

## Year 2008 to 2009 with Triculette by Donald Foster.

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The 2008 sailing season started as usual; "when are we going to lift out for preseason maintenance" we were saying to each other.

We are not now a crew that starts early March, which is a good thing for other boat owners in our club who do. March and April is always a demanding time for the limited hard standing spaces, especially for a 40 footer. I have my own cradle that gives me the ability to stand anywhere on the hard standing if there is available space.

Jennifer and I decided at the end of April or the beginning of May to lift Triculette out of the water; the weather should be warm and dry!

When I start preparing to lift out I start to think about the weather! Will it be windy on the day we lift out and the nearer to our lift date the more I listen to the weather forecast and the position of highs and lows, as if I could do some thing about the weather other than cancel if it is blowing too much. I find lifting my boat out of the water a very anxious operation, when I am helping other boat owner to lift their boat I don't have any nerves; looking down from the hoist gantry position I am able to see every thing and know what to do; it's different when in the cockpit of your own boat.

We are really very fortunate because there is always help from friends who know what you are doing and our friendly dock masters operating the travel hoist.

As usual we lifted without any trouble, the boat bottom pressure washed and then put into the cradle. Pots of tea and bacon sandwiches were provided by Jennifer for our helpers; to celebrate a job well done sort of thing.

When close inspecting the under water area I discovered some filling or fairing beginning to break free of the keel where it joins the hull; it was going to require removing and refilling with epoxy filler. To do this work I will require the weather to be warm and dry.

The weather was not warm; we will have to wait until we have a temperature of 15 degree C. to enable the epoxy primer and filler to cure. We carried on with the work we could complete and waited for some sunshine.

I decided to help the keel to warm up by using a heat lamp directed onto the keel on the area to be repaired. I also went to B&Q and bought a roll of plastic bubble wrap and wrapping it around the keel to insulate it from the cold wind; it also allowed the sun to heat the air around the keel. It worked well and I was able to complete the job.

My inspection of the cutlass bearing revealed some play between shaft and bearing.

To be sure Triculette would be in good condition I decided to replace it with a new one.

A bearing was ordered from Vetus that arrived in quick time by post.

After removing the prop shaft I withdrew the old bearing and put in the new one. I replaced the prop shaft and to my surprise there was as much play if not more between shaft and bearing than the old one I had removed. I looked at the old bearing with the thought of replacing it, but drawing it out caused it to be out of shape. To pacify myself I said to myself; the rubber may expand with water. (The first signs of madness).

With the antifouling done and dry we lifted Triculette into the water. Lifting into the water is no problem. Once the slings are low enough to allow the boat to pass over them you just drive out.

The weather in general was not very nice we only had a few sailing days in the river.

I think the chap that controls the weather is an awkward devil; when we are unable to go sailing it appears the weather is fine to have a lovely day out on the water.

Jennifer and I had noticed the noise the prop makes when turning freely was getting noisier and we were also experiencing some rumbling noise from the prop or gear box. There were times when the noise was not noticeable but I did not feel comfortable not knowing what was causing the noise and rumbling we were experiencing.

We were looking forward to having a few days in Scarborough and Whitby and maybe farther North but I did not feel confident that Triculette was in A1 condition. To allay my feelings I decided to lift Triculette out of the water in order to inspect the drive gear and repair any faults if found. Lifting out was as described earlier and again there were friends helping. An old friend Arthur Bradley called out to me; Don there's a lot of movement in the cutlass bearing; the bearing

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I had put in only a few Months earlier. The amount of play in the bearing could cause a rumbling and that was the decision of a number of experienced people. I thought the noises were from a different source. I decided to check the Aqua Drive (The universal joint between the gearbox and the prop shaft). I removed it from the boat and took it home to work on in my workshop.

I took one half of the CV coupling apart, to make sure there were no wear spots or indents where the metals may have come together; I could not find any wear it was as new. I put it together after filling it with CV grease.

Could the incorrect cutlass bearing make the metallic noise we had been hearing? I think not. While the after end of the gearbox was exposed by the removal of the Aqua Drive I noticed a damp oiliness at the rear of the gearbox drive flange. I pulled the dip stick out of the gearbox and discovered the oil was at the low mark, I had never put oil in the gear box before, when dipped it was always at the full mark, I decided to change the oil before topping up. I had never changed the oil in the gearbox and the only way to get the old oil out was with a suction pump; I went to Machine Mart and bought a pump.

The oil I took out was very dirty, I have never seen oil so dirty come out of a gearbox and I must have repaired 50 or 60 in the time I have spent repairing motor vehicles; gearboxes that have been worked very hard. The difference between our boat gearboxes and motor vehicles is our gearboxes have the clutch inside them; that could be why the oil is a dirty colour.

At this point the only fault I had found was the cutlass bearing that was not the correct size and a small oil leak on the output shaft at the rear of the gearbox

I was trying to locate another cutlass bearing that had been bored out to the correct size and not like the new one. A drawing of the new bearing and an explanation of the failings I will produce. During my search, I was asking for a cutlass bearing with a 1\8" of an inch brass wall on the out side and the rubber on the inside bored out to 1.1\4" inches.

I telephoned two companies in England asking them if they could supply me with a cutlass bearing to my specification. One could not tell me anything about their bearings, the other said they did have bearings of the size I wanted but could not say what the thickness of the brass outer sleeve was because they come at different thicknesses. I asked the man to get the bearing he proposed to send to me and measure it. He got a bearing out of the box and said he had measured it and that the brass sleeve was 1\8"inch thick and was bored to the correct size. OK will you send it to me please and paid for it by card. It arrived the next day. Upon inspection I found it had not been bored central when looking at one end of the bearing. The thickness of the brass sleeve on one side was 1\8"inch and on the opposite side was less than a 1\16"inch; at the other end the sides were reversed. I returned the bearing unfit for use.

I went on to the internet. I talked to three companies one in Canada. The people I had to talk to knew nothing about the products they were selling. It is very frustrating when you cannot talk to people about the things you want; they were saying; it will tell you on the box. I phoned Halyards a company I had previously purchased products from, for their advice. They gave me the phone number of the company they use but they had a breakdown at their factory and it would be at least two weeks before they would be in production and with a backlog of orders it may be longer before they would be making my size.

How hopeless can the purchase of a cutlass bearing become!

I was advised I could get a cutlass bearing from a company on the Fish Dock; when I found their premises I discovered they had closed down. Another member told me of a company at Hull, A&E Woodward Limited. I went to them and spoke to a man called Dave in the stores, he was very helpful; showing me bearings they had and how they were bored out to size, for immersion in water. He did not have the size I required he would have to place an order. "Order me two" I said, "I will have a spare that I will never use if I have a spare"! Their phone number is 01482 329185. Mob. 07798 802166 Fax 01482 216619.

It was September by now and we always visit the Southampton Boat Show. I thought I would take the new bearing out of the boat and take it to the boat show; I can return it to the Vetus stand. Off to Triculette and I got the bearing before going to the boat show.

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Jennifer and I were at the gate of the boat show early, so that we could get to the Vetus stand before other people got there; we did not want to cause embarrassment if an argument developed. I had four men listening to me; some were trying to convince me the bearing was the correct size. One person asked; where did you buy it; I said; "I have the invoice and receipt of payment here". The man took the receipt, looked at it and said; "that is me" his company. He then began to explain. There are some bearings better than others; (meaning there are good and bad bearings) the good bearings cost twice as much as the cheap bearings because they are better quality and are turned out to the size required; you should have asked for the expensive one. Now what do you want to do about the bearing? Do you want your money back or do you want another bearing? Thinking I have two ordered at Hull; I said; "I will have the money back". Oh we do not have any money on the stand; I said "well, I will have another good bearing then" I said. And now I have three cutlass bearings on order.

While at the show I bought a Max Prop; that would stop the screw turning when sailing. There are differences of thought about letting the screw turn or not. Some say; stopping the screw turning saves wear in the gearbox and cutlass bearing. (I wish to say; in my case letting the prop turn could wear the cutlass bearing because the bearing is fed water from the engine) my bearing has not suffered much in the nine years I have had Triculette, water must have lubricated the bearing from the out side.

I believe it is better to let the prop turn, to keep the lubrication of the gears and bearings; that is, if the gears that are turning are turning in oil.

There is a condition that occurs with bearings and gears when they are standing still and especially if there is vibration and pressure on the gears or bearings; this condition is called Bruneling, named after the great engineer of that name.

When there is constant pressure and worse vibration as well, the lubrication that keeps the metals apart is squeezed out, allowing the bearing surfaces to come together and quickly wear at the point of contact. Stopping the gears from turning allows the pressure and vibration of the boats movement to squeeze the oil out from between the gear teeth and roller- ball bearings; Bruneling. Bridges suffer from Bruneling on the expansion joints, through constant pressure and vibration of thing passing over them. It is very difficult to lubricate these joints; PTFE in flat plate form is a popular lubricant.

In my boat manual it advises that when sailing to put the boat into reverse gear. In the engine workshop manual when addressing the inspection of the gearbox parts for wear to look at the gear teeth for quote, pitching, abnormal wear, dents and cracks. The kind of wear one was looking for could be caused by Bruneling.

Having a feathering prop will more or less serve both trends of thought. Sorry if you find it boring, I only wish to inform.

When we returned home from the south, in the mail was a card asking me to collect a parcel from the post office at Barnsley, it was the cutlass bearing from Vetus. On the voice mail a message saying; A&E Woodward had got the cutlass bearings I had ordered. (Cutlass bearings galore). While collecting the bearings from Hull I had a lesson on some of the materials used for under water bearings. Some of the materials I had used before and the earliest one was Lignum vitae. When I was a small boy I repaired a water pump with it, early washing machines used it and it was used in boats for stern bearings, it was good if kept in water.

Lignum vitae were a versatile material, in the early days it was used on the railway to hold the plates or shoes in place that the rails were placed on. Four wooden lignum vitae pegs were driven through four holes in the shoe and into holes drilled into the railway sleepers and they held the rails in place. When a small boy and walking along the railway lines, if we saw a loose one we would pick it up and take it home to make Nipsees out of them. Nipsee is a very old game that requires no money for tackle an advantage when you have no money.

Different kinds of metal were used but without a viscous kind of lubricant to keep the metals apart they were no good in my experience. Special lubricants were developed especially with the introduction of steam engineering.

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Another material is Tufnell that in most cases has been super seeded by plastics offering hundreds of different types for different applications, some are in the form of rubber that is used in cutlass bearings and the number of products for this bearing is growing as more types are being discovered. The bearing supplied by Vetus is Nitrite and the bearings from A&E Woodward, Polyurethane all made by the same company; which makes me think; how many more materials are there and which is now the best, also which one to put into my boat. I put in the bearing made of Nitrite from Vetus.

Before putting the drive shaft in I fitted the Max Prop, closely following the instructions supplied at their recommended settings for the prop angle of pitch.

Everything back in place we lifted into the water again. After moving out from the hoist we had a short motor in the No1 fish dock; I could feel the disturbed water striking the rudder, I had never experienced this before.

The instructions said I may have to alter the pitch after sea trials; they also refer to the engine revolutions saying; if the engine cannot get full revolutions the prop pitch will require reducing and if the boat is not moving at the proper speed at full revolutions the prop pitch may require increasing. With these instructions in mind, I thought I need more trials before making up my mind what to do next.

At our first opportunity we went for a short sail in the river. With the new prop not turning the shaft Triculette moved through the water without a sound and the helm or wheel was feeling as if the helm was not coupled to the rudder it was so still; I did not think the steering of Triculette could be improved, it was lovely.

By now we were well into October. The weather was not good but was better than normal for 2008. Jennifer and I decided we would go out of the river for the first time in 2008, we decided to sail to Withensea.

Sailing down the river at the south side; past the Mono Buoy, crossing over the river to number 3 Chequer and clear of the Binks we turned north.

The sun was now shining and we were sailing along thinking how lovely it is to be out on the water. The refreshment side of Triculette was working well, with Jennifer providing tea and sandwiches. While surveying our surroundings and looking north, a few miles in front of us was a big black bank of cloud; I thought typical of 2008 it is going to rain. I called down to Jennifer to come and have a look. Pointing out the cloud in front of us I said; "do you want to sail into that lot"? Jennifer replied "no". I said "let's turn round and go into Spurn or find some quiet spot in the river" I don't fancy that as we saw lightning coming from the clouds. We went into Spurn Bight and anchored. It was lovely; the sun was warm with a gentle breeze.

Jennifer and I were having dinner below and all of a sudden the boat swung round against the tide by the wind that was blowing 35 knots. The sun now was trying to shine through the dark clouds that were now dominating the sky and there were the odd flash of lightning. We both looked at each other with the same expression of gloom on our faces. I checked that the anchor was holding I then went below to pass time until we could go into the fish dock.

The wind was staying stronger longer and as we weighed anchor the wind was Westerly 35 knots that created a bad wind over tide condition in the river. Triculette was making slow progress in the steep waves; I put more revolutions on to give Triculette more speed to punch through the waves that were doing their best to hold us in the river. This slow progress situation was unusual for Triculette; the engine would not normally require the throttle pushed forward as far as it was to nudge through the tops of these waves.

As I tried to increase speed a very nasty vibration and server knocking was heard coming from the transmission area of the boat. Jennifer who was down below, started to lift the floor locker lids trying to find where the banging was coming from. I took off the power and the banging stopped; I increased power again and the vibration started again. Jennifer shouted "come down, the noise is down here, come and see for yourself where it is coming from" "wait" I shouted; "I am busy here". I took the power off to a point where the banging stopped and our speed decreased. We were moving forward and I had good steering; I thought take it easy we are moving and the

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tide is with us; it is going to be slow progress but we will get back to the dock. When we had crossed the river and into quieter water our speed picked up and Triculette was moving nicely as if there was nothing wrong. We went through the locks and into our berth to think about our day outing and the difficulty we were having with Triculette.

The following day with our friend Keith Anderson on board I went out into the river to try to find out what was causing our trouble. When out of the locks, motoring Triculette at good speed across the river and back; we did not experience any problem like we had the night before. This trial did not ease my concern for Tricullettes performance. There is something wrong and I don't know what it is, or where it is coming from; I will have to lift Triculette out of the water again. We are spending more time out of the water than sailing.

While we were on our mooring I thought I will run the engine; I engaged forward gear and increased the revolutions; the engine did not seem to be as lively as it usually was, I put more power on but the engine was not getting to full revolutions. I tried astern gear and the engine went to full revolutions. I thought the new prop is not pitched correctly; the angle being too great for my Yanmar 50 HP. I will measure my old prop and the pitch of the new prop and see what the difference is. What caused me to think of the prop was; forward gear reduction of engine revolutions is 2.6. Astern reduction is 3.06. Giving the engine more power in astern gear. I did think of the different attitude of my old prop when going astern; a Max Prop has the same attitude both ways.

Before lifting out I made enquiries about obtaining gearbox parts from Marine Power Limited Bursledon Southampton. They told me, Yanmar do not make my gearbox any more, Yanmar do make a replacement. Parts for my gearbox can still be obtained and they have some in stock. An unconfirmed price of a new gearbox was £2,500 to £3000.

I began to make preparations for lifting out.

We lifted out in November with the intention of finding out what was wrong; it looked like a lot of work. I would have to remove the galley work area before I could remove the gearbox and I do not know how difficult this task will be. I also thought, being out of the water in November when other boat owners do not want to work on their boats will be a good time to remove the old antifouling on Triculette that is now so thick it is beginning to drop off and making it difficult to apply new antifouling as bits keep coming off.

I will require permission of our committee to stay out of the water if more than two months. I wrote a letter asking for permission to stay on the hard standing, explaining what I had to do and permission was granted. I was thankful for the committee's decision that took a load off my mind. They asked to be kept informed of my progress.

My own cradle assembled, I was lifted out of the water, washed off and safely placed in my cradle by our reliable dock masters and friends to begin my search of Triculette's problem.

Jennifer and I started to take the galley apart that covered the engine, the boat started to fill with the parts being removed; (how much more room does a bit of furniture or engine cover require when taken apart) the part I expected to be difficult, the frame work was easy; it surprised us both in the way it was fastened; it was all held together with clip type buckles.

With the cover removed and the prop shaft out, it was easy to remove the Aqua Drive and gearbox that was quickly removed. The gearbox was lowered down off the boat and put into the car to take home to my workshop where I could work on it in comfort. After cleaning and tidying up Triculette we were on our way home.

When carrying the gearbox into the workshop I noticed my first problem; to remove the flange from the out drive shaft I would require a special spanner or key; I would have to make one and during that evening I thought of how to make it. The following day I made it and removed the flange. Closely inspecting the flange coupling I could see where moisture- water had discoloured the area where the oil seal was to stop oil leaking out of the gearbox; it was easy to polish out by spinning it in the lathe, I could see very slight marks where the moisture had begun to attack the

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steel. I was going to learn that in a marine environment moisture was going to be a problem I was not used to dealing with in mechanical engineering.

With the gearbox on the work bench I started to drain out the oil and to my surprise the oil was not clean and the oil had not been in long. I started to take the gearbox apart and washing all the bits in paraffin that were coated with a black sludgy type of oil. By the time I had removed all the parts I had had to change the paraffin in my washing can twice. I have repaired a lot of gearboxes from trucks and I never saw as much dirt in the oil as I was finding this time; bits of metal and broken parts but not muck, there is nothing to make muck in a gear box. I have found gear shafts that have turned blue with heat from collapsed and seized bearings and the oil was not like I was removing. What could be the cause?

A workshop manual for the engine and gearbox was supplied with the boat containing all the measurements and tolerances of the gearbox parts and with all the parts washed and clean I began to inspect all the parts for wear. I did not find any wear of the metal parts, they were all in new condition; except the bearing races of the Timken taper type roller bearings on the out put shaft; they were grey in colour and not shiny as is usual, but they appeared to turn OK.

I began to measure the clutch plates for thickness. There are 6 plates to drive forward and 6 plates for astern; there was a small amount of wear on the forward plates, none on the astern. I may be a bit slow but it was at this time I thought the black in the oil could have come from the clutch plates.

I recalled the time I took water inboard, that came up to the level of the gearbox and with finding rust colouration on the flange where the oil seal is in contact; I thought, did water get into the gearbox and start the oil emulsifying.

Having found no parts faulty it was time to start rebuilding the gearbox.

I had studied the manual and now I had it in the workshop to follow the instructions to rebuild. Special tools required I did not have I made. Having a hydraulic press made taking apart and putting together easy. It was difficult keeping the clutch plates in line with their splines as they were being pressed together.

The work shop manual stated that if no new parts are fitted the adjusting plates or shims must be reused. These plates are to set the clearances of the bearings on the input and out put shafts inside the gearbox; so I rebuilt the gearbox with all the original parts. In fact the shims or plates were not removed from behind the outer race rings pressed into the gearbox cases.

When the gearbox was put together and tightened I turned the gears and thought they were tight. I asked my neighbour Johnny to have a look at the gearbox, he is an engineer. I asked him what he thought; he said he thought it was tight also.

I took the gearbox apart again with the intention of measuring the distances as was explained in the manual and while I have it apart I will fit new bearings.

It was difficult to measure inside the gearbox case; my inside micrometer was not long enough; I had to utilize by using threaded rod. The clearances to set were 0.0020 inch for the input shaft and 0.0040 inch for the output shaft. In the output shaft there were 3 shims 2 X 0.0196in and 1 X 0.0157in. I removed the 0.0157in shim which made the clearance within the allowances by my measurements.

I rebuilt the gearbox again. Although it was better I still thought it a little tight. I decided to fit it to the engine and run it for a while. At the boat I coupled the engine to a water tank and ran the engine with gearbox only. After a while the gearbox began to get warm, the flange was also getting warm, too warm I thought. The gearbox is air cooled and it was not starved of air and with no weight on the gear; it was still too tight. I removed it again and took it home.

At home I decided to set the clearance my own way because I could not say that my measurements inside the gearbox between the cases where the races fit were exact. Using threaded rod to measure was close but I could not swear to it being accurate, it was not possible for me to measure between the surfaces of the bearing housings in a direct straight line.

The way I was to do it now was to measure end play or clearance of each shaft between the cases in turn, so one shaft could not have any influence on each other.

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A problem in obtaining correct measurements was; the gearbox case is made of aluminium and all except the clutch plates are made of steel; aluminium and steel expand and contract at different rates with temperature change. Apart from motor bikes I have never worked with aluminium gearboxes; wagon gearboxes have always been made of cast steel or a fabrication of steel. With this in mind, after doing any work on the gearbox parts I waited until their temperatures were the same. When measuring in thousand parts of an inch it is surprising how much difference there is.

After taking the gearbox apart and washing all the oil off the bits and cleaning the joint faces I assembled the gearbox with the input shaft in place. I then fastened the gearbox outer end down to a surface plate. With a dial gauge placed on the end of the shaft; with a short lever I lifted the shaft and measured the amount of lift and that was the clearance between the bearings at that time. I was now able to determine the thickness of shims required to arrive at the required clearance. Taking the gearbox apart I repeated the method with the other shaft.

Using some of the original shims and shims made from steel I had I was able to arrive at the measurement required.

I assembled the gearbox and filled it with oil. When turning the gears by hand the feel and movement was much better.

I took the gearbox back to the boat, fitted it and ran it as before. The temperature of the box and the flange fitted to the output shaft stayed relatively cool. It remains to try out the gearbox with work.

While I had the gearbox out I was able to look into the bilge; we cannot see into the bilge with every thing in place; I washed it out with detergent and water using Keith Anderson's high pressure washer, we also removed a lot of bird dropping from the coach roof of Triculette. Them blasted starlings use our boat to relieve themselves of excess weight before going to bed. (The filthy Bs).

To look into the bilge we had to remove two pipes, one was the hand pump and the other I assumed was for the electric bilge pump that did not reach the bottom of the bilge and did not have a strainer on the end; I took measurements to buy a bit of pipe and a strainer when we were at Hull. OK you can laugh but I have been under a lot of strain!

Well; Jennifer said "where is it coming from Then?" "I don't know" I replied; Jennifer said "we will have to take up the floor to find out". On top of every thing we have done and she says that! "We can't do that" I said, quietly; 'a Hum' "it must be to drain some part of the boat we cannot see; see if there is a drain hole in the wet locker?" "Yes" Jennifer said "it must be from here" and it was of course. Next I lifted the seat cushion over the front part of the bilge and the electric pump and pipes were there clear to see. A major problem solved! Isn't knowledge a wonderful thing; and how daft can you get at a time like this!

We had to use a camera to look at the bilge it was our only way. With a good wash out it looked fine.

With the gearbox in place and the engine fully exposed I changed the engine oil, filter, fuel filter and checked the belt drive to the alternator and engine water pump, it was easy; no cramped mussels by trying to get where no man had been before.

I made one modification to the galley area before putting it back together; Jennifer took charge of all except the heavy stuff and it became possible to move about as things were being put in place. While Jennifer was seeing to the inside I now started to think of taking off the old antifouling.

First I did some experiments with the angles of the scraper blades and I found that an angle of 22 to 25 degrees was the best for removing my antifouling. The scraper I made held a blade at one end of a piece of steel and a wooden handle at the other like a big file; the blade was made from machine hacksaw high speed steel blade. I cut pieces off 2" long and ground them to the angle I required.

Now here is the most important part of preparing a scraper blade so you do not cut the base material you are scraping too. Finish the grinding at the required angle on a fine grinding wheel;

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the cutting edge must be true and level. Then holding the scraper lightly stroke the cutting edge of the blade on a piece of flat glass to smooth the cutting edge and take off any minute metal standing proud on the cutting edge; you will not blunt the cutting edge, it will cut smooth and better without digging into the surface you want to preserve. I made a number of blades so I could change them when worn.

What you must not do is clean off antifouling dry without a good face mask. A lot of energy is required and a lot of air is required to keep your energy levels up. Use a good face mask the ones with a valve to allow the exhausted air and moisture from your lungs out of the mask.

After scrapping the antifouling off I brought my compressor from home so I could use air tools to sand the hull; to remove paint not removed and take off any high spots. With the orbital sander the hull was sanded in 2 hours.

The next day Jennifer and I started to clean and polish the top sides of the hull. I was using the heavy electric polisher to apply and rub in the polish; Jennifer was shining up the hull with the lighter air polisher. It was hard work with aching arms and by now sore hands. When finished, Triculette was beginning to look like a lady again.

Throughout the winter the weather has been and still is a factor when trying to do work. It has been wet and very cold, on occasions we had ice on the windows like we used to have when I was a child. The frost has lifted the ground and allowed rain and moisture to form mud that clung to our boots and clothing and how ever hard one tried to keep clean, it got onto and into the boat, in fact it got everywhere. It can only be avoided by spending a lot of money that is hard to come by. One cannot alter the weather and winter is a hard time to be working outside but it is what some of us are prepared to do to keep our boats in good condition. I hope for every one, the work we put into our boats is worthwhile when ever we do our maintenance.

We had been to Kildale Marine Hull to enquire about paint and the paint we required was to prime the bare lead metal that was exposed on the keel. We also wanted a primer to put onto the hull before antifouling and we wanted a paint that would go off in cold conditions. The paint we chose was Blakes Underwater Primer; it was a single pack and was right for the surfaces we wanted to cover; it did require 10 degrees C before painting.

I bought the only 1 x 2.5 Lt tin they had and ordered another that they quickly got for me.

We were ready to paint and were now waiting for some sunshine; it is very frustrating. Jennifer and I were trying to think of how we could help the hull keep warm and to stop water spray from boats being washed after lifting out getting onto our boat.

We loaded the car with white wagon sheet I had and the roll of bubble wrap I had bought earlier and a lot of thin rope to fasten the sheets to the boat; we also brought thermometers and hygrometer to record the temperature sticking them to the hull on the shaded side of the keel and then the weather God gave us a brake, he turned on the sun shin and lifted the temperature. The weather forecast was looking good with a temperature of 9C. By the time I was ready to start painting the bare metal the temperature was 10 degrees with a humidity of 60% it was now right to start painting.

The Under Water Primer is a quick drying paint, over coating in 6 hours at 10 degrees. I painted the bare metal first after cleaning and abrading; I then started on the hull, I painted about two thirds before I had to stop; the sun was starting to go down and so was the temperature. The next day the temperature was looking good and the humidity was 65% still OK when started. I put a coat on the parts that had been bare metal; this coat was the third and would require another two coats. I finished the first coat on the hull and then put on a second coat. I finished painting with a coat on the bare metal area.

Triculette looked great and invited a lot of comments from other boat owner friends. I told them it was aluminium racing antifouling and the paint made the boat lighter and faster. Jennifer was telling some we were going to change the name to lightning so it would not be as embarrassing for them when we sail passed them; it was all in fun and was taken with laughs and funny remarks from some that had us all laughing.

Jennifer was saying "it will be very lonely when we are on our mooring after meeting so many nice friendly people on the hard standings"

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We had done better than expected and now we were very tired, aching in our arms, shoulders and back; but it was fine we were making progress to being back in the water.

We had to go home to fetch the antifouling paint and the tackle to apply it. When at home I loaded the paint and the prop shaft with our new prop attached into the car. While I was doing my bit Jennifer was washing cloths we had been wearing, making dinner and putting together a few bits and pieces like food, clothing and stuff to take back to the boat. We had one night in bed then up early and back to the boat; I put on one coat of antifouling I thought would be enough and later I would put more on what is called the leading edges. I also fitted the shaft and prop. We had to go home the following day to keep an appointment and were intending to have a day at home but the forecast said it was going to be good next day and would not be good for some days after. We were off back to the boat to put the finishing touches on the antifouling. I greased all the sea cocks and filled the Max Prop with grease. I hope the pitch of the prop will be OK, we will soon know when in the water.  
We have a lift in date on Wednesday 11 March early morning.

Tuesday morning we started back to Grimsby to prepare Triculette for going into the water as planned. During the early hours of the morning I had been thinking how tight the time schedule was going to be to lift Triculette, paint the under parts of the keel, give the antifouling a little time to cure, then lift into the water when high water Wednesday was 0557. I had been thinking it would be better if we could lift in on Tuesday, if there was enough water and it was OK for the dock master. When we arrived at our marina I asked if it would be OK to lift Triculette into the water to day, Tuesday. Our dock master said yes. Straight away the hoist moved over Triculette, she was lifted and the under part of the keel was painted and left to dry while we had lunch. After lunch Triculette was lifted into the water. When clear of the slings I put Triculette into forward gear and slowly, very slowly Triculette moved out into the dock. She was not as responsive as she normally was. We then proceeded to our mooring; on approaching our berth I discovered Triculette was slow to stop which took me by surprise with my new prop having a reputation for being good at going astern. We decided to give Triculette a run in number one dock the following day.

After receiving permission from the lock master we motored Triculette round in number one dock. It appears the prop is now too finely set, we were not attaining full speed at full revolutions and the prop sounded noisy; I think from turning so fast and causing cavitations in the water. I decided we would make alterations to the prop when it was more convenient. We have had enough lifting for now

To sum up 2008 for Triculette it was not a good year.

It appeared our problems started when out of the water in April- May by replacing the cutlass bearing with a poorly fitting bearing. Do not accept poorly made cutlass bearings; always make sure they have been bored out to the correct size for your shaft and that other dimensions are correct.

And now for the gearbox! It states in the workshop manual that the oil should be changed periodically. I must confess I have never changed the oil in a gearbox unless I have been repairing it; I was totally unaware that I should.

In our marine environment and the type of gearbox's we use changing the oil must be necessary; for two reasons; one the clutch is in the gearbox that dose wear and leave deposits in the oil, two the marine environment where water vapor and water are in close abundance. I do believe water may have found its way into the gearbox when I accidentally took on board water that came up to the level of the gearbox. Water could have caused the oil to emulsify, changing the characteristics of the oil.

And now the bad vibrations and banging when pushing into bad weather; what could be the cause?

When a gear is engaged the clutch plates are pushed together and held there by springs. When the pressure or load of pushing the boat through the water is transferred to the gearbox the clutch

## **Year 2008 to 2009 with Triculette by Donald Foster.**

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plates are pushed together tighter and the harder it is to push the boat through the water the tighter or more pressure is put on the clutch plates.

When we were pushing through the wind over tide sea and sharp waves the pressure would be continually changing; going into a wave would increase the pressure on the clutch plates and when going down a wave the pressure would be eased and with the oil being not as it should caused the clutch to slip and grab which caused the bad vibration and banging.

What do you think? Could my explanations be correct? Have you any other explanations of why I was having so much trouble with Triculette?

I am always seeking to improve my knowledge and I hope I can help others in our club to improve theirs.

I submit this report to our committee and the members of HCA for information and I hope their pleasure.

Don and Jennifer Foster.