

Thames Valley Silent Flyers



LIFT

ISSUE 73

NOVEMBER 2013



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Photo Competition



Gossamer
Albatross

Club Night Talks



Slope Day Out

CIM - 2 - 2013



A Good turnout of intrepid flyers at St.Tudwal's, the flying comes later!



Graham gaining extra lift by flapping the wings of his Nimbus



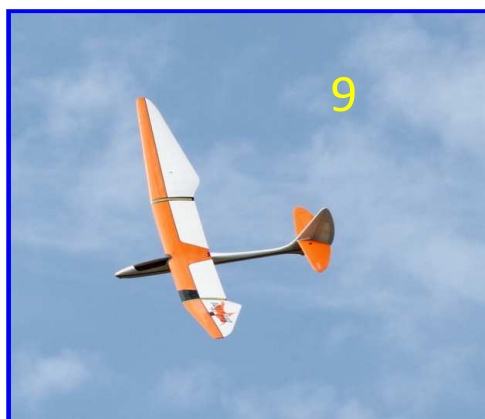
This battery is going to fit even if I have to cut one cell off.



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Cover Photo taken by Roger Stacey at the 41st Veteran Glider Club International Rally at Lasham airfield.

This photo was considered the TVSF favourite at the September club meeting.



Do you know someone who would like our club newsletter? To order a copy of the next issue (March 2014) send a cheque to Tony Ridler, 109 Pierrefondes Ave, Farnborough, Hants. GU14 8NZ for £4.00 which covers P&P. A few back issues are available @ £2, email Tony for availability. Make cheque's payable to Thames Valley Silent Flyers. Orders must be received by the cut off date. - **19th February 2014 for the March Publication.**

Editorial

By Tony Ridler



Summer seems to be truly over, but what a summer, hardly any cancellations of competitions until October. I think I have done more flying this year than previous years.

One of the highlights of the TVSF calendar for me is the Slope day out. This year we had excellent weather. I took both my Minimoa and the K18. After several flights with the Minimoa went to put together the K18 but I had left the tail feathers at home! So a bit of a disappointment, we made up for it with an excellent evening meal at the Hunters lodge.



Items I have been unable to include from the recent copies of LIFT is reports of the various competitions throughout the year, so come on you CD's, the club wants to hear how they went even if it is only to see their name in print. The editor can only include the material he is given.

I must thank the few regulars who manage to find time to write an article, contributors this year have included; Clive Learwood, Bill Cook, Vic Thomas, Steve Elkin, Andrew Horne, John Price, Geoff Bentley, Colin Hutchinson, and Terry Antell. From a club with 70 members I would like to be in a position to apologise that I am unable to get their masterpiece in this edition.

One way we could extend the members views towards the club would be to send "a letter to the Editor" telling us your likes and dislikes. We could start a regular column in LIFT.

The next club meeting will be the AGM, so come prepared with your views how the club is doing and how could the committee improve our enjoyment of TVSF, or maybe keep the "Status Quo", we need to hear your views and I need your items for LIFT, that is if I am elected Editor for a further year. Safe flying and don't get too wet.

Tony.

*Newton's Law states that what goes up, must come down.
Our Company Commander's Law states that what goes up and
comes down had damn well better be able to go back up again.
— sign in the Operations Office of the 187th Assault Helicopter
Company, Tay Ninh, Viet Nam, 1971.*

Chairman's Chat

By Graham Stallard



Hello All,

Strewth it's time to write the chairman's chat again. A somewhat better summer than last year. The thermals have been fun to ride during the various comps and sports flying. The field situation has presented its own headaches. Whilst Pidwells is flyable it definitely comes with its hazards.

The thermal leagues have been well supported with the winners in each class being pretty dominate. Some events were lost to poor weather whilst others were run in challenging conditions. One comp in particular stands out for me where I was flying in the DLG on a windy Sunday. At the start of the comp we wondered out and I thought this air feels good and launched. I managed to find some good air and get away completing a near 3 minute flight. I was quite surprised to have achieved this as it really was quite windy. However throughout the comp others also managed good times, not easily though.

The Autumn Wales trip has happened with 16 club members indulging in a week of slope soaring on the Lleyn peninsular. Our visit coincided with the Lleyn Bring and Fly where the local club hosts three days of organised slope soaring and flat field flying for any modeller who wishes to take part. There is a catch it costs a fiver. The Lleyn Modeller Aero Club (LMAC) also arranged an evening meal on the Saturday night for attendees. Most of us attended this and enjoyed a pleasant evening socialising with other flyers. The Sunday was blessed with one of the best days for lift on the East face overlooking Tudwalls. Malcolm the LMAC co-ordinator for the slope was a friendly chap guiding and helping people as needed. In the end there were some 50 flyers on the slope with up to 12 in the air at any one time. There was an area set aside for combat flying which worked well and was busy all day. It was good to see youngsters being mentored on the slope. I flew my Nimbus for quite a while in the gorgeous lift at times getting a very nice bend on the wings. Ask the other guys! I left the slope early to represent our club at the prize giving on the flying field at Penrhos. There were half a dozen cups for various classes on the slope, some were very impressive. Once the prizes had been presented people headed home.

Tony Morgan has once again taken on arranging the indoor flying this winter at the Waitrose sports and social club through Richard Edmunds. The venue is in Bracknell on the Southern industrial estate. Access is easy with plenty of parking. The actual venue is very pleasant. The first session will be complete by the time this is read, 26th October. The remaining dates will be elsewhere in Lift or on the website.

Not sure how many are building this winter but do take a few photos to share with us and maybe a few words.

Hope to see you flying soon indoors or outdoors.

Graham 😊

Diary Dates

Date	Day	Item	Contact
05/11/13	Tuesday	Club Night - Bring and Buy	
09/11/13	Saturday	Indoor Flying 15:00 - 18:00	TM
17/11/13	Sunday	Slope Aerobatic 9:30 - 13:00	GS
23/11/13	Saturday	Indoor Flying 15:00 - 18:00	TM
01/12/13	Sunday	Reserve Date - Slope Aerobatic 9:30 - 13:00	GM
03/12/13	Tuesday	Club Night - AGM	
07/12/13	Saturday	Indoor Flying 15:00 - 18:00	TM
07/01/14	Tuesday	Club Night -2013 Trophy Presentations	

MKS Servos ---- Voltage limitations

MKS earlier this year set voltage maximums for a number of their "Wing Type" servos that we are likely to use. The note I picked up stated that exceeding the maximum voltage would negate the warranty.

Reference to the MKS website in Taiwan confirmed the following :-

DS6125, DS6125H, DS6125Mini and DS6188 now have a maximum voltage of **5.5 Volts**

DS6100 now has a maximum voltage of **5.0 Volts**

**MKS state that 4 cell Nicad or Nimh batteries should be used.
Or a regulated supply set to the appropriate voltage (ie for 5 cell Nicad/Nimh or 2 cell Life/Lipos)**

If in doubt refer to www.mks-servo.com.tw

Clive Learwood

*A little boy went up to his father and asked: 'Dad, where
did my intelligence come from?'
The father replied. 'Well, son, you must have got it from
your mother, cause I still have mine.'*

The Long Mynd 2013

At the beginning of July, I went to Shropshire for a week's slope soaring. I stayed in Church Stretton with a view to flying on the Long Mynd. The hill is about 6 miles long, a couple of miles wide and about 500m high. It is the home of the Midland Gliding Club, one of the oldest in the country. It is quite usual to share the westerly slope with full-size gliders, usually above the models but occasionally below.



There is a road up the Long Mynd from Church Stretton. It is steep, bendy, single track and there is no barrier between the road and a steep drop. Fortunately there are frequent passing places but the drive ensures that you are wide awake when you get to the top! The views going up are spectacular and coming down they are even better. The road goes round the top of the hill and close to the best soaring sites and then on to the gliding club. That is where I saw the gyrocopter.

I was unlucky with the weather. It was marvellous but there was very little wind. Wall to wall sunshine, so it was great to go for walks and take a discus launched glider and try various slopes.





Wolves MAC had a scale glider comp on my last day there. The day started with very light winds and the only thing that would stay up was my Blaster. Around midday the wind picked up and we were able to run the comp in some very good lift. There were some lovely models of vintage gliders and a few modern fibre glass ones.

The comp consisted of static judging, 2 self nominated manoeuvres, a very short cross country and circuit and landing. The circuit was to be rectangular and the landing on a "runway" laid out on the heather.

The gliders were divided into two sections, vintage and modern. I think there were 6 vintage and 4 modern. Of course the best conditions were after the comp had finished when the sky was full of models and a couple of full size as well.

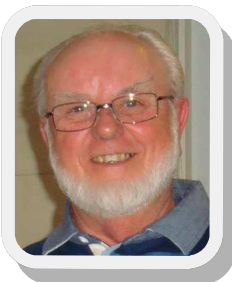
Despite not getting very much flying it was a great week because it is such a beautiful area to be in. I shall try to get back there in September when Wolves have a scale glider fly in.

Oh yes; I won the modern section with my Pik 20b. ➔



The Club Slope day out at White Sheet Downs

By Tony Ridler, additional photo's Barry Jordon



The 5th of September was the Annual Club day out. The day started with clear blue sky's and a light breeze. We left Farnborough (Mike Cope and myself) loaded with models and relishing some good flying. We picked up Barry Jordon at Guildford and set off for White Sheet; Big boys with their toys.

We collected the peg board and set the disc on the road. The log book is missing, I met the new landlord, he said "its been missing since I took the pub". While I was there he insisted I look at the pub improvements. The back wall of the bar has been knocked down and a restaurant area made. Must investigate next time I am there.

Arriving at the top the winds were very light and variable SW to W. I first tried the main bowl but it was too light to stay up. As more members arrived we tried the West face which if you kept to the left gave enough Lift. However as the day progress the wind picked up and in the sunshine it was very pleasant.



The early Flyers



Colin's Bird of time





A brilliant day out followed by an excellent meal at the Hunters Lodge. ➔

Wales with TVSF October 2013 *with Colin Hutchinson*



Saturday

Travelled in convoy with Trevor and reached Dobbies in record time, meeting up with several TVSF members including Graham James, and Graham Stallard. Ate breakfast and set off for the Lley Model club power site, where we were to make contact with their club chairman, to confirm arrangements for the weekends flying and the evening meal. No hold-ups on the road, and traffic generally moving along well. We had a little trouble finding the site, but knew we were in the correct area when a large turbine powered jet (something like an A320) flew over the road ahead.

As I prefer flying to unpacking I went to the slope as soon as possible. The ridge overlooks the islands of St Tudwals, the landing is superb and when the breeze is on the slope, the lift is just fab. Although we did not know it as the time the east wind was to keep us on this ridge until Friday.

There were lots of people, as this was the weekend of the Lley Model Club Bring and Fly, but as is usual with modellers there was lots of talking, not that much flying. Nevertheless, once bitten twice shy, so I flew the Sblitz just in case of mid-air.

I should add that the slope was accessed over a big grassy field that had a large herd of cows in it.

Sunday

Arrived early at the slope I am fairly sure I was the first to fly a model. By lunchtime there were even more people than Saturday, and more flying, but not as busy in the air as it might have been. However, it was too busy for some TVSF'ers, and unfortunately there was a mid-air between Chris Moynihan and a Bring and Fly modeller.

On the bright side, the lift was good, and the landings smooth, just so long as you did not slide through any cow pats!



The amazing sky on the Sunday

Monday

Beginning to regret driving over the lush grass field, with hidden cow pats the size of dust-bin lids. You always knew you had driven over one when the car started to slither from side

to side!!!! In addition if the sun was shining and your car started to warm up, the smell of cow clap increased exponentially!

Monday seems to be a bit of a blank for me, and I can't remember what I flew, but the weather was OK.

Tuesday, oh glorious Tuesday!

On the other hand Tuesday was the best sloping day of the week. Windy and bright, with the wind and lift increasing all day, but always smooth. Flew all my newer gliders, including the Acacia II, Vector III and the Banana, and as the day wore on and the wind and lift increased I started to add ballast. In the end I used all the ballast I had taken, and started to fly formation passes with Tony Morgan as the noise of two F3F gliders whining past was just too good to pass up.



Terry's all-round disc brakes working at full power

Wednesday

Graham cooked four legs of lamb, and I made gravy balls, but they were rejected on the grounds of danger to humans! The evening meal was finished off with treacle pud, ice cream and custard. Yummy!

Thursday

Rained early afternoon, so least flying was done on this day. Went to the shop in the evening during a very heavy downpour and the rain washed most of the cow clap off the car. In the evening we went to Twinti for a fishy dinner, moule and scallops – very tasty indeed.

Friday

The only day we went to another slope, Annies. Light winds directly onto the slope, produced good lift. The wind eased at the end of the day to the extent that Andy Marshall was able to slope his model paraglider – absolutely delightful.

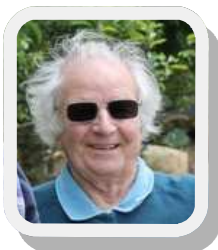
Another excellent week sloping in Wales. Roll on May 2014.



Graham's slim-line trousers

Oh yes, it was the T21 wasn't it?

By Vic Thomas



Last time I was extolling the speed of construction made possible by the wonders of laser cutting. This Clive-like speed of construction continued to completion of the tail end and part of the port (left, I think) wing.

This progress then stalled for various reasons, the onset of the SAM 1066 free-flight season with its inevitable damage, and the summer, garden, garden....garden, and, oh yes, holidays. That said, all the damage is repaired, (don't shout too loud, there is another SAM at the end of this month). Anyway, construction should be resumed by the time this edition hits the streets.

I always find that ¼ scale wings are very difficult due to their size as my bench is centred in a usable width of about eight feet, (two feet either end of the building board). The inner panel is easy as it can be built straight on the board but the outer halves' construction requires the completed half to be waving in the air. With the T21 the added problem is that with no dihedral an apparent dihedral is achieved through the depth taper on the outer half. It is necessary to maintain the top spar straight with an upward taper bottom spar. That is the point now reached and is probably another reason for stalled progress. Anyway roll on the coming building season, after the dreaded leaves.

Going back to the free-flight adventures, they started with the Easter meeting at Middle Wallop. The weapons of choice were an electric Mamselle and the Mills .75 Tomboy, both very reliable performers. My oft repeated error is to release the Tomboy with too much fuel and no DT set. Off it went into the distance and having spent an hour or so searching the hinterland I considered it lost. That evening the SAM Chairman rang to say it had been found on the peri track and he had it in Hartney Wintney. All I can conclude is that some kind soul moved it before I returned from my search, anyway good old Tomboy was safely returned. Over Whitsun I took the Manselle and the new electric Matador. As usual the Mamselle performed according to the tin but the fancy controller in the Matador was as dead as a doornail, (It worked at home). The rot set in over August Bank holiday. The Mamselle smote someone in the back of the neck and the Matador got into the dreaded death spiral. Health and Safety note, does one shout "Fore" it which case the unfortunate target turns around and could get hit in a more painful place. Discuss. Hence the need for damage repairs. All better now and hanging in the loft.

And I haven't even mentioned the Watts Up! What a Summer. →



T21 at Lasham

HLG 5V Switched Mode Regulator

By *Graham Stallard*



I had been flying my Blaster 3 for a while with a 4 cell NiMh receiver pack and wanted to change to a 300mA 2S LiPo to reduce the all up flying weight. The 2S LiPo runs at a nominal voltage of 7.4V. The 2s LiPo voltage range is 8.4 (full charge) to 6V (empty). Unfortunately the servos are rated for 4 cell NiMh/NiCad so I needed to regulator the voltage to 5V. Hyperflight had a regulator reported to do this, which I bought. Unfortunately it was a liner regulator and ran far too hot. Liner regulators work by dissipating the extra voltage as heat.

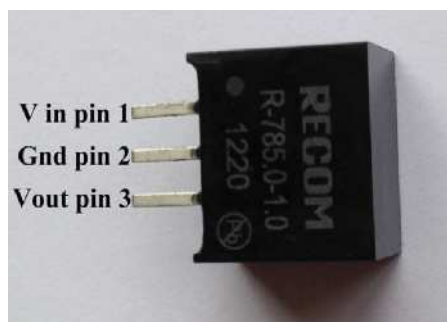
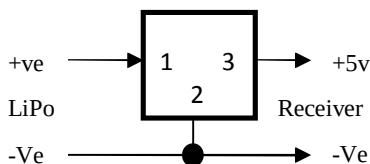
Plan B. Mike Fantham mentioned there was a Switched Mode regulator used by Mike Stern on the Flyquite forum. I found the thread and it was an RS part, part number 672-7124. I bought some of these to check out. Reviewing the spec the regulator provides 5V @ 1A from an input voltage range of 6.5V to 18V. Just the job although, 6.5V was a bit high.

I checked the current taken by the flight pack when all sticks moving and recorded a peak current of 0.6A, so OK from that point of view. I then checked the stall current for a single servo, which was 0.5A. Uhm if all 4 servos stall that's 2A. However the probability of that is equivalent to winning the lottery, so probably safe.

I then checked the performance of the regulator at 6V as this was 0.5V below the specified minimum. With a 0.5A load and using a bench supply the supply voltage was reduced from 7.4V to 6V and the output stayed steady at 5V. As the supply voltage dropped to 5.8V the output started to drop. So this will be pretty safe on a 2S LiPo as once its voltage has dropped to 6V (3V per cell) you really want to be on the ground.

The benefit of a switched mode regulator is that it works by chopping up the incoming DC then using a transformer principle to step the voltage down then rectify this back to DC whilst maintaining a steady output with varying loads. Quite clever really. 20 years ago this took a whole printed circuit board whereas today it's packed away in a block 10.2 x 11.5 x 7.55mm with 3 pins. +ve in (1) ground (2) and the output pin (3) +5V. Pin 1 is marked by dot. So to use this device the LiPo +ve is connected to pin1 with the LiPo -ve connected to pin 2. The -ve of the receiver power lead is connected to pin 2 with pin 3 connected to the receiver power lead +ve. Circuit diagram such as it, is below.

One final bit is to add is a 2S LiPo monitor. BRC hobbies do some neat LED ones which I have used. I did change the 5mm LED for a 3mm though to fit in the fuzz.



Servormances

By Graham Stallard



What's servormances? Read on.

For those who cannot wait!

<http://www.aeroglide.net/2013/02/servormances-mise-a-jour-fevrier-2013/>

Over the past 12 months I have had the miss-fortune of 4 servos failing in my most expensive model a ¼ scale Nimbus, 6.6m span. It is a superb flyer but has taken time to learn to land. The first servo to fail was the landing wheel servo. The wheeled landing was pretty good but after landing the servo did not work. The landing wheel mechanics were spot on, i.e. at the up and down position the servo was off load and the mechanics locked. It was a puzzle. The servo was replaced with the same one and time passed by. The next wheeled landing was interesting in its own right however once again the landing wheel servo was not working. At home I took the servo apart and reviewed the electronics. It appeared the output FET's had burnt out. These were replaced to see if this was all that was damage. The servo did not work so it was put in the bin. Yet another was fitted to the landing wheel and time passed by.

Eager to aero tow the Nimbus I went to one of the Middle Wallop aero tow events to fly the Nimbus. As a result of another concern I checked the aero tow release on the Nimbus to make absolutely sure the tow would release. Whilst checking for the third time the servo started to release then slowed, stopped never to work again. At that point I packed up and went home. Yes the same type of servo had just failed before my eyes. Searching on the net quickly showed this servo cropped up a lot as failing by burning out. I then reviewed where this type or servo was used in the Nimbus, Landing wheel, aero tow, rudder and elevator. Ouch, no second chances if the elevator servo fails.

Shortly after this burnt out, news of another miss fortune came to light. Roger Stacey was flying a large scale model at an aero tow when it inexplicable headed for terraferma. The post arrival investigation suggested the elevator servo had failed in flight. The servo was the same model as the 4 in my Nimbus.

Having put all the offending servos in the bin I now needed replacements and recalled reading an article in EQFI which mentioned a website that tested servos and reported there real life performance. The tool is servormances which can be downloaded from <http://www.aeroglide.net/2013/02/servormances-mise-a-jour-fevrier-2013/>.

A group of French modellers have created a standard test for servos to measure their performance in terms of speed and power among other things. The results of servos tested to date are in this tool. I checked the servo I had been using and was surprised how much lower the actual performance was against the manufactures specification. In fact most servos do not deliver to spec, a bit like urban mileage for cars. When selecting the replacement servos for the Nimbus I used this tool to check that its real performance would be adequate.

Thankfully the ones selected, Hyperion DS16, have performed flawlessly both on aero tow release and landing wheel. And most definitely on elevator and rudder.

So if you wish to check your next servo is up to the job or the ones in an existing model are, I highly recommend the servomances as the tool to use. This is now a standard part of my servo selection for any model.

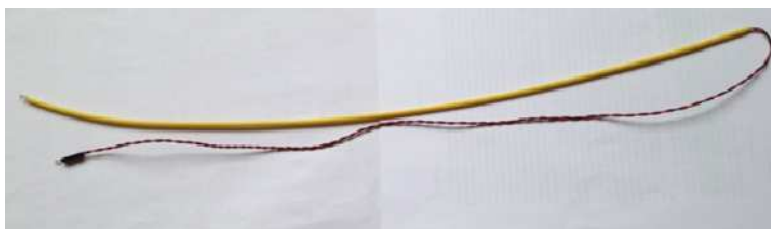
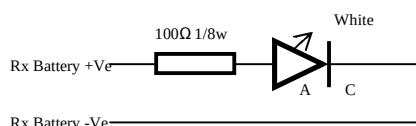
GlightS

This little gadget came into being when I needed to get a light source halfway down a fuselage to see what was going on. Using previous methods such as shining a light through the side or a torch down the fuse just did not put enough light where I could see what was going on. Looking around I needed a white LED, resistor, power source and stick. Power source that is always around is a RX battery, 5V. For a stick a control snake outer, resistor in the box and an LED from Farnell. (<http://uk.farnell.com>). Finally a light weight extension lead.

The extension lead has the signal wire removed and threaded through the snake outer. I have found the most flexible solution is with half as lead and half snake outer. The end the battery does not plug into is cut off. The resistor is soldered to the anode lead of the LED followed by the red lead to the resistor. The black lead is soldered to the cathode with a small piece of heat shrink sleeving over the solder joint. See the data sheet on the Farnell website for anode and cathode. The resistor and LED are then eased back into the snake outer, you may need to flatten the snake outer a bit to accommodate the resistor and LED leads. Connect to the Rx battery and away you go. I have found I can see so much more with this including measuring how far into a fuse/wing the point of interest is by seeing the LED through the fuzz wall/wing skin. Give it a try, it really make life easier.

	Farnell	
Parts	Part Number	Cost
3mm White LED	158-1175	£2.60 for 5 (52p +VAT each)
100R 1/8W resistor	934-2397	3p each

	Maplin	
3mm White LED	N66KG	84p each
100R 1/8W resistor	not available	

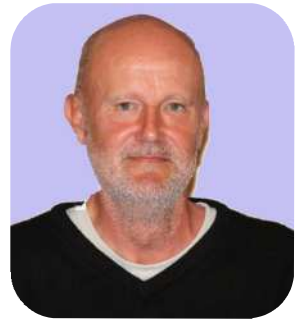


CLUB NIGHT ACTIVITIES

Our July club night speaker was **Ian Parker** who gave us a talk on the Phoenix man powered aircraft.



In Greek mythology, Icarus is the son of the master craftsman Daedalus. The main story told about Icarus is his attempt to escape from Crete by means of wings that his father constructed from feathers and wax. He ignored instructions not to fly too close to the sun, and the melting wax caused him to fall into the sea where he drowned.



The problem

The Kremer Prizes for man-powered aircraft set up in 1959 in the UK generated considerable interest worldwide. For 17 years various groups and individuals designed, built and flew over 30 aircraft but failed to collect the prizes. Due to the low power output of man - about 1/3 hp, aircraft weight has had to be kept to a minimum, resulting in complicated and extremely fragile structures. In order to capitalise on the reduction of induced drag due to ground-effect, up to now these aircraft have been forced to fly at about 10ft above the ground. With insufficient spare power to control these aircraft so close to the ground crashes are all too frequent, leading to considerable time being spent in repairing structural damage. Another practical problem besetting the constructor and operator of man-powered aircraft is that of storage and construction space.

Wingspans of around 90ft for aircraft attempting the figure-of-eight Kremer Prize are normal, and at least three aircraft with wingspans of over 130ft have been built. Finding hangars for these aircraft is a constant problem. (A new generation of aircraft with a smaller wingspan is now being encouraged.)

The arrival of the "Gossamer Condor", designed by Paul McCready, demonstrated that the repairs problem could be greatly alleviated, but the aircraft still suffered damage in crashes. With the crossing of the English Channel by the "Gossamer Albatross" in 1979 man-powered flight had reached a significant state of maturity. These two aircraft set a new trend in motion, but the problems of storage and crashability still remained.

The Solution

The late Dan Perkins, an engineer at the Royal Aircraft Establishment at Cardington, had identified these two problems in the early 60's and attempted to solve them with designs using inflatable wings. He built four of these inflatable-wing man-powered aircraft; the last, "Reluctant Phoenix" proved most promising.



The aircraft was a delta flying-wing with a wing-span of 31 ft and an empty weight of 391b. The envelope of the wing was made of polyurethane-coated nylon fabric. Due to the high power requirement for cruise, the aircraft was limited to short hops under man-power as it was being flight tested inside an 800ft long airship hangar. About 90 flights were made. "Reluctant Phoenix" was successful in that it could be folded away and transported in the back of a small station wagon. It also survived many crashes without requiring repairs as the aircraft merely bounced when in collision with the ground. Shortly after Perkins' death the "Reluctant Phoenix" was handed over to Frederick To, who was born in Hong Kong in 1938, he came to the UK in 1952 to study, and qualified as an architect.

He immediately recognised the advantages of the system. The Air-plane Co Ltd was formed and development work began in 1978.

Design considerations: "Phoenix"

A flying wing configuration was chosen although this necessitated a reflex cambered aerofoil section resulting in higher profile drag and lower maximum lift coefficients. It was felt that the inherent simplicity of the inflatable wing in rigging and transportation would be lost if canards or tailplanes and a fuselage also had to be carried around.

Control surfaces

As the torsional stiffness of the inflatable wing is high, wing warping as a means of control was not considered and conventional elevons were adopted. The method of producing a trailing edge was similar to that of the Reluctant Phoenix" which gave an excellent profile. However, in order to allow up and down movement of control surfaces the two stretched skins holding the trailing edge struts had to vary in width.



Inflating Reluctant Phoenix



Reluctant Phoenix at Cardington



20' span prototype wing for Phoenix demonstrated by Ian

Towed tests

The power source used for the towed tests was a running man who held on to a nylon string attached to the aircraft. By the ease with which the aircraft took to the air we felt confident that the flow separation problems had been solved. The towed tests were conducted in a grass sports ground at Chiswick in London.



During the towed tests the aircraft crashed at least once from a height of over 20ft due to a wrongly connected aileron servo. The aircraft hit the ground, bending the wing which bounced without receiving any damage. By this time the aircraft proved fairly easy to move around the country on top of a 10ft long car roof-rack attached to a 1.3 litre engine European car. The wing had also seen over two dozen inflations.



Man-powered flights

Delays due to chain drive malfunctioning held up further tests in 1981. Early in 1982 permission was obtained from the London Docklands Corporation to test fly the aircraft inside one of their 600ft long empty warehouses. On 28th March 1982 the aircraft was rigged inside the warehouse. However, as weather conditions were ideal, Ian who was the, pilot and flight manager, decided to test "Phoenix" outdoors in the adjacent concreted lorry park.

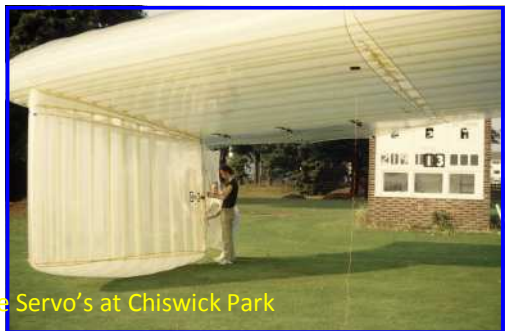
After a long period of acceleration the aircraft took off under the power of Ian. Further flights were made that day, all of about 20 seconds duration.

It was observed then that there was adequate control in all three axes. Due to the extra weight of the plywood riblets and repairs. The weight of "Phoenix" had crept up to 1051b. The calculated mass of air held within the inflatable wing is 2001b, which explains the unusually long time taken for acceleration. In May 1982 "Phoenix" was handed over to Barry Jacobson, a member of the team, who was willing to take over development of the aircraft.

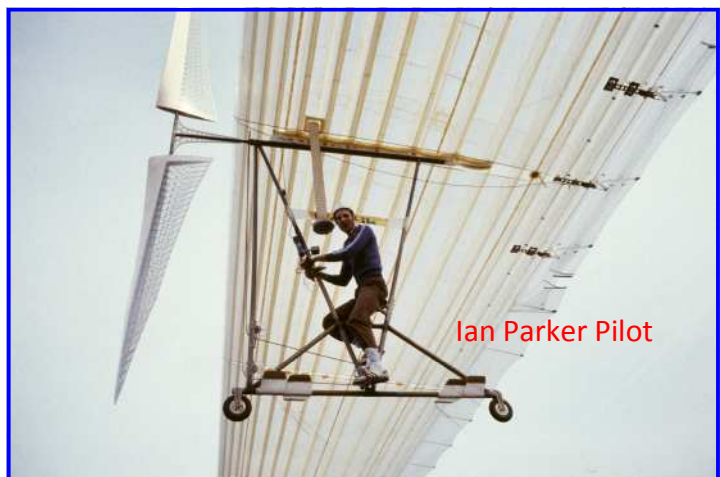
Two production prototype inflatable aircraft were completed. One in polyester-film and the other in polyurethane coated! Nylon fabric.



Inserting the rigging and testing the Servo's at Chiswick Park



The First - Man Powered flight's at Docklands



Ian Parker Pilot

"Phoenix" has proved that an inflatable man-powered aircraft can be made, can be easily stored and transported, and that such an aircraft can be built to withstand punishment. ➔

TVSF ALLROUNDER @ 91

		Indoor Chuckie	Mini Glider	Mini Glider League	Hand Launch F/F	Friday Night League	Open Thermal	100s Thermal	Electric Xcountry	Electric FNL	Electric Thermal
2013 Pilots Name		10	10	15	10	15	10	10	10	15	10
Maximums >>		10	10	15	10	15	10	10	10	15	10
				<i>Fly 4</i>							
Colin	Hutchinson	8	9	12	9	15	10	9	8	12	3
Graham	Stallard	3	10	15	7	13	5	6	10	13	8
Peter	Williams	10	4	11	8	14	1	4	7	14	
Chris	Moynihan	1		9		9	7	8	6	15	10
Roger	Critchley					12		7	9	10	1
Paul	Harvey	4		8	6					7	7
John	Price	2	5	13							
Tony	Ridler	1		6		10	1			11	6
Graham	James	1	3	7		7	4			5	
Mike	Fantham		8	14	10						
Terry	Pelling						1	10			9
Joel	West					11	8				
Trevor	Hornby	9						2			
Richard	Thornton	7	6	4							
Roger	Stacey		7	10							
Terry	Weeks									8	5
Richard	Edmunds	5		5			3				
Steve	Cope					8		3			
Steve	Elkin	1					1		5		4
Glynn	Chambers						6	5			
Peter	Wood	1								9	
Martin	Gilbert						9				
Bill	Cooke						2			6	
Peter	Chance									4	2
Alex	Gow	6									
Mark	Pitts					6					
Andrew	Horne	1									
John	Skinner	1									
Ian	Lancaster	1									
2013 Participants		17	8	12	5	10	13	9	6	12	10

9TH OCTOBER 2013

	F3F	Cross Country	Aerobatic	Annual Pylon (foamie)	Annual Pylon (crunchy)	Thermal Allrounder	Electric Allrounder	Slope Allrounder	Club total points	Club Position		
0	10	10	10	10	10	100	35	50	185			
	7			7		72	23	14	109	1		
	10			8		59	31	18	108	2		
	8			10		52	21	18	91	3		
0						34	31	0	65	0		
	5			7		19	20	12	51	4		
	6			7		18	14	13	45	5		
	9			10		20	0	19	39	0		
						18	17	0	35	0		
				7		22	5	7	34	6		
						32	0	0	32	0		
						11	9	0	20	0		
						19	0	0	19	0		
				7		11	0	7	18	0		
						17	0	0	17	0		
						17	0	0	17	0		
						0	13	0	13	0		
						13	0	0	13	0		
						11	0	0	11	0		
						2	9	0	11	0		
						11	0	0	11	0		
						1	9	0	10	0		
						9	0	0	9	0		
						2	6	0	8	0		
						0	6	0	6	0		
						6	0	0	6	0		
						6	0	0	6	0		
						1	0	0	1	0		
						1	0	0	1	0		
						1	0	0	1	0		
0	6	0	0	8	0	27	14	8	29	6		

KEY

Gold

Silver

Bronze

2m Win

2m RU

Following the **August** meeting **Alan Gornall** gave a talk on his Phantom Quadcopter. In the 100" competition, Trevor Hornby unfortunately had a wing fold and the model went down in the rape seed. The rape was so dense it was not possible to retrieve it .

Alan had his Quadcopter with him and searched using the Bluetooth download facility to his mobile phone.



Unfortunately the rape proved too dense to locate the vertical fuselage of Trevor's model (as demonstrated by Colin Hutchinson).



In Alan's own words;

"This has to be the coolest (and yet practical) model on the planet ! The awesome Phantom Quadcopter is an extremely high tech. flying camera platform with a built in GPS (Global Positioning System) based autopilot and Gyroscopic stabilisation.

Its very easy to fly with a little practice, and has the ability to hover on the spot with hands off the controller, maintaining its position automatically. The built in GPS holds it steady over the same spot, at the same height within a close tolerance. If the Phantom Quadcopter loses the transmitter signal it simply lands itself where it took off. How awesome is that !

With a built in mount for a Go-Pro camera you can shoot aerial footage in full HD (1080p or even up to 4K) to carry out surveys for maintenance of buildings, aerial photography (movies or still frame), in fact your imagination is the limit ! Just tell your other half that you bought it to survey the roof of your house so you don't have to pay an extortionate call out fee !

The Phantom Quadcopter also lands itself safely should the battery go flat after giving you a warning LED. If you're a complete beginner to model flying, or you have experience with aircraft or helicopters, this is a refreshing new way to fly !

Aside from all the practical stuff, this is really great fun and will bring a huge grin to your face"

Alan concluded his talk with a demonstration in the club room. He is offering a special price for TVSF members, check out the website. →

<http://webstore.hificinema.co.uk/product/phantom-quadcopter/>



September was our annual photo competition run as usual by **Roger Stacey** in his efficient way.

"Another very good year with a similar number of entries to the last two years. The standard of photos submitted was very high with votes spread across many entries although the Class winners and the Favourite photo was decided by a clear majority of votes.

There were several photos taken at the recent Vintage Glider Club meeting at Lasham. My photo which won the Favourite photo section showed a vintage Capstan glider landing which had the added bonus in that the passenger was our very own Chairman, Graham. Clearly that made all the difference!

The winning photos should appear elsewhere in this issue. Thank you to everyone who took the trouble to enter. I am indebted to all the people who helped me stage the event so we could announce the winner on the night".



Results.

TVSF Photo Competition Sept 2013 the winners of each of the classes were as follows.

Class A - A TVSF member and model in action – 1st Roger Stacey, 2nd Chris Moynihan

Class B - A TVSF member's model in flight – 1st Stuart Brown, 2nd Chris Moynihan

Class C - Photo of any TVSF activity (or lack of activity!) – 1st Roger Stacey, 2nd Colin Hutchinson

Class D - A Civil Aviation photo – 1st Tony Ridler, 2nd Roger Stacey

Class E - A Military Aviation photo – 1st Chris Moynihan, 2nd Tony Ridler

Class F - Any Aero modelling activity – 1st Chris Moynihan 2nd Roger Stacey

TVSF Favourite Photo – Vintage Capstan glider -
Roger Stacey (Cover Photo)



Members checking the quality of the photographs



Class A - A TVSF member and model in action – 1st Roger Stacey



Class B - *A TVSF member's model in flight – 1st Stuart Brown*



Class C - *Photo of any TVSF activity (or lack of activity!) – 1st Roger Stacey*



Class D - A Civil Aviation photo – 1st Tony Ridler



Class E - A Military Aviation photo – 1st Chris Moynihan



Class F - Any Aero modelling activity – 1st Chris Moynihan



Class A – 2nd Chris Moynihan



Class B – 2nd Chris Moynihan



Class C – 2nd Colin Hutchinson



Class D – 2nd Roger Stacey



Class E – 2nd Tony Ridler



Class F – 2nd Roger Stacey



Spotted by Colin - the new TVSF workshop on the cliff at Tudwals! Open all day, and night, running water (under the floor), but no power!

Andy Marshall's delightful model paraglider on Annie's - Photo - Colin Hutchinson



Brian Pettit was our speaker following the **October** club meeting and gave an interesting lecture on the LuftWaffe - The Rise and Fall.

In the beginning.

1910 Founded with the name Imperial German Army Air Service .
(Die Fliegertruppen des deutschen Kaiserreiches)

1916 German air Force (Luftstreitkräfte). The air war on the Western Front received the most attention in the earliest accounts of military aviation, since it produced aces such as Manfred von Richthofen, popularly known as the Red Baron, Ernst Udet, Oswald Boelcke, Werner Voss, and Max Immelmann, many of whom would later serve in the Luftwaffe.

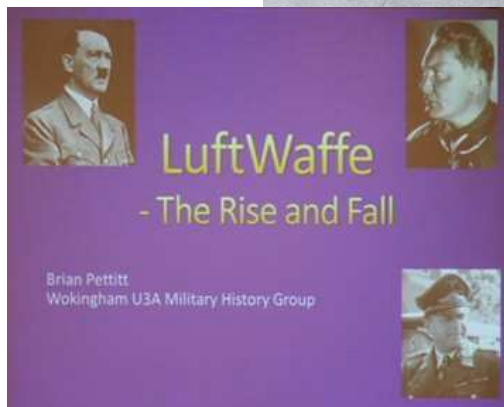
1920 The service was dissolved on 8 May under the conditions of the Treaty of Versailles, which also mandated the destruction of all military aircraft of Germany.

Two civil Airlines were set up which in 1922 became Lufthansa.

Since the Treaty of Versailles forbade Germany to have an air force, German pilots trained in violation of the treaty in secret. Initially, civil aviation schools within Germany were used, yet only light trainers could be used in order to maintain the façade that the trainees were going to fly with civil airlines such as Deutsche Luft Hansa. To train its pilots on the latest combat aircraft, Germany solicited the help of its future enemy, the Soviet Union, which was also isolated in Europe. A secret training airfield was established at Lipetsk in 1924 and operated for approximately nine years using mostly Dutch and Russian, but also some German, training aircraft before being closed in 1933. This base was officially known as 4th squadron of the 40th wing of the Red Army.

The first steps towards the Luftwaffe's formation were undertaken just months after Adolf Hitler came to power. Hermann Göring, a World War I ace with 22 victories became National Kommissar for aviation with former Deutsche Luft Hansa director Erhard Milch as his deputy. In April 1933 the Reichsluftfahrtministerium (RLM – Reich Air Ministry) was established. The RLM was in charge of development and production of aircraft.

By the summer of 1939, the Luftwaffe had nine Jagdgeschwader (fighter wings) mostly equipped with the Messerschmitt Bf 109E, four Zerstörergeschwader (destroyer wings) equipped with the Messerschmitt Bf 110 heavy fighter, 11 Kampfgeschwader (bomber wings) equipped with mainly the Heinkel He 111 and the Dornier Do 17Z; and as it had encountered design difficulties, was just starting to accept the Junkers Ju 88A for service with only a dozen aircraft of the type considered combat-ready, and four Sturzkampfgeschwader



(dive bomber wings) ready for combat, primarily armed with the iconic Junkers Ju 87B Stuka. The Luftwaffe's strength at this time stood at 373,000 personnel (208,000 parachute troops, 107,000 in the Flak Corps and 58,000 in the Signals Corps). Aircraft strength was 4,201 operational aircraft; 1,191 bombers, 361 dive bombers, 788 fighters, 431 heavy fighters, and 488 transports. Despite deficiencies it was an impressive force.

When the Second World War began, the Luftwaffe was one of the most technologically advanced air forces in the world. During the Polish Campaign that triggered the war, it established air superiority, and then air supremacy, quickly. It supported German Army operations which ended the campaign in five weeks.

The Luftwaffe was to have in place a ground-to-air communication system, which played a vital role in the success of Fall Gelb.

In the spring of 1940, the Luftwaffe assisted the Kriegsmarine in the daring invasion of Norway, Operation Weserübung. Flying in reinforcements and winning air superiority, the Luftwaffe contributed decisively to the German conquest and expulsion of the Western Allies from Scandinavia.

In the summer of 1940, the Luftwaffe contributed to the unexpected success in the Battle of France. It helped destroy three Allied Air Forces and secure the defeat of France in just over six weeks. However, during the Battle of Dunkirk despite intense bombing, it could not deliver Göring's promise to destroy the British Expeditionary Force, which escaped to continue the war.

During the Battle of Britain, the Luftwaffe, despite causing severe damage to the Royal Air Force's infrastructure and British cities during the subsequent Blitz, did not achieve the air superiority that Hitler demanded for Operation Sea Lion as the invasion was cancelled in December 1940, when Hitler ordered preparations to be made for Operation Barbarossa, the invasion of the Soviet Union.

In June 1941, Germany invaded the Soviet Union. The Luftwaffe destroyed thousands of Soviet aircraft. But it failed to destroy the Red Air Force. Due to a lack of Strategic bombers - the very "Ural bombers" that General Wever had asked for six years before - the Luftwaffe could not strike at Soviet production centers regularly or with the needed force. As the war dragged on, the Luftwaffe was eroded in strength. The defeats at the Battle of Stalingrad and Battle of Kursk ensured the gradual decline of the Wehrmacht on the Eastern Front.

Meanwhile, the Luftwaffe continued to defend German-occupied Europe against the growing offensive power of RAF Bomber Command and the United States Army Air Forces. The Defense of the Reich campaign gradually destroyed the Luftwaffe's fighter arm. Despite its belated use of advanced turbojet and rocket propelled aircraft for bomber destroyer duties, it was overwhelmed by Allied numbers and a lack of trained pilots and fuel. A last-ditch attempt, known as Operation Bodenplatte, to win air superiority on 1 January 1945 failed. After the Bodenplatte effort, the Luftwaffe had ceased to be an effective fighting force. ➔

Boeing's QF-16 goes unmanned

Published on Sep 24, 2013

As a pilotless F-16 roared into the sky last week at Tyndall Air Force Base, Fla., members of Boeing's QF-16 team and the U.S. Air Force celebrated.

The flight represented the first unmanned QF-16 Full Scale Aerial Target flight. Put another way, fighter pilots now have an adversary for which to train against that prepares them like never before.

Two U.S. Air Force test pilots in a ground control station at Tyndall remotely flew the QF-16, which is a retired F-16 jet modified to be an aerial target. While in the air, the QF-16 mission included a series of simulated manoeuvres, reaching supersonic speeds, returning to base and landing, all without a pilot in the cockpit.

"It was a little different to see it without anyone in it, but it was a great flight all the way around," said U.S. Air Force Lt. Col. Ryan Inman, Commander, 82nd Aerial Targets Squadron. "It's a replication of current, real world situations and aircraft platforms they can shoot as a target. Now we have a 9G capable, highly sustainable aerial target."

Prior to the QF-16, the military used a QF-4 aircraft, which was a modification of the F-4 Phantom, a Vietnam-era fighter. The modified QF-16 provides pilots a target that performs closer to many jets flying today.

The QF-16s were all retired aircraft. Boeing retrieved them from Davis Monthan Air Force Base in Arizona and restored them for flight.

Next up, live fire testing moves to Holloman Air Force Base, N.M. The military will ultimately use QF-16s for weapons testing and other aerial training. So far, Boeing has modified six F-16s into the QF-16 configuration.

To see the Video go to - <http://www.youtube.com/watch?v=LGDOdDwp0cE> →



AN ELDERLY ITALIAN CATHOLIC GENTLEMAN

An elderly Italian gentleman who lived on the outskirts of Rimini, Italy, went to the local church for confession. When the priest slid open the panel in the confessional, the man said:

"Father, during World War II, a beautiful Jewish woman from our neighbourhood knocked urgently on my door and asked me to hide her from the Nazis. So I hid her in my attic."

The priest replied: "That was a wonderful thing you did, and you have no need to confess that."

"There is more to tell, Father. She started to repay me with sexual favours. This happened several times a week, and sometimes twice on Sundays."

The priest said, "That was a long time ago and by doing what you did, you placed the two of you in great danger, but two people under those circumstances can easily succumb to the weaknesses of the flesh."

However, if you are truly sorry for your actions, you are indeed forgiven."

"Thank you, Father. That's a great load off my mind. I do have one more question."

"And what is that?" asked the priest.

"Should I tell her the war is over...?"

LIPOETRY - ODE TO A LIPO.

Oh lovely little lipo,
You're small and light and neat,
You make my plane fly high and fast and climb two thousand feet.

Oh lovely little lipo,
You pack a lot of poke,
I'll charge you very carefully so you don't go up in smoke.

Oh lovely little lipo,
You're rather slow to charge,
I'll add another amp or two, that's OK, by and large.

Oh lovely little lipo,
You cost me quite a bit,
Now you're burning brightly I do feel a right ...

The Bard of Binfield. John Price

Caption Competition

Please email Tony with which caption you like best - results announced in next LIFT.



“Hey Roger I think your Height Limiter is Goosed” – Toni Pelling

“Help me Roger, my wigs stuck to me hat” – Terry Pelling

"I take my hat off to some amazing flying" – Terry Antell

“Ole, low flying Frisbees again!” – Peter Sullivan

“Lower Roger, I'll see if I can swat it” – Graham Stallard

“ Walk THIS way Roger” – John Price

THE GLIDERS OF WILBUR AND ORVILLE WRIGHT

The Wright Brothers first steps in aviation were with kites. They built a biplane kite with a five-foot wingspan and attached lines to the corners of the wings, so that they could be twisted in flight to simulate the actions of the birds.

From the safety of the ground they discovered that they could deliberately upset the equilibrium of the kite, making it turn, then by reversing the direction of the twist, regain it. They called the process 'wing-warping'.

THE KITTY HAWK YEARS

Each autumn between 1900 and 1903 the Wright Brothers spent at Kitty Hawk, NC, trying out a new flying machine.

The first was a tethered kite-glider with wingwarping and a front elevator which they controlled with lines from the ground; in 1901 they were back with a larger, free-flying machine. Over the winter they used a small windtunnel for basic research and came back with their third glider in which they made hundreds of flights in 1902.

The next stage was to build a much larger kite, which could be controlled from the ground but, once tested, it would support a pilot. For that they needed strong and consistent winds which could not be found around Dayton. Once again their approach to solving the problem was systematic: Wilbur wrote to the Weather Bureau for details of wind strengths from all over America and the trail led them to Kitty Hawk.



Replica of the Wright brothers' wind tunnel at the Virginia Air and Space Center

In the autumn of 1900 they went to have a look. It was perfect: a steady wind blew in from the Atlantic over miles and miles of uninhabited sand; the fishermen and the family who kept the post office were solid people, almost like a family away from home. For the next three years Orville and Wilbur made an annual pilgrimage to Kitty Hawk, each time building on the experience previous years. Four years of intensive theoretical and practical work with gliders culminated in 1903, when they added an engine and propellers. The four flights of 17 December marked the birth of powered and controlled flight in aeroplanes.

1900 Glider

The brothers flew the glider only a few days in the early autumn of 1900 at Kitty Hawk. In the first tests the glider flew as a kite not far above the ground with men below holding tether ropes. Most of the kite tests were un-piloted



The No. 1 kite-glider had a 17 foot wingspan; it was chiefly flown unmanned with sand-bags or chains as on board ballast though they made a few piloted flights on it.

1901 Glider

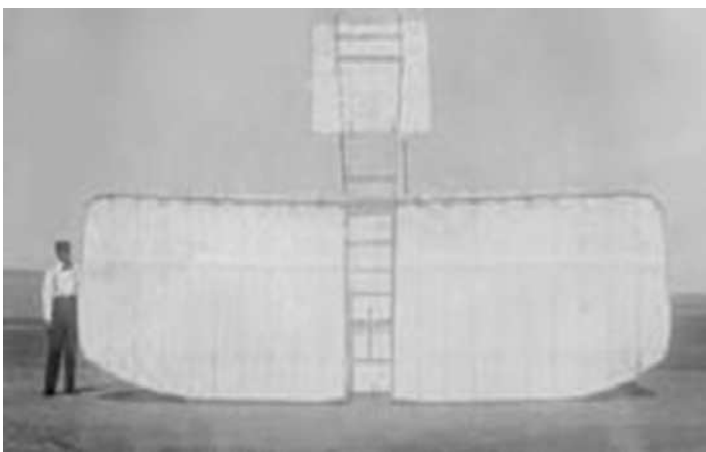
They tested wing-warping using control ropes from the ground. The glider was also tested unmanned while suspended from a small homemade tower. Wilbur (but not Orville) made about a dozen free glides on only a single day. Although the glider's lift was less than expected (causing most tests to be unmanned), the brothers were encouraged because the craft's front elevator worked well and they had no accidents. However, the small number of free glides meant they were not able to give wing-warping a true test.



The pilot lay flat on the lower wing, as planned, to reduce aerodynamic drag. As a glide ended, the pilot was supposed to lower himself to a vertical position through an opening in the wing and land on his feet with his arms wrapped over the framework. Within a few glides, however, they discovered the pilot could remain prone on the wing, headfirst, without undue danger when landing. They made all their flights in that position for the next five years.



The picture on the right is Wilbur just after landing the 1901 glider. Glider skid marks are visible behind it, and marks from a previous landing are seen in front; Kitty Hawk, North Carolina.



Orville at Kitty Hawk with the 1901 glider, its nose pointed skyward; it had no tail.

Hoping to improve lift, they built the 1901 glider with a much larger wing area and made 50 to 100 flights in July and August for distances of 20 to 400 ft. The glider stalled a few times, but the parachute effect of the forward elevator allowed Wilbur to make a safe flat or "pancake" landing, instead of a nose-dive. These incidents wedded the Wrights even more strongly to the canard design, which they did not give up until 1910. The glider, however, delivered two major disappointments. It produced only about one-third the lift calculated and sometimes failed to respond properly to wing-warping, turning opposite the direction intended—a problem later known as adverse yaw. On the trip home after their second season, Wilbur, stung with disappointment, remarked to Orville that man would fly, but not in their lifetimes. The poor lift of the gliders led the Wrights to question the accuracy of Lilienthal's data, as well as the "Smeaton coefficient" of air pressure, which had been in existence for over 100 years and was part of the accepted equation for lift.

The Wrights and Lilienthal equation used to calculate the amount of lift that wings of various sizes would produce and on the basis of measurements of lift and wind during the 1901 glider's kite and free flights, Wilbur believed (correctly, as tests later showed) that the Smeaton number was very close to 0.0033, not the traditionally used 60 percent larger 0.0054, which would exaggerate predicted lift.

Back home, furiously pedalling a strange-looking bicycle on neighbourhood streets, they conducted makeshift open-air tests with a miniature Lilienthal airfoil and a counter-acting flat plate, which were both attached to a freely rotating third bicycle wheel mounted horizontally in front of the handlebars. Because the third wheel rotated against the airfoil instead of remaining motionless as the calculations predicted, the Wrights confirmed their suspicion that published data on lift were unreliable, and they decided to expand their investigation. They also realized that trial-and-error with different wings on full-size gliders was too costly and time-consuming. Putting aside the three-wheel bicycle, they built a six-foot wind tunnel in their shop and conducted systematic tests on miniature wings from October to December 1901.

1902 Glider

Dramatic improvement in performance is apparent. The 1901 glider flies at a steep angle of attack due to poor lift and high drag. In contrast, the 1902 glider flies at a much flatter angle and holds up its tether lines almost vertically, clearly demonstrating a much better lift-to-drag ratio.

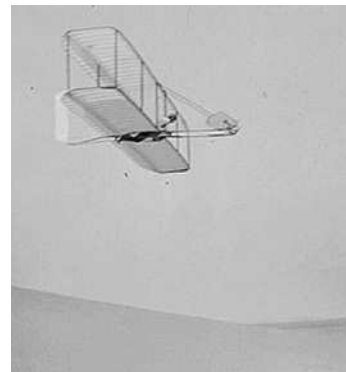
With the knowledge from the wind tunnel and a more accurate Smeaton number,

the Wrights designed their 1902 glider. Using another crucial discovery from the wind tunnel, they made the airfoil flatter, reducing the camber. The 1901 wings had significantly greater curvature, a highly inefficient feature the Wrights copied directly from Lilienthal. Fully confident in their new wind tunnel results, the Wrights discarded Lilienthal's data, now basing their designs on their own calculations. Picture on the right shows The 1902 glider flown by Wilbur (right) and Dan Tate, their helper.



With characteristic caution, the brothers first flew the 1902 glider as an unmanned kite, as they had done with their two previous versions. Rewarding their wind tunnel work, the glider produced the expected lift. It also had a new structural feature: a fixed, rear vertical rudder, which the brothers hoped would eliminate turning problems.

By 1902 they realized that wing-warping created "differential drag" at the wingtips. Greater lift at one end of the wing also increased drag, which slowed that end of the wing, making the aircraft swivel—or "yaw"—so the nose pointed away from the turn. That was how the tail-less 1901 glider behaved. The picture on the right shows Wilbur Wright piloting the 1902 glider over the Kill Devil Hills, October 10, 1902. The single rear rudder is steerable; it replaced the original fixed double rudder.



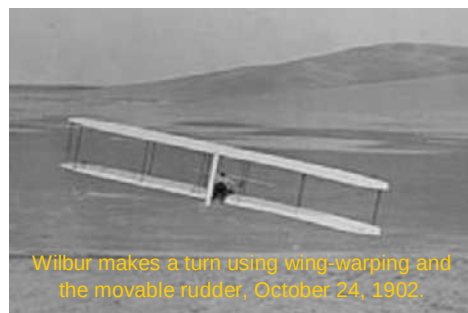
The improved wing design enabled consistently longer glides, and the rear rudder prevented adverse yaw—so effectively that it introduced a new problem. Sometimes when the pilot attempted to level off from a turn, the glider failed to respond to corrective wing-warping and persisted into a tighter turn. The glider would slide toward the lower wing, which hit the ground, spinning the aircraft around. The Wrights called this "well digging".

Orville apparently visualized that the fixed rudder resisted the effect of corrective wing-warping when attempting to level off from a turn. He wrote in his diary that on the night of October 2, "I studied out a new vertical rudder". The brothers then decided to make the rear rudder movable to solve the problem. They hinged the rudder and connected it to the pilot's warping "cradle", so a single movement by the pilot simultaneously controlled wing-warping and rudder deflection.

Tests while gliding proved that the trailing edge of the rudder should be turned away from whichever end of the wings had more drag (and lift) due to warping. The opposing pressure produced by turning the rudder enabled corrective wing-warping to reliably restore level flight after a turn or a wind disturbance. Furthermore, when the glider banked into a turn, rudder pressure overcame the effect of differential drag and pointed the nose of the aircraft in the direction of the turn, eliminating adverse yaw.

In short, the Wrights discovered the true purpose of the movable vertical rudder. Its role was not to change the direction of flight (as a rudder does in sailing), but rather, to aim or align the aircraft correctly during banking turns and when leveling off from turns and wind disturbances. The actual turn—the change in direction—was done with roll control using wing-warping. The principles remained the same when ailerons superseded wing-warping.

With their new method the Wrights achieved true control in turns for the first time on October 8, 1902, a major milestone. During September and October they made between 700 and 1,000 glides, the longest lasting 26 seconds and covering 622.5 feet (189.7 m). Hundreds of well-controlled glides after they made the rudder steerable convinced them they were ready to build a powered flying machine.



Thus did three-axis control evolve: wing-warping for roll (lateral motion), forward elevator for pitch (up and down) and rear rudder for yaw (side to side). On March 23, 1903, the Wrights applied for their famous patent for a "Flying Machine", based on their successful 1902 glider. Some aviation historians believe that applying the system of three-axis flight control on the 1902 glider was equal to, or even more significant, than the addition of power to the 1903 Flyer. Peter Jakab of the Smithsonian asserts that perfection of the 1902 glider essentially represents invention of the airplane. ➔

Glider Vital Statistics							
	Wingspan	Wing Area	Chord	Camber	Aspect Ratio	Length	Weight
1900	5.33m	15m ²	2m	1/20	3.5:1	3.51m	24kg
1901	7.0m	27m ²	2.1	1/12	3:1	4.3m	44kg
1902	9.78m	28m ²	1.5	1/20	6.5:1	5.2m	51kg

TVSF Branded Garments

Thames Valley Silent Flyers



Polo Shirt

Heavyweight Pique Polo Shirt



Sweat Shirt

Raglan Sleeve Sweatshirt



Fleece

Full Zip Outdoor Fleece



Order options: Tick one box in each section.	Polo Shirt	Sweat Shirt	Fleece	Bronx Hat	Base Ball Hat
Price	£11	£12	£18	£7	£6.50
Quantity					
SIZES					
S : 36"				NA	NA
M : 38"-40"				NA	NA
L : 42"				NA	NA
XL : 44"				NA	NA
2XL :46"-48"				NA	NA
COLOURS					
Head wear all one size.					
White					
Burgundy					
Yellow					
Black					
Smoke / Grey					
Green					
Blue / Royal					

Baseball Cap

6 Panel Structured
Brushed Cotton
Baseball Cap



Bronx Hat

Acrylic Knitted
Thinsulate
Bronx Hat
With Turn-Up



ORDERING

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Or see him on club night.

Don't forget to give a contact telephone

Thames Valley Silent Flyers



TVSF Puzzle Corner

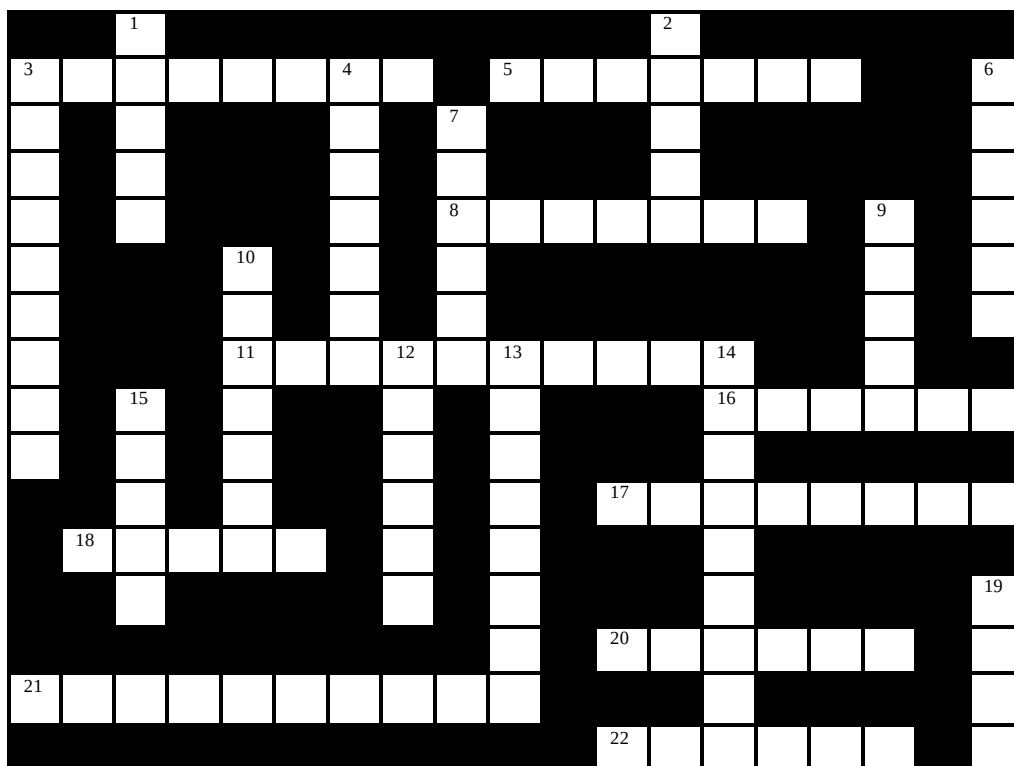
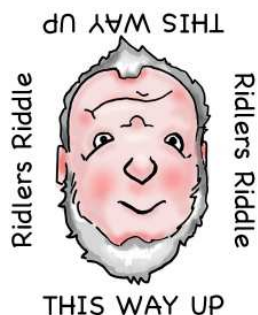
The Crossword this month is the subject of World Airports. You need to find the city from the Airport code. For example;

LGW is Gatwick in the UK. (not in the puzzle)

Good Luck

Down
1 CDG
2 HND
3 SIN
4 ATL
6 SYD
7 MNL
9 MIA
10 CGK
12 LHR
13 LAS
14 AMS
15 ICN
19 FCO

Across
3 PVG
5 YYZ
8 JFK
11 KUL
16 MUC
17 IST
18 DXB
20 MAD
21 LAX
22 BOM



My **Anomalous** Friend has been busy this issue with several gems. The following is a selection of his twisted sense of humour. Many seek to uncover his identity but only the Editor knows his true identity, it is rumoured he may be "the Stig".

In ancient Israel, it came to pass that a trader by the name of Abraham Com did take unto himself a young wife by the name of Dorothy. And Dot Com was a comely woman, broad of shoulder and long of leg. Indeed, she was often called Amazon Dot Com.

And she said unto Abraham, her husband, "Why dost thou travel so far from town to town with thy goods when thou can trade without ever leaving thy tent?"

And Abraham did look at her as though she were several saddle bags short of a camel load, but simply said, "How, dear?"

And Dot replied, "I will place drums in all the towns and drums in between to send messages saying what you have for sale, and they will reply telling you who hath the best price. The sale can be made on the drums and delivery made by Uriah's Pony Stable (UPS)."

Abraham thought long and decided he would let Dot have her way with the drums. And the drums rang out and were an immediate success. Abraham sold all the goods he had at the top price, without ever having to move from his tent.

To prevent neighbouring countries from overhearing what the drums were saying, Dot devised a system that only she and the drummers knew. It was known as Must Send Drum Over Sound (MSDOS), and she also developed a language to transmit ideas and pictures - Hebrew To The People (HTTP).

And the young men did take to Dot Com's trading as doth the greedy horsefly take to camel dung. They were called Nomadic Ecclesiastical Rich Dominican Sybarites, or NERDS.

And lo, the land was so feverish with joy at the new riches and the deafening sound of drums that no one noticed that the real riches were going to that enterprising drum dealer, Brother William of Gates, who bought off every drum maker in the land. Indeed he did insist on drums to be made that would work only with Brother Gates' drumheads and drumsticks.

And Dot did say, "Oh, Abraham, what we have started is being taken over by others."

And Abraham looked out over the Bay of Ezekiel, or eBay as it came to be known.

He said, "We need a name that reflects what we are." And Dot replied, "Young Ambitious Hebrew Owner Operators." "YAHOO," said Abraham.

And because it was Dot's idea, they named it YAHOO Dot Com.

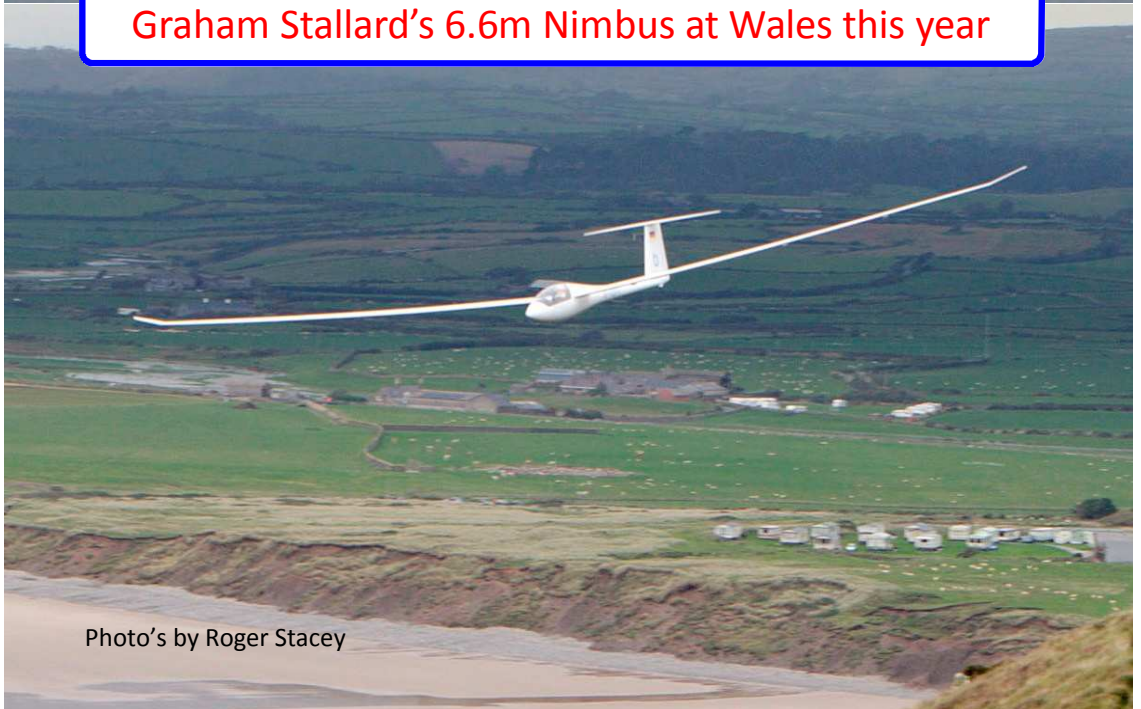
Abraham's cousin, Joshua, being the young Gregarious Energetic Educated Kid (GEEK) that he was, soon started using Dot's drums to locate things around the countryside. It soon became known as God's Own Official Guide to Locating Everything (GOOGLE).

That is how it all began. And that's the truth.

That's all for this issue of LIFT, to be sure to get your articles to me early for the next issue number 74, available at the March 2014 Club Meeting.



Graham Stallard's 6.6m Nimbus at Wales this year



Photo's by Roger Stacey