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Application of the Newly Adopted IACS Polar Class Rules to Offshore Support Vessels of Small Tonnage

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The Alaska Region Research Vessel (ARRV)

Abstract

The Glosten Associates, along with their regulatory partner, the American Bureau of Shipping (ABS), recently completed the design of the 242-foot, ice-strengthened Alaska Region Research Vessel (*ARRV*) for the University of Alaska Fairbanks (UAF) and the National Science Foundation (NSF). The vessel design is the first reviewed by ABS that meets the structural and mechanical requirements of the new Polar Class Rules developed by the International Association of Classification Societies (IACS). The application of these rules to vessels of smaller tonnage, such as offshore supply vessels (OSVs), maintenance vessels, anchor handling tugs, etc., is of particular interest to designers of vessels that will operate in the newly developing Arctic offshore areas.

The Polar Class Rules represent a major step forward in harmonized, ice-capable, structural design. However, some areas of the rules require further development and cautioned use, particularly for vessels with displacements below 5,000 metric tons[1]. It is recommended that simultaneous application of the General Ice Class Rules be utilized to identify major areas of impact.

Design consequences resulting from the application of the new IACS Polar Class rules include vessel weight and cost and changes to arrangements, machinery, and operations. These impacts are of great interest to designers and operators of Arctic vessels. This paper summarizes important design guidance for ice-capable offshore vessels and provides guidance on collaborative efforts with ABS, particularly for application to small-tonnage vessels.

[1] All tons referred to in this paper refer to metric tons.