

BUILD
FROM OUR
FULL SIZE
PLANS!



DOOFA

**This'll Doofa now! Try Dave Hughes' three-foot
lightweight glider for Vintage fun**

DOFOA is a lightweight tow-launch glider, of low aspect-ratio, designed primarily for those all-but-calm summer evenings which seemed to abound in the late 1940s. It weighed just 2.1/2 ounces and utilised the special LDC 2 section, produced by the LSARA (Low Speed Aerodynamics Research Association) mentioned recently in the Readers' Letters page.

Well, something like that section, anyway, as I cannot recall having used any ordinates, so it was probably 'eyeballed' - and, in 1947, no doubt distorted via the 'pin-prick through onto balsa' technique. But it certainly seemed to work well - and still does!

Years later I was told by some technical type that the LDC 2 section only works for streamlined fuselages. I spent the next few weekends trying to get my Doofa VII to fall out of the air, once this knowledge had been imparted. But it would not.

Drawn, built and flown one Saturday in June, the model seemed promising from the start - though admittedly, the 'flown' part that Saturday was just a hand-launch from the sand-dunes bordering the Royal Liverpool golf course at Hoylake, in the gathering dusk...

For later, tow-launched flights, we moved onto the beach at West Kirby, which afforded something like three square miles of flat firm sand, when the tide was out. The only problem for most of us was that wingtips became 'sandpapered'. Doofa had to go one better than this, however, and wandered away, to land a few inches from the incoming tide.

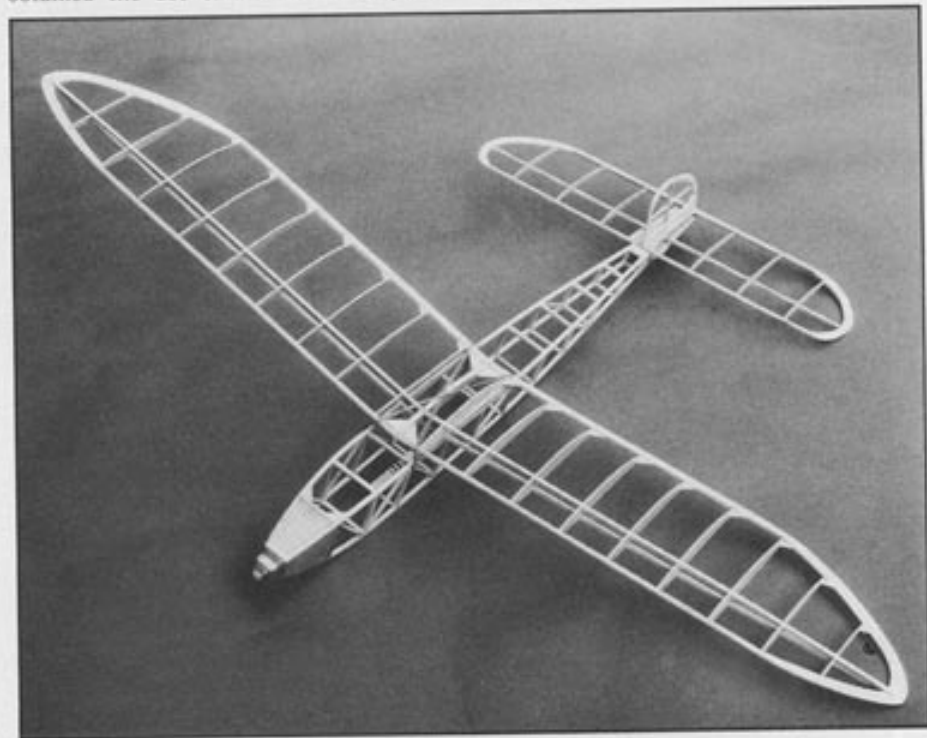
By the time we reached it, the tissue had become very soggy, the model having been trying to emulate a surf-board.

About this time, the Merseyside club obtained the use of RAF Sealand (near

Chester) and during the next couple of years I managed to lose three Doofas OOS and burn a fourth. Yes, I said burn. It sat on its own D/T fuse. In view of losing the other models I decided to fit one of these, you see. But not your conventional tip-up tail arrangement. I thought I'd try the swinging-weight type - which I suppose I must have seen in Gadget Review.

The system required a small weight to be secured beneath the fuselage, at the CG, by an elastic band, through which the fuse was fitted. From the weight, a length of cotton ran to the wingtip. When the fuse burned through the band; presto! - the weight swung from the wingtip and the model gently

Simple, traditional construction means you can't go wrong. Note TE gussets for strength.



spiralled downwards. When the weight reached the ground (am I beginning to sound Hoffnungish?) the tension in the cotton was released and the model flattened out for landing.

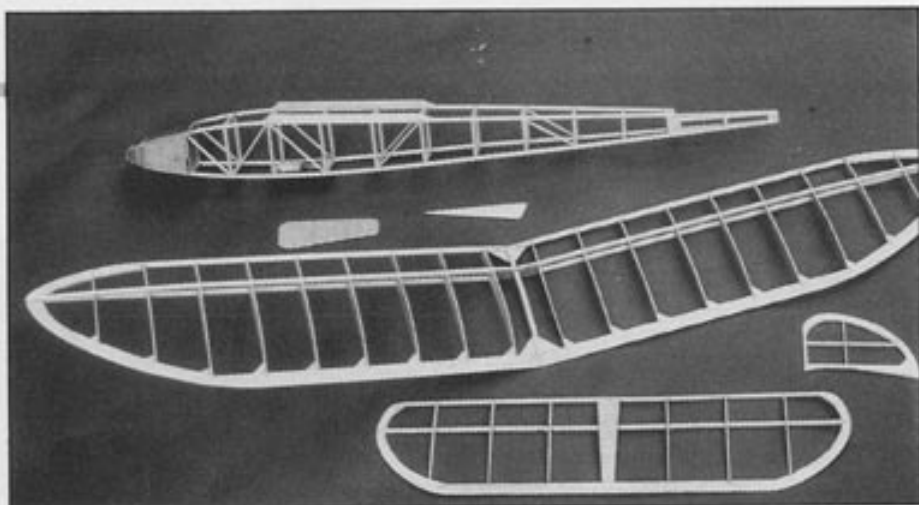
This worked quite well a number of times, though the model usually finished up inverted in the grass in a somewhat inelegant fashion. However, the time I'm telling you about, I think the fuse/band/weight assembly must have been moved back on the previous arrival, sliding beyond the piece of mica which was supposed to protect the fins from the fuse, as it were. The flight was a short one - due probably to a poor launch - and, on walking leisurely towards the grounded Doofa, smoke was observed. We broke into a run across the airfield but, by the time the crash crew had done their work, all that was left of Doofa V was the proverbial 'two wingtips and a pile of cigar ash'.

Do a Doofa!

This is an ultra-simple model structurally, and all the relevant details appear on the plan. Use light grade 'soft' balsa for all ribs and tips, but longerons should be of fairly hard stock, as should uprights and spacers.

On the wings and tailplane of my 1988 replica, I used some white Jap tissue which I bought at Sweeten's of Blackpool back in 1943. (Yes - I'm a hoarder!). I didn't know, after all this time, if it would still shrink when water and dope were applied. It did. It just went a bit patchy, some parts of the wing being less translucent than others. For the fuselage I used some lightweight Modelspan. (I ran out of coloured Jap about twenty years ago).

As the tailplane is a pretty light structure, I never used dope on it. Nor even water-shrinking. I preferred a few wrinkles to the



All the bits! Plenty of time to build a Doofa for Vintage Weekend...

sort of thing dope might have done. However, if you want to experiment... another tailplane is easily built.

Flying fun

Use the lightest line available. I used to use cotton thread, before everyone started using nylon monofilament. It had the advantage of providing a 'weak link' - if you towed too enthusiastically, or tried flying Doofa in too strong a breeze, the cotton broke before anything else. Today's 'cotton' all seems to be polyester, however, and is probably just as strong as nylon - but with more drag!

Test-fly Doofa on a calm day. After a few shoulder-height hand launches, and adding or subtracting small amounts of nose weight

In its natural element - Doofa flies stably, and likes lift. Don't forget your name and address - or dethermaliser!

for optimum glide angle, a towline launch can be tried. Unless there is absolutely no wind, there should be no need to run. Just a steady walk. If there is any amount of wind - be careful - it may be necessary to ease the tension by actually walking towards the model.

I used to trim my Doofas to 'wander' rather than circle (perhaps that's why I lost 'em!) but if circling flight pattern is what's required, then a wing-tab works better than offsetting the fin. (This should be angled 'up' on the wing inside the turn).

With the model balanced as shown, trimming for pitch adjustments - if necessary - can be made with 1/32in packing under leading or trailing edge of the tailplane as appropriate.

I often used to self-launch the Doofa, when there was just a whiff of wind drift, suspending the model from a foot or so of towline, and then 'kiting' it up, paying out the line from the hand-winch as I walked along. Backwards. You'll probably find you can't walk too fast backwards...

