The Worshipful Company of Shipwrights

Case Study - Jacob Penaluna - Engineering Apprentice (funded 2019-20)

Triskel Marine, Cornwall

https://cornwallmarine.net/member-listings/listing/triskel-marine-ltd

Making his mark…

Before joining Triskel Marine in the summer of 2019, Jacob studied BTEC Engineering at Truro College, where he distinguished himself with excellent grades to add to his already impressive GCSE attainments. Jacob is a natural born engineer, and at college he designed and manufactured a miniature-autonomous gravity racer that was capable of navigating through a technical obstacle course consisting of jumps and slaloms. Quite some achievement! We sat down with Jacob at the end of his first year to gauge his progress…

Skills and Knowledge…

"*The first half of the year at Triskel Marine was extremely eye-opening and provided me with many new life skills and knowledge of marine technology. My first weeks consisted of practicing swapping generators and mounts over on the test engines we have and getting a good idea of the products we manufacture, and the products we use, by counting the warehouse stock. This is also due to the company moving over to a stock control software and the numbers needing to be updated.*

I very much enjoy working in a small team environment that works with names and not numbers. I have found that I have been trusted accordingly to my capabilities and have received the necessary training for anything that I am not confident with working on solo.

My first major project was to design a small, sleek, and simple display stand for our new Integrel Smart Switch, to be displayed at the 2020 METs show. I took this job from initial design and cardboard prototypes all the way to a display in a worldwide marine show. I heard that the display did very well and gained the Smart Switch plenty of interest, which made me very pleased.

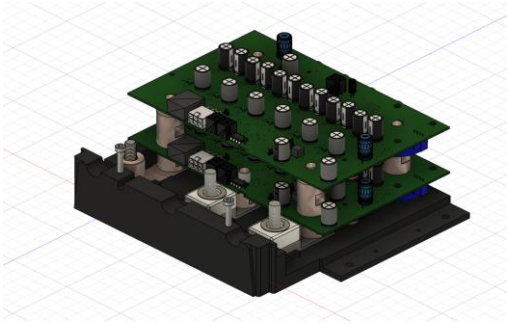
Another major positive about my work at Triskel is that I am qualified at level 2 C&G CAD. This was instantly recognised, and I was trusted with a lot of CAD work, specifically drawings, which are now capable of being sent to other engineering companies due to our compliance to BS8888.

My day to day jobs tend to consist of starting on the computer and updating the online task software (Jira), a daily conference call with colleagues that are based elsewhere, and then I will move onto work on what's current and needs doing. For example, today I will be assembling 20 junction boxes, and 20 screen interface boxes to be put into full system boxes for upcoming installs. These boxes have also been started, listed, and updated by me.

The most educational aspect of my time at Triskel Marine would have to be the trip to A Coruna, Spain, to replace a full battery system on a client's Neel 51 Trimaran. This trip lasted a week, and I was able to see exactly what our company do, and how we aim to go about a job such as this. It was a lot of hard work and was rather overwhelming at first, however I adapted quickly and still made sure to enjoy the job as much as possible.

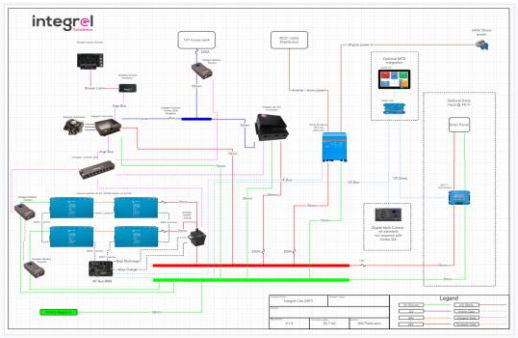
In the last six months, I have helped to complete a series of new and existing challenges, made slightly more difficult during lockdown, nonetheless engaging and exciting. Since March, I have helped to create a new, first ever, product that is capable of charging lithium ion batteries at a range of voltages and is also battery agnostic.

Nothing like this is currently on the market. We're very close to having this product on the shelves and sent to consumers. A lot of the work I did regarding the smart charger was on CAD. Below is a screen grab of the inside assembly file that I had put together after designing some of the components:



Another great area of work has been a full installation on a Garcia Exploration 45. This was my first ever full installation and required a lot of attention to detail due to the aluminium hull. Not only did I gain a mass of experience in just 5 days, but also a huge confidence boost within my work and my capabilities. I was entrusted to carry out laying, cutting, and crimping cable to size, mounting our hardware to the customer's boat and taking care of the main packing of products for the installation. Below, is a photo of our controller all wired up and mounted above one of the 4 Victron batteries that we had installed onto Idris (the customer's boat name).

In addition to these areas, I have also had the opportunity to learn how to create a full system schematic, based on a customer quote. My first schematic drawing was to design a basic single voltage single generator setup which will be used to assemble our all new Integrel Lite kits. This means after some training, other engineer's and customers will be able to install Integrel onboard their boats, with very little, or next to no assistance from our team. Here's a screenshot of the first schematic I drew with the help of my boss:



I feel that I have benefited the company with another pair of hands during these busy times, I have bought in another person's perspective on how a task can be addressed & completed, as well as bringing in new ideas for a product design or manufacture. I feel that my apprenticeship has impacted the company in a very positive way.

And what about the future?

My plans with work for the future are simple as I would love to stay long-term, and eventually work my way up to becoming senior engineer at Triskel Marine. I aim to gain a higher understanding of everything that is involved within my job role, and eventually be able to give someone else the same higher-level education within an apprenticeship that I have received.