

SECOND INNOVATION

SPORTING A NEW WING SECTION, A HANDFUL OF CONSTRUCTION ALTERATIONS AND A SET OF NEW HOLLOW-FOAM CORES, PETE TINDAL'S SECOND INNOVATION GETS THE DAVIE MATTHEWS TEST TREATMENT



Davie's Innovation, turned out in the colours of the French Dalotel, an aircraft which inspired Pete Tindal's original design.

Finished in Profilm, trimmed with 'pin stripe' from the local 'motor factor', and iced with Innovation graphics (as supplied in the kit).

Well, here I am again folks, back in the 'review seat' after what seems to have been quite a lengthy lay-off. In truth, this particular review has taken longer than usual, due mainly to the fact that, half way through, Helen and I got married. And as if that's not enough, we tied the knot on the same weekend as the annual May fly-in... no problem, except that I organise it!

Anyway, those amongst you who had the opportunity to visit Sandown this year might well have seen Dave Stephens flying in Pete Tindal's slot with his version of the 'Second Innovation'. Aptly named the 'Innovation Pro', there was nothing that Dave couldn't make it do. The

difference, so I understand, is that the 'Pro' has been lightened, by leaving out various parts of the kit (don't even go there unless you know exactly what you're doing!), and that the tail feathers are slightly larger.

Getting back to the non-pro

version, the model is loosely based on the French designed full-size 'Dalotel' aircraft, a model of which caused a stir here back in the 1970's after a Chris Foss scale competition win. Capturing the basic essence of this aircraft, Pete has adapted the design to produce a lookalike fun-fly version, just for us balsa junkies. So, let's see what you get for your money!

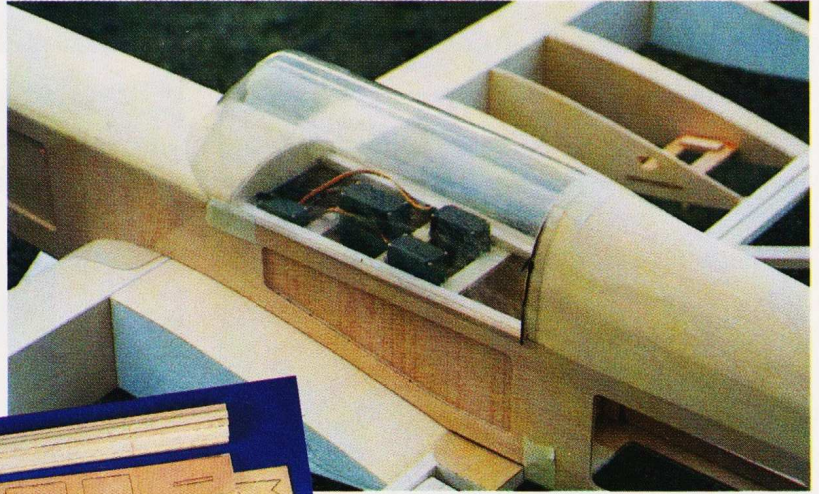
WEIGHTLESSNESS

Like all of Pete's kits, the Innovation is quite comprehensive - in fact, this box yields all but the engine, radio, and covering. Some of you may have read my review last year on the Innovation's even larger stable-mate, the 'Excitation'; well, as you'd expect, the two are very similar in both design and construction.

Second Innovation features a built-up wing, which includes a total of six veneered foam ribs. Construction begins with the two foam leading edges, which are glued to the balsa sheet spars; don't use cyano, unless you have the non-fuming verity - otherwise, you'll end up with a melted mess! Deluxe Materials R/C modeller's glue is my chosen weapon, used here to good effect.

By resting the leading edge face down on your building board, and attaching some ribs, the wing begins to take shape. Somewhat unorthodox - but hey, it works! Servo trays are mounted between liteply ribs, which in turn are positioned half way along each wing panel (a point worth mentioning here is that, depending on your choice of radio set

When it comes to motive power, they don't come much better than the O.S 91FX. This one's brand spanking new.



up, two servo extensions leads may be needed). Strength at the centre-section is provided by various pieces of 1/16" ply: one wrapped around the leading edge, and two pre-cut pieces placed on the upper and lower trailing edge surface.

A heap of square-section balsa is provided in this kit, the bulk of which is used for building the ailerons, tailplane, fin and rudder. Due to the nature of construction, these items go together very quickly indeed, although I must admit to having been slightly dubious regarding the nominal aileron width. However, I need not have worried, and my reservations were finally put to rest during the flying sequence.

The total wing weight, less covering, tipped my scales at just over one pound. Not bad for a 5' span model with a huge airfoil!

SIMPLICITY ITSELF

Second Innovation's fuselage is total simplicity, being made up from CNC, router-cut liteply parts. Again, veneered foam components are used to make up the curved top decking, whilst more liteply sheets complete the underside. Assembled as a left and right-hand pair, each side is fabricated from three main parts, to which 1/4" balsa strips are glued, top and bottom. These provide a platform for later attachment of the foam sections.

A further question, which once



undercarriage, and wing mounting plates. This being the case, I used 1/8" plywood for the servo rails, and added a plywood plate in the tail section, to allow for a better fixing of the supplied tail wheel. The liteply original would probably be okay, but only if you perform perfect arrivals each and every time (a superb flying site helps!).

One of my many building dodges is to cut-out all the slots

and cable runs before I cover a model; in this respect, liteply is an absolute dream to work

with. Out with the Permagrafit tools, plug in the Dremel, and it's done

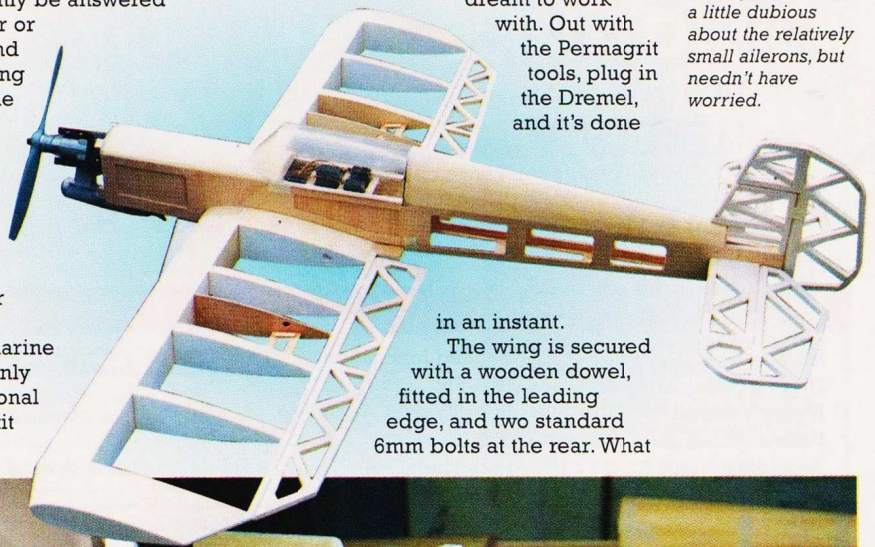
TOP RIGHT: Cockpit and centre-section, clearly showing the various braces and stiffeners. Note the inverted servos, protruding into the cockpit space.

Good use of CNC cutting, a smattering of veneered foam parts, and a quality bag of accessories make for a speedy build.

Assembled and ready to cover. Initially, Davie was a little dubious about the relatively small ailerons, but needn't have worried.

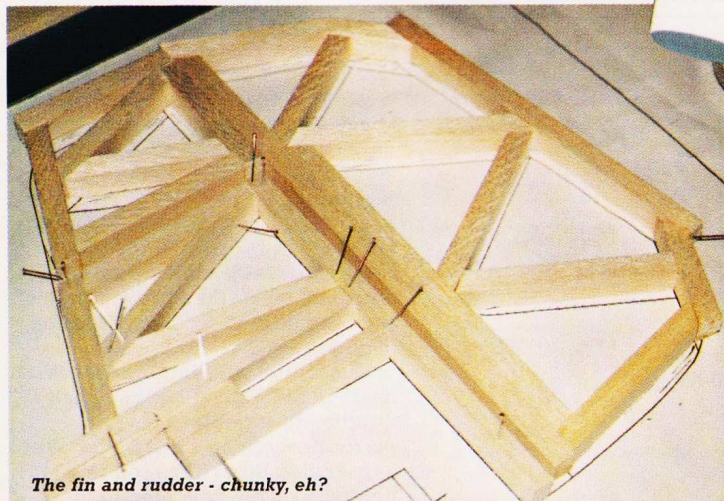
again could only be answered later, was whether or not the firewall and its associated fixing would be up to the abuse dished out by my chosen power-plant - an O.S. 91FX. Well, once again, I can testify that it is indeed more than adequate for the task.

Apart from a marine ply firewall, the only remaining traditional ply parts in this kit are the

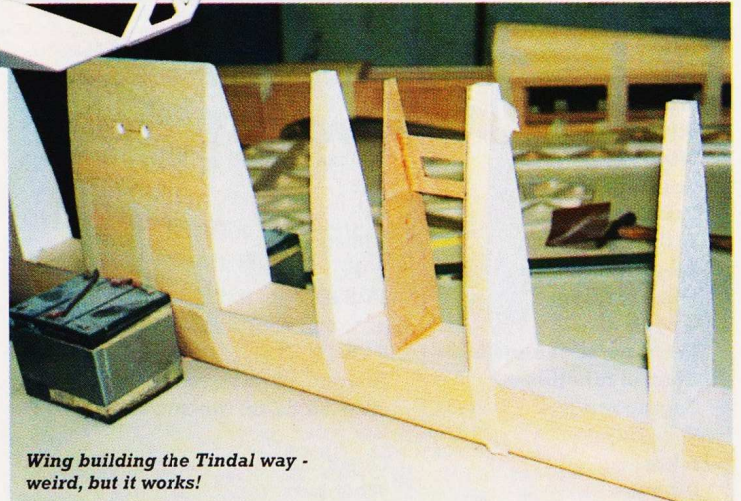


in an instant.

The wing is secured with a wooden dowel, fitted in the leading edge, and two standard 6mm bolts at the rear. What



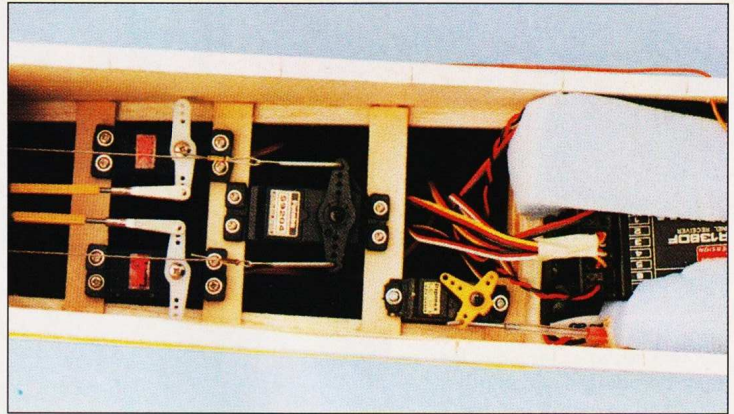
The fin and rudder - chunky, eh?



Wing building the Tindal way - weird, but it works!



A good tidy fit for both the cockpit and wing saddle.



TOP RIGHT: Yep, your not seeing things, that's one servo for each half of the elevator.

follows isn't necessarily recommended; however, I felt that one wing bolt was probably enough, and certainly a lot easier than trying to line up two on a frosty morning.

were used for the first few flights, and then rapidly changed for a pair of decent looking balloon type jobs.

As previously mentioned, the tail surfaces, fin, rudder and elevators are constructed over the plan, using the same material as that utilised for the ailerons. A thick, 'chunky' piece of balsa beefs up the tailplane centre-section, whilst doubling as a stiffener for the rear end, without adding too much weight.

THE GREAT COVER-UP!

You'll need a fair bit of film for this one, folks (you should have seen the look on my local supplier's face when yours truly, his favourite customer, turned up to place yet another order!). After much scratching of the head, I eventually chose to cover it 'Dalotel' style, i.e. with white and Cadmium Yellow. The red pin striping was acquired from a motor factory down the road, and the finishing touches applied with Pete's own graphics.

Radio installation, comprising six assorted servos, is easy, thanks to the copious amounts of room allowed for layout / C of G adjustment. Once my brand spanking new O.S. 91FX had been bolted on, complete with its 14 x 7" Graupner prop, it was time to check the weight; with a tank full of fuel, she came in bang on the nose at 7 lb. This gave a wing loading of 17oz. per square foot... which translated, means: 'a good fun flyer with ample urge from its 2.8 bhp powerhouse'!

Throws were set as recommended; however, having tested the Excitation and Baby Boss in the past, experience told me to programme rates at least double these values for some real flying fun.



As always, the proof of the pudding is in the eating, and so far, I've yet to break it! If I have one gripe with this kit, then it would have to be the wheels... yuk! In the interests of an accurate review, they

DATAFILE

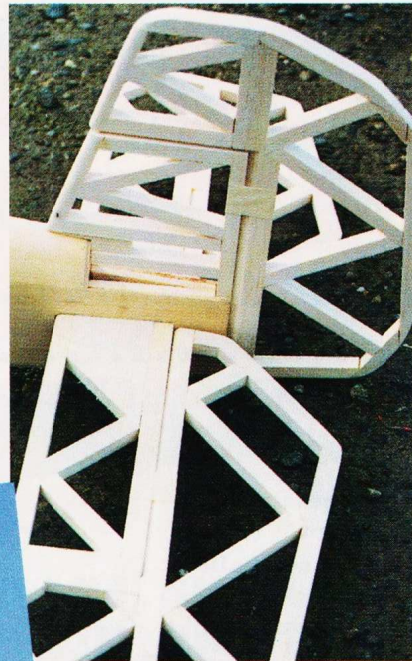
Name:	Second Innovation
Aircraft type:	Fun-Fly
Manufactured by:	Pete Tindal's Airplanes
Price:	£70.00
Available from:	Pete Tindal's Airplanes, Roselea, Fen Lane, North Ockendon, Upminster, Essex. Tel. 01708 852899. Fax. 0956 469639, E-mail: airplanes@petetindal.freemove.co.uk
Wing span:	60"
Wing chord:	15.1/2"
Wing area:	930 sq. in. (6.45 sq. ft.)
Fuselage length:	55"
Tailplane span:	24"
Tailplane area:	168 sq. in.
All-up weight:	7 lb.
Wing loading:	17.3 oz. / sq. ft.
C of G:	4" from l.e.
Rec'd no. of channels:	4 - 5
Control functions:	Aileron, elevator, rudder, throttle, optional flaps
Engine range:	.60 - .90 cu. in. two-stroke
Likes:	Looks, size, prop-hanging ability
Dislikes:	Wheels

HANG AROUND!

Once again, the Langford Lodge MFC site near Belfast was chosen as a suitable test flight venue. I was accompanied on the 500 mile round trip by... yes, you guessed it... my old mate Aiden. That man will never learn! Check out his web page at: <http://homepage.eircom.net/~duffys> to see what I mean.

To cut a long story short, we got to the LLMFC site early in the morning, and set up our models for the day's activities. I had previously run two full tanks of 'go juice' through the 91, so we were ready to go without too much delay. Up she went, with a stunning take-off, and an explosion of power - WOW!

This model will, and I repeat, WILL, hang on the prop at less than half throttle. However, for best performance, a 16 x 5 is better. With unspecified throws, the roll rate is lightning quick; switching to the



FAR LEFT: As pilots go, our Davie is up there with the best of 'em. If he like it, then it must be good!

Tough but lightweight, the tail end seems quite capable of putting up with all the abuse Davie can throw at it.

If you like fun-fly models but want a little something extra, you'll just love the Innovation, it really is a cracker. Fit a .90 and she'll hang on the prop at half throttle.

recommended settings produces a similar result - pretty impressive. The stall is very forgiving, and this model could probably be used as a trainer.

Second Innovation has a lovely, incredibly long glide, and the thick wing section will allow you to slow the model up to a standstill in the lightest of breezes. This, of course, means that landings are simply easy peasy. For best



performance, I've got the throws set as follows: 60° on the elevator, 50° on the rudder, and around 45° on the ailerons, with 40% expo on all

functions. For ultra-tight loops and better control in the prop-hang, I use flap mixing, whilst the C of G is set about 1" back from the recommended position.

Do take care if you intend to fly using this set-up as, to be honest, the initial trimming period is a little like taming a wild stallion on six pints of Red Bull! The great thing is, once you've calmed down and managed to control yourself on the sticks, Second Innovation is a totally fun machine to fly. Get one, and get inspired.