The Build

Miles Hawk Speed 6 by Brian Green

I have always enjoyed racing, it's a simple competition, fly the course in the fastest time. You do have to avoid the other three planes all desperately trying to be number one and that's where a good caller and fast reflexes come into play. You fly the plane and the caller tells you what to do, a team effort. Another advantage of racing is that a second is a second anywhere in the world, making it easy to compare your progress to the world's best. But this article is about scale racing, yet to achieve International recognition. There several classes flown here but for me Golden Era is the go. Scale replicas of those pre WW2 racers with up to 100cc doing the pulling.

When the late Leo O'Reilly proposed this scale racing event in the nineties I was enthused and the aircraft I chose to build was the Miles Speed Hawk Six. The reason was that English racers had small engines, when compared to their US counterparts and therefore the airframe needed to be more efficient. Whereas the Yanks simply put as much grunt up front as they could fit in.

So my Speed Hawk was built from Aussie modeller Ken Burke's plans using a 3W 56

Marking out the wing section for wing fillet template

Easy to install and ultra reliable Robart pin hinges

Internal elevator horn made from 5/32″ (4mm) K&S spring steel wire. Plywood block yet to be added

A bit of lick to fix the ding. *(Technically this was my fault because I made him move the model. ED)*

DA 85 engine and three piece MTW header

Will Locktite keep the cowl bolts secure?

using methanol fuel for power. I did change the wing section to a symmetrical one with the idea of using the Hawk for racing and scale aerobatics but Scale Aero never got off the ground. This model was successful with a second and first place in the early race meetings.

After the Hawk came a Mr. Smoothie, an American design with retracts and an inline Moki 60 for power. This set-up provided a small frontal area and when the Moki could be persuaded to run properly it was very fast. That model now resides in the hangar of son Stephen, who is still grappling with the unreliable Moki.

With the development of a scale racing special interest group and a regular fixture of races it was time to get back into action. Another Speed Hawk, why not? The rules state the model must weight three pounds for every 10cc of engine capacity and there are minimum airframe dimensions. The 3W 58 was still sitting in the cupboard but needed a rebuild, however the current gun engine is the DA 85 petrol. I am not a lover of petrol engines, they stink too much and the fuel although cheap, is highly inflammable, but they are the trend in large capacity model engines, so one was ordered.

Another rule is that the engine must be basically enclosed with only the head exposed. Laying the DA85 on the plan indicated fuselage modifications would be needed to meet this rule. The fuselage was deepened by 26mm and the taper towards the spinner was reduced slightly.

There is also a noise level rule and to meet this a canister muffler system is tucked away inside the fuselage making the tank and ignition unit installation a bit sqeezy. I'm sure the weight of the DA 85 will require some lead up the back to get an acceptable CG position.

Next is the duct for carburettor air

Unfortunately winter has arrived and the garage/workshop is a bit on the cold side. This would not have bothered me once, hopefully warmer weather will appear soon

Nice thin wing section for racing

Next on the list is the tail wheel mount

Though this electric paint chiseller might be quicker and create less mess than the trusty old razor plane. It's completely useless for the task at hand

otherwise the heater will be on. As the photographs demonstrate, the basic structure is complete, once the wing fillets are glued in place and shaped it will be onto the finishing. Once I locate a source of three quarter ounce fibreglass cloth, it will be laid in place and then doped on as the base. Several coats of dope thickened with talcum powder provides the base for undercoat and then the final colour scheme.
Let's go rrrrracing.

Kevin Hay's 50% scale Pitts S1s

(Thanks to Launceston Model Aero Club Website) This project was the brainchild of Kevin Hay and his "construction manager" Merv Cameron. Kevin likes big models and the bigger the better. Kevin owns a smash repair business ZZ Autos in Launceston and this comes in very handy for some very nice paint jobs on his models. Merv has been building models from scratch all his life and at almost 75 years of age continues to amaze us with his skills. Incidentally, his AUS number is 91 so he has been around a while!

Kevin and Merv first "plotted" this project some 6 or 7 years ago and the build commenced in January 2013. The model was built from a "scaled up" set of 1/3 scale "Mike Smart" plans that Kevin and Merv had obtained with a smaller Pitts purchased some years ago. The model (not sure if "model" fits with a plane of this size) is of a Pitts S1s and is a 50% scale of the "Betty Skelton" aircraft. Betty Skelton was a remarkable pilot and you can read more about her exploits on line. The graphics were modelled on a full size Pitts located in

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Kevin Hay and his scratch built 50% Pitts Special. Wow!

Victoria and owned by David Pilkington
It is a fully built up construction and when you see the construction photos, you can see that a master craftsman has built it. Merv's work can often go unheralded because the wood craftsmanship that Merv employs to build models (and he has built plenty of big models, the 3.6m Cessna Aerobat was another example) is often hidden under either solid covering or marvellous paint schemes. I am sure that when you witness the work in this build Merv will be right up there with the best.

After reviewing the plans, Merv advised Kevin "I'm about to place an order for balsa and I reckon about $900 to start with". After Kevin got over the initial shock, he said to Merv "Put the order in". As expected more balsa was needed and the estimate was well over $1000 for the balsa alone! It didn't stop with the balsa. For the structural areas Merv needed a more substantial timber. Because of the size of this model, sourcing the variety of sizes for the job was going to be difficult. A search around some of the timber merchants in Tassie and they located Brittain Bros. Timber a specialty timber merchant at Smithton (a country town about an 3 hours drive from Launceston) who supplied a 10" x 1¼" x 9' (Merv still likes imperial measurements!) plank of King Billy pine. Merv would take this back to his workshop and rip it down to whatever size he needed; another demonstration of the craftsmanship that Merv possesses.

Merv also had to think about the size of this model and the size of his workshop. "Mmmm, I better clean up a bit if I'm to fit a 50% scale Pitts in my single car garage but I've built bigger than this so it will be no problem!" After a quick shift of a few models, boxes etc., Merv thought "space is tight but no problems for me".

Wish I could achieve joints like this. ED)

Low ceiling throws up a few challenges

Lower bench height was a necessity

As stated above, Merv commenced the build in about January 2013 and set about doing what he does best – cutting and shaping balsa! However doing what Merv does best has its challenges when you are building a 50% scale model in your garage. Merv is not 6' tall and as he thought about constructing the fuselage, he wondered "how am I going to work on this on top of my bench?" "Build a stool to stand on? No, build a shorter bench and put it on wheels so I can move it around where it is comfortable to work on!"

The fuselage was the first job and was of all built up construction and used balsa, King Billy pine for the longerons where strength was needed and ply and pine for various formers. A lot of thought went into making this model light but strong. An example of weight saving was the use of rolled paper to form tubes to the rear of the fuselage to carry servo cables.
One of the most critical components of the fuselage build was the construction and alignment of the main cabane. The alignment of this component was vital to the wing alignment and incidence. It had to be built in place on the fuselage and the incidence had to be spot on. It took as long to get this component built as it did the entire wings, such was the care taken to get it right.

Keeping the weight down aft

Robart Incidence meter. Incorrect incidence has made many a biplane a dog to fly

Another weight saving measure was for Merv to "roll his own" fiberglass wing spar sleeves to accommodate the wing tubes. The wing construction also used numerous techniques for building a structurally sound but lightweight build.

Merv also made up moulds for the fiberglass wheel pants and cowl from foam. Once finished, he had to remove the foam from inside the cowl and wheel pants. "I better not do this in the workshop" he thought. So out into the backyard to remove all the foam and didn't the yard look like it had been snowing! The tail wheel was handmade by Merv, who also has this enviable skill with a lathe and any metal work. Is there any material Merv can't work with? By the end of May, almost five months later, the build was complete and it was on to the fitting out of the internals.

The pictures give a small glimpse of what outstanding craftsmanship skills Merv has. It's a shame we can't bottle it and keep it for future generations.

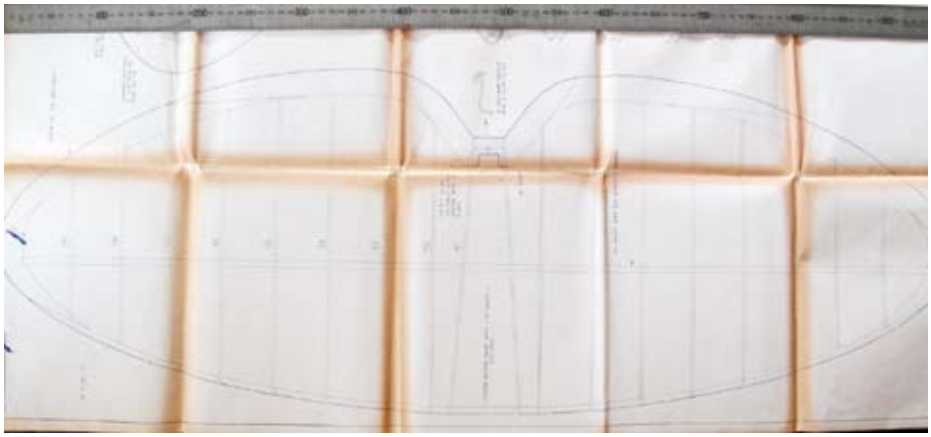
Mercury IV update
by David Hipperson.

Progress hasn't been as rapid as I'd like. Melbourne's bout of cold weather was a factor, I had really wanted to do all of the sanding outside rather than in my fairly small workshop but good days had been too few for comfort. Instead I'd sort of let the Mercury languish while I finished off my Stevens CAP 232, which could be done in the dry and warmth.

The sanding I did attempt was a little more difficult than I had first thought. Isn't that always the case? The filler (paint?) existing on both the fuselage and wings were,

despite their age, really cloggy and filled paper extra fast. I might have tried sanding with wet and dry paper used wet other than the fact that I did not want any water to attack the old balsa. I also thought that something like my “Mouse” sander might work but that was far to aggressive and the balsa too soft. Regrettably, it looks like softly, softly on this as a task.

So, what I could I do in the interim was to look at building the tail/elevator, fin/rudder, wing centre section and undercarriage. Plenty to keep me occupied through winter. I’ve also been thinking about what to do as a power unit. Obviously I have several brushless outrunners available but I’m very inclined to look at one of my older geared brushed motors and I have a spare, new in box, Astro 40G, a Graupner 1800 neodym 2:1 belt drive unit and others so I may well try fitting an older style motor into this vintage style model which might be appropriate. I hope to give you something more of interest next time. David Hipperson.



Span for the tail is 960mm

There is continued interest from people of retirement age returning to the hobby after years of asbsence. I’ve had a number of readers contact me about suitable kits to build. Most do their sums and get flying again, with an electric powered model. With time on their hands, the building experience is left wanting.

I’m very inclined to look at one of my older geared brushed motors and I have a spare, new in box, Astro 40G, a Graupner 1800 neodym 2:1 belt drive unit and others so I may well try fitting an older style motor into this vintage style model which might be appropriate

Common questions.

1. What is a suitable kit?
2. Where do I get one?
3 What electric package does it need?

Numbers 2 and 3 are the easiest to answer, but a motor without an airframe is of no use. In the next issue we will answer all three in a special feature. The new Seagull .40 trainer kit should be available by then. Ace RC Models in Perth advertise the SIG Seniorita and Col Taylor models lists the Great Plane PT 14. Pacific Balsa still market the Hustler Mk 111.

This iconic Australian design by Aeroflyte in South Australia underwent three make overs. Commercially they all sold well. Whilst all three were a success, from my experience, the third was the best. Designed by the late Ron DeChastel design it featured trike gear and a great wing section that was superior to teach in the wind. Not too much sheeting either, which makes covering with film much easier. Stephen Green.