

## CCGS Ann Harvey

The “Ann Harvey” is a CCG Type 1100 Arctic Class 2 medium ice breaker operating on Canada’s east coast around Newfoundland and Labrador and the eastern arctic. Based in St. John’s she carries out various Coast Guard missions including navigational aids, fisheries support and search and rescue. Built in Halifax and commissioned in 1987 it has been in active service since then.



During the 2013 dry docking of the ship it was discovered that the tail shafts were very difficult to withdraw from the stern tube which is unusual given that worn bearings normally create more clearance rather than less. Avalon Marine was consulted to determine the cause and to help with replacement bearings. Avalon analysed the available data and it was determined that the original tail shaft design did not take into account the amount of wear that can occur on the shaft journal themselves during the long operational life of such a ship. As a result, new bearings fitted at that time were installed with higher than normal clearances (for new bearings) in order to mitigate disassembly issues during the next docking since corrections to the tail shaft could not be undertaken during that dry docking. Ongoing discussions about tail shaft refurbishments and new bearings were underway in the intervening period but were accelerated after the ship ran aground on an unmarked obstruction resulted in complete flooding of the engine room and propulsion motor room. Further damage investigations revealed that the main shaft lines and machinery alignments were now in question and decisions were taken to fully refurbish the main propulsion plant and shaft line including renewal of the bearings and implementing SCM on this ship.

With this approach agreed in principle, Avalon undertook the necessary SCM compliance assessment and worked out the engineering and physical details to integrate WQPs and other requirements needed to achieve compliance. A firm costed proposal was submitted to owners in 2017. Due to the ever-growing work scope for the dry docking scheduled for 2018, owners decided that the appropriate approach would be to implement the SCM in stages, focusing on the underwater work during the dry docking to be followed by the rest of the SCM implementation at a later alongside refit period.

The photo shows the ship alongside at the St. John’s NL shore base during dockside work while afloat after the grounding in 2017.