



Model Aeroplane Club

Founded in 1946 by Ray Malmström

November 2015

Edited by Bryan Gostlow
Distributed by Tony Harper

Old Warden



Pete Iiffe holds up his Siemens-Schuckert D.III to show just how much down thrust is needed. As usual he was more than happy to explain how he achieves these minor miracles.

Scale tip for tyres: make up a core by butt jointing rubber or neoprene but then wrap with the neck of a balloon to achieve a seamless finish.



a scale prop to complement the flying one



what a box of delights

Old Warden

flying weather at last



Keith Palmer with Jaguar



Terry of course with his Corben Super Ace



Keith again, this time with Golden Eagle



do you think they know what they're doing?



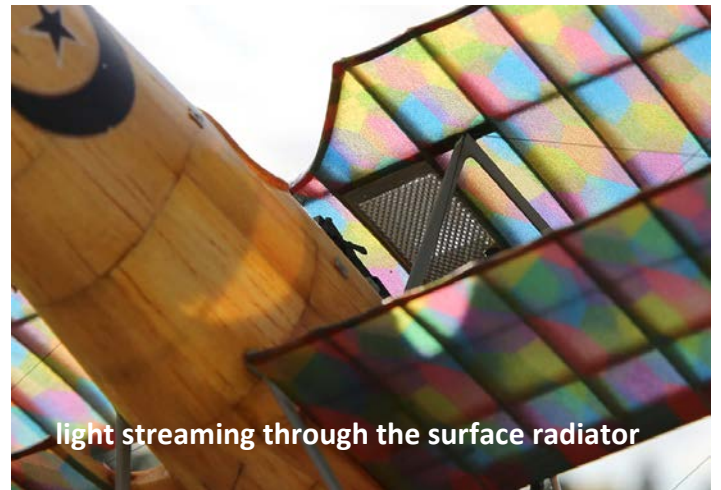
Beriev Be12 from Mike Stuar
not afraid to tackle an unusual subject



Martin Stoneleke's x2 Linnet



Martin with his Contestor '50'



light streaming through the surface radiator



Tim Grey prepares his Scarab



Chris Aylott winding a Gypsy



Pete Iliffe's Albert Ross

Looking Up

a report from Tony Harper

Will Sir be baking this afternoon?

Forget the silly title I'll come back to it later if you're still with me. Right, let's get on with it, if you can remember my previous offerings earlier this year you may remember that the air over and around Ely had been unusually quiet. Since July things have warmed up a little in fact 1st July was a particularly interesting radio day. Several KC135 tankers had passed over Ely heading North East and these were followed about an hour later by 14 F15's. Just before lunch, about the time they would normally return, I heard a call from one of the F15's saying he had a problem. He had attempted to refuel but something was wrong and the fuel transfer had failed. He had declared an emergency and was returning to Lakenheath. Then it became exciting, he said he was 35 minutes flight time away from the "Heath" (his word not mine) with 20 minutes of fuel left. Maths was never my strong point but I soon worked out that he had a small problem. I should point out that this was one of those rare days when I could hear Lakenheath ground control, something to do with cloud cover I think. Maybe someone in the club who has a greater knowledge of radio telegraphy could explain to me why this happens. A conversation followed between the pilot and someone on the ground about height and throttle settings and it was agreed that he could just get back which he presumably did because I heard no more. How they managed to overcome what was originally supposed to be a 15 minute longer flight than he had fuel for I don't know and why they didn't suggest getting him down at Marham seemed a bit odd to me. In the afternoon, still listening to the radio, I heard an unlucky pilot saying that his starboard main undercarriage was not locked down; two greens when there should have been three. Unlike the first pilot this one had a full tank of finest unleaded. His wingman told him all looked O.K. and he was then told to land at Mildenhall but only after he had gone out over the North Sea and dumped fuel. Before this he was to raise and lower his undercarriage a few times just to see if this helped and it seemed this did the trick because 20 minutes later he and his wingman came over Ely and landed at Mildenhall. Not sure why they chose Mildenhall and not his home base.

Now, when it comes to the Lockheed Hercules I thought I seen most variations with the possible exception of the Spectre. At the end of August I saw a Hercules, and it turned out to be a type which I hadn't seen before. Before I continue I should point out something which some of you may already have found out and that is with age comes failing eyesight. Whilst pottering about in the garden one morning, without optical assistance, when cutting grass I rely on screams to let me know I've hit something, I heard a Hercules and looked up. Squinting, as one does, in a futile attempt to improve things I saw what looked like a flying boat with 4 engines! Fortunately long distance specs were at hand and I managed to get a good look at my flying boat as it went away. Now you know as well as I do that there aren't any 4 engine flying boats hereabouts and, of course, this was no flying boat just a Hercules with a funny tail and what looked, at a distance, like wingtip floats. A few minutes on the internet and all was sorted it was an EC-130 Commando Solo. They do give their aeroplanes funny names. This is the official description of it duties. The EC-130E/J is a specially-modified Hercules that conducts information

operations, psychological operations and civil affairs broadcasts in AM, FM, HF, TV and military communications bands. A typical mission consists of a single-ship orbit offset from the desired target audience - either military or civilian personnel. Many modifications have been made to Commando Solo. These include enhanced navigation systems, self-protection equipment, air refuelling and the capability of broadcasting radio and colour TV on all worldwide standards.



One evening in late July one of those products of an unholy alliance flew over in the general direction of Coveney a little later it returned but before it passed over Ely it went into its helicopter mode and hovered, the noise was horrendous. It eventually moved away and I must confess to a feeling of relief. Before I tell you about some real aeroplanes that I've seen I must tell you about the first week of September. NATO had decided to shake a fist at Vladimir Putin and carry out a good old fashioned military exercise. It wasn't the best week for aircraft spotting but there were enough breaks in the cloud to see F15's, F16's, a couple of Mirages, Tornados, Typhoons and some very high flying B52's. There were also two AWACs one RAF and one NATO and the first RAF Rivet Joint RC135 that I have seen. I also got to see the two F22 Raptors brought in from the States especially for the occasion and they were still about long after BBC Look East said they had gone back to America. I wonder what dear old Vlad thought about it. Probably couldn't care less.

Now for some real aeroplanes, on the day after the VE Day display at Duxford a lovely rumbling sound turned out to be the newly restored Blenheim and such a delight. That black Yak I've mentioned before appeared again and I still don't know who owns it or where it comes from or goes to. A Battle of Britain Memorial Flight Spitfire visited Ely one Saturday and flew twice around the centre of the City before heading North. A Hurricane quite high and midweek passed over also headed North. I saw Sally B at a distance going in the general direction of Cambridge also midweek presumably going home after a display or test. On the afternoon of the Clacton air display I saw the Vulcan probably for the last time. It had shown itself to the Americans at Lakenheath and Mildenhall, and no doubt made them jealous all over again. Another lovely rumbling turned into a beautiful Biplane Waco YKS-7 in a very fetching green and cream colour scheme, it was most unexpected and all the more

welcome. It was built in 1938, is now registered G-BWAC and is owned by David Peters who I consider to be a very lucky man who is, no doubt, extremely rich. And finally yesterday, Friday 18th September, while standing on Brancaster beach the Battle of Britain memorial flight Dakota flew down the coast and turned towards Marham. And a final finally, today Saturday 19th September a Battle of Britain Memorial Flight Spitfire came over going South towards Duxford.

To return to that silly title, what do you cover your plans with to stop the glue or balsa cement sticking to it? For a long time I used silicon baking parchment but when I ran out I couldn't get any more, at least not the white variety. So I got some waxed paper but it didn't work like it used to when I were a lad. White wood glue and balsa cement soaked through and everything was stuck together. I tried cling film but I didn't like it at all. So, in desperation, I searched on line and found some parchment at

Lakeland, this is a cooking equipment shop which has everything including a branch in Cambridge which I visited. Feeling very pleased I picked up the smallest roll they had, all 50metres of it, and went to pay. A very tall, superior looking lady took my money and asked "will Sir be baking this afternoon?" I explained what I was going to do with it but she didn't say anything just twitched as she looked at me with an expression on her face which suggested that the wasp she was chewing had a bad taste. I would recommend silicon baking parchment, nothing sticks to it and nothing comes off it and you can draw on it so you can draw a non-stick plan should your heart desire. I'm sure there are other things you could do with it. I wonder how it would take spray paint and could shapes such as registration letters be cut from it and applied to a model once peeled from the parchment. It do make you think don't it?

Newsletter: 2000 and 2001

edited by Roger Hines

When Gordon Hannah passed on the newsletter editor's baton he also handed me a substantial pile of boxes containing a near complete record of this newsletter from June '82 when Peter Hoskison started the ball rolling. Many of you will know that Roger was editor for two years from February 2000, at a time when a new edition rolled out every month!



I've been looking through those newsletter and though they were a bit thin to begin with Roger soon got people contributing and what interesting reading they make:

May 2000 - Roger took a turn in a full size glider and who was in the instructor's seat? Gordon Hannah. It also featured the first colour photo.

Dec 2000 – Chris Strachan elected chairman

Jan 2001 – Michael Marshall contributed an excellent article on covering mylar with tissue

Mar 2001 – Chris sets up the first open indoor (Public) meeting

Apr 2001 – records the demise of the Aero Modeller (ed Ken Sheppard?). This newsletter also contained an interesting article by Chris titled 'Are you perverse?' about building scale models of aircraft that never made it to production. Such a good article in fact that I twisted his arm to let me reproduce it here. - page 8

May 2001 – and probably the scoop of Roger's editorship when he covered Bruce's design for an indoor biplane canard called 'One Cent' . .



Jun 2001 – following a visit to the club Laurie Barr (flying Bruce's One Cent) contributed an interesting article giving advice on, "How does one get the best out of a simple indoor model" You won't be surprised to learn that Laurie made the highest time of the day.

Aug 2001 – found John Valiant was putting in a lot of time gathering together plans for Ray's models: "With club members' help, the total of known plans has now reached 181, of which I have 139 so far."

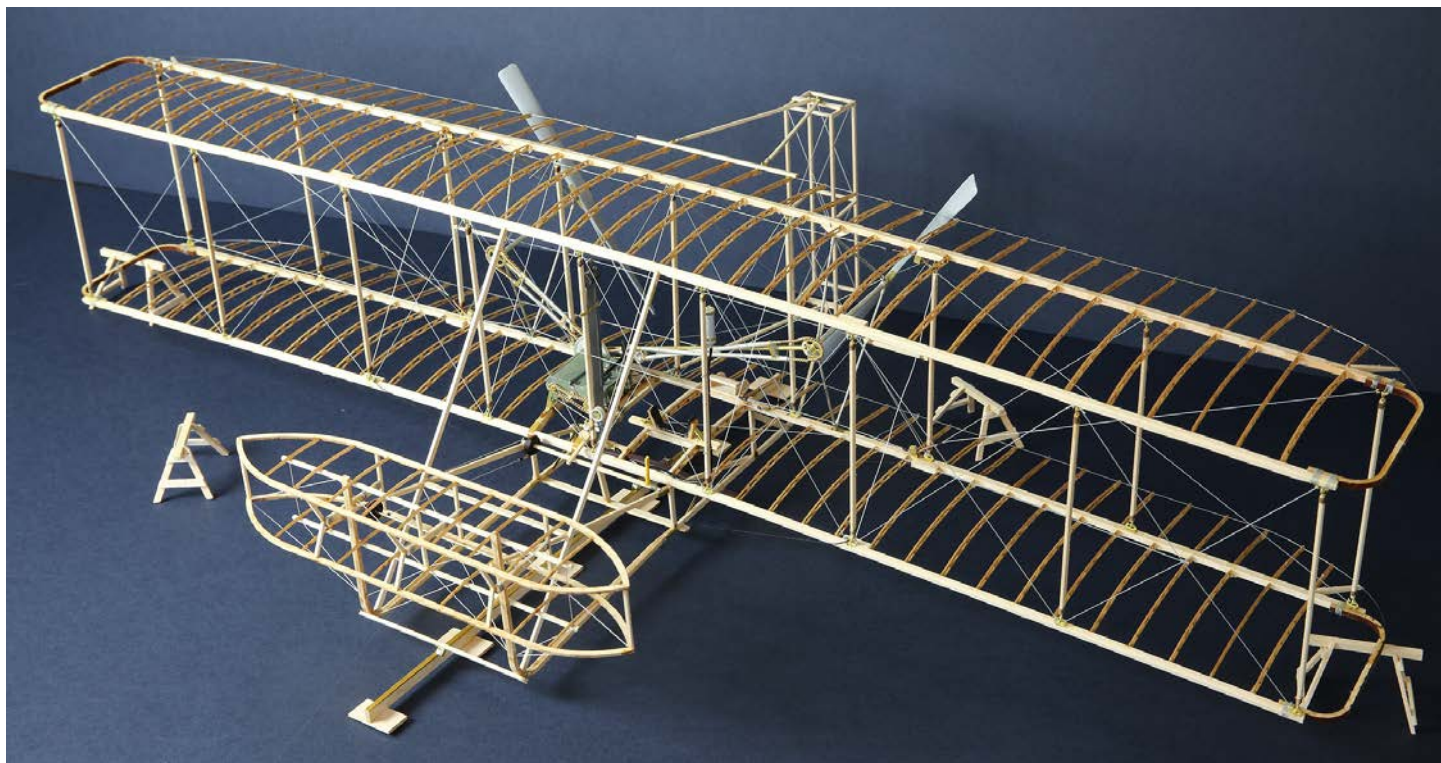
Oct 2001 and a letter from Austria, via Peter Hoskison, containing "Some thoughts from abroad" contributed by Dennis Sharman

My own dad suffered as Roger did with his sight and I could recognise the frustration in 'almost' seeing. I'd email him the newsletter as a .txt and he would pull it into Word and have it read to him. I tried this technique for myself and found it invaluable for spotting typo's.

Roger also shared with me the *editor's secret*, but I couldn't possibly include that here! He in turn handed on the baton to Dave Burkin.

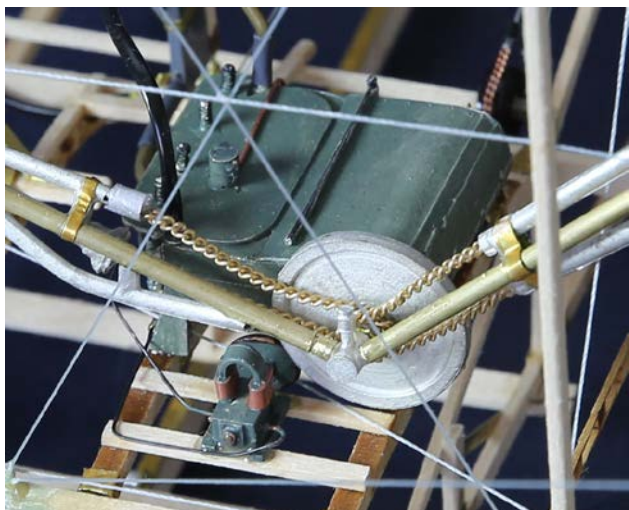
Wright Flyer

Richard Staines goes back to basics



Club members will I am sure be aware that scale models, whilst much appreciated, are not my forte. Some surprise may therefore be expressed in my latest undertaking, being a 1/16 full scale non-flying model of the Wright Flyer. During a chat with a good aeromodelling friend from my old stamping grounds I learned that a mutual friend had begun this model but was finding it difficult to complete and was asked if I would I help him out.

The kit is quite complex as a look at the web site and photos will show, comprising in excess of 170 laser cut wooden parts, 160 plus brass photo-etched fittings, 30 plus metal castings, chain, reels of thread, strip wood, wire and several other sundry items. The basic wings were complete so my first task was to assemble the engine from metal castings and brass shim. Valve springs, fuel lines, valves and regulators together with wiring, magneto, oil cooler, radiator and plumbing with appropriately sized wire, brass, aluminium and rubber tubing. The drive chain assemblies were fitted followed by the hip cradle with wing warping cables, chain and chain pulleys.



Both wings were fitted into a jig that held them in the correct anhedral for the fitting of the 18 wing struts and fittings. The latter were assembled from 2 brass parts, a flat plate and an open eyelet that had to be fitted together. Not too bad a job until you realise each plate is only 5.5 x 3 mms, the open eyelet slightly smaller. There are 36 to make being the top and bottom fittings on the wings for each of the 18 struts. It began to get interesting at this point. Each strut was shaped from 3x1 mm wood, bound at each end, drilled and fitted with a closed eyelet 3mm dia to hook onto the above described wing fittings. When the struts and prop shaft supports (metal castings) fitted the interesting job of installing the working rigging using a smooth thread commenced. As more is installed the more tricky it becomes as room to manoeuvre reduces. I soon learned to use two pairs of tweezers to tie knots to the open eyelets mentioned above. There are some 20 metres of rigging, control cable etc etc. Elevators and rudders were next and built on the plans and assembled as for a conventional box type fuselage; after which their individual rigging was installed prior to mounting on their frames for linking to the main structure. Control wires/chain, pulleys and levers were installed and connected and, low and behold we were complete except for the launch rail and wing tip supporting trestles for which no details were given. This brings me to the 'down' side of the project: the kit quality is excellent but the instructions which start off in a very comprehensive manner become less specific and confused further into the build which is compounded by errors in part numbering and drawing identification which led to much head scratching.

The model has now gone home to spend it's days under glass.

details of the kit can be founds at:

<http://www.modelexpo-online.com>

Stahlwerk D-574

a new model from Tony Neal



The model was a free plan in RC model Flyer October 2013
Span is 36" combined with a generous chord. Designed by Peter Rake it's called Stahlwerk.

Mine weighs 11oz, I built it as light as possible though the original weighs 14 oz (minus battery).

In some ways maybe a little too light because any turbulence will upset its flying speed

I decided to build it in one piece rather than band on the wing, because then if it crashed it would break anyway, also the struts are needed to support the wing which is a light structure.

I Have only flown over long grass at the moment and I don't know how it will take off and land on its wheels yet.

Motor: 20gm pole+stator 1300kv silver wired cost £10.95

Lipo: 500mAh 2S Turnigy

With Gerhard Fiesler he co-founded an aviation firm known as Raab-Katzenstein. The RK-26 Tigerschwalbe was probably the best known model to come out of the firm.

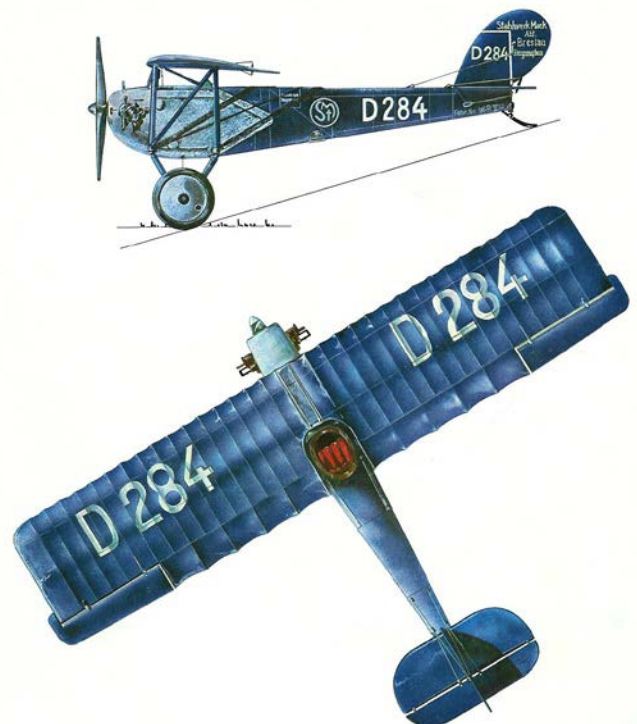


Tony Neal with his Stahlwerk

Colourful past

Antonius Raab landed a Stahlwerk in the center of Berlin as a publicity stunt in 1923.

A German Jew, he was a fighter pilot in WWI. In the postwar period he worked with Dr. Reisler on the Stahlwerk Mark and flew the airshow circuit with other famous German aviators at the time. His landing of the Stahlwerk on Unter den Linden in Berlin proved to be feel good story of the day.



Out of the ordinary

Chris Strachan *a selection of the weird and wonderful*

Why build scale models of aircraft that never existed? Building free flight scale models is a pretty perverse thing to do even at the best of times. Once aircraft designers had got over the basic problems of getting off the ground and getting back on again in one piece (by about 1912), they put their minds to getting aeroplanes to do what the pilot wanted them to do in between. So full size aeroplanes had to be designed to be unstable, after all a pilot is pretty unimpressed if he asks an aircraft to diverge from steady flight and the aerodynamics just say, "won't!". Free flight scale modellers have to reverse engineer these unstable machines so that they fly safely without any pilot on board to influence things. The result is often increased dihedral, extra tailplane area, non-scale wing sections and large thrust offsets. Also, very low wing loadings, which are probably the most help of all, but are difficult to combine with scale detail and surface finish.

You would think that all of this was a sufficient challenge and modellers would be satisfied to choose to model the more stable full size prototypes. However, there are some people who are never satisfied with the easy option, and set off to build unlikely things like tail-less aircraft or four-engine rubber models. Some of them go even further and insist on building scale models of aircraft that never flew at all.



Blohm-Voss BV P212

The most frequent manifestation of this behaviour is found in modelling German prototypes from the end of World War 2. It has been going on for a long time. Bill Warn in the USA has been flying a rubber model of a push-pull propeller driven tailless project of Lippisch's for years, and I am sure you can name other examples. More recently, the advent of the Rapier rocket units has opened up a whole mass of further prototypes/projects with turbo-jet or rocket power, and models of these are starting to appear. Soon you will see the Focke Wulf Flitzer (single engine, twin-boom jet fighter a bit like a Vampire) from Richard Crossley. Richard has also almost finished a Messerschmidt Me 1106, which is a single engine, swept wing fighter with an engine position like a Yak 23. I know that Mike Stuart is working on a Lippisch P13, (the delta winged project with the big triangular fin which in one version was going to be powered by a coal dust fuelled ram-jet!). I have almost completed an Arado 381, which was a project for a parasite fighter to be launched from an Arado 234 jet bomber. The 381 was rocket powered with a prone pilot and a mere 16 foot wingspan. Peter Smart has been flying a Focke Wulf Ta 183, a single engine jet fighter project very like an early Mig 15.



Miles M52

There are lots of interesting prototypes, but where can you find details? Probably the best single book I have found is "Luftwaffe Secret Projects, Fighters 1939-1945" by Walter Schick and Ingolf Meyer, published by Midland Publishing, (they also do a companion book on bombers, but they are really challenging, often with 6 or 8 engines!). The other place to start looking if you have Web access is "Luft.46". Any search engine will find it, and the number of projects illustrated and sketched is mild-boggling.

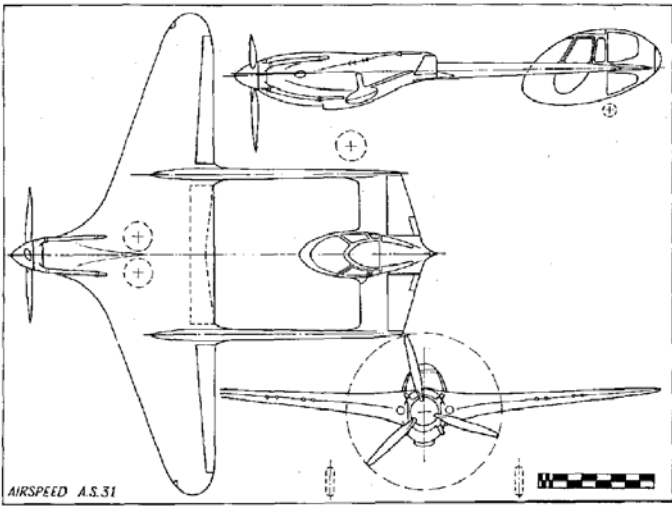
It is all good fun and has the attraction of not being too serious. Even if there was a BMFA scale competition for rocket powered models, we couldn't enter models of aircraft that never flew, so we don't have to worry about nit-picking detail, (which is a good thing when you see some of the scale drawings, but that is another subject) and documentation of colour schemes, which is normally the bane of competition scale modelling.

This is an invitation to all of you to come in and have a go. You don't have to confine yourself to "Luftwaffe 1946" either. There are masses of prototypes from all nationalities and manufacturers. Some are well known, like the Miles M52 (soon to be published in Model Flyer by Richard Crossley), for which I have built one of the model prototypes.



Lippisch Li.P13 coal fired

Others are obscure and splendid. For example, how about the Gloster P275 Day Fighter from 1948, which was a single engined Delta with the pilot in the tailfin (like the Lippisch P13), 56 ft wingspan, 12,000lb of thrust and rotating wingtip controls? Real "cor blimey" stuff!



Airspeed A.S.31

There is a good drawing in the Putnam book "Gloster Aircraft since 1907". That book lists 92 Gloster unbuilt projects after 1940, most of which are jets, with drawings of about 20 of them. Alliteratively have a look in Appendix C of the Putnam Westland book, and ogle the twin Spectre rocket powered fighter to specification F124T drawn up in 1952. Multiply these numbers by the number of UK manufacturers, let alone world-wide, and the choice and opportunities for research are endless.
Chris Strachan

[This article first appeared in this newsletter April 2001]

Mills 1.3 project

Garry Flack *workshop visit*



It all goes back to a swap meet I went to in Watford with John Wynn. I'd made various engine components as a part of team racing, bits for CS Tigers, Oliver Tigers and so on. We got talking about making a complete engine and the Mills 1.3 seemed to lend itself to copying and John had one he could lend me to take apart.

Back at my workshop I had a Myford ML7 which John had found for me. It had been owned by a farmer and had all the attendant bits but had barely been used.



prop shaft, below, made to replace the broken one above from a CS tiger cub . . . worked well until it too had a mishap

So I sorted out blocks of alloy for the crankcase – I ended up building two engines, one for myself and one for Jim Springham. The pistons were made from 5/8" meonite stock which John had. The crank shaft and liner were EN8 or EN28, but I didn't machine on the crank pin and instead pressed in a pin made from a needle bearing. Then the con rod big end I reamed out to fit. I worked with what I had and didn't make drawings. The tank, it's lid and induction tubes were machined out of stuff borrowed from John.

I began by boring the holes in the block to take the cylinder liner and crankshaft. These need to be precisely at right angles. We came up with a jig for drilling through the piston before machining the piston got underway.



piston in jig and ready for drilling to take the gudgeon pin

Once machined the cylinder, for example, needed heat treating: heating to cherry red and quenching in oil [glass hard] before heating to the right colour, straw from memory, to take down the hardness. From a machining point of view the difficult part involved thread cutting. For passages and timing I took the dimensions from John's engine. The Mills proved to be a good choice to copy.

Once machined I had to get to grips with lapping and Alan Hunter helped with info.



Alan, in case you were wondering where your lapping paste had got to

There's a whole article in lapping: removing turning marks and bringing the cylinder and piston walls to a fine finish to create a precision fit.

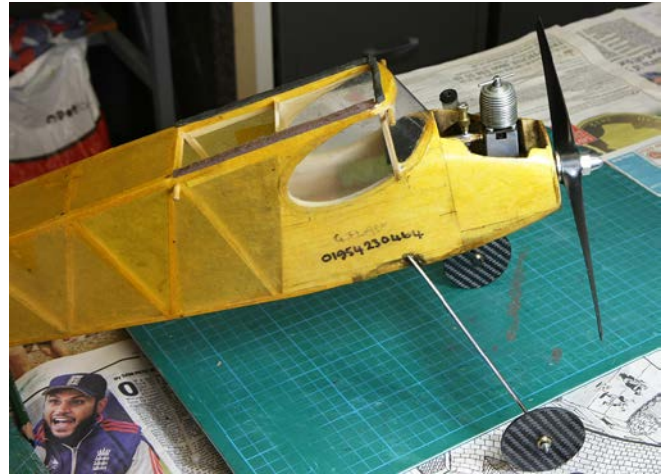
John and I came up with a jig to hold the piston whilst lapping. Making jigs takes time plus the Myford can only handle small cuts, but you get there in the end.



jig for holding the piston while lapping

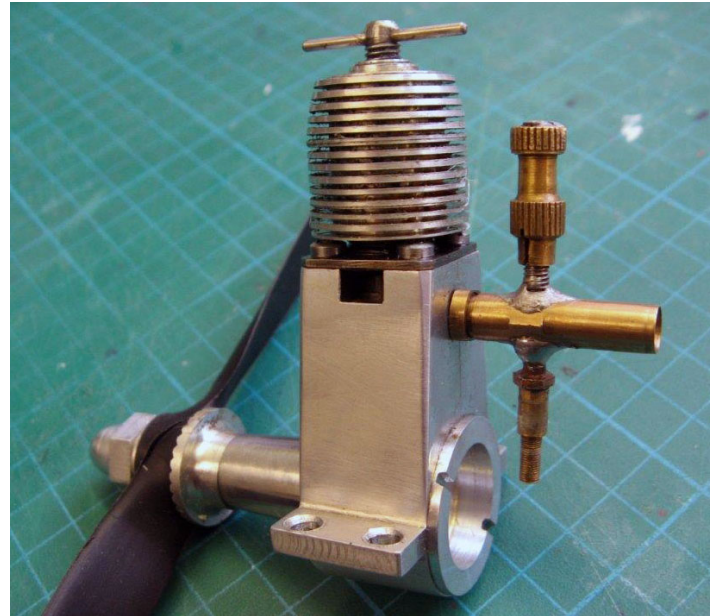
Once complete the engine started no problem and ran well. Jim had a Bandit but had broken the fuselage and so he'd bought another kit. The Mills was perfect for the Bandit so I kept Jim's

wing and tailplane but made up a new fuselage. I've since flown it a lot at Sculthorpe and the engine is still going strong.



Garry's Mills in the Bandit

This photo is included to show what a proper, working model should look like. [but mostly to wind up Alan]

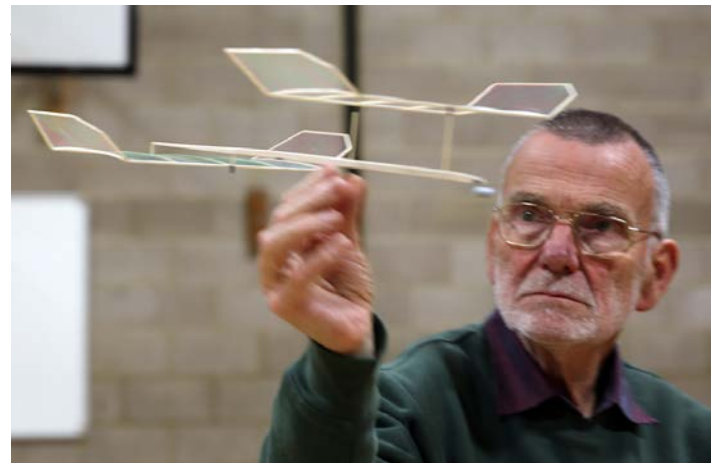


Garry's Mills 1.3

Indigo

Clive King's *indoor model for 'more average' flyers*

If you haven't already picked up your November copy of the Aero Modeller then I urge you to do so. It contains a free plan and building instructions for Clive's Indigo, the model he's designed to accompany the Inside Indoors series of articles



Chris wears his serious face while having a go at test gliding the other evening

Talk about Crow Braking!



Guardian newspaper September 2015

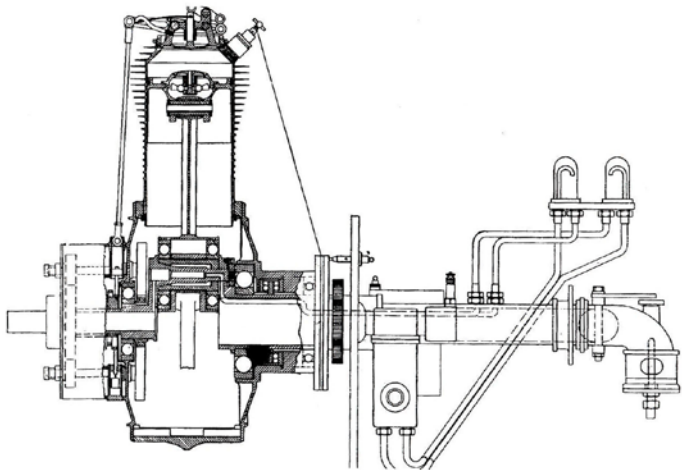
This young Great Blue heron has deployed everything to get down and by the looks of it, the mallard's 'deployed' something too.

New members

A scheme for placing new members on a period of probation was discussed at the annual meeting of the Cambridge Model Aircraft Club. It followed a request from a club member, who considered it was important to see whether people were really interested before joining permanently. He said: "There should also be four nights a year when everybody must produce a model or be fined."

Cambridge Evening News 1955

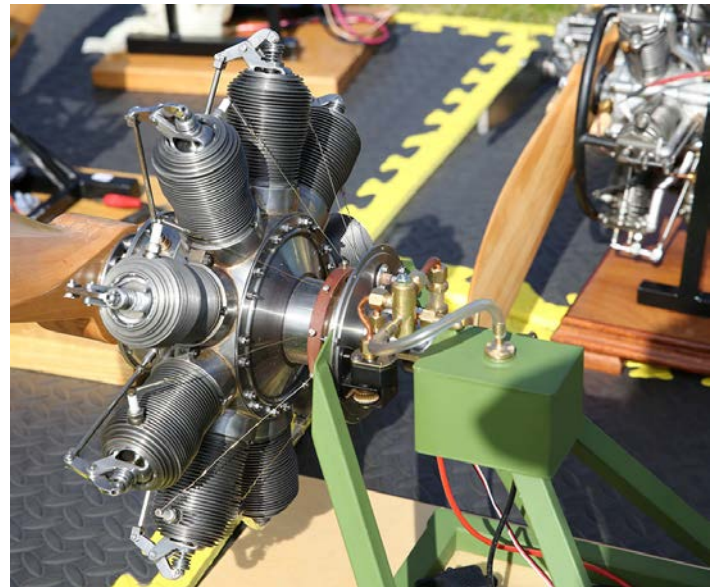
Gnome Rotary Aero-Engines



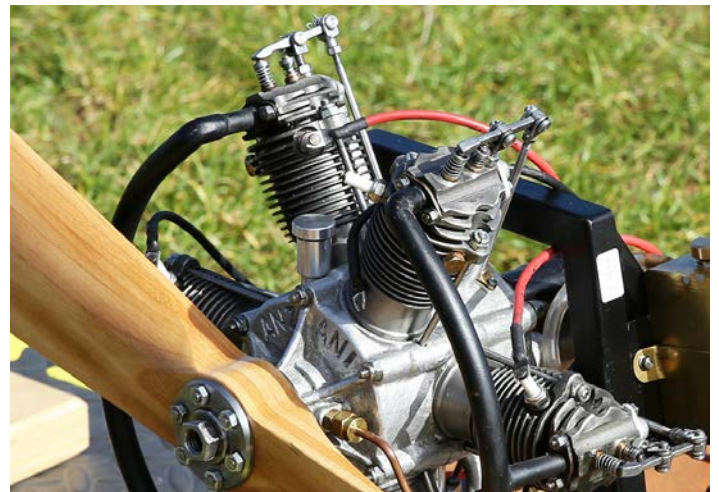
The rich mixture flooding through the crankcase would have swept away normal lubrication, so a copious supply of oil had to be fed in all the time the engine was running. This oil passed up into the cylinder and so was burned. Accordingly the oil had to be miscible with the fuel and burn cleanly to leave no ash, and the obvious choice was castor oil. As oil consumption was generally at least 30% as high as consumption of fuel (which itself was used inefficiently) it followed that a very rich oil-loaded exhaust streamed from the running engine like a Catherine wheel. Everything downstream soon became covered in a film of oil, and for this reasons engines in tractor installations were surrounded by a cowling, open underneath to let everything drip out. An hour's running typically cost 45p for fuel but 75p for oil!

This superb Gnome rotary from the workshop of Mike Cole was displayed at Old Warden in September.

At 1/8 scale each 'pot' is 50cc so that adds up to 450cc altogether and larger than the engine in my first 2CV



Mike Cole



Anzani, also by Mike Cole

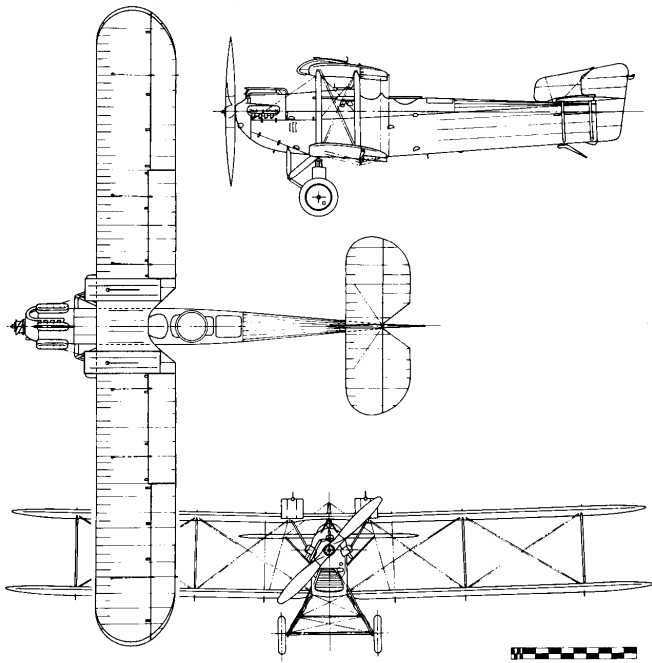
Specification 5/21

The Fawn and the Fox by Ed

Back in 1921 the Air Ministry found the need to replace the Airco DH.9A ("Ninack") single engine bomber which led back to de Havilland's DH.4 first flown in Aug 1916. The system in those days went like this: the Air Ministry drew up a detailed specification and invited a number of manufacturers to come up with a design and offered a contract to build a prototype. The prototype would be evaluated, usually at Martlesham Heath, and if the aircraft proved promising (often in competition with aircraft from other manufacturers) a fresh specification would be issued to cover any changes required and a production contract issued.

Fairey aviation led by Richard ("Dick") Fairey responded to specification 5/21 and designed then built the Fairey Fawn. Prototype J6907 first flew in March 1923. Though one of the smaller companies Fairey aviation had a good reputation and was to have success with the Flycatcher, the standard fighter of the Fleet Air Arm. Few aeroplanes have been the subject of so much praise from pilots and from all accounts it handled beautifully.

Though the Fawn was purchased (75 were built) Dick Fairey could see that it was a bit of a dog. It replaced the DH.9A in 3 out of 6 squadrons but the rest pressed on with "Ninacks". Of this failure he wrote, "*The net result of the drawing up of this aircraft specification, and of ineffectual co-operation with the designer, resulted in an inferior machine after five years and much expenditure of money.*" In 1925 the Director of Equipment wrote, "*For slightly less than the price of the new single engine day bomber complete with Condor engine, or one Fairey 'Fawn' with a Lion, we can purchase and put into service three new DH.9A's, and for one 'Virginia' complete with two Lions, seven DH.9A's.*" Money was tight.



Fairey 'Fawn' - wing loading 10.6 lb/ft²

Looking at this 3-view showing two-bay wings and external fuel tanks the penny drops. The designer simply didn't have enough input. The penny dropped for Dick Fairey in September 1923 when he sat with his brother on the Downs behind Portsmouth watching the American Curtiss R-3 Navy Racer win the Schneider Trophy at a speed of 177 mph. For comparison the

'Fawn' managed 107 mph at 10,000' and the 'Flycatcher' front line fighter managed 131 mph at 10,000 feet. The following day Fairey went over to Cowes to take a closer look at the Curtiss R-3 and its 450 hp Curtiss D-12 engine. He saw immediately that this was the way in which the performance of military aircraft could be improved. He approached the Air Ministry with his ideas but they were rejected.

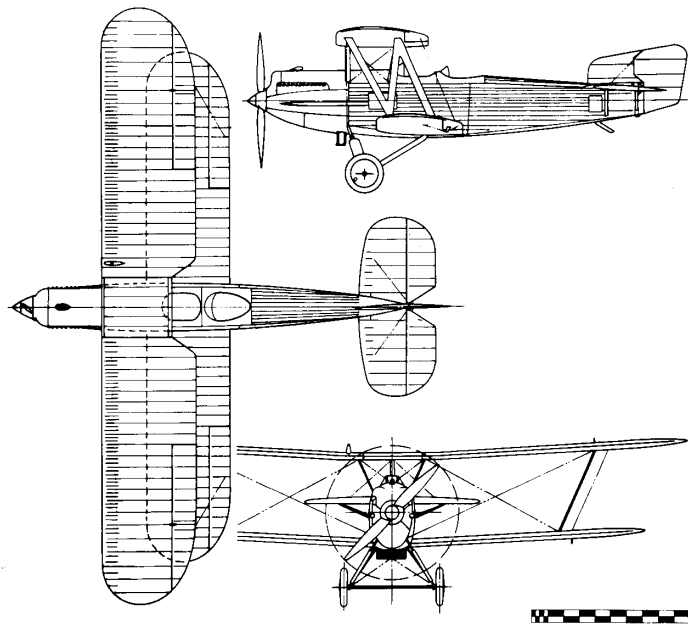
At this time top priority was given to a fighter's rate of climb in the operational requirement. In general it's true that maximisation of rate of climb and top speed are conflicting design aims. Best rate of climb is given by low wing loading and best top speed by a high wing loading. Worse still, fighters were required to operate day or night, requiring heavy radio sets. The capacity for night operation (requiring low landing speeds) also drove down wing loading.

Fairey decided to step out of the specification/contract loop and later wrote, "*It was decided to take the Fawn specification as representing the staff requirements for the time being and to build a type to those requirements exactly from the designer's point of view without any restrictions other than those that commonsense dictated. Since no suitable British engine was available I acquired an American one of the required size and performance.*" Design of the 'Fox' began in April 1924 as a private venture. It first flew in January 1925 and in August 1925 it was demonstrated to the Chief of Air Staff at Northolt where he 'ordered' a squadron on the spot. A retrospective specification 21/25 was prepared and an initial order for 18 aircraft was placed: J7941 – J7958.



production Fairey 'Fox' - Curtiss powered

So how was the Fox different from the Fawn? Design emphasis was on minimum dimensions, especially in frontal area, clean lines, low weight and the simplification of fuel and other systems. Together with carefully faired fuselage, pointed nose and single-bay wings. These were braced with N-struts with junctions faired into the wings with *papier-mâché*. A high speed gun mounting was an essential feature in the search for cleanliness. The Fox had a forward-firing Vickers gun with its barrel in a trough on the port side. It managed 153 mph at 10,000 feet compared to 107 mph for the Fawn.



Fairey 'Fox' - wing loading 14.3 lb/ft²

Job done and Dick Fairey could sit back and wait for the orders to pour in? Well, no, though the Belgians bought the Fox. Maybe it didn't handle well – hardly, here's what Norman Macmillan, the test pilot most closely concerned with it writes: *"The Fox was the most stable aeroplane I have ever flown. Its inherent stability was such that it flew both hands and feet off through really turbulent air. I have never known any other aircraft which could do this."* In service the Fox went to No. 12 squadron ("Fox Squadron"). The prowess of the Fox squadron was more than adequately demonstrated during the annual defence exercises, when certain restrictions were placed on the operation of the Fox in order to give the fighters a better chance.

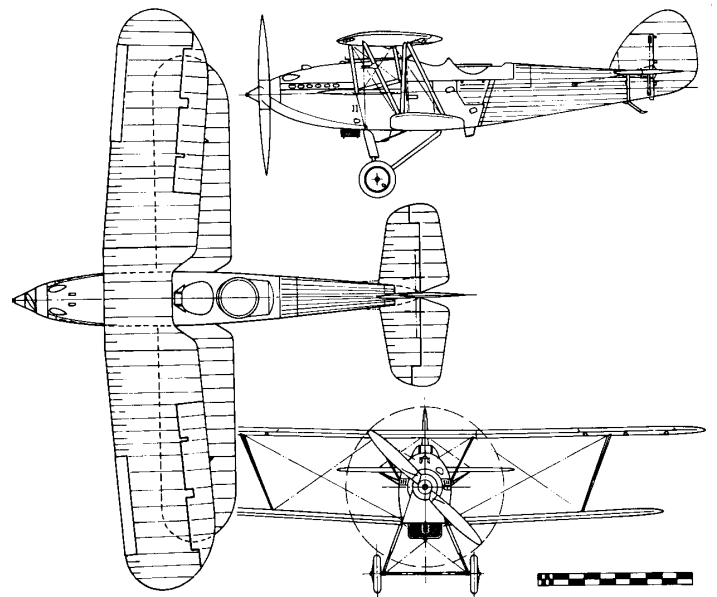
Not Invented Here

At the Air Ministry Trenchard sought to replace the Fox by an aircraft with a British engine and in April 1926 he wrote, "I consider that the specification should state that we merely want the same range and bomb load as the Fox and that it should not land any faster." Specification 12/26 followed. Engines were a problem though. Trenchard had visited Arthur Wormald, in charge at Derby, who had convinced his visitor that *only* Rolls-Royce could build the Condor engine, a development of the famous Eagle. On reading the report Trenchard wrote across it: "No more Condors".

Over at engine makers Napier Arthur Rowledge was immensely impressed by the Curtiss D.12 which Fairey had introduced with his Fox and draughted a twelve-cylinder vee layout using Lion components, but Napier had cold feet. Ironically enough for Napier, Rowledge then persuaded Royce to enter upon a design programme which led to the Kestrel. The Kestrel was, like the Curtiss, a cast-block engine. The aluminium cylinder block improved beam stiffness (allowing higher rpm). Further development led to the Merlin.

The Air Ministry issued Trenchard's specification 12/26 for a High Performance Bombing Land Plane with a top speed in excess of 160 mph – a Fox in all but name. The high speed and other high performance requirements were regarded by most firms as impossible to attain. Two firms, A V Roe and Hawker, were each invited to construct a prototype for competitive trials. Can you believe, Fairey was not invited to tender until

representations were made to the Chief of Air Staff and the prototype, J9834 was flown for the first time in October 1929 about a year after its rivals the Avro Antelope and the Hawker Hart.



Kestrel engine Hawker 'Hart'

No Fox II production order was placed by the Air Ministry even though it matched the Hart for speed. Whatever you may think about the way Fairey was treated the Hart was a superb aircraft. Though a bomber it reached 185 mph at a time when the Siskin front line fighter could only manage 156 mph. Next time you visit Old Warden look out for the Hawker Demon, a derivative of the Hart. Designed by Sydney Camm.



Hawker 'Demon' – fighter variant of the Hart

Footnote

There was someone else in Cowes that day in 1923 when Dick Fairey and his brother visited. He had a dog in the fight and the Schneider trophy winning Curtiss made a profound impression on him too. Who was he? R J Mitchell, chief designer at Supermarine and the rest is history.

Dick Fairey *aero modeller*



Not a great photo admittedly, but then it does go back to 1910. On 4 June 1910 (aged 23) C R 'Dick' Fairey entered a model flying competition at Crystal Palace, London. His model monoplane design won 1st prize in the Longest Flight and Stability Competition with a distance of 153yds 1 ft 10in. His success in aeroplane modelling helped establish his reputation as a craftsman and innovator.

After winning the Challenge Cup and gold medals for 'steering', stability and distance flown, he demonstrated in Hyde Park to representatives of Gamage's stores, who bought exclusive sales rights for £300 with rights to sell plans. He negotiated a royalty on each model bought.

In 1913 Fairey joined Short Brothers as chief engineer and in 1915 he formed his own company, Fairey Aviation.

Specification 5/21

afterword by Ed

I've been itching to write this piece for a while now but needed to know about the business of issuing specifications. I emailed the library at RAF Hendon about 5/21 but they couldn't help. Then I remembered reading in AeroModeller about a new library the Aeronautical Society has set up in Farnborough – the National Aerospace Library.

after all that, just how bad was the Fawn?



I emailed the librarian there and was pleased to hear back within a couple of hours from the chief librarian Brian Riddle:

He recommended: *'The British Aircraft Specifications File: British Military and Commercial Aircraft Specifications 1920-1949'* and added that in the Introduction to the book the authors note: *"The record is not complete, as access to detailed copies of British aircraft specifications prior to 1936 is a rare event. Information on many early specifications can only be assembled in piecemeal fashion by analogy from details of the aircraft produced"*.

He then went on to suggest a second book *'The RAF and Aircraft Design 1923-1939: Air Staff Operational Requirements'*

I found both books in the University Library and what a find they were – even though, from the titles they may not sound like page turners!

It seems that the RAF mounted their first large scale exercise in 1927 followed by more in 1928, '31 and '32: The exercises were artificial. Attacking bombers were required to radio their height and position. In 1932 bombers were given set courses and were to use their navigation lights. When the bombers 'arrived over the target, the fighters were not allowed to worry them as they aimed their bombs.'

Looking back we can only guess at the hullabaloo created as Dick Fairey's Fox burst on the scene. A private venture two seat bomber, which outpaced and outclimbed the RAF's standard fighters. An interim solution was thought to convert some Foxes to fighters. They would climb to a position in front of and just below the approaching bombers. From the rear seat the second crew member could fire up, but there was a snag . . . "this position is difficult to maintain if the bombers practice evasion." Indeed Brooke-Popham later commented that such tactics implied "that the enemy will be good enough to continue flying in a straight line." Presumably with their navigation lights turned on.

And who was the supposed enemy? – well France of course.

bandit at six o'clock

though that's *not* what Gotthelf called him



.. and it had been such a nice day until then

on the interweb

Richard Staines has found an interesting website

<http://www.rclibrary.co.uk/>

Latest 10 books added



RCL#1032

The Challenge of RC Scale

Don Dewey (Ed)

Radio Control Modeler Corp.

1967. Book, 102 pages

Contents: How Scale Is Scale? - Dave Platt

Pietenpol 'Air Camper' - Fred Angel Consolidated

PT-1 - D.F. Etchings Martin AM-1... [more](#)

Added: 16/10/2015



RCL#1030

Model Aeronautics

Bill Dean & Ron Warring (Co-Editors)

Ian Allan Ltd, London

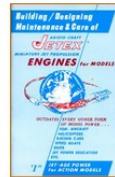
1950. Book, 66 pages

Models: Powerhouse - Dick Korda Firecracker -

Norman Marcus Little Mike - Pat Lidgard

Tiercel - W.A.S. Geddie Small Fry -... [more](#)

Added: 14/10/2015



RCL#1029

Aristo-Craft Jetex Engines for Models

Aristo-Craft Distinctive Miniatures, New York

1967. Book, 52 pages

Contents: Principles of Jet & Rockets Martin

PTV-2N "Gorgon" (Flying Models) Contest Rules for

Free-Flight Jet Powered Models... [more](#)

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LONGSTANTON SEMAPHORE & BUGLE

April 1st 1909



Wright brothers conduct a master class in wing construction

Footnote

a comment or two from the editor

This is the twelfth newsletter I've edited, completing year two. Thanks to John Upton they're all up on the website if you want to refer back. As I may have mentioned I tend to edit the newsletter I'd like to read – but I hope you do too. If you think I get the balance between modelling and full size wrong then please feel free to say so. If you think I have a blind spot and you can't find anything on the topics you'd like to read, then let me know about that too.

As always, if you've contributed in any way to this edition, thank you.

