



BOW MODIFICATION ANALYSIS

Vessels : 6750 TEU & 13119 TEU containers

Scope of assessment

Container vessels underwent bow modification for fuel savings and economic sailing where the actual operational fuel savings was checked.

Conclusion

The savings in the fuel was not found justifying the investment on the modification and the owners dropped the plan to extend bow modification to further vessels. This was a major decision for the owners before a huge investment.

Merits of Xship performance

Checking the performance improvement of the modification through simple data comparison between the pre and post modification period is difficult. Since the operational range was different between these two periods, such comparisons will fail to give the actual results. Also there are many external and operational parameters which affect the fuel consumption of the vessel like Speed, Draft, Environmental conditions etc. Without considering the effects of various parameters on the vessel's performance and consumption, an improvement study cannot be carried out.

Xship has its competence in such studies and analysis by building its own

proprietary algorithm which considers the effect external and internal parameters in fuel consumption. Xship realises the actual relationship between Speed, Draft, environmental parameters and the fuel consumption and the power required. Due to this fact, Xship is most reliable in Understanding the benefits of any modification done to the vessel and dependable in making crucial decisions.

How Xship identified the effect of bow modification?

It was necessary to compare the pre and post periods to understand the effect of Bow modification. We analysed the vessel data for the two periods. After identifying the outliers using the methods available in Xship, the vessel model was created and performance was compared. Normalised performance curves were produced for the two periods and the improvements were measured as negative. Also one vessel had a small gain. But considering the efforts and investment on such a modification, the gain was not sufficient to meet the ROI. Also on the detailed analysis of data, it was found that most of the proposed design conditions such as trim were not met during the actual operations.