

# Neste Enterprise

Designed and built by Fran Oakey



Enterprise was built by Griffon Hovercraft Limited, at their manufacturing plant just outside Southampton. The machine is 11.9mtrs long and 4.76mtrs wide, and on cushion 3.93mtrs high, it can carry 20 – 26 passengers including the driver. The Hovercraft is powered by a single Deutz diesel engine developing 355HP, which provides the power for both lift and thrust. The lift air is generated using a centrifugal fan driven by a shaft from the front of the engine and the thrust air with a four bladed propeller driven from the rear of the engine, via a toothed belt. A cruising speed of 35 Knots can be achieved with a full payload.

In 1991 an expedition was planned to China by Hoveraid, the goal was that this hovercraft would reach the source of the river Yangtze. On its way to the source it was to be used as a mobile medical clinic on the upper reaches of the river, where a team of doctors and nurses would inoculate hundreds of children under the age of five. It then traversed sandbanks, severe rapids and snow to reach the source at 5000m (16000ft) and was the first marine craft ever to reach the source in Tibet; this is believed to be the only marine craft to have reached such an altitude. Another hovercraft the Pindair River Rover accompanied the Enterprise but didn't reach the source of the Yangtze.

At present the Hovercraft resides at the Hovercraft museum at Lee on Solent and it was at the museum where the photographs were taken to produce the model. The present owner of this machine is Patrick O'Donoghue, who lives in Co. Clare, Ireland, and to my knowledge the craft has not been operated for many years, except to run up the engine at the Hovercraft museum open days.

The model was scratch built as a stand off scale model to 1/10<sup>th</sup> scale, the design being based on a plan obtained from the web site, "Modelhovercraft.com". The plan gives the basic dimensions for the hull and cabin, the detail design of the model being left to the modeller as there are a number of variants of the 2000 TDX built by Griffon. This model was built with development in mind, which resulted in the model being designed and built in three sub-assemblies, the hull, the cabin and the thrust unit. Either one of the three units can be rebuilt to reduce weight, improve the thrust or lift and so improve the performance of the model.

The model is constructed mainly from 2mm liteply, 0.4mm hard ply and 0.8mm hard ply, which gives a light weight model but does make it less robust. The model took about six months to build, then over the following couple of years there were several modifications made to the model that have dramatically improved its performance. Brushless motors were the most significant and are being used for both lift and thrust, driving propellers designed for electric flight. These motors are more efficient and lighter than the can motors (brushed) originally used. The skirt has been redesigned to suit the bag and plenum pressures and experiments done to eliminate the Coanda effect at the rear of the skirt. A helicopter gyro is used to help stabilise the lateral movement of the model at speed.