

EFC NEWS



Edition – August/September 2008

Editor's Notes

This month I would like to begin by commiserating over the miserable weather we have had in July and August. You might like to know that my electronic weather station which has a rain-measuring device, recorded 781mm of rain in total last year. This year to date we have had 660mm and there are still the wet autumn months to come!

This issue has a profile of Martin Walker one of the G-FY owner's group – looking very serious in the picture below. All PPLs and students should take note of the changes to RTF in the recent CAP 413 outlined by Tom below. We also have an interesting perspective on training flights and an exciting article about flying the Gnat.

I am still looking for contributions from members to the e-mail address at the end. Happy reading and flying.

Member Profile



Name: Martin Walker

Age: 40

Job: IT Manager at RBS

Flying Training: PPL Training at the old Turnhouse Flying Club, followed by IMC training a while later and a Night Rating after that

Total Hours: Not much over 300

Furthest Flight: Valdera (near Pisa) in Northern Italy. This was flown with Gerry, sharing the flying over two quite full days from Edinburgh. Finally getting to Valdera for some well-earned Pinot Grigio on the Friday evening after some amazing flying. Including of all things a broken mixture cable on Corsica, on Friday afternoon with no engineers to be found. Not a SNAFU per se, but possibly the most dramatic 'problem' I've ever had when flying.

Favourite Route: Edinburgh to Oban

Worst SNAFU: SNAFU's ... there's always a few of these. The one that 'woke me up' the most I suppose was arriving at Oban one day, quite the happy pilot. No weather issues, no other traffic at the airfield, so easy trip in. Must've been about 900ft having just turned base and before reducing power went to pull the carb heat out. Sadly the engine coughed somewhat when I pulled the Mixture out instead ... duh.

Needless to say Mixture went straight back in and other than a cough nothing dramatic. Was a useful reminder re paying attention though!

Future Dream: I'd like to get myself a full Instrument Rating sometime, when time and finance allows. And way in the future one day instruct. It's great to put something back.

The Grumman Group (FY) consists of six members, Gordon Edmiston, Gordon Graham, Gerry Robertson, Alastair Mutch, Charlie Marshall and myself.

Between the group we have taken FY all around Europe - Germany, Denmark, Finland, Holland, France, Italy amongst them. The aircraft usually goes abroad at least once per year to meet up with other Grumman owners, which

means some varied flying for the pilots who go. The aircraft has been based at Edinburgh now for a long number of years, and as well as the current group, our past chairman, Ron Bagnall once owned a share, and Jack has also been part of the group in its time.



The Anatomy of a Training Flight

Ok, you waken up in the morning, open the curtains to a clear blue sky. Great! Flying today, phone the club only to be told you are going nowhere!! You will no doubt be a bit disappointed. However, have you ever thought of all the parts that have to fall into place for a training flight to take place?

The first thing that's required is an aeroplane. It may have been available at the time of your booking but things change. It could have gone 'tech' or gone for a service. Our aircraft are in the 'Public Transport (Passengers)' category and because of this they require regular servicing as laid down in the Light Aircraft Maintenance Schedule.



Yep,
all
looks
ok!

The LAMS state the checks that are to be done along with the time scales. These checks have to be done by a Licensed Engineer, with the exception of the 'A' check, which is done prior to the first flight of the day. This is the one you are sent out to do whilst the Instructor has a cup of coffee!

Every 50 hours our aircraft wing their way over to Prestwick for maintenance checks. During this service, things such as brakes, flight controls, spark plugs etc are checked. Then every 150 hours it goes for a more comprehensive service. The Annual Inspection takes place around December and usually takes about a month. The 50-hour and 150-hours checks may only take a few hours each but the logistics of getting the aircraft over to and back from Prestwick could take several days. For a start, the weather has to be suitable on both sides of the country (and the bit in between as well). Then pilots have to be available for the ferry flights back and forward; alternatively, someone may have to go over in a car with the ferry pilot or bring him back. So with four 50-hour checks, one 150-hour check, an annual inspection, plus any 'tech' downtime, it means that one aeroplane can be off-line for about 10 weeks in the year. Multiply that by the number of aeroplanes the club has and you find that the full fleet is only available for around 12 weeks in the year!

Next the student has to be available.

With any luck the student will turn up early, well prepared, 'bright eyed and bushy tailed'. But having booked a slot it's not unknown for a student to cancel a lesson at short notice. Most have other commitments, and priorities may have to be rearranged at short notice. They may also only be able to fly at weekends, which may cause further problems. If this is the case do not expect to 'fly' through the syllabus in 6 months but, if you can plan ahead and utilise annual leave or bank holidays etc, then progress may not be delayed too long.

Then there is the Instructor!

EFC is well covered in this respect having 3 full-time (almost 4 at the moment) and one part-time instructor. Although they are usually reliable, with Class 1 medicals to renew, and for some that is every 6 months, their availability is in the hands of the AME. Also their class rating has to be current and, whilst getting 12 hours in the second year of the period of validity is not a problem, it's easy for the 1-hour flight with an Instructor to be overlooked. There is also their Instructor Rating to be renewed every 3 years. For this you have to find an FI examiner for a revalidation flight test or attend an FI seminar. In either case your bank balance will end up considerably lighter. So far so good. Another thing that is now needed is a runway.


We are lucky at EFC in that we can have the use of 4 runways. They are kept in very good condition, inspected regularly over 24 hours, cleared of ice and snow during the winter if

necessary and suitably dimensioned so that parts of the flying training syllabus can be demonstrated fairly readily and safely. We can, for example, quite often demonstrate a crosswind take-off or landing, or show the effect of a tailwind on the take-off run as well as landing with a tailwind, and that's something you are unlikely to forget and certainly more useful than just reading it from your Flying Training Manual. If during exercise 12 & 13 you are having trouble recognising the 'flare', we can use all the 2560m of runway 06/24 and hold the aircraft in the flare to give you time to get 'the view'. And as we are using the same runway as the 'shuttles', you learn how to integrate yourself in amongst the stream of inbounds, taking wake vortex into consideration. If you are in 'the circuit', the airfield for this detail should be open and the runway available. The airfields we use for this detail are single runway operations and it does not take much of an incident to close one. Thankfully this does not happen often, but quite recently Fife was closed for a whole day due to a 'non aviation event'. Then there's the weather!

This topic is worthy of a whole newsletter. So what kind of weather can stop your flying lesson? Your first stop should be the Flying Order Book where you will find any one of the following will keep everyone on the ground: a cloud base that is below 2000ft, visibility less than 10k; a wind which is greater than 25kts; or a crosswind in excess of 15kts. The weather conditions in the 'Book' are drawn up with safety in mind and approved by the CAA Inspectors. So if the conditions are better, does it mean your lesson will always go ahead? No! Because it all depends where you are in the syllabus.

Consider the wind. Any wind coming from the south will keep all of us on the ground, not just the students. This is because, as it blows over the Pentland Hills, it becomes turbulent on the north side. Try going out the Dalkeith Lane in these conditions and you will find it's a bit like being in a tumble dryer (I think). Something that can mislead you in these conditions is the w/v given on the ATIS. The anemometers are situated at each glide path and are sheltered from this wind, so you can have quite benign winds being reported on the ATIS, but the 1000ft wind can be fairly strong. For example, quite recently during a 'southerly' the ATIS was giving 200/10, but your friendly Newsletter Editor who had just come down from the Pentland Hills reported the wind to be 35kts and he wasn't near any of the tops! How about a 'northerly'? Ok as long as you are not doing exercise 12 & 13. The northerly does the

same to Fife as a southerly does to Edinburgh. Any wind from about 290/10 round to north east can make the last 300ft on the approach at Fife quite a handful. These conditions don't mean you can't take off or land, just that flying the circuit will be a waste of your money. Don't forget it's you who needs the practice not the Instructor! There is no point in you flying around the circuit for the Instructor to take control on final approach in order to land the aircraft. And don't think Cumbernauld or Perth will be flyable because the topography is not much better. An Easterly or Westerly wind is usually ok as long as they are not 'gusting', although an easterly can bring in low cloud from the North Sea. Also, a sea breeze setting in during the afternoon can make circuit conditions at Fife a bit 'tricky' due to the crosswind.



Howma
doing
Bob?

How about the cloud base? No problem if you are doing effect of controls, straight & level or medium level turns - 2000ft in the local flying area will suffice for those exercises. If you are due to go to Fife or Cumbernauld for a circuit detail, it just might be that 2000ft is a bit on the low side and you certainly wouldn't get to the overhead. However, for climbing & descending, slow flight, stalling and PFLs etc you will need at least 3000ft. If you have progressed as far as Navigation, you will be aware that you must remain clear of cloud and in sight of the surface at all times! Therefore if you have planned a Nav Ex which is going to take you over some hills, you may want more than that. Visibility? For most exercises you need a good horizon. This is essential because the relationship between the horizon and the engine cowling is an indication of the attitude of the aircraft. There are occasions when we have clear blue skies, sun shining, and looks like a great day for flying but in fact you can't see too far forward due to the haze. Because it obscures the horizon, these conditions are not much use for most exercises. However, they are great conditions for a Nav Ex because you won't see your turning

point/destination until you are nearly upon it. So you have to fly an accurate heading.

Fog. In our case it's the haar that gives us a problem. It's normally present in the spring and summer and sits over the Forth and the surrounding coastline like a blanket. It doesn't get much height, only about 200ft, but it can move inland a couple of miles and cover runway 06/24 very quickly, which means the airfield has to adopt LVPs (low visibility procedures) which for us, if we are airborne at the time, means a diversion even though runway 12/30 is clear. It's the speed at which the haar can move inland that gives us the problem and you can't second guess the timing.

So there you have it. With all these variables learning to fly can be a bit frustrating but because you are not flying does not mean the learning has to stop. Instructors are always available at the club for any briefings that you think may be useful. If you have just started flying and are still struggling with the FREDA checks etc, come in and sit in the aircraft with your checklist and go through all the checks at your own pace. Concerned about the stalling exercise? Get a thorough briefing to help take away the anxiety. A long briefing on the PFL exercise is useful even though you may have already done a couple, and there are any number of Nav Exs that require briefings prior to them taking place. Finally, in conditions less than above, it does not mean that everyone is grounded. You are still likely to see some flying taking place, possibly aerial survey work or pleasure flights. However bear in mind that in these cases the aircraft will be flown by professional pilots with, hundreds if not thousands of hours in their log book, and not 30+ hour students!

Tom Ward



Flying Folland's Gnat

Flying Folland's Gnat

Standing next to a Jet Provost, a Gnat oozes speed and sophistication. The Gnat, a development of the Midge and the trainer version of the Gnat Fighter was selected to train pilots to fly Lightnings and Buccaneers. It has excellent instruments. Attitude indicators replace toppling artificial horizons and the Horizontal Situation Indicator incorporates Tacan and a clever zero-reader ILS. You just put the dot in the middle and you intercept the localiser and descend the glide path without having to do anything other than keep that dot in the middle. You can also fly aerobatics on instruments in IMC. I did get comments once that flying inverted and pulling 7g during an IRT isn't what an examiner normally expects. But I still passed.



Climbing into the Folland ejector seat is simple. No need to remove lots of pins as with Martin-Baker products. Just push one lever to the side and the seat is live. And if you forget, it pokes you in the neck as a gentle reminder.



Starting is by air, provided by an external Palouste unit. There are lots of checks, particularly of the Hobson motor, a hydraulic motor which controls the tail plane. The tail plane and elevators are normally locked together. There is a complex feel trim system operated from the top of the stick. Bliss after the JP's hand wheel.

Take off is great. Start to raise the nose about 105-110 knots and fly off at about 140. Gear up, flaps up and settle into a 350 kt climb with the rate of climb off the clock. Pretty soon the Mach meter starts to register and you then switch to climbing at Mach 0.82. Rate of climb drops off as you pass through the tropopause but up you go until FL 500 by which time your rate of climb is down to 200 ft per minute and the sky is a darker shade of blue and the highest clouds are a long way below.

Seeing as you are up here, why not go for a boom run? Push zero g into a reasonable dive and you very rapidly pass Mach 1. At this point the centre of lift moves back and so you have to haul the stick quite a long way back to compensate. No point in trying for much more than M 1.2.

Recovery involves bringing the nose up but be careful – as you decelerate through M1.0 the centre of pressure moves forward and you pitch up. If you are already pulling 4g, this can take you through the limit of 7. Mind you, despite what was published to the contrary, it was possible to exceed M 1.0 straight and level at medium height, as the residents of Wales know all too well.



Handling is exquisite. Extremely light and sensitive. Rate of roll is brilliant. So fast that full aileron application can bash your helmet off the canopy hard enough to break the helmet. Trust me on that one. Aerobatics are a delight. The long pitot probe on the nose rests on the horizon in normal flight. For steep turns (80+ degrees) you just sweep the probe round the horizon and then roll out. So easy. Formation flying is challenging due to the sensitivity of the controls. Flat turns are scary for if the one in the middle starts to oscillate in pitch – oh so easy to do – and he can collide with the others. Not good. Curiously, formation aerobatics are easiest in cloud. No distractions from green and blue being in the wrong places or glaring sun in your eyes. Formation approaches and landings are fun as when the gear and flaps are down everything becomes a lot more stable. By the same token, formation take-offs are fun too until the gear and flaps come up and then you have to work hard.

Navigation was challenging but the Gnat gives a good lookout. You would dial in your low-level entry point on the offset tacan and just fly the needle until you lost the tacan signal, usually about 2,000 ft. Then off you would go, 250 ft and 420 knots in search of today's target. The standard expected is on target plus or minus 2 seconds. No GPS or moving map, just a carefully folded map, a stopwatch and a compass. And as often as not leading a formation and having to cope with an intercept and dogfight on the way. Low-level fuel consumption was high, about 45 lbs a minute. At FL 350 and M 0.8 (conveniently TAS 480 kts or 8 miles a minute) consumption was 16 lbs a minute. If short on fuel, your most economical approach was to fly overhead the airfield at high level and drop down vertically. I have called joining the circuit from FL 350 on occasion when the low fuel warning light (410 lbs remaining) had been on for a while....



Advanced flying back in these days included a lot of air combat manoeuvring and you were

encouraged to have a go at anything that flew. It was an excellent way to discover the characteristics of other aircraft as you racked it round the sky trying to get positioned for a theoretical guns kill. The Gnat's superb aerodynamics would let you out-stall a Jet Provost (80 kts); though flying at a huge angle of attack 40 kts below published stalling speed did require a certain finesse of touch. But it was fun to watch him drop away stalled and theoretically shot to bits. In these days we had exchange USAF QFIs straight from tours in Vietnam and they certainly taught us a thing or two.

There were of course plenty of emergency drills to practice, the favourite being hydraulic failure. Everyone who has flown the Gnat has the STUPRECC mnemonic seared into their brain. The Gnat was good in manual. You unlocked the tiny elevators which became your fine adjustment to pitch and your primary pitch control was the electrically driven tail plane controlled from your trimmer switch. Sounds confusing, but it was easy enough to get used to. Don't try and spin in manual. The Gnat would unpredictably enter a normal spin, a flat spin, a high-rotation spin or an inverted spin. It does have yaw indicators to help your spin recovery – essential as the brain falls into overload. Easiest to remember 'kick the black and punch the white' (full opposite rudder, stick fully forward and full in-spin aileron) – unless it happened to be an inverted spin of course. I can feel the brain going now...If you hadn't managed to recover by 10,000 ft it was time to get out.



Circuit work was challenging until you managed to master the beast. The astonishingly sensitive controls would set you off into pilot induced oscillation quick as a flash. The very narrow undercarriage track meant that crosswinds were tricky. If you slammed it down hard enough, the oil/air oleos could diesel firing the undercarriage legs up through the wings. Embarrassing. Below 170 kts, you had twice normal aileron travel which made sneaky quick twinkle rolls on the downwind leg perfectly feasible. Anyway, you

flew oval circuits, crosswind at 70 degrees of bank, accelerating to 250 kts, then reducing speed downwind to 170 kts as you did your checks, then base turn at 50 degrees of bank. Across the threshold at 125 – 150 kts depending on weight and configuration then reduce the rate of descent – no round out – and main wheels onto the numbers. If you wanted to stop quickly, or show off, you crossed the threshold at 5 kts below threshold speed and popped the brake chute at 10 feet and you could touch down and stop for the first turn off. The Gnat has Dunlop Maxaret anti-lock brakes, which pulsed, on and off out of synch and set up a horrible rocking motion. It was a matter of pride never to actually use them. Back in the old days, the Gnat's light weight allowed it to be flown on a PPL though to my knowledge no one ever did. Wisely. When the Gnats were replaced by Hawks, a number were sold to private owners in the USA and they can be seen in the Top Gun spoof Hot Shots. But what is not widely known is that 2 pilots died in their Gnats making the film. The Gnat was and is an absolute delight but has to be treated with great respect. Would I fly one again? You bet.



RTF Update

Edition 17 of CAP413 (the RTF bible) was published on 21st July and includes one or two changes to RTF procedures.

There has been a change to the initial call that is made at an aerodrome providing an ATC service. Gone is the need to include the word 'instruction' when requesting taxi and they provide an example to "remove the impression that callsign alone is an acceptable form of initial call". So the initial call at Edinburgh or any other airfield with an ATIS is: "[Edinburgh Ground GBNU](#) [Info.....QNH..... request taxi](#)".

At Dundee your initial call would be to obtain "departure information" and your call for taxi would be "[Dundee Tower GBNU request taxi](#)".

for VFR flight to Edinburgh”. However, at AGCS units such as Fife, Perth and Cumbernauld you still have to ask for “taxi information” on your initial call. Also in CAP413 is the requirement for taxi clearance to be written down by pilots whenever possible.

You no longer ask for “joining instructions” on the initial call to an ATS unit, just use the word ‘join’. Eg “Dundee Approach GBNNU request join”. If you are landing at an aerodrome with an ATIS ie Edinburgh or Prestwick get the ATIS information before calling them then the call is “.....approach GBNNU Info.....QNH..... request join”.

You have probably noticed that the frequencies are getting busier so if you miss a call due to another aircraft transmitting at the same time your reply to ATC would be “transmission blocked tower/approach say again GBNNU”.

When more than one runway is in use ATC will pass the runway designator before your take-off clearance.

Avoiding action now includes the term “unverified” in relation to another aircraft’s altitude.

In an emergency either pilot or ATC can prefix the aircraft callsign with “Mayday” prior to each message.

Other changes that have taken place:

FISO becomes AFISO and there are quite a few amendments concerning the revised ATSOCAS.



This is a gun camera picture of an Indian air force Gnat shooting down a Pakistani Sabre

EFC NEWS

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