

Gliding & Motorgliding International

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Monthly Features

Derek's Favourite Gliders

By Derek Piggott
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Flying The French Fauvel AV36 Tail-less Glider

Derek goes back to the 1950s this month with memories of flying Charles Fauvel's unusual design. Eventually more than 100 were sold in kit form and flown in 14 countries



This photo is of the AV361, which was the improved version with a slightly longer wingspan - an increase of 11.95 to 12.78m. We are sorry we couldn't find anyone with a photo of the original.

It was in the late 1950s that Charles Fauvel brought his little tail-less glider to Lasham to try to popularise the design in the UK.

The BGA No. 1 test group was based at Lasham and it was largely their responsibility to test and approve new types coming into the country. The group consisted of Lorne Welsh, Frank Irving and Hugh Kendall, all very experienced in both gliding and test flying matters. At that time I was a hanger-on and not a member of the test group, being Chief Instructor and present on the airfield every day and, of course, I was keen to get a go in this interesting little machine.

As the wing is one piece and permanently built on to the short fuselage, the trailer held the glider with one wing up over the car and the fuselage and other wingtip on the short trailer. There was, I remember, some doubt about the legality of the set up because the length of the glider mounted across the trailer was more than the normal legal width allowed at that time, so that it constituted a "wide" load. This was after folding the rudders at right angles and removing the nose cone to reduce the width to the minimum.

I seem to remember that Lorne and Frank flew first and there was very little to criticise about the handling apart from the landing characteristics. It seemed to be quite easy to bounce on the landing and this appeared to be because of the shape of the landing skid. Later models changed this from a curve to a flat and eventually to a nose and main wheel spaced well apart.

Fairly sharply tapered outer wing portions

The wing plan of the Fauvel is a parallel chord centre-section with fairly sharply tapered outer wing portions. The twin fins and rudders are mounted at each end of the centre-section with a release hook just below each leading edge at the same point. The launching was by aerotow using a special bridle with a vee of rope and rings at each end.

It all looked delightfully simple to build and very lightweight and a possible machine for homebuilders.

I well remember that it was a poor day with very little hope of any usable lift, but this was not important as the object was not to soar, but just to fly and evaluate it.

With such experienced pilots, it was very unexpected to see several bouncy landings. All went well until one of the pilots happened to balloon up a few feet during the hold off on landing. We were all rather surprised when the correction for this went badly wrong and resulted in a heavy landing and damage to the skid and, if I remember rightly, a frame under the seat. We were all rather embarrassed and rushed it off to the workshop where it was hurriedly repaired ready for the next day.

Of course I was waiting to fly it when the damage occurred and I was very disappointed as it was probably going to mean that I would miss the opportunity altogether.

The shape of the skid was a continuous curve

However, it did give us time to consider why the incident occurred. The bouncing problems appeared to be the shape of the skid which was a continuous curve. But the real reason for the incident was inherent in the design of most flying wing designs and is interesting and well worth knowing about in case you get the opportunity to fly one.

The elevator, being a simple flap on the trailing edge of the centre-section, not only lowers and raises the nose of the glider, but at the same time changes the lift from the wing. Everything works fine provided that you always make a gradual, continuous backward movement on the stick during the hold off and don't balloon.

However, the situation is not so good if you start to make corrections close to the ground. Suppose, for example, you balloon up a few feet. If you make a move forward on the stick to lower the nose, the first effect is for the flap moving down to increase the lift making the glider go still higher, then the nose goes down and the glider starts to lose height. But, as the glider approaches the ground again and you move back on the stick to roundout, the lift decreases as the flap has moved up, resulting in a further rapid loss of height and a heavy landing.

Better to hold the stick still and wait

So the secret is to avoid any rapid stick movement close to the ground and just to make a very smooth hold off with a gradual backward movement. Probably if anything goes wrong, such as holding off too high or ballooning up a few feet, it is better to hold the stick still and wait for the glider to settle.

My own flight was uneventful and once in the air you would hardly notice the lack of tail. There appeared to be a very slight buffet at most speeds, probably due to the turbulence set up by the flap close to the wing root. It also flew with a slight oscillation in pitch, but this was unimportant as it was a very low frequency. It seemed almost impossible to circle absolutely accurately but the slight rising and dropping of the nose was not sufficient to make centring difficult.

The performance seemed to be as claimed, about 20-22:1 glide ratio at quite low speeds and it thermalled well. A fun glider capable of good cross-country performances. Apart from the need to hold off smoothly, it was simple to fly and offered a low cost machine for a homebuilder. However, because of the landing characteristics it was not given a BGA C of A until this was improved by the change of skid design.

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