



Harvey

1847 / 1:50 Scale

Dear Client,

First of all we would like to thank you for the confidence you have placed on us in buying this excellent model, and it is our intention to live up to this responsibility by providing you with not only the finest quality materials, but also with a complete back-up service, so that you will have every assistance in completing the model to your total satisfaction.

Our greatest pleasure would be, to know that you have built the model with the same enthusiasm that we for our part, have planned and developed it for sale on the world's markets.

Before releasing this model for sale, we spent a long time, in producing models from what is now the commercial kit, such as the one you have just bought. This is to provide you with a guarantee that you will be able to build the model from all the parts that are in the kit, and to your complete satisfaction.

In doing so, we have included the most detailed instructions and by following them carefully, you will not find too much difficulty in constructing the model.

Please, allow us a few words of advice:

- Always remember that this is a HOBBY and not a job of work. Have patience and take your time. If you do this you will be surprised at how relaxing this hobby can be.
- Read the building instructions BEFORE starting. By reading them in conjunction with the plans, you will obtain a very good general idea of how to go about the construction in an orderly fashion that will suit you.
- Each part on the plans has a reference no., and this number is also given on the parts list, so that you will be able to identify each part in the kit.
- Please consult with your nearest hobby model shop for any type of advice during construction. If he cannot solve your problem, get him to write to us and we will write back to you directly to you, to help you in any way we can.
- Please check the contents of the kit against the parts list you will find with these instructions, to make sure that you have all the parts. It will also indicate to you the parts that you are required to cut for yourself from the woods in the kit.

HISTORICAL

The history of Clippers in general is quite curious. They were called clippers because of the very high speeds they could develop in favourable weather. The first ones appeared during the American war of Independence, when they were used as blockade runners. Later on and owing to their great speed, they were used in the opium and the slave trade. However the government of the U.S.A. countered this move by arming their own clippers.

The American Clippers really came into their own when California was incorporated as a state of the Union in 1848. It had been discovered that California had a great deal of natural wealth, as yet undeveloped, and many people from the East coast preferred to emigrate there by fast sea passage, rather than join the across land wagon trains which were not only slow but could be very dangerous. The gold strike in 1849 also encouraged people to pour into California and Clippers such as the HARVEY were extensively used to transport business-men, provisions and utensils to that great land. So valuable were some of the cargoes that their armaments were retained to deal with any pirates who crossed their paths. It is worth remembering that all this happened before the Panama Canal had been built, so the journey was round the Horn. Such was the demand

that many ships, including HARVEY caused San Francisco to triplicate its population in only 10 years.

The main American Clippers were principally built at Baltimore by William Webb and at Boston by Donald McKay. The design was for a hull built for speed, many sails and an uncluttered deck. This was so that a maximum cargo could be stowed and also for the sailors attending the sails could have as much free room to work as possible, as it was so important that the many sails could be furled and unfurled as soon as possible and without losing a minute. The fierce storms round the Horn demanded this ability to trim sails quickly and some fast times were recorded - for example, New York to California in 89 days.

The early Clippers had only two masts, such as the HARVEY, but for the ever increasing demand for speed and volume, the later Clippers were built with three masts and up to about 4000 square metres of sail.

But the death knell of the Clippers came about with progress, as first the railroads were extended, the Panama Canal was planned and especially when the Suez canal was developed in 1870's. They were to become uneconomic - but who can forget the amazing exploits of the Clippers such as HARVEY, in that golden age of sailing ships.

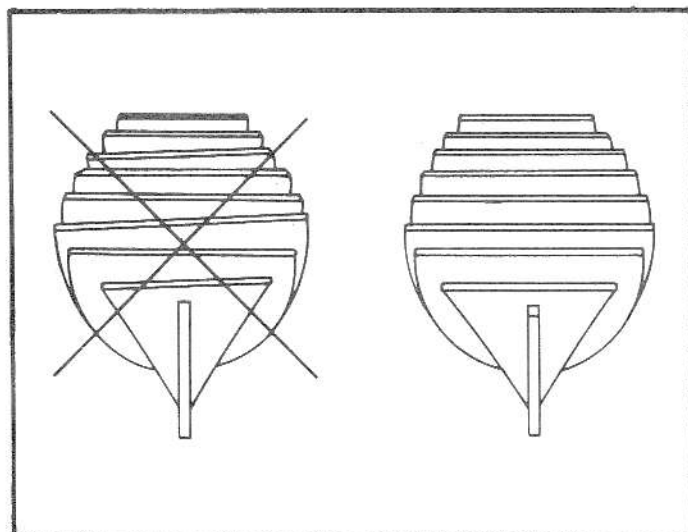
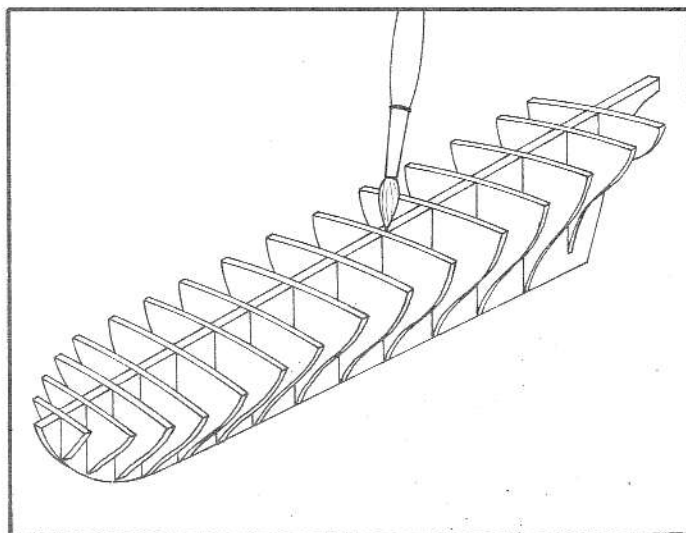
Rubbish!

BUILDING INSTRUCTIONS

A. THE HULL

To start building the hull you should first start by making up its framework, which consists of a false keel and 15 timber frames or ribs.

A.1. The False Keel and Timber Frames. (Ref. Nos. 1 and 2-14). Fig. 1. Select these parts from the kit and immediately slot the timber frames into the grooves cut on the false keel. Start from bow to stern as you will see them numbered on the plans and make sure that the top level of the frames all sit at the same level as the top of the false keel. Make sure that they are all at right angles to the false keel and parallel with each other. They should also sit upright in position and when fitted, take a look along the top level of the framework to make sure that this is so. If it is not, then you may have to make some adjustments with a smooth file and sand-paper. If by any chance you live in a tropical climate and the humidity has warped the false keel somewhat, then do not worry- just soak it in water and then place it on a flat surface with a suitable weight on top. You will find that when it dries out, it will retain its original straight form. When you are satisfied with the position of the structure, apply wood glue to all the joints, refit the frames back into position again and leave to dry out thoroughly. When the structure has dried out, examine it once again to ensure that all the frames are still standing in their correct positions as described before. (Fig. 1).



A.2. Hull Reinforcing Blocks. (Figs. 2-3-4. Nos. 15-16-17).

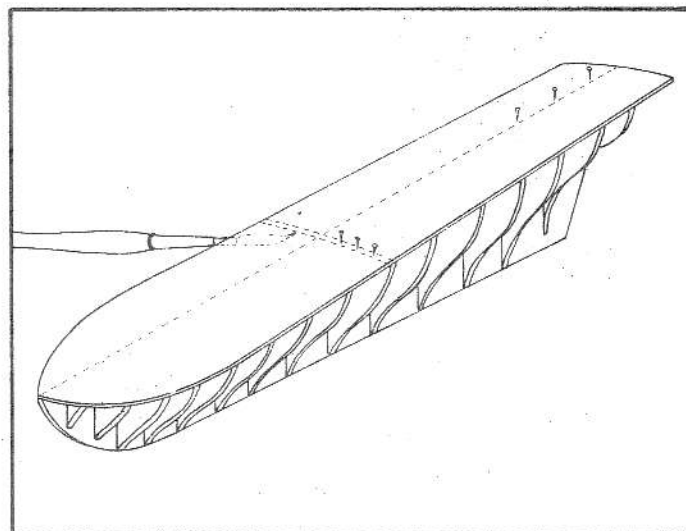
First take the two prow reinforcing blocks (Nos. 15a and 15b, and bond them into position against the side of the false keel (No. 1). The first timber frame (No. 2) and at the same height as the tops of the false keel and frames. (One block on each side of the false keel. (Fig. 2).

A.2.1. Do exactly the same with the stern reinforced blocks-Nos. 16a and 16b (Fig. 3) and against the back of frame No. 14. Then on to both sides of the false keel, bond the mast carling blocks Nos. 17a and 17b and between frames as plan and with the upper parts at the same level as the tops of the false keel and frames. Then do exactly the same for the other two mast carlings 17c and 17d, but this time bonding them into position between frames 9s plan. (Fig. 4).

Now leave this to dry out and when ready, file down any proud surface along the tops of the false keel, timbers and reinforcing blocks, with a rough file so as to ensure a flat surface for fitting the false deck. (No. 16).

A.3. The False Deck. (Fig. 4 No. 18).

Dry fit the false deck No. 18 to the top of the structure and as shown on Fig. 4 of the plans. Then take a pencil and by holding the false deck into position, draw the outline of the top of the false keel and the timber frames on the UNDERSIDE of the false deck. Turn the false deck over and refit it into position again and showing the outline of the rib structure below. This is so that later on you will find it easy to locate the areas on the false deck that will require to be pin-nailed. Apply wood glue to the tops of the timber frames and along the top of the false keel, giving a liberal coating to the tops of all the reinforcing blocks. Bond the false deck into position as shown on the plans. You will notice that there is a slight but natural bevel and to assist the false deck in taking up this form and to help the bond, start knocking in a few pin-nails at about 30mm distance along the line of the top of the false keel and the timber frames. When this is done, leave the structure to dry out.



A.4. Shaping the Hull. (Figs. 5-6).

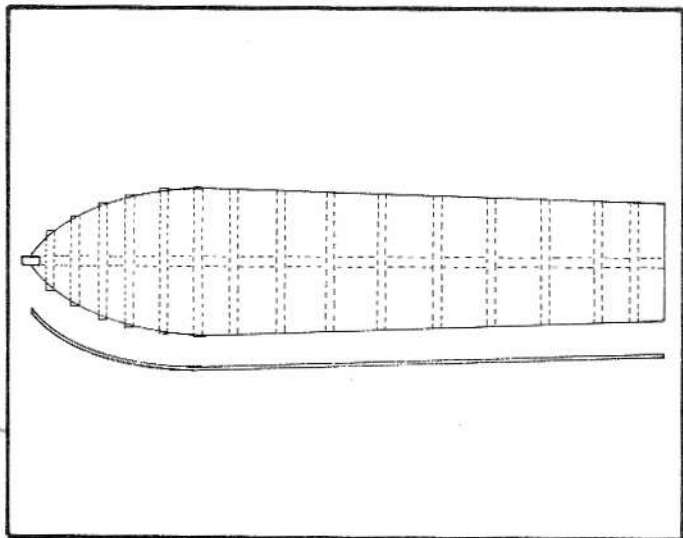
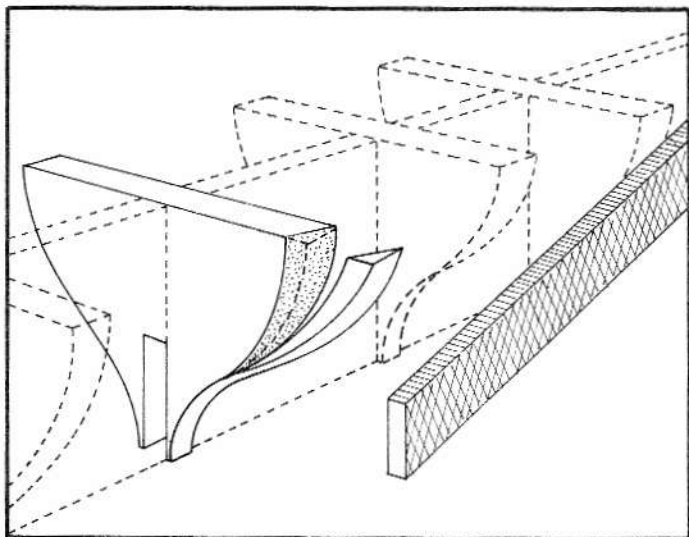
When the structure is dry, you will see that it is strong enough to withstand some shaping. Nevertheless, care should be taken during this next stage. The idea is to have the structure in the best condition before hull planking, and that the edges of the timber frames should present their full faces to the breadth of each hull plank.

Start with the prow reinforcing blocks and file these down with a medium file so that they take up the shape of the curvature of the hull at its bows. Then start to file the edges of the timber frames to give a curving effect that the hull planks will follow. Frame No. 8 to No. 2, should follow the shape towards the bow and Nos. 8 to 14 to follow the shape towards the stern. This can easily be determined by simply laying a hull plank along the sides of the frames and you will see for yourself if all angles including the surface of the reinforcing blocks are correct. When you are satisfied with this, start filing the bottom of the false keel at the point where the bottoms of the frames touch it. This is merely so that the join of the bottom of the frames appear to "run into" the false keel as if all the structure were one piece. These are mainly frames 2 to 10, because as from this point back to frame 14, the frames are in an ascending run.

A.5. Hull Planking. (Fig. 7-8. No. 19).

You will notice that we have made an addition to the contents of the kit. Instead of one single cover of hull planking, we have introduced a second and much thinner group of hull planks of thin walnut veneer. First time builders were having some trouble with the original kit in trying to hull plank with just one layer of walnut wood strips, because Walnut or Bokapi strips do not lend themselves easily to bending along the curvature of the hull. We introduced Limewood as a substitute, which is so flexible that you can almost tie knots in it. Unfortunately it is a white wood and does not "look right". It is for this reason that we have added further walnut veneer strips as a second covering, so that it will look right when finished. It also has the added advantage of covering up any mistakes done with the first layer of limewood strips. Here, bumps can be filed off or filled with a suitable wood.

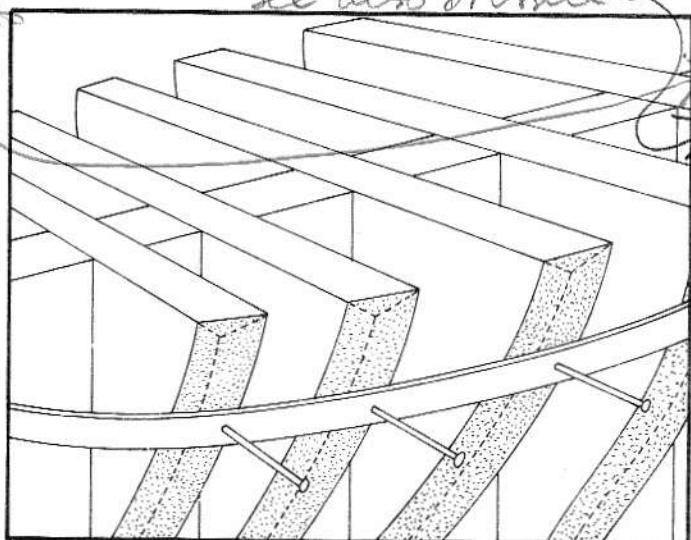
2 see A11 Add stern + keel now to form a rabbet for planks? see Dressel



ble filler, depending on whether they are convex or concave. An experienced model-maker can, (if he so wishes), throw away these strips and buy walnut strips of the same size as our Limewood strips, from his local dealer. The choice is yours.

A.5.1. Hull Planking - 1st. Layer.

Take the limewood strips (No. 19) and lay the first one along the whole length of the hull from stem to stern and at a point 2mm down from the edge of the false deck. (The bulwarks will later on be fitted here). When you have this to your liking, apply wood glue to the underside of the wood strip and fit it back into position as before. Take some pin-nails and gently knock in one pin-nail where it meets the edge of each of the timber frames. Repeat this operation for the other side of the hull.

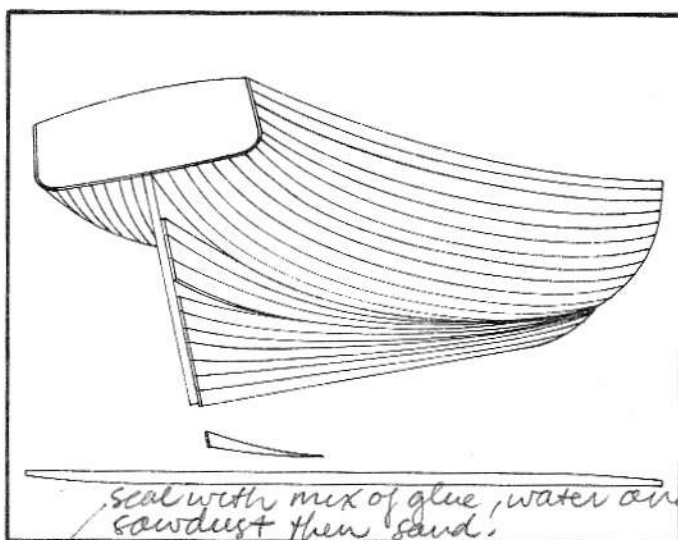


Now, there are just two points to remember:

a) Knocking in pin-nails. If you can clip off the points of each of them with snipping pliers or just blunt the points with a tap from a small hammer, the better. Pins with a point, tend to wedge themselves between the grain of the wood and often causes the wood to split, which would be almost fatal. Blunted pins do not cause such problems.

b) The other point is that when you fit one plank to the side of the hull, you must repeat this operation for the other side of the hull before going on to the next. This is to avoid applying too great a stress on the hull if only one complete side was planked first. Doing it by alternating planks on one side then the other side in turn avoids putting this stress on the hull and the finished product will be true and straight, and not twist out of alignment.

Continue now, to lay a second plank (one on each side of the hull) in the same way as before and immediately against the first one. Make sure that it lies flush against the bottom of the first one you laid by applying a little wood glue to its edges. Now when you have the two planks laid, on both sides of the hull, the third one is called the master plank. It is called the master plank because you should start to lay it at a point some half-way down the hull and let it take up its natural position without any undue twisting it out of its own path along the side of the hull. Repeat this for the other side. Now it is from here that you should start to lay all the remaining hull planks and working both above and below this master plank. You will find that owing to the severe curvature of the hull, that some gaps will open up between the planks as you are laying them. Do not worry about this as it is quite natural and the original ship was the same and for the same reason. On other parts of the hull and owing to this curvature, you may find that you will have to shave off some plank sides with a sharp knife. Keep on planking until you have the whole hull planked on both sides and leaving the natural gaps. These gaps will have to be filled in now, and to obtain the shapes, make templates with cardboard first to the shape of the gaps. Then use these templates to cut some wood strips to the same size. Dry fit them into place, and adjust if necessary and once you are happy with the result, proceed to bond them into place with wood glue.



Now leave all this to dry out thoroughly. This may take all of a day to do. When it is dry, proceed to file down the surface of the hull with a medium file. Remove excess parts and fill in any dents with filler, and when you are finished, you should have a smooth surfaced hull.

For reasons that you will see obvious later on, we don't apply the second covering yet. That is done at a later stage. Now is the best time to start deck planking.

A.6. Deck Planking and Waterway Deck Stringer. (Figs. 9-10. Nos. 20-21-22).

For the deck planking, use the thin white mukali wood strips, of 600 x 5 x 0.6mm, and use impact glue for this job. Take the first strip, apply impact glue to its underside and also to the whole surface of the false deck which you have already fitted, then wait a little until the glue is "tacky". Then immediately lay this first strip all the way down the exact centre of the ship's deck and from the point of the bow to the stern.

Now cut up the remaining strips into lengths of about 70mm. Apply some glue to each one and then start bonding each one into position on the deck flush against the first full strip you have just laid, and working from one side to the other. Try and lay these cut strips in a staggered form such as brickwork is done, and make the bonding flush against each other and make good butt-end joints.

To simulate the deck rivets, you should tap a few pin-nails into the ends of each strip as shown in Fig. 9 and as soon as they pierce the false deck, snip them off with pliers. When the job has been finished, rub down with fine sand-paper and then trim and smooth off the edges of the deck.

A.6.1. To make the waterway deck stringers (No. 21-22 use the 3 wood dark strips of 1.5 x 640mm from the kit. With 2 of these strips, make dri-



round off before fixing.

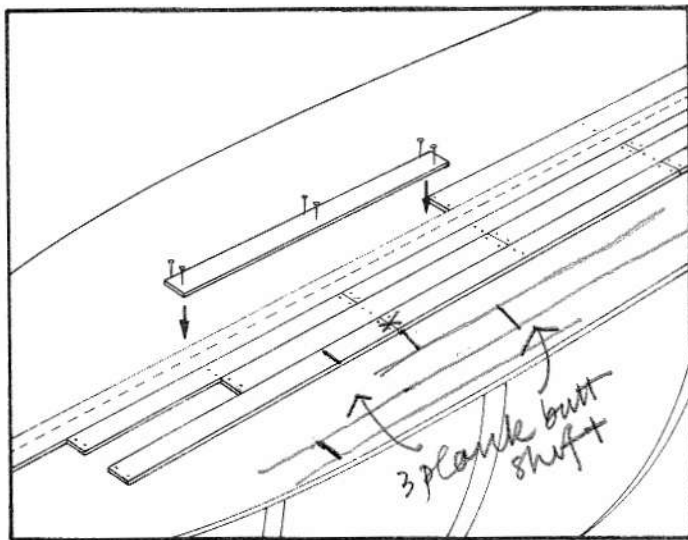
First fix bulwarks, 23A + B so that struts can be glued to deck to get shape then cut struts off.

See also Dressell

see HSM Pgs reshape

see diagram over page see HSM pgs re butt shifts

lled holes of $\varnothing 0.5\text{m}$ at 10mm intervals for a distance of 200mm. Now, first try dry fitting these two strips on to the deck, from the point of the bow around the edge of the deck and dead flush with it. If the strips do not bend sufficiently to allow this, then soak them in water for a while and then you will find that they will bend to take up the curve that you need. Use the pin-nails to fix the waterway deck stringer to the very edge of the deck by way of the holes that you have previously drilled. Apply wood glue, fix well and knock home the pin-nails.



A.7. The Bulwarks. (No. 23a and 23b).

Before fitting the bulwarks to the model it is advisable to hull plank them before mounting. For this you should use the very thin mukali veneer wood strips of $0.6 \times 5 \times 600\text{mm}$ from the kit. Now, you should treat this as planking of the inside of the bulwarks, first. Take the Bulwarks (Nos. 23a-23b) from the kit together with the walnut veneers. Apply impact glue to the underside of the veneer strips, lay one from the top edge of the bulwark in a vertical position, and at its bottom edge, break off with your fingers and immediately start laying the next flush up against the first, break off again and repeat until you have all the inside of the bulwarks planked in this vertical fashion. As soon as it has dried out, trim off the ends and smooth down with sand-paper.

Now take the bulwarks you have just planked on their insides and bond each one into position, working from the stern and laying each one flush on top of the first hull plank down, which as you remember was laid at a distance of 2mm from the edge of the deck. When the two bulwarks meet at the prow, cut off and trim, then bond the two edges together with impact glue. (Fig. 10).

A.8. Transom. (Fig. 10. No. 24). and Stern Curved Supports. (Fig. 13. No. 39).

Take the transom from the kit (No. 24) and smooth it off with some fine sand paper. Do the same with the 4 Stern Curved supports (Nos. 39, Fig. 13). First glue on the curved stern supports at the back of the deck and as shown on the plans. (Fig. 13). Then bond the Transom (No. 24) into position where it should be pin-nailed into position as shown on Fig. 10.

A.9. Planking the Exterior side of the Bulwarks and the Transom. (No. 25).

It is at this point when you should plank the sides of the bulwarks and the exterior to the Transom. Use the same type of thin veneer mukali wood strips, but this time lay them in a horizontal fashion starting from the top and using impact glue. Repeat this for the Transom at the stern for both inside and outside. When you reach the bottom of the bulwarks, this task is finished and you should continue now to cover the hull with the second covering of hull planking.

A.10. Hull Planking. Second Cover. (No. 26).

Proceed with the covering of the hull with the thin walnut veneer strips of $0.6 \times 5 \times 640\text{mm}$. Use impact glue. Spread impact glue on the underside of the strips and apply to the hull when "tacky", and using the same technique as you did with the first covering of the hull with the limewood strips. Start where you left off covering the bulwarks, and continue planking until you have all the surface of the hull covered. Leave it to dry and once dried out, lightly rub down with fine sand-paper to give a fine satiny finish.

A.11. Mounting the Stem, the Keel and the Rudder Post. (Fig. 11. Nos. 30-31-32).

The Stem (No. 30) and the Rudder Post (No. 31), will be found already cut for you in the kit. For the Keel (No. 32), you will have to use the wood strip of walnut $6 \times 10 \times 410\text{mm}$, which you will also find in the kit. Now you should first of all dry fit these parts together to ensure that the final fit will be correct. The idea is that once the three parts have been mounted that they should appear to be almost of one single piece. So, if you have any adjusting to do, it is better to do it now before bonding

together. When you are satisfied with the fit, mark the spot of the joints on the hull with a pencil, then bond the stem into position first, followed by the keel. Then finish off by bonding the rudder post into position. To give a better and more secure bond, knock home some pin-nails as shown on the plans and then leave this to dry out.

A.12. The Cannon Ports. (Side Elevation plan- No. 38).

There are 4 of these on each side of the ship, and you will see them marked on the side elevation plan at the height of the bulwarks. Take your measurements from the plans and draw in the square ports on the bulwarks with a pencil. Try and make sure that the second port from the prow coincides at one edge with the joint of the bulwarks you have previously fitted as this will make the construction of this port easier as it is already cut at that edge. To make the ports you should drill through the centres of each with a small twist drill and when you have done this change to a larger drill to leave as wide a hole as possible. This is to avoid the possibility of splitting the wood of the bulwarks. Then take a small file and start filing at the edges of these holes to end with the edges of the ports squared off as measured. Leave the gutter waterway stringers (Nos. 21) intact and do not cut through these.

A.12.1. Cannon Port Frames. (No. 28).

To finish off the cannon ports, take the Bokapi wood strip of $1.5 \times 4 \times 640$ from the kit, then take measures to cut off strips to act as the cannon port frames. Smooth off with sand paper and then bond each one into position until you have each port fitted with its respective framework.

A.13. Bulwark Stanchions and Breast Plate. (Nos. 27-29).

Take the dark walnut wood strips measuring $1 \times 3 \times 640\text{mm}$ from the kit and cut them up into 56 lengths of 20mm each. These strips represent the bulwark stanchions (No. 27) and should rest on the top of the gutter waterway stringers and against the insides of the bulwarks. Once again take your measurements from the plans and bond each stanchion into its respective place as described. Make sure that you have stanchions placed at each side of your cannon ports so as to add strength at these points. Leave to dry out and once firmly fixed, cut off the tops where necessary and file down to the same height as the bulwarks.

A.13.1. Breast Plate (No. 39).

This part will be found in one of the plastic bags in the kit. Take it out and dry fit it into place at the bow of the ship. Make any adjustments to its size if necessary and once you are satisfied with the fit, drill some small holes through it to take the belaying pins later on, these are clearly shown on the plans. When this is done, glue firmly into place with wood glue.

A.13.2. Stern Belaying Pin Rail. (No. 40).

For this you will need a Ramin wood strip $1.5 \times 8 \times 100$ cut from its full length. Once you have adjusted its size to the stern of the ship, proceed to drill the holes to take the belaying pins and also the centre half-moon. Bond it into place with super rapid bond glue. (Fig. 13).

This should sit into place at the edge of transom and evenly flush on top of the curved transom stanchions which you have previously fitted. (No. 39).

A.14. The Hand-rail Tops, Davits and Prow Head Rails. (Figs. 12-13-14. Nos. 36-37-38-41-42).

For this you will need some walnut wood strips of $1.5 \times 5 \times 640\text{mm}$ that you will find in the kit. The Glue you will need for this is a super rapid bonding type such as Wonderbond or Loctite.

Try dry fitting these handrails to the tops of the bulwarks first, to see if it will lend itself to the bending along the curve of the bows. If it does so, well and good- you can proceed. But if you think that it is too risky and that the wood strips will break, then soak them in water first. When they are thoroughly soaked out, you will find that you will have no trouble in getting the wood strips to bend to the shapes that you desire. When you have them bent to the shape desired, you will find that they will dry out and still retaining the shape you have given them. Another good method of shaping, is to use a steam iron. This gives an adequate amount of moisture to shape the wood strips and also assists in drying it out to that shape. However, we have no wish to disrupt the harmony of the home, and you should incorporate the assistance of the important female side of the family using as much diplomacy as you can, and which we feel you are capable of doing as a valued client of Artesania Latina.

However, the objective is to arrive at the place where you have the hand-rails shaped so as to fit cleanly on top of the bulwarks and the transom, as representing the hand-rail tops. If you are using the super rapid bonding glue as mentioned, do so only when the wood strips are really dried out. Do not use this type of bonding with the wood strips still wet, as it will not work.

A.14.1. Take the Prow Head Rails (No. 38) from the kit and when you have the handrail tops dried out, bond these prow head rails on top and at the bow of the ship (Fig. 14).

You will now find the Stern Davits for the long-boat in one of the plastic bags in the kit (No. 41). Smooth off with sand paper and then immediately bond the davit cleats into position, one on each davit and as shown on the plans (Fig. 13). When you have done this, take each of the davits in turn and bond each one into position as shown on the plans, and on top of the ends of the hand-rail tops.

A.15. Rubbing Wales or Fenders. (Fig. 12. Nos. 43-44).

For the upper wale (No. 43) use wood strips of Ramin $2 \times 2 \times 640\text{mm}$ which

you will find in the kit. Use rapid bonding glue for this work. First of all smooth off two adjacent sides of the wood strips to leave a curved form the opposite underside of the wood strip is the one that will be bonded into place leaving the curved edges facing outwards. Bond this strip (starting at the prow) into place along the line of the gutter waterways (No. 21) and on the outside of the hull. You will be able to align this by looking through the cannon ports that you have cut out. Continue along the same line at the outside of the transom.

Now do the same for the second wale (No. 44), but this time using the Bokapi wood strips of 2 x 2 x 640mm in the kit. This wale is bonded at a parallel to the first and below it at exactly the line where the bottom of the bulwarks were fitted to the second hull planking. In fact it should cover the join. Now take the Cutwater reinforcements (No. 45) and bond these two parts into place between the bottom of the Handrail top and the top of the first wale (No. 43).

A.16. Foremast and Mainmast Outboard Channels. (Plan View and Nos. 50-51).

These parts (walnut) are to be found in one of the plastic bags stapled to the card tray in the kit (No. 50-51).

Take a small file, and by looking at the parts on the plan, you will see how the parts have to be shaped with the file. With the same file, make the small grooves on the outside edges and as shown on the plans, so as to take the chain-plates for the lanyards later on. Then bond each part into position (2 on starboard and 2 on the port side) and at the sides of the masts and on top of the upper Rubbing Wale you have just fitted. (see plans)

A.16.1. Belaying Pin Racks. (Fig. 12. Nos. 52-53-54-55-56).

For this operation you will need to select some of the walnut wood strips from the kit. (1.5 x 5 x 640mm). Take the measurements of the belaying pin racks directly from the plans and cut off these lengths from these walnut wood strips. Smooth them down with sand paper and make the appropriate shapes, as on the plans, with a small file. Then make 1mm drill holes through these parts to represent where the belaying pins will be housed. The number of holes should be determined from a sight of the plans. They should now be bonded into position against the inside of the bulwarks and as shown clearly on the plans. If any of them fall over any part of the bulwarks where there are some bulwark stanchions (No. 27), you will have to cut some small slots in the racks so as to fit snugly over these stanchions. (Fig. 12). Use rapid bonding glue for this job.

A.17. The Rudder. (Nos. 33-34).

Take this part from the kit and proceed to round off the top of it, first with a knife and then with sand-paper until you have it rounded. This diam. should be about 4 mm. Now this must go through the back of the hull at its stern and in line with the rudder post (No. 31). As you can see from the plans, it is also parallel with the rudder post. You will need about a 2mm play between the two and as your drill is of 4mm- that is a radius 2mm plus 2mm play- you must draw back 4mm from the end of the rudder post and that should be the point where you should start drilling. Drill upwards and parallel to the rudder post but stop when you begin to break through the deck, thus avoiding the possibility of splintering. Now you can enlarge the hole on the deck with a file to give you a smooth edged hole where the head of the rudder should come through.

Now, take the rudder again, and on the side that lies almost flush with the rudder post, take measurements from the plan at the point where the hinges are to be fitted. Once more using a file, make suitable grooves into the rudder where these hinges will be fitted. These grooves should be the width of a pair of hinges set head to head and one on top of the other. Place the hinges (No. 34) like this and slip the retaining rod (brass) between the two heads and then fit and glue the legs of one of the hinges straddled over the sides of the rudder. Knock in a pin-nail to make it more secure. Repeat this for the other set of hinges. Then fit the head of the rudder through the hole you have just made, to appear through the deck and then proceed to bond and pin the legs of the other and opposite hinges against the rudder post and stern of the model.

A.18. Drilling for the Msts etc.

Mark the spots on the deck where you must drill for the mast placings. Use a drill of Ø10mm. Take the positions from the plans and also take into account the angle of the masts. Drill down in this position to a depth of 30mm. There are reinforcing glocks there to take this depth. Change the drill to one of Ø6mm and drill in from the bow of the model at the bulwark level to prepare a hole for the Bowsprit. As this hole should be Ø8mm, finish off with a file to this size and so as not to splinter the wood. Change the drill to 4mm and make two holes on the deck to take the anchor chain guard. Then drill a further two holes (1 port and 1 starboard) through the bulwarks and near the bow where the anchor chains will pass through.

Change the drill size once more to Ø3mm, and taking a reading from the plans, drill a hole in the bulwarks (1 port and 1 starboard), and through which the catsheads will pass through (No. 46). As the Catsheads are square, you should then square these holes off with a file to obtain a size of 7 x 7mm.

A.19. Varnishing.

This is the best time to apply a good coating of varnish, and you should use a clear cellular varnish which has been thinned down with suitable thinners to about half its consistency. After you applied a good of varnish, leave it to dry for about one hour, and then use a little steel wool to rub

it down all over the hull. This will leave you with a beautiful colouring and which is even all over. The apply another coating of this varnish and leave to dry out once more.

B. THE SUPERSTRUCTURE

The items consisting of the superstructure are most clearly shown on the plans. It is advisable to construct each one individually and leave aside until you have each one complete before you start to mount them on the deck. This is because owing to the natural bevel of the deck you will find that you will have to make some adjustment to the base of each part so that they all sit flush with the deck and before you bond them into position.

B.1. Catsheads. (Fig. 15. Nos. 46-47-48-49).

Take the parts of the Catsheads from the kit and first of all smooth them down with light sand-paper. Then drill a small hole of Ø1.0mm through the its top side at the grooved end (See plans). Insert the Catshead pulley wheels into the grooves and fix them with a small piece of brass wire (No. 48) which you should pass through the sides and through the pulley wheels. Secure this with a drop of super rapid glue. Then take the Catshead top (No. 49) and drill a small hole in its top to take a dead-eye (No. 179). Glue this dead-eye into position and then immediately bond the Catshead top into position at the end of the Catshead. Repeat this process for the other Catshead for the other side of the ship.

B.2. Knight Heads. (Fig. 16. Nos. 58-59-60-61).

Like-wise, you will find these parts in the kit, already made. Just smooth them down with sand-paper and then fashion the top grooves with a fine file and as shown on the plans. To make the cross bar for the Knight Heads, take a walnut wood strip of 1 x 3 x 640mm from the kit and after taking your measurements, cut off a small strip and smooth it off with sand-paper, and then bond it into place in the grooves of the Knight Heads and as shown on the plans. One the half way point of this cross-bar, drill a small hole to take the ship's bell and its support (Nos. 60-61). Glue this into position.

B.3. Windlass. (Fig. 17. Nos. 62-63-64-65-66).

All the parts of this item are already made except the cross-bar (No. 64) which you should cut from one of the walnut wood strips of 1.5 x 5mm. Take the two stands of the windlass (No. 62) and after smoothing down, make a groove all round it sides near the top to give them the shape as shown on the plans. Then drill through the sides of both with 1.50 drill to take the axle of the windlass (No. 65). The bond the windlass support head stays (No. 63) to the rear sides of the windlass posts and fit the cross bar into the grooves at the front of these posts. Fit the brass winding axle through the posts and at the same time, inserting the windlass drums into position (No. 66). Bend the end of the brass axle at one end to give the form of a winding handle.

B.4. Fore and Main Hatch Covers. (Figs. 18-25. Nos. 67-69. 118-120. 176-179).

Take a walnut strip of 1.5 x 5 x 640mm from the kit and cut off two strips of 10mm for the lengthwise coamings and then another two strips of 24mm for the crossways coamings (Nos. 68-69). Now take the Fore Hatch Covers (No. 67) from the kit and dry fit these coamings around this hatchway. Trim and smooth off as necessary. When you have a good fit, bond the coamings into place with wood glue and leave to dry out. Then drill a hole near the ends of the hatch covers to take the eye-bolts and into which you should fit a small ring. (No. 179). These are clearly seen on the plans.

For the main Hatch Covers, (see numbers above), the procedure is exactly the same, except for the difference in size (Fig. 25).

B.5. Fore-mast Fife-rail. (Fig. 19. Nos. 70-71-72-73-74).

Most of the parts for this fife-rail are already made for you and are to be found in one of the small plastic bags in the kit. First take the front bitts of the fife rail (No. 70), and shape the head design with a small file and as shown on the plans. Then take the curved supports (No. 71) and bond them to the backs of these bitts with wood glue, together with the rear bitts (No. 72).

You will then be left with only the belaying pin-rail to make. There is one at the front and one on each side of the bitts. (Nos. 73 and 74). These are made by cutting off strips, 1 of 45mm and two of 28mm from one of the walnut wood strips in the kit measuring 1.5 x 5mm. Dry fit these into position to determine their exact position, and when you are satisfied with this, drill some small holes along the length of these parts which will later on take the belaying pins. When this has been done, bond the parts into position and as shown on the plans (Fig. 25).

B.6. Fore and Main Gratings (Fig. 20-Plan View. Nos. 75-79 and 83-87).

The strips that form the gratings will be found in one of the in the plastic bags in the kit. First take the strips of 45mm and assemble them to form a grating unit. You will then have to form the coamings for this unit by taking one of the walnut wood strips of 1.5 x 5mm from the kit. These strips should be cut off according to the size of the gratings (Nos. 76-77). Smooth off and bond into position with wood glue. When this has dried out, cut off strips to represent the munition racks from a walnut strip measuring 1.5 x 4mm. Smooth these off and bond into position with wood glue. Consult with the plans in doing this (Fig. 20).

The mounting of the main grating is done in exactly the same way, the only exception being the size of the grating is different.

B.7. Water Barrel Supports. (Plan View.- Nos. 80-81-82).

The water barrels and their supports are to be found already made in one of the plastic bags in the kit. First take the supports (No. 81), and after smoothing down drill and insert an eye-bolt into the ends of each one. Bond the barrels into position on their supports and then secure them with a length of twine of Ø5mm as representing the lashings that kept water barrels in position.

B.8. Bilge Pumps. (Fig. 21-Plan View-Nos. 89-90-91-92-93-94-95-96).

From a walnut wood strip of 1.5 x 4mm cut off a length of 70mm and start to shape it with a file as in the form shown on (Fig. 21). This represents the bilge pump lever (No. 95). Drill a small hole of Ø1.5mm through which you should fit and bond the brass lever handles (No. 96). For this you will have to cut off two lengths of 20mm from the brass wire you will find in the kit.

Drill another pair of small holes near the centre of the pump lever and as shown on the plans (Fig. 21), so as to take the pump connecting rods (No. 91), eye-bolts. Then shape the pintle from the brass wire (No. 94) as shown in Fig. 21. This will be held in position on the lever by means of the pump lever (No. 93).

When you have this done, take the bilge pump cylinders (No. 90) and drill a hole through the centre of Ø0.5mm and introduce them inside of the Bilge pump bodies (No. 89). Now take the drain tubes (No. 92) and fit these into the holes that are already made on the pump bodies. It only remains now to introduce the eye-bolts into the lever arm and bond the other ends into the cylinders with a spot of super rapid glue.

B.9. The Bucket Stand and The Capstan. (Fig. 24-22. Nos. 97-100 and 114-117).

All the parts constituting the bucket stand are to be found in one of the plastic bags in the kit, and are already made. Use rapid bonding glue and start by bonding together the bottom of the stand (No. 97) to the side parts (No. 98). Then immediately bond the front into position (No. 99) in the grooves already made on the side parts. Now take the buckets and tie a little of the cotton twine to their ends so as to form the handles. Then add a spot of wood glue to the ends and place the buckets into the bucket stand.

B.9.1. The Capstan.

You will find the parts for the capstan in one of the plastic bags in the kit. Start by bonding the capstan axle (No. 115) to the base of the capstan (No. 114). Now use rapid bonding glue and glue the capstan pawls into position around the axle (No. 117). These should be fitted so that the pawls touch the bottom of the capstan and make sure that they are bonded at equal intervals around the axle. Finally fit and bond the capstan top into position over the top of the axle (No. 116) and at a point where it meets with the top of the pawls. When the unit thus constructed has dried out, cut off any surplus of axle that may show, and carefully smooth off.

B.10. The Cabin. (Fig. 23. Nos. 101-113).

You will find many of the parts of this cabin in the die-cut sheet of 1.5 x 90 x 235mm. Use a sharp knife or fret saw to cut out these parts. Be very careful when cutting out these parts as you can easily cut into the part itself, thereby ruining it. It is delicate work, so take your time (there's no hurry) and make sure you have it correct. When all the parts have been extracted, rub down the end edges with smooth sand-paper.

Mount the cabin as follows and with Fig. 21 before you:

Bond the bulkheads of the cabin together (Nos. 101 and 102 and leave to dry out thoroughly. When really dry, you should start to bond the bulkhead planking into place (Nos. 103-104). For this you should use impact glue and strips of the dark coloured walnut wood of 0.6 x 5 x 640mm. Apply the impact glue to the undersides of these strips and when "tacky" lay the first strip down the length of the bulkhead, break off with your fingers and apply the second planking immediately alongside. Repeat this until you have all the bulkhead sides covered. Rub down the ends where you broke off the ends with your fingers, to leave a smooth and even edge. Immediately start to do the same for the roof of the cabin (No. 105), but this time instead of planking the roof, it must be framed as shown in Fig. 23. For this use a walnut wood strip of 1 x 3 x 640mm and cut off the lengths you will need to form the frame of the skylight (Nos. 106-107). Bond the parts together to form this skylight frame (one on each side of the roof). Now take some of the brass wire you will find in the kit, measure off and cut it into strips to represent the protecting bars of the skylight. Then bond these into position as shown on Fig. 23. (No. 108).

Take the Companionway unit (No. 109) and glue this into the rear bulkhead of the cabin. Then bond the door of the companionway into position and as shown on Fig. 23.

Now take a walnut wood strip of 1 x 3mm and form the door uprights and its crossbars (Nos. 111-112). Rub these down smoothly and bond into position against the door of the companionway that you have just mounted. Bond the companionway roof into position and as shown on Fig. 23.

B.11. Compass unit bench. (Fig. 26. Nos. 121-126).

In one of the plastic bags in the kit, you will find the block representing the main body of the bench together with the lateral sides, (Nos. 121 and 122). The bench top and back will be found on one of the die cut sheets measuring 1.5 x 90 x 235mm. Carefully cut out these parts from this die-cut sheet, (Nos. 123 and 124). Bond all these parts together with wood glue and as shown on the plans (Fig. 26). To make the side covers (No.

125) you will have to cut off strips from one of the walnut wood strips of 0.6 x 5mm to be found in the kit. Bond these into position with impact glue. The false drawers are made in a similar fashion with the same wood strips (See Fig. 26). When this has dried out sufficiently, press in a pin-nail in the centre of each drawer and leaving the head out slightly to represent the drawer handles. To finish off, drill a small hole in each side of the bench and bond in an eye-bolt at each side.

B.12. The Cannons and The Navigation Lights (Figs. 27-29. Nos. 127-133 and 145-147).

All these parts are to be found in one of the plastic bags in the kit. For the cannons, start by bonding the gun-carriage sides to the cannon base with rapid bonding glue (Nos. 127 and 128). Fit the axle of cannon barrel (No. 131) through the centre of the cannon. This axle is the trunnion (No. 131) and the cannon (No. 132). Lay this over its position on the gun-carriage and as shown on the plans (Fig. 27) and secure well with the trunnion bracers (No. 133), using impact glue. Finally take the cannon axles (No. 129) and bond into place with rapid bonding glue. These are brass wires of Ø1.0mm and you should be careful to leave an equal amount of overlap at each side of the gun-carriage. Using the same type of glue, bond the wheels of the cannon into position (No. 130).

As there are 8 of these cannons, the procedure for the other 7 are exactly the same as for this one just described.

B.12.1. Navigation Lights.

These too, are to be found in the kit in one of the plastic bags. Using the same rapid bonding glue, carefully bond the light covers (No. 146) to the box itself (No. 145). Then immediately bond the light into place with a spot of rapid bonding glue. (No. 147).

B.13. The Latrine Heads. (Fig. 28. Nos. 134 to 144).

Most of the parts of the heads are to be found on one of the die-cut sheets, measuring 1.5 x 90 x 235mm. Here we emphasise yet once again the importance of exercising great care in removing these parts so as not to break or damage any of the parts. After removing any part from the die-cut sheet, smooth it off with fine sand paper.

Use rapid bonding glue and immediately bond the fore and aft bulkheads of the heads (Nos. 134 and 135) against the base of the heads (No. 137). When this has dried out a little you can then bond the port and starboard bulkheads of the heads into position (No. 136), then leave to dry out thoroughly.

The next stage is to wall plank the bulkheads of the unit so far constructed. For this you should use the thin walnut wood strips of 0.6 x 4 x 640mm. Apply impact glue to the strips and when the glue feels "tacky" to the touch, lay one strip along the length of the bulkhead then break off at the end with your fingers and immediately lay the next plank flush against the first. Break off once again and repeat the operation until you have the bulkheads completely planked. With breaking off the strips with your fingers, you will probably have some rough edges at the bottoms of the bulkheads. Smooth these off with some fine sand paper. (No. 138-139). Now take part No. 140 which is the door of the heads and bond it into position and as shown on the plans. Make the door frame by taking a walnut wood strip of 1 x 3mm and cutting off the strips to fit according to measurements and as shown on the plan (Fig. 28). This door frame with its crossbars are numbered (No. 141 and 142). Smooth off and bond into position.

To make the roof of the heads, take a Bokapi wood strip of 1.5 x 4 x 640mm and cut off some strips of 22mm. Then bond each one over the heads and being careful to keep each one flush up against the other. Leave to dry and once dried out, trim and smooth off with a file and sand-paper. To finish off, drill a 2mm hole on each side of the heads and insert the light glass frames as supplied (No. 143). Fit a pin-nail on the door to represent the door handle, but leaving the head about 2mm out. Repeat all these operations for the second latrine heads.

B.14. Longboat. (Fig. 30 to 37 - Nos. 152 to 170).

For this longboat, the false keel, the timber frames, the transom and the prow reinforcement blocks are to be found on the plywood die-cut sheet of 3 x 119 x 125mm. (Nos. 152-153-154 to 157 and 158). We would remind you once more of the importance of being careful when extracting these parts as you can easily break them if great care is not exercised.

Now glue the timber frames into the grooves on the false keel. Make sure that the frames are upright and parallel with each other. Frame No. 154 is the one nearest to the prow. The transom (No. 158) should be bonded into position at the end of the false keel where its extreme bottom end should coincide with the bottom of the false keel at that end. (Fig. 31).

B.14.1. When this unit has dried out sufficiently, lightly rub down the exterior parts of the timber frames and the reinforcement parts at the prow in such a way that when you lay one of the hull planking strips of walnut 0.6 x 5mm is laid across the frames, that it takes up a naturally curved position. These strips are No. 159 on the plans. Cut them up first into lengths of 130mm and using impact glue, start to lay them across the frames starting at the keel. Keep on laying the planks as such and making sure that they sit flush against each other as in (Fig. 32).

Note: If you wish to plank the longboat as it really was in these days, you should allow the next plank up to fall over the edge of the lower one slightly. This is called "clinker" planking and isn't difficult to do. However, it is important to allow the application of impact glue to lie for about 7 minutes before applying the plank to the longboat and across its timber frames. This gives greater bonding power. Once you have the sides of the long-

All the units you find in the kit are made of wood. If you are using a plastic bag, make sure you use a plastic bag.

boat planked, take a paint brush and apply a good coating of wood glue to the inside of the hull of the longboat. When this has dried out you will be surprised at the strength that this has given to the unit and you will have no difficulty in working on the hull from then on.

B.14.2. Now cut off the overhanging parts of the planking at both the prow and at the stern with a sharp knife, then immediately file down on the prow of the boat until you can see the end of the false keel showing at that point. Then take a walnut wood strip of 1.5 x 4mm and cut off a slice of 28mm long to shape for the stem of the prow (No. 160). Bond this into position at the prow to cover where you have just filed down.

Extract with care, the prow forecastle (No. 161) and glue it into position inside the prow of the boat. Then cut off seven wood strips from a walnut wood strip of 1.5 x 5 x 640mm, each measuring about 35mm to represent the longboat seats (No. 162). Trim each of these to size and then bond each one into its respective position in the boat.

B.14.3. Extract the gunwale tops from the die-cut sheet (Nos. 163-164). Smooth down with fine sand-paper and immediately bond into position over the edges of the boat including the part of the transom. (Fig. 35). Then cut off 8 pieces from a Ramin wood strip of 2 x 2mm in lengths of 6mm to represent the oar tholes (No. 165). These should be bonded into position on top of the gunwale tops and at appropriate positions for the rowers when sat on the thwart seats. You should then knock in a couple of pin-nails on each of these oar tholes to represent the oar locks (Fig. 35). The next job is to fit the wales (No. 166), on the boat and for this you should cut off two strips from the Bokapi wood strip of 2 x 2mm. Cut two strips of 130mm long, and then looking at Fig. 36 you will see where these should be fitted, one on port side and the other on the starboard side. Be sure to use rapid bonding glue for this work and do the bonding bit by bit owing to the curvature of the hull. Immediately, cut off a length of 25mm from a dowel strip of Ø3mm and form the tiller of the longboat with this and as shown on the plans. (No. 167). Remove the Rudder of the longboat from the die-cut sheet (No. 168) and after smoothing down with sand paper, glue it to one of the ends of the tiller. When dry, make two small holes on the edge of the rudder and bond two eye-bolts into these holes. Do a similar job on the gunwales where all these positions are clearly shown in Fig. 36.

B.14.4. Oars. Take the Bokapi dowelling of Ø2 x 250mm and cut off 4 lengths of 60mm to represent the oar handles (No. 169). After you have smoothed these off with sand paper, proceed to cut a groove of 4mm upwards from the end of each of the oar shafts. This should be done carefully with a fret saw or similar. Then take a walnut strip of 0.6 x 5mm and cut off 4 lengths of 20mm and start shaping them to the form of an oar blade as indicated in Fig. 37. When you have them shaped, bond them into the 4mm grooves that you have just made on the oar shafts. These blades are No. 170.

B.14.5. To finish off, rub over the whole hull of the longboat with fine sand-paper until you finish with a satiny touch finish. Now apply a good coating of clear varnish and leave to dry out. Once dry rub over with a little steel wool, and when you have the surface to your liking, apply another coating of clear varnish. When dried out, you can paint the longboat to any colour to your preference. We would only advise that whatever colour you use, it should be matt finish and not brilliant.

B.15. The Tiller of the Ship. (No. 35).

The Tiller of the ship itself will be found in one of the plastic bags and it is simply a matter of shaping it and smoothing it down. Drill a hole of Ø3mm on the end of the tiller and fit it over the head of the rudder of the ship, which as you will remember passes up through the hole you drilled through the deck at the stern. If it is a bit wobbly, fix it firmly into position with a drop of glue.

B.16. Mounting the Superstructure on the Model.

Now that you have all the items of the superstructure built, the first thing you do is to see how each one sits into place on deck.

Owing to the natural camber of the deck, some of these items will probably rock or wobble to the touch when placed on the deck. You will therefore have to file off the edges of some or sand paper others until you are satisfied that they sit flush on the part of the deck that corresponds to each item. Once this is done, then you should apply a good coat of varnish to each item and leave them to dry out thoroughly. When they have dried out, apply some wood glue to the bottoms of each and then locate each one in position and as shown on the plans.

B.16.1. Drill some small holes of about Ø0.5mm on the deck of the ship and at the places clearly marked on the plans (Plan View) and bond an eye-bolt and ring into each one with rapid bonding glue. Repeat this for the eye-bolts that should be located on the bulwark top rails (No. 36). See Elevation View of the plans. Fit eye-bolts too at the point half-way down the stem (Side elevation plans).

Fit the chain guards to the anchor holes on the prow of the ship, by first applying a drop of rapid bonding glue and then bond the anchor Cats-heads into place through the hole you had previously carved to take them. Let these rest on a piece of wood of similar type and width, which must lie against the inside of the bulwarks and the bottom of which should be bonded on to the gutter waterway. As this is not a straight line, you will probably have to carve the angle of the bottom of this support. (No. 57 and 46).

In the spaces at the sides of the gratings which are destined to hold the cannon balls, apply a light coating of super rapid glue before fitting the cannon balls into place. This is only to stop them from rolling about and losing them. This is what visiting admirers do when they are examining your model and they tend to loose them for you.

Take the corresponding anchor chain and rigging and fit the amounts required to the anchor and then fit the anchor itself into place, with its hook over the catsheads.

Lastly, fit the rigging that corresponds to the longboat as it hangs from its davits and in which the method of mounting is easily interpreted from the plans.

C. MAST AND YARDS

The Masts of a ship are never just one long mast, but rather a series of sections which are joined together at various stages and overlapping in order to give great strength to the masts which as you will realise must bear great forces, especially when under full sail and a strong wind is blowing. To avoid rigidity and give a degree of flexibility to ride the strong winds, these masts were built with each section having a tapering effect, which meant that its diameter was gradually reduced from maximum at its base to somewhere round about half this diameter at the top of its section. Likewise the cross spars or yards, were tapered to but at both their ends.

Now we mention this because in constructing your model, obviously you will have to taper down the dowelling that represents the masts and yards and if you did this to all of them with sand-paper you would find it a very tedious job indeed. It can be done, but we would not say that it was a relaxing part of this hobby. One way you can do this is by tapering down first with a knife and then sanding down afterwards. This is certainly much more quicker and more interesting, but it depends very much on your ability with a carving knife and if you are not very experienced you could slice off more than you at first wished. A wood lathe is ideal and if you have a friend who is the owner of one, no doubt he will do this for you and save you a lot of trouble - but not everyone has a wood lathe. We at Artesania Latina have struggled with this problem for a long time and we think that we have a good answer to the problem and it is this. We have found that if you sit down and wedge a carpenter's plane upsidedown between your thighs, then by using both hands and drawing the dowel gingerly across the upturned blade of the plane, it does do a very effective job and reduces the diameter both gradually and in a uniform manner. Then the sanding off part is very easy. Nevertheless, your degree of skill should determine just how you are going to do this, but at least if you are stuck for an answer, you know how we do it when a wood lathe is not available at that moment.

C.1. Lower Foremast and Lower Mainmast. (Figs. 38-39. Nos. 191-214). Take the two dowels in the kit that measure Ø10 x 360mm for the Lower Foremast (No. 191) and another of Ø10 x 410mm for the Lower Mainmast (No. 214). Reduce the diameters of these as described in the last section C, in a gradual fashion until you arrive at a diam of 6mm at one end of these masts. Smooth off with sand-paper.

C.2. Top Foremast and Main Topmast (Fig. 38-39. Nos. 195-215). For these take the dowelling of Ø6mm x 500mm and cut off in two parts - one of 230mm and the other of 250mm. The smaller is for the Top Foremast No. 195 and the larger for the main topmast No. 215. Likewise, these should be reduced as before to about Ø2mm and rounded at the top. Smooth off with sand-paper.

You should now make two drilled holes on the top foremast of about Ø0.5mm, the first at about 28mm from its top and the second at about 74mm from its top. These will serve later on for the yardarm halyards (Fig. 47).

C.3. The Foremast Gaff and the Mainmast Gaff (Fig. 38-39. Nos. 188-203-204-212-213-216).

Use a dowel of Ø6 and cut off a length of 170mm to represent the Foremast gaff (No. 212) and reduce this gradually to Ø3mm at its other end. At the wider end of this gaff, make a groove of 2mm wide and 19mm long. Then take a gaff crab-jaw from one of the plastic bags in the kit, and smooth it off with sand paper. Drill two holes on each side of its broadest end and fit and secure the end of a length of cotton of Ø0.5mm x 45mm to one of the holes. Fit 7 parrels through this line before securing the other end of the line to the other drilled hole (No. 204). Finish off by bonding the other end of the crab-jaw (No. 213) into the groove you have just cut in the end of the gaff. Now drill some small holes in the gaff as shown in Fig. 38, in which eye-bolts should be bonded and as shown on these plans. Then fit the gaff end supports using long nosed pliers to the top end of the gaff (No. 188), and secure well with a spot of rapid bonding glue. Give the gaff a coat of varnish and when it is dry fit the single and double blocks as indicated on Fig. 38 in their respective places and using a little of the galvanised wire to do so.

Do exactly the same for the Mainmast Gaff (No. 216) only this time the length of the dowel to be cut off is 180mm and that at a distance of 18mm from its smaller end you should drill a small hole through it which will serve later on when fitting the working rigging. (See Fig. 39).

C.4. Joining the Lower Foremast to the Top Foremast. (Fig. 38-40. Nos. 182-190 to 196).

At this point, both the lower foremast and the top foremast will have received a coat of clear varnish and left to dry out. When dry, take one of the mast caps (No. 182) from the kit and fit it on top of the lower foremast so that it sits evenly at that level. Then fit the bottom of the top foremast through the other hole on the mast cap so that it passes through some distance to overlap the top of the lower foremast and behind it. Take your measurements from the plans and from Fig. 38. Now take the two trestle-trees for the foremast (No. 193) from the kit together with its hound cheeks (No. 192) and its cross-trees (No. 194) and fix your position you require at the foot of the top foremast. It is at this point where you should bond the trestle-trees hard up against the two mast parts in line and also the hound cheeks which have to support them (No. 192). When this is dry, proceed to bond the two cross-trees (No. 194) into position to give a squared support. This can be easily seen by looking at Fig. 38 on the plans. Then fit the foremast truck to the top of the top foremast using a spot of wood glue. (No. 196).

Lastly, look at Fig. 38 to determine where the eyebolts will be placed and make suitable holes in the unit so as to bond these eye-bolts into position, and when secure, attach the single and double blocks into place together with the stopper chain to the Foremast yard (No. 197), and using the galvanised wire to do so.

C.5. Joining the Main Mast to the Main Top-mast. (Figs. 39-40. Nos. 177-178-182-189-192-193-194-196-214-215).

To complete this part of the model you should do exactly the same as described in the previous paragraph C.4. for the Foremast, with the exception of the numbers of the mast parts which are 214 and 215.

The joining of the mainmast and the main top-mast is the same as for the Foremast, using the trestle-trees, the cross-trees and the Hound Shoulders.

C.6. Making the Main Boom. (Fig. 39 and 42. Nos. 188-203-204-213-217).

Cut a length of the Ø6mm dowelling to give a length of 320mm so as to form the Main Boom. (No. 217). Reduce this gradually as described from Ø6mm until you arrive at a Ø3mm at the other end. Now at the broadest end of the boom, use a fret saw to cut in a groove from the bottom of 2mm wide and to a depth of 19mm (Fig. 42). Then take the crab jaw piece (No. 213) from the kit and at its widest end drill two small holes of Ø0.5mm to take the parrel traveller (No. 203). Tie one end of this cotton line to one of the holes and cut off a length of 45mm of the cotton line. Then thread 6 parrels over this cotton and immediately tie the other end to the other drilled hole on the crab-jaw. You will see that this remains fairly slack and that is because you will have to slip this over the masts when you come to mount them on the deck. Now apply wood glue to the other end of the crab-jaw and insert it into the groove you have just made at the end of the boom. (Fig. 42).

If you look at Fig. 39, you will see where you should insert some eye-bolts into the boom. It is advisable if you can to make some drill holes at these places first, or even make them with the point of a dart. This makes it easier to bond the eye-holes into position with security. Then take the boom end support (No. 188), apply a spot of rapid bonding glue to one side and wrap it around the end of the boom and pressing tight with pliers.

At this point apply a coat of varnish to the boom and when dry, you should then mount the single and double blocks at the places indicated on Fig. 39. It is here where you mounted the eye-bolts and you should use galvanised wire from the kit to fasten the blocks to the eye-bolts.

C.7. Mounting the Masts on Deck. (Figs. 38-39. Nos. 178-190-189).

First take the Foremast which you have constructed and fit the gaff (No. 212) into position followed by 9 rings (No. 178) and then glue the support ring (No. 190) into position. These are shown on Fig. 38. Then take the mast hole cover (No. 189) and bond it into position on the deck around the mast hole you have already drilled earlier on. Then apply wood glue to the mast hole and to the foot of the mast and insert it into position and making sure that you obtain the correct angle as is shown on the plans. Repeat this operation in exactly the same way for mounting the main mast. This has the same number of rings etc., as the foremast and the only difference is that the boom when it comes to be attached to the mast should have a support ring bonded into position to keep it well supported in place (No. 190).

C.8. Preparing the Bowsprit and its Jib-Boom. (Fig. 39. Nos. 181-183).

To construct the Bowsprit (No. 181), take a dowel of Ø8 x 175mm from the kit and gradually reduce its diam to Ø6 mm at its other end. Try dry fitting this into position through the prow of the ship and where you see it touching the deck, you must file this part flat so that latterly the bowsprit will sit securely on top of the deck.

For the Jib-boom, take a dowel of Ø6 x 500mm from the kit and cut off a length of 180mm. Likewise this will have to be gradually reduced to leave a Ø3mm at its other end. Sand paper both the Bowsprit and the Jib-boom.

C.8.1. Preparing the Dolphin Striker and the Jack-staff. (Nos. 186-187).

From the remains of the dowelling of Ø3mm, cut off a length of 45mm to represent the Jack-staff (No. 187). Then with a small flat file make the configuration as shown in Fig. 39. Smooth down now with fine sand-paper. For the Dolphin Striker, all you have to do is to cut off a 60mm length from the Ø3mm dowel and smooth it off with sand-paper. Drill a small hole near

one of its ends where an eye-bolt should be bonded in and which will be used later when the whole unit is mounted on the ship. (See Fig. 39).

C.9. Mounting together the Bowsprit, Jib-boom, Dolphin Striker and the Jack-staff. (Fig. 39. Nos. 181 to 188).

Take the last mast cap (No. 182) from the kit and apply a coat of wood glue to the insides of the holes where the bowsprit and jib-boom will pass through. Then immediately fit the cap to the end of the bowsprit and then allow the wide end of the jib-boom to pass through its hole on the cap so as to overlap the bowsprit and lie flush on top of it. (Fig. 39). To make sure that the two lie parallel, cut off a small strip of walnut measuring 1.5 x 5 x 6mm and bond this between the two where they overlap (No. 184). Now take the Bowsprit fork cleff from the kit (No. 185) and drill a 1mm hole through its upper side, then bond it onto the Jib-boom and as shown on the plans (Fig. 39). You should now drill a Ø3mm hole through the jib-boom at a point where it almost meets the mast cap (No. 182), and in a vertical sense. In the upper part of this hole you should bond in the Jack-staff (No. 187) and in the lower part of the hole bond in the Dolphin Striker (No. 186). Take a boom support of brass (No. 188) from the kit and form it round the extreme end (smallest diam) of the jib-boom and when you have it formed correctly, bond it into this position with rapid bonding glue and using long nosed pliers to make the fit tight.

Apply a coat of varnish to the unit so far constructed and leave to dry out. When dry, rub down with a piece of steel wool.

Now examine Fig. 39 carefully to determine where you will have to fit all the eye-bolts to take the dead-eyes, single and double blocks, make adequate holes at these points, either with a drill or with the point of a dart and then bond into each one, a corresponding eye-bolt. Use the galvanised wire in the kit to attach the necessary dead-eyes, single blocks and double blocks.

At this point you should start to mount the bowsprit unit on the ship. Place the end of the bowsprit through the hole you have made at the prow of the ship and let it rest over the stem of the prow and apply wood glue to the end part of the bowsprit that will rest through the knight heads and Bell supports to where it will bond on to the deck. This position is clearly marked on the plans (Side elevation).

Finally take a length of the cotton twine of Ø0.8mm and carefully wind it round the union of the jib-boom and the bowsprit and as shown on the plans. Do the same thing to unite the bowsprit to the stem of the prow. This is also shown on the plans.

C.10. Preparation and Mounting of the Foremast Yard. (Fig. 38-41. Nos. 198 to 204).

Take a dowel of Ø6mm from the kit and cut off a length of 310mm to represent this yard. (No. 198). Then gradually reduce the diam of this from the centre to arrive at a Ø3mm at both ends and as described before. Smooth off with sand-paper, apply a coating of varnish and when dry, rub down with a little steel wool.

Drill a small hole of Ø0.5mm near the ends of the yard where later on the working rigging lines will pass through. At the same time you should make similar small holes into which the eye-bolts should be bonded in. The positions of these will be easily seen on Fig. 38.

Now take the brass strip to form the yard bracer (No. 199-Figs. 38 and 41). Make this form with some long nosed pliers and immediately apply a spot of rapid bonding glue and fix into position as shown on the plans. Then take the Foremast Truss (No. 200) from the kit (from one of the plastic bags) and after smoothing off make a pair of small holes of Ø0.5mm on either side of the rounded centre. Here you should tie a small length of cotton twine to one end and then thread some parrels (No. 204) over this line and then tie off at the other hole (Fig. 38). Finally take a length of cotton twine of Ø0.5mm and form the Footropes and the stirrups of the yard (Nos. 201-202). Looking at the plans you will see where you should fix the single blocks to the rigging of this yard, which you should do with some of the galvanised wire you will find in the kit, but you should use some cotton twine of Ø0.5mm to form the yard arm bracer pendants (No. 261). - (Fig. 38).

C.11. Lower Fore Top Sail Yard and Upper Fore Top Sail Yard. (Figs. 38-41 - Nos. 205-211).

Take a Ø4mm dowel from the kit and cut off a length of 230mm for the Lower top sail yard (No. 205), and another of 180mm for the upper top sail yard. (No. 209). Apart from their different lengths, the treatment of both are exactly the same.

First gradually reduce their diameters from their centres to both their ends and in the way described as before and then sand-paper down smoothly. Apply a coat of varnish and when dry, rub down with a little steel wool. Drill small holes of about Ø0.5mm near the ends of both so that later on the working rigging can be attached here. At the same time make small holes along the yards so that the eye-bolts can be bonded into position. A look at the plans will show you quite clearly where you should bond these eye-bolts along the yard.

In one of the plastic bags in the kit you will find the other two yard trusses (No. 206). Here, you should drill two holes on each side of the centre groove of the trusses with a twist drill of Ø0.8mm, but this time make these drill holes on the thin edge of the truss on either side of the centre groove and not on top as in the first yard you constructed. This is because when you come to mount the yards, they will be held in position with a small bend of brass wire and not with parrels as before. Bond the trusses against the centre of the yards with rapid bonding glue.

As with the first yard, you should now form the footropes and the stirrups of the yard by using cotton twine of Ø0.5mm. The procedure is the same

as before and can be seen clearly on the plans. Finally, fit the single blocks and double blocks as shown on the plans and by using the galvanised wire from the kit to fix them to their respective eye-bolts. Then finish off by making the yard arm bracers (No. 259).

D. THE RIGGING

There are two types of rigging- Fixed Rigging and Working Rigging. As the name implies, the fixed rigging is used in order to support and maintain all the spars in a rigid position. The following is a list of some of their names:-

Stays. This fixed rigging is meant to keep the masts and topmasts firmly in position.

Shrouds. This rigging is fitted over the mast heads and extend to the vessel's side or to the rim of the tops, where they are set up by dead-eyes to support the masts in a sideways direction.

Top Mast Shrouds. This rigging serves the same purpose as those of the masts, except that they extend to the top of the top masts.

Ratlines. These are short lengths of rigging which are clove hitched about 14 inches (on the actual ship) apart across the shrouds parallel with the sheer pole and which act as rungs of a ladder for the crew when they have to go aloft for working on the sails.

Back Stays. This rigging serves as a support for the top masts and running backwards towards the sides of the ship. They also help to maintain the shrouds rigid.

Bowsprit Shrouds. Rigging that holds the bowsprit and the jib-boom rigidly in position in a sideways fashion.

Bob-stays. These are fasteners that hold the Dolphin Striker rigid and help to unite the bowsprit and jib-boom together.

The first thing you should do of course, is to tint the rigging lines to distinguish the fixed rigging from the working rigging. Read the sizes of the rigging from the descriptions that follows, then take this rigging and tint it either black or a dark brown colour and hang it up to dry out. Once dried out you may apply a little silicone or a very small spot of wax and rub in with a cloth simply by wiping it through the hands.

D.1. The Foremast Stay. (Fig. 44 - Nos. 218, 219 and 174).

Cut off a length of 450mm of the Ø0.8mm rigging and tie one end at the junction of the mast and its topmast-precisely in the forward area of the trestle-trees and the cross-trees. Then tie a dead-eye to the other end. Then with another small length of rigging, make the lanyard (No. 219) between the Fork Cleff on the bowsprit (No. 185) and the dead-eye you have fitted. Draw this rigging tight and then apply a spot of glue to where you made the knots so that they will not slip.

D.2. Standing Jib-Stay. (Fig. 44. No. 220).

Tie the end of a similar type of rigging line to the same place between the foremast and the top foremast and lead it down to tie it at a point half way along the jib-boom. (See Fig. 44).

D.3. Outer Jib Stay. (Fig. 44. No. 221).

Tie a similar rigging line to a point half-way up the top foremast then lead the line down to the point of the jib-boom where you should tie it off. Make sure the line is rigid and when tied apply a spot of glue.

D.4. Flying Jib Stay. (Fig. 44. No. 222).

This will take a length of 670mm of the same type of rigging line which you should tie to the end of the jib-boom and then lead it upwards to tie it securely to a point near the end of the top of the top foremast.

D.5. Tween Topmast Stay. (Fig. 44. No. 223).

Tie a similar piece of rigging of about 270mm at a point at the top of the Foremast and then tie it tight to a point at the foot of the main top mast. (See Fig. 44).

D.6. Main Top Mast Stay. (Fig. 44. No. 224).

With the same type of rigging, use about 380mm to tie one end to a point almost at the end of the Main Top-mast and lead this down to tie off at the top of the main Foremast and as shown in Fig. 44.

D.7. Jib-Boom Bobstays. (Fig. 44. Nos. 225 and 228).

Prise open (but just a little) the eye-bolts you have and the end of Jib-boom and at the end of the Dolphin Striker. Then take a length of the chain you will find in the kit and fit the last link into one of these eye-bolts and then lead the chain down so that you can slip the corresponding link into the other eye-bolt, and in such a way that the chain will be quite rigid. Then close again the eye-bolts with pliers.

Now take a piece of rigging line of Ø0.5mm and cut off a length of about 120mm. Tie one end to the eye-bolt which you have fitted about half-way along the jib-boom and then lead this down to the eye-bolt where you fastened the chain and tie off and trim the end of the rigging at this point and as shown on Fig. 44.

D.8. Bowsprit Stays. (Fig. 44. Nos. 174-226-227).

Take a length of rigging of Ø0.5mm and cut off about 160mm for this stay. Tie a dead-eye to one of the ends of the rigging line (No. 174). Tie the other end to the lower eye-bolt on the stem of the bow of the ship. Now make a lanyard between the dead-eye you have fitted and the eye-

bolt near the end of the bowsprit and using rigging of Ø0.25mm. Now repeat this in exactly the same way to make the stay which lies a little higher up and which you can see clearly on Fig. 44.

D.9. Jib-Boom Side Stays and Shrouds. (Fig. 45 - Plan View - Nos. 229-230-232-234).

By looking at the plan view of the model, you will see that at the region of the main wales (No. 44) you should make a small hole on each side of the ship into which you should glue an eye bolt. Once this is secure, you should then cut off a length of Ø0.5mm rigging of about 250mm long. Tie one end into one of these eye-bolts then lead it along to the eye-bolt at the end of the jib-boom and tie it off securely. Do exactly the same for the other side of the jib-boom and when you have it secure immediately start to make the ratlines between these two lines (No. 230). This makes the shrouds for the Jib-boom.

Then at each of the eye-bolts you have fastened into the anchors Cat-heads use a piece of galvanised wire to fit a dead-eye (No. 174). Now take a length of rigging line of Ø0.5mm and cut off a length of about 520mm and tie a dead-eye to the end. Then lead the rigging through the eye-bolt at the end of the jib-boom and run it back along the other side of the jib-boom to a point near the end of the other Cat-head, and tie on another dead-eye. Now, you should then unite the dead-eyes by forming a lanyard (No. 233) and using rigging line of Ø0.25mm. Do this on each side and be careful to draw the lines you have rigged as tight so that there is no slack (Fig. 45).

D.10. Bowsprit Side Stays. (Fig. 45. No. 231).

Cut off two lengths of chain of Ø1.0 x 160mm, one for each side. Then prise open a little eye-bolts on the Catheads and the Dolphin Striker. As before, slip the end link into one of these eye-bolts and run the chain along to the other where you should slip the corresponding link over that eye-bolt, then carefully close with pliers. Repeat this for the other side. (See Fig. 45).

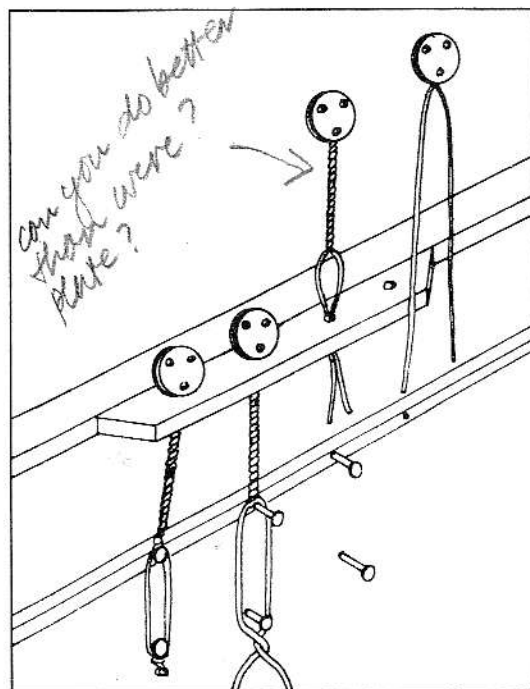
D.11. Foremast Shrouds.

To construct these you will need 4 lengths of rigging line, chainplates, lanyards and ratlines.

D.11.1. Chain-plates. (Fig. 45. No. 236).

From one of the plastic bags in the kit, take out 10 dead-eyes (No. 172). To make 1 chain-plate, take about 100mm of the brass wire of Ø0.5mm, fit the throat collar of the dead-eye at a point halfway along the brass wire and wrap it round the collar of the dead-eye. Fit tight by twisting the wire and then keep on twisting it until you are left with the two ends free. Join them and then lay the dead-eye in a position slightly above the level of the outer channel you have previously fitted on the side of the hull and at about the level of the top handrail.

Run the wire downwards through the groove on this channel and then pinnail the end of the wire against the hull. Repeat this for all the chain-plates on this outer channel and also on the other side of the ship.



D.11.2. Shrouds. (Fig. 45. No. 234).

Take the rigging line of Ø0.8mm and cut off a length of about 700mm. Immediately tie on a dead-eye to the end of this rigging, hold it in position slightly above the dead-eye you have fitted on the chain-plate on the outer channel, then run the rigging line upwards to a position at the junction of the mast at the trestle-tree. Tie off here and then run the line down again

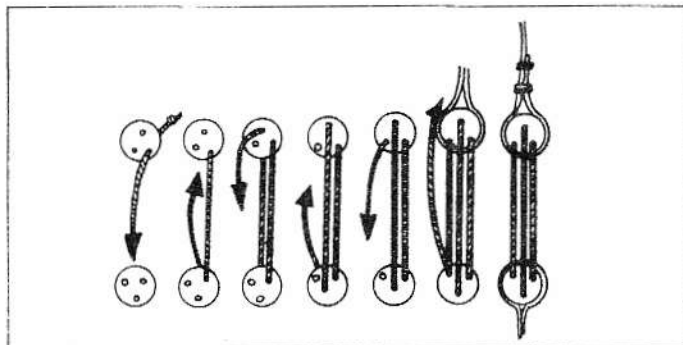
fore stay - single rope 100%

standing jib stay - preventer stay - single rope 80% ie thinner than fore stay

on the other side and at the same spot where you started, but this time on the other side of the ship, tie on another dead-eye. Repeat this operation for the 3 lines of the shrouds.

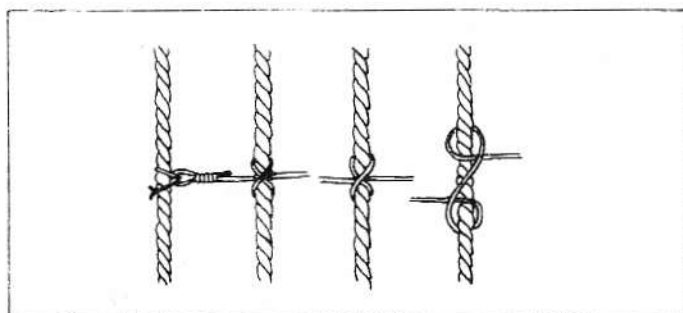
D.11.3. Lanyards. (Fig. 45. No. 235).

To finish off the mounting of these shrouds, you have to unite the shrouds to the chain-plates in the following manner. Take a length of Ø0.25mm rigging line and tie one end to one of the dead-eyes, then thread through the other in turn until you have the lanyard complete. Do the same for the other side. Then and only then should you start to tense the shroud lines, using the lanyards to do so, and bit by bit from one side of the ship to the other so that the tension will be gradually built up evenly on both sides.



D.11.4. Ratlines. (Fig. 45. Nos. 237-238).

Before forming the ratlines, take a piece of wood strip of Bokapi of 2 x 2 x 35mm and apply glue and bond it to the shroud lines at a distance slightly above the dead-eyes of the lanyards. You should now make the ratlines using rigging line of Ø0.25mm, tying them across the shrouds and by taking your own measurements from the plans.



D.12. Main Shrouds. (Fig. 45. Nos. 239 to 243).

Now that you have the shrouds for the Foremast built, there only remains the building of the Main mast shrouds. The operation for this is exactly the same as for the Foremast shrouds just described and the only difference being that the reference numbers are different so as to distinguish one set from the other. If you have built the first set correctly then you will have no trouble building this next set.

D.13. Foremast Back Stays. (Fig. 46. Nos. 172-244 to 247).

There are two of these and you should cut off 2 lengths of about 1,100mm of the Ø0.8mm rigging line. Now if you follow exactly the same procedure for these as you did for the shrouds as described in paragraph D.11.2. you will find no difficulty at all in mounting these. The only difference is that instead of leading the lines up to the junction of the masts, you should lead them straight up to almost the top of the Top Foremast (No. 195) and the same point where you tied off the Flying Jib Stay (No. 222). Remember to tie a dead-eye to the ends and construct lanyards between this one and the dead-eye of its chain-plate and exactly as you did for the shrouds. (See side elevation plans).

D.14. Mainmast Back Stays. (Fig. 46. Nos. 172-250 to 252).

This is an exact replica of the Foremast back stays as we have just described above in D.13, with the exception that the numbers of reference are changed, and that the lines should be tied off near the top of the main top mast (No. 215) and at a point where you have tied off the Main top sail stay (No. 224).

D.15. Foremast Top Shrouds. (Fig. 49. Nos. 174-272 to 275).

First of all drill a hole through the ends of the cross-trees (No. 194) to a size of Ø0.5mm. Do this in a vertical manner and repeat this for all the ends of the cross-trees, giving a total of 4. Now take a length of 120mm of the Ø0.5mm rigging and tie on a dead-eye (No. 174) to one end. Lead the other end through the hole you have just drilled on the cross-trees and tie off on the corresponding shroud line and at a position as shown on the plans. Leave the dead-eye a little distance above the cross-tree. Leave this as it is for the moment and then repeat this operation for the other three holes you have drilled on the ends of the cross-trees and using a similar length of rigging attached to a similar dead-eye. The part of the

topmast shrouds you are constructing at the moment are called the futtock shrouds, because it is where the crew were able to change from the first shrouds over to the top mast shrouds when they had to climb up to the topmast sails.

D.15.1. Now take some more Ø0.5mm rigging line and cut off two lengths of about 480mm. Tie on a dead-eye to the end of one of the lines then hold it a little above the level of the dead-eye you fastened to the end of the futtock line, then pass this shroud line up to near the top of the top foremast. Tie it off here and then pass it down again to near the second dead-eye you had previously fitted on the futtock line. Tie on another dead-eye at this point and trim and cut off. Now repeat this operation on the other side of the ship and at the same places until you have all 4 lines on the top foremast finished. All that remains is the joining together of each of the 4 ends to each of the ends of the futtocks. This is done yet once again with lanyards.

D.15.2. These lanyards (No. 273) are made from Ø0.25mm rigging line. Simply attach one end to one of the dead-eyes and start threading it through the dead-eye of the shroud line and the dead-eye of the futtock and in this way you are able to give the correct tension between the futtocks and the topmast shrouds. Repeat this at each of the corners of the cross-trees until you have the futtocks and the topmast shrouds completely finished with the correct tension applied.

It only remains now to cut off small lengths of rigging line to make the ratlines (No. 275) on these shrouds and in the same way as you did for the shrouds for the main foremast, only these will be somewhat smaller.

D.16. Main Top Mast Shrouds. (Fig. 49. Nos. 174-276 to 279).

These are made in exactly the same way as you did when you made the top mast shrouds together with their futtocks for the Top foremast.

The only difference is that the reference numbers for identifying parts on the plans are different, but the procedure is exactly the same. So if you made a good job on the foremast, you will certainly have no trouble here. Note: At this point, it is more convenient to describe the construction of the sails, before attending to the Working Rigging, otherwise you would encounter so many lines that it would make your job very difficult. So sails first.

E. Making and Fitting The Sails

Schooners and Clippers like the HARVEY were rigged with 2 topmast sails on the Foremast and a gaff sail behind. They also had a standing Gaff sail on the mainmast together with 4 jib head sails on the jib-boom and Bowsprit. On rare occasions a square sail was added to a yard attached to the main Foremast. As the HARVEY was an exceptional Clipper, she had the privilege of having this extra sail, as you will no doubt see from its photograph.

E.1. You will find a sheet containing all its sails stamped clearly in one of its plastic bags in the kit. Carefully cut out each of these sails along the outside continuous line. The next step is to stitch the hems. This is the reason the sails bear a dotted line, as this is the line that the hem should be stitched. We realise that stitch sewing is not suited to male hands, and if you can incorporate some female aid here no doubt you will have an easier job but also a high quality job done. So use your natural diplomacy and charms to persuade the feminine part of the family to do this job for you, and if they have an electric sewing machine, it will be a bevery easy job for them and no doubt you will be able to reward them for their help in making a good job for you. Just one thing to make clear- the hemming should be doubled and stitched at the side of the sail cloth taht is not printed on.

E.2. The next thing you should do is to make the Bolt ropes for the sails. You will see how this is done by looking at Fig. 43 when stitching round the sails you should use rigging line of Ø1.0mm and when you come to the vertex corners do not forget to make the round eye-splices as shown on Fig. 43.

When you have this done, proceed to stitch the Upper Fore top Sail (No. 288) and the Lower Fore top Sail (No. 289) to their corresponding yards (Nos. 205 and 209). Do this by using the eye-splices and the meshing (No. 295) and as clearly shown on Fig. 43 of the plans. In fixing these sails to the yards, remember that the foot-ropes and their stirrups will be behind the sails when fitted.

E.3. To fit the Foremast and Mainmast Gaff Sails (Nos. 291 and 292), you should fit the sails to the foremast and the mainmast first before fitting to the gaffs. To do this, use the rings (Nos. 178-179) that you will find in the kit. Open each one a little and fit them between the Bolt-ropes and the sail, then once they are all in place close the rings again where you had opened them.

Then proceed to the Gaff Top Sail (No. 293) and the Main Top-Sail (No. 290). These are fitted in the same way, only that the rings you use for the Main Top-Sail are as specified in part No. (176).

E.4. Next continue to fit the sails that belong to the Jib-boom and the Bowsprit, namely the Jib Head Sail, the Fore top mast stay sail and the Fore stay sail. These are clearly shown on the Side Elevation plans. You should use the rings (No. 176) for these and you should use the same procedure as before by first opening the rings a little and then fastening them round the stays and between the bolt-ropes of the sails and the sails themselves.

E.5. As you can see, we have left the mounting of the yards to the masts to the end. These are (Nos. 205 and 209). You will remember that you drilled two small holes on either side of the trusses of these two yards and now when you fit them to the Top Foremast, you should apply a spot of rapid bonding glue to these holes and to the ends of half of one of the rings (No. 177). Fit the yard to the top mast and the half ring against the topmast and into these holes. Once the sails are in place, you can have them furled and tied up to the yards or you can leave them set, or if you prefer, some furled and some set. The choice is yours, but if you choose to have your sails set as sailing in the wind we would advise you to apply a very thin coating of thinned down varnish, which will give them a "well used" and olden look.

F. WORKING RIGGING

As the name implies, working rigging was used to move yards, booms, gaffs etc. Any manipulation of the sails that were made to take advantage of the prevailing winds at the moment. The Main lines were as follows:-

Halyards. These were lines used to move yards and their sails as well as flags and signalling flags.

Braces. These were lines used at the extreme ends of yards so as to turn them in horizontal fashion.

Vangs. These were rigging lines that ran from the ends of the gaffs and their sails and running down the sides to hold the gaffs taught while the ship was carrying out some necessary movements.

Lifts. Rigging line attached to the yard arms and running to the mast head above. These served to maintain the yards in horizontal position.

F.1. Lines for Raising and lowering Sails.

Halyards. Lines for raising sails.

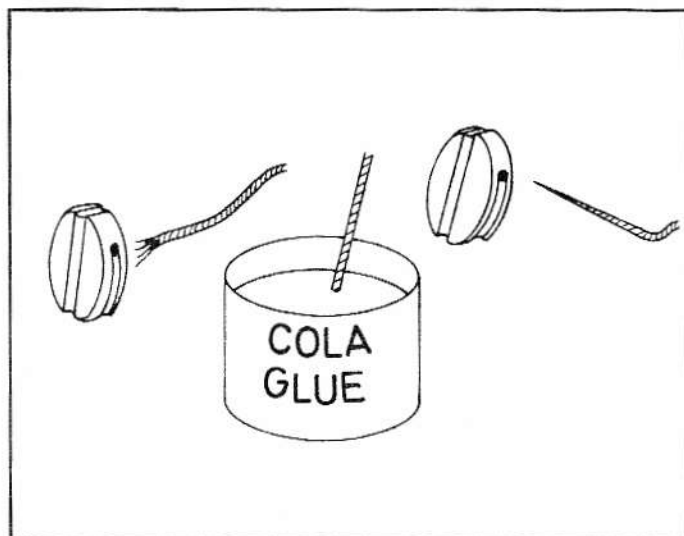
Downhauls. Lines used for hauling down jibs, staysails and studding sails.

Sheets. A rope employed to spread the clew of square sails and headsails: with boom sails, sheets are used for controlling the boom.

Tacks. Ropes holding down the weather clew of a course. It is also the lower forward corner of a fore and aft sail.

Now at this point, we tried several times to try and describe the mounting of these working rigging lines, and try as we did, we always finished up with a description that would only serve to confuse the ancient mariner. So we decided that some general plans showing where they were used when you were mounting them. Indeed, a case of one good drawing being better than a thousand words. Use rigging line from the kit of Ø0.25mm. Keep the plans in front of you and particularly Figs. 46 to 55. For a more

realistic appearance, any rope ends to be left on deck and rolled up, should have a spot of wood glue applied so that it can be retained in that position. Just follow these Figs., mentioned and you should have no trouble.



Just one last piece of advice. There will be times when you will be called upon to thread lines through single and double blocks. When these are of a small size (i.e. 3mm), you might find some difficulty in threading the Ø0.25mm lines through the very small holes. We at Artesania Latina, have found that the best way and certainly the easiest for us, is to fray the end of the line somewhat with a knife and then dab it into some of the wood glue that you will have. Wipe off any excess and leave the line to dry out. You will find that this dries out like a very thin sharp and strong needle which will make your threading operation a great deal easier. We certainly hope that you have enjoyed building your model and that you have found the same enthusiasm in doing so as we did in producing it on the market.

Thank you for your patience and we certainly hope that your model will hold pride of place as a show item in your home.

Why do sails? see Martini (Ship Modelling Simplified) section on rigging/sails p 93 →
If yes then furl like box photo but notice Dressell's Elizabeth has no sails!