Vickers Wellington

TONY NIJHUIS TAKES THE RARELY-MODELLED MEDIUM BOMBER TO THE MAX

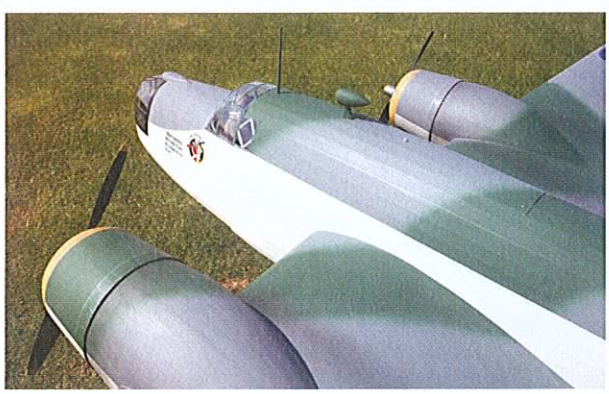
A beautiful model that you'll delight at seeing out and about at the shows this summer.

As W.W.II progressed the Wellington was overshadowed somewhat by the heavier bombers, notably the Halifax and Lancaster, but at the beginning of the war it was one of very few bombing weapons Bomber Command had at its disposal. Often affectionately referred to as the 'Wimpy' (after J. Wellington Wimpy from the Popeye cartoons), the Wellington was the first bomber to attack Berlin, the reaction to which saw the Luftwaffe turn away from attacking Britain's beleaguered fighter stations to retaliate on British towns and cities. Ultimately this gave Fighter Command time to recover and continue the battle.

The Wellington also saw action as a night bomber, and in a maritime role with Coastal Command it proved to be a very effective anti-submarine aircraft. The last example was completed in the autumn of 1945, and after the war Wimpy's served in a search and rescue role for a number of years.

A slight variation on the Coastal Command colour scheme was used to great effect.

The general level of detail in the turrets is superb and very necessary as, like cockpits, they're a magnet to the casual onlooker.



PEER PRESSURE

In modelling terms the Wellington again seems to be overshadowed by its more evocative peers; you don't see many around. However, I've had a love of this aeroplane for 15 years, and this is the second Wellington I've designed. Back in 1990 my first incarnation was a 65" version for electric power, which at the time was a real challenge. But so successful was this model on its (early) 400 brushed motors and 1200 SCR Sanyo cells, it cemented my belief that electric power was the only way to go, and that advancing technology was only going to improve things.

Despite my unreserved affinity for all things electric, sharp-eyed readers examining the accompanying photos may have noticed an exhaust pipe or two and carburettors poking from the cowls... so have I become a hardened petrol head all of a sudden? All will be revealed later!

NEW BEGINNINGS

The design of this Wellington started as a commission from Tony Hooper, Chief Safety Officer of the Large Model Association (LMA). Tony

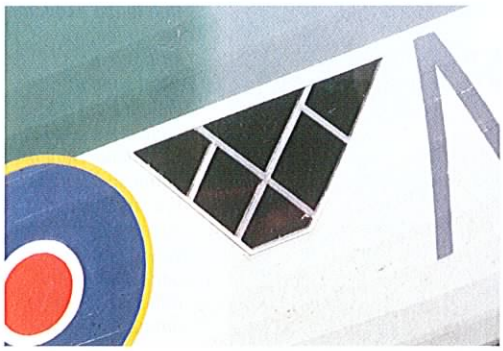
Due to the geodetic construction, stringers could often support weight from the opposite side of the aeroplane. Hence, battle scarred Wellingtons with huge holes in them would often limp back home when other planes might not have survived.

wanted a 21' model designed, and CNC-cut parts made available for him to build as a winter project. As the Wellington was a particular favourite of mine there really wasn't much convincing involved.

I decided to build a smaller version to test the design before risking a 21-footer, and were I sensible I would have settled on a nice 70" (1.8m) version for electric power. Being sensible isn't really my thing, however, so I 'upped the ante' somewhat and settled for 13' span, which came out to around $^1/_5$ scale; curiously the same scale as my 17' Lancaster. As a consequence the front and rear Lancaster gun turrets would fit the Wellington a real treat... I'm always looking for short cuts in the building process, don't you know!

The target weight was designed to come out at well under 20kg (44 lb); the significance of this being that if a model weighs over this then it has to go through the CAA / LMA over-20kg approval scheme, which means airframe checks, double redundancy with the on-board radio system and a series of 'behind closed doors' flying tests before the model is pronounced fit for public events.

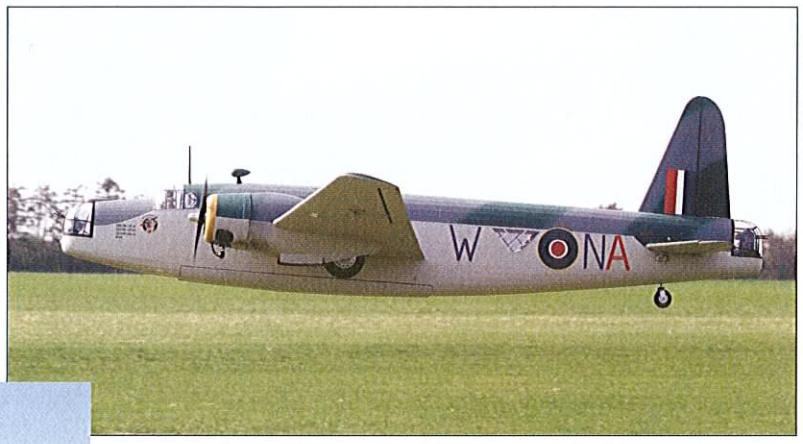
Tony's current set-up allows for flights of more than 30 minutes at a time. Which is just as well because she's a lovely aeroplane to fly. "Lightly loaded and very trainer-like."



Unusually, nylon has been used to cover the airframe, rather than one of the proprietary heat-shrink products. "Nylon is far less temperamental in extremes of climate," says Tony.

Quite a procedure which, if can be avoided by keeping under 20kg, makes life easier.

The original plan was to build my version for electric power, which meant 60 plus batteries (30 per motor) and a pair of the largest AXIs and speed controllers I could lay my hands on. The build finally started in early October 2005, and if I'd put all my effort towards it then it would have been finished before Christmas. However, designs for a



TOP RIGHT: Amazing attention to detail. Tony went the whole hog and built a geodetic structure into the airframe, rather than settling for strips of 'crisscross' tape after the covering stage. As you can see, the effect is utterly convincing.

A pair of ultra-reliable Zenoah petrol engines power this one and, as Tony points out, he's not beholden to a battery charger every time he fancies a flight.

new 72" Lancaster and a Dogfight Double Corsair / Mitsubishi Zero got in the way (look out for these in forthcoming issues of *RCM&E*).

ALL CHANGE!

Eventually, work on the Wellington progressed, and things were going swimmingly until February when, at 90% complete, I had a sudden change of heart. Having experienced the large electric Lancaster for almost two flying seasons and seemingly becoming a slave to a charger that told me when I could and couldn't fly, I decided I was going to enjoy this model and fly it on my terms: just fuel up and go. The other reason that tipped the balance away from electric power was the cost, which would have topped the £500 mark, minus the batteries!

Not having dabbled with petrol engines for some years, I ordered a couple of Zenoah 26s and proceeded to beef up the nacelles and remake the engine mounts. I was soon reminded that an i.c. engine installation isn't as simple as electric; space for the fuel tanks had to be found, throttle servos and linkages had to be added, and a lot of holes had to be cut in the cowl for exhausts, carburettors and spark plugs. Despite this diversion the model was ready for covering by early March.

BODY BEAUTIFUL

The fuselage was built as an open framework in two halves (left and right) that were then joined together before adding 6mm square balsa stringers across the formers. Because I hadn't notched the formers to accept the stringers, locating them and achieving a true, straight line along their length did prove time consuming. Also, because the stringers were only glued on one edge, they regularly got knocked and became broken or un-stuck. I overcame this frailty by lining the inside edge of the longerons with another length of 6mm square balsa between each former. As you can imagine, gluing some 300-odd extra pieces was really a gut-wrenching experience that absorbed a week of evenings, and one that I would rather forget. In hindsight what I should have done was to sheet the whole fuselage in 3mm balsa (which would have given the rigidity) and then use 6mm x 3mm strips to achieve the effect of the raised stringers over the geodetic construction. You live and learn!

The full-size Wellington was constructed using a 'criss-cross' geodetic structure (a system originally conceived by Barnes Wallis for use in airships) and fabric covered. The geodetic pattern was noticeable through the fabric, particularly through the wings, fin and tailplane. If you're going to build a Wellington then it's really worth going that little bit further and featuring this detail. It could be done after the covering stage with strips of criss-crossed tape, but I decided to incorporate the effect into the airframe. This was done by building the wings, tail and fin as a

Made to specification by Tony Goodyer at Unitracts, these retracts and oleo legs are another example of the model's class.

Tony is evidently proud of his 'Wimpy' build, and who can blame him? She's a corker.

conventional ribbed structure, fully sheeting the wing with 2.5mm balsa and then applying 1.5mm x 10mm wide strips of balsa over the sheeting. The strips going in one direction were laid first, parallel spaced 40mm apart. With this completed I began the difficult bit of producing the crossing effect - achieved by cutting literally hundreds of balsa strips 40mm long and gluing them between the parallel strips. Not a job to be taken on lightly, but the overall effect is definitely worth it.

COVERING

As the model was effectively an open framework, covering on this scale was going to be limited to either Solartex or Nylon and dope. Not being a great fan of Solartex on scale models because of the wrinkle effect in warm weather I elected to go the Nylon route, which first meant treating the structure with sanding sealer. This allows the Nylon to be put on 'wet' without the airframe absorbing the moisture, and gives you time to smooth out the wrinkles. The edges are then sealed using dope, and allowed to dry. As the wet Nylon dries it actually shrinks, resulting in a surprisingly taut, drum-like finish. I was so impressed with this that I decided to use non-shrinking dope thereafter, and with three coats the Wellington was ready for painting.

When it comes to colour schemes I like to be a little bit different, so I decided to do a slight variation on the Coastal Command colour scheme, which I hope you agree does give it that touch of uniqueness. I used Flair Spectrum paints: dark green, dark grey and light grey, with 50% matt white added. All the decals were hand painted, and the nose art was pulled off the web as a .jpeg file and printed onto clear, self-adhesive film.

Retracts and oleo legs were made-to-measure by Tony Goodyer at Unitract; a superb system designed by a talented engineer. To control the model I fitted two receivers and two sets of Rx batteries, splitting the system so that one Rx operates one aileron and one elevator whilst the second Rx operates the remainder. The idea of this is that should one Rx fail then you can effectively retain half the control of the model and avoid an uncontrolled crash – that's the theory, anyway! There are five main controlling servos, each rated at 8kg torque, whilst six auxiliary Futaba 148 servos do the rest.

The workman-like Wellington is reported to have been a tough old bird that could take quite a lot of punishment and still bring her crews home safely.