

Two Squirrels OVER THE CHANNEL

Charity Flight Across the Channel Described

I was asked by the West Essex Model Flying Club in November of last year if it was possible to fly a model helicopter from a full size. To which I replied 'yes' that I had seen it done in Europe — Ewald Heim when he took the world height altitude. They then sprung on me, some weeks later, if I would be interested in flying a model helicopter across the Channel for charity — in actual fact for the Children in Need charity — which I thought was quite a novel thing.

We set about adapting a standard Baron 60EX Long Ranger with large fuel tanks, thinking this would give us enough range — bearing in mind, of course, that we had no real idea what sort of duration we would get out of a 61 powered helicopter. We actually fitted two 24oz Sullivan fuel tanks, thinking this would give us a good hour to hour and a half duration, but in actual fact, to our absolute surprise, with a helicopter going flat out we got just on 30 minutes! We realised we had to do some careful re-thinking, bearing in mind that it wasn't just putting in larger fuel tanks, it was, of course, the absolute weight of fuel — remembering that 48oz of glo fuel weighs just about 3lbs. So, just putting larger tanks in would affect the overall air speed because one of the criteria that Eddy Coventry [Pilot of the full-size chase heli — ED] set was that he didn't really want the model flying at less than something around 50 knots, because obviously he would be more or less hovering the full size helicopter which has 120–130 knots cruising speed.

When we actually went to Eddy Coventry in March of this year, we had to establish, first



Concentration!

of all, how we were going to do this — where I was going to sit with relation to Eddy: next to him in the passenger seat, or behind; whether or not we left the door on for visibility; and, of course, was the model helicopter fast enough. We eventually decided to leave the door on the full size helicopter, otherwise it would have been freezing cold, especially flying across the Channel. I would sit directly behind the pilot so that at all times both Eddy and I could see the model. From the safety point of view we did this otherwise if I had been sitting on the left with the pilot on the right, some of the time the model would have been out of sight of the full size pilot. The seating worked very well — I had the transmitter in a tray that I use and the aerial sticking out through the small air vent on the door. We had already given it a range check and it didn't seem to affect the range at all.

We set off in weather conditions that weren't too bad, although it was very windy, and a typical Winter's day — very cold — we had snow on the ground. To begin with, because of all the people there, they wanted us to stay in the hover for quite some time for photographs. This was very difficult to do because the turbulence

and the ground effect from the full size helicopter was kicking the model about, in addition, the wind conditions were knocking the helicopter around and I was unable to tell whether it was gusty or not.

Eventually we decided we had had enough and we were going to go for a circuit — I thought we would do a little circuit of his flying site and then come back in and land it. We, in actual fact, proceeded some 15 miles all around our local area. At one stage, as we started to take off, we got to about

450ft which was fairly comfortable. It was quite an experience seeing the model below us and actually looking down on it, and also not really seeing the helicopter moving because we were moving along at the same sort of speed. I was glad to say that when I asked Eddy what sort of air speed we were doing, he said we were doing just on 52 knots and at times we had to go up to about 58–59 knots. He then said that we were really too low for flying across the Channel, so he wanted us to go up to about 1000ft. It seemed



The two pilots congratulate each other — the gentleman second from right is Mr Drinkwater, owner of field. He showed us photo's of Tom Sopwith flying from this field in the early twenties, also there are still huge blocks of concrete and iron rings, used to tether airships in World War One. A very nostalgic site.

to take a very short time before he was saying, yes, this is OK, we were at 1200ft. We then proceeded to do a turn back to the flying site, where we made a very nice landing. In fact, I thought that landing would create some of the biggest problems: first of all, coming down from that sort of height, secondly do we land the model first or the full size first? When we first took off, we decided it would be easier for me to take off first and get into a comfortable hover, and the full size, when he was ready, to take off when I gave him the signal — the model being at all times in front and to the right of the full size, so that as we were pointing into wind, we were getting as little down wash as possible. I am glad to say that the landing was a lot easier than I had anticipated. Eddy's flying ability was second to none, he was flying the helicopter much slower than he would normally and keeping close formation with the model, and we just came down in a nice gentle descent to a hover. I was slightly lower than him, and he came down lower so that I could see in relation to the ground, because being high it was much more difficult to see if I was actually landing or three or four feet off the ground. It all worked very, very well. This encouraged not only me but the whole of the West Essex Club, because although of course I had said 'Yes, there is no problem flying one from a full size', I hadn't thought how difficult it would be or what sort of problems we might run into.

We then decided, after realising the problem of the duration, that it would be rather nice to build a model of the full size, i.e. a replica. To do this we chose to use a petrol helicopter because of the known fact that not only is it more economical but it is also able to carry a much larger payload. After all, I wasn't interested in going for any sort of record, where you had to be under a certain weight, I just wanted to make sure that we had more than enough fuel to get across the Channel.

I decided to use a GS Baron petrol helicopter because of the new engine they now use which gives 50% increase in power over the old one. Also, the Escuriel fuselage that is available just happens to be a single engine version which is exactly the same as the full size.

I then set about fitting the mechanics and realised that it wasn't quite as straightforward as I had at first imagined. Firstly, the tail on an Escuriel is much lower, which meant that we had to modify the tail drive to make it that much lower, which we did by reversing the up drive from the main gear so that instead of coming up and up to the back, we reversed it so that it was lower. It just so happened in doing this it also reversed the direction of the rear rotor gearbox, which was quite handy because the Escuriel has the tail on the right hand side whereas most models have it on the left. In turning the tail rotor gearbox to that side, the drive is still going the right way, that is anticlockwise. Also the width of the helicopter meant that to get the mechanics in easier we



Passports please!! From left to right, Customs Officer, Eddie Coventry, Colin Bliss, Ian Folkson (mechanic/helper), Ken Mainstone (video man on board).

would cut the front off the fuselage to make it more accessible — and also making it easier to get a large fuel tank. We hadn't, as yet, decided on what capacity tank we would need but we had ideas of using either one or two tanks. The problem was getting a large enough container that would be able to hold enough fuel. It's quite easy to get a 24oz fuel tank, but anything larger tends to be very poor quality plastic bottles.

At this time we had also decided to move house which wasn't a good idea because I hadn't as yet built the helicopter and it created a lot of problems — we had already set a date for the 2nd July. The clock was running and we hadn't even got the helicopter test flown. We also had to bear in mind that although we had done the

initial tests with a Long Ranger which has a 61YS in it, which is very fast, the Escuriel is quite considerably longer and wider. In addition, speaking to several different people who had already got petrol helicopters and asking how they compared to a modern 60 powered helicopter, I got differing answers from different people, so it was a bit of an unknown quantity.

I'm glad to say we eventually got the helicopter all built and we painted it in the same colours as the full size. The weight was quite nice — just under 14lb, which for a petrol helicopter is pretty good. I initially used two one litre fuel tanks, but unfortunately they weren't any good — they were leaking quite considerably — so we decided to use a half gallon fuel container, which full up could actu-

ally hold 2.76 litres, and, to my surprise, the model actually lifted it off the ground as if it wasn't even there. It was quite stable. The speed seemed to be pretty good, but it wasn't until we actually did a test with the full size that we would be able to tell if it was going to be fast enough.

On the Friday before the actual event, we had arranged with BBC London Plus to do a dress rehearsal. Unfortunately the weather was absolutely diabolical, for most of the time it was foggy and we didn't think that Eddy would actually fly in because the cloud base was something like 50 to 60 foot. The mist was just coming in off the sea — one minute you could see quite clearly, the next there was zero visibility. To our amazement, and also to that of

the BBC who had been patiently waiting by, Eddy actually turned up — then we had to wait for something like three hours before we could do any flying.

We had kept the model a secret from Eddy, so he hadn't already seen it. He was absolutely over the moon when he saw it. We then proceeded to fly the model from the full size, and of course under normal circumstances we would only have needed to have landed the once, but for the rehearsal it meant us taking off and flying out over the cliffs. It was very turbulent and at times it was quite fraught flying over the cliffs because the model was getting buffeted about so much. However, I am glad to say that the speed, although not quite as fast as the Long Ranger, was sufficient to make it happy for Eddy, and he was certainly more than comfortable flying.

We proceeded to do two flights that day, one with the BBC filming from the ground so that they could get ground-to-air shots and then they stuck a cameraman in with us and did some air-to-air shots which actually came out very well.

I should also point out at this stage that we had taken the precaution of making the Long Ranger a back-up helicopter, which would be at Calais airport just in case a mechanical problem arose — not if we crashed in the sea. It would be used if, for example, a link broke — it is always best to be safe on these sorts of occasions. So I had a Long Ranger with a half gallon fuel tank in it also — I wanted as much fuel as possible — the engine, although it didn't like the weight picked it up quite well. It is also interesting to note that half a gallon of glo fuel weighs quite a lot more than half a gallon of petrol/oil mix.

When the day finally arrived, we set off from Eddy Coventry's house fairly early on — we had to go through Southend Airport to clear customs and then on to Calais Airport where we had two guys already in place who had already liaised with all the authorities.

Unfortunately the weather forecast wasn't too good — as we were hoping for a Southeasterly wind direction and in actual fact it was Southwesterly. This would mean coming back we would have, for most of the

Cross Channel Flight

time, a cross wind which was obviously better than having a head wind. When we got out there, the weather was actually starting to close in fairly quickly, and it was agreed that we would set off as quickly as possible. This was to avoid the storms that were brewing up.

We started off, with no real problems, from the airport and went out across the sea and to the left hand side we could see quite a bad storm brewing up which in actual fact we were being caught by. We had to turn East and fly around the storm — under normal circumstances with a full size helicopter this wouldn't have been a problem — but as he was doing at most 50 knots, that was something that was a little bit frightening not knowing whether we would fly round the storm. I am glad to say we finally managed to though we caught the edge of it which was very turbulent. We started off at about 1000ft as we went across we were going from anything around 750ft to 1100ft to try to get out of the very turbulent, windy conditions. At the same time we were being blown off course and in actual fact when we did hit land, we were some eight miles to the right hand side of Dover, and the objective was to the left hand side.

What I should also point out is that the straight line distance to be covered is 33 miles, that is 33 miles across sea. We had decided that it would be a good idea to do the shortest possible distance across the sea — that is going Calais-Dover because obviously if we are three quar-

ters of the way across and very low on fuel, having done say 28 miles, it is no good me saying to Eddy 'I'm just about to run out of fuel' and land in the water, whereas had we gone across the actual Channel, and then found we were low on fuel over land, there would be no real problem putting it down anywhere.

When we were actually travelling across, we didn't come up against too many problems other than because for most of the time the sky was very overcast and very dull, if we let the model get either too far in front of the full size or too far behind, it was very difficult for orientation. At times, because the concentration was such — flying for such a long time — that I started to lose orientation if the model got too far away, so I made sure that Eddy kept within 25 to 35 metres away. I should also point out that I had already practised flying for half an hour at a time to give us some idea of the duration that the model would give us, but of course I had not flown one for any longer so once we got to the 45-50 minute mark, it was starting to tell, and I must admit the concentration was quite immense.

When we got across the Channel and turned left towards Folkstone, we of course were flying directly into wind and when we looked down onto the A20, we could actually see the cars overtaking us, which Eddy pointed out. We were going very, very slowly and I said if he wanted to land I was quite prepared for him to

do so, but he was quite happy to continue. He tried to actually set himself a cruising speed so that he wouldn't keep going fast, slow, fast slow. but it was very difficult for the model to maintain a steady speed. One minute it was going very fast and then it hit different pockets of air and was knocked about all over the place. Apart from that, it was fairly smooth, the actual crossing.

We eventually sighted the landing site and to the surprise of all those who were waiting, we were actually coming slightly inland because we tried to get away from the coast, so that we weren't hit by the turbulence there. I must admit it is something that will always stick in my mind the actual cheer that we heard — even though I had earphones on — when they spotted the model and the full size. They didn't see the model at first, or for quite some time after seeing the full size, but Dad had already pointed out to them that the model must still be with them because the full size was flying much slower than it would normally.

Now a little bit about the model: it's about one sixth scale, it weighs, with fuel, about 20lbs, it uses Sitar laminar flow main and tail blades, apart from that the model is absolutely standard. JR PCM radio, obviously with fail-safe, was used. It was set so that if anything went wrong it would kill the engine, because obviously safety was of paramount importance.

I should also like to say that the West Essex Club put in a

staggering amount of work, Stan McGee, who was the guy in charge, Eric Cooper, who was the public relations guy, Tony Scofield who was able to get the permission from the CAA, and also both the take-off and landing sites, Johnny Whitehead who was over in Calais — he went over at 4 o'clock on the Saturday morning to be there when we arrived, also Maurice Winch who was the treasurer who was responsible for collecting all the money (his telephone number has been published in most of the magazines).

The actual crossing took one hour eight minutes, and we covered some 48 miles. One of the staggering things was the amount of fuel we had left — we had estimated that we had an hour and a half to an hour and three-quarters duration, because, the helicopter being fairly new, it had to be run in for some ten hours. Also, we had decided to run it slightly on the rich side just in case the engine should start to get hot. When we landed and looked at the fuel, we had over half of the amount of fuel left. We had used 1.16 litres and had 1.7 litres left. Everyone said you can now fly back again! The helicopter was capable of doing so, but not the pilot!

Contributions to the West Essex - Children In Need appeal should be sent to:- Maurice Winch, 10, Station Road, West Horndon, Brentwood, Essex CM13 3LZ

Little and large?

