Motorising 'Iron Duke'

BY J. DAVIES

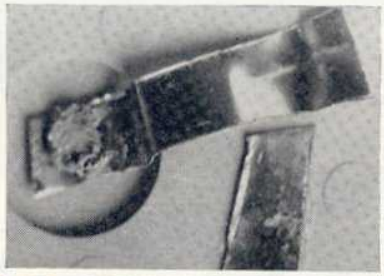
Above: *The Airfix* Iron Duke *is an attractive but realistic subject for motorisation. Here she is afloat but not under way. 'A' turret actuates the switch and is here trained to starboard in the 'off' position.*

THE machinery layout of a motorized Airfix *Iron Duke* model is perfectly unoriginal; such problems as there are centre around the small displacement (the smallest, I believe, of any Airfix battleship), the numerous openings in the hull and the low freeboard, particularly around the six inch gun casemates (parts 2, 5, 12, and 18).

The work falls into two parts, preparation, a number of small jobs which can be done in any order, and fitting out, in which a definite sequence must be observed. Preparation of course comes first. The hull was assembled and all the 6 inch casemates were glued to it, not to the deck as in the instructions, and all the hawseholes were blanked off from behind. Care was taken to make all these joints watertight. While they were setting, the metal base of the electric motor, an Orbit 005, was unscrewed and replaced with plastic card which sticks well to the hull. A crude switch was constructed under 'A' turret by gluing one contact to the deck and heat sealing a wiper to the pivot of the turret. When the turret is put fore and aft the switch makes the circuit.

The propeller I bought was far too large and was therefore sawn off and replaced as follows: a pair of dividers was used to scribe a circle of 3/16 inch radius on an old tin lid, then the centre point was pushed through. The resulting disc with a central hole was cut out and three slots cut, not reaching the centre, to divide it into blades. It was then soldered to the shaft and the blades twisted to the correct angle. When the hull had set the skeg aft was sawn off, the resulting slot cleaned up and the nearby locating points filled.

When everything was dry, fitting out began. The propeller assembly and motor were installed, aligned, tested and glued in. The shaft was then withdrawn from the tube and the rest of the slot filled. A rudder tube was next; the sternwalk (part 38) makes a good upper support.



Top: *A close view of the simple switch under 'A' turret. The wiper is heat-sealed to the turret pivot which is seen, left, under the barbette moulding.* **Above:** *Close view of the simple tin propeller in its shaft, all supported by a new skeg.*

As the next stage involved oil the lower hull was now painted. Two coats of matt red were applied and stippled all over with greens and browns. The hulls of the Grand Fleet, in the water for years at a time, must have become heavily fouled; anyway bare matt red is too garish on a small model in the water. Next day it was masked off and the grey applied to the upper hull. More masking was used for the black line.

The propeller tube was filled with oil and the shaft fitted and coupled up. When it was in place the rudder, shaft very slightly bent for a stiff fit, was installed.

When the now watertight hull was floated and the batteries were used to trim her she floated exactly to the waterline. A lightweight battery box, merely shim contacts glued to the motor and soldered to the propeller tube, was built. Two little stops were put in to prevent the batteries from rolling and the switch was wired up with some slight difficulty when the plastic almost melted.

Delicate fittings like anchors and six inch guns were last. Rather than risk losing them the guns were glued on with a very little cement to leave the tops of their pivots clean for the deck to click on to. In 1913 it was found that the casemates aft were too close to the waterline to enable the guns to be worked in the slightest seaway so they were plated in and the guns moved to the fore superstructure, a deck above the others. The kit has them in both positions so one pair should be omitted.

The superstructure was assembled normally except for a WT spreader added to part 145 (see boxlid), a little rigging, and a white ensign added aft. She goes very well and despite the small motor and propeller she is a bit too fast. As the batteries are in parallel the voltage cannot be reduced and I can see no way of slowing her down. The low freeboard is an ever present danger in deep water which is the reason for the ugly tether line in the photograph. In future I shall stick to nice shallow ponds where such a monstrosity will not be needed.

Below, left: *The model slowly under way—note 'A' turret fore-and-aft—with ripples of the wash just visible. On right is a tether line attached to the model for 'steaming' trials.* **Below, right:** *A view of the complete motorisation scheme, with wires from the switch, the Orbit motor (available from large model shops), batteries and shaft.*