

SQUARE SAILING

NEVILLE WADE DESCRIBES SOME OF THE PRACTICALITIES AND FASCINATION OF SAILING MODEL SQUARE RIGGERS

NOTE: The little full rigger almost puts her ice rill under in a good wind on a cold winter's day. Again, she is very close to the wind.



Introduction

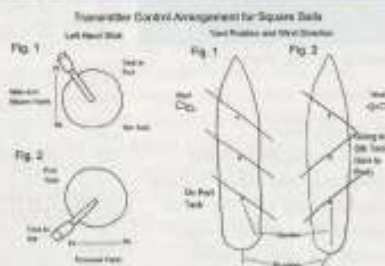
Real square-riggers never got anywhere by beating, but, if you look at my diagram of our pond, you'll see that the majority of any 'voyage' will be spent close hauled, on either tack, interspersed with very short periods of downwind sailing. The difficulties of this are what make sailing square-rigger models so interesting, and it is helpful to develop a system in the use of transmitter controls to allow you to perform the manoeuvres required. The following is a brief account of my approach to this.



ABOVE: The small pond at Millhouses Park in Sheffield. It will be apparent that the square-rigger will only go to about 65 deg to the wind

Using Those Yards

The object of the exercise is to present the after side of the sails to the wind, in order to make forward progress. When sailing with the wind, it is obvious, but with the wind from abeam, or ahead, it is less so, and next is a description of the way in which I set-up the transmitter to allow as simple an achievement of good control as possible.



ABOVE: A schematic showing the set-up of the transmitter in two typical sailing situations, see text for the detail

When going with the wind abeam, or close hauled, the yards need to be braced right round onto the backstays, as close to the fore and aft line of the vessel as possible. I use two sail servos to brace my yards (the details of which have appeared in earlier MME articles), one controls the foremast yards, and the other controls those on the main and mizzen. The left hand stick of my four channel set-up controls both servos, left/right for the foremast yards from tack to tack, and up/down for the main and mizzen. All the return springs have been removed from the transmitter, so that, whatever position is selected, the stick will stay where it's put. If you look at the schematic, you'll see that with the stick in the bottom right hand 'corner', both sets of yards are on the starboard tack. With the yards in this position, and the wind abeam or just ahead, the vessel will sail happily 'hands off' on the first course shown on the pond drawing. Very soon on our pond, it will be necessary to turn away from the side, and run



ABOVE: The little full rigger (square sails on all masts) as described in the schematic. She is sailing 'hands off' in a good beam wind

downwind, this is done by simply steering with the rudder, and gradually squaring the yards as you turn away from the wind. Thus, with the wind on the quarter, you can sail 'down' the pond, 'running free'.

The next turn is again a simple one, steering round to port, and gradually bracing the yards round on to the port tack, being careful not to go too close to the wind, and having the sails caught aback, with the wind on the forward side. In effect, over this turn and the last, you will have moved the stick gradually from bottom right to top left. It is at the next turn that things become more complicated, as from here on, we will progress by tacking ship.

Tacking

Following our course on the pond diagram, it will be obvious that we now have to make progress 'up' the pond, into the wind. In practice, this means sailing with the yards braced sharp up, on the backstays, on



ABOVE: Going about from starboard to port tack. The bows are being pushed round by the backed foremast sails



ABOVE: Under all sail now, on a choppy, threatening day, beating on the port tack



ABOVE: Here a four masted barque is running free, with the yards squared to the wind from astern



ABOVE: With five sails removed, beating on a very windy day. If the sails are caught aback in these conditions, there will be a sharp stop, and violent change of direction



ABOVE: Ten sails have been removed here, and she still can only just cope, sailing 'hands off' in a scale gale



ABOVE: Sometimes it all goes wrong! The strong wind has just gone round 180 deg, and what was good progress beating on the starboard tack, has turned into sails all aback with the wind from ahead. The model is now about to go astern until use of the rudder makes her head fall off the wind, so that control can be regained

either tack, then going about on to the other tack, as we run out of water. In order to tack, we will have to do several steps, in order, and with good judgement of the wind. The right hand stick, in the spring loaded left/right position, controls the rudder. It also controls a servo that pulls in, and lets out, the sheet of the fore and aft sail, the 'spanker', on the aftermost mast. With the stick in the bottom position, the sheet is pulled in, push it up, and the sheet is let out (the spring loading has again been removed).

To get back to the boat, we now need to steer slightly 'off' the wind, to pick up a little speed, and then we use the right hand stick to pull in the spanker, as above. This will use the wind during tacking to push round the stern, and assist with the steering. We now put the helm hard over to steer to port as quickly as possible. The vessel will now begin to swing, towards the wind. As she goes across the wind, still with some way on, now is the time to put the main and mizzen yards on the starboard tack. You will have sailed down the last leg with the left hand stick in the top left position, on the port tack (Schematic Fig. 1): now you pull the stick straight down to put the main and mizzen yards on to the starboard tack (Fig. 2). Once in this position, the wind will be behind these sails, and will prevent the vessel gathering sternway, in effect she will be held where she is, or continue to move slowly forwards,

The yards on the foremast are still on the port tack, now with the wind from in front of the sails (Fig. 2). The effect of this is to push round the bows of the vessel, to finally put her on to the starboard tack. When this is achieved, the left hand stick is moved across to the bottom right hand corner, now putting the foremast yards too on the starboard tack. If you have judged everything correctly, the vessel should now start to move ahead confidently on the new tack and you can let out the sheet of the spanker, to assist progress.

To go about the other way, from starboard to port tack involves the same bracing actions, but the other way round, which will involve your moving the left hand stick first to the top right, to put the main and mizzen yards on to the port tack, and then to the top left, to put the foremast yards on to the port tack. Thus you can see that going about from one tack to the other is simply a matter of moving the left hand stick, at the right moments, in an anti-clockwise direction!

Some Golden Rules

When sailing a square-rigger model, you will always be watching for shifts of wind direction that can take your vessel aback. This is an irritation for a yacht, but will stop a square-rigger dead in her tracks. If the wind veers during tacking, or indeed at any other time, you can end up with the sails

'all aback', sailing astern rapidly across the pond! During normal progress, if you leave the spanker sheet 'out', the angle of the spanker boom will give you a guide to wind direction at the model, and help you to forestall this.

On the other hand, the ability to trim yards to the wind allows you the possibility to deliberately sail astern, either to stop quickly in an emergency, or to back away from the side of the pond, let the bows pay off before the wind, and then sail away! You simply put the wind on the fore side of the sails, and use the limited ability of the rudder to steer while going astern!

In heavy weather you can put the model about by 'wearing ship', which involves turning away from the wind, with yards squared, then turning back towards it, gradually bracing round the yards on to the new tack. For such weather, it is advisable to make some sails removable, starting with the topmost ones, to allow the model to cope.

Finally

When sailing my models, I am in command for about 70% of the time, coping 20%, and all at sea 10%, and never boned, and the sight of a square-rigger pounding or gliding across the water, depending on wind strength, is one which makes all the effort worthwhile. ■