Mallard

With Willy Winship afloat at last, Andrew Wolstenholme introduces our brand new 'Boat for the Boatman'.

Of Dreams and Designs

Several years ago, as a designer of traditional boats struggling to gain wider recognition I sent off a pack of drawings and photos to the editor of a boating magazine. The editor was encouragingly enthusiastic and was particularly keen on an 11' (3.4m) dinghy called Coot which I had designed for myself and he asked if I would write an article. Coot struck a chord with readers and I still receive enquiries about her.

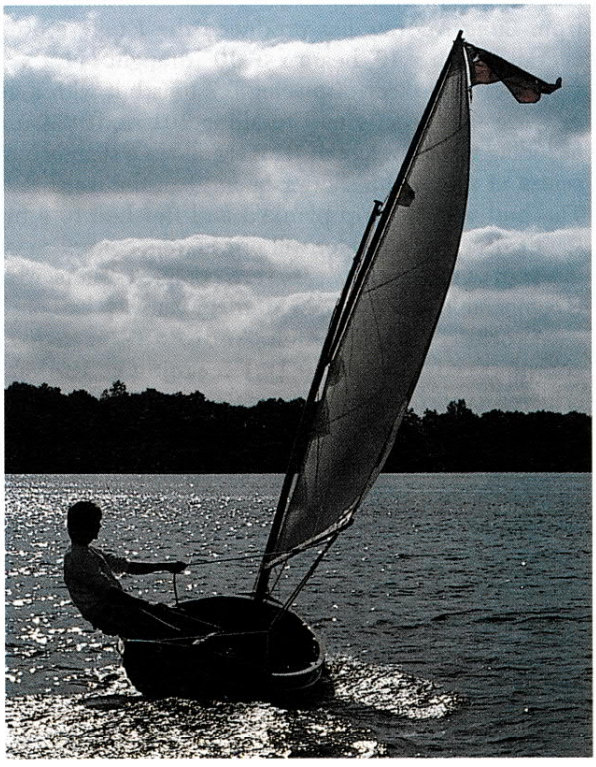
Time moves on and Pete Greenfield now edits *The Boatman*. One of the aims when launching the new magazine had been to create a range of boat plans especially designed for the amateur craftsman and Mallard is the first of that series and owes much to my original Coot.

First Thoughts

When we first discussed the project in July 1992, the brief was for a 'boat shaped boat which will genuinely sail' and with 'considerable visual appeal to inspire the builder in the first place and along the way'. *The Boatman* team had been bouncing ideas off each other and had thought about Coot, and then moved on towards a lug rigged dinghy suitable for 2 adults or 4 children, and then their ideas began to crystallize in a modern version of Arthur Ransome's Swallow suitable for epoxy based building techniques. What did I think?

The idea appealed – there is a very limited choice of dinghies available for the sailor looking for something classic for relaxing sailing or for introducing children to sailing. In his book *Small Boats*, Phil Bolger writes about his Dolphin design coming into her own for a group of small children: "they may not appreciate her beauty, though they would remember it later and live with a high standard in consequence". That thinking was in my mind when I designed Coot and the same philosophy would apply to this new project.

It is the task of the designer to interpret the brief laid down by the client and to "read between the lines" to produce the best solution to their requirements. With the combined experience of *The Boatman* team, we soon narrowed down the key parameters. The design had to be large enough to be sailed comfortably by two adults but no larger than necessary to avoid the boat being tricky to handle ashore and, most importantly, to be built comfortably in an average domestic garage. At 11' (3.4m), I consider Coot to be a little on the small side for 2 adults and we all agreed that 13' (4m) was getting too large for the typical 16' (4.9m) garage. So what about 12' (3.7m)?



Mallard was partly inspired by Andrew Wolstenholme's previous design Coot, an 11' (3.4m) cat-rigged dinghy with a sparkling performance.

Or 12'6" (3.8m)? A few inches can make a considerable difference on a boat of this size but compactness won the day and we settled on 12' (3.7m) as being the ideal length.

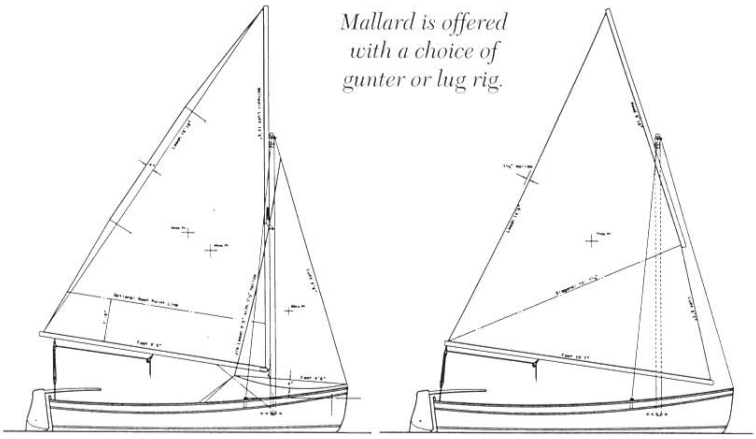
Developing the Concept

My next step was to find out more about Swallow. Basic drawings for Swallow show her to have been around 13' (4m) long with a 5'6" (1.7m) beam, and carrying a standing lugsail rig. She is shown with a long straight keel and no centreplate, and a correspondingly shallow rudder. The underwater profile suggests that by today's standards she would have poor turning characteristics and questionable windward performance. What I needed to do was to produce a design that had the aesthetic feel of Swallow combined with a sailing performance that meets today's expectations. An image of *The Boatman's* dinghy was beginning to form in my mind but before I put pencil to paper I needed to discuss the method of construction and the rig with my clients.

Swallow has a lugsail and Coot has a cat rig. I have been interested in catboats and cat rig for some time – my first design was David Moss's Catboat 16 – the simplicity of the rig and the high volume shoal-draft hull form of the typical Cape Cod catboat are well suited to our shallow East Coast or North Western waters. Why have lots of small sails when one large one will do? For the singlehander this philosophy is fine but for sailing in company or teaching youngsters to sail, the cat rig doesn't leave the crew much to do. My thoughts for Mallard were for a gunter sloop rig which would be weatherly, practical, and yet still have a traditional feel. The clients agreed but asked that an alternative standing lugsail could also be offered.

On construction, we discussed the possibilities of clinker topsides with wide strake multichine panels below the waterline, but I felt that this would require compromises in the hull shape and may detract from the traditional feel of the design and so we decided to stick to conventional glued ply clinker. One of Pete's original aims was to produce a design for the more experienced, or more ambitious, builder with the emphasis on visual appeal and glued ply clinker was agreed to meet this requirement best. The design would also be suitable for cold moulding or strip planking (although construction information is not included for these methods on the drawings).

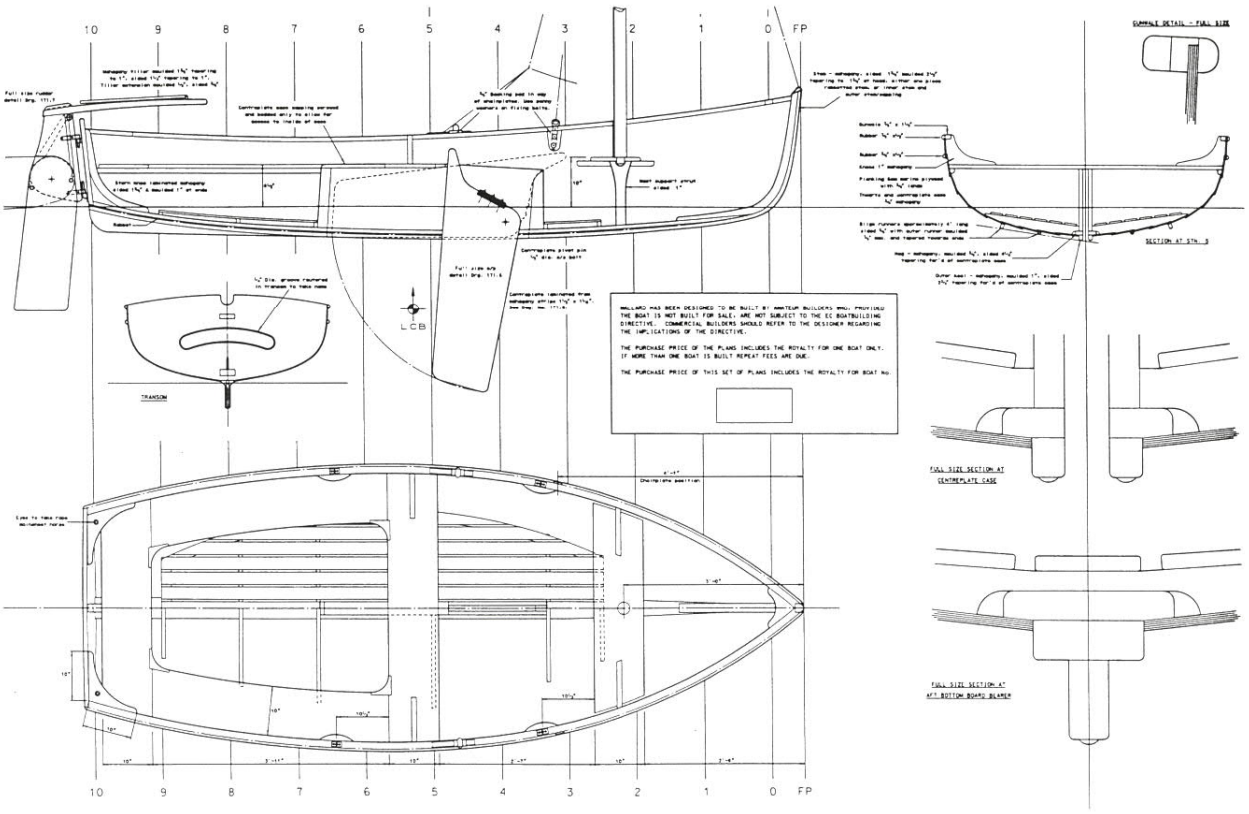
Coot's simple and sensible layout. For more information about Coot and her current builders, see page 75.



Mallard is offered with a choice of gunter or lug rig.

On the Drawing Board

Having firmed up the parameters for the design it was now time to put pencil to paper. The first stage in producing a design is to prepare a Preliminary Drawing. This is a small scale drawing showing all the basic facets of the design – it usually comprises of plan and profile views and a midship section. It is really at this stage that the design is developed – the large scale



Mallard has Coot's traditional open layout. The use of removeable buoyancy bags is recommended for ease of maintenance.

drawings that follow are necessary for the builder to work from but the Preliminary is accurate and the large scale drawings are developed from it. It is at the preliminary design stage that the client should satisfy himself that the designer has produced a design that meets his requirements. Detail changes can be (and generally are) made as the design develops but major changes can involve considerable additional design time and do not win points with the designer. More importantly, changes at a late stage in the design process, when the boat may be in build, can upset the overall proportions and concepts of the design.

The basic dimensions were set at 12' (3.7m) by 5' (1.5m) and I set about developing the preliminary. Ideally the client is presented with a smart completed drawing but to avoid too much re-drawing, it can be helpful to show the client early roughs to check that you are going down the right path. This was the way *The Boatman* project proceeded and early drawings were faxed to Falmouth for comment. The initial ideas went down well and most of the discussion centred on construction and whether to have side benches or not – a decision argued for and against by those of us who feel a dinghy of this type is best sailed sitting on the bottom boards and those who prefer to sail sitting on a seat. The latter won (but the boat can always be built without the side benches ...) and the Preliminary was completed and approved.

On the Computer

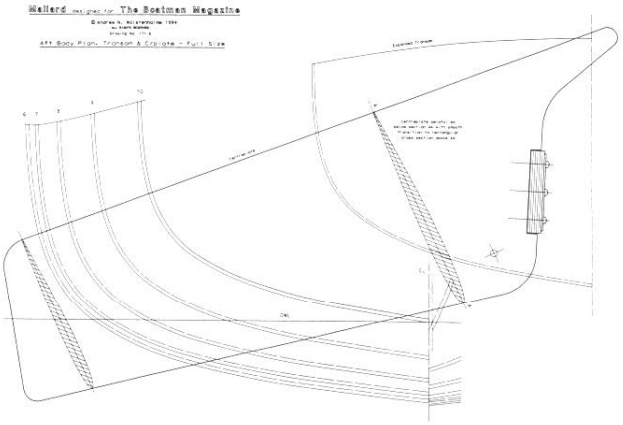
In common with the majority of designers, I have forsaken my pencil for the computer for developing hull lines and most of the working drawings. The computer is only a tool to assist the designer, an electronic means of drawing – it will not design the boat for him and must be used with as much skill as the traditional methods. I had been concerned that the artistry of a hand drawn drawing would be lost but soon discovered that CAD drawings can still reflect the operator's personal style. Preliminaries and superstructure styling (for larger boats) I do by hand but the rest is done on the PC. For Mallard only the preliminary was drawn by hand.

The hull shape and underwater profile of Mallard is based closely on Coot and features a rockered keel to ensure good turning, an efficient aerofoiled centreboard and rudder for good windward performance and manoeuvrability, and a skeg aft to ensure good tracking under oar. The sheer and the transom profile are, in my opinion, the two most important lines aesthetically on a small sailing boat hull. Mallard has a fairly bold sheer running to a pretty

transom which shows a moderate rise of floor. This rise of floor continues through to amidships ensuring a gentle turn of the bilge and produces a reasonably narrow waterline and low wetted surface when upright but increasing as the boat heels to produce maximum stability. The rockered keel and the gentle convex shape of all the sections, combine to produce a hull which looks attractive and has a good shell stiffness.

The internal layout and construction is conventional and well proven with three thwarts and side benches aft. Two rowing positions are shown allowing her to be rowed from amidships or, with the mast unstepped, from for'd. The same mast is used for both gunter and lugsail rigs and is stepped on the for'd thwart to keep its length down so that all the spars can be stowed inside the boat when de-rigged.

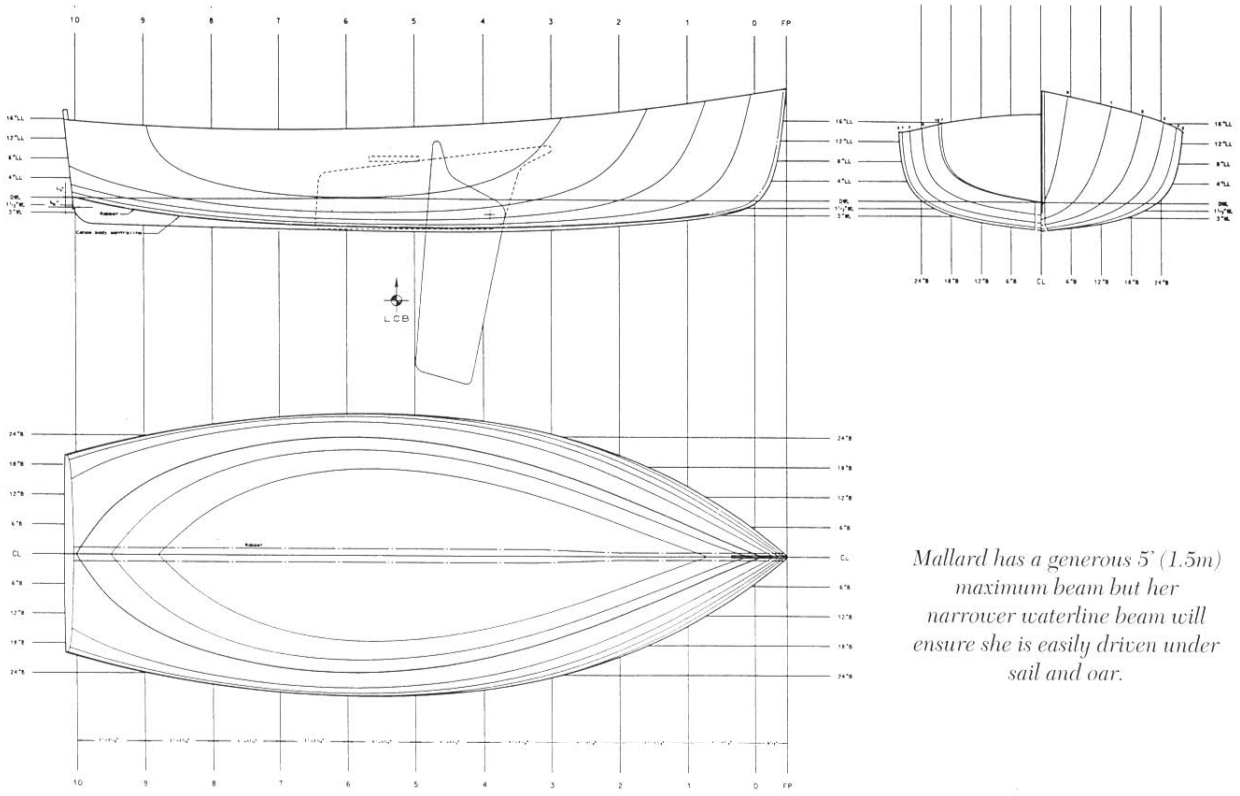
The new EC boat standards will require all professionally built boats under 19'8" (6m) to have built-in buoyancy (with exceptions such as National and International dinghy classes, canoes, and surfboards). Air tanks are discouraged (insofar as the requirements must be met excluding the largest two air chambers) leaving foam as the main option. Home built boats however do not appear to be covered by the regulations "provided they are not placed on the Community market within five years". On this basis it is recommended that Mallard is fitted with conventional buoyancy bags, so giving the builder full access to the inside of the hull for maintenance.



One of the two large sheets in the plans package which provide full-size templates for the body plan, stem, transom, rudder and centreboard.

On the Way

The package of drawings for Mallard includes full size body plan (no lofting required), stem profile, rudder blade and stock detail, and centreboard. The Lines Plan, and General Arrangement and Construction Drawing are produced at a scale of 1 $^1/_2$"= 1' (1:8), and the sail Plan and Spar Drawing is at $^3/_4$"= 1'(1:16). Plans are now available from *The Boatman's Catalogue* at £63.45 inc-VAT plus £2.00 P & P. In the September issue, on sale 25th August, Dick Phillips will begin the stage-by-stage series on building Mallard.



Mallard has a generous 5' (1.5m) maximum beam but her narrower waterline beam will ensure she is easily driven under sail and oar.