

# FFLYPAPER

(2005—our 26th year)



*Journal of Felbridge Flyers Radio Model Flying Club*

### Special points of interest:

- Max's p38 crash
- DIY BBQ.
- Genuine ATC exchanges.



### Inside this issue:

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## Chairman's Chatter

We visited northern France in June this year for our holiday. The idea was to visit the Normandy beaches, catch some fine weather (which we did) and generally relax. We based ourselves around Bayeux which is just inland from the main UK invasion beaches and famous for it's tapestry.

There were many invasion museums in and around the area and much good will to the British. There is a British war cemetery on the outskirts of the town where over 6000 of our armed forces are buried. The place was perfectly kept, all the headstones in perfect lines and each had a name and unit with the appropriate badge carved into the white headstones. The emotion in that place was amazing which only a trip to such sites will reveal. Most of those

is of a Typhoon painted there over 50 years ago. The French seem very proud of what the Allied forces did for their country and don't want people to forget.

We found the French people very welcoming and friendly, they would happily lapse into English if you tried out your schoolboy French on them. The roads are magnificent, there is no traffic to speak of, no speed cameras, no double yellow lines, most car parking is free and everyone seems relaxed (chilled out as my boys say). It makes you realise what a crowded little island we live on.

Well, lets get back to the chit chat.

Damaged my Acro Wot a few week's back, pilot error I am afraid. It was a windy day and the wind changed necessitating an approach

from the south over the newly formed "gap". I was at the northern end so attempted a head on approach standing at the northern pilot box (there was no one else at the field). It was just to check out the wind rather than a full stop landing. I turned onto final but was a little to the right of the gap as the wind was blowing it off course. Never mind I was the strip side of the trees

so no problem—wrong. I caught an upper branch with the wheels which wiped out the undercart mounting, releasing the wing. The 3 assemblies then fell to the ground! Not too much damage and can be repaired with little problem, my pride

*(Continued on page 2)*



killed were younger than my 2 sons which really brings the loss into perspective.

Everywhere you go are reminders of the D Day landings and not just on the coast. We were driving along about 20 miles from the coast when we passed the barn pictured here, it



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permanently damaged though.

With the increased reliability of modern engines dead stick landings are now less common. Practice for this eventuality does not occur all that often so a lot of people may be rusty. Recent "A" test candidates will be more familiar with this requirement as it forms part of the test. On your next visit to the field why not practice this manoeuvre? Just gain height and slow the engine to idle. Plan your approach and practice getting back to the strip without putting on the power. If you get into problems just throttle up and try again. If you need any help with this and to get some hints and tips speak to one of the instructors.

Jim Christie was flying his electric Cub while I was relaxing in the sun outside the shed. I was watching the plane when suddenly the prop departed from the model. I was able to follow this down to the ground, fix a line to it, walk along the line and find the prop with the prop driver. Jim landed the plane with no problem or damage. The lucky break here was that I was looking when the prop came off so could pinpoint the location. If you are flying the model you can't pinpoint the location as you have to fly the plane.

As a fixed wing BMFA examiner I am able to also take helicopter "A" tests. I was going through a mock test with Mike Lippert and had just finished the hovering tests when the engine started to run roughly and then quit. No damage so Mike went back to investigate. He changed the plug and set up the mixture a few clicks richer.

All went well with the hovering tests but the engine again quit. Mike decided on more investigation and eventually found that the clunk had become detached as the flexible pipe had split. Just goes to show that the humble fuel tank is an important part of the aircraft. The moral is do check your tank from time to time. A good way to check with a fixed wing model is to do some checks with a quarter filled tank. Start the engine and check that it runs well in all flight attitudes (nose up, upside down, etc). A faulty clunk will often not show up with a full tank.

A small electric model and Tx has been left in the shed, it was found in the far hedge so I am told. The tailplane was broken and Jim Christie has fixed this. The aircraft battery (a LiPo) is charged from the Tx. Is it yours? Contact a Committee member if it is.

We are organising a DIY BBQ on Saturday 1 October in the afternoon. We will be providing a

number of lit and ready to cook on BBQs. You bring the food and cook it yourself (you may want to bring something to drink as well).

We will get the BBQs working from mid afternoon and maybe arrange some light hearted simple competitions. We may even get a bonfire going. This is a very informal occasion so come along and have a fly, do some cooking, open a few beers (if someone else is driving) and put the world to rights.

Those of you who take "Quiet and Electric Flight" magazine will have seen Chris Searle's ME Komet and SE5 small electric models featured, fame at last.

We are trying something different for the October Club night on 26th. It is a photographic competition. Subject matter to be "aviation" in whatever form you want. Prints required please at no more than 10" x 8", bring them along on the night but be aware that we will probably be using blutac to fix them to the walls and this may damage the prints. There will be a prize and the winning prints will find their way into this publication. Judging will be by a "celebrity" and judged on appeal not necessarily technical competence.

Congratulations also to Ian Stone who has achieved a 1000m height gain as part of his silver gliding award, well done (and from a winch launch as well). He has now also been cleared for the single seat K9 which he says "is just fantastic".

Norman Carter

**DIY Barbecue**  
**Saturday 1 October**  
**Bring your own food and**  
**cook it on the BBQs provided**  
**Mid afternoon to dusk**

## Some Aircraft Traffic Control exchanges

These are transcripts of actual ATC conversations (so I am assured), they made me laugh.

Tower: "Delta 351, you have traffic at 10 o'clock, 6 miles!"

Delta 351: "Give us another hint! We have digital watches!"

"TWA 2341, for noise abatement turn right 45 Degrees."

"Centre, we are at 35,000 feet. How much noise can we make up here?"

"Sir, have you ever heard the noise a 747 makes when it hits a 727?"

O'Hare Approach Control to a 747:

"United 329 heavy, your traffic is a Fokker, one o'clock, three miles, Eastbound."

United 329: "Approach, I've always wanted to say this... I've got the little Fokker in sight."

A student became lost during a solo cross-country flight. While attempting to locate the aircraft on radar, ATC asked, "What was your last known position?"

Student: "When I was number one for takeoff."

A DC-10 had come in a little fast and thus had an exceedingly long roll out after touching down.

San Jose Tower: "American 751, make a hard right turn at the end of the runway, if you are able. If you are not able, take the Guadeloupe exit off Highway 101, make a right at the lights and return to the airport."

There's a story about the military pilot calling for a priority landing because his single-engine jet fighter was suffering some engine problems. Air Traffic Control told the fighter jock that he was number two, behind a B-52 that had one engine shut down.

"Ah," the fighter pilot remarked, "The dreaded seven-engine approach."

The pilot of a Cherokee 180 was told by the tower to hold short of the active runway while a DC-8 landed. The DC-8 landed, rolled out, turned around, and taxied back past the Cherokee. Some quick-witted comedian in the DC-8 crew got on the radio and said, "What a cute little plane. Did you make it all by yourself?"

The Cherokee pilot, not about to let the insult go by, came back with:

"I made it out of DC-8 parts. Another landing like

## CLUB NIGHTS

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**SUMMER CLUB NIGHTS ARE HELD AT NEW-CHAPEL FIELD AND WINTER ONES IN BLINDLEY HEATH:**

**WEDNESDAY 28TH SEPTEMBER - FIRST INDOOR MEETING AFTER THE SUMMER. THIS WILL BE NOGGIN & NATTER AT THE FOREMAN CLUB AND INSTITUTE IN BLINDLEY HEATH.**

**WEDNESDAY 27TH OCTOBER - THIS IS THE CLUB PHOTOGRAPHIC COMPETITION. PRINTS OF AN AVIATION SUBJECT MATTER, NO BIGGER THAN 10 X 8. WE HOPE TO HAVE A CELEBRITY JUDGE.**

**TRY TO GET ALONG TO CATCH UP ON WHAT MAY BE HAPPENING. ATTENDANCE HAS BEEN POOR AT SOME EVENTS SO DO TRY TO GET ALONG.**

yours and I'll have enough parts for another one."

The German air controllers at Frankfurt Airport are renowned as a short-tempered lot. They not only expect one to know one's gate parking location, but how to get there without any assistance from them. So it was with some amusement that we (a Pan Am 747) listened to the following exchange between Frankfurt ground control and a British Airways 747, call sign Speedbird 206.

Speedbird 206: "Frankfurt, Speedbird 206 clear of active runway."

Ground: "Speedbird 206. Taxi to gate Alpha One-Seven." The BA 747 pulled onto the main taxiway and slowed to a stop.

Ground: "Speedbird, do you not know where you are going?"

Speedbird 206: "Stand by, Ground, I'm looking up our gate location now."

Ground (with quite arrogant impatience): "Speedbird 206, have you not been to Frankfurt before?"

Speedbird 206 (coolly): "Yes, twice in 1944, but it was dark, and I didn't land."

## Airfoil accuracy—an insight by John Chew—part 1

About two years ago I invested in a piece of software for my PC called "DesignFOIL Pro" (DreeseCode software).

This piece of software contains a "Virtual Wind Tunnel" (among other things). A Virtual Wind Tunnel is a software product that uses a technique called "Computational Fluid Dynamics" to solve the Navier-Stokes airflow equations. It then adds in corrections that estimate the transition between laminar and turbulent boundary layer, with "transition bubbles" if such exist, and produces results in similar form to those that are produced by physical wind tunnels.

During those two years I have used DesignFOIL Pro to develop a series of aerofoils specifically for model use, which I refer to as my "EP" or "Elipso-Parabolic" sections because they are generated using an amalgamation of elliptical and parabolic curves.

I will not go into the detail of the EP aerofoils here, their development was a long process and the tale is a long tale, but for now I will just say that the EP aerofoils are "very competitive" against the NACA 4-digit equivalents. Indeed, marginally better in terms of drag performance.

However I went on to do another experiment in the DesignFOIL Pro virtual wind tunnel that was very interesting indeed.

I used one of my EP aerofoils for this experiment, the "EP34-152". This is an EP series aerofoil of 15% thickness and 2% camber which would be ideally suited to a primary trainer or general sports model. It provides good low speed lifting capability, a decent depth so that it can be easily built strong and very competitive drag characteristics for a 15% thick section.

I then modified the coordinates of this aerofoil within DesignFOIL Pro to introduce a "dent" into the upper surface at the 30% chord position. This dent was *only 0.2% of the chord deep*, which equates to a dent of 1/50th of an inch on a 10 inch chord wing (or 1/2mm on a 25cm wing). I know I cannot produce aerofoils accurate to 1/50th inch myself, and I don't think I'm particularly poor as a builder, so I suspect this level of inaccuracy is widespread in model building.

The interesting thing was what happened when I ran both the "dented" and the original EP34-152 through DesignFOIL Pro and compared the results.

It is quite notable that the dent, even though it is very shallow and only present at one particular point on the aerofoil, has produced a very noticeable increase in drag at a particular point on the "drag polar" curve. It's also noticeable that the "lift vs. angle of attack" curve seems almost totally unaffected.

This was borne out by further experiments along the same lines. I went on to produce further "inaccurate" EP34-152s, leading to a final one where random inaccuracy of up to 0.2% chord was introduced all over its surface. This inaccurate EP34-152 *looked* almost indistinguishable from the original, but in terms of its drag performance it was a vastly inferior aerofoil. Yet *still* its lift vs. angle of attack curve was practically unchanged.

For completeness I then did almost the same series of experiments using a Clark-Y, and obtained equivalent results. I believe this answers one of the "odd questions" about model aircraft. Namely why many models seem to fly just as well with an aerofoil drawn freehand with a french curve or a shoe sole as others do that use a "proper" aerofoil like the Clark-Y, NACA 2415 or my own EP34-152.

If you put any of the "proper" aerofoils through the DesignFOIL Pro virtual wind tunnel and compare it with a similar "French Curve Special" you almost invariably find the "proper" aerofoil is significantly better (I have done this experiment too!). Yet in reality this simply does not matter, as the natural and inevitable inaccuracies of building a real wing mean that the "theoretical" advantages and qualities of the "proper" aerofoil are lost anyway.

It's not that the "french curve special" is as good as an NACA 2415, it isn't. It's that by the time you've actually *built* the NACA 2415 into a real wing its qualities have been lost and it has been "dragged down" to the same (low) standard of the "french curve special".

Yet because it's only the *drag* performance that is damaged by these minor surface inaccuracies, not the ability to actually produce *lift* (which is much more a matter of location of maximum thickness and camber than any surface effect), the only real effect upon the

model and the way it flies is a need to use slightly more throttle.

Does anyone really notice, or *care*, if you cruise at 2/3rds throttle rather than 3/5ths? Besides, with wing aspect ratios of less than about six, and at normal flying speeds, the wing is producing more induced drag than profile drag anyway so the overall effect is remarkably minor.

So what are the conclusions?

*John Chew*

*(You will have to wait until the next issue for the conclusions but get your thinking caps on)*

## Max's P38 crash—an analysis

As Norman reported in the June newsletter my P-38 Lightning hit the ground in an un-intended way recently. Pity as I was just feeling comfortable with this hairy little model. Post crash at the field a range check was fine, all the servos worked ok so what went wrong? Back home looking closely with everything on the bench proved just as inconclusive. The receiver pack had almost full capacity when discharged so it would have to be one of those annoying unexplained events that ruin your hard work.

A few days later I am flying my Acrowot and whilst looking up at the model I become aware that the throttle stick does not 'feel' right. Upon inspection later I find that the throttle stick axis is only supported by a pivot at one end. The other end is just floating allowing the whole gimbal assembly to sag and move around. Looking inside the transmitter case and comparing the two stick assemblies I see that the inner throttle pivot pin is missing even though its retain plate and screw are still in place.

Hmmm where did that go methinks, is it still in the Tx somewhere? A short search and I find it rolling around at the back of one the circuit boards. As the pivot pin is steel it is easily capable of shorting out any circuit it happens to touch. Could this be the reason for my P-38 crash? Well yes it could be, still

cannot prove it but it does fit the way the model behaved just prior to the crash. A couple of major deviations from commanded flight but recovered from, followed by a total loss of control.

How many of us check the TX for integrity? Other than charging the battery nothing else can go wrong can it? By the way my Tx is a Futaba FF8 although this gimbal assembly will be common to many Futaba and probably non Futaba Tx's. I can only imagine that the constant back and forth movement of the throttle 'unscrewed' the pin even though its just a plain steel rod. Upon re-assembly I formed the retain plate slightly to put more pressure on the pin and hopefully prevent a repeat.

I plan to have a go at repairing the P-38 over the winter. In the mean time will get a DH Mosquito to utilise the same electric flight hardware.

*Max Woodhead*

*(Ed's note: Max tells me this is not an isolated case as two other Futaba Field Force Tx's in the Club have had similar problems with this gimbal pin working free. If you have one do check for this problem, Max says the pin in his had nearly worked free again in less than a month)*

**CONGRATULATIONS TO  
MAX WOODHEAD WHO PASSED  
HIS BMFA "B" TEST. WELL  
DONE, IT IS NOT AN EASY TEST  
PARTICULARLY WITH EXAM  
PRESSURES AND 2 EXAMINERS  
STANDING BESIDE HIM.**

**We need your articles—** It is always a bit of a struggle to get enough content for the newsletter so articles are always welcome from members. It does not have to be long or complex and you will be surprised how easy it is to do. Your English does not even need to be up to much (just look at mine—I took 3 tries to barely get a pass at GCS "O" level—I know, it shows). Choose your own topic (aircraft related please) and get it to the Editor any way you can from handwriting to publisher, I can cope with them all.

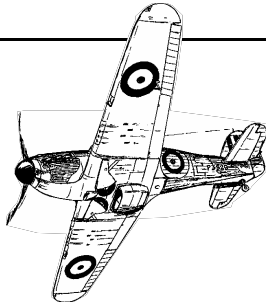


## Committee and General

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## Field Report

**Imberhorne** - Chris Searle is doing his bit for the Club by keeping this site cut during the summer. We will all be needing to use this site in the winter if we get a wet one as this makes Newchapel unusable.

**Newchapel** - The safety line posts have been replaced by Dave Nice, they are now a little bit higher than they were and the gaps are just wider than the wingspan of my Hurricane; well done that man.

The grass is now really short, just right for your scale models with small wheels and scale leg positions. The ground is rock hard as well, all the plus points of a tarmac strip and grass strip together. The strip will be like this now until early November with any luck.

Mike Dyke and Dave Nice have also been working on cutting the blackthorn back to the fence in the parking area and by the entrance, to allow a better sight line to see oncoming traffic approaching from the right on the A22. We have also approached the Council about the dead tree right in our sight line.

Chris Searle has also managed to get a grass cutting contractor to cut all the fields for the land owner as well as our area again, it now looks much tidier and makes any items that fall from our models *slightly* easier to find.

**KEEP YOUR SITE**



**WITH QUIET FLIGHT**

BRITISH MODEL FLYING ASSOCIATION  
**AND LOW RPM'S**