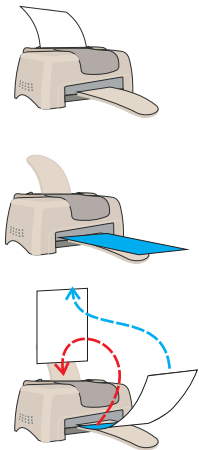


Welcome, and how to print your magazine..

Thank you for downloading the ModelShipWrights Journal which we sincerely hope you will enjoy. Before you can read it properly you will first have to print, collate and then join it together. Please follow the steps below. We suggest that you read this page through a couple of times before printing. All these instructions relate to the print set-up in Acrobat Reader.

5 Paper orientation



1. The first page to be printed will be the cover. Please click anywhere on the page to select it for printing, or open the 'thumbnails, folder to the left of the screen and choose your page from there. Choose an A4 gloss paper of at least 180gsm in weight. This paper should be coated gloss on one side and coated matt on the other.
2. Click on the PRINT icon and in the PRINTER PROPERTIES box, select the best range your printer will print at.
3. In the PRINT RANGE box, select the CURRENT PAGE radio button.
4. Select OK.
5. When the page has printed, carefully remove it from the print tray and put it back into the paper tray so that the printed side is face down on the paper chute and so that face will not be printed again. The leading or first edge that came out of the printer should be at the top of the paper tray. *See the process on the left if you are not too sure.*
6. Move down to the next page after the cover page in this Adobe file and click anywhere on the page to register it for printing (you can also click on the thumbnail to get the next page) then click on the PRINT icon. Make sure that the CURRENT PAGE radio button is still checked then click on OK.
7. You should now have both sides of the cover page printed and be feeling rather pleased with yourself.

8. Paper

If you can get it, acquire some A4 double sided coated photo paper. It does not have to be glossy, as matt will do and as long as it is not too thick. 100gsm or less should do the trick as any heavier paper will make binding a bit of a pain.

9. Insert a single piece of your double coated paper into the paper tray then repeat the process you did with the cover page and page 2. You will need to move the page down to the next page in this Adobe file and click anywhere in it to register it as the next page to be printed. Always check that the CURRENT PAGE radio button is checked before clicking OK, otherwise the printer will print all the pages at once – which we do not want.
10. When all the pages have been printed and the ink has dried, collate them so that the cover is face down and exposing page 2 to the left hand side of the page. (Page 2 does not have a number on it but is the opposite side of the cover). Place page 4 on top of it, then page 6, then 8 and so on until the centre pages run in sequence from left to right.
11. Make sure all pages are properly lined up with one another and then fold down the middle of them all to form an A5 booklet. You may have better results with thicker paper by folding each page separately.
12. **Binding**

To bind the booklet together, either use a long reach staple gun or if you don't have one, insert a pair of dressmaker's pins into the inside of the spine, or with a needle and thread, carefully sew a few stitches into the spine at the top and bottom.

You now have a readable magazine which we hope you will enjoy and refer to for many years to come.

BULLETIN BOARD

Have you anything to swap, sell, give away? Would you like to advertise your home product or just bring something to the attention of others? Here is the place to do it.

Rates are very competitive - FREE!!

Just drop a line to scale.sailing@blueyonder.co.uk and it will be in the next issue.

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ModelShipWrights
JOURNAL

Number 1

Neb Kehoe gives an insight to his rigging techniques with his brig 'Bennington'

Bill Short tells us about wood carving

Terry Lynock makes bending tools

Morey Benton gets comfortable

Plus lots, lots more..

Put a face to those who write in...

MUGSHOTS

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Cover Picture..

A remarkable example of Bill Short's work with a dental drill. Bill starts an on-going article of his techniques on page 15.

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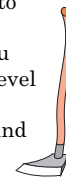
44" with just the push of a button.

Ladies and gentlemen, this is the ultimate in applied ergonomics, and I can now not only talk the talk, but..... well, you know the rest!! It is amazing to me how often I do adjust this table and how

much easier various tasks become. Also, after many hours of work, I can now walk away with far fewer aches and pains!

Lighting and air quality are also issues of prime importance, but I think you are all more than aware of this. The only thing I'll point out is

that fluorescent lighting has been proven to be an irritant to the nervous system due to the high frequency flickering, and that if you can achieve the correct level of illumination with a combination of natural and incandescent light you are far better off.



FUN PaGe

THE TRAIN DELAY

A mother was working in the kitchen listening to her 5 year old son playing with his new electric train in the living room.

She heard the train stop and her son saying, "All of you sons of bitches who want off, get the hell off now 'cause this is the last stop! And all of you sons of bitches who are getting on, get your asses in the train 'cause we're going down the tracks."

The horrified mother went in and told her son, "We don't use that kind of language in this house. Now I want you to go to your room and you are to stay there for TWO HOURS. When you come out, you may play with your train, but I want you to use nice language."

Two hours later, the son came out of the bedroom and resumed playing with his train.

Soon the train stopped and the mother heard her son say, "All passengers, please remember to take all of your belongings with you. We thank you and hope your trip was a pleasant one. We hope you will ride with us again soon."

She heard her little darling continue: "For those of you just boarding, remember, there is no smoking in the train. We hope you will have a pleasant and relaxing journey with us today."

As the mother began to smile, the child added, "For those of you who are pissed off about the two hour delay, please see the bitch in the kitchen...."



Once upon a time, a perfect man and a perfect woman met. After a perfect courtship, they had a perfect wedding. Their life together was, of course, perfect. One snowy, stormy Christmas Eve, this perfect couple was driving their perfect car along a winding road, when they noticed someone at the side of the road in distress. Being the perfect couple, they stopped to help. There stood Santa Claus with a huge bundle of toys. Not wanting to disappoint any children on the eve of Christmas, the perfect couple loaded Santa and his toys into their vehicle. Soon they were

their vehicle. Soon they were driving along delivering the toys. Unfortunately, the driving conditions quickly deteriorated and the perfect couple and Santa Claus had an accident. Only one of them survived the accident.

Question:

Who was the survivor?

Answer:

The perfect woman survived. She's the only one who really existed in the first place.

Everyone knows there is no Santa Claus and there is no such thing as a perfect man.

**** **Lasses, stop reading here, that is the end of the joke.**

**** *(Lads, keep reading)*

So, if there is no perfect man and no Santa Claus, the woman must have been driving. This explains why there was a car accident in the first place.

By the way, if you're a woman and you're still reading, this illustrates yet another point:

.....Women never listen!!!!

Modeling Ergonomics

Morey Benton

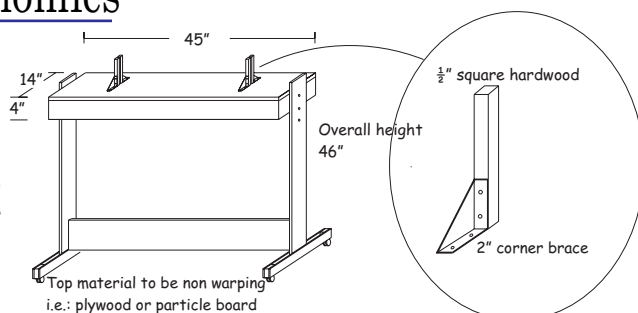
My full time career in the business world involves amongst other things, the designing and planning of ergonomic workstations for people who use computers. This covers almost everyone these days!

Ergonomics is the study of how the human body interacts with the working environment, equipment and technology, and can be defined down to "economy of work".

When we modelers scrunch over and contort ourselves to hold that stubborn plank in place, sitting on a four-legged wooden chair with our backs, shoulders and necks just aching, squinting in the pale light of our dusty workshops, we certainly aren't practicing the soundest of ergonomic principals!

A proper chair is in my opinion, essential to good modeling and the single most important tool in the workshop. After all, it supports YOU! Any reduction of fatigue and discomfort you feel is sure to improve the quality of your work, its certainly been proven to do so in the office workplace.

One of the most important purchases I ever made for my workshop was to buy a good drafting stool. It has an adjustable foot ring, and the seat height and back angle are pneumatically adjustable. Further, the height of the back is also adjustable to allow for



correct support of the lumbar region.

The major advantage of a stool over a conventional chair is the ability to go from sitting to standing with less effort. Sitting comfortably is the first step, the second is to find a way to be able to adjust the position of the work as needed, to prevent unnecessary bending and reaching. A height and tilt adjustable work surface would be ideal, but for modeling the tilting part can be a bit tricky since all your tools could roll or slide off, and I hate it when my X-acto ends up in my foot, and the model crashed on the floor!!

Because I've been actively working on Confederacy in my spare time, using the Hahn method, it occurred to me how very good his technique might be if I could adapt it for the kit of Diana.

I'm not sure if it was Mr. Hahn or Father Romero who came up with the idea for the mobile stand that goes with the Hahn building jig, but it's a very good one. It frees up valuable workspace, allows the model to be angled and locked in any position through 360 degrees, allows for more accurate marking up of the hull, and if you make it height

adjustable as well, allows you find the most comfortable position for YOU! You will never again have to wrestle with a hull while trying to plank or copper the bottom.

I added extensions to the uprights on my stand, and drilled holes at three different heights. Later, when I get to the decking and rigging, I can simply turn the model right side up, and lower the platform so that I don't have to reach. If need be, I can add holes to reposition the platform further. I used a 3/8" bolt and wing nut on each side as the pivot point and locking mechanism. The only problem with this setup is that it takes time and a bit of effort to change the working height of your model.

Back in May 2001, I attended a trade show and was prompted to throw my business card into a jar for a draw, and forgot all about it until I got a call telling me I had won an electrically height adjustable table! Most people would have put this beauty into their office, but you all can guess where mine ended up! It is a true sit-stand table, infinitely height adjustable from 24" to

Comment..

If I and welcome to our brand new little journal. In it we will put what you want to see, mainly your boats but, we can include anything you want.

Mugshots, member's profiles, stories, modelling experiences, how to features, book reviews, letters page, your in depth projects, a fun page, in fact anything you may think will interest the rest of us. You can be as serious or as easy as you like.

For about 12 years I was the managing editor of the Scale Sailing Association's in-house magazine Under Sail and found that people liked many types of different articles, mostly written in a fairly light easy to read humorous style as fun is what this glorious hobby of ours is all about.

Judging from our mails, we have plenty to chat about and do so lyrically. All of us put things in an understandable manner that is fairly easy to comprehend, however, we lack the one medium on the list that needs few words - pictures. How many times have you been trying to make a point of something and get frustrated that you can't enclose a drawing? Many I think. I most certainly do.

Well in this medium we can jot those drawings down so everyone knows exactly what we mean. If you send me your sketches I will draw them in

vector format and add them to the piece as and where they should go.

Writing articles is a very profitable pastime and most publisher's pay almost good currency for articles as magazines are hungry devils that forever need feeding. Some pay by the page and others by the word, so the more one writes, then the more one gets paid! All the drawings I tidy up in vector format will be sent to the author for inclusion in his or her work.

If you do sell an article to Clay Feldman of SIS fame say, sell it as "First United States Publishing Rights only", as then you can sell the same article under the same terms (but inserting the publishing country) to any publishing house in the world, thus gaining your fee many times over to pay for the many hours spent writing it.

You retain the rights to your work both in the content and the right to publish anywhere you like. If any house wants to publish your work again at any time in the future, then they have to pay you again, albeit at a reduced cost.

Let's try and make this little journal work, as it will only do so with your help and cooperation.

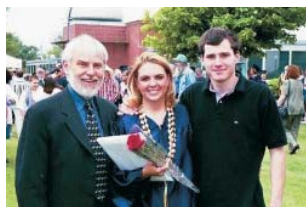
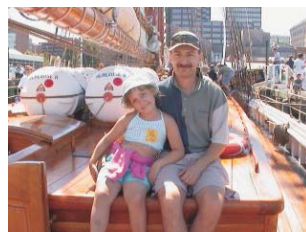


Taylor

*Bill Short*

MUGSHOTS

*The friendly face
behind the mail...*

*Terry Lynock**Bob Craig**Neb Kehoe**Roger Marsh**Joel Sanborn**Carl Rychwa**Frank Parth (left)**Dave Stewart**David Hill*

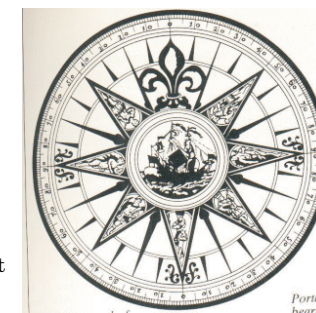
Horizontal shelves, I used 1/8" cherry, while the top, side doors, drawers, and all of the small vertical panels on the upper shelf section were made of 1/16" cherry. The two front drawers, set just below the compass compartment are faux. I could have made actual working drawers, but I could see little purpose since they would not actually be used to store anything on the model. The drawer fronts are simply applied with a piece of 1/8" material set in between the two horizontal shelves to create a vertical stile in between the drawers.



The individual pieces for the cabinet were all made on my table saw, except for the decorative cut out on the bottom of the side pieces, which was done on my scroll saw. All of the joints were glued with Elmer's yellow glue and the major joints were held tight with miniature sliding clamps. For the chamfered edges of the doors, drawers, and top of the cabinet, I turned to my trusty jeweler's files. I used a round section files to relieve the edges, making the pieces look as if they had been passed through

a router/ shaper machine. It took a bit of doing and careful attention to the depth and width of the cut, but the effect is believable, even up close. The front trim piece was set just below the compass compartment and runs the length of the cabinet front, wrapping around both sides. It was finished with a bullnose on its leading edge and is mitered at the corners where it wrapped around the sides. The end grain on the backside of the side piece of the front trim was capped with a small piece to finish it off.

Probably, the most interesting part of the project was making the compass that can be seen in the middle section of the upper shelf. I puzzled for some time, trying to figure out how I wanted to tackle that piece. In the end, I cut of a piece of birch dowel of the appropriate diameter and used that as a basic shape for the compass. For the rest, I tried a method introduced to me by a neighbor who also builds highly detailed model airplanes. He suggested using cardboard to simulate metal. So, for the upper rim around the compass, I used a piece of white cardboard about 3/32" inch wide and wrapped it around the upper edge,



recessing the upper edge of the dowel slightly, to form a raised rim around the compass face. I used white Elmer's glue to attach the cardboard. For the compass face, I rummaged through my library and hit upon a compass face reproduced in Wolfram zu Mondfeld's book, *Historic Ship Models*. I scanned the compass face out of his book and then reduced it until I got the appropriate diameter. I printed it and then cut it out and white glued it to the face of the dowel. Surprisingly, The details of the face can be made out even at the rather small size of the compass. I finished off the compass by painting it gold to simulate shiny brass. I did not have any brass paint in the drawer, so I went with what I had and it looks decent.

All in all, this was a very rewarding piece to make for my client who I hope will finish the piece with some clear coat or other natural style finish to highlight the wood grain and overall appearance. The binnacle cabinet is a piece of furniture and I believe it should look like that. My client fortunately has a background in furniture refinishing, so I am confident that he will be able to make the cabinet look really well.



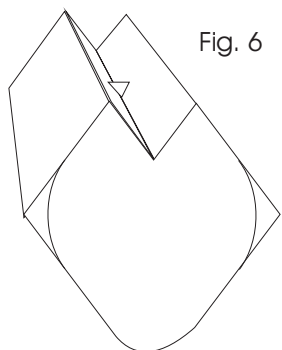


Fig. 6

Note the blade which is set to 45° of the rabbet

jig still plays an important rôle, as it is used as a steady for a half round router bit. All we have to do is transfer the jig from

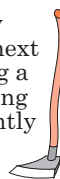
the saw table to the router bench. The mast's edges are carefully rounded off to the point of where the mast is squared, with any hexagon shaping to the hounds between the crosstree lift and the cap being finished with a steel file.

To finish off a mast after it has received a good final sanding and all the dust and crud has been removed, dip a tissue into the chosen colour and 'polish' the paint on. Little paint is required and the grain smiles though nicely if polished enough. Ideally for a penetrating coat, the paint should be thinned a little before application. Do

not thin the paint in the pot as thinners tend to make the paint go yucky after a while when one next returns to the pot for another application.

Use something like a milk pot one gets at motorway service cafés with one's tea. The stirring 'spoons' are useful to mix the paint and thinners. Any cellulose based products will melt these containers so be careful what one puts in them.

Have fun and happy mast making. In the next issue I will be building a steam chest and making jigs so I can permanently bend wood into intricate shapes.



Making A Binnacle Cabinet

Russell Barnes

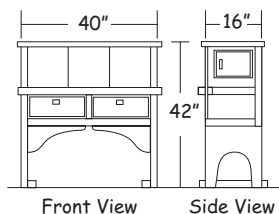
Several months ago, I was asked by a client to make a set of fittings for his model of a nineteenth century schooner. Because the model was not of an actual schooner, it became clear that much of the fittings would have to be made in a style that would fit the model, rather than adhering to a set of fittings for a particular vessel. One of the fittings I made recently for this model was a binnacle cabinet to house the schooner's compass. While this type of schooner may or may not have had a compass, after corresponding with several list

members and with my client, I felt an argument could be made for the cabinet style of binnacle as opposed to the later pedestal type.

The cabinet was one of the more enjoyable pieces I have made for this project. Once I decided upon the cabinet style, I cast about for a suitable plan. In Charles Davis' book, *The Built-Up Ship Model*, I found a plan of a cabinet style binnacle that would answer my purpose. Working from a rough plan of the model's deck, I knew the cabinet must measure a bit over 3 scale feet

feet long. So, I redrew the binnacle from Davis's book making a design that would be 40 inches long, 42 inches tall and 16 inches fore and aft. This will fit the client's model quite well.

Binnacle Cabinet at $\frac{3}{4}$ " = 1' Scale



© Russell Barnes 2002

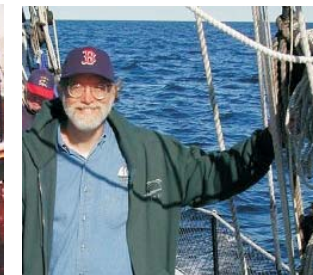
I decided that since the binnacle cabinet was probably made with some style and looked very much like a piece of furniture, I would make the model's cabinet out of some leftover cherry I had in the scrap box. For the sides, back, front trim piece, and two



Derek Burchill



Jim Krauxlis



Tom Babbin



Harry Belflower



Wendy Thompson



John Fox III



Jared Matwiy



John Rose



John Weliver



Jim Stein



Mark Fairchild

Where are you?

More MUGSHOTS



Terry Goodwin



Russell Barnes



Kim Blackseth

Sailing On The High Roads

Or how to get a square peg into a round hole

Tike Maylor

Making working sailing ships has several draw backs and one predominant one is transportation to the pond or lake, as a fully rigged ship is a heck of a job to get into the ordinary car, as delicate bits can often get broken.

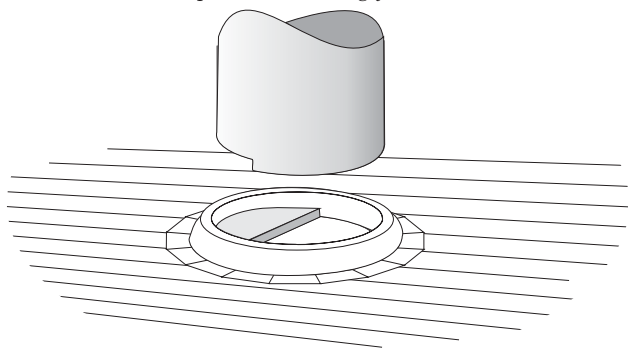
There is no real practical use or reason to step a mast on a model right down to the keel as the materials used are strong enough to take the weight of a mast quite easily

plus the tension from the rigging. Most of the stresses are taken at the hounds and there is only a rotary stress placed on the mast as the yards swing round. Little or no stress can be found at deck level where the mast disappears through it en-route to the keel.

All the masts on my ships are collapsable to enable easy transit. To do this I make a 'cup' that is cunningly

disguised as the mast wedges and inside this I glue a half round piece of plastic about one millimetre thick. A corresponding half round is made on the foot of the mast so it can sit on top of the plastic and not swing round. The 'cup' needs to be no more than 2 mm deep so the mast can be pulled free under the tension of the rigging and laid on the deck. To stop the rigging tangling I de-mast the mizzen first after laying a duster over the poop and then lay another duster over the mizzen and then the main and so on.

With all the masts down, it is now very easy to get the ship into the car, as it is a bit like putting a ship into a bottle



to the blade, switch the saw on and cut the timber. See Fig. 3

Once the cut has been made, save the scrap piece and tack glue it back to the side it was cut in one spot only. This will keep the mast in the correct aspect for the opposite pass. After the second cut has been made, turn the mast round to cut the other two faces, remembering to tack glue the first piece of scrap back on.

As a tip for temporarily tack gluing pieces together, use a hot glue gun. When

the pieces are to be separated, run a hot clothes iron over the timber and the pieces should fall apart. The glue can then be scrapped off with a chisel.

Rounding over...

The mast is now tapered on all four sides and can be hexigoned off as the first step to making it round. For this a second tool has to be made that will cut tapered flats on the edges of the square sides. This tool will plane the edges down and needs to be made of something hard to avoid wear. I used a scrap piece of maple flooring, but beech or teak will do the job just as well. Do not use pine or mahogany as these are far too soft for this type of work.

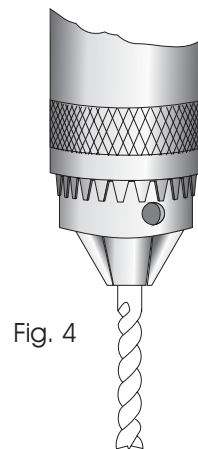
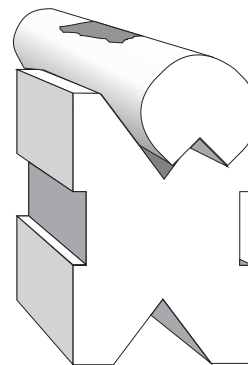


Fig. 4



Roughing out the hole for the blade and wedge

I cut my maple to 30mm square by 75mm long, and in my table saw, cut a rebate down one side and along its length to a depth of 6 x 6mm. See Fig. 3

Next, the piece is put into a 'V' block and a series of holes drilled halfway down the length to form an opening for the blade. These holes are then straightened up with a sharp chisel to form an angle for the blade to sit against and another angle for the wedges that keep the blade from moving. While still in the 'V' block, the top square edge of the plane's body was rounded off with a plane so it fits in the hand comfortably.

The blade is a bit of ground down hacksaw blade that has been honed sharp on a stone. A maple wedge is cut to fit the plane's wedge and blade

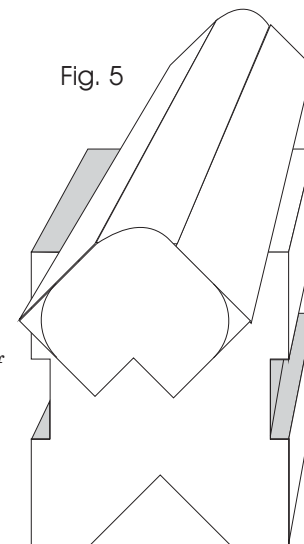


Fig. 5

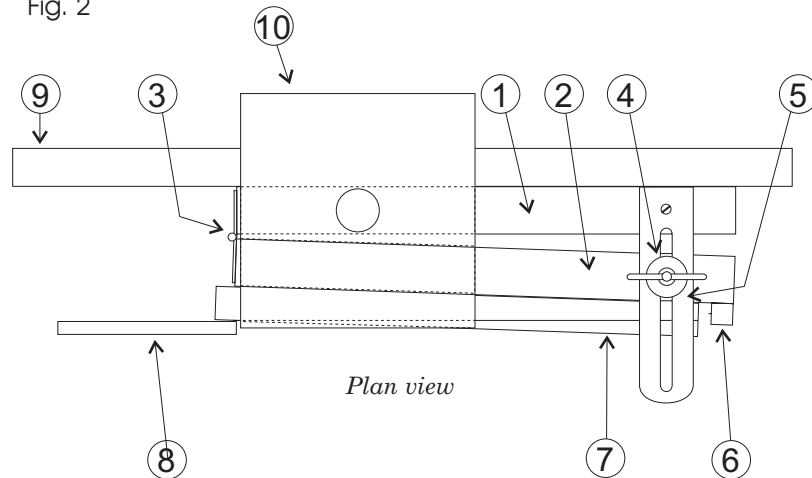
Rounding over the edges so that the plane fits nicely in the hand

angle and a rabbit cut into the blade side of the wedge so shavings can escape. Once this has been done the blade is inserted so it is just proud of the internal 'V' and the wedge rammed home.

Our mast is then swiped along one of its edges until the desired flat has been produced, with the same being done to the other three sides. A piece of 60 grit production paper is sanded up and down the mast to get rid of any square sections. This is followed with a piece of 220 paper to get rid of any scratches left by the 60, ending up with 400 to get a baby's bottom finish to the timber.

Quite often, masts have several square sections along them for hanging the crosstrees, cap and foot. For this type of mast, our

Fig. 2



cutting a thread in the timber. Once it has gone down a couple of centimetres or so, unscrew the stud and glue up with some slow curing cyano or epoxy (Arelidite) and screw it back into the hole. Place the washer over the stud and screw the butterfly down once the adhesive has cured. See Fig.1 (4).

At the hinge end of the left hand piece of batten, drill a 20mm hole and insert a piece of dowel. Fig.1 (10). Cut a piece of 18mm ply 100 x 100mm square and drill a 20mm hole in its centre and glue it in place over the dowel. This dowel will facilitate something to grab hold of and the square ply base will prevent accidental injury to the hand as it passes over the saw blade. At the opposite end to the hinge on the sawing side of the jig there is a stop & pin glued to the side of it. (See magnified insert Fig.1 (6). This is to hold the work as it passes through the saw blade. The pin sits just

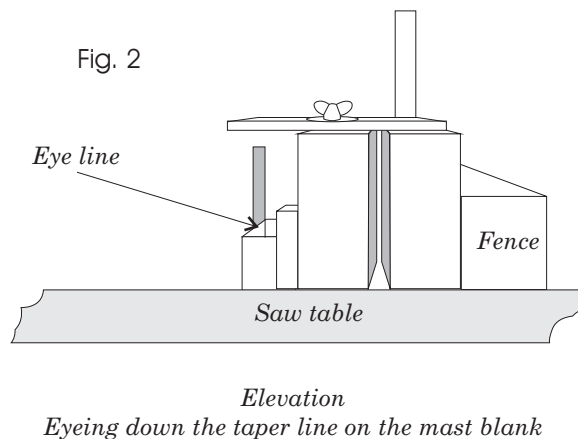
proud of the block to catch the end of the workpiece and to stop it moving about. This block should be just glued in place and not pinned as pins ruin saw blades if they come in contact with one another.

To cut the mast, (7) first run a centre line along its length and measure the taper either side on one of the ends. Adjust the saw's fence (9) to enable the blade to brush against the mast at the start of the cut and then eye up the taper line

with the blade by looking down the timber towards the blade.

Adjust the angle of the jig until both line and blade are straight. Run the jig past the blade and check that the smaller end of the taper line lines up with the trailing edge of the saw, adjusting the jig if necessary. Move the jig back to the start position and check if the blade still rubs against the thick end of the mast at the start of the cut. When both ends line up OK

Fig. 2



GRINLING GIBBONS AND THE ART OF CARVING

David Esterly

Harry N. Abrams, Inc.
ISBN 0-8109-4142-2

A fellow list member, Jay Greer, introduced me to the carvings of Grinling Gibbons. After a search of the Internet, it was apparent that this man is perhaps the most famous wood carver in English history. Of course, there were many wood carvers in English history, but Grinling Gibbons created a style of carving that changed the way ornate carvings were made.

In my search for information, I stumbled across a recent book written by an American Carver, David Esterly. David is a renowned carver in his own right, and was largely responsible for a show of Gibbon's work that appeared at the Victoria and Albert Museum in 1998. He also was called upon to work on the restoration of carvings damaged or destroyed in the fire at Windsor Castle. He is a long time Gibbons aficionado and perhaps the number one

authority on his works.

The book is 233 pages long and filled with the most exquisite photographs of his carvings. It is not a primer on carving, but rather follows Gibbons' climb to fame with the British Royalty while revealing the immense influence he had on other carvers of the day. It also reveals, to the inquisitive, the length one may go in producing delicate objects of art that are as close to the real thing as you can get. His unique style of 'layering' is examined and some photographs show how individual carvings were stacked and layered to achieve complex three dimensional masterpieces.

His carvings survive to this day in many fine English country homes as well as in the major Universities and churches in England. Cascades of flowers, fruit, leaves, fish and birds adorn his complex works. Many are used to frame doorways and paintings as well as mantle pieces and facades in churches. Of particular note are the carvings that adorn Petworth House in Sussex. There are excellent photographs of this work included in the book. Other fine examples of his work can be viewed at St. Paul's, Hampton Court and a life size cravat

A review by Bill Short



and the libraries of Oxford. One of his more famous carvings is a life size cravat recreating Venetian needlepoint in wood. It is said that it was once worn by a gentleman and was not recognized as being made of wood.

The majority of his work was carved in Lymewood (or Lime) (Linden), and Esterly gives an explanation of the structure of this wood revealing its special properties that allow fine sharp edges and almost paper thin shapes to be carved and shaped into foliage and ribbons without the wood breaking away. It leaves the reader to experiment on his own to try to emulate the types of carving shown.

The book retails for approximately \$40 US and is a hardcover edition. Any serious carver wanting to learn something about carving decorative ornamentation, will find this book provides guidance as to what can be achieved and chronicles the life of a very fine artist.



One of the many beautiful carvings being prepared for Windsor Castle

An Exercise in Rigging an 18th Century Brig of War

The Bennington

Part One of an on going article

Someone gave me a partially built Model Shipways kit of the Brig Fair American (Plank on bulkhead version) several years ago. I set it aside. Then I read on Page 106 of William Saltonstall's book "The Ports of Piscataqua" that a Privateer Brig named the Bennington was in Portsmouth around 1780. He also remarked that a privateer brig Fair American was in Portsmouth around the same time.

Actually Saltonstall does not say they were in Portsmouth at all. What he does say is that John Langdon, a very prominent resident of Portsmouth in 1780, had an interest in both brigs. I want to believe, so I will, that they must have both called at Portsmouth on occasion.

Well!! - I said to myself, maybe be there was a similarity between the two (I think that's called rationalization). Of course I had (and have) no idea if the Fair American model in the Rogers collection (#60) is the same Fair American mentioned by William Saltonstall (It seems there were several Fair Americans). I also have no idea if the Fair American and the Bennington were at all similar. But I did not let that deter me, because

my great interest is not in the hull design, deck layout etc, but in the rigging of 18th century vessels. So I thought I could not go far wrong if I assumed that the rigging of two 18th century privateer brigs was similar. Thus my model of the Bennington, A Brig - O - War of 1780 was born.

I dug out the Fair American kit and got started on the hull in a sputtering fashion. A sputtering fashion because I had several rigging restorations to do at the same time. However, in time, I did finish it.

The Model Shipways kit of

the Fair American is at 1:48 (51?) scale. I'm not sure the advertised scale of 1/4 inch to the foot is accurate for this kit, but I built and rigged it as if it were. At this scale the hull would have been approximately 67 - 68 feet long (range of deck), so it is a very small vessel to be rigged as a brig, and a brig of war at that.

Building the Hull and other misc. Stuff

Being a treatises on rigging, I will make only a few comments on the hull and its building. There are many good books on building the hull of the Fair American.

Neb Kehoe



Note the pumps just aft of the mast. Just aft of them is the binnacle which is a 'sideboard' type that is lashed to the deck through eye bolts.

Making a Mast Tapering Jig

Mike Taylor

It's always a problem to make true masts. How can I do it? Do I turn them on a lathe, or whittle them down with a plane? Will they be correct and look good, and more to the point, be accurate?

How many times have we asked ourselves these questions and still not come up with the right answer? After making a few, most people get themselves into a system that works fine for them, which is OK. In the next few paragraphs I'd like to discuss my system of mast making and demonstrate the special tools I have made to accurately make them.

The basic workshop tool is a table saw, without which nothing can be accurately made. These tools are lethal if the

manufacturers instructions are not closely followed, so don't bother heading for your lawyers if you chop your hand off when you have removed the guards for fine detail work. Just keep your fingers well clear of all moving parts. Two of the most important items of apparel that are needed when working with timber are a face dust mask and eye protection. This disclaimer out of the way, we can now get on with it.

Two pieces of batten 50 x 25mm by a bit longer than the length of the mast we want to make are clamped together on edge with two clamps. On one end, screw a suitable size butt hinge to allow the pieces to open in a 'V' shape.

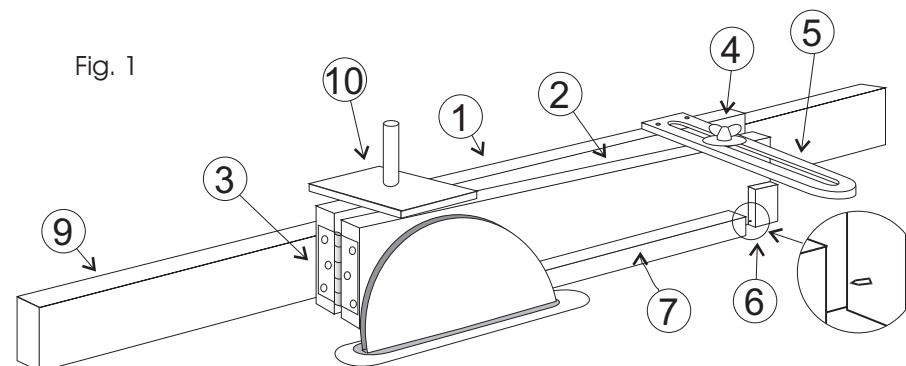
On the other end to the hinge, a sliding grip has to

be made from 6mm plywood. A fret or coping saw can be used to cut a slot along the middle of the ply. The slot can be any length, as this jig can be used to taper anything to any angle and it may prove profitable to make it say 10cm long for this future purpose. As soon as the slot has been cut, pencil mark about 2cm round it and cut to line.

Screw fix the sliding grip to the left hand hinged batten with a single screw, with the hinge set at the opposite end. Place the slide at 90° to the batten it is fixed to and mark out the inner slot on the other piece of batten. Purchase a longish bolt and butterfly nut plus suitably wide rimmed washer and after cutting the head off the bolt, measure the width of it across the base of the thread with a vernia calliper and drill a corresponding size hole in the middle of the batten that was last marked.

Screw the stud into the hole that has just been drilled. It will need some force behind it as it is

Fig. 1



Angle cutting jig

The decision to carve the ornamentation on my Sovereign of the Seas was daunting to say the least and the process that led me to using a dental drill to do it is worth a few words. On a visit to Florida in 1999 and a trip to Father Bill Romero's house with John Weliver, I was treated to a carving lesson by Fr. Romero using his Fubbs Practicum as a guide. It was at that lesson that I decided to put all the Mantua ornamentation back in the box and carve my own. Up to this point my carving experience amounted to trying to use a 12 V dc. Proxxon hand tool with a few old dental bits to carve in a piece of Pear and the results were dismal to say the least. The Foreloom that Fr. Bill showed me looked to be the answer but on my return to Canada and a few trips to local suppliers to try them out, I was not happy with the feel of the cable and hand pieces that

Foreloom supplied.

It was at a dinner with my dentist friend who had supplied the few used burrs that the answer appeared in an offer to borrow his belt driven dental drill that he used to train to be a dentist in the 1960's. As the photo shows, it consists of a pad mounted variable speed motor and a system of pulleys leading to a hand piece. The system is balanced and very flexible to use which solved my problem with the Foreloom.

The hand piece is also very 'pencil' like and when carving lets you feel like you are drawing with a pencil or brush. That was the 'feel' that I was looking for. The loan of this equipment led me on a search for one of my own and after an exhaustive look through dental supply places, I finally found a unit for \$50. A machinist friend of mine helped me repair the hand

piece and I returned the loaner unit to my dentist friend. With a trip to the local watchmaker's supply house, I came back to the shop with an array of stainless steel burrs suitable for the task at hand.

It then left me to try and see if I could carve something that would be good enough to mount on my model. Keeping the basic knowledge of Fr. Bill's lesson in my mind I tried to develop a method to take the images of the stern carvings from the painting of the Sovereign by Sir Peter Lely and somehow get them fairly represented as a sketch on the beautiful Colombian Boxwood I had purchased for this purpose. This is where it gets tricky.

It is my belief that the carver must possess a little artistic talent to begin with. Someone once said that if you can sketch it, you can carve it. So, I proceeded to sketch a rather simple outline of the first carving on a small piece of Boxwood. After many tries, the image did end up on the wood and to my amazement, looked pretty good. Then the carving began. Keeping Fr. Bill's lesson in mind, I tried to visualize the different levels or layers in depth that the carving would take. The process seemed to be as many others in the past have said, remove the wood that is not needed to reveal the object inside.

*In the next issue..
Part 2.
The Mindset Required To Carve.*

*Left..our front page picture
without all the scribble over it*



One of the interesting things about building this kit was that the frames are not perpendicular with the keel, but with the waterline and that the keel is not parallel with the waterline, but has a drag aft. Thus when you level the water line with your bench top, the frames slope aft.

I single planked and painted the hull. It has an antique white underbody, very dark green hull and weathered black wales as are the outside of the bulwarks. Inside the bulwarks is my own dark red mix. Mast doubling's etc are the same dark green as the hull. Taff rail and quarterdeck rails are natural wood, stained with Min wax Jacobean If you apply the stain and then wipe quickly it does not come out as dark as you might think. They were then oiled along with the deck planking. It does make for a pretty dark ship, but that may be an advantage in a privateer.

The quarter deck is only about 3 1/2 to 4 feet high, making for very short doors into the cabin area, thus I made them in the companion-way fashion, by putting a sliding hatch cover on the quarter deck over each door. The doors are planked and have blackened brass hinges with blackened ringbolts for handles.

Armament -

I Armed The Bennington with twelve 6 pounders (they are 35mm long or 5 feet in real life). I blackened brass barrels with gun blue and mounted them on wood carriages. They are rigged with breach ropes only.

Fittings -

All metal fittings, such as eye bolts, ring bolts, pins, cannon barrels, hinges etc are blackened with "Hoppes" gun blue (The only gun blue I have found that seems to work on almost every thing metal, copper, brass and steel) they really get black and look like they are iron. The only white metal (gun blue does not work on these) fittings used were the wheel, Capstan, pumps and ladders. They are painted appropriately (Flo-Quill Paint)

Gallows -

The only place I can find anything about these is in Falconers Dictionary, 1780. PG 207 under "No mans land" (strange as that may seem). He describes them and says they were used on "deep waisted" ships. This brig is not deep waisted, as it has no raised forecabin. I'm thinking they were, often used on a small ships or brigs such as this as a way to keep the spare spars and the boat off the deck and hatches. Being a small brig, the boat would take up a lot of room and would really over crowd the deck, as would the spare spars I would think. With the pictures I have included I think you can get a pretty good idea of the hull and it's layout.

Lets look at some plans

My modifications and comments on rigging plans for the "Bennington"

I am referring here to the plans for the "Fair American, Brig Of War" by John R

Stevens (1952), revised by Eric Ronnberg Jr. (1977). The rigging instruction book is by Eric Ronnberg Jr. with revisions by Ben Lankford. These plans are included in the kit produced and distributed by Model Expo. It was produced in two versions, a solid hull version in 1:64 scale and a plank on bulkhead version in 1:48 scale (I don't think either version is still in production). I have the rigging plans for both, but I have the instruction book for the plank on bulkhead version only.

In rigging the Bennington, I thought I would take a good look at the plans and, the rigging section of the instruction book for the brig Fair American. I found them to be excellent, very well drawn and written. I did however find some areas where I felt I must make some modifications to them in the rigging of my model of the Bennington.

I have assumed through out these comments and revisions that the Fair American, being a small American brig of war (privateer?), would be rigged in the British, rather than the Continental style. I also looked at the rigging practices from about 1775 to about 1790. After that time (1794) it probably would have carried a dolphin striker. Before that time (1773) it would not have had slings on the lower yards, only jeers (In spite of this, I chose not to use slings on the Bennington). The plans call The Fair American a "Brig of War of 1780" so I felt it important while researching, to remember the words "Small", "War" and "American".

Running Rigging

Braces

Plans show main braces leading forward. But the belaying plans show belaying points both on the fore pin rails {P&S} and to cleats on the quarterdeck rails. They could run either way? Maybe it's both ways? Preventer braces?

(Marquardt, Pg 117)

Braces usually ran forward on continental brigs. The British style was to lead them either way on merchant brigs and often aft on Navel brigs. I would like to research this further. I always thought that the cross-jack yard braces ran forward on a brig (Large main sail, a long boom and no square sail on the cross-jack) and would run aft on a Snow (Smaller gaff sail, no boom and a square sail, or course, on the main yard). To make a long story short, I ran them forward on the Bennington it being a brig.

Sheets

On the plans, the topsail sheets are set up with tackles at the base of their respective masts.

(Lees Pg 90) (Harland Pg 82) and others.

None of my research shows a rig such as this for rope sheets. Lees describes the sheets leading in the normal manner. He says they were run through either lead blocks on deck, or sheaves in the topsail sheet bits (this was the more common). Harland does say that chain sheets came in about 1838 to 40 and used tackles to set them up.

This strikes me as being a

slow and cumbersome way to control the clues of the topsail; I will go with the traditional rig and not use tackles.

Lifts

Topsail and Top Gallant lifts are shown as standing lifts.

(Lees, Pg 84 & 95)
(Marquardt, Pg 91 & 98)
(Falconer, listed under Toggles) (Harland, Pg 29)
(Mondfeld, Pg 314) (Lever, Pg 38)

I doubt very much if a Brig of War would use standing lifts. They did not come into use until a much later date. This may be because of the quality of hemp rope in 1780. It tended to stretch & shrink a lot. To be constantly adjusting standing lifts in order to keep the yards square would be a real nuisance. Also, being a brig of war, sail trim was of more importance than in a merchant brig. Also, on a privateer more men would go aloft to set and shorten sail. Men are heavy, and running lifts would support the yards better.

I also think, that as standard practice of the day, they used the topsail lifts as topgallant sheets. All above sources mention this rig. Darcy Lever, although he is of a latter period (1819), gives a wonderfully complicated description of the practice. I will use the topsail lifts as T' Gallant sheets on the Bennington

My guess is that the topgallant lifts should be single, but not standing. These yards were sent up and down quite often and running lifts are useful in performing that procedure.

Parrels

Topsail parrels are open and falls belay on deck

(Marquardt, Pg 93&94) (Lees, Pg 84) (Harland, Pg 28 & 29)
(Mondfeld, Pg 312)

Marquardt says that in continental practice open topsail parrels were used, but the English did not use them. All other sources indicate the British used closed parrels. I will stick with closed parrels.

Lower yard lifts are single, lead over the caps, and are set up with tackles at the foot of the mast.

(Lees, Pg 68) (Marquardt, Pg 75) (Lever, Pg 34)

Lees does not mention this rig at all, but remember he was writing about English ships of war (that word "war" again). Marquardt says it was "Frequently practiced on merchant ships". Why he doesn't say. Lever (1819) Mentions this rig but also says, "This looks snug and is found in the merchant service to answer very well". He goes on to say "the lift must leathered well in the wake of the cap". I have also read it had to be well greased - ugh!

I will use the standard "gun tackle" type lift rig here. With a block at the cap and one seized to the sheet block.

Topsail sheets

They are shown leading through sheaves in the lower yards.

(Lees, Pg 68, 13 & 91) - Not until 1806 (Marquardt, Pg 31)

The picture of yards on page 31 seems to indicate that on English merchant ship sheaves



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CARVING WITH A DENTAL DRILL

Part I.

Bill Short

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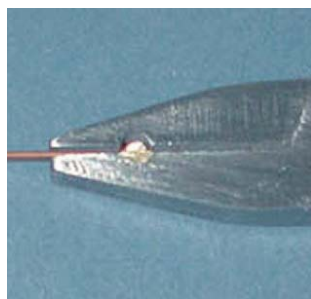
A Trunnion Iron Making Tool

Terry Lynock

As most model makers will know there are many small jobs that really make you grind your teeth at the thought of them, one of these was making the cap squares that cover the trunnions on the cannon barrels, the little things that look like a hump-backed bridge and are a total pain to replicate in any numbers, getting them all the same size and shape is a real test of ones patience.

When there is only a few cannon to be seen it isn't too bad but when you get into the building of bigger warships where there are anything from 32 to 100 cannon needing two cap squares each then you have a long boring job ahead of you, it was with this tedium in mind that I came up with the answer to my prayer.

I rooted around in my drawer of old but still usable/redundant hand tools



Note that the hole has to be a little larger than the brass die to allow for the strip clearance.



Overview of Terry's Trunnion form tool

and found a small pair of flat nosed pliers, the first job was to clamp the jaws of the pliers together then drill a hole between the jaws so that when the jaws were opened they had a semi-circular groove across the jaw, the face of one jaw was then filed away, the amount of metal removed being the thickness of the metal used to make the cap square.

The groove in the jaw then had a piece of hard brass or steel rod silver soldered into it, the diameter of the rod should be the same as the diameter of the trunnion of the cannon barrel, the other jaw should then have the groove filed out, the amount of metal removed should again be the same as the thickness of the metal used to make the cap square.

The metal for the cap square is held end-on in the jaws and crimped to shape, see r making small

the jpegs for the details, this tool will produce perfect cap square blanks all the same size and very quickly, I made over forty in five minutes, just crimp the metal and snip it off with side cutters, I have four sets of pliers at different sizes modified in this way, they cover almost all scales and trunnion sizes, they can also be used for making small brackets for futtock band shackles and so on.



The finished form tool. Please note the smooth finish to avoid marking the compressed metal.

may have been used after 1780

Neither Harland nor Mondfeld seem to contradict above, though Mondfeld does mention a sheave for reef tackle (Snatch blocks nailed to back of yard?) but date not clear.

I will stick with sheet blocks with the lift blocks seized in their strops.

No cheek blocks on either topmast head.

(Lees, Pg 5) (Marquardt, Pg 23 & 25) (Monfeld, Pg 225)

The picture in Monfeld that shows cheek blocks says "18th Century British". All other sources indicate cheek blocks were in general use on English ships of all rates from about 1773 and on first rates from about 1745.

Lees describes the main topmast staysail stay and the staysail halyard as using cheek blocks on the main topmast. Ditto for the middle staysail stay, and the middle staysail halyard. (1773ish)

I like cheek blocks, and since they fit the period, I'll put them on both the foretopmast and the main topmast head.

The plans showed three cross trees (and top gallant shrouds) on the topmast heads, I changed this to two. This is a small ship, only very large ships would have had three.

Vangs

(Lees, Pg 111) (Marquardt, Pg 85) (Falconer, under Vangs) (Monfeld, Pg 324)

I have read that hoisting gaffs did not need vangs, only a peak down haul. All above sources describe vangs, but it



Bennington's midship section

Note the eight cannon which would require a possible gun crew of six men each. During an action Bennington's decks would be really crowded.

is not clear if they were used on all gaffs or just certain ones at certain times (like in 1780?). So it is possible that because this brig had a hoisting gaff, Vangs would only rigged when in port. But because this sail is the main sail on a brig, I would think vangs could be of value, kind of like braces on square sails. Is that a stretch? Maybe, but I will rig vangs on the Bennington

Peak Halyard

(Lever, Pg 43) (Monfeld, Pg 325) (Marquardt, Pg 84) (Lees, Pg 110)

The rig shown on the plans seems to be that of a standing gaff. I don't think a brig of this date would have a standing gaff. This was the main sail and had reef points etc. This would mean the gaff would be raised and lowered during reefing as a topsail yard would.

The plan shows a complicated span on the gaff

with a single tie leading through a block at the masthead and set up with a tackle on deck at the foot of the mast. This would limit controlling the angle of the gaff as it was raised and lowered during reefing etc.

Marquardt does show a span on a hoisting gaff but it does not look like the one on these plans, he also says it was continental. Lees does not mention a standing gaff at all and does not show a span like this. It would seem an English style brig of war would use the usual Peak halyard rig with blocks on the gaff and the masthead.

I will use the more traditional peak halyards.

Sheer poles

(Marquardt, Pg 61 Fig 31(e) & Pg 62) (Mondfeld, Pg 288) (Lever, Pg 25) (Lees Pg 42) Neither Harland nor Falconer mention or show them)

It seem these came into use a little later than 1780.



Neb has yet to finish rigging the fore and main back stays nor has he tied anything down permanently yet. The tackles showing at the base of the mast are the jeer and truss tackles.

Marquardt calls them "Stretchers and says they came into use about 1800. Monfeld says 19th Century, as does Lees. Lever also calls them stretchers or Squaring staffs, he give no date but the book is dated 1819. One would wonder why they were not used sooner being rather simple. Probably it was the quality of hemp in the 18th Century. The old hemp stretched and shrunk a lot in weather so the shrouds would have to be set up often. This being the case, stretchers (sheer poles) would complicate the operation a great deal. I will not use sheer poles

Jeers and Slings

(Based on all listed sources)

No Jeers on plans, just slings. This could make sense, when at sea they may be unrove to reduce top hamper, but I don't think that was true in 1780. The jeers were the primary rig holding up the yard as well as allowing for

adjustment (Hemp again) while Slings were considered as a preventer rig, a back up. War ships often rigged chain slings just before going into battle.

The Bennington will carry jeers only, no slings.

No Jib Boom Guys on plans

(Based on all listed sources)

She carries a spritsail yard and a jib boom, so she would have had jib boom guys in the normal fashion, leading through thimbles on the yard and set up with a tackle or bulls eyes in the bows. I think this may be just an oversight. I will put jib boom guys on the Bennington

Boom and Gaff

Jaws Vs Goose neck

(Monfeld, Pg 234) (Lees, Pg 17) (Marquardt, Pg 23 & 36) (Lever, Pg 44)

Monfeld says jaws until the 19th century, others seem to

back that date give or take a little. I'll stick with jaws on both boom and gaff. I also assumed a lowering gaff would be important on a brig of war

Cross trees

After looking at hundreds of rigging plans and pictures in all above sources and elsewhere.

The plans showed three cross trees (and three T' Gallant shrouds) on the topmast head. I changed it to the normal two. This is a small ship, only very large ships would have carried three. Maybe some ships that carried royals as a standard sail might, although they would probably just add backstays as in the rigging of Clippers.

Standing rigging

Another place I modified the plans is in the run of the main stay, all my sources show the main stay running to the starboard side of the fore mast, the plans show it on the larboard. I am running it on the starboard with the preventer stay running through a bulls eye fairlead on the foremast and set up with bulls eyes to an eye bolt just abaft the mast as shown on the plans and in all my sources.

The plans do not include a fore preventer stay. Being a ship that is expected to fight, I would think it would have one, so I rigged one on the Bennington.

Rigging Overview

The Bennington has a typical Brig rig. It really is a "Towering" rig, with the main

mast being approximately 80 feet from deck to truck. 9 1/2 feet of which is the pole above the T' Gallant mast. (She could fly a really big flag.). This was typical of American vs. European style of masting and rigging. These long poles, in light weather, may have been used to set a flying royal, but there is nothing in the rigging plans of the Fair American to suggest this, and I have not rigged anything to suggest royals on the Bennington.

Through out I have deferred to the British fashion in rigging rather than continental, since that would probably be more common in America.

Blocks

Because of my advanced age, and because I do not want this to be the last ship model I ever rig, I have gone with manufactured walnut blocks from Model Expo, bought in bulk. Out of the bag they look terrible. Thus I dress each one by sanding to shape, clearing the sheave hole, defining the strop slot etc. Rubbed with a little black and/or brown shoe polish they look Ok. They do look a lot bigger before dressing than after. I defined the sizes as follows:

| Scale size | Actual size |
|------------|-----------------|
| 3/32" | 4 to 5 Inches |
| 1/8" | 6 to 7 Inches |
| 5/32" | 7 to 8 Inches |
| 3/16" | 9 to 11 Inches |
| 1/4" | 12 to 14 Inches |

In general I tried to follow the adage that when in doubt as to size, in both line and

blocks, smaller is better. However, one must be careful here. In the days of hemp rope, too small a block was not good, they wore the rope out much quicker than larger blocks with larger sheaves. Hemp rope is really made up of a mass of relatively short, natural, fibers all entwined together. It is not as flexible as today's ropes. As you ran a hemp rope over sheaves in blocks it became more flexible, but weaker and weaker as friction broke the fibers down during the flexing. The smaller the sheave, the more this break down took place.

It also took more effort to haul a hemp rope over a small sheave because of its relative stiffness, thus sailors did not like small blocks. I have read that sailors often judged a good ship by the size of its blocks, the larger the better.

Thus 18th century and earlier ships used larger blocks than would be used today with Nylon, Rayon and other synthetic fiber rope. (I'm not sure, but I don't think manila rope had much advantage over Hemp in this regard.)

Masts and Spars

Mast and spar dimensions are from the plans of the Fair American. They will be detailed in up coming sections.

The rigging line

All rigging was done with beige line. The standing rigging is dyed (or stained?) with black liquid shoe polish and bees waxed. This gives it a far more "Tarred" look than the pure black pre-dyed commercial line. It also

stiffens it so it is more like heavy tarred rope. I stained all running rigging with either tan or light brown shoe polish with cigarette ashes (or cigar ashes if that's your passion) mixed in, gives it a nice unpolished goldish/green gray look

SOURCES

The major sources used in my research for this article were:

Marquardt - 18th Century Rigs and Rigging

Lees - The Masting and Rigging of English Ships of War, 1625 to 1860

Monfeld - Historic Ship Models

Falconer - Marine Dictionary, 1780 edition

Lever - Young Sea Officers Sheet Anchor, (1819 edition)

Harland - Seamanship in the Age of Sail

Steel - Steel's Elements of Mast Making, Sail Making and Rigging

I also used information from many other authors, such as - Hahn, Chapelle, Longridge, Davis, Magoun, MacGregor and many others.



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