

Wrinkly Bottom Flyer



Stable and forgiving - ideal qualities for any sport model



When Ron Bishop last did the washing up he didn't just come away with clean Marigolds - oh no! Give a modeller a dirty saucepan and he'll turn it into an aeroplane for sure. Writing from the sun drenched beaches of Alicante, Ron explains the true inspiration behind Wrinkly Bottom Flyer and guides us through the construction

After an enjoyable flying session one Sunday last September, the Wrinkly Bottom Flyer was conceived in an attempt to get certain of our club members away from the idea that trainers and sports planes should be able to withstand accidents by building them hefty. Many seemed to believe that using large chunks of balsa, reinforcing with plywood and glass fibre and mounting to an undercarriage more suited to a Boeing 747 was the way to go, providing that you fitted the largest engine it was possible to shoehorn in to get the whole lot off the ground. Having cut my teeth on free flight models in the

1940's and 50's I tend to take the view that a plane is likely to survive a lot longer if the weight is kept down thereby keeping the flying speed down and making 'arrivals' a much less traumatic affair. With this in mind I sorted through the materials I had in stock (my nearest model shop is 60 miles away) and found sufficient material for a suitable size model for a new OS 25 which had been recently acquired and run-in on the test bench. I also had in stock a very light tin saucepan, which, with cowlings in mind, I had purchased some weeks earlier at the local market.

Bottom building

So, the size of the front former was decided for me and from there on it was just a case of 'keep it simple - keep it light'.

If it looks right it will probably fly right! Starting with the fuselage, construction follows the traditional method and should be well within the capabilities of anyone who has had some experience of building model aircraft. Using 1/4" sq. medium balsa, start by building two identical fuselage side frames directly over the plan. For the benefit of anyone putting their faith in my design and building the Wrinkly Bottom Flyer, there is the obligatory reminder that when gluing the two ply doublers to the fuselage side frames you do need to ensure that you have one left side and one right side. I used 5 minute epoxy for this step - strong and quick! From here on, it's plain (plane?) sailing. When set, stand the fuselage side frames vertically and form the traditional 'box' fuselage using a

Ron is now the proud possessor of an Aircraft Company, complete with aeroplane and company merchandising.

combination of F2 and eight horizontal cross members (three at top and five at bottom) Add the ply fuselage floor and formers F1, F1A and F3. Pull in and glue the rear of the fuselage, fit the remaining cross members, then add the top decking stringers. Drill the 1/4" ply front former for the engine mount, throttle control and fuel tubes. Fit captive nuts for the engine mount, then epoxy the former to the front of the fuselage. Fit the throttle control outer, fuel tank and plumbing, then sheet over the top nose decking with 3/32" sheet. Fair in the sides from the engine mount former back to F2. Epoxy the undercarriage block securely in position and fit the tail wheel assembly. Now would be a good time to fit the elevator and rudder snake 'outers'. The tail surfaces are built directly over the plan and need no explanation.

Flat bottom wing

Like the tailplane before, the wing is built flat on the plan, in one piece and with ribs cut away where appropriate for the plywood braces. For simplicity the centre section ribs are not cut undersize hence the sheeting goes straight over the leading and trailing edges and is lightly sanded to fair it in a little. Cut out the lower centre section sheeting and fit a servo box to suit your equipment. The inboard ailerons, although perhaps unusual, are quite effective, however, for the more proficient pilot wanting an increased roll rate, I would suggest they be extended to the end rib - the choice is yours.

The bottom end

Having drawn the plan on Monday and with all the requisite bits and pieces to hand, the urge to know 'how' or even 'if' it would fly was upon me and all commitments for the week were promptly forgotten. On Tuesday I took up residence in my workshop, only emerging from time to time for meals and to assure my long suffering wife that I was not going to sleep in there. By Friday evening I was the proud possessor of a smart little plane all neatly wrapped in Antique and Blue Solartex. On Saturday morning I fitted the servos and gave it a coat of thinned down polyurethane varnish to have it ready to fly on Sunday.

Bottom's up!

The Gods must have been smiling on me. Sunday dawned clear and sunny with just the merest hint of a breeze from the South (perfect for our site). After loading everything into the car I had a worried ten minute drive to the field. Would it work? And worse, would I have to eat my words? What if I wreck it on its first flight? Do all hobbies relax you to this extent?

On arrival at the club field I set out the flight box and assembled the plane while three or four of our Spanish members looked on trying to decide amongst themselves whether it was a kit or some obscure scale model or what? Having explained that it was my own design and how it had come about, it was jovially suggested that a plastic bag might be a handy item of equipment. I offered up a silent prayer that I wouldn't need one and pressed on.



Whether you dress it up scale or let your imagination run wild, the Wrinkly Bottom Flyer will look good in any scheme.

Bench tested and ready for action, Ron's O.S. 25 nestles nicely in the cowl.



Now here's a pensive looking chap if ever there was one! With a pilot and a few accessories it wouldn't be a million miles away from a certain First World War machine we could mention.



So impressed were Ron's club mates with the design, three members have since built one and they love it. The model is shown here during fun-fly day and is fitted with an egg release attachment!!

With the range check completed and another check to ensure that all the controls were still working in the right directions, it was time to start up the noisy bit. With 5% nitro fuel and a 9 x 6 Master prop. the OS sprung to life at the first spin of the starter and after a few adjustments to the needle we were ready. I could not think of any excuse to delay the next step and so taxied the plane out to the strip. Last control check completed, nothing left to do now but open the throttle and pray! With just a touch of right rudder to keep her straight she lifted off in about 30 yards. A little up elevator to climb out, two clicks of right aileron and there she was steadily climbing, straight as a die. A gentle bank to the left to circle round the field and down to half throttle. At this point my hands stopped shaking, my heart beat slowed down and I could relax a little. After a few circuits to get the feel of the controls I tried a loop - fine - no tendency to roll out so I did it again just to show off. The roll rate was fairly slow and without any rudder correction finished a whole lot lower than it had started. No doubt I will get the hang of it one day! Full throttle again and a half loop, into inverted with a lot of down elevator to maintain level flight yet still enough authority to climb in that attitude. Not wishing to push my luck to the point where the bicycle clips became operative, I decided that it was time to land so throttled back and brought her in. She floated slowly down and with very little assistance from me settled gently on the strip. It occurred to me at this point that it would have been a good idea to check the stall before making that first landing but as I said before, 'the Gods were smiling on me'. Subsequent flights have shown that in the stall there is a tendency for a wing to drop but recovery is very quick and, unless the plane is

very low indeed, it is not likely to be a disaster.

Having now had many flights the model has become a firm favourite of mine. I almost always take it with me together with whichever of my other planes I decide to fly. To my surprise and great pleasure, three of our club members (one Spanish and two British) have now built copies, albeit with their own minor modifications (i.e., longer ailerons, different motors etc.) and at one time we had three of them in the air together. I'm sad to relate that one has since succumbed to a serious case of radio failure and there were not many large pieces left but then again I doubt if any of the beefed up flying bricks would have survived the impact either. Naturally some of our members are still flying their heavy fast projectiles and seem to be enjoying

every minute of it. I must confess that some of my own models are pretty heavy and a little faster than I would like, so who am I to criticise? It would certainly be a funny old hobby if we all built and flew the same sort of models. 'Viva la Diferencia' as they say here!

On a final note, should you be wondering about the name, the 'Wrinkly Bottom' part could be because I am the oldest member of the club. Then again it could be the effect that my flying sometimes has on me. In any case, the 'Wrinkly Bottom Aircraft Co.' is a firmly established part of my life and with the 'Factory' at the bottom of the garden and the flying field only ten minutes away, what more could one ask? ●

D A T A F I L E

Plan Specifications

Name	Wrinkly Bottom Flyer
Designed By	Ron Bishop
Aircraft Type	Shoulder wing sportster
Wingspan	60 1/4"
Wing Chord	7 3/4"
Wing Area	446 sq. inches
Fuselage Length	37"
Tailplane Span	17 5/8"
Fin Height	8"
Engine Range	.25 cu in. or equivalent
Rec. Number of Channels	Four
Control Functions	Rudder, elevator, aileron, throttle
C.G. (from L.E.)	1 7/8"
Elevator Throws	1" up - 1" down
Aileron Throws	1/2" up - 1/2" down
Rudder Throws	1" either way