How 2 Tins of Chockfast Saved a Vessel from Going to the Scrap Yard

In the 1980's I had "Zulaiha", a general cargo vessel under my management. It was owned by a local Indian timber merchant. After 6 months of profitable operation she had to go for docking for intermediate and tail shaft survey. The owner had programmed to operate her for another two and a half years and then scrap the vessel. She went to Sembawang Shipyard for her docking, 5 days in the floating dock and 5 days alongside repairs.

This vessel was originally built in Norway with conventional lignum vitae (a hard wood) stern tube bearing/packing gland. After withdrawal of the tail shaft the lignum vitae were found worn out and needed to be renewed. The removal of the lignum vitae uncovered a 1 metre crack on the bottom half of the bronze bush.

Together, DNV Surveyor Mr Tanubrata and I inspected the defect. The crack began from mid half of the bottom bush and extended to the outer flange. A light hammer knock around the crack sounded hollow but the inner half sounded solid. Instructions were given to pull out both the top and bottom halves bronze bushes for further inspection. The stern tube housing was of cast steel was corroded and pitted in way of the cracked areas. Some of the pits were more than 4 mm deep. It seemed that when the bottom half bronze bush cracked, sea water seeped through and over time corroded the cast steel. When the crack started was anybody's guess. The corroded areas were concentrated around mid half bottom to the outer housing; the surface affected about 4 sq. ft.

DNV made these recommendations for permanent repairs:-

1) The corroded surfaces to be repaired and machined to original diameter about 650 mm.
2) At the end of the crack a 5 mm hole be drilled through to stop the crack from propagating. The cracks to be filled with a compound to prevent sea water from seeping through.
3) The repairs to be re-examined at her next docking.

The big job was how to repair the corroded /pitted areas. The yard gathered all available welding and machining specialists and even Mr Jerry Koh then Marine Manager to find a solution. Jerry cautioned that he only have 5 days docking time for my vessel as other ships were queuing for docking.

The welding specialist said it was possible to weld up the corroded areas but the Head of Machine Shop said he had no boring tool to machine down the welded areas. Moreover, it would take 3 days to design and fabricate the boring tool and at least a week for in situ cutting. Jerry could not afford to give me 10 more days in dock. He suggested that we blank the stern tube and undock the vessel while the boring tool was being fabricated. He would then find a slot for re-docking. I then asked Jerry what dates were available and he replied that the window was at least 2 months away.

I relayed the full story to the owner. He was horrified, "I got 7,000 tons of timber in the warehouse awaiting loading and I cannot afford to wait 2 months! Do find a temporary solution or I would loose a lot of money." I told him, "There is no temporary solution as it concerned the tail shaft and Class would not allow it". He then asked for the worst solution. I said, "Scrap her and get back some money". He almost dropped dead, "So what's next?"

I took a deep breath and told myself that if Chockfast had been used as chocks to support main engines weighing a few hundred tons, why not use it to support a tail shaft weighing only 2 to 3 tons? Moreover I have read in marine magazines that Chockfast had been used in naval ships to house the stern tube bush. I quickly rang up Chockfast agent to come up to the yard with sufficient information on their product range. I cannot remember the agent's name. Anyway I gave him my idea to pump in the liquid Chockfast to fill up the corroded/pitted areas and allow it to harden overnight. After hardening, my question was can it support the rotating tail shaft? "Yes" was his answer and he gave some past records of naval ships using Chockfast for the stern tube housing. I quickly went over to see and explained my idea to DNV surveyor Mr Tanubrata. He was quite convinced and said he will contact DNV Head Office in Oslo for approval. All the specifications of the Chockfast and my procedure to pump in the liquid Chockfast were attached.

The next morning DNV Oslo came back with full approval.

The yard was informed and I had to get 1 more day docking space from Jerry as the hardening time was minimum 24 hours. He reluctantly agreed and then he casually asked me who gave me the idea of using Chockfast. I told him 'yours truly'. I added with Sembawang Shipyard's history in ship repairs expertise, no one could come up with a solution and an outsider had to bail out or solved the problem with 2 tins (10 litres) of Chockfast which cost not more than $1500/-. Had the yard done their way i.e. welding/boring and 10 more days in dock and waiting time of 2 months for re docking, the cost would be 100 times more, with loss of earnings not included.

Anyway to cut the story short I supervised the complete procedure using the Chockfast. The 2 halves bronze bushes were fitted back, alignment checked and secured. One hole was drilled at end of the crack and an adapter was screwed in for pumping in the liquid Chockfast. Another bleeding hole was drilled at the outer end to allow air to escape. Once the liquid Chockfast was completely pumped in the bleeding hole was plugged. We waited for 24 hrs hardening time then the new lignum vitae were fitted in, the tail shaft and finally the propeller were in place incurring only one extra day in the dock.

The owner was very happy and got his cargo loaded and sailed for the Gulf. This vessel continued her trading without any problems till she finally went to the scrap yard 30 months later.

So ends my story on 2 tins of Chockfast that saved "Zulaiha" from going to the scrap yard.

Kan Seng Chut
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After completing his apprenticeship at SHB/PSA Dockyard in Telok Blangah in January 1967, Seng Chut went to sea. He joined Bankline, a Scottish shipping line and sailed as Junior Engineer on the m.v."Yewbank" for 15 months. He then left to join Guan Guan Shipping where he sailed on passenger ship "Kim Hwa" for 4 months to clock enough sea time before he could appear for the Class 2 CoC in Singapore. Unfortunately, he failed twice and decided to join NOL on the "Neptune Garnet" for 10 months as 4th Engineer. His 3rd try at Class 2 CoC in Singapore was a success and with his new qualification, sailed on "Neptune Amber" as 3rd Engineer for just 3 months for he was soon promoted to 2nd Engineer. He sailed as 2nd Engineer for 12 months and then got promoted again to Acting Chief Engineer on "Neptune Agate" and "Neptune Jasper". For his Class 1 CoC, he decided to go over to London where he at Poplar Technical College in May 1973. He sat for the Class 1 CoC in September 1973 and passed at his first try. Seng Chut then left the sea to re-join NOL as a Superintendent in the Technical Department. In 1976, he left NOL to join Singapore Shipping Corporation as to manage several portfolios as Superintendent cum Technical Manager cum Director. In 1992, he ventured out on his own to set up "Odesta Pte Ltd" to do ship management.

Seng Chut retired in 1998. He has been busy giving back to society through his charity and continues to share his experience with others in our marine industry.