

EL 600 Series of Hovercraft

Designed and built by Fran Oakey



The EL 600 series of model hovercraft were designed primarily to use the radio equipment from abandoned model cars giving the equipment a new lease of life. Most model cars use the standard size radio gear so the model had to be designed large enough to carry the weight of this size radio yet small enough to be transported easily. The smallest model to satisfy those criteria is a model 600mm x 300mm with a calculated all up weight of 2lb 9oz. The measured weight for the radio/electrical equipment was about 1½lbs, which meant the model weight had to be not greater than about 1lb to meet that total of 2lb 9oz. The heaviest single item of equipment being the battery used to power the craft weighing in at 0.75lb, almost a third of the total estimated all up weight.

It was decided that the model would be of the integrated design, one motor driving a prop to supply both the lift and thrust air. From experience a model of this size would require a propeller seven inches in diameter with a pitch of four inches. After testing the performance of a standard 27 turn 540 buggy motor with an APC E series 7" x 4" propeller and a 6 cell Nimh battery, it was found that the 540 was not really suitable. This was due to the amount of current drawn by the motor, it was too high in the order of 16amps, which caused the motor get quite hot.

The prototype model was made from 3mm liteply and balsa to keep the weight to a minimum and given the scale like appearance of the Griffon machines. Unfortunately the first model hull came out a bit heavier than the 1lb. With an all up weight of just under 3lbs this prototype model was fitted with lighter radio equipment, a brushless motor and a 3S1P Lipo for the power supply. A second model was constructed using different thickness of plywood, which resulted in a lighter model.

Several different styles of superstructure were designed and drawn, seven in all, some of them have been built and are shown in the photo. Another variant of the model has been designed and built, where the plenum air is fed into the plenum at the front of the machine, the air being ducted to the front through its bag skirt.

The design has been produced as a kit by Palaform using Depron, which is an extruded polystyrene. Depron is a very light material giving the model an extremely low ready to run weight. The low weight makes the model ideal for inside running but for outside operation the model needs to be a little heavier. At the heavier end of the plastics range, models to this design have been made from Correx, the material used by estate agents for the boards they use to advertise houses for sale.