

AWARDS 2021 BEST ICE-CLASS TUG SELENE



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Robert Allan Limited (RAL) of Canada

and Sanmar Shipyards of Turkey have long enjoyed a successful and prolific collaboration. The tugs developed by their partnership are now operating practically worldwide. These two particular tugs, however, are somewhat different from their norm. They have been designed and built for a Finnish owner that will operate them in the sometimes bleak and cold Baltic Sea. The 31.5-metre LOA and 66tpw tugs, therefore, had to be ice class. They are very potent and versatile vessels that represent the latest in tug design development and the highest quality of construction. "A combination of special and unique requirements makes this icebreaking tug special in our opinion," RAL told Baird Maritime. "One of these requirements was to have good seakeeping and performance in open water and at the same time the best possible icebreaking capability." RAL, however, clarified that the design approach for the best open water performance and that of the best possible icebreaking capability are different and therefore contradict each other. As a result, the tug has a unique balanced design that combines good seakeeping, relatively high free-running speed in open water with substantial escort performance, and effective icebreaking capability. "Accomplishing all these objectives efficiently was a major design challenge and was achieved through careful analysis and selection of the hull form. With the designed hull form, the tug has speed ahead of 14.5 knots with a maximum achieved speed during trials of 15 knots. The speed going astern is also very high – up to 13.9 knots. That is a very high astern speed even for a non-icebreaking ASD tug." The tug is designed to operate in ice up to 0.8 metres thick, and so the owner requested an extremely strong hull structure. The hull is thus designed for icebreaking with strength that is significantly above the requirements of the prescribed Finnish Swedish Ice Class 1A. The reason was to ensure safety during icebreaking operations and eliminate the possibility of structural damage and shell plate deformation. "As per the owner's requirement," said RAL, "the tug has an extensive and unique fendering system. The fendering system was specially arranged to prevent damage of the fender from ice impact during icebreaking at the higher speeds of 10 to 11 knots. The cylindrical fenders also have an unusual installation with a large outboard overhang to create space between the dock or assisted vessel sides and prevent possible ice jams." "She is the first ice class tug built by our company," added Sanmar Shipyards Vice President Ali Gurun. "Among other things, this project proved that we can take on complex custom shipbuilding designs for specific operational needs." The tug was designed to be capable of performing multiple, diverse tasks, which include escort, ship-assist, icebreaking, ice management, open sea towing, small cargo transfer on deck with 20-foot containers, assistance in salvage, and oil spill recovery. Gurun remarked that building an ice class tug is, "a totally different experience, presenting new challenges and opportunities for change." For RAL, the challenge lay in meeting all of the owner's operational and technical requirements and to find the right balance between possible design solutions. "Any icebreaking tug design can be considered unique," the designer told Baird Maritime, "because of the local uniqueness of the geography, ice conditions, experience, and technology of operations and other factors. Each specific design brings additional experiences and lessons to learn from. Alfons Håkans is a very experienced ice class tug operator and working with them on the icebreaking tug development was a learning process that gave us valuable knowledge and experience in designing icebreaking vessels." The delivery of Selene was one welcome development during 2021, which Gurun said was a "very successful" year, albeit not as noteworthy as 2020. "That one was our record-breaking year. For us, 2021 was slightly below 2020, but we expect to set a new sales record in 2022." Gurun also identified customers' increasing preference for vessels with low-emission propulsion as a trend currently having an impact on

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shipbuilding. "We are getting lots of orders for LNG-fuelled and battery-operated tugs as well as IMO Tier III regulation diesel-powered tugs. Orders for such vessels are significantly high, and we have responded to this by taking a strategic decision to focus our manufacture on low- and even 'no emission'-tugs." [By Baird Maritime - March 8th 2022](#)