

Burt Rutan's 'Solitaire':



Burt Rutan first came to the attention of the aviation community in the 1970's with his revolutionary home-built aircraft, firstly the Vari-Viggen, then the fibre glass Vari-Eze and the Long-Eze. These aircraft all had his 'trade-mark' tail first configuration, with the engine and pusher propellor in the tail. The two Eze's also had winglets on the main-plane, and these incorporated the rudders.

Rutan has since designed numerous aircraft, the most notable of which was the Voyager, which circumnavigated the globe non-stop, without refuelling. The first and only time that this has been done. The Voyager was piloted by Burt's brother Dick and Jeanna Yeager (who contrary to some reports was not related to Chuck Yeager).

With his many successes behind him, it was natural that considerable interest would be aroused when Burt Rutan announced that he was building a powered glider, the Solitaire. It was, like most of his other aircraft, to be a home built machine, using the mouldless construction which he has pioneered. The prototype was exhibited at, among other places, Oshkosh 1982. It had the usual fore-plane, but a conventional tail boom and rudder. Uncharacteristically for one of his designs, it didn't have winglets. The retractable motor was stowed in the fuselage ahead of the cockpit. The fixed undercarriage consisted of two equal sized wheels mounted in tandem under the fuselage.

The Solitaire was reputed to fly well, though it was not a very high performance machine (I have seen a figure of 35:1 quoted), but that was not the aim. It was to be a simple-to-build unstallable glider, with the advantage of having an engine. Unstallable? Well that was one of the reasons for the tail-first layout in Rutan's aircraft. The fore-plane design is such that it stalls before the main plane. The nose will then dip, unstalling the foreplane. In fact the Long Eze can be flown with full aft stick, the nose bobbing up and down as the fore-plane stalls and unstalls, while the main-plane stays well within its critical angle. The other advantage of the tail first configuration is that both surfaces provide lift, unlike the normal layout where the tailplane produces a down-load and the main plane has to lift the aircraft's weight plus this down load.

So why aren't there any home built Solitaire's flying around? It seems that no one wanted one. Whether that was conservatism, or whether those building gliders wanted something with a higher performance, I don't know. Pity, as it would have been interesting to see a few of them flying around.