Noise and Vibration Assessement

WOLFSON UNIT

FOR MARINE TECHNOLOGY AND INDUSTRIAL AERODYNAMICS

Introduction

In collaboration with the world-renowned Institute of Sound and Vibration Research, the Wolfson Unit is now offering a comprehensive marine noise and vibration control service. Whether solving a particular issue with an existing vessel or ensuring that a new build is refined before construction commences, the Unit is able to supply the appropriate measurement and analysis know how.

Newbuild design review

When noise and vibration issues are encountered on a new vessel, far too often the root cause of the problem is due to an unfortunate fundamental design feature such as an inappropriate choice of reduction gear ratio, poor design of engine girders, problematic exhaust pipe lengths etc.

By careful review of the design many of these unfortunate features can be highlighted and appropriate redesign can be carried out before construction commences.

Improvement of existing vessels

After launch or refit, noise and vibration issues can sometimes arise. Through targeted measurements and spectral analysis the source of the issue can in most cases be rapidly identified and then characterised. Using either impact methods or omni-directional sound sources, the associated vibro-acoustic transmission path(s) to the receiving area (e.g. bridge, cabin, etc) can also be characterised and weaknesses identified. With a full understanding of both the source and the transmission path(s), potential control solutions may then be discussed with the naval architect.

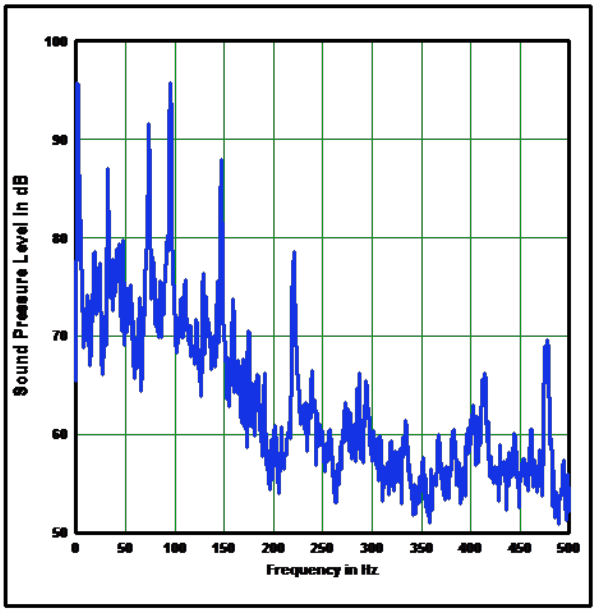
Exhaust ducting vibration measurement in an engine room

Services provided

The Wolfson Unit are able to provide a very wide range of marine noise and vibration services for both power and sail vessels up to around 100 m in length. The more routine services are as follows:

- Noise and vibration surveys
- Noise and vibration source identification
- Design reviews
- Torsional measurement
- Foot impact, transmission loss and privacy measurement
- Propeller selection advice
- **Exhaust system layout advice.**

As with all Wolfson activities, these noise and vibration services are provided in a highly flexible and practical manner. Complete client confidentiality is adopted as standard practice by the Unit.



Sound Power Level against Frequency for an engine room

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