

Impington Village College



Model Aeroplane Club

Founded in 1946 by Ray Malmstrom



Nov Dec 2014

Edited by Bryan Gostlow
Distributed by Tony Harper

Impington VC at 75 and IVCMAC showing what we do

Everyone who came away from the exhibition had nothing but praise for the show put on by Gordon Hannah and his willing band of modellers.

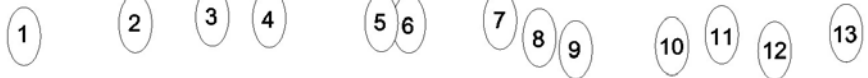


Famous Flyer *well, world famous round here**



Can you identify the Famous Flyer?

If you think you can, then find him using the key, and let me know both name and number [editor]



*MOUSEBENDER: *Not much call for it! It's the single most popular cheese in the world!*
WENSLEYDALE: *Not round here, sir.* [Monty Python 30/11/1972]

Canard-Air Contest

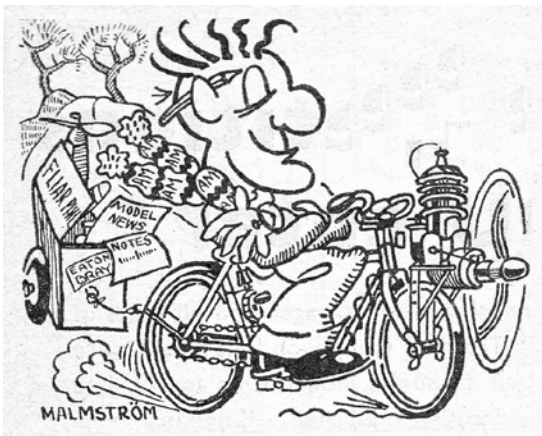
Bruce Lindsay reports

When I knew that the Canard-Air design was chosen for our Sunday do, to me it seemed like a good idea for our next competition, October 12th, so as to get as many entries as possible. What I did not realise how difficult some would find it to get a good performance. The week before the event there were about six being tested.

On the Saturday we held the contest there was only four of us flying Canard-Airs due to many who could not compete due to prior arrangements. Michael Marshall's plane had an accident which broke the fuselage so we were down to three. Mick

Staples started proceedings with three flights averaging over 30s before breaking his plane. I had two flights of over 50s then the motor broke. Clive meanwhile got 61s followed by 47s. After I replaced the motor three flights of well over 60s were obtained. While this was happening Clive's plane was slowly going out of trim and could only manage two more flights.

| | | |
|-----|---------------|------|
| 1st | Bruce Lindsay | 215s |
| | Clive King | 169 |
| | Mick Staples | 96 |



The Interview recorded with Tony Welch

What tool wouldn't you want to be without?

I'd have to plump for the Permagrit tools - because obviously you can get the needle files, you can get the rotary tools, you can get the shaping sanding blocks so I think they're probably the most flexible and useful thing I own. I think they're better on bigger models, not so good on the really small stuff.

Do you have a favourite model past or present?

I would think my favourite model from the past probably has to be the Keil Kraft Talon control-liner because I like the look of it and also probably a model that made an impression on me as a teenager.

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Another model that made an impression on me as a teenager was a Keil Kraft Pioneer glider being towed up on Stapleford rec by some big boys who were older than me. It actually flew unlike most of the gliders I built at the age of ten or twelve. I didn't understand about C of G and about not having warps, it was all way beyond me.

Probably my favourite model at the present must be my foamy, a Hawker Sea Fury by ParkZone, just as a hack. My current favourite control line model, for actual flying quality, is my Blue Pants with an ED racer. It is very nice to fly. [37" and by H Stouffs Aeromodeller Jan 1955]

Never happier than when I'm . . . on the other hand I hate having to . . .

Never happier than poking around a swap meet looking for a bargain, rummaging through some box trying to find an old pair of Keil Kraft wheels or some gem for 50p or whatever.

On the other hand I hate having to - I come to a grinding halt when I'm finishing a model sometimes and I can't quite push myself to actually apply the finish - either the covering film or painting it. I get builders block at that point sometimes.

What got you started?

I suppose a fascination with aeroplanes and flight from a very young age. I can't actually remember what sparked my interest. Later I was there on the rec trying to fly my own aeroplanes but these other boys were several years ahead of me and much more competent - as I say I've always been aeroplane mad.

What do you fly?

Anything that flies really - I haven't had a go at the indoor, the small stuff, and although it does fascinate me I haven't quite brought myself to build anything like that yet. RC, control-line, odd bit of free flight. It all fascinates me. The thing that switches me off most is rotary wing craft. Possibly the more rotors they have the less attractive they are.

A time it came close to disaster or phew, only just got away with that!

I can't recall anything there really, not in my modelling life - there's a few I could put in there but I don't want to hang myself!

When I'm not aero modelling . . .

My current project is - I'm restoring a 1947 Foden 8 wheeler which might be quite a life-time's project because there's not a lot left of it. My grandfather bought it new in 1947 and we ran it in our business until we were nationalised in 1949 when all the haulage was taken over and became BRS. We were de-nationalised in 1954/55 but at that point we never got the vehicle back. It went to a local operator and it ended up in a scrap yard in Hitchin in 1960 - I know that because I bought it out of the same scrap yard in 2007. It had been in there, maturing away, for 47 years when I found it. It's what I think you can call a complete basket case and you'd have to be a complete and utter nutcase to try and do anything with it, but, as it was my grandad's, I feel I ought to put it back together. So it's all rotted away even down to the chassis. I've had two new chassis rails made and now I'm repairing the cross members so I can put the chassis back together.



looking a bit like this one Tony?

Then I'm going to build it from the chassis up. It's a bit more than a modelling project - it's a full size model! I still have the original invoice and I still have the original parts book that we still had on file from 1947. It's an ash framed cab with Dura-Bright aluminium and where, when the paint comes off, it goes shiny - apparently its an aircraft grade material and a lot of the panels have lasted. To be honest I'm going to build as much as the original vehicle as I can back into it, so even if a panel is not going to be 100%, if it's usable then I will. It would be easy to build a replica with very little of the original vehicle but that's not what I want to do - keep as much of the original dna, shall we say, otherwise it would be a replica. That's one of my other hobbies!

An unfulfilled ambition

Is to do a free fall parachute jump, which for my 55th birthday, an accelerated free fall course sounds just about right. I've done a tandem skydive and I want to jump out on my own. You can achieve this with an accelerated course where you start with two blokes hanging onto you and after a couple of jumps they let go.

Love the smell of . . hate the smell of . .

Diesel, D2000 a nice drop of model diesel fuel. It might seem like a strange one, but I hate the smell of gas powered vehicles - I hate the smell of cars that are running on gas or forklift trucks that are running on gas. I don't know why - I just hate the smell.

Old dog new tricks

I've got a good one, I've got a *very* good one. I learnt this about a month ago and this is one for people who are starting to get involved in electric flight and want to join two wires together: what people will often do is they'll get the two pieces of wire and they'll put them one on top of the other and then they'll solder them together like that.

So what you do, you split each one into three parts and twist each one up, then you fit one into the other, twist and you pull them apart a couple of mm then twist them again. Finally you pull them apart a couple of mm until you've pulled them so they've ended up like that [joined]. They'll all be intertwined [a splice effectively]. For speed controllers or your motors - whatever, it stops you getting a big lump in your wire which has then got a blob of solder in it and not as straight as you want it to be. One of our electricians at work, an auto electrician, told me that. That's a good trick!

What's your covering material of choice . . and adhesive . .

Profilm Lite - tough as old boots. It's transparent and that's where the lightness comes from. You can paint it provided you etch it with a multiplex primer it will take paint very well. The good thing with profilm is you can really iron it on with a hot iron and it will shrink a heck of a lot and it's a job to make a hole in. It does add to the structural strength and stiffness of a model - its good stuff, the only disappointing thing with it is it's transparent.

Favourite adhesive - no - I use them all! If you look in my glue box there are twenty different adhesives, all the different grades of cyano, aliphatic resin, pva and there'll be two part epoxy, two part polyurethane. I'll try anything.

Do you have a favourite model of Ray's

it would have to be the Sweetheap. It flies well now I've tweaked it. [22" from Aeromodeller Sept 1968]

Where does it happen . .

It happens mainly in my shed although saying that, if I'm doing sanding or painting or what have you I do it outside - that could be a bit of an issue in the winter months. Out of the way - when East Enders comes on, it's time to retreat to the shed.

If you could turn the clock back . .

I'd have joined a model club when I was a youngster because, like I say, as a youngster I built a string of Keil Kraft kits mainly bought from RenBros when they were probably what is now under the Grafton Centre in Fitzroy Street. A string of like Mercury and Keil Kraft gliders and control-line models, most of which only flew once, twice, if they were lucky. As I say I didn't understand what that funny round symbol was [C of G] and they weren't exactly warp free either. So my first successful control-liner was the Veron Piston Provost, an all sheet model and I think that flew because it was all sheet and fairly straight so you couldn't get it wrong. Yes, that was probably my first successful control-line model and flown at either Stapleford or Shelford rec. I lived in Stapleford so they were about equidistant to go there really.

My early days of modelling. I was all on my own, had a vague idea but could have done with some guidance. Then you get old enough for your moped, being out on your own, booze and it all falls by the wayside.

A modeller you admire . .

I admire any modeller who's built himself a model and is out there flying it and enjoying. It doesn't have to be showpiece or whatever as long as he's out there doing it with a smile on his face that's what I admire. It's nice if he's built it himself, yes! [underline the "built himself"]



New Product Review *Wireless-Copilot*

reviewed by **Richard Staines**

Strange how things happen isn't it with a little serendipity to help.

Several years ago I flew BARCS glider competitions and although they were not then available, the thought of using an artificial aid to 'sense' thermals was unthinkable. In fact I recall an April Fool joke in the precursor of Q & EFI called simply Quiet Flight International published by the now sadly departed Dave Jones, alluding to the availability of fighter aircraft head-up display units that would show columns of rising air i.e. thermals. What a cheat

Forward to the more recent past thanks to a fellow club member drawing it to my attention, I went to the North London Model Club's open glider day at Baldock. Some super models there but what stuck in my mind was a large (1/3 - 1/2 full size) scale glider that was aero-towed and spent the next 2½ hours lazily circling around (at great height) before landing. The pilot sat relaxed in a chair, occasionally strolled around, had a coffee; but he was wearing a quite discrete ear phone. A variometer as used by full-size glider pilots! So he instantly knew the quality of the air he was flying in. Basically the onboard device measures atmospheric pressure which decreases with height and signals by way of tones whether the aircraft is rising or falling and, how quickly. The higher the tone the faster the rising air is carrying the aeroplane upwards and the lower the tone the more quickly it descending in sinking air. What a cheat

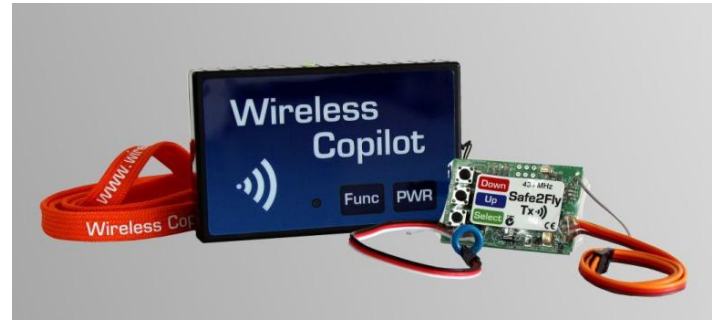
The following evening our Club had a full-size gliding evening at Gransden arranged by Peter Cunnison and Margaret Staples. A brilliant evening and those who didn't go don't know what you missed. I hope I already have my place reserved for the next time. I was very lucky as on my second winch launch my pilot drifted a little away from the airfield to be under a dark cloud whereupon the variometer started a high pitched tone, I felt slight pressure and it was obvious to feel the glider being lifted. An amazing feeling ... lift that I could feel, proved by the vario tone and the climb/sink dial showing a vertical rise of a couple of meters or so a second. We were going up the pilot asked if I wanted to take control and under his guidance I circled the glider in the rising air and we were still going up as shown by the instruments and the feel of the aeroplane. Wonderful with the vario whining away I was actually flying in lift after many years of watching and searching to be able to fly my models in a thermal may be not such a cheat after all I began to think ...

Radio control systems have become very complex over the years and now can include full telemetry systems that enable a pilot to be aware of everything happening in his model aeroplane such as height, battery condition, speed; in fact anything you install a sensor for, including a variometer. My radio control equipment is a little outdated now and the thought of having to learn new systems and change so many receivers etc at a not insignificant cost was somewhere I had some time ago decided I did want to go. But having a vario sounded very interesting but it was impractical for the above reasons for fun only you understand not cheating.

The day after the Gransden gliding evening, my subscription copy of the August Q & EFI dropped through the letter-box. A quick browse through and "what's this," on page 70? ... an article by Frank Skillbeck discussing several types of variometer systems including one that was totally self-contained ... i.e. it did not rely on the existing radio setup. It was a version of the Safe2Fly telemetry system and the article and web site were very interesting.

Wireless Copilot

The web site details the various products and very reasonable prices but unfortunately they are not available over the counter in England. I decided quickly I had to have one to play with if nothing else and shortly the items arrived from New Zealand where they have been developed.



The system comprises a transmitter weighing 10 grams fitted in the model and powered from any free channel on the radio control receiver directly or by a Y lead, and a small receiver worn around the neck to which headphones can be fitted, this unit requiring a couple of AAA batteries. The units communicate on a frequency of 433 MHz and work with any radio control gear. I don't propose to go into great detail but to say that set up is easy, you only need one ground based receiver to bind to as many airborne transmitters as you require.



Gotthelf too finds the vario invaluable for soaring

Each transmitter can be programmed to either give tones for the variometer or voice to tell actual altitude in feet or meters the latter at what every time intervals you decide. It is possible to switch between the two options in flight dependent upon a free radio control receiver channel. It will also allow you to set maximum height warnings and by default has a low airborne battery warning alarm.

I have only flown mine now on two occasions and am learning to interpret the output ... it is novel to listen to what is going on and I look forward to the time when the novelty has worn off and it becomes another sense we use whilst flying like our eyes and ears.

The serious stuff cost amazing value I think. I bought 2 transmitters (the bit in the aeroplane) and one receiver from the web site priced in dollars. I was amazed when the parcel arrived from New Zealand, custom declaration in NZ\$ and my Pay Pal account debited for £70.00. I have exchanged e-mails with the manufacturer who have been very helpful and to date am very pleased with the product. I have been challenged to 'a blind test' in that someone else listens whilst I tell whether the model is in lift could be interesting but can I have a little more practise please.

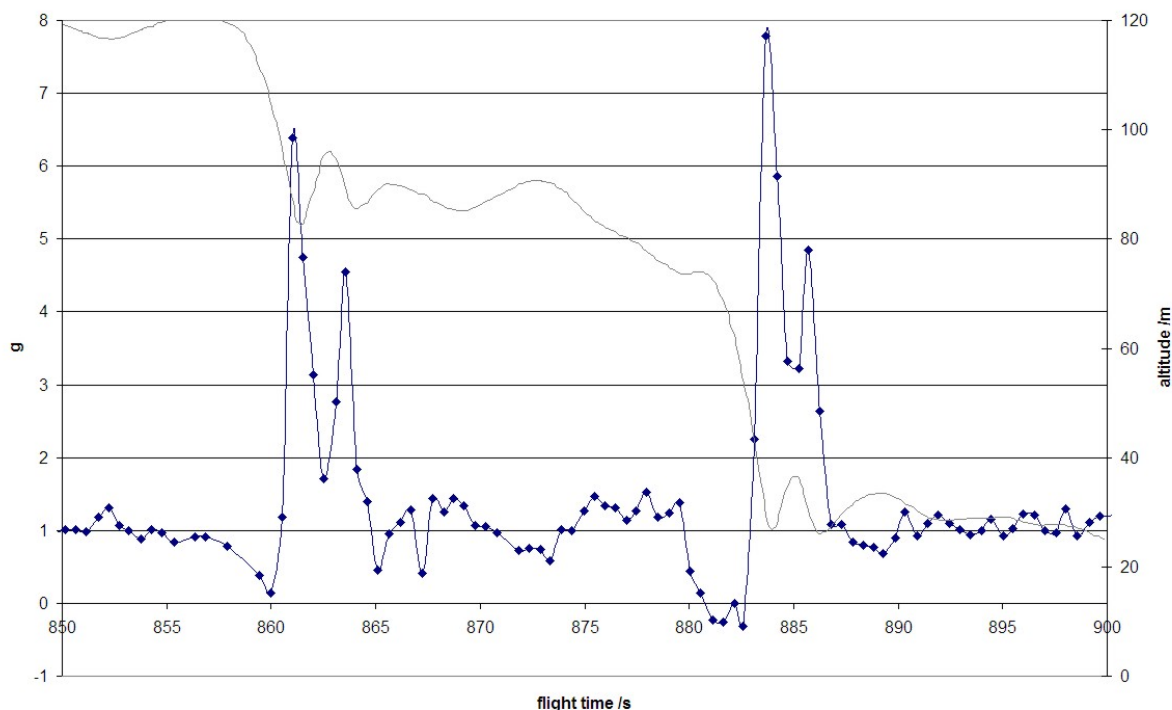
..... cheating may be, but not for sports flying.

Pictures and full details of all Safe2Fly products are on the web site :-

<http://www.wireless-copilot.com/index.aspx>

Two loops Lautrec or telemetry cont'd

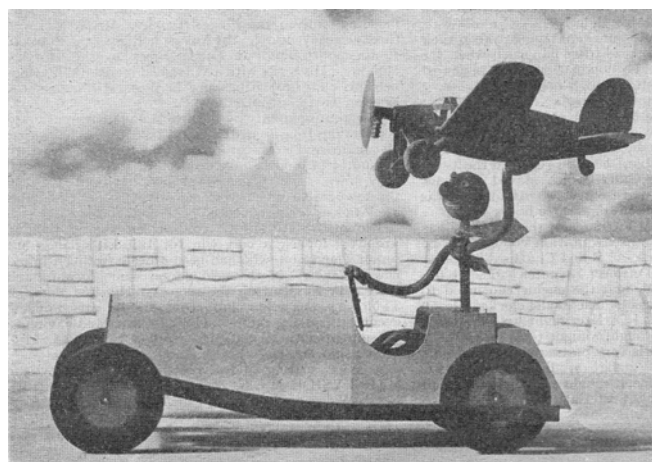
"In the interest of science" your editor has a *foamy* EasyStar II equipped with all manner of gyros, accelerometers and what have you. Back in July I decided to have fun pulling a couple of loops and then looking back at the telemetry. Hmm! it turns out that they were a couple of outrageously bad loops and were a real test of this model already overloaded with gear.



The first was entered by diving from 120 to 84m [read the scale on the right] before pulling hard back on the elevator and registering 6.4g [shown by the scale on the left]

Worse was to follow when the model was dived a second time from something like 72m down to 28m which I calculate should have added 29.6m/s or just over 66mph! This time *full* up on the elevator produced 7.8g at the bottom of the loop and it has been pointed out that the poor model was even pulling 3.3g at the top . . nothing to be proud of!

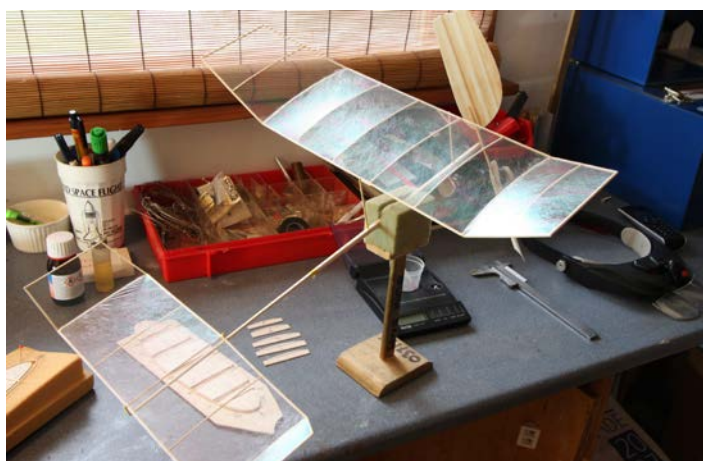
To provide balance, here's a very sensible suggestion found in the October '46 *Aeromodeller* where Mr D A Russell suggests a way to launch heavy power models where no suitable runway exists.



Snapshot a view from the workbench



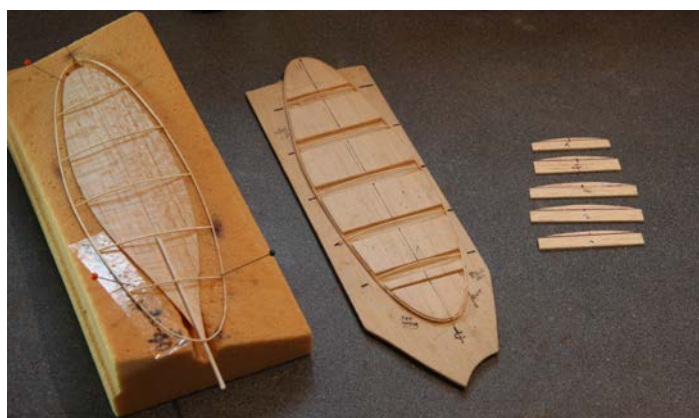
A few clues here, but if you'd like to see more . .



Turn to SAM 1066 Clarion's August edition and you see that the builder of this Pennyplane scored 17:31 (2 flight total) and quite possibly a WR.



Need another clue? Who builds props that need a variable pitch mechanism as delicate as this?



And here are the jigs for prop building . . talk about attention to detail!

Final clue: Who won this trophy for winning the mass launch of Malmstrom designs at Old Warden in 1998?



With a time of 3:25 and flying an P30 "Impair" of which unkind things have been said . .



As I'm sure you guessed, the mystery workshop belongs to Clive. Many thanks Clive for being so accommodating.

Note: your editor toyed with cropping this photo more closely or applying a bit of PhotoShop but decided in the end to reflect the true Ray - always the epitome of sartorial elegance!



Looking Up

a report from Tony Harper

It's been a funny year not much seen, so not much to report. The Farnborough air show has come and gone, normally I would have expected to see a few rarities into Mildenhall but nothing out of the ordinary appeared. In recent weeks several members have asked if there had been a noticeable increase in activity at Mildenhall or Lakenheath as a result of the action in the Ukraine and Iraq. The answer to that is no, in fact if anything it seems quieter and I mean that literally. The C130's flying around seem even lazier than usual. The tankers taking off do not seem to be fully loaded, they are much quieter and they go off as singletons whereas a few months ago they were leaving in threes and fours. The F15's from Lakenheath are not taking part in any attacks in Syria or Iraq as these are all being carried out by Marine Corps or carrier based aircraft and land based B2's operating from Saudi Arabia. The Minnesota Air National Guard staged through Mildenhall in the shape of two C130 of the 133 Airlift Wing. These were not knowingly seen by me; after all one C130 looks about the same as the next. I did see three French Air Force Alpha Jets fizzing around in mid September. This seems to be getting a regular yearly visit as I recall seeing them last year. A group of twelve US Marine Corps F18s arrived at Lakenheath, from Sigonella, on Friday evening 3rd October and left for the US on the Sunday. Sigonella is a US base on Sicily which is home to around 40 different units; I bet that gets a bit busy at times. Two KC10 tankers supported the F18s and left about three hours before. I saw the tankers coming over and one F18 later which I think returned for some reason. There has been a very persistent rumour involving F22 "Raptors" at Lakenheath. I have seen nothing but the rumour claims that two operate in and out of the base under the cover of darkness and, as rumours go, this one seems to run and run. As for the Osprey, I have only seen that product of an unholy alliance once since my last report which is no great loss. A recent TV news report showed Ospreys delivering arms to Iraqi forces which may explain why I haven't seen any.

A much more interesting sight about the middle of September was a red Britain Norman Islander it potted around at about a thousand feet or so on and off over three days. It was an unusual sighting for these parts and I wondered if it had anything to do with the parachute club at Chatteris or was doing some sort of survey work. I have mentioned in the past that I have seen a small autogyro and I saw it or a different one again in September. I have also mentioned in the past that I have seen a Brantly helicopter once or twice and it was also about again in September. I didn't realise that the first one flew as early as 1953 and I have tried to find out who owns it and where it's based but without success. It comes from and leaves to the North East but of the four on the UK register none are based in that direction. I haven't seen a single hot air balloon all year and this is strange. We often see one when we are on the college field in the summer but so far nothing this year. I think it was last year I saw thirteen on my way to the club one Friday. Another non sighting has been gliders, over the last four years I have seen groups in excess of twenty and once I saw thirty seven. These were not all together in a group but were in sight at the same time. If my memory is right this was the same day that two crashed after touching in midair. Real vintage aeroplanes have been in short supply this year but one Saturday morning I was sitting on Ely railway station with grandson Jamie when we heard a quiet rumble which turned out to be B17 Sally B not seen in these parts for at least a year. In a previous report I said that the Classic Wings Rapide was around most Sundays it now appears almost every other day which is great. I did see another Rapide flying West to East a little to the South of Ely and although I kept a look out for a few days I didn't see it return. When listening to the radio it is clear that Classic Wings are also doing rather well with their Tiger Moth experience flights. Just to round off September I saw over Witchford the new vintage Percival Mew Gull built by David Beale over about

six years. It has a brand new 1936 vintage Gipsy engine and it sounded wonderful.



photo by Michael Shreeve

I had to wait until the 1st October to see another Spitfire and that was just a short glimpse. I heard it around for about ten minutes before I saw it. It dropped down through the one and only hole in the cloud and set off South towards Duxford. On the afternoon that the F15 went down in Lincolnshire there was an enormous amount of activity above the clouds. All I could hear was F15's, but nothing on the radio just the occasional string of numbers which mean absolutely nothing to me. You

may have seen reports of spectacular thunderstorms in Norfolk on the first week end in October. Jamie and I were out and about on the Saturday afternoon and there was a very good storm towards Downham Market. What was obvious was the amount of small aircraft being routed around the storm towards and over Ely. On a calm day these would have passed well to the North.

Now that the weather has clamped down I don't expect to see much of interest but I live in hope and, it seems, living in hope works. The Wednesday before the Thursday meeting on the 17th I saw the Mew Gull again flitting around Witchford. My hopes of it being based on the old Witchford airfield have been dashed for the time being. It was assembled and is being operated out of RAF Henlow. And finally, in the early afternoon of the 17th I was again on Ely station to see a private excursion train pulled by "Oliver Cromwell" a standard class 7 engine. Just before it pulled in a Boeing Stearman in pre-war markings appeared, flew parallel to the station turned and flew back from whence it came. So as I said at the start, a funny year but it might be getting better.

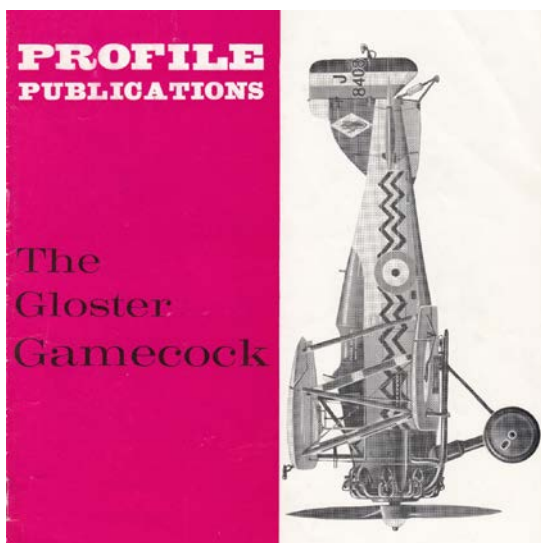
Choosing a new project *for many, the best bit* by Bryan Gostlow



I was passed this collection of cigarette cards years ago and can't open it without thinking, "that would make an interesting subject!", but where do you go from there?

There's the excellent series, "Profile Publications" which covers 262 aircraft - all of which can be downloaded free from:

http://www.hippoketaeronautics.com/hpa_plans/



Published more recently, with more detail and better use of colour, are the Windsock Datafiles

ANSALDO A.1 BALILLA

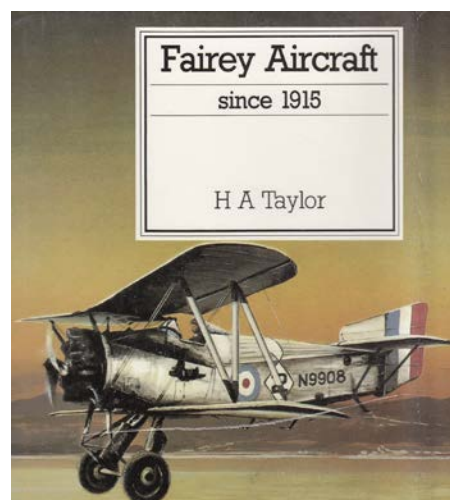
By Gregory Alegi



WINDSOCK DATAFILE 88

Most of the Putnam Aviation series can be picked up second hand over the *interweb*. You might like to try:

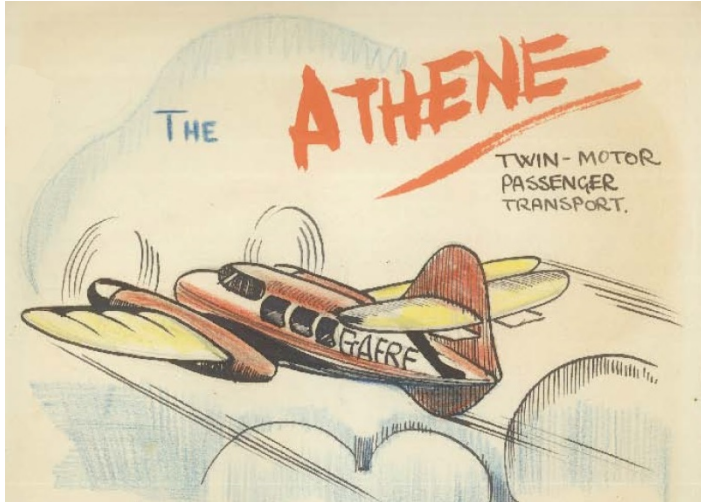
<http://www.abebooks.co.uk/>



A visit to Old Warden *a Ray connection or two*

October 1946 and Ray has his eye fixed on the future:

“With the transition from war to peace and a new civil passenger aircraft either on the drawing board or on the runway it is natural for the designers in the model world to ponder on the pleasant problem of creating an original and well-proportioned flying model of a civilian passenger aircraft”



thanks to **John Valiant** for finding this drawing

You can imagine my pleasure at seeing David Hunt's realisation of an electric rc version of Ray's Athene:



Later in the day I saw David flying Athene and having a few issues with turning right, but feel sure a modeller of his class will soon get to the bottom of that.

Soon after that I bumped into Andrew Knight with his own design "PWS" free flight: a 40" model powered by a PAW .5 diesel and loosely based on a 30's Polish PWS 54.



He's since written, *“To my surprise I finally got the trim right and had a great flight out of the airfield”. Moving the CG back worked.”*

Now here's the thing, *“I originally built it as a rubber powered model of about 20inch span. I flew the rubber powered version at the IVCMAC when they used to meet occasionally in Harston. When I could get there I used to go to IVCMAC meetings. They helped me fly my first powered plane a phantom mite.”* - that's right, another Ray connection.



A super model with real character. I was blown away by the understated but stylish trim Andrew added.

Talking of Ray, it's been drawn to my attention [thanks Tony H and Richard S] that he would have been 100 this year.



Before you can make one

first somebody has to draw it



Just for once let's begin with the aircraft: the Fairey Flycatcher a carrier-borne fighter which first flew in November 1922.

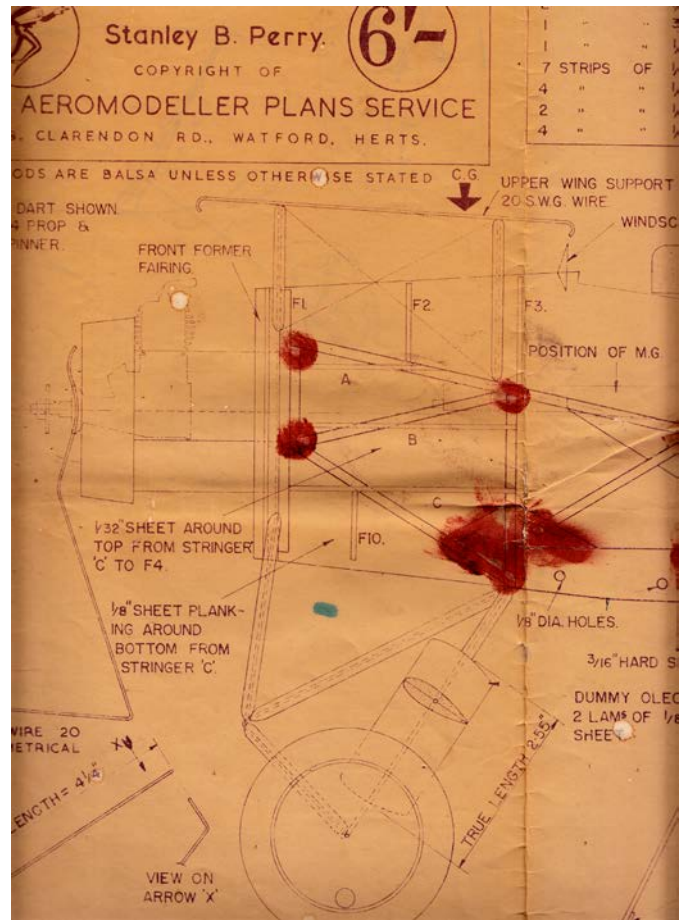


The plan, published with Aero Modeller in May '55, is for a 29" free flight biplane powered by an Albion Dart. You can download it from www.Outerzone.co.uk.

For me the strange, broken backed, Flycatcher will always be associated with friend and one time work colleague, *Lewis Stone*. Initially, apprenticed with de Havilland, he went on to teach at the Boys Grammar School, Hills Road and once was a member of this club, Lewis worked for a number of years at Duxford in the Education Department where his endless enthusiasm for aircraft and for communicating how things were designed and made him a perfect fit.

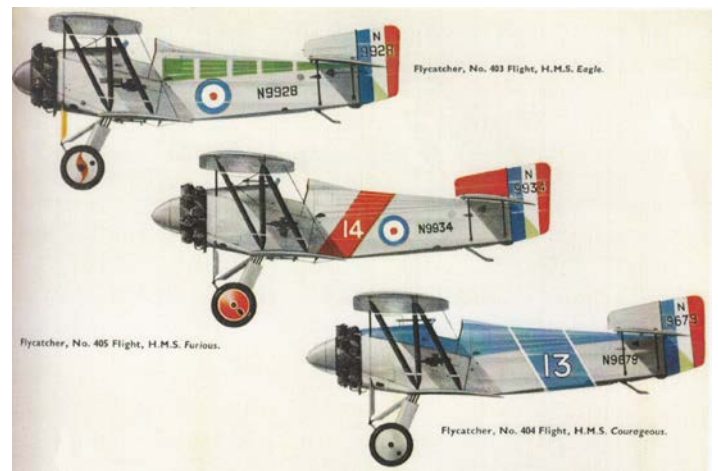


Later I badgered him for the plan and it has pride of place on my workshop wall.



I once asked him about the red spots as I couldn't work out what they were doing there. He said he got the plan in the post and couldn't wait to start building . . he needed some wax to preserve the plan as he glued up the sides, but not finding any he improvised and used shoe polish!

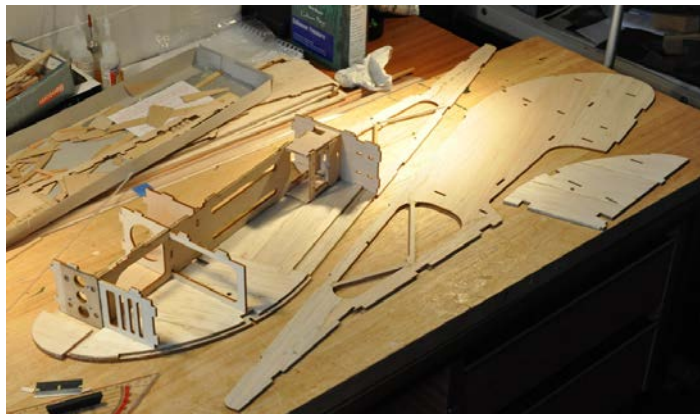
Lewis Stone, a gifted eccentric who'll be missed by those who knew him.



This illustration is from *Profile Publication 56* and can be downloaded from: http://www.hippocketaeronautics.com/hpa_plans/index.php

A tale of two FREDs revisited

Going back to the March/April issue of the newsletter, Gotthelf showed how he'd built a 104cm FRED from laser cut kit. Here's a reminder of that article:



Well the first piece of good news is that FRED flew really well and I met him on the heath at Newmarket to take a few snaps.

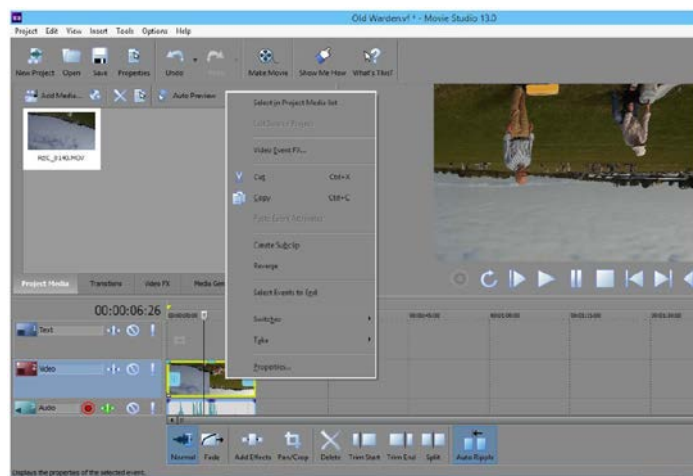


At first it is a bit of a surprise that this parody of an aircraft flies at all, then more of a surprise that it flies so well! Gotthelf soon started to use it as a platform for filming with a mid priced *Mobius Action Cam*



He took FRED and camera to Old Warden and rather than just uploading the video to YouTube he had a go at editing as you can see at: <http://youtu.be/eXHis9eYD4>

He got together with Richard S who's also been editing film for sometime and came up with Sony's *Movie Studio* editing software.



It all looks a bit intimidating but if you've thought of doing something like this yourself then here's the good news: Gotthelf has put together a step by step guide. At 14 pages it's too long to include here and so I'll bundle it up with the newsletter when it's time to publish.

Footnote

a comment or two from the editor

I've finished drawing Scarab using *DraftSight* and had a set of formers laser cut to check I'd placed the stringers about right. I was surprised how little scorching there was on the edges. While at Old Warden I had a talk with the *Belair* guy who said, encouragingly, that I could specify the weight of each panel to be cut. So I spent some time going through my balsa, weighing, and decided that *light* falls between 4.5 and 5.5 lb/cuft, *medium* from 5.5 to 6.5 lb/cuft and *heavy* as 6.5 to 9.5 lb/cuft. Belair have come back with a quote of £34 for the first set of 5 panels . . . maybe by the next newsletter in January I'll have a model to photograph.

For this issue I *recorded* an interview with Tony Welch, a first! If there's anyone you'd like to have me interview for this slot then let me know and I'll get busy arm-twisting. The same goes for Snapshot *a view from the workbench*. A reminder that John Upton adds each newsletter to our website.



If you've contributed to this issue of the newsletter in any way, thank you.

http://www.ivcmac.co.uk/ivc04_newsletters/ivc_news.html