

# Vliestroom

## Damen Buoy Layer

Built by Pete Dickinson



*Vliestroom* and her sister ships *MV Nieuwe Diep* and *Schuitengaat* were built by Damen Shipyards in 1987-90 for the Dutch Ministry of Transport and Waterways. The folding main mast and cantilevering radar masts together with the low draught flat-bottomed hull allow for a very versatile craft, which can encounter low bridges and shallow waters in and around Holland. This unusual and distinctive model is based on *Vliestroom*, built in 1987, operating out of Hellevoetsluis.

### **The Model.**

This kit, manufactured by Model Slipway, became one of my most interesting projects as I decided from the outset to make her as fully functional as possible including bow thrusters and a fully working crane.

Many hours were spent on making the crane functional and deciding how to use the 6 channel transmitter to the best effect. In the end I scratch built a servo motorised switch unit which enabled me to use the three on-board electronic speed controllers to control either, the twin propulsion motors and the bow thruster motor, or the crane jib lifting, turning and cable winder motors.

After building the hull completely I discovered that the white metal cast Kort nozzle rudders were both far too heavy and brittle where the tube and shaft join, so I cut and turned replacements from thin walled aluminium and brass rod which perform perfectly. Using the bow thruster in conjunction with the Kort rudders enables the vessel to manoeuvre sideways with little or no back and forward movement.

Having made the crane functional I decided that the larger of the buoys should also be made functional so that when the crane places the buoy in the water the flashing warning beacon activates and when it's recovered the flashing stops. This was achieved by placing two 'coin' cells in a watertight container in the base of the buoy and building a small pcb to house the simple electronics needed to switch on and off the flashing beacon. With CMOS integrated circuits having very high input impedances, I simply placed two brass studs in the base of the buoy so that when the device was in water the unit would switch on the low speed oscillator.

The rest of the build presented many problems. The instructions supplied with the kit lacked many details and after I found a high resolution image of the full size vessel (See facing page) I discovered many inconsistencies between the model (See last page) and real ship. I decided to follow the real vessel and so the paintwork and final fit is not as the kit but as close a match to the original as I could manage.

I used 18 LED's to enable the model to appear more like lifelike and spent many hours perfecting a method of wiring without ugly and out of scale wires showing. A spare channel on the transmitter allows me to switch on, in sequence, the navigation lights, the bridge internal lights and all the working lights. This was achieved by utilising a third servo and a scratch build cam mechanism operating three micro-switches. As in the full size vessel, the main mast can be

folded down to rest in a cradle supplied for that purpose, although this isn't automated in the model. As the mast can be manually lowered and raised I didn't want the mast lights to be on when it was in the down position. Eventually I found a small mercury tilt switch, connected in series with the supply to the mast, enabled the mast lights to be off when it was in the lowered position.

I used red, green and 'soft white' LED's for the navigation lights and bright white LED's for the working/flood lights. As LED's can't be wired in parallel, I placed a 1.5K surface mount resistor in series with each LED and when these are painted over they become virtually invisible. The total load for the lighting, with every LED illuminated, is only 100mA.

On the image of the real vessel the RIB, mounted on the raft deck, is covered with a red tarpaulin and after some trial and error I discovered that domestic cling film stretched, primed and painted looked very close to the cover in photograph as it seems to crease realistically to scale.

The superstructure colour was very hard to emulate in 1/40<sup>th</sup> scale. Humbrol pale yellow was the nearest I could get but even that appears rather dark on the model.

In the photograph there is a sign, either side of the main cabin, for the Dutch waterways authority *Rijkswaterstaat* so I copied the insignia and printed waterslide transfers to place on plaques added to the superstructure.

The Dutch diagonal 'flash' on either side of the hull was also copied from the photograph and another waterslide transfer was produced to show these, as in the model it was intended to simply be painted on without the royal crest.

Having built several Model Slipway models, I have quickly learned to abandon many of the white metal fittings that adorn the vessel. Partly because they tend to be slightly crude but mainly because the amount of excessive weight, which is placed high above the centre of gravity of the model, tends to render it top heavy, with a tendency to heel badly in a turn. I mostly copy the item in styrene, as in the cantilever radar masts, and this also allows for some to be made functional, as wheelhouse roof flood lights are.

From looking at many images of the real ship, I discovered that the full size vessel has two exhaust pipe outlets either side of the rear transom and these are not shown or even mentioned in the model description, so I made up some from styrene tubing cut and stuck at angles to represent them.

There are two white metal figures supplied with the kit and after searching round I discovered that most 1/40<sup>th</sup> scale figures that were available, including those supplied, seemed rather small when placed in position, compared with the real people standing on the full sized vessel in the photograph. In the end I decided on 'G' scale model railway personnel which work out slightly less than 1/32<sup>nd</sup> scale but look far more to scale on the model.

I suppose that, in all, around 350 hours have been spent building the model but in my opinion it is still one of the best kits that Model Slipway has produced to date.

*Pete Dickinson. AWL Model Group*