

TOP FLITE STINSON RELIANT GIANT PRODUCT REVIEW

by Phillip S. Kent

In the late 1950s and early 1960s I was a regular reader of the American magazine, Model Airplane News. Over a period of several months the magazine featured a series of scale drawings by William Wylam of the Stinson Reliant. The series started with the straight wing SR-5 models and ended with the classic "Gull" winged SR-10. At the time the drawings were some of the best that we had seen in model magazines with an enormous amount of structural detail, typical colour schemes and lots of dimensions. I was convinced that I could use the drawings to design a good quality radio controlled model and started collecting more information about the Gull Winged series of aircraft.



These dreams were somewhat shattered when I discovered, quite by accident, some more, and in my opinion, better drawings of a Stinson Reliant SR-10 in a 1976 Model Airplane News magazine. The drawings, by Kenneth Wilson were not as detailed as the Wylam ones but they had been made from measurements taken from the featured full-size aircraft. There were some differences, the stringer positions above and below the fuselage being the most obvious. The article included photographs and drawings of a restored SR-10G, NC 21135 in American Airline livery. Full colour details of the aircraft were included on the drawings with paint reference Randolph Numbers. All the information had been taken directly from NC 21135, enough I thought, to build the model of my dreams. At about the same time that I came across the SR-10 article I also obtained some 1:5 scale Richard Barron drawings of the SR-9. With some alterations the model drawing could have been used for the SR-10, but like many other good intentions, it never happened. The dream of building one of the Stinson Gull Wing aircraft was reborn when I saw photographs of the prototype Top Flite kit model of the SR-9 in this magazine about a year ago. During a conversation with the editor he asked if I would he consider the review, as he knew I was interested in this type and era of model. There was only one answer!

First things first

The first thing I did when the kit had arrived was to read the instruction manual and I came to the paragraph about the scale accuracy of the model. "The Top Flite Reliant SR-9 is a faithful reproduction of the full-size aircraft, with a few exceptions". The statement worried me and I read on. "The tailplane area has been increased by 9% to improve pitch stability". This was disappointing and not what I had expected because I had hoped to use the model for F4C competitions and it had to be spot on. I got out all my Stinson drawings and other information and I started checking the model for other possible inaccuracies. There were 16 ribs in each wing on the model and 23 on the full-size aircraft. The undercarriage legs did not fit into the spats at the correct place, and the rudder mass balance was too small. I was now having grave doubts about the suitability of the kit for my needs but I realised that the model could be completed for stand-off competitions or just pleasure flying, and that is, in fact, what the kit has been designed for. One of my friends, Fred Keegan, said he would be interested in helping me to do the basic airframe construction. We decided that there would be no mods to improve the scale fidelity of the model. Fred had built several Top Flite kits before and knew the speed with which they usually go together.

The Top Flite Stinson is a big model with a span in excess of 100". The instruction booklet quotes a weight of between 16 and 25 lbs. for the model and suggests engines of up to 32.6 cc two stroke, 26.2 cc

four stroke, and 35 cc petrol engines. I chose to use my reliable Laser 150 four stroke for the review model. The large kit box was brim full of top quality balsa, bass, and plywood. There was a substantial number of very well produced die-cut components in both ply and balsa and several sheets of vac-formed parts for the cowl, spats and cabin top. I was quite surprised to find so many die cut parts as had got the impression that all today's kits used laser or router cut components. It is only fair to say that the die-cutting in this kit was absolutely superb with only the minimum amount of work needed to remove the parts from the material sheets. The laser cut plywood parts were as I expected, accurate and easy to remove from the backing sheets. There was a comprehensive hardware pack that included all the fastenings needed for the model. These were again of a good quality but were in American sizes which necessitated the purchase of matching Allen keys to suit, later in the construction sequence. It is suggested that high-torque servos are used for the major control surfaces. When you consider how inexpensive servos are today, it's a worthwhile suggestion.

Wings and tail

Top Flite have designed the model so that modelers with limited building experience can expect to have reasonable success for their outlay on this kit. I would not recommend a raw beginner to buy one, but the instructions are very thorough with lots and lots of photographs that help in difficult to describe situations. To get builders off to the best possible start, construction begins with the tail unit. This is a relatively simple structure that uses a mixture of core and simple built up stick construction. The wings are built next and are some of the most complicated that I have seen on a kit model. The root ribs are quite slim where they fit up to the fuselage but then the section thickens out to a maximum after a short parallel run before tapering in both plan form and in thickness towards the tip. The designers have however gone out of their way to make this as simple as it can be by using jiggging and packing pieces wherever possible. As well as the unusually complicated shape of the wing, there are ailerons and flaps to accommodate within the structure and a sharply rounded wing tip. It was when weighing up the aileron construction that we came across the first error on the drawing. For the experienced modeler it was perhaps something that would be overcome without too much thought. The aileron hinges were shown in positions parallel to the wing ribs, not at right angles to the aileron hinge line. If mounted as drawn, the ailerons would not be able to be operated and would I am sure, cause a lot of problems for the novice builder.

The way that the wings are mounted is very clever indeed as it does away with the need for working struts. A 1" diameter aluminium tube slips into cardboard tubes in the wings and fuselage. Steel bolts from inside the fuselage structure into captive nuts in the wing roots hold the wings in place. This was fine at first on the review model but when one of the captive nuts dropped out I had a major problem. Unless I cut open the wing covering there was no way that I could get the captive nut back into position. As a last resort before cutting, I tapped out the plywood mounting block and used a larger diameter bolt. The aft bolt fixing position for the wing was in the wrong place on the drawing too. They had to be moved when it was found that one of the formers was in the way. Getting back to the wing construction, they are more or less built up before any glue is applied. If you follow the instruction booklet to the letter you will have no problems, glue when told. When the wings were finished I found the trailing edges too thick for my liking. The full size aircraft has a sharp trailing edge and I was not satisfied with the almost 1/8" thick ones on the model. With a lot of hard, careful sanding I was able to reduce this to a more reasonable 1/16" that looks much more realistic.

Fuselage

The fuselage is basically a box with formers and stringers. It is however, a little more complicated than that. First of all the formers have to be assembled from the die-cut parts and strip wood, then the bottom part of the fuselage is built up directly over the plan. There is a great deal of bracing, some of it temporary, involved in the structure, but it's strong and accurate. The bottom part is then removed from

the board and the top formers fitted followed by the top longerons and stringers. The portion of the fuselage that is built first runs from the leading edge of the wing to the leading edge of the tailplane. The nose portion of the fuselage is again a box with the sides being from two laminations of lite ply. The ply sides key into position, again helping the builder to produce an accurate structure. I found it unusual to have the side thrust built in to this nose portion of the fuselage as it is noticeable when the model is finished. The rear end of the fuselage that carries the tail plane is again from lite ply. The ply parts align with the rear former and bottom longeron, again a simple and accurate technique. The box is then finished off by adding stringers and balsa sheeting. The whole nose area is sheeted along with the underside of the fuselage back to the rear position of the door. The side sheeting however continues to include the window area aft of the doors. In order to have access to the wing bolts both doors are working units. The openings also give access to the radio gear that can be located in the cabin area. Full instructions are included for both making the doors and the fastening latches.

Landing gear/engine

The landing gear, from pre-bent aluminium sheet, is bolted onto plywood plates that are attached to the fuselage box. During construction, this seemed to be a reasonable method of fixing the undercarriage, but when I came to fly the model it gave much cause for concern. The aluminium legs are faired with plywood to give them the required shape and vac-formed fairings are added round the fuselage/undercarriage joint. The large wheel spats are also vac-formed units that work quite well. Another vac-forming is used on the SR9 version for the cabin top and this certainly helps in creating this complicated part of the fuselage. I mounted the Laser 150 inverted on beech engine bearers with the fuel tank in a box aft of the firewall. The cowl is again from vac-formings and although many modelers prefer GRP cowls, the one on the model has been excellent. I also fitted the suggested dummy engine and this too has proved to be just fine.

I used a combination of Polytex and Solartex for covering the model. Both are heat shrink, iron on, fabrics and both are ideal for a model of this size. I had decided to paint the model in U.S. Army wartime colours of olive drab and light grey. I had some olive drab cellulose left from a previous model and I thought that it would make the model look a little different from ones with the more usual civilian colour schemes. The national insignia was masked off with low tack masking film and the colours were sprayed on. The model was then given a good coat of two pack matt fuel proofer.

Flying

The model was test flown just before the Traplet Scale Weekend meeting at Old Warden. I might have had some doubts about the accuracy of the model but there were no doubts about the flying qualities. The model did require quite a lot of up trim before I got it flying straight and level, but once that was sorted out the model was a delight to fly. I did have an embarrassing moment at Old Warden when landing the model. The engine had stopped as the model was making its final approach and I needed to extend the glide to get back to the landing strip rather than land in the rough. I just managed to do this but bounced the model as it ran out of air speed, removing the port undercarriage leg complete with its ply mounting plate. This was rather worrying but I reasoned that 181b models will break things if not landed properly. The repair took only a day, but it did make me think that a sprung undercarriage, similar to the one employed on the full size aircraft, might be a good idea. This case for a pivoted working undercarriage has been reinforced after further flights. The model is so easy to land accurately, but due to the movement of the undercarriage when it flexes outwards the joint between the plastic fairings and the fuselage are in constant need of slight repairs. The flying characteristics are, however, superb. I am still flying the model with about 3/8" of up elevator trim even though the centre of gravity is in the correct position. This would not look too bad but for the fact that the elevators have a mass balance area forward of the hinge line which accentuates the up trim.

Conclusion

If you are looking for an big impressive looking scale model that has excellent flying characteristics this could be just the model for you. The materials in the kit are first class and apart from the two slip ups with the aileron hinges and the wing bolts, the model goes together just fine. It has obviously been designed so that modelers with limited experience in the building of scale models will be able to produce a model that looks like the real thing. I would however recommend some modification to the undercarriage, perhaps a look at how it was done on the full size aircraft would be a help. For the modeler who wants to spend more time finishing off the model there are a couple of extras that might be of interest. I mentioned earlier that I fitted a dummy engine and I must say that it did improve the look of the model. It is a vac-formed unit that fits neatly into the cowl although it was intended for the large Top Flite Corsair. The other item is a cockpit interior kit specifically for the Reliant. In this kit is a full set of seats and a dashboard with instruments, the icing on the cake you might say. Both items are easy to assemble and simple to fit and do add to the quality of the model. To sum up, this is a simple and attractive model, ideal for the modeler who wants a scale model that looks like the real aeroplane but is not necessarily 100% accurate. The quality of the materials could not be faulted and the flying characteristics are great. The kit model has one or two items that could be improved, as explained, never the less, many modelers, like I did, will find the classic lines of the aircraft irresistible.

Model Specifications

Scale: 1:5

Wingspan: 100.5" (2550 mm)

Weight: 7.26 - 11.3 kg

Engine: 17.5 - 32.5 cc two-stroke. 19.5 - 26 cc four stroke or 1.5 - 2.0 cc petrol

Price: £349.99.

Cockpit kit: £29.99.

Available from your Great Planes dealer in the U.S. and Ripmax stockist in the UK.

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