Studies on Tow Forces of Tugboat in Regular Head Waves

Ship Model Experiment

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SUMMARY
The tow force of tugboat is brought through the bollard pull test that is executed under the condition of still water and no forward speed. This is only information relating to towing works, which is offered to tugboat operator and pilot. However, since tugboat always works in waves and with forward speed, it is needed to know practical the tow force in waves. But the characteristics of tow force in waves have not been studied in series.

In our studies, the characteristics of the tow force in regular head waves are examined by water tank experiment using ship models. To make clear the above characteristics, we divide the directly measured tow force into two components, namely the mean tow force Tm and the fluctuating tow force amplitude Ta. And influences such as the elevation of towline, wavelength, wave height, forward speed on the above analyzed Tm and Ta are revealed. The information on the characteristics of Tm and Ta in waves will become useful data for planning navigation and checking for strength of towline.

REFERENCES
1. Association of Japanese work ship (1979). Investigation on towing force of tugboat. Report, Japan.
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