

## **The Hurley 22 by Colin Curtis**

This is My story of the design and building procedure of the now famous Hurley 22 sailing yacht.

It was in 1963 that George Hurley commissioned a Designer from Dartmouth called Ian Anderson, to design a new sailing Yacht for the Hurley Marine Company.

The yacht was to be Twenty Two feet overall with a medium to heavy displacement, and to have provision for both fin and bilge keels.

This sailing yacht became World famous, please remember this was way back in 1963, and for a Twenty Two foot yacht she was surprisingly fast and quite roomy down below, yachtsmen loved her and even now there is quite a cult following.

The British Royal Navy acquired over Thirty Hurley 22s, using them for sail training in all their Naval sea training establishments, the Cadets both Officers and enlisted sailors loved them, for most of these recruits this was their first time at sea in charge of a boat.

You could always see these boats sailing around Plymouth Sound under instruction, and When they were competent they were allowed to venture up and down the English coasts, all the crew taking in turns to be captain , navigator and crew.

This was a fine testament to a fine Yacht, she was rated 24th out of the 100 in Yachting Monthly's top 100 boats of the Century June 2006 by David Harding of the sailing Magazine "Practical Boat Owner " and David Harding called her "A Proper Little Yacht".

The Hurley 22 was built by Hurley Marine until their sad demise in 1975. the mouldings were acquired by David Cotter and Brian Trehane, they were both ex Hurley Marine apprentices.

Then after their closure, the moulds were acquired by John Ratenbury at Ravensail Marine in Oakhampton.

Lastly by a company in Crediton called Hurlwind.

I have Personally worked on almost every Hurley 22 ever built and there have been about 1300 built ,either starting by helping build the Plug, fitting the keels and interiors, or building the masts and rigging these Yachts.

I was an Apprentice in one of the first two build crews, myself and Peter Ward on one crew and Bruce Hatherly and Colin Bucksley on the other.

Then I was switched over to the installation of the cast Iron keel and the first stage internal fit out.

I was then Finally offered the job as the Company Rigger, responsible for building the Running and Standing rigging , receiving the masts and booms from our internal company builders at Richmond Walk, these raw masts were then fitted out and dressed with the running and standing rigging, test rigging every boat, doing any alterations needed , packing and dispatching,

When I was employed by South Coast Marine I was in charge of building each and every mast and boom , once again Test rigging and final dispatch.

After the closure of South Coast Marine I started my own company, Colin Curtis Yachtspars, and once again building rigging and packing the Masts for John Ratenbury at Ravensail Marine.

In the following Story I will be trying describe the Building process of this Iconic "Proper Little Yacht ".

My thanks go out to Tim Sherman and Nick Vass, they are the writers of a book , the "History of Hurley Marine ", from this book I took the liberty collecting some of the correct dates, as my memory was a little off.

## **Building The Hurley 22 Wooden Plug**

At the Hurley Marine factory at the Clapworthy building in Coxside things were about to change, this old building where the wooden Silhouette's and Felicity's were built, was about to get a radical change in the company's boatbuilding style, Hurley Marine had been building most of its range of sailing Yachts out of wood, this product was time consuming in building , even more in the yachts upkeep, so our Owner George Hurley decided it was time to leave the wooden boat building and switch totally over to the latest product Fiberglass.

To be fair we had been building fiberglass boats for a little time , the Silhouette , Felicity and the Alacrity, but not in any great numbers, this was the time to switch completely over. George Hurley had commissioned Ian Anderson to design our new Flag Ship, to be called the Hurley 22.

Both the wooden Jigs for building the wood Silhouette and Felicity were removed from their stations bolted down to our wooden floor, these jigs were cut up and destroyed, the whole area was swept and cleaned, sheets of ply were fastened to the floor, it seemed really strange to see this large clean space in our dusty old loft.

Somehow Hurley's acquired the services of Peter Ward, he was a boat builder and had worked for a Boatyard on the River Plym called Skentelbury's, Peter set about Lofting the lines of our new boat, from these lines he would build the frames for the construction of the Plug from where we could take the mould off.

This was really interesting to be involved with, we apprentices would from time to time be called to help hold the bendy battens so Peter could transfer these lines to sheets of plywood, then cut them out ready to be set up on the plug.

Two lengths of timbers were set up on the floor, these were levelled and fastened to our thick pine floor, these were set up with battens athwartship in the correct stations on the drawing, these would then have the corresponding frame glued and screwed to it , all these frames would be fastened to each other , all up straight by a spirit level, Gradually as these frames were fitted you could see the shape and form of the boat coming to life, once all the frames were fitted and finally faired to the desired shape, the long tedious job of planking could begin.

The planks were all cut long enough to use with no joints , the planks were if I remember only about 1-1/2 wide and 3/4 inch thick, machined with a convex radius on one side and a concave radius on the other, so when fastened one on top of the other they would nestle together helping to get a fair shape.

Planks had to be laid first on one side then the other ,this then stops the plug from getting distorted, like I mentioned before this a really long tedious job ,and there are no short cuts, if you thought that was bad the next process is worse , long sanding boards are made, these are lengths of four or five inch strips of a bendy plywood , handles are screwed on each end, then lengths of sandpaper are glued to the bottoms.

Then two people one each end start sanding down the completed plug ,one pulls and the other pushes once a fair shape has been achieved the process of filling starts, fill and sand ,fill and sand working thru the grades, this is truly a laborious job , all the while you have Peter looking over your shoulder, plus this had to be all hand work as short electric sanders would leave marks , the long board is the answer albeit hard work.

Once the completed hull was faired to Peters satisfaction a product called Furane or Durabuild was painted all over the plug, this was a special plug making product that was black in color, and you have to have dozens of coats to get a build up suitable for rubbing

down with wet and dry sand paper to get the required finish, this is where the success of the finished moulding will be obtained.

We are not finished yet now we have worked thru all the sandpaper grades its time for compounding and waxing, you can use a really large buffing wheel on this part of the job, a large sheeps wool mop is used, and Don't

mix up the mops used for the different grades of rubbing down compound, each mop head is washed each night before leaving work , washed with detergent and hung over the radiators for use the next day.

Finally the finishing operation was complete, and our fiberglass Manager Ron Almond came upstairs for a final inspection prior to laying up the mould, if he said "No " then more polishing would have to be done, but the Plug was excepted !!!!,on the First Inspection.

George Hurley, Ian Anderson and a whole entourage of people came to see the finished Plug, I forgot to mention that before the polishing took place the whole Plug was tented in plastic, to keep off the dust , with all the polishing static electricity builds up and draws in any dust particles to the work in progress.

The whole Plug was wiped down with a special mould release agent, Now we are ready for the special hard mould Gelcoat to be painted on, we and I would think most companies use a bright orange coloured Gelcoat at that time it was manufactured by a company called Scott Bader, this operation is done at least three times , we need a good layer of Gelcoat on the mould to take the initial rubbing down and any subsequent polishing.

Now its time to start applying the fiberglass mat, a first thin layer is applied, we have to use a special resin for moulds, much stronger and no heat build up, the first layer is checked for air bubbles trapped in the wetted out mat, then once this check has been completed more layers are added until we get to the required thickness.

If I remember correctly it was at this time we were going to move to the new factory at Valley Road in Plympton and I think all the associated steel work was completed at that site, this includes the Spindles for revolving the completed mould.

Then came the big day for releasing the plug from the mould, lifting straps were attached to the plug, all the top edges of the mould were cleaned

off , wooden wedges were cut and inserted at the top edge ,Holes were drilled in the bottom the keel area just deep enough to touch the plug thru the fiberglass mould these holes will be used to inject the compressed air, to get separation.

All ready the crane takes up the tension, the air blow valves are connected and the air starts to get injected, "Nothing Happens", don't worry this always happens . a couple of soft knocks with a rubber mallet and "Crack Crack" its Starting to Release !!!!,time to knock in the wedges," Gently, Gently Catchy Monkey ", time to apply some water into the mould ,where the mould has separated from the plug, bit more strain with the crane, you can start to hear the cracking begin to work , a couple of taps with the rubber mallet.

Suspense , Suspense, we are all waiting for the release, hoping we haven't got a stick up, this can sometimes happen with a miss on the release agent, or something equally as stupid, and like a True Lady she will release when She is ready.

Then all of a sudden out the Plug pops. "OH's and Agh's " She looks Awesome, the crane lifts the Plug to one side , its job is finished, Everyone inspects the mould and its "Perfect ", But what would you expect , we have some of the very best Fiberglass Experts of that time, they were working for Hurley Marine, we were an industry leader,

When the plug popped out you could see the relief in all the Managers faces especially Ron Almond the Glass shop manager, and in fact everyone involved with this project, whether with a large or small input.

Right get out the big saws and the sledge hammers and destroy the plug, this always seems a cruel way for the plug to end up, not many plugs can be used as a finished sailboat , I know our 9.5 mtr Ketch Motor sailor was used in later years but that is far from the norm.

Whilst the final preparations on the hull was being completed ,Peter Ward was busy building the plug for the deck, this again was built of wood , but special ply could be used on the flat surfaces, but there is a hell of a lot of work on all the corners and you have to get the release angles right, or it will not release.

But Peter is up to the job, and both plugs are built ,moulds completed, built and finished together, now its only the hatch's, the inside tray, engine well, these are all built the same way ,hard exacting work carried out by True West Country Craftsmen.

The only thing now is to lay up all the Mouldings, build the wooden kit parts, have the keel mould built by Iron Brothers in Wadebridge, Have the Hurley Sail loft build a suit of sails, make up a set of running and standing rigging get the mast and boom delivered, I think we are ready,

Lets not forget the whole team of people that are going to be involved in the building process.

When we get every thing together we are ready to build a “ Proper Little Yacht “.

I have done my best to remember all the following stages of the building procedure's involved in producing these “ Proper Little Yachts”.

As the Company rigger I had kept a ledger of every Yacht I had rigged, this was a complete history of the boat and consisted of the following.

The Build number.

The Sail number, these were not consecutive, as the sales team would change these numbers on boat allocation.

Date it was rigged , any alterations to the rigging .

Any extra fittings the customer wanted fitted to the standard mast.

The original customer, these may be not the prospective owner as we had a Worldwide network of agents who would import these boats then sell them on to customers.

The date the Boat was shipped out from our Facility in Valley Road.

The transport whether by our own transport, or a contracted transport company.

Now comes the problem , in all the moving I have done in my life these two books have gone missing, I know that the Hurley owners Association would have loved to get their hands on them ,”Sorry Guys.”

As I have stated this story on the History of the Hurley 22, has been written as well as I can remember, if any thing is wrong please accept my apology.

There are lots of parts to building a Hurley Sailboat, they all start coming into our Facility at Valley Road Plympton by a Truck, boxes of Fiberglass Mat ,Tankers of Resin and Gelcoat in 55 gallon barrels, then we get into the Trucks loaded with Plywood ,planks of Teak and Afromosia, boxes and even more boxes of hardware, rolls of stainless steel wire , boxes of sail materials , our stores were always checking in and checking out parts, the stores were a great team led by the manager Paddy, you could never get one over on him, a typical store manager he thought everything in the store was his personal item and he was reluctantly letting you have it

Of course the most important station was the clocking in and out station, this was where our labour force clocked in to start the Magic of creating our line of yachts , and at this time we were the market leaders,

the largest self contained Boat Building Yard in Europe, something to be really proud of.

We used to get all the major players in boatbuilding, to come visit our brand new Lloyds approved facility, companies from England, and then the French they were just getting into

mass production of sailboats and wanted to see what this English company just across the Channel was up to.

I personally could never understand how our company feted these guys they came with movie cameras, tape recorders, taking film of all of our build procedures, asking questions, all with a big smile.

Our company were so proud of our innovations, \* Roll over moulds.

\* Roll over building jigs the whole boat could be revolved giving ease to a hull keel joint.

\* Cranes that could go from Glass shop all the way through the build line, moving on any axis.

\* Our Keel installation system , and inside unit fitting.

\* Our docking system where a boat comes in and all work benches are at deck level , saves ladders time and effort.

Our test tank where the inboard engine could be run up and tested, then the boat could be leak tested , both underwater fittings and the deck fittings sprayed with a fine mist spray.

\* A crane that could reach almost every boat in our large storage yard, and bring it in to the loading area, or the test pool. This was all stuff that we as a company, did to make things better to build our yachts.

Our eventual competitors came in with their cameras and recording tools and Stole our Expertise, well they never technically stole it , this was a gift, our management were so proud.

This is one of the reasons why the French Dominate the boat building industry , one of the other reasons are the French government give them Subsidies, a great thing in the volatile boat building industry, you hardly ever hear of a French boatbuilding company closing down. Company's like :-

Dufour Beneteau Jeanneau First

All the above came to visit and benefit from our expertise, well I can always say that I worked for a leading Yacht building company.

In those days you would have been hard pressed to go to Any harbour in the UK , without a Hurley Yacht bobbing at its mooring.

## **Building a Hurley 22**

The Birth.....a Hurley 22 or in fact any of our line of sailboats starts it life in the Fiberglass shop.

Large boxes of Mat are brought to the cutting table and placed on a large spool at one bend of this long table, the person in charge of this operation gets out his paperwork relative to the yacht he is going to produce, this file has the complete lay up schedule,

All the cut out patterns are placed in a rack , and the corresponding mat is rolled out and cut, if there are multiple layers of the same size they are stacked up and cut, the table has a metal top this helps with cutting and you don't get chips of wood in the mat.

These parts are all cut with a Stanley knife, once cut they are rolled up and marked, with their orientation in the build , then these are taken to the build mould ready for use.

There are different Weights of cloth to be used according to the schedule, weight is calculated by the weight of a Square foot of the mat most of the mat is Chop strand, these are lengths of short strands of fibers pressed together make a 48 inch wide strip, there are some regions where Woven Roving is required , this immensely strong fiber is made up of long lengths of glass woven together in squares , this is a lot harder to cut , lay and wet out but its strength is immense,

Once all the associated pieces of mat are cut, for either for a Hull or a Deck they are taken up to the appropriate mould and placed in a wooden rack in sequence ready for use.

The resin has arrived at Valley Road by a tanker and is pumped into underground storage and distribution tanks, the different Gelcoats have arrived in 55 gallon drums these are offloaded on to metal cradles with wheels so they can be placed ready for use. We are almost ready to build a boat.

First we have to release the moulding that has been curing overnight from the mould, there are lifting tabs on the moulding, holes are drilled in these tabs to accept the lifting shackle pins, on the shackles are wire strops these are attached to a metal lifting frame , this ensures that the hull is lifted vertically, with no stress points.

There is a block in the stern of the mould this is for the outboard motor well, this whole unit is bolted into the hull mould and is laid up as a complete unit, the small release gap has been filled with Plasticine this will give a good release, there is a flange on top this will accept the outboard well moulding.

There are valves recessed into the keel of the mould, these are to accept the compressed air tubes, the air is turned on , and the air releases the moulding and out she pops, this is the cool part you always want to get an unsuspecting person to touch the metal work of the mould , static electricity has built up and you will get a bit of a shock , “ I Know only too well “.

This completed moulding is placed into a build cradle with metal bars fixed to the gunwales, this will keep the hull to its correct shape, this will keep curing for sometime. this is then rolled out to the build line ,space is at a premium in the glass shop.

Ok we are almost ready to start , on the release some small particles of dust have been attracted to the mould by the static , so a careful wipe down is carried out, with a dry anti static cloth.

Now lets get going, the hull mould has lines scribed into the gelcoat these are for the waterlines and the cove lines, these lines are taped up ready to gelcoat ,

As previously mentioned all our moulds are made with a bright orange gelcoat, this color is great for taping up the lines and gel coating in general, there is a very remote chance that a hull will be orange, I know of only two, as the gelcoat is applied its easy to see any bald spots or Holidays as we call them.

The lines are all taped ready to accept the gelcoat in what ever colour the customer wants, one guy has this job he mixes up the gelcoat ,then adds

the M.E.K.P., these letters stand for Methyl-Ethyl-Ketone-Peroxide, only after adding this will the gelcoat harden.

There is a short time window when the gelcoat will be ready for the tape to be removed , and this is done in one easy lift making sure not to touch the rest of the mould, this just leaves the lines of the waterline and cove line adhered to the hull.

Now the correct number of mixing bowls are placed ready, the bottles of M.E.K.P are all ready for their application , one last check on the gel coated lines and we are ready to paint on the gelcoat , this will be painted on by hand, the whole mould is covered and the inspector is called , he will use a light checking for the Holidays.

If there are any of the dreaded holidays they are marked and a hot coat of gelcoat is applied to cover them up , a hot mix is just adding a bit more MEKP to speed up the hardening process.

While the checking has been going on the rest of the crew has been busy drawing buckets of resin, MEKP bottles have been filled the mixer is ready in the drill, the layers of mat are in sequence, things are ready to get rolling.

## **Its Lay Up Time**

Ready to go ,first check that the gelcoat is ready and still slightly tacky this will get a good secondary bonding. time to get going, first layer will be a skim mat using clear resin this is applied so we can check for any air bubbles or voids in the first mat lay up.

This is once again checked by the inspector, any voids corrected, I forgot to mention that we use a Roll over mould system so both parts of the hull can be worked on , just wait for one side of hull to kick off then rotate and complete the other side,

Most of the Hull crews are three persons evenly spread along the hull, each responsible for their own section.

The Skim mat has kicked off so we can now stand on this to get to the keel.

The keel is laid up first as you cannot reach this from the floor, so you have to stand on the newly laid up hull , a plastic sheet is laid down to stop your feet from sticking, all the keel is laid up with big overlaps, using both chop strand and woven roving, this is going to give a completed all integral keel with an internal ballast system.

All is ready for the hull to be laid up, this is a team job resin buckets have been mixed in order the moulding always starts from the bow , this man wets out his section of the hull the mat is placed on and rolled this then passes to the midship guy he wets out and rolls, finally on to the stern guy and the processes completed.

All the fiberglass layup in Hurley Marine is done by hand, its slower harder work than a chopper gun lay up , we tried the chopper gun but after testing it was rejected, this was the first generation of chopper gun ,and we were unsure of a proper consistency of resin to mat also a long clean up time, plus we thought we got a better layup ,and I still do.

After the first skim mat we use a resin with a white pigment added this was normally white, this gives a better finish helps with coverage and the finished moulding look sharp,

We used a metal roller system , this was made up of lots of washers slightly bent so when all bolted together on the bar would, give a really good roll,` forcing the resin into the hollow pores of the fiberglass.

Once all the layers of mat have been laid up we have to wait for the time window when we can trim off the excess mat hanging from the top of the mould, timing is everything in this process brand new knife blade is readied and with one cut starting at the bow you cut to the first tab up and over then cut to the next tap repeat the process, roll over the mould and the hull is trimmed.

The hull is now rolled to the horizontal position and left to cure overnight, and now the crew can get on with the clean up , buckets of acetone are all around the shop ready for the tools, and hands, this is a sticky dirty process.

In the morning the process of removing the moulding is completed, and another moulding is ready to be turned into someone's pride and joy.

At the time of the hull layup, the deck has been busy undergoing its transformation from buckets of liquid and dry mat into a shiny deck, there are way more chances of air bubbles and voids in this layup, because of the rounded edges and some tight corners involved.

The deck mould has lots of nice round corners helping reduce the possibility of voids, but its a good glass guy that doesn't get any bubbles, as in the hull moulding the deck has been all taped up for the different colour gelcoats, these are for the different colour of the nonslip and the overall deck moulding colour,

The diamond pattern on the non slip sections of the deck bring their own problems with applying the gelcoat, the gelcoat has to be painted on then scrubbed into the patterns so all air is removed , no one wants to repair nonslip,

The deck is harder to layup than the hull because of all the shapes, a guy crawls under the mould and comes up through the for hatch aperture, he will move back to the main hatch when the bow section has been completed, this a tough position as your legs and hips are continually coming into contact with the wet mat and resin,

Once all the schedule of mat has been applied , its the same process as the hull wait for the trimming time window, trim the whole deck ,yes even on the inside hatches, leave the lifting tabs, and all is ready for a release in the morning.

i might add whilst they have been laying up the deck and the hull , resin has been spilt on their clothing, together with bits of mat, this is all going off at the same rate as the moldings being worked on , so at the end of the day you have a pair of trousers you can actually stand up, you tend to go thru a lot of clothing especially the deck guys, the hatch man is a mess, the company provided trousers, but only a few pairs per week, so first thing in the morning they would stand on them to loosen them up.

#### Making the associated mouldings

There are a number of mouldings to complete our Hurley 22 these are, Fore deck hatch - Main hatch - Cockpit locker lids - Lazarette Hatch - and the Lazarette engine well moulding then we have the headliner moulding, the largest moulding is what we call the internal tray , this is a unit comprising of the fore cabin bunk tops - main cabin bunk tops - main cabin sole, the sink and galley together with the quarter berth units, one moulding saves so much work. The hatches for the fore ,main and lazarette are made in rather special way, the centre of the hatch is taped up and the outer part of the hatch is gel coated with the appropriate colour, the centre is then gel coated with a clear gelcoat, this is allowed to kick off then the good bit happens a piece of paper is floated over the clear gelcoat with a clear resin the paper is plain on the back but there is a teak finish on the face.

This is very gently brushed down so that the paper begins to absorb the resin, all the air bubbles have to be very gently worked out, this is a very specialized job, as no one wants to repair clear gelcoat on a hatch, and one of the rules of the fiberglass shop is no mouldings leave the shop , and they are repaired in your own time or deducted from your Bonus.

the Hull and deck mouldings leave the fiberglass shop in special build cradles, on the hull metal bars are bolted to the hull topsides this keeps the hull from deforming, the deck has all the support to once again stop it from deforming, the two parts have to mate up further down the build line.

#### Hull preparation and keel installation

The hull preparation can now start the deck ring is placed over the gunwales, this is made from the deck mould with about 12 inches of decking laid up , there are stiffeners athwartship to keep the deck moulding in shape they also double up as measurement positions for the tray, the deck ring is bolted to the hull,

A water level is used to set up the hull from the actual waterline, this is just a tube filled with water when you take out the bungs on the end of the tube the water will find a level, just jack up the cradle until the line on the tube matches the waterline on the hull fore and aft and athwartship.

We now go out to the yard and collect the two parts of the Hurley 22 keel, these castings have been made in Cornwall by Iron Brothers foundry in a town I know well ;Wadebridge. Both castings have threads run into the tops to take our threaded lifting eyes, this will enable the crane to lift them into position.

“Note “ these keels have to be bone dry, so when it was wet a supply of keels we brought in to dry ,only a few as space was at a premium, now its time to fit six metal bands down into the keel they extend up over the turn of the bilge, these are wedged into place and glassed over the tops and partway into the keel,

The keel is now lifted using the fitted eye bolts, and lowered gently into its pre-determined position, at this point there should be an 1/2” gap around the keel no part of the keel should touch the leading edge, the small rectangular block which is the second part of the keel is lifted and lowered into its tenon on top of the leading edge of the keel,

Now comes the messy part of the operation, the whole keel except a small portion in the front ,has to be glassed over, the top is easy its flat but the aft end of the keel has to be glassed over the bottom of the keel is longer

than your arms you get very adept at using a brushed roller attached to a batten of wood, plus this has to be a waterproof seal as we are going to fill the keel with resin.

When this coating of fiberglass has got hard we then paint all over the keel and up and over the metal bands with gelcoat thus ensuring a water tight keel, now is the time to make this keel a complete solid structure, we get our small barrel out and pour in a certain amount of a special Casting resin mixing in a filler powder this will be poured into the front of the keel filling the void around the keel,

We use casting resin and a powder to thicken the mix , this is a very slow cure resin and with the powder mix we can eliminate any heat build up and cracking, the whole barrel is craned into position and simply poured into the aperture we left open when glassing in the keel the resin mix gently settles out , the keel has a slight angle so any air just gets forced out by therein when it fills to the top its full,

The front plywood bulkhead is collected from the kit part shop , this is a complete unit with the front hatch door hinged all ready, this is hot tabbed into position, "hot mix is extra MEKP." Whilst the keel has been worked on ,a person has been prepping the tray moulding, this entails grinding off the recessed edges ready to glass the unit into the hull, plywood filler pieces are cuts filler pieces.

At about this time we are ready to drop in the tray , once again we get the crane get the unit up and into the boat, measurements are taken the front edge slides up to the front bulkhead this is screwed into position, measure again and hot tab in some places ensuring a good fit,

We can now fit the outboard trunk into its position , this is a very awkward job as we have to drill bolt holes then mix up a sealant when this is bolted up and glassed over we will have a watertight fit, this joint spends most of its life under the water , and once the aft vertical bulkhead is fitted its hard to get to the joint,

"Time for a break." On our return the hot tabs have gone off, the tray is now in its final position , all there is left to do is completely glass around the top recessed edge, then glass out all the lockers,

The top is an easy job and we take in turns doing this, the dirty part is the lockers ,we use a piece of triangular foam to get a good transition from hull to bulkhead joint, its then time to glass in the vertical plywood filler pieces, this is a time consuming job and you get covered in resin,

Of course when your covered in resin ,hands, arms sometimes your hair, there is only one way to get cleaned up. "Acetone " "Horror of Horrors" in Todays world Acetone is really frowned on, we had open two gallon buckets of the stuff sitting around the building both fiberglass shop and build shop , it was the only thing we had to clean off the resin and gelcoats arms legs ,faces and hair all washed in the buckets, "No Wonder I have grown up a bit Strange " .

The Kit Part Shop

This was a really cool part of the factory to work ,all clean with dust extractors all the machines, this was far different from the old shop where I worked in Clapworthy's, in that building we had years of sawdust piled high on the old wooden overhead beams, cobwebs were every where, the sawdust was shovelled up every night by the apprentices, the lighting was terrible often changing the fluorescent tubes as you moved from station to station, small square windows all obviously covered in dust, giving a Dickensian look to the whole place,

The best thing about the place was the solid pine floor if you dropped a tool it just bounced, also the strong wood smell was a bonus.

Now at Valley Road we had a custom built machine shop, every machine had its own dust extraction system culminating in a huge dust hopper outside the building, any extra working dust and shavings were swept into one of the many vacuum ports at floor level.

The whole place was light and airy, the plywood was all neatly stacked ready for use. of course this was all marine grade ply, either single faced Mahogany or double faced depending on the final product,

Most of the hardwood such as Mahogany and Afronesia were all stored outside the main building in a large tented area. the Mahogany logs were all stacked and sticked , sticks are lengths of wood battens that lay between the planks this then allows the air to move freely around the timber.

The planks of afronesia were mostly used for the rub rails and capping for the H22 and the H18, and later the H30, these were delivered in just wide planks ,then our Machinist's would cut them to useable lengths and widths, these were then spliced together to get the required lengths for each boat, a nice job ,first you select two pieces that have similar colour's and grain so when varnished will look like one piece, the splice was cut and a resorcinol glue was used, both parts were cramped together and left for a couple of days to harden,

The cramps were removed , no fasteners were needed or used , the completed part was then taken to the machine shop where it was finished with one rounded bottom outside corner, this is ready for use and you can hardly see the joint, another in house job finished.

Our machine shop was run by Doug Brenton and an old machinist called Les , they also had an apprentice, all the wood parts pertaining to each and every boat passed thru their hands, parts were always made in sets of three or six, these parts would be all ready to be placed on carts and wheeled over to the kit part assembly area,

They had various jigs where the parts would be dropped into, glued and screwed together ready for fitting to its allotted boat, every wooden part passed thru this shop, they were pre-drilled, sanded and then finished ready to be inspected, then to be picked up by the build line crew, this part of the factory was run by Ken Sprules, and he had some great guys working for him.

### **Hurley 22 Deck Fit Out**

Its the build crew that is responsible to fit out the deck, normally by the youngest member, the deck has been craned on to its fit out jig this has six wheels on it so it can be pushed into any vacant space, the deck has had the gunwale edges all sanded you have a fair edge to fit to the hull, all the hatch apertures are sanded smooth these are now ready to accept the finished hatches.

A set of deck fittings have been collected from the stored placed roughly in the positions, I always started at the bow and worked aft, drilling the deck to receive the allotted fittings, hatch hinges ,cleats, tracks, all these fittings required you to drill them individually as the holes in the fittings varied, once all the holes are drilled you go over them again and countersink the holes this will allow the sealant to make a better watertight joint,

The deck is cleaned off and all the fittings bottoms are cleaned once again to get a good bond, the bolts are slipped in after being coated with some filler material "we tried various types of sealers as they came on to the market, remember its over 50years ago".

The bolts are tightened making sure all the screw heads are facing fore and aft, at this time the bolts are broken off and re-tightened, the whole deck is fitted out this way one fitting at a time, once again the deck is swept clean any and access sealant is cleaned up.

Next its the hatches the main hatch is the worst as this is sat on brass tracks and must slide very smoothly or the inspector will give you hell, the fore hatch and lazarette hatches are hinged , and of course these have to fit perfectly and the locking system must pull down on to the rubber sealer.

Now comes time to fit the Windows or Ports, at first these were installed using a rubber section and the Perspex slide into the section being locked into place with a rubber locking insert, this worked fine ,but then our competitors went to alloy frames so we had to follow, these were a pain to fit as it was like a clam shell extrusion with lots of screws a real pain.

Final build out

We now have prepped hull placed into its build spot, now we have to get the water level out again and get the boat set up in its correct position, we have by now collected all of our internal fit out parts from the store and the Kit Part Shop, these are placed around the boat ready for the installation process,

There is an order in fitting these parts as they have to be installed before the deck is fitted , the head or toilet is fitted and plumbed and all the seacocks are fitted at this time and the hoses hooked up. Any wiring is run all ready to hook up , ready to accept the deck.

All the bulkheads have their patterns places against them and a pencil marks of the top, this only a first cut to get the deck into its position , clean up the cut offs and we are ready to go collect the deck and hoist it into position.

For the deck fitting procedure we bring the fitted out deck alongside the crane, a spreader bar is inserted into the main hatch athwartship, hook up the crane and the completed deck is lifted up and over the hull, to fit the deck we need a slight down angle on the deck as the bow has to slip over the bow then be pulled aft to get that good fit on the stem.

Now is the time to scribe in the bulkheads , a check is made and there should be only an inch to scribe to get that perfect fit, the deck is lifted enough to cut these marks with a jig saw, when this is done the deck "Should" now slip into its perfect place, sometimes a little persuasion is required get the stern to slip over the lip flange , but that is what "Rubber Mallets" were designed for ???.

Its time for the deck flange to be thru bolted to the hull , the fairness of the hull is inspected ,no flat spots, looks like we are ready.

The next job is my least favourite. the deck to hull joint has to be completely glassed over making a watertight joint and unlike the smaller boats we do not have the luxury of a roll over jig, strips of chop strand mat are placed around the tray, resin buckets were brought into the boat together with m.e.k.p. bottles, some three inch brushes and rollers, time to get going.

The resin is mixed and you start this messy job ,all the layup is overhead, i used to start my side from the forepeak and work aft, Peter would start at the lazarette and come forward, of course the resin runs down your arms and all over your hands, i tried using gloves but your hands sweat so much it was awful,

Once all the glass work has been completed, there is a major clean up, and lets get that resin off the boat,

"At this time I must apologize to the Hurley Owners as a lot of the bolts have been glassed over making it a Nightmare in later years to tighten a fitting or change a fitting, I have had to do this myself many many times and its a really Pain Sorry ".

There is not a lot to do at this time , just fit some cover strips, remove all the doors with hinges, fit the locker tops and stamp all loose parts with the designated build number that corresponds to this boat, these are all taken to the varnish shop so Jack the Varnish can perform his magic.

My favourite part of the job is now about to start, I have been to the machine shop and collected the lengths of Afronesia these are the rub rails and the capping, we use afronesia

or Iroko as this wood looks like teak but is easier to use and this wood accepts varnish better than the oily Teak.

the lengths are offered up to the boat to get a fit on the bow and marked where the scuppers are going to fit , all trimming is done and the lengths are pre-drilled for the screws and the wooden bungs, the inside is primed and a sealer is laid on, now the whole length is offered up to the Gunwale to be screwed into place.

We leave the top slightly proud as this will be planed down by hand later to get a fair run for the capping, once the rub rail has been fitted and the tops

planed down the carpal is fitted this again is offered up to get the fit to the wooden stem head cover ,

now all we have to do is to gently work the carpal in to position, Iroko sometimes has a short grain and no matter how much you have checked it, there is a hard turn about four feet from the transom and the iron or Afrosia gets a bit mad at you, and. "Bang, Crack ,the cap breaks off and you have to start the process all over again , of course the boy gets blamed as is always the case.

The above could have been steamed but we never had that luxury or the time.

When both sides were fitted the wooden plugs had to be fitted , these plugs were made up before hand by getting odd ends of rub rail and drilling with a plug cutter, once all the plugs were cut I used to run a pencil line with the grain as its easier line up the plugs this way, the plugs were glued in then after the glue hardens they were trimmed and the whole rail was sanded,

Why I always marked the plugs because this was most times my job , and when Mike Parsons our inspector checked over the boat ,if a plug was not fitted correctly it had to be replaced in your own time.

the handrails were fitted and plugged, the whole boat was cleaned , tools were put away ready to be sharpened, ready to start the whole process again,

Time to call in Mike Parsons our inspector, Mike was a great guy and a really good sailor, he at one time sailed on the Royal Yacht Bloodhound, Mike was really good at his job not much passed his Eagle eyes.

I used to get the boat as good as I thought was perfect, But Mike would always find something so my trick was to leave a couple of different grades of sandpaper loose on the tray top, I would then engage mike in a conversation about sailing, he loved to sail, and to be fair he was a lot better sailor than some of the management team.

Any way Mike would start to talk about one of his sailing exploits and before you knew it he would have picked up a piece of sandpapered just clean up a section of wood that i had missed that never came up to his

standard, we did do a good job building these boats but we were under a lot of pressure to get these boats out the door.

I am sure Mike knew my plan but he was very fair and a good inspector , and he would surly let you know if things were slipping past his standards.

The Paint Shop

Now that the build was completed the boat was taken from its build slot over to the Paint Shop, Sid Walker was the manager of this shop another cool guy,

the boats were not hand painted inside and out as in the old days, but first the while inside was taped up to cover any areas where varnish was going to be applied, the paint used on the interior hull sides was a splatter paint , this was an emulsion paint with droplets of an oil based paint suspended the mix.

Peter Gatehouse was our sprayer and it was his job to climb inside the boat and blast out the area's that the paint was set to cover, this is a very effective way of finishing of the inside of a fiberglass boat , the paint leaves the spray gun and as it hits the designated surface the oil

droplets get splattered into a random pattern ,this great for covering raw fiberglass mat, this was a smelly operation ,” Not For Me “.

Peter was a good sprayer not that the above job needed any talent just aim and shoot ,keep the gun nozzle moving.

But sometimes peter was called into spray a boat, then he could show you what he was capable of, a talented craftsman.

All our rub rails were varnished, we had tried an oil finish but this was not very successful and our market liked really smooth varnish on the wood parts.

Our hulls were sometimes painted with Anti Fouling this was another of those smelly jobs and one of the painters Harry Croker was mostly assigned this job.

Jack was our varnish guy , this man was amazing he could get a mirror like finish on all the loose parts of the boat, he always had a cigarette hanging from his mouth , this was a lighted cigarette and the complete ash was still attached to the damn thing, he could smoke and varnish , I never once saw any trace of ash in any varnished board, he was not supposed to smoke but this was Jack and he had been doing this for Twenty Years or so, some times you just have to fight another battle.

Final Fit out

We are almost there ,the boat leaves the paint shop ready for the final fit out, hook up the wiring, Calor gas stove is fitted and tested any

navigation instrumentation is fitted at this time, and all the loose parts have been collected from Jack the Varnish, doors are re-hung, the steps are fitted, the boat is looking ready to head out to the Test Tank, the boat is lifted from its cradle and lowered into the water, this is where all the thru hull fittings are checked ,and the boat is sprayed down to simulate sailing conditions.

Once again call Mike Parsons, he’s a busy man, he jumps into the boat and runs his checks for leaks , Mike always used a sheet of Blue paper towel. leaks show up instantly, he runs the towel over all the fittings, trying to find a leak, I still use this method of leak finding to this day,

Mike signs off the boat its now on its last journey, out to the storage yard ready for rigging and dispatch.

Hurley Marine Sail Loft

At Hurley Marine we built all our own Sails- Canvas Covers, and Cushions, we also built all our own Running and Standing Rigging, this made us at that time “ The Largest Self Contained Boat Building Yard in Europe “

The Sail loft was run by Wilf Witts together with his brother Frank Witts , on the Floor we had my Brother in law Ken Hardy and Norman James, building the standing rigging was an ex Naval Dockyard Rigger Erni, there were also three women running the sewing machines and sorry I forgot their names.

This loft was always busy, all the sails were built on a raised table, taking up most of the shop, the material was rolled out trimmed marked and went to the girls for a first layup, once this was done the sail was put back on the table and the second layup was done folding all the tabling on the Leach, Luff and Foot, the patches are glued on with double sided tape and the girls would then get the sail back and sew up all these edges putting in the leach lines and a sacrificial line for the Luff rope,

The last operation completed the sail went up to either Wilf , Ken or Norman for hand finishing, this is where the luff rope is pulled thru the sail and stretched to get its shape this is then hand stitched in and all the bronze sail hanks are stitched on grommets are punched in and formed , all the finishing hand work is completed,

Of course the appropriate Sail Number was allocated to the sail, "Not necessarily in sequence that depended on our sales force".

the canvas work was built by Norman, this is a tough job as everyone wants a tight canvas Bimini, even with good patterns and a production line build, this was hard to get correct, some would still sag but Norman would get them fitting tight in the end.

All our sails; Spinnakers Jibs, Storm Jibs and Mainsails were all hand cut and sewn by hand, "I had a Hurley 22 in Sarasota Florida a few years back still using the original sails". mind you it was time for a new wardrobe to be built, I think the guy was a bit tight, All the running rigging was Three strand Polyester with the sail handling in a soft braid, once again all the terminations were hand spliced.

The standing rigging was made up in 1-19 Stainless Steel Wire, these wires were terminated using a Talurit Swaging Machine, the wire was first passed thru a Copper Ferrule then back on its self into the ferrule, this was then pulled tight around a Stainless Steel Thimble a bit of the wire sticking out of the ferrule, this length was the dial of the wire 3/16<sup>th</sup>.

you now checked everything all tight and the handle was turned and Twenty Five Tons of Hydraulic pressures applied and the termination was completed.

This was a great way of building production rigging at this time, and there are still Hurley boats sailing with the original rigging, "I would not advise that but some people think that stainless steel will last forever".

Like I had mentioned before, the local Hurley 22 in Sarasota Florida had the Original sails, Mast, Boom and Standing Rigging I was totally amazed, this guy had come to our local sail loft enquiring about a new Mainsail "about time".

when asked what boat it was for he told my friend Gregg the owner of the loft, that it was a European boat and doubted if Gregg had heard of it, when saying it was a Hurley 22, I was called in and could give him the complete history of the boat, he was amazed.

we went on to build him a new Mainsail and I went down to properly set up the boat and tune the rig, it was amazing to see the old rigging still with adjustment left on the turnbuckles, I advised him to renew the standing rigging, but before we could do this the boat was involved in an accident with a rather large cigarette boat going fast and out of control, it hit the boat and ended up a total loss, so sad it's only the second Hurley 22 I have seen in the USA.

### **Stepping the Mast**

All the Hurley range of sail boats were pre-rigged prior to shipping, AG Hurley in Richmond Walk built our masts, and these were shipped out to our Facility in Valley Road, these masts were all Extruded in holland with our own company Dies, these masts were all raw Aluminium extrusions, I used to have clean them up with a Brillo pad to get a finish,

I used to store these in long racks the end of the factory together with a long dressing bench, My Last and by far the Best job I ever had at Hurley Marine was running the Rigging Shop, I would get the masts dressed with the standing rigging all ready for the stepping process, I would get a list on Monday morning of the expected dispatch date, and time approx. that the truck would be here to load.

My job was to get that boat rigged, inspected and packed ready for dispatch, these lists did change daily depending on transport and customer, sometimes you had got a particular boat rigged and packed only for the office to pick another boat, Frustrating is a loose word there was a lot more stronger ones used.

first thing in the morning would check my list, make sure it corresponded with the list in the office.

I would dress all the masts ready, "you have to remember we were shipping out up to Eight boats a day; normally it was between Three and Five.

I would carry the masts outside to the boat , adjust all my Turnbuckles prior to fitting on to the boat, I would set up my lifting frame on the stern, lift the mast into position, slide the mast back so I could insert the Top bolt in the Tabernacle would attach the Capshrouds at this time these are pretty loose to account for the change in angle on hoisting.

I make sure all the rigging is untangled move to the main hatch bend down making sure to bend my knees, Then on the call of 2-6 why that number I know not ????

the mast is lifted and the top bolt is inserted the tabernacle all safe now holding on to the Forestay i insert the 1/4 shackle pin ,move back to the Backstay insert the pins , fit the lowers and tension up the whole rig. once this is done i once again go in search of Mike Parsons for a rig check.

If he is not around i just carry on rigging the boats, he is a busy man and he will get here when he can , Mike will look over the rig ,checking for tension ,making sure I have enough room in the Turnbuckle for future tuning, if there are any alterations to be made I will take these up to Erni or maybe have to them myself,

It never ceases to amaze me that boats from Identical moulds, identical building jigs can ever be different.

Right now I bring the mast back into the rigging bench , time to dress the running rigging , fit any extra fittings the customer might require, pack up and table the mast ,ready for the dispatch team to collect it.

Of course there comes the time that the boat is late coming out of the finish shop, the truck is here waiting , my mast is all ready , the boom has already been packed, wait, wait ,wait, ok the boat is on the move, can't rig it yet it has to go in the test tank, i have time for a coffee , its now getting really late , the truck driver is making rather rude comments,

This is not our first Rodeo , it happens quite often in the Silly season, ok the boat is leak free ,its hoisted out of the pool, "I know what's going to happen now " !!!!,,

Hey Colin how about you rigging this boat up on the truck ??? "I knew it" this is a real pain , i have to lift the mast up on to the boat which is its self now up in the air,

Ok lets get this done , " don't want to look a wimp", going to need a hand now , we go thru the same process as on the ground , just now i have further to fall, Mike has been patently waiting he checks the rig over, yes its going to need alterations this always happens when you're in a hurry, I strip of the rigging and head up to a deserted Sail loft , perform the alteration, and redress the mast , all this time i have been getting verbally abused by my workmates, and the Driver is pacing up and down , relax its all in a days work .

The boat has been strapped down , just waiting for the mast, and finally I get it packed and take it out to the truck to shouts of about time to.

load the mast and the truck is of in a cloud of dust , leaving us to pack up and get ready to do it all over again tomorrow. !!!!

Very rarely do our section of the company get to go home on time, there is always something holding us up .

The words "On Time "are a couple of strange words in the Boating Industry.

Looking back these were Crazy times for our company, we had a really Great Team from Top to Bottom, boats were flying out the door , little did we know that things would change so drastically in just a few years.

That is the Boating Industry and I. LOVED IT.

I am attempting to write a book about my life at Hurley Marine giving a real in depth look into the life of an apprentice moving thru all the parts of this fine Company , I had a lot of it written when an unexpected glitch in my computer lost the whole lot.

Hurley Marine shaped my life starting in Richmond walk , traveling thru out Europe and Ending up Living Working and Finally Retiring in the USA.

Thank You Hurley Marine

Colin Curtis. ex Apprentice