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RAF RTTL 2762 E

by Rowen

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13th Feb 2021

RAF RTTL 2762 E

Decided to build a model of an RAF Rescue and Target Towing launch (RTTL) as my next project. Spent much of the winter and Covid lockdown period working on this 1:24 scale model. As the build closely follows my earlier Brave Borderer project, will only describe significant differences or areas of interest. The original vessel was designed and built by Vosper in the U.K. for the Royal Air Force in the early 1950s.This Mk 2 RTTL version, was eventually powered by 2 x Rolls-Royce Sea Griffon engines (the Griffon, although a similar style engine to the Merlin, was not a development of it). The one I chose to model was 2762E. This originally had an aluminium plated hull and was built for experimental purposes to evaluate this feature. The “E” in the pennant number depicts “Experimental”. The R.A.F then realized it already had a 2762 vessel, one captured from the Germans! She was renumbered as 2772E. In service it was found the aluminium sheathing corroded quickly in the salt water. She was then resheathed in double planked mahogany, just like her sisters. The pennant number then also became plain 2772. In the original guise this hull was both lighter and had a smoother surface finish than usual, so was capable of over 50 knots. The standard vessel topped out at around 47 knots. Planned to use a glass fibre hull. The smoother surface of GF would more closely replicate this particular vessel and would thus give an ideal opportunity to capture a unique period in her life. Also wanted to capture a version with the low engine room hatch, although 2772 was later converted to the raised glazed version.

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22nd Feb 2021

RAF RTTL 2762

Purchased, about this time last year, a glass fibre hull from MTBHulls. Have used their products before and been very pleased with them. Prefer to use GF hulls on these faster models are they are so robust. Proceeded through the Spring and Summer to fit the twin-screw brushless drivetrain, so it could be thoroughly tested before the deck was installed. Have found, through bitter experience, this is the easiest way to commission a brushless motor installation. It allows much better access to adjust or replace components. My caution proved well founded! Obviously, running on open water without a deck runs the risk of the model filling and sinking. To address this, fitted inside the hull old plastic water bottles and some air-filled sealed plastic bags usually used for protecting fragile shipments. Had earlier calculated the buoyancy given by these items, so it did exceed the hull weight. On the first runs, found the Turnigy water cooled brushless motors leaked water heavily. Possibly exacerbated by the pump circulated water-cooling system. This is evidently a well-known problem and even described on YouTube! Fortunately, easily cured by applying sealant to the area around where the wires emerge. Access was too limited to do this in situ, so removal and bench repair was the easiest approach To be continued

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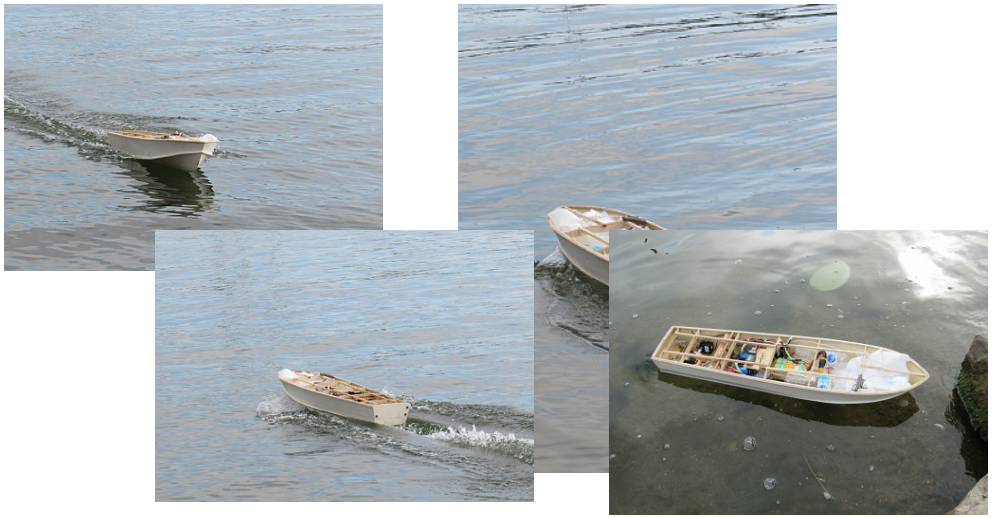
1st Mar 2021

RAF RTTL 2762 E

The next problem was both Turnigy ESCs burnt out! Not simultaneously, but in quick succession. Have no idea why. They were well protected by fuses and generously sized for the motors and screws. Anyway, HobbyKing refunded the purchase. Obtained two more ESCs, but this time from Banggood. Had several premature Turnigy failures last year; time to try something else. The Banggood ones worked straight out of the box. They do not require programming and operate simply in Fwds or reverse; no beeps, punch mode, throttle setting or other complications. Just as well as my Turnigy ESC programming card had, by now, also failed! These ESCs are basic and do not have a low voltage alarm or cut-off. When using LI-Po batteries it is essential one be added to protect LiPo cells from inadvertent full discharge damage. Once these ESCs were installed was immediately impressed at the improvement in control. They could be fully modulated from the Tx lever. The Turnigy ones were much coarser and the hull could not be safely docked, it can now. The drivetrain trials and tribulations were resolved, the model sailed well throughout several runs. It is not as fast as the Brave Borderer, but with only two screws it is lighter and easier to control. It also planes easily. Although the original vessel had twin screws that rotated in the same direction, decided to cheat and install contra-rotating screws. Experience with the Brave B. steering shows it is sensitive and felt this might make the model more predictable and also reduce any “digging in” tendency on turns. Quite enjoy running a bare hull as it is not susceptible to minor damage. All marks can be cleaned off during the build programme. Parked the model for the onset of the winter, when will complete it. The pictures show the final tests in Hamilton Harbour.



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21st Apr 2021

RAF RTTL 2762E

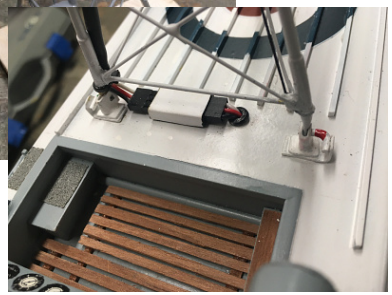
Should have explained, these are outrunner motors and used them because of the higher torque. Have also used air cooled outrunner brushless motors and never experienced overheating. They are slightly noisier, as expected. Toying with a future build of about 17”length of a RN Scimitar FTB. It will require 2 small motors, has anybody any experience of any light, outrunner brushless of this type of size? Weight will be an issue so air cooled is anticipated.

Model Boats Website!

8th Mar 2021

RAF RTTL 2762 E

The making and fitting of the deck, planking and cabin all followed established procedures and went smoothly. The only major challenge was the mast. The picture of 2757 shows the last surviving RTTL (in original form) on display outside the R.A.F. museum near London. It illustrates the unusually complex mast. Ruminated long on how best to build it. Had an unusual stroke of genius and made up a small wooden stand to the same dimensions as the base fittings of the mast. The developing mast structure could then be easily gyrated through various angles and dangles to gain access for soldering the main brass structure and fitting the styrene sections that make up the interstitial members. This approach has the added attraction of making the mast as a single unit, which can be made readily detachable. Transport and storage become so much easier. The original mast could be collapsed, but the bracketry to do that looked difficult to reproduce successfully at small scale without machining resources. To make the mast detachable, made up a clevis bracket under each mast leg on the cabin roof. The clevis mates with a hole at the end of the mast legs. Fitted a tapered pin into the clevis through the hole to hold the mast, along with a “keeper” bracket to ensure the pin remains in place. The mast contains a radar scanner and the mast lights. To disconnect the wiring easily, fitted a servo style connector plug at the mast base. By disconnecting this plug and removing the pins the mast can be easily removed. Not quite as original, however, a good use of modelers “license”. The original wiring ran up the starboard mast leg, so copied it. My wiring is slightly more obvious, but is considerably simpler and much easier to service than passing it though a mast leg. Decided to feed the electrical power to the superstructure by using springs on the hull mating with brass plates on the underside of the superstructure. The spring & plates conduct the current. Using this idea allows removal of the superstructure without disconnecting wires. This works nicely on an installation with relatively few circuits. The main RC controlled on/off switch is the hull. The secondary circuits in the superstructure are controlled by small switches, so can select the radar and /or lights as desired.



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16th Mar 2021

RAF RTTL 2762 E

Until the ice melts on Lake Ontario, cannot submit any pictures of the maiden voyage. Weather is improving, hopefully not too long now. In the meantime, here is the finished model, still on the bench. Will post sailing pictures in due course.

Model Boats Website!

15th Apr 2021

RAF RTTL 2762 E

Tried her yesterday for the first "shake down" before her maiden voyage. That is why there is no mast or other accessories, removed to avoid breakage. Model runs 2 x Turnigy 3520 1700kv brushless, watercooled outrunner motors with 3 S LiPo power. She is rather overweight, but there is more than enough power to comfortably plane. Being twin screw easily controlled, did not detect any "dig-in" tendancies. Had to curtail the runs due to a water leak from a coolant hose. Model is 34" long