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Since my last review in June of 2021, the list of activities I have been involved in, in and around Blackwater Marina is rather extensive. I have been given the opportunity over the last 6 months to develop the skills I had just begun to touch on in June of last year, becoming more and more familiar with the marine industry which has been fantastic, and leaves me excited to continue my career in this field.

Being a marine engineering apprentice means that my primary role within the company is to assist and carry out a large proportion of the engineering that occurs here. Since the last review, I have been able to carry out many more engineering based jobs which has helped me expand my knowledge but also enjoyment of my job.

My day-to-day role within the company is to monitor plant and equipment, performing regular checks on all plant and workboats to ensure that the oil and water levels are correct and that all machinery and equipment is functioning exactly as it should. I have continued this over the last 6

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months as it is vital to keep all of the yard's machinery in good, working order as it could be used at any time.

I have also had the opportunity to develop my knowledge of outboard engines, performing multiple engineering-based tasks upon them, such as routine servicing and fault diagnosis. An example of this came in November when a long-serving customer asked for their 3.3hp Mercury 2 stroke outboard to be fully serviced and be checked over as he was aware that it was not running as smoothly as it should have been. I began by performing the service, changing the spark plug, gearbox oil, impeller and fuel filter to see if this improved the rough running issue. It made minimal difference, so the investigation into the rough running needed to be taken further. I began by cleaning the fuel tank which had gathered some debris and, in turn, could have been restricting fuel flow. I then cleaned all of the fuel system from the tank to the carburettor. Upon dismantling the carburettor, I noticed that the jets were considerably blocked which would have been greatly reducing the amount of fuel being injected into the engine, and thus they needed cleaning. After the jets had been cleaned, the outboard ran well, however, after a couple of minutes, the rough running issue arose again. Having established that restricted fuel flow was the issue in the first case, I promptly removed and dismantled the carburettor, noticing that yet again the jets were blocked. This proved that there was still an amount of debris in the system, and that I had not been thorough enough with my initial cleaning of the system. Therefore, I removed the tank, performed a thorough clean of the tank and the rest of the fuel system and installed it once I was happy. Having done so, this then allowed the outboard to run perfectly without any blockages and has done since. At the time, I found this very frustrating and somewhat stressful, however, now I see this job as significant as it taught me the importance of being as thorough as possible at all times.



Other engineering works I have been involved in is in the maintenance and servicing of larger engines, such as diesel engines belonging to customers. In September of 2021, I performed a full service of a customer's 8m yacht, propelled by a 1970s Volvo Penta MD22B diesel engine. The yacht had just been purchased by the customer and so they wanted to be safe in the knowledge that the engine had been fully serviced and was running well. Little was known about the yacht, however, we had been informed that the engine had not been started in roughly 8 years, an incredibly long time for any engine to be left alone. I checked for obvious signs such as engine seizure, all of which were okay and looked promising. As a result, I carried out the service, changing engine and gearbox oils, belts, filters and water impeller then attempted to start it. To my amazement, the engine started almost straight away and ran faultlessly. I was pleased with the outcome of the job as I achieved exactly what I had set out to do and the customer was very happy with all works undertaken. This job was a highlight as it showed that my company had the confidence in me to carry out the task with minimal help and that the job went as planned.

One job I particularly enjoyed was assisting ex-ship engineer Ian Hiner start and run the 6 cylinder Gardner engine belonging to the Sailing Barge Cabby before it undergoes a major rebuild over the next couple of years. The engine had not been started in several years, therefore, Ian and I spent the day performing checks on the engine and gearbox to ensure that they were in a condition to run without causing any damage. Checks included fluid levels, ensuring that the engine and shaft was free to turn and that all valves were in a usable condition to allow the raw water cooling system to operate as necessary.



One of the aspects that I continue to love about my job since the last review is that I am able to get involved in as many areas of the marine industry as possible. One of the areas I have particularly enjoyed is assisting shipwrights and getting involved in the repair and maintenance of wooden vessels. A good example of this is assisting in the caulking of the decks on a 1973 trawler that is currently being converted into a liveaboard vessel. This process involves pressing oakum fibre between the deck planks using an array of caulking irons and hammers. Learning this skill was very

enjoyable but also satisfying because the number of people able to do these traditional methods of wooden boat maintenance is rapidly depleting, which is unfortunate for the industry.



Kesteven's Decks

I have also been involved in the stripping of paint from a wooden yacht constructed in 1913, using heat to soften the paint and a scraper to remove it. Great care must be taken when using this method as it is possible to apply too much heat, burn and cause permanent damage to the wooden hull. It was hard to judge an adequate temperature at times, however, after gaining some experience, this became easier.

Over the last 6 months, I have continued to develop my ability to operate the plant whilst under supervision. I regularly use the forklift to move pallets and JCB telehandler to move larger equipment if necessary. In my last review, I had just started to lift vessels in and out of the water using our boat hoist, which is something I have continued to do since, gaining more experience, becoming comfortable and familiar manoeuvring the hoist around the yard with customer vessels in the slings.



Our drydock has remained busy since the last review with barges coming in and out regularly, all requiring different amounts of work. One of the largest jobs undertaken since June was on a Dutch barge called the 'Dankbaarheid' that came to our drydock from Hermitage Wharf in London. The barge came in for a full survey, which subsequently required the barge's failed paint system to be removed, some areas of the hull to have doubling plates welded over the top. I regularly was placed on fire watch duty, ensuring that the inside of the vessel didn't get so warm that a fire broke out. I became more involved with the job when a new paint system had to be reapplied to the hull, which allowed me to carry on expanding on my knowledge of 2 pack paint systems and mixing ratios which are vital to ensuring that the paint sticks exactly as it should.



Dankbaarheid

With drydock work and the company's involvement with barges, comes the need to move these one-hundred-plus ton vessels in and around the marina which is extremely interesting but comes with its own challenges. The movement of barges is quite high risk, as they tend to gather considerable momentum when being towed. This requires lots of forward thinking and being able to slow the vessel down as early so that the manoeuvre is as controlled it possible. This requires me to be around to throw and catch ropes where necessary and be ready with fenders to prevent contact between vessels, which is something I did find daunting at first but am now fairly confident in my ability to do so.

Other work that I have done afloat is assisting my manager, Beccs, in several trips to Maldon, situated further up the River Blackwater to retrieve different boats and bring them back to the yard. I am finding this type of work is one of my favourite aspects of the job, as it tests my forward thinking and planning skills being ready to help where I can by taking ropes and pushing and pulling with a second boat if needed. Although my abilities to assist when afloat have improved since June, I would say that this is something that I am going to strive to improve over the next few months as it is a large part of my role at Blackwater Marina. This is an aspect of my job that I found quite intimidating at first and would often find that I was becoming frustrated with myself, however, this is improving as I gain more experience afloat. I would like to get to a point where I am fully trusted by the highly-skilled, qualified skippers I regularly work with and leave them safe in the knowledge that I am able to think several steps ahead and do what is necessary without having to be told.



Since starting in college, I have been taking part in a hand-fitting module which has allowed me to test my skills using hand tools in order to create various different tools such as a T-slot cleaner, drill drift and bevel gauge. The hand-fitting module is likely to be hugely beneficial in the future as it is impossible to predict what mechanical failures may occur at sea, and being able to craft a component using only basic tools is going to prove vital in my career as a marine engineer. We have also been studying engineering principles which has helped in my job to understand why materials are used for certain applications and the treatments and processes they undergo to achieve the finished result. We have also been completing an electrical unit which has greatly benefitted my understanding of electronics and the wiring of components such as lights, something that does frequently occur in my job.



A practice plate complete with threaded M6 rod made at college.

I would say that, all in all, my ability to conduct routine services on marine engines has improved over the last 6 months has greatly improved and I understand the importance of regular maintenance, as this is something that gets regularly overlooked in some parts of the marine industry. From having started college, I am happy with the skills I am developing in hand-fitting as I am certain that this will play a part in later life and may be a skill that gets a vessel out of trouble.

On the whole, my knowledge of the marine industry has increased greatly- a large part of this is thanks to Blackwater Marina putting me through an RYA day skipper course, lasting one evening per week for 8 weeks. This benefitted me in many ways as I now have knowledge of navigation, buoyage, markings, lighting, plotting positions, sound signals and many more. I now feel more confident than ever before whilst afloat.

Since having started at Blackwater Marina, I would say that my apprenticeship has benefitted the company as it has hopefully proved that apprentices like myself are worth taking on. This is hugely beneficial to the company as it means that the vast skillset possessed by those that work for the company can be passed down onto the next generation working in the same field. In the last 3 months, the company has taken on another apprentice on the same college course as me, which helps prove this. We could consider the local community to have benefitted from this as it may also prove to other local businesses that the next generation of apprentices is an important investment for the future, which could generate jobs those nearby.

In terms of the near future, I would like to finish the college course with a good engineering ability and be confident that I am able to complete many different jobs in the marine industry. I am happy with my current role at Blackwater Marina so would like to remain in that position for the foreseeable future. As my knowledge continues to grow, I will feel more and more confident in my role as a marine engineer which is something I am greatly looking forward to.

