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## Case Study – Jack Sullivan – Boatbuilder apprentice (funded 2018-19)

### Cockwells Modern and Classic Boatbuilders

[www.cockwells.co.uk](http://www.cockwells.co.uk)

This report is an outline of my first year as an apprentice at Cockwells Modern and Classic Boatbuilding alongside studying at the Falmouth Marine School on the level 2 course progressing onto the level 3 course over the duration of my apprenticeship.

Last October (2018) I applied for a job at Cockwells as an apprentice boat builder and successfully was offered the job. Over the last year I have worked alongside many different boat builders on many different projects. Whilst working on these projects I have gained many skills already which before starting the role I never thought I would have ever achieved or been able to do. Over the last year I have been working under Jonny Mills. Jonny is the apprentice and trainee manager at Cockwells and with the experience and skills Jonny has to offer I have been able to learn lots.

#### Projects and Training masterclasses, I have undertaken since October 2018

##### Duchy 21

After couple of months of training me and a couple other apprentices were approached and given the chance to build our own Duchy 21 under the watchful eye of Jonny Mills. Before this we had been through lamination ratios, how to use all power tools, Wood machines etc. Once we were confident, we started the build. We were down at the laminating work shop laying up the hull with laminators who were teaching us how to lay up properly using rollers, consolidators, how to cut glass and the importance of not having air under the matt. During the build I learnt how to level up the boat using lasers and datums, I learnt how to Vacuum bag the teak decking onto the deck after bonding the deck on using Sika flex. I found being able to interpret drawings and transferring the information of a drawing into the build very interesting and was a good learning curve being able to put it into something that was actually being sold to a customer. During the build I was taken through a gel coat repair masterclass, which was massively helpful and interesting. I was taught about going through the grades using sand paper to a final polish finish. Below is a couple of images of the build process.

Jack Sullivan – Cockwells Modern and Classic Boatbuilders



Here is an image of me using wet and dry sandpaper to perform a gel coat repair on the Duchy 21 deck.



This is an image of the fuel tank that I had glassed in using polyester resin. Before glassing I had bonded the tank in using crestomer.

The fuel tank was then pressure tested to ensure our work was up to standard

This is an image of the waterline being painted on after I laid it off using a laser level and masked it on. Underneath is the antifoul that I had also painted on.



This is the boat finished I was just adding the final touches and extras, such as the Bimini with Jonny.

### Fleury (Little Ship Dunkirk)

Fleury was one of the boats that bravely went across the channel to Dunkirk in 1940. This was a huge restoration job that I was lucky enough to get the chance to do a small job on. This was to plug all of the holes on the toe rails. This was really interesting learning how to cut plugs using plug cutters as well as using an epoxy mix to bond them in. I was shown how to place the plugs meaning all the grain was running with the rest of the timber on the boat. After hammering them in I was shown how to cut the plugs flush using a chisel paring away the plug little by little until it was flush.



### Sheathing Marie's deck

Marie is Dave Cockwells fishing boat that he has been restoring. I was lucky enough to be work alongside one of the composite boatbuilders at work for the day learning how to prep and sheath Maries deck. I learnt how to prep for the lay-up, sanding, masking, protecting and mixing the epoxy with hardener using a 3 in 1 mix ratio. I then learnt about filling holes and making a viscous mix. Then making a neat mix to lay down before the matt goes on. In this case we were using woven rovings followed by laying down peel ply. I learnt that laying peel ply is a used to protect the matt below as well as it helps reduce air underneath the matt. On completion It was reiterated the importance of cleaning up afterwards.



### Wood machining course – Bob Harris

Me and a couple other apprentices and trainees were sent on a wood machining course down at Cambourne college to learn how to use machines properly and confidently from learning from the skills and experience of Bob Harris. This course was a top up and a more in-depth bit of training. We learnt how to use spindle moulders, radial arms saws band saws etc. The course really went into depth on safety in the workshop. Following on from being shown all the machines in depth and how to use them we were given a task to make a window frame using the machines we had been shown.







*Figure 1 Bessie 1902 Falmouth working boat extensive restoration*

First, I dug out all the old ballast, which had forced off the garboard planks as the rust expanded, then we made new frames and floors where necessary. We then fitted new planks and refastened about 50% of the nails and screws below the waterline. I spilled and fitted my first planks on the topsides forward,( see below) and then gently caulked them with cotton, and payed the seams with white lead putty. The boat was then sanded and painted with primer, for the new owners to finish themselves

