

Rebuilding the Aeronca Sedan 15AC

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The first ever flight I took, was in EI-BKC back in the Eighties with Gay Treacy from Roscrea who flew myself and my father to Birr, this harnessed my love of aviation...

Back in 1999, while going for a flight training lesson in Birr, my flight instructor suggested that I should buy the 1949 Aeronca Sedan, which was sitting parked up at the end of the field with a large hole in the side of the fuselage. My first reaction was "I can't afford an aeroplane!" finding the cost of the flying lessons was difficult enough, however, the thought of that aeroplane rattled around in my head for weeks. What to do?

During those training days, I used to see another student waiting around for his flight. He turned out to be Johnny Keating. We spoke about what stage each of us was at with the training and it turned out that we were both only starting, with just a few lessons each. A week later we spoke again, while on the field for our respective lessons. I asked do you want to buy an aeroplane? – the one at the bottom of the field with the hole in it. He said "Ok, let's go and have a look" The Chairman of the Ormand Flying Club at the time was Peter Hynes, a very nice guy who was also training for

his PPL. Peter had gone solo at this time, and to two green students we thought he knew everything about flying. We decided to ask Peter to join us in trying to buy the Sedan, but even with three on board it was still too rich for us. Peter knew another student Mike Farrell who was training with him that might be interested and he said he'd ask him. Mike came on board with us and so we could afford to buy. We bought Aeronca Sedan EI-BKC in October 1999. So here we were four students, not a licence between us and an aeroplane we were unable to fly; that brought us to Tommy Mounsey. Tommy from Nenagh had many years tail-dragger experience and was an ex-Instructor from the Club. Tommy flew us happy students all over the country for the next 12 months until we began the re-build. Sadly we lost our good friend Peter Hynes early in the re-build, and Tommy took over then as the fourth member of the group.

When we bought the aeroplane the previous year, we were warned that it would need re-covering very shortly so



Mike Farrell, Gordon Hendrick, John Keating and Tommy Munsey celebrate in front of their beloved Aeronca Sedan at the Birr Breakfast Fry-In on the 28th of March.

in October 2000, we removed the wings and brought the fuselage to Templemore and proceeded to remove the old fabric. With fabric removed, we called Dave Bruton Supervising Engineer in Abbeyshrule to inspect the metal work, he arrived and we were informed we had to completely clean down the metal work for the inspection. So the next few weekends was spent by the pair of us cleaning and stripping paint. With all the paint removed Dave passed the metalwork and allowed us to prepare it for painting. We painted and corrosion-proofed the metalwork and applied a top paint coat. When the paint dried, we looked at all the bits that were to be re-installed and to be honest they looked the worst for wear, so we decided to replace the old formers and stringers which were badly rotted. With the help of my father-in-law Michael Maher we replaced all the bad timber and treated same.

The control cables, they were tired looking also so we said we would replace them also. We were quickly coming to the realisation that this was starting to get expensive. We needed a loan and contacted Roscrea Credit Union. The C.E.O., Ray McCarthy personally met us and asked what we needed the loan for. We said that we had bought a vintage aeroplane and were in the process of trying to restore it. It was the first time he was asked for a loan to restore an aeroplane, but the loan was granted and he wished us the best of luck with the project. Now

armed with what we thought was enough money to do a full restoration the spending started in earnest.

After spending many weekends making lists, checking sizes, converting metric to imperial, getting advice and ordering, the parts started to arrive from America.

Since we had the control cables, timber and fittings replaced, the next job was to completely rewire the Sedan. So again we made our list of what we wanted and made our electrical diagrams, removing all old wiring and fuses. We then needed dopes and paints etc.

before we could start our re-assembly. The cost of shipping the dopes and paint was too expensive, so we decided we would take a boat to the UK for one major shopping spree. The first stop was an avionics installation workshop in the UK to get a second-hand transponder and altitude encoder. While there we discovered we could buy some used and certified avionics which were being removed from another aeroplane, we bought a lot of bits and pieces along with the installation drawings. The following day we were on the road again to the south of England to buy our dopes, glue and paints for the fabric work. We found them eventually, and went shopping before loading up and heading for the boat.

Back home with our stash, we were ready to start. We had only one problem, we knew nothing about fabric work. After a quick lesson and much encouragement from our C.F.I. Joe Davy, we were ready to try our hand at this black art. We started with the small items like tail feathers and ailerons. Then it was onto the taping and Dave suggested that we went up to his workshop to be shown how to apply the tapes correctly. We arrived and were shown the techniques in applying tapes, and doping correctly. With our new skill learned it was back to the Sedan to put it into practice. The small bits were actually looking very good. Next it was time to tackle

the fuselage. So we started by installing the wiring loom and the control cables etc. Another call to Dave to inspect the work before the final fabric work started, now we were ready for the fuselage, so we had decided to use a full fabric sock from the USA to speed things up. This was oversized and would need trimming once we managed to get it over the fuselage. Once in place it started to look like an aeroplane again, we spent the next few weeks trimming and adjusting. Next up was the painting. With the final colour coat applied, the Sedan started to take shape.

Next on our agenda was to install the panel and wiring. We started trying to design the panel and we decided to install the radio nav. equipment, GPS, radios, intercom, new engine instruments etc. The panel now looked a little different than it did when we started. After that we started assembling the wiring looms from the drawing, this was time consuming as we had to check and recheck every wire before ticking it





off our drawing. It also didn't help that all the aircraft wire is white. It was now time to move premises and to get it one step closer to completion.

We hitched up the fuselage to a trailer and towed it to Roscrea, to make room for the work on the wings. Now with the fuselage in Roscrea, we started to strip the old paint from the wings with plenty of paint stripper and a power washer, at this point we noticed some rivet heads missing, and closely checked the next section to be done prior to stripping the paint. All rivets were present and accounted for, but after washing we were missing 10. The alarm bells were ringing loudly now. It was time to call Dave again, and ask him to check out our findings. He found the dreaded corrosion inside the wings, it needed to be opened and checked. The wings were transported to Abbeyshrule where he found the spar caps were beyond repair and the wings needed new outer skins. The spar caps were ordered from Alaska and shipped to Abbeyshrule. After many days of cleaning and sanding, the wings were ready to be corrosion-proofed internally. The wings were finished and painted ready to be sent back to Birr.

So for us it was back to our workshop in Roscrea to complete our reassembly of the windcreens and firewall forward. Now with the end in sight once again,

we decided we needed a new propeller. Now we had another two issues to sort out. (a) How do we get a long propeller from America? (b) Where do we get the money to rebuild an engine? Well the first problem was somewhat easy. As luck would have it, a friend of ours Aidan McEvoy was going to the US on business and said he would collect it from Chicago. Aidan carried this propeller all around the US before eventually returning to Ireland.

The next issue was the engine rebuild. This meant another visit to the Credit Union and a few white lies about being almost finished. They gave us the money again, so we ordered complete new cylinders and piston assemblies, they were sent to Ireland and then shipped with the bottom end of the engine to the UK. Then we had more bad news, our crankshaft had a crack and would need to be replaced. They engine builder eventually found one for us. At this point we decided to upgrade the engine with a key start, and spin-on oil filter. The engine was returned with Zero hours and a nice paint job.

The pressure was on once again to finish up our work. We installed the windcreens.

The firewall and cowlings needed painting, the painting was going on we continued to finish the wiring and the



The cake to celebrate the return to the sky

pipe work for the instruments. The firewall was installed along with the engine mount; this brought us very close to the final move to Birr. The move to Birr was on. We arrived at the airfield and installed the Sedan in the new hangar.

Now it was time for the final assembly. The first thing was to fit the new fuel tanks into the wings. Then the big lift to put the wings into place. We got so much help from the Ormand Flying Club members; we thought "should we have brought the Sedan over sooner". When the wings were attached, it started to really look like an aeroplane.

The engine was next to be installed. After eventually tracking down new engine mounts we installed the engine. After consultation and contribution after contribution it was eventually installed, with Dave calling again to check



everything and to complete the weight and balance after the rebuild. Now fuelled up it was ready for the first start.

It sounded great. The six cylinders roared into life on the first turn of the key.

The engine was run for fifteen minutes and the oil pressure and temperature checked. Everything seemed ok. We agreed that Dave would come down again to do another check the following day.

The engine started again without any trouble, and after some more ground running he said he'd do some taxi checks. As we all stood there watching the Sedan taxiing around the apron. Then he taxied up beside us and gave us the thumbs up sign, and continued to the end of the runway. We then heard power checks from the end of the Runway 18. We knew the moment was here, the first flight!

We saw the Sedan running up the runway and lift off. After a gasp we realised that we had actually rebuilt an aeroplane from scratch and it worked again. The feeling of relief and joy was overwhelming. We knew it could fly and then the thought, would it land safely. As the aeroplane approached the touch down point it roared into life again and screamed past us for a second circuit. The cameras were all clicking around us as members of the Club looked on and tried to record the event. Dave landed safely and taxied back to the hangar. We all waited to see his reaction. He told us that it flew beautifully, even hands free.



EI-BKC makes its first public appearance at the Birr Fry-In on the 28th of March.

He did have one concern that the engine oil pressure seemed to be a little low at idle. The following day, Dave spoke to the engine re-builder and they asked him to check the oil pressure relief valve, which he did but found nothing wrong. Then they asked him to remove the engine again and return it to them for testing. To say we were disappointed was an understatement, but it was better to be safe rather than sorry. The engine arrived back some time later and was installed again, with more test flights completed. This time everything was ok.

Now the aeroplane was finished, it was time to complete paperwork. Dave kept the aeroplane in Abbeyshrule for a few days and completed all paperwork and sent away for our flight permit. The best Christmas present ever, our flight permit, arrived on Christmas Eve 2009, with a note from the IAA that they wanted to do an inspection of the aeroplane as it had not had a permit for nearly ten years.

On the 22nd of January 2010, the IAA Inspector arrived and spent a few hours going through paperwork and Certificates then completed an

inspection of the aircraft. She passed with flying colours!

During the years of the rebuild, we all have obtained our PPL's. Now things have come full circle again with Gay Treacy, Tommy Mounsey and Joe Davy now teaching us to fly the Sedan. The official launch day took place in conjunction with the Birr Breakfast Fry-In on the 28th of March 2010. The weather was very kind to us on the day and many people arrived by road and by air to help us celebrate our achievement. Thanks to the following for their help with the re-build, Joe Davy C.F.I. for the advice and guidance throughout the project, Jonathan Madden Club Chairman, Mick Hogan, Michael Maher, Aidan McEvoy, Fintan Byrne, Alan Greene and Members of the Ormand Flying Club at Birr. Also thanks must also go to the long suffering spouses and partners of our group who have foregone holidays and weekends without partners for the sake of this project. Many thanks also to Dave Bruton, Supervising Engineer on all his help and guidance over the last nine and a half years.