



Case Study – Adam Smith – Apprentice Boatbuilder (funded 2015-16)

R Cann & Son Ltd

This apprenticeship has been one of the most challenging, unique, and wonderful experiences of my life so far. Even though I've only been here for 5 months I've learnt more than I ever did in my last few years in education. I have learnt how to be more selfconfident, I've learnt how to manage team relationships and I have learnt how to become a responsible adult. This apprenticeship has allowed me to learn how to manage myself in the future. But most of all this apprenticeship has taught me the traditional arts of boat building! This report is about my first year of being a shipwright Apprentice with the Worshipful Company of shipwrights at R Cann & Son Ltd. Our current project at R Cann & Son Ltd is a complete restoration of an old canal barge called George. This project is funded through the National Lottery and is part of the Canal River Trust.

September 2015

This is my first month working for R Cann & son and I already felt very welcomed into the new working environment. All the employees was very friendly and understanding that I have just come out of education. I got along with all of them very well, already from the start I was beginning to learn new experiences, not only from Bob (my boss) but also from the other employees there and began learning many new skills and techniques that I never knew before.



The apprenticeship first began with me getting to know the employees and for them to get to know who I was and what my skills were such as my strengths and weaknesses. During this month I partook in small tasks varied from making patterns of the old George and taking measurements and transferring them to templates and frames that we now had for the new restoration. I also had to help make batons that would wrap around the moulds we made from the old George to create our patterns for the planking. I also acquired many skills in measuring and learning many new names for different parts of the vessel. I had to measure parts of the old George and transfer the data to rough drawings that we could use as a reference point when it comes to the full restoration. I also got to learn the history about the project and learn the history of the current workplace and employees. Towards the end of the month it was time to dismantle the old George and we began to strip the inner planking and



of

completely clean the boat so that it was ready to be cut up and the wood could then be used for other needs. During this time I also got to learn how to use new machinery I haven't used before. Such as the band saw, table saw, circular saw and gain new skills in many tools I already knew how to use.

October 2015

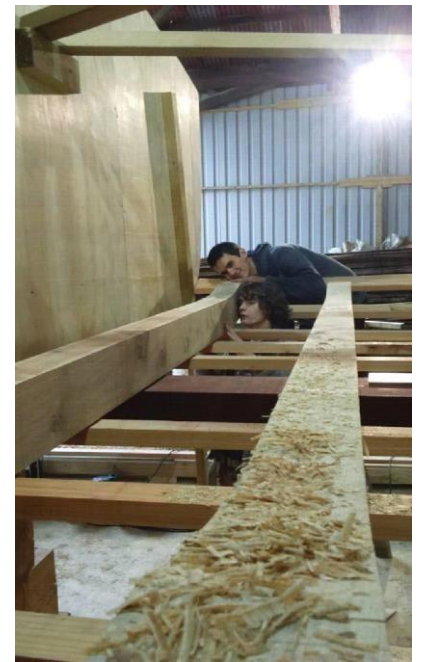
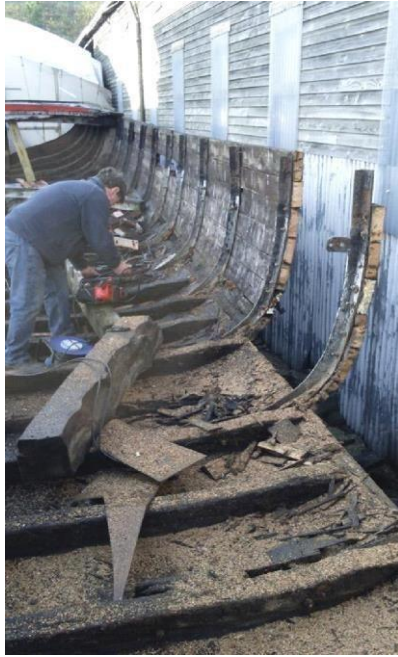
In October we had new apprentices join us from South Devon College. This allowed me to make friends of my age group and I got along very well with them! We not only learnt together but also learnt from each other! The start of this month consisted of learning many new skills and vocabulary that I never knew before. The first thing we did during this month was roll oakum for the caulking. Oakum and caulking was a very new thing to me even though it has been around for hundreds and hundreds of years but Bobby taught me a lot of stuff about it and its history. I learnt that using Oakum for caulking is a very traditional thing and I learnt the technique of Rolling Oakum which was at first, difficult but with the help of Bobby I easily picked it up. Bobby also explained to me why we use Oakum and the process of caulking. This is very interesting for me and helped me learn. We also positioned and connected the stern to the keelson.



During the month me and Bobby also attended the Worshipful Company of Shipwrights lecture. Here I met many other apprentices and employers and found the entire lecture to be very valuable and educational.



Coming into the middle of the month I then helped to position the batons and get them fixed to the new mould. During this task I learnt many valuable marking and measuring skills. Knowing how to do this will be very valuable in the future. We also began to pattern, Mark and cut out the floor frames. During this I got to use tools such as the disc sander, the table saw, I helped assist when others were using the band saw, assisted when others were using the planer and the circular saw. The employees and Bob were very helpful in using these and gave me all the guidance and correct information on how to safely use the tools, they also supervised and made sure that I was using the tools safely, wearing the correct PPE and I wasn't putting any risk to me or anyone else. After we had marked and cut out the frames and faired them through we were then able to position and attach the frames to the mould and the Keelson. I was also able to cut out and mark the Waterways in the



frames. This allowed me to learn new skills with the chisel and I asked for help when I needed it. Also during this month I assisted the group in deconstructing and cutting up the Old George.

November 2015

Adam Smith – RC Cann & Son

During this month we began to paint all the floor frames with red oxide to protect the wood from the elements. We also continued to Mark and cut out all the floor frames and continue to collect measurements from the old George. We also took out the steel frames from the original George and got them re-bent and painted so we could use them for the new George. To do this we took patterns from the inside of the mould around the batons so we could get the new shape for the frames to be bent into. The Steel frames and the steel Keel are some of the only original parts that we transferred from the old George. We then got the steel frames positions and clamped them up as a temporary fixing, having these in position would allow us to then work out the planking positions and then allow us to begin to Mark out and cut the planking, After we were happy with the steel frame positions we then connected them to the floor frames using bolts.

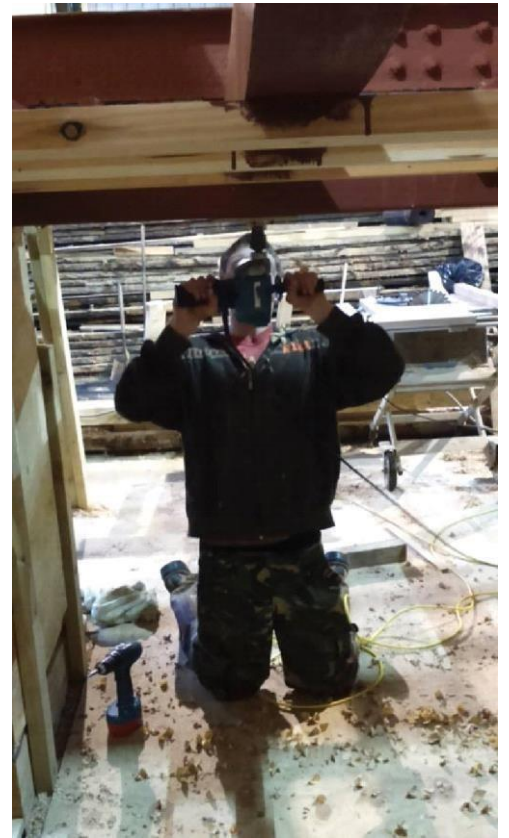


Also during this month an employee name David trusted me enough to help him with one of his private projects. He got me to router batons and plane and Sand pieces for furniture. He also helped guide me through the process and

gave me valuable information and skills to use in the future.

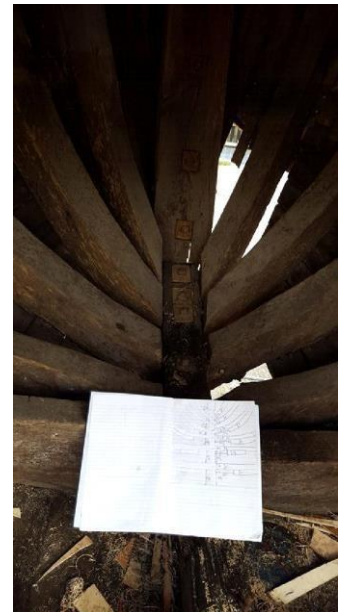
We also attached the keelson to the floor frames. To do this we countersunk into the wood and then drilled a hole through the keelson into the frames and the bolted it together.

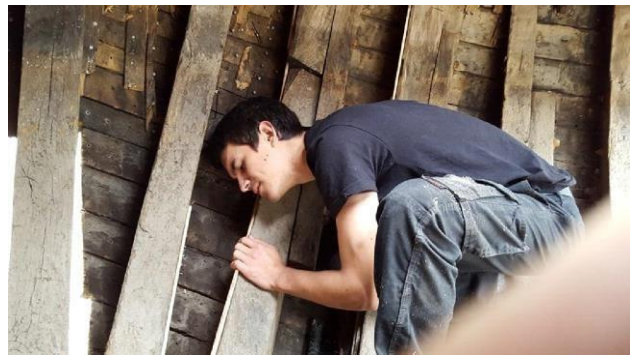
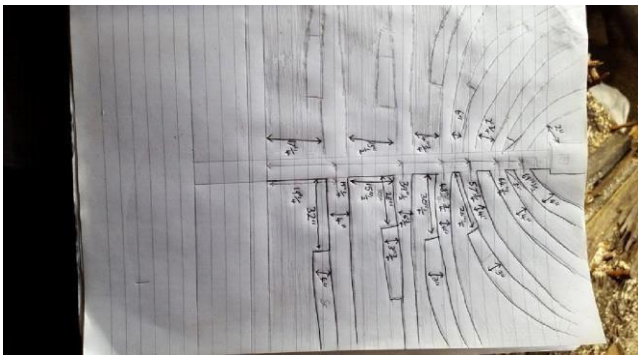




December 2015

In the start of December I was tasked to get the last few measurements and markings of the floor frames in the stern. I measured the existing frames and applied them to a rough drawing I drew. This will later be used to mark and position the new floor frames for the new George. I also had to make patterns of the floor frames which we could then use as rough patterns for the stern. We then had to finish cutting up the old George to prepare the transportation of the stern and the bow back to the Canal Trust Museum. I also helped the other employees mark, measure and cut out parts for the vessel. I also shadowed the employees and asked questions of what they were doing and why. Doing this allowed me to understand a lot more and learn about the different stages and parts to building a vessel. We also had to put the steel keel from the old boat into the new one; this took a lot of tweaking and getting it in line with the floor frames so that we could connect it to the wooden keelson.





January 2016

After we had all the steel frames floor frames and patterns and place it was then time to start making the patterns for the planking. To do this we placed plywood between the batons which we could then use a spile block to draw the line from the batons onto the plywood. This then allowed us to take the pattern, place it on a suitable piece of oak, and then use the spile block to then mark off the line on the plywood and onto the oak to get the marking of a plank. We then cut out the plank using a circular saw planed it into tolerance and then left them aside to dry until we were ready to attach them to the vessel.





I also got to help build the Transom which taught me a new technique into connecting wood and give me good experience in joinery work. The Transom was then also painted with red oxide to ensure that it stayed clear from the elements.



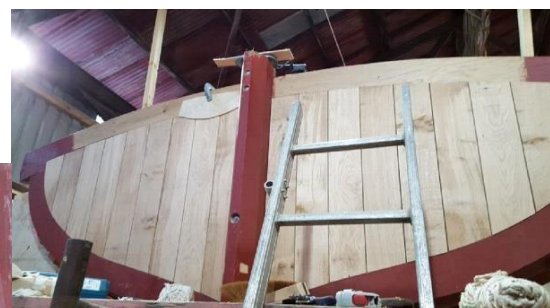
We also began to construct a steam box to allow us to steam the planks ready for going onto the vessel the steam box was 30 feet long which was how much we needed to steam to bend it around the stern. I then also learn some new skills and electronics as I helped an employee mount the steamer to the steam box and help wire up the components. I also helped Bob to make the knees which will be used to support the beams. To make these we cut out many strips of oak and bolted them together as this made it easier to steam them. We then steamed them in a small steamer and bent them around a pre-made jig to the right shape which made them ready to be sanded and planed to size.

In the month I learnt many new skills. I learnt how to accurately mark planks and work out how to position planks. I also got my first taster at steaming and found it very enjoyable!



February 2016

Planking has been the main task of this month. We have marked and cut out many planks that were all ready to be fitted to the vessel. The first step to getting the planks up was steaming the ones that needed. To do this we placed the plank into for roughly 5-6 hours and we then amount of time to get the plank into clamped up before it cooled down cause the plank to split or snap. were clamped into place we then they had fully cooled down. We the floor frames on the inside onto lowered it onto tressels which then tar the areas that would be otherwise unreachable and scallop out parts in the



to be steamed. the steamer had a small place and which could Once they waited until then marked the plank and allowed us to

plank to allow it to bend around the frames easier. We also cut the butt and made sure it will fit in its position. Then we clamped the plank back into place to allow us to start spiking the plank to the floor frames and bolting it to steel frames.

The first part to connecting the planks to the frames was to use a countersink to inset the spikes which we could the glue and plug afterwards so the spikes are safer from the elements and oxidation. We then drilled a hole in the middle of the countersink for the spikes to fit in securely. We then hammered the spikes in and then had a partner hold a punch so we could hit them into the countersink.

Current to date

We are still planking and patterning and will be for the next couple months. Everyday I'm learning something new, whether it be a skill, vocabulary or a new technique.

I am enjoying the apprenticeship so much and I am very thankful for the opportunities bobby, South Devon College and the worshipful company of shipwrights have given me. I hope to continue to learn as much as I am and cannot wait to see the project finished and I can finally say for the first time "I was part of that!" I am very happy with the apprenticeship and the scheme and will be finishing the apprenticeship with a smile on my face! I've learnt so many new skills and techniques I didn't learn during my education at college which will be extremely valuable to me.
