

FLYING THE FAUVEL

By PETER M. BOWERS

The long-awaited moment has finally come, and an American-built Fauvel AV-36 has taken to the air. This tailless French design is one of the most controversial gliders of recent years, and while the Americans have had plenty of evidence in the form of text and picture that it flies well, they have been reluctant to believe it until such time as they could see one for themselves.

Credit for this first Fauvel goes to Fred Jukich, of Mill Valley, California. Fred rushed his ship to completion, hoping to be able to have it ready for the opening of the 21st National at Elsinore, but he couldn't make the deadline. He did manage to get to the contest with it, however, a week late, but with a few test flights behind him to prove that it would really work. In spite of his best effort, though, he was beaten out by the Canadians for the honor of flying the first "Western World" Fauvel, for the first of the five under construction north of the border took to the air on June 27.

The appearance of the tiny black-and-white beauty at the 21st National caused an immediate sensation, and there is no doubt that it was the most photographed ship there.

The trailer that it came on was almost as much of a curiosity as the ship itself. The ship is small, having only 42 feet wingspan, and the trailering method worked out by the designer is to attach one wingtip to the top of the car, put a dolly under the pod, and let the wing act as the frame of the trailer. This is legally possible because the nose of the French version folds back, reducing the width of the load to legal limits. Fred had departed from the original plans, and had made his pod in one piece of fiberglass, which could not be folded. In order to trailer it, therefore, he had to stand it on edge, which ruled out the dolly-under-the-pod arrangement. Consequently, he developed a trailer with a movable cradle. The ship was pushed up alongside the trailer, with the leading edge of the wing fitting into two large padded saddles. When the ship was in place, a winch on the trailer pulled the

cradle and the glider to a near-vertical position on the trailer. Building the trailer must have been as much, or more, work than building the ship itself!

After he had flown the ship for a few times to satisfy himself and the army of amateur and professional photographers, Fred very generously allowed several different pilots to fly it. Al Backstrum of TSA, who is working on a somewhat similar tailless design, took it up, and the author was



Staff Photo

Fred Jukich steps into the first American-built Fauvel AV-36.

one of the other fortunates. The flight report given here is entirely the result of his own observations and opinion, and has not been checked with the other pilots that flew the Fauvel.

Take-off was made rapidly, using about 10 degrees of flap, and the ship immediately settled into "high-tow" position behind the PT-23 tug. It was found to be very responsive to the elevator trim tab, and stability on tow was surprisingly good. There was no evidence of any desire to porpoise, a point that had worried many pilots during earlier discussions. Elevator control can be called "strong," at least at a tow speed of 70 mph.

The first thing that was noticed after release was a considerable inadequacy of rudder control. This may be partially due to the fact that the ship was rigged with 15 degrees less rudder travel than specified, but is more likely a characteristic of tailless aircraft. It was impossible to do the simplest coordination exercise—rolling on points with only a 10 degree bank. In standard gliders, this is overcome to a large degree by long rudder moment arms (an impossibility on a tailless) and differential ailerons. This latter feature cannot be incorporated on flying wing designs because of the pitching moments produced. If one had more "up" than the other, it would begin to function as an elevator.

As a result of this, the Fauvel feels something like the old model Bowlus Baby Albatross, the one with no differential aileron travel, when starting a turn. As the inside wing starts down, the nose starts to swing in the opposite direction, but once the bank is established, rudder and a bit of back stick bring it around in one of the tightest turns imaginable. Because of the tight radius and the high drag on the outside wing, recovery is rapid and smooth. In straight-and-level flight it is possible to slow the ship down to under 35 mph with the aid of a little flap. The flight was too short to check sinking speed, so all effort was concentrated on learning the handling characteristics.

In free flight, the ship was slightly nose heavy. Fred had noticed this on earlier flights, and had hung weight on the rear end of the pod, which improved things for him but not for me, as I outweighed him by about twenty pounds. However, the nose-heavy condition brought a degree of comfort when considering the stall problem, which was the biggest question mark hanging over the ship. With no lift around, there was no time for thorough checking through a progressive series of stalls, so I tried a couple of easy ones straight ahead. About the only thing that can be said of them is that they are similar to gentle stalls made in a Cessna 140—the ship will mush downward without dropping the nose if you keep the stick back. From a slightly steeper stall approach, the nose will drop in the conventional glider manner, and recovery can be made very rapidly.