

# A-star for the

# C

**David Bremner is exhilarated by the Comco Ikarus C42C, the latest version of this hugely popular training and touring machine**

IT'S a tough job being a flight tester for *MF*.

Days like today, for example, when I followed in the poetic footsteps of John Gillespie Magee Jr and danced the skies on laughter-silvered wings.

I'd spent four hours driving across the width of England and arrived in the far corner of Norfolk ready for a bit of aviation.

First job was to get the air-to-air photos done before the weather broke, and I sat with Paul Hendry-Smith in TLAC's Cessna 150 while James Milne and David Glasspoole hopped into their shiny new 100hp C42C.

The 150 has a 100hp Lycoming at the front, and slowly, slowly crept skywards at around 200ft/min while James and David swept past us at between three and four times the climb rate. It would be hard to find a better illustration of the advances in light aviation brought about by the microlight movement.

The scattered clouds topped out at about 4000ft, so we headed up there to get some good backdrops for the photoshoot, then pattered back to earth, and after another cup of tea I was shown round the latest iteration of what has become the microlight equivalent of the Cessna 150.

Designed in 1996 by Swiss designer Hans Gygax, the Comco Ikarus C42 was an immediate success, with its emphasis on easy maintainability and conventional handling and performance. This was hardly surprising, given the long list of successful aircraft designs to his credit.

By the time of *MF*'s first flight test in the Mar-▷



Oh, I have slipp'd the surly bonds of Earth  
And danced the skies on laughter-silvered wings.  
Sunward I've climbed and joined the  
tumbling mirth  
Of sun-split clouds. And done a hundred things  
You have not dreamed of; wheeled and soared  
and swung  
High in the sunlit silence. Hov'ring there,  
I've chased the shouting winds along and flung  
My eager craft through footless halls of air...

Up, up the long, delirious burning blue  
I've topped the wind-swept heights with easy  
grace  
Where never lark, or ever eagle flew –  
And while, with lifting mind I've trod  
The high, untrespassed sanctity of space  
Put out my hand, and touched the face of God.

*High Flight,*  
by John Gillespie Magee Jr



**Above**  
TLAC's James Milne and David Bremner enjoying themselves far too much

▷ Apr 2002 issue, it was already a firm favourite on the Continent with no less than 400 sold for private flying, instruction and glider towing, and some converted to float flying.

Since then it's been adopted by many microlight schools in the UK as their mainstream instructional machine and I imagine many readers will have had at least a passing acquaintance with it. If it ain't broke, don't fix it, and the C42B (tested in *MF* Dec 2018) was an incremental development of the basic design.

The UK dealership has gone through a number of hands since then, but is currently in the safe hands of The Light Aircraft Company at the delightfully-named Little Snoring airfield.

TLAC is a well-established outfit that has all the certification necessary to carry out maintenance and repairs on everything up to and including business twins. It's building a significant portfolio of microlight and light aircraft products, including the Sher-

wood range consisting of the Ranger, Scout and Kub, the Comco Ikarus, and more recently the Medway three-axis Clipper and SLA100 Executive which are to be relaunched soon.

This is great news for the C42 owners, who can be confident of reliable support for their machine for the foreseeable future.

Comco is no longer offering the kit version; it's factory-built only, but there are plenty of options available to personalise it.

One thing you can't do is change the basic colour from white, though a number of different vinyl trims can be bought, and presumably there would be nothing stopping you from designing and fitting your own.

TLAC offers a wide range of glass panels to replace or supplement the standard analogue instrument fit, and you can choose between the 80hp and 100hp Rotax 912 engines. There is a wing-fold kit, but it's a fiddly job to operate it, and I don't think many have been sold in the UK.

The changes in the C42C are rather more noticeable than the C42B, but it's still very recognisably the C42.

Perhaps the most obvious change is in the flying surfaces. The wings have a subtly different aerofoil section and leading edge and are significantly shorter, with those fashionable carbon-fibre aerodynamic winglets at the tips. There are nicely moulded covers for the outboard ends of the forward struts, and "spades" on the ailerons.

More commonly associated with aerobatic aircraft, spades are small additional surfaces mounted below and in front of the ailerons, and the effect is to reduce the stick forces in roll. To reduce the stick forces in pitch, Comco has introduced a servo tab on the elevator.

For those who haven't come across this concept, a servo tab is linked so that as the elevator goes up, the tab goes down, reducing the stick forces. The C42C has an unusual arrangement, with a servo tab on one side and a normal electric trim tab on the other.

There are changes under the skin, too. There are carbon-fibre wing ribs and a revised cockpit roof construction, with an improved door hinge, and circuit breakers have replaced the old electrical system fuses. Under the bonnet, the engine mounts are the new tubular type.

Having genuinely struggled to fold up sufficiently to squeeze myself into the Cessna, access to the C42 was a very pleasant experience, with its wide top-hinged door, wing struts behind the door and central stick.

There are no surprises in the cockpit: it's the same familiar, well-appointed environment with the throttle between your legs. Comco has always placed great emphasis on fit and finish, and it shows.

Engine options are the 80hp Rotax 912 and 100hp 912S. The demonstrator is fitted with the latter, and in due course we fired it up.

The noise levels are low, and because it was already warm we were able to taxi out and head straight off to the runway. ▷

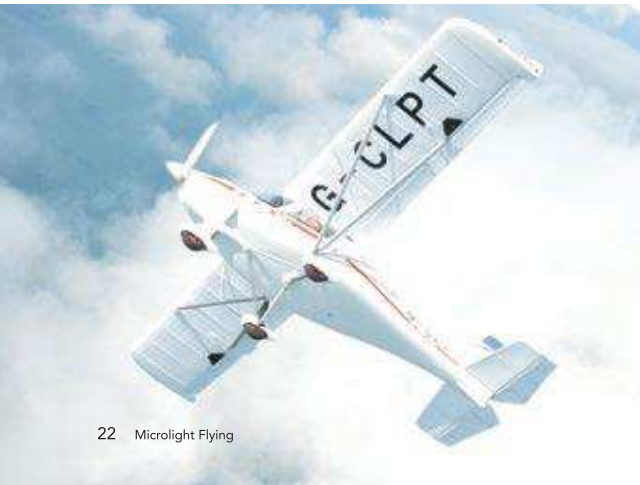


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The effect of the reduced wingspan and aileron spades is immediately obvious

**Photos**

- 1 Nice tidy fit for the 912S
- 2 The electric trim is effective without being oversensitive
- 3 Much more room than a Cessna 150
- 4 Neat instrument panel, and room for a tablet
- 5 Aileron spades reduce stick forces in roll





“ It’s a wonderfully flingable machine; the light roll control invites you to experience to the full the freedom of flight

▷ There are a couple of changes under the bonnet that should reduce the warm-up time, however. The first is an intercooler which exchanges heat between the coolant and oil. It’s a small heat exchanger which requires no attention from the pilot.

The other is an optional manually controlled flap to close off airflow to the water radiator. This is controlled by a rather agricultural lever at the bottom of the panel, and does require a fair amount of attention. I’m sure it speeds up the initial engine warm-up, but if you forget and leave it closed, the coolant/water will quickly overheat in the climbout, which lights a great big orange warning lamp on the panel.

That, together with the old-fashioned carburettor heat control – very rarely needed for 912 engines in an enclosed cowling – were the two things that slightly jarred in an otherwise well-designed cockpit layout.

There’s never been much cockpit storage space in a C42; nowadays the coaming has a couple of flat spots in it which help in that respect, but the Skyranger scores better with its baggage compartment behind the seats, as does the Sherwood Scout with its cavernous rear fuselage capable of taking a dead deer (truly – the original design was a joint British/American effort, and the Americans wanted to tap the hunting market).

The seats are as comfortable as they always were, and the view out is quite adequate without being exceptional.

With 100hp straining at the leash, we were off in no time, and sunward I climbed. The electric trim is effective without being oversensitive, and the indicator tells you what position it’s in. Test pilot James reminded me to open the cowl flap before the orange lamp lit.

At the top of the climb, we settled into the cruise and retrimmed before trying a few turns. The effect of the reduced wingspan and aileron spades is immediately obvious. Roll control is delightfully light and the response is crisp and swift, and almost entirely without adverse yaw.

The effect of the elevator servo tab is less obvious; it may be a little lighter than before, but not by a huge amount. There’s still plenty of pitch stability, however; the stick forces increase very quickly as you move it out of trim.

Overall, the balance of control forces between roll, pitch and yaw is excellent.

It’s possible to make well coordinated turns with either rudder or stick, which is unusual in a micro-light, and might be regarded as a less desirable feature for a training aircraft, where you’d like to be able to demonstrate adverse yaw to students who are surely going to come across it in other machines they will encounter in their flying career. Nevertheless, it’s a sign of a very well sorted design.

There are significant changes of trim with flaps and power, but neither is particularly marked. The stall, flaps up or down, is just as it always was: loads

of buffet and eventually settles into a surprisingly level mush with the ailerons still effective.

At the other end of the speed range, we topped out at about 107kt with the engine still well within limits. I had thought the shorter wing might increase the top speed, but the effect was not as great as I had expected.

So having done our duty, we headed off to a convenient cloud and wheeled and soared and swung high in the sunlit silence. The C42C is a wonderfully flingable machine; the light roll control invites you to depart from straight and level flight and experience to the full the freedom of flight.

Eventually we decided to head back to Little Snoring, and James thought it would be a good idea to turn the engine off to see what happened.

The stopped propeller created a great deal of drag, and it’s probably not the best way to try and stretch the glide if you’re running short of fuel, but it flew fine.

We tried diving to see if we could “bump start” the engine, but although it eventually turned over a compression or two, we had to resort to the big red button to restore normality. It would be interesting to try it with the 80hp engine, as it has lower compression.

The landing was as simple and straightforward as you might expect from such a well-bred machine, the well-damped long-stroke suspension ensuring that all but the firmest of arrivals are comfortable, and we taxied back to the hangar.

## Conclusions

The C42 has established such a firm place in the microlight world (there are 228 on the UK register) that it’s hard to imagine the aircraft being anything other than central to the microlight experience.

The C42C is an incremental change that should keep it there for the foreseeable future. It’s always been a solid, reliable, middle-of-the-road machine and the latest upgrade is no different.

And if that sounds a bit disparaging, it’s not meant to. Today’s flying left me as exhilarated as John Gillespie Magee Junior in his Spitfire in 1942.

It’s been the machine of choice for instructors for many years and it will be interesting to see if the factory-built Skyranger provides significant competition.

The Skyranger is significantly cheaper, but as TLAC’s Managing Director Paul Hendry-Smith points out, the initial purchase price is actually a small part of the overall business decision when it comes to choosing a training aircraft, particularly with interest rates at historically low levels.

Far more important is the true cost of ownership, which includes not just the purchase price but also the maintenance costs, reliability and resale value, and the C42C comes with a proven track record in that regard which – according to Paul – guarantees a good return on investment.

Unlike Icarus, the Ikarus should remain airborne for many, many years to come. □

## Comco Ikarus C42C

Data shown is for 80hp version, figures for 100hp version in parentheses, where different.

### MANUFACTURER

Comco Ikarus, Flugplatz Mengen-Hohentengen, Am Flugplatz 11, 88367 Hohentengen, Germany. Tel +49 (0)7572 60080, info@comco-ikarus.de, comco-ikarus.de.

### IMPORTER

The Light Aircraft Company, Hangar 4, Little Snoring Airfield, Little Snoring, Norfolk NR21 0JL. Tel 01328 878809, sales@g-tlac.com, g-tlac.com. Director: Paul Hendry-Smith.

### SUMMARY

Two-seat high-wing monoplane with aerodynamically faired lift struts and conventional three-axis control. Wings have parallel leading and trailing edges and carbon-fibre ribs, conventional tail. Pitch control by elevator on tail with electro-mechanical trim on port side and servo tab on starboard side; yaw control by fin-mounted rudder with trim tab; roll control by ailerons with aerodynamic spades, two-stage reflex flaps. Undercarriage has three wheels in nosewheel formation with composite wheel spats; oleo pneumatic suspension on mainwheels, polyurethane bush on nosewheel. Nosewheel steering connected to aerodynamic controls. Hydraulic disc brakes on mainwheels. Aircraft-grade aluminium-alloy airframe, anodised prior to assembly, with secondary non-structural composite fuselage in either honeycomb GFK or carbon-fibre. Wing and tail surface covered in Xlam stitched with Tanara thread. Engine mounted below wing on tubular mounts, driving tractor propeller.

### EXTERNAL DIMENSIONS AND AREAS

Length overall when rigged 6.38m. Height overall 2.20m. Wingspan 8.71m. Constant chord 1.37m. Dihedral n/a. Wing area 11.9m<sup>2</sup>. Aspect ratio 6.4. Wheel track 1.60m. Wheelbase 1.51m. Mainwheel tyre size 14x4. Nosewheel tyre size 14x4.

### POWERPLANT

Rotax 912UL (912 ULS) engine. Max power 80hp (100hp) at 5500rpm (5800rpm). Gear reduction, ratio 2.27/1 (2.43/1). Three-blade Helix propeller, diameter x pitch 180x20cm @ 400mm (Neuforn three-blade, Warp Drive three-blade and Helix two-blade optional). Power per unit area 6.72hp/m<sup>2</sup> (8.40hp/m<sup>2</sup>).

### WEIGHTS AND LOADINGS\*

Empty weight 272kg\*\*. Max takeoff weight 472.5kg. Payload 187.5kg. Max wing loading 39.7kg/m<sup>2</sup>. Max power loading 5.91kg/hp (4.73kg/hp). Load factors +4g, -2g recommended, +6g, -4g ultimate.

\* Under current microlight regulations and with parachute system. When regulations permit, MTOW rises to 560kg without parachute, related data changes accordingly.

\*\* Minimum figure for 80hp model, alternative specs add up to 10kg and reduce payload accordingly.

### PERFORMANCE\*\*\*

Max level speed 118mph (123mph), 100hp 123mph. Economic cruising speed 109mph (115mph). Never exceed speed 139mph. Glide ratio 11/1. Power-off stall speed with flap 46mph, without flap 52mph. Max climb rate at sea level 800ft/min (1200ft/min solo). Takeoff distance to clear 15m obstacle 244m on grass. Service ceiling >10,000ft. Range at average cruising speed 485 miles. Fuel capacity 65 litres. Average fuel consumption 10-13 l/h (10-14 l/h). Noise level n/a.

### Under the following test conditions

\*\*\* At 560kg takeoff weight except where otherwise noted. Other conditions unspecified.

### PRICE INCLUDING VAT

Starting at €78,714 (at current exchange rate, £72,363). With 912S and Helix three-blade prop (as tested), circa €86,000 (£79,061) depending on instrumentation etc.

n/a = not available

Data above provided by manufacturer / importer  
Data in text is tester’s experience