Gold-plating the Ford Fiesta

The Ikarus C42 can be a microlight or a Group A aircraft – and comparing them gives an insight into the cost of the CAA. ***Pat Malone*** *reports*

Photos: Keith Wilson

The CAA's review of general aviation has concluded that there is no overall decline in the industry and that some segments are thriving. AOPA's case is that while self-regulated sectors are doing well, those which bear the full force of CAA regulation and cost are in dire straits. Microlights are healthy, traditional Group A operators are in the toils.

To illustrate some of the problems, let's look at the Ikarus C42, which in its guise as a sub-450kg aircraft is Britain's best-selling microlight. There is another version of the C42 with a firewall that is 1mm thicker. This adds one kilogram to the weight, and makes it a

Just watch the deceleration...

Whether a microlight or a Group A aircraft the Ikarus C42 is easy and fun to fly, says flying instructor ***Paul Bennnett***

The Ikarus C42 is similar in size to the C152 but some 300 kg lighter

Your first impression sitting in the C42 is the amount of room; two average males will have plenty of space between their shoulders. Designed to accommodate large strapping Germans, it has ample head and leg room. Secondly, the visibility is very good; you're not straining your neck to peer out. The controls - eeek! Where are they? Instead of a yoke you have a central stick, and the throttle lever is between your legs. Over the years I've flown many different layouts and I personally like central sticks as they leave your lap free for maps and things. Also, this configuration leaves both arms at rest.

The exterior dimensions are similar to a C152 – in fact they don't look dissimilar from a distance, and stand around the same height. The fuselage construction is triangulated metal

Left: the C42 can be a microlight or a C of A aircraft, but the extra 1 kg costs a fortune Right: jobs you can do yourself on the microlight version include pumping up the oleos if they're a bit flat, with no need for a licensed engineer

VLA – a Group A aircraft, which can have a Certificate of Airworthiness issued by the CAA. In all other respects, the planes are identical. They'll both do 100 knots, they'll both carry two fattish chaps, even their mother couldn't tell them apart.

For simplicity, let's call the Group A aircraft the CAA version and the other the BMAA version. The BMAA looks after the microlight sector and does a great job of keeping costs down. The CAA looks after Group A aircraft and charges like a wounded bull.

The cost of running these two aircraft is stunningly different. The first thing you'll notice if you buy the CAA version (which you'll need if you want your flying hours to count under JAA rules) is that the Rotax 912 engine is £4,500 more expensive. Same engine, different paperwork – the manufacturer has to create an expensive and time-consuming audit trail for the VLA. It isn't any safer – it just costs more money.

Suppose you buy the CAA plane anyway. Both versions would set you back Ford Fiesta money – about £30 an hour in direct operating costs – but with the CAA machine you'd be able to fly into Bournemouth and other airfields from which microlights are banned. That's about the only advantage. From here on, things start getting really silly.

The starkest cost difference between the CAA and the BMAA machines comes in the area of maintenance. In the microlight, a 50-hour check takes an hour and costs a couple of quid – or nothing if you do the work yourself. Rotax does a three-day course that will set you up. A BMAA inspector will check your work, and some of them don't even charge for the service. But with the Group A version, a licensed engineer must take the aircraft apart to prove it's not broken. It will be off line for several days, and much unnecessary and expensive labour will be lavished upon it. And just now and then, a problem that wasn't there in the first place will be created by the dismantling.

In the BMAA C42 you'd be able to learn to fly at an unlicensed aerodrome, and be taught by an instructor with no recognised JAA qualification – if you have 60 hours P1 on type, you can qualify to instruct on it. In the CAA C42, you'll need an instructor who has passed his commercial exams, you'll have to operate from an aerodrome that has paid handsomely to pass through the eye of the CAA's licensing needle, you'll need a fire engine and crew standing by with the meter ticking, and all the paraphernalia that goes with Group A training today. The associated costs are horrendous – more than doubling the direct operating costs of the aircraft.

Ironically, the microlight instructor might be a better safety bet and may even charge more. He probably won't know how many megaphones you have to have on a 747 or any of that other interesting stuff we learn in the commercial exams, but he won't be a 20-year-old sausage-machine hours-builder either. He'll be a dedicated microlight instructor who'll still be there next month, and given that he's not there to subsidise the airlines, you may have to pay him (or her) what he's worth.

A Permit renewal costs about £150, while getting the CAA to do what is effectively the same job will cost a minimum of £1,500 plus VAT. If you walk out to your BMAA C42 and notice the oleo's a bit down, you can get the

nitrogen bottle and blow it back up again. With the CAA version, you'll need to pay a licensed engineer to sign off the work, and the aircraft is grounded until you can find one.

So, surprise surprise, when everything is taken into account the CAA one costs at least three times as much to run as the identical BMAA version, and probably more. The result is, of course, that BMAA C42s are falling from the sky onto innocent members of the public, wiping out schools in great balls of orange flame… Oh? They're not? Hmm. ■

(aluminium) framework with a composite outer structure. The wings are again aluminium framework covered by a plastic finished fabric which is heat-shrunk on. The engine is a Rotax 912S 100hp which is a flat four boxer engine of which the main block is air-cooled but the heads liquid (similar to the Merlin), which means you won't shock cooling. The max revs for the engine in the C42 pushing a three-blade propeller is 5,000, with a prop speed through a fixed reduction gearbox of around 2,100. The engine purrs rather than grunts, and to fit strict German noise regs is exceedingly quite – on the noise front this is a stealth aircraft.

Doors are gas strut gull-wing types and are very large, making getting in and out exceptionally easy. They close easily and the handle rotates to lock two sliding bolts – a very secure arrangement as you would expect from a German aircraft A full harness is fitted. Due to the high power to weight ratio (MAUW 450kg, engine 100hp) rather than the usual gentle acceleration, you are almost thrown back into your seat as full throttle is applied for take off. Rapidly reaching rotation speed you'll find yourself in the air in less than 100 metres. As you accelerate you'll find a small amount of right rudder is required, and you gently raise the nose so the top of the cowling is in line with the end of the runway and you're off. After take off, gently relax any pitch pressure on the stick and presuming

you are correctly trimmed she will climb hands off with one stage of flap at 58 kts. The trim is electrically operated with two buttons on the top of the control stick and there is a panel LCD indicator. The PTT is a trigger button at the top front of the stick. Reach up and move the manual flap lever to clean, holding the attitude momentarily and again relaxing any pitch pressure at the same trim setting, the C42 will maintain its climb at 68 kts and around

Above left: room for two fatties - the stick between your knees is the throttle Above: gull-wing doors are very large, making getting in and out a breeze

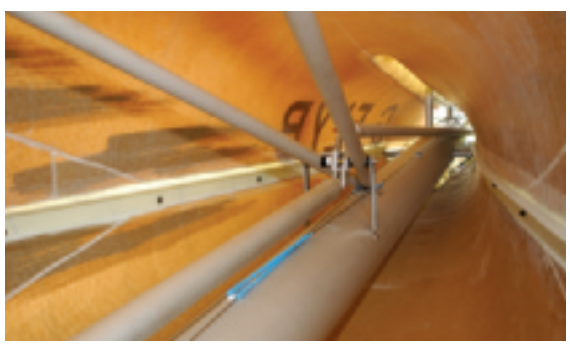
1000fpm. To level off, lower the nose allow the airspeed to rise to your chosen cruise speed, say 82 kts, reduce power and trim. All very familiar, you say. Once trimmed out in the cruise she is very stable and flies totally hands-off. She feels like a bigger heavier aircraft. The control inputs required are small but there's plenty of feedback. Initially, if you're used to moving controls a long way to get a reaction you might over-control, but you adapt quickly.

The Va speed (Max speed turbulent air) is 83 kts, a relatively low speed compared to the C152, but this reflects the 300 kg difference in MAUW. In turbulence you will be more affected in the C42, but not as much as one might think, and it responds quickly. The biggest difference is all to do with inertia. You accelerate and slow down more quickly. Acceleration is not a problem and can get you out of trouble. Slowing down quickly can get you into trouble fast. The minimum recommended approach speed is 53 kts, and considering in simple terms the stall speed is 32 kts with full flap, that gives a leeway of 20 kts. If you have any wind shear and combine it with a sudden reduction in power you will need it. When converting onto a very light aircraft like a microlight, this is probably the most important difference.

Crosswinds are generally dealt with using the wing down method and the C42 copes very well, with a demonstrated crosswind capability with full flap of 15 kts. Taxiing when the wind is in the 20's and gusting, you will not feel as secure as your C152 and greater care should and needs to be taken.

The majority of C152 pilots I know who fly the C42 have adapted quickly and without exception love it, finding the response rate and versatility of the aircraft make it serious fun. When you know what you're doing the STOL capabilities are to good to quote – a friend of mine who flies Dash 8s out of Southampton but C42s for pleasure manages solo take off and landings across the runway with room to spare. The C42 is a forgiving aircraft and has an exceedingly robust undercarriage but is capable biting back – but you have to push her. The stall characteristics are very mild, with the nose just nodding, and with full flap a positive buffeting prior to the stall. I have spun the C42 on many an occasion as part of the test requirements and she will only enter by very positively actioning a spin entry. To recover immediately you could simply let go of the controls – you would still have to recover from the ensuing dive, though. Establish the spin further and you would use the Standard Spin Recovery or generic technique. Once established in a spin she rotates at 280 degrees per second with a nose down attitude of 55 degrees descending at 8,750 fpm.

Operating a C42 will cost you around 12 litres of fuel per hour at 82 kts, 16 litres per hour at 95 kts. If running on mogas, an oil change every 100hours (3 litres), eight plugs every 200 hours. Full hull insurance as a private pilot is between £1200 and £2000. ■



Left: rear fuselage structure is composite on aluminium framework
Above: the oddest feature at first acquaintance is the centre stick, but it has many advantages
Right: manual flap lever is above your head
Below: best cruise speed is around 82 kt, and she can be trimmed to fly hands-off
Bottom: deceleration is rapid when you cut the power and can catch out the unwary