

EFC NEWS

EDINBURGH
FLYING CLUB

Edition – November/December 2008

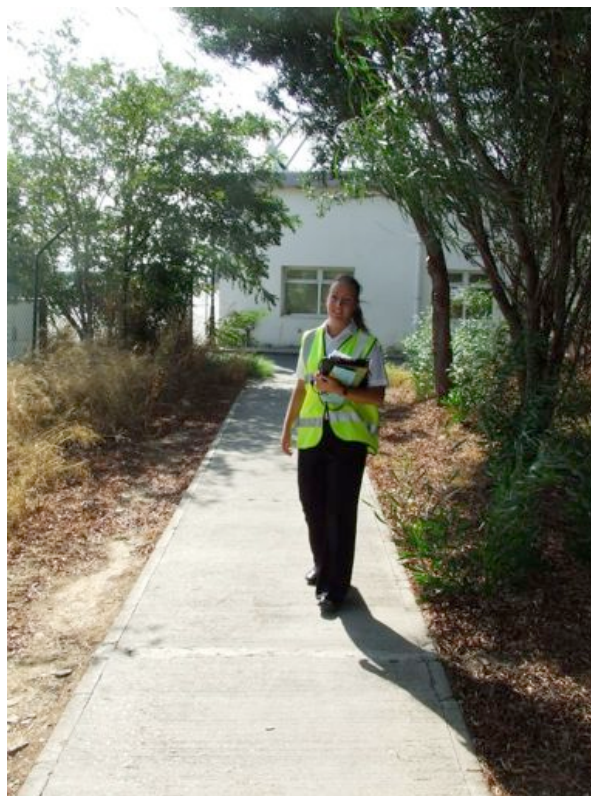
Editor's Notes

This month I would like to begin by offering congratulations to Liam Kelly on his solo cross-country and to Robert Menzies for his first solo. Also to Mark Allan for his first solo out of the zone. Someone has been flying!

Last issue we were commiserating over the miserable weather we had in July and August and this spell has continued in September and October. The update on my electronic weather station which has a rain-measuring device, is that this year to date we have had 872 mm (as opposed to 781mm in total last year) and there are still half of November and December to come!

Can I repeat Malcolm's plea to you all to take advantage of any good weather and go flying. Some of the PPLs and many of the students may not know of the need for ferry pilots. Our aircraft get maintained at Prestwick and there is always a need to have someone to fly an aircraft over to drop off or collect another of the fleet. Typically the flight I did recently reflects this. I flew GT through to Prestwick with Bob in the right hand seat and George in the rear. George flew NU back and I returned with GT. That clocked me two hours solo time but had the advantage of a 'look' at my flying by Bob! It also meant two hours in GT at the ferry rate, which is cheaper – £119 per hour as opposed to the normal rate. In addition if you have a banker's order the rate will be reduced by a further £7 per hour – a recent decision by the committee to 'reward' pilots for doing this vital service.

The committee always reviews the flying rates on a regular basis. You may have noticed the prices of fuel going down at the pumps. We have looked at the prices of AVGAS and unfortunately this decrease in price for cars has not been reflected in aviation fuel. As can be seen in the recent Flight Training News (newspapers in the Club), the price of AVGAS is still averaging 180.6p per litre in Scotland as opposed to 165p in the far south.



This issue has an article from Gordon on flying the Hunter, one from John Smyth on a trip to Colonsay and the new tarmac strip there, and a short piece from Tom on EFATO. There are some nice pictures of three of our club members now either line training with Ryanair (Paul and Neil) or well through training in the case of Joanne, seen in the picture above at Jerez in Spain.

Joanne says "Sorry it's taken me so long to get back to you. I've had mock exams over the last two weeks and have the JAA exams this week coming. That will be all 14 done and ground school over with!

"There's not much to report on the flying front as we have stopped at the moment to focus on the exams. I passed PT1 (more or less equivalent to PPL) at the start of September and once I start flying again I should almost be ready for PT2 and then it's onto the Seneca before Christmas!

How are things with you? Weather been any good for flying? We've had lots

of thunderstorms here which hasn't been very good." So even sunny Jerez has been wet!

The picture below is of Joanne in a piper Arrow at Jerez!

The other pictures show Neil and Paul at Edinburgh in their new uniforms and Neil with a Ryanair B737. Neil says, "Line training is going ok, I've done 24 sectors so far and been to Spain, France, Ireland and Poland. Based out of Liverpool but hoping that I'll get to Edinburgh at some time in the next few months."

Paul is based at Prestwick and is doing similarly well. I would like to acknowledge that in a club of the size of EFC, their success is a testament to the quality of the flying training and to their perseverance and determination to succeed. Well done to them all!

Joanne with tongue in cheek suggested when she saw the photos, that GT get a new paint job – in blue and yellow! I know also that Graham Jones is hour building to get his 100 hours of pilot in command before progressing to the next stage in his modular training and David Hogg is also making progress. I would like an update from them if possible for the next issue, which will be in the New Year.

Finally, can I say thanks to Gordon Johnston for his articles and to make a plea for contributions for the next issue. It would be good to get volunteers for the pilot profile – missing this month – and other articles. It is your newsletter – so help me to continue to produce it!



Flying the Hunter

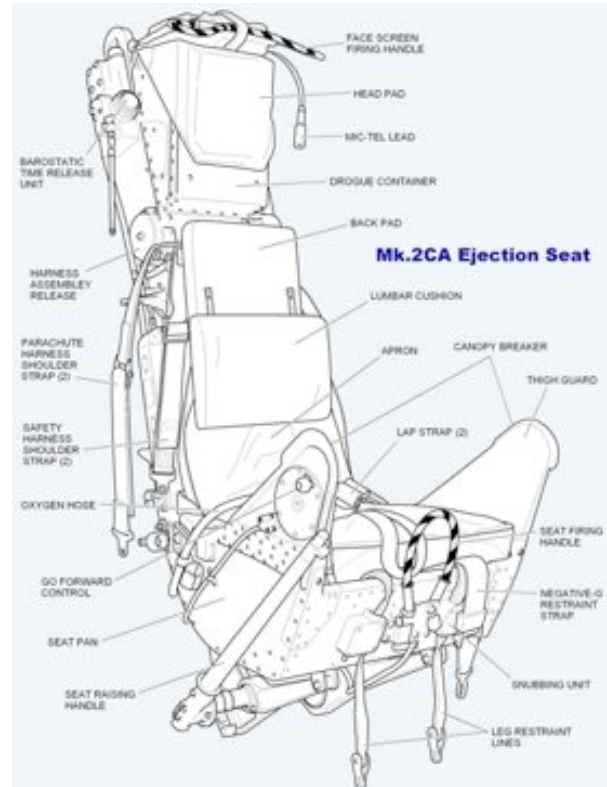
Flying the Hunter



Walking out to fly Hawker's legendary Hunter you know you are looking at a Warbird. It's big and elegant and singularly purposeful. Closer acquaintance reveals its age. Even 30 years ago the last remnants of the RAF's fleet were old. Signing the Form 700 you would read pages of green line entries – acceptable deferred defects – and as often as not red line entries – cleared for one flight only. One of the external checks was to look for sprung rivets in the wings. If more than 40% were sprung you snagged it, otherwise it was fit to fly. You could spend some time looking for an area with fewer than 40% sprung rivets.



Climbing in the ejection seats are older than you had ever seen – Martin Baker Mk 2. Even the Jet Provost had Mk 4s. The old fashioned instrument panel was of Spitfire era and the coaming invariably had boot prints on it.



On enquiring why, the terse answer from the QFI was 'Flying in Manual'. But what grabs your attention is the gyro gun sight and the weapons selection panel and of course the trigger on the control column. So let's leave the T8 for a moment and go straight to the F Mk6 single seater. Start up was relatively straightforward. There is a bar on the left panel, which you lifted and that got the essentials switched on for a rapid start – very useful if you had other Hunters turning and burning for a formation sortie and you had just had your aircraft go unserviceable and had to leap into another and get going. It was not uncommon to complete the pre-start checks on the climb out in close formation in IMC. The PTT is on the throttle, not the stick. Until you get used to it, when you call for taxi you take a picture on the G90 gun sight camera instead of transmitting. Oops.



The F Mk 6 had a more powerful engine (10,000 lbs thrust compared to 7,500) and different starting arrangement from the T Mk 7, avpin rather than cartridge. This produced a huge cloud

of black smoke venting from the starboard side behind the cockpit, which could completely envelop unsuspecting ground crew. Taxiing was straightforward using toe brakes and once lined up on the runway the final check was a vigorous stirring the pudding with the stick to check the hydraulics were cycling correctly. In jets, you don't normally hear the engine noise, possibly a bit of alternator whine. But in a Hunter, opening the throttle produced an audible roar as thrust built up and you had to release the brakes before full throttle or you would just slide along the runway.



Acceleration is impressive and you didn't have much time to get the gear and flaps up before exceeding limiting speeds. You could just do a normal climb, 400kts becoming M0.85 but there were two other options. One was to start a series of barrel rolls up to FL 400 or the other was to hold it down until you reached 620 kts then zoom vertically to FL 400. Much more fun. But of course with such a creaky old aircraft there were foibles, a favourite being a nose wheel red on raising the gear. This was easily fixed by rolling upside down and giving it a shake. Apparently you were meant to leave the circuit and climb to a safe height to do this. Oh well...



Handling is good, as you would expect. The T8 with the 7,500 lb thrust engine is actually better balanced and flies like a bigger, faster Jet Provost,

but nobody complains that the F6 with its 10,000 lbs is overpowered. You just trim it nose down as you open the throttle and go. G limits are +7 to -3 ¾. This lets you run in to a display, roll inverted and push to the vertical. Rather masochistic really and not very comfortable. The Hunter doesn't realise it has swept wings. It turns well – it will pull a sustained 4+g level turn and it is pretty viceless. When it came to having a go at any other aircraft in Her Majesty's inventory you could so well, out-turning most things and fast enough to chase most others. Spinning is straightforward and very predictable, not that you are supposed to spin it for some reason. But if the powered controls go out, everything changes.



Control forces are extremely high – some say it's like the stick is set in concrete. As the speed decays below 200 kts, a Dutch roll can develop and the best way to stop it is to increase speed until it stops then try again. If you are flying a flameout approach and are hence in manual, you start your round out (but see below) at 1,200 feet. Anything lower and you will make a dent in the runway.

The view from the F6 is excellent. The T8 however is another story with its heavily framed windscreen and canopy and some annoying person sitting to your right your view was strictly limited. For navigation, the trick is to fly a mile or so right of track and that way you actually get to see your turning points.

Take the Hunter up to height and you run into its limitations. Firstly you are limited to FL 430 (well, officially that is). That's because although your oxygen kit is cleared to FL500, should you lose the canopy the aerodynamic suck raises your cockpit altitude by 7,000 ft. Although designed as an interceptor, the Hunter is pretty useless at height. It can't turn. 20 degrees of bank will have it buffeting and any attempt to turn harder will have you either stalling or losing height rapidly. Going supersonic is like hitting a brick wall. The F6 shudders and shakes and is most unhappy,

reaching a mighty M 1.02. The T7, despite the lower thrust is in fact faster as the side-by-side cockpit adds some accidental area ruling, making M 1.2 a possibility. However, you have to be careful. Should you go supersonic in a shallow dive, the disturbed airflow from the wings blankets the tail plane and you will not recover. A number of Hunters have left a big splash when this has happened. So stick the nose down properly.

Back in the circuit it all quietens down. Well, not really. The Avon on the F6 is a crude device and the fan over-compresses at intermediate power settings. It was therefore fitted with bleed valves, which bang open and shut at circuit power settings. Disconcerting if you are not used to it. If, however, it will not hold a steady rpm, something is not right even if the engineers don't believe you and it is likely to blow up catastrophically on the next flight. Trust me on that one. Anyway, the Hunter isn't fussy about precise downwind power settings. It seems to arrive at on finals at the right speed regardless, 125 – 155 kts depending on fuel state and what all you have dangling under the wings. And flap setting. These flaps are powerful having been designed as airbrakes. Not very well as it turns out as at high IAS you will get an uncontrollable pitch down, hence the separate afterthought airbrake under the fuselage.

Touchdown has to be firm. No round out. At all. Thump it on, carrier-style. Why? Well, the Hunter will sit nicely in ground effect a few feet above the runway for upwards of 4,000 feet and lose only a few knots in the process before deciding to sag gently onto the ground. If at this point you decide to go round you face another problem. The Avon (crude device, remember?) can take 18 seconds to go from idle to full thrust. So that's another 3,000 feet (allowing for a bit of headwind) before you get a bit of shove. And when you are operating off a 6,000 ft standard RAF runway it can all get a bit embarrassing. Even a 7,500 ft runway can seem a bit short at times. But get it right and circuits are fun. If you are really feeling exuberant, as you reach circuit height you can just increase the bank from 60 degrees to 180 and pull the nose down to the horizon then roll out onto downwind leg. Naughty but nice. But circuits don't last long as all too soon the fuel state dictates a full-stop landing and taxi back to dispersal and shut down. Of course, all your after-landing checks have been done as you taxi in and the art was to shut the HP and LP fuel cocks as you were being marshalled onto your spot so that you arrived precisely on the blocks with a dead engine and were able to leap

out without wasting a moment in dispersal. Crew room and coffee called loudly!

Gordon Johnston

Colonsay and tarmac



One of the greatest pleasures of light aircraft flying in Scotland is a trip to the West Coast and the Islands - all you need is good weather and navigational skill! This year I have been challenged to find both! As I have written in the newsletter before I think we are extraordinarily fortunate to have Malcolm Spaven in his enthusiasm to encourage us to explore light aircraft flying in Scotland and for his unswerving courage in accompanying PPLs in these pursuits.

On August 5th I invited Malcolm to be my safety pilot on such a trip to which my long-suffering wife Ann enthusiastically agreed. "Lets go to Colonsay," said Malcolm - "Excellent idea" said I "where's Colonsay?" The look on Malcolm's face does not translate well into the written word. Typical of this summer the weather was marginal at best in Edinburgh, but despite this by midmorning we got airborne in the Archer, with myself notionally in charge and Ann enthusiastically holding her camera in the rear seat. Clearing the zone at Polmont we headed up the Carron Valley with barely 1500 feet indicated under a solid wall of grey cloud. My University Air squadron days reminded me of the need to remain well clear of cloud both above and in front, but this was not possible as we searched in the gloom for Balfron where we were clearly frightening the sheep with our low-level flying. Nevertheless staying clear of the Glasgow zone we found our way to Loch Lomond where a hole in the cloud suggested that we might proceed at the go/no-go decision point.

It was clear that we would not make the 2500

feet requirement to fly due west from Helensburgh, so we headed south-west to Dunoon and took the coastal route via Ardyne Point and up the Kyles of Bute towards Lochgilhead. Barely 1000 feet above sea level I was yet to be convinced that we would reach our destination - which I had by this time clearly secured both in my imagination and on the map. Lochgilhead was our second go/no-go decision point, but we were blessed with a significant break in the cloud over the Sound of Jura and we climbed to 3000 feet before setting out over the ocean towards the north end of Colonsay. I have never visited the Island before and it truly is beautiful on approach from the sky. The beaches at the north end and down the west coast looked totally stunning and it is clearly an island that should be explored by land as well as from the air.

As up-to-date as ever my Jeppeson's guide had suggested that a grass airfield awaited me so no one was more pleased than I when we became visual with a magic, small asphalt airfield with a 29/11 501m runway. Deciding that 11 was the most appropriate direction we joined overhead and I planned a right-hand circuit. Over confident at the length of Edinburgh runways I planned to do a tight circuit and got just about everything wrong! For those unused to short runways the lesson irrespective of wind strength and direction is that you need a much longer downwind leg than you would with a normal landing distance. Hence I found myself turning finals from base leg "hot and high" and short of scaring Ann and Malcolm inappropriately with side slipping I had to admit defeat and overshoot. If I say that my second approach in landing was near perfect I would certainly be exaggerating – but nevertheless we parked the plane at a delightful hut identified as the "terminal" and phoned the local hotel. Within 10 minutes a delightful young man arrived in his land rover to convey us to a hotel for a really outstanding lunch.



This young man clearly had not spoken to anyone for many days since he hardly paused for breath, clearly not expecting us to answer any of the questions that he posed as a constant stream about where we had come from and why we were there. Replenished with food but sadly not alcohol we returned to the "terminal" and conscious of deteriorating weather to the east set off to fly home - this time with Malcolm in charge and a direct routing.

One small lesson for those less experienced in cross-country navigation was that despite his immaculate and timely radio requests Glasgow were remarkably slow in giving us permission to enter the zone and we orbited the Inverkip Power Station several times before being given appropriate permission. How tempting it could be to press on, but clearly entering a major zone such as Glasgow or Edinburgh is absolutely not allowed without appropriate permission. Ever keen to strengthen my powers of observation and navigational skill I was relieved to find that Spaven wasn't any more confident about spotting the Erskine Bridge that I was and we were both surprised not to be given a straight overhead run through to Glasgow. On approach to Edinburgh Malcolm decided to request a direct landing on 12 which I am convinced was for time and efficient use of fuel and not in any way to show off! Nevertheless I was remarkably impressed that until the last 10 feet until touchdown we were facing 06 with a crosswind well in excess of 20 knots. The touchdown was as immaculate as you would expect!

All in all a delightful day - 2 1hr10 flights over interesting countryside to a fabulous destination. I fully support Malcolm's enthusiasm for teaming up for these flights and we can only all hope that the weather allows us to pursue this through the winter months - after such a disastrous summer.

Safety Matters

Engine Failure After take Off (EFATO)

Over the period from 2001 to 2007 there were 76 fatal accidents in aircraft below 5700kg MAUW. Of the 76 accidents, 10 involved aircraft that the average club PPL is unlikely to fly, perhaps even dual. These included amongst others a C310, Cessna Caravan, Hurricane and an Islander. Another 12 occurred either abroad or in the UK, where the reports cannot be traced or are still to be published.

A study of the remaining 54 accidents, which involved mainly the ubiquitous Cessnas, Pipers and Robins, revealed a rather disturbing fact. Of these 54, the weather played a part in only 18% of them, but 32% were the result of the pilot being unable to cope with an engine failure just after take off. With this in mind, it may well be worth while recalling the actions to be taken in the event of an EFATO.

The first place to look is the POH for the type of aircraft you fly. For 'NU' this states: "maintain a safe airspeed to avoid a stall. Close the throttle, pull the mixture control to ICO, and turn off the fuel selector, master switch and the magnetos. The use of flaps depends upon the circumstances however full flap allows the slowest touchdown. At low altitudes with a failed engine, turns should not be attempted, except for slight and gentle deviations to avoid obstacles. A controlled crash landing straight ahead is preferable to risking a stall which could result in an uncontrolled roll and crash out of a turn".

If you are faced with an EFATO situation, as the POH says the first thing to do is lower the nose to maintain your best glide speed. If you don't do it immediately then, because of the high nose attitude the airspeed will quickly decrease and you will soon be getting near to a stall. Select an area straight ahead in gliding range and within 30° of the aircraft nose to avoid any turns. In a gliding turn a high RoD can occur and any tendency to raise the nose to stop this will result in the airspeed decreasing. So limit any turns to 15° AoB and remember the stall speed increases in a turn, make a Mayday call if time allows, switch everything off and open the door(s). If the engine fails lower than about 800'agl then there probably will not be time to carry out the failure checks and if you fly a Cessna, remember the flaps are electrically operated.

Treat a rough running engine as a failed engine and do not try and turn back to the runway. Turning back will require a 360° turn to land on the same runway or a 180° turn to land on the reciprocal. Half of the EFATO fatalities

occurred trying to do just that and some from a height of about 200 - 300'agl! You will not make it! Do the arithmetic. For example, let's assume you are taking off from a local airfield and the engine fails at 500'agl, you lower the nose for your best glide speed. This will give you a RoD of about 500'/m if you're lucky. Carrying out a Rate 1 turn through 180° will take 1 minute. When the turn is completed you will have lost about 500' and this would put you approximately abeam the point where the engine failed but at 0'agl and short of the runway!

So if you want to find out how much height you would lose in a 180° turn, then the next time you are flying, note your altitude, put the aircraft into a climb (as you would for a take off), close the throttle, take your time about lowering the nose and see how quickly the speed bleeds off. (This should demonstrate to you why you have to lower the nose immediately.) Having established your best glide speed carry out a 180° turn maintaining a 15° AoB. On the completion of the turn, note the height loss. Most of the other EFATO fatalities were due to loss of control whilst encountering engine problems just after take off.

So the message is, fly the aircraft!

Happy landings!

EFC NEWS

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