

ABSTRACT**An Apparatus, and Method of Reducing Bow Wave Losses of Marine Vessels at any Drafts, Trims and Speeds.**

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A method of varying the desired optimum length and height of the bulb of a bulbous bow for producing anti-bow waves of the desired wave height and wave length to cancel out the bow waves for reducing the bow losses at various drafts, trims and speeds of marine vessels, is disclosed herein. In a described embodiment, the apparatus includes an arrangement of several bulbs which are recessed with the top of the bulbs been flushed with the surface of the bulbous bow when the bulbs are fully retracted, and each bulbs can be extended and adjusted to the desired optimum height. The method comprises, at step 301 to 302, deriving the desired optimum length of the bulb from the speed of the marine vessel and activating the bulb located at or nearest to the desired optimum length of the bulb. At step 303 to 304, the method includes deriving the desired optimum height of the bulb from the draft and trim of the marine vessel and adjusting the activated bulb to the desired optimum height of the bulb. At the step 305, the activated bulb is locked in position at the desired optimum bulb length and height so as to generate the desired anti-bow waves to cancel out the bow waves to achieve minimum bow wave losses.

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20Figure 3

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