

# A Portable Jodel

By Thomas Philippa - Dip Teach I A  
Design & Wood Technology

There are few aircraft that can boast a Rolls Royce reputation and the Jodel range of aircraft are amongst those select few. For many years the Jodel D11 Club was the fore-most pilot training aircraft in Europe and the UK. Quite a few were also built by amateur builders in Australia, New Zealand and the USA. There is still a network of dedicated Jodel lovers around the globe, and although the company that used to make them is no longer in existence, there are many versions of the Jodel still being built by

amateurs today. The most favoured of the Jodel family at the moment is the Jodel D18, which was specifically designed for the ultralight market with a gross weight capacity of 1,015 lb and powered by the 70 hp VW engine. The most famous Jodel has to be the two-seat D11 Club, so named because of its extensive use by aero clubs for pilot training. Its gross weight is 1,360 lb and is powered by a 100 hp Rolls Royce Continental.

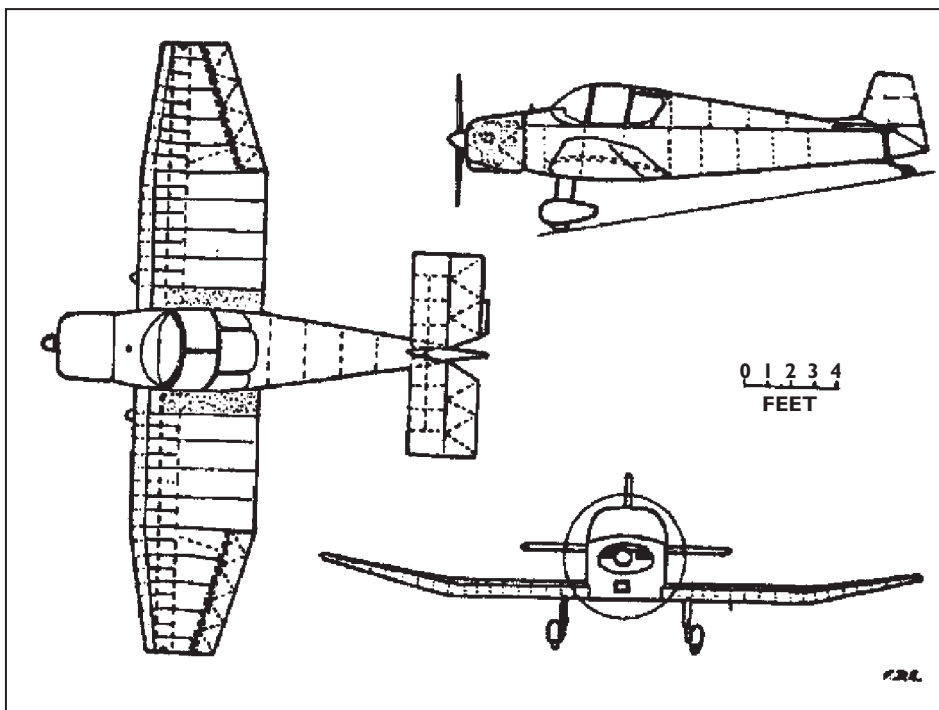
With the event of kit aircraft and the rising cost in aviation, the Jodel D 11

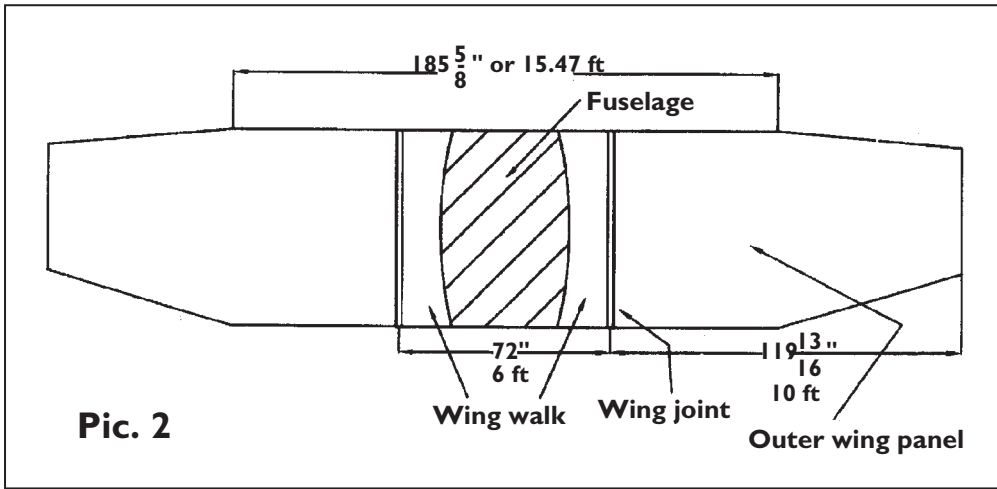
Club has slowly been relegated to the back burner, and I think one of the main reasons why the Jodel is losing favour with builders is because of its huge wing that prevents people from taking the aircraft home. In the old days this was not a problem, but today with rising hangar fees and escalating costs, the economics of ownership is very much a matter of concern. It is therefore a real pity to see an aircraft such as the Jodel D11 Club of which I have shown the three (see pics), (or the slightly modified wider cockpit version the "Sky Princess") going into oblivion because many people who can afford to own one, cannot afford to put it permanently in an airport hangar.

I think there is a way that this wonderful aircraft may be given a new lease on life. I would like those who own a Jodel and prospective builders to consider a redesign of the cumbersome single cantilever wing and box spar into a split wing with a main and auxiliary spar that can be built into three sections comprising of the centre section which remains attached to the aircraft leaving the aircraft on its wheels and two outer wing panels that can be removed and placed on a trailer for transport home.

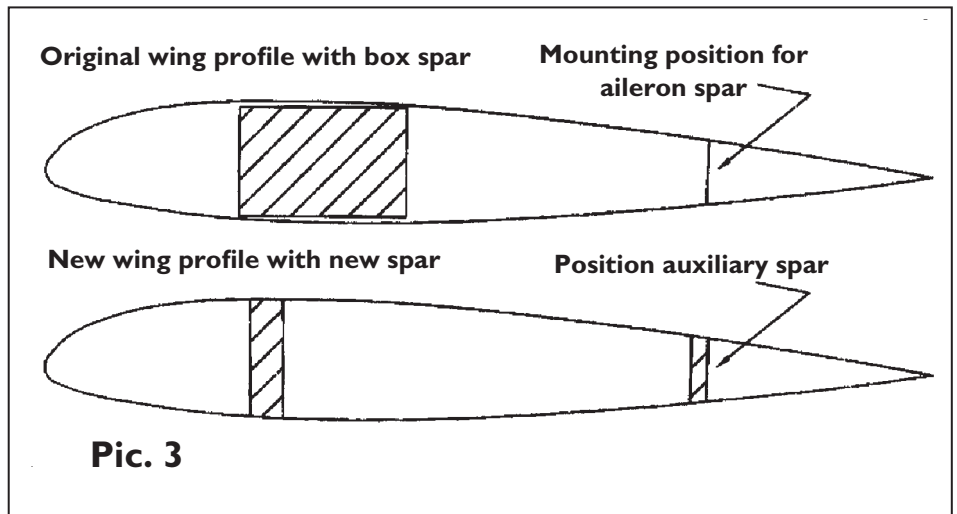
Most Jodels also have a large horizontal tail; this too can be redesigned to enable it to be removed and placed on the trailer. The aircraft will then be road transportable.

The drawing (left) shows the original rib profile with the large box spar that





**Pic. 2**



**Pic. 3**

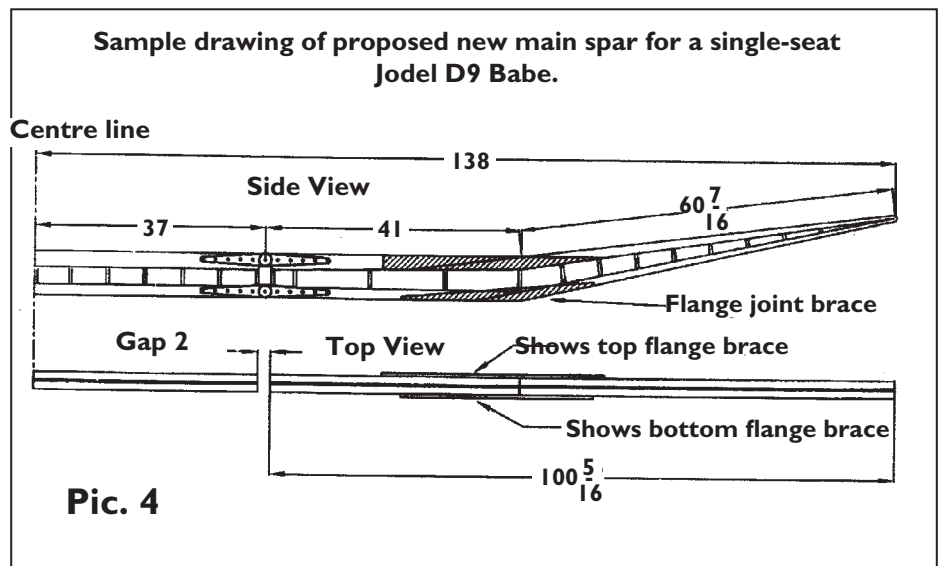
can be replaced with the spars as shown in the second drawing.

The first step is to design a new main wing spar. This is not as difficult as it seems. By locating the position of the new spar on the wing rib profile the height of the new spar can be worked out. The next step is to calculate the alternate spar flanges to work out how wide and deep they have to be. This new spar allows for spar plates to be bolted to the centre section and wing panel spars. There is a retaining plate on the auxiliary rear spars.

The classic Jodel undercarriage will not suit the new spar arrangement so a new type of undercarriage has to be designed to fit the new spar, and it is now bolted to the spar at the spar plates. Also all the ribs have to be slightly modified about an inch to adjust the position of the vertical stiffeners and ply gussets.

The aileron cables in the wing panel can remain as they are, but the centre section wing will have the cables replaced by a push/pull rod attached to the control column. This rod goes to the wing joint where it will attach to a control horn that has the cables to the aileron attached. The pitot static line will be joined at the wing joint with a pressure air hose lock fitting that can be clipped on and off for transport.

For aircraft fitted with a fin, the attachment of the fin will have to be modified to facilitate its removal so the horizontal tail can be removed and also



**Pic. 4**

placed on the trailer.

On the bigger models such as the Jodel DR 1050, I estimate the current cost for modification of an existing aircraft to be in the vicinity of about \$1,500. If this cost of modification is compared to the cost per annum of hangar fees at an airport, the owner or builder will soon realise that it will not be long before there

is a real financial gain.

For those builders contemplating the construction of the aircraft, it is best to incorporate these changes at the start at no extra cost.

*I may be contacted to discuss the design modifications. Phone: 61 2 4275 2350 or email to [tomp@mydesk.net.au](mailto:tomp@mydesk.net.au)*