reduce the power to about half and push in rudder (3/4 to max, depending on whether it's left or right – but for safety reasons it should always be away from the flight line) and reduce both rudder and throttle to zero just after it goes over the top. It should finish up heading vertically downwards, so recover as for a loop.

- Landings were usually a thing of beauty, particularly after it was outfitted with a set of Rhom-Air retracts and sprung oleos; gear down on the into-wind leg so that we know both legs are down, half flap once established on the downwind leg, reducing throttle to bleed off speed then full flap on or just before the crosswind leg, turn into wind and aim it at the runway threshold (so that the top of the wing is just visible), adding a few notches of throttle as necessary to make sure that it doesn't get too slow with all that drag. When it's at the threshold at – hopefully – the correct low altitude (a foot or so), come back to idle and (very important, this) *watch the fuselage* to keep it level, keep watching the fuselage and when it starts to sink just ease back on the elevator as though you're trying to keep it at the same altitude and it'll land itself. Lovely.

However, because of a combination of inherent vanity and thinking that I knew best, I had failed to provide an adequately large outlet for the cooling air and the engine would often stop, particularly on warm days, at the most inopportune moments; I became quite good at dead-stick landings.

The Texan met its unfortunate end one hot afternoon at the patch when the RCV stopped (again!) whilst the model was heading downwind at relatively low speed and altitude, so I had to put it down in the rough with the wheels and flaps up. This should have been fine but it transpired that the engine bay was *so* oil-soaked that the entire firewall (and cowl) had fallen off, and there was no non-oily wood left to glue it back together. So with great regret, the Texan was retired. I still have the wings somewhere…

Events

Date	Event	Location	Description
Thursday 08 March	Club meeting	Uxbridge Golf Club	"Drone" racing
Friday 16 March	Indoor Flying	Vyners School Gym Ickenham	Indoor Flying 7.30-9.30 pm
Thursday 12 April	Club meeting	Uxbridge Golf Club	Skills Evening. Demos by Dave Chinery and Mathew
Thursday 10 May	Club meeting	Uxbridge Golf Club	Chuck Glider competition
Saturday 9 June	BMFA Scale practice/tuition	Harefield	Competitors practice for tomorrow's competition, also tuition for members with a scale model who want to see what it's like.
Sunday 10 June	BMFA Scale competition + BBQ	Harefield	BMFA Scale Competition with BBQ for members and competitors. Spectators welcome, normal flying resumes when competition finishes at about 3pm.
Wednesday 13 June	Field meeting	Harefield	BBQ and Electric Flying
Sunday 1 July	Family Fun Day	Harefield	Scale Day and Fun Day
Sunday 8 July	Family Fun Day reserve date	Harefield	(Only if rained off the previous week)
Wednesday, 11 July	Field Meeting	Harefield	BBQ and Electric Flying
Wednesday, 08 August	Field Meeting	Harefield	BBQ and Electric Flying