

Global Marine Industry PDM Programs

PDM Program Class Acceptance

Predictive Maintenance (PDM) has become widely accepted in the Global Marine Industry by the Classification Societies. Requirements for mandatory open-and-inspect maintenance during a standard 5-year survey cycle are no longer required if a PDM program exists.

American Bureau of Shipping, Det Norske Veritas, and Lloyd's Register all have well established guidelines and modifications to their regulations that allow waivers on open-and-inspect requirements for well running and maintained machinery.

ABS Program Overview

ABS states in their 1995 Guideline, "Consideration will be given to extending overhauls (opening out) beyond the 5-year cycle where Planned Maintenance and Condition Monitoring programs are in effect". This program has led the way for substantial savings for owners over the past 15 years. PDM has virtually eliminated time-based maintenance with the use of condition-based analysis and proactive actions.



Why switch to a PDM Program?

Under the normal class required time-based interval maintenance, maintenance actions were reactive, time consuming and costly.

In some cases, the machinery failed before scheduled maintenance; other times required class inspections were scheduled on equipment that did not need repairs costing both substantial time and money.

The result was the useful life of the machine's components were lost and often the rebuild induced immediate failures at re-start which negated the positive effects of the entire Continuous Survey process.

Program Condition Monitoring Methods

The frequency of acquiring Condition data is the basis for a successful PDM Program. IMPACT Engineering supports two levels of monitoring as follows:

Plan 1 – Highest Level of Monitoring (Q)

Shipboard Engineers acquire vibration and ultrasound data using condition monitoring equipment on a Quarterly (Q) basis or as needed. Classification Societies require that a certified external specialist (e.g., IMPACT Engineering) collect the readings on an Annual basis and prepare a detailed diagnostic report of the findings and recommendations on a Semi-Annual basis. This benefit allows for maximum onboard diagnostics.

Plan 2 – Moderate Level of Monitoring (SA)

Semi-Annual (SA) vibration and ultrasound monitoring is performed by an engineer from IMPACT Engineering dockside or during a 2-3 day voyage. Again IMPACT Engineering provides a detailed diagnostic report of the findings and recommendations after each survey. This level of monitoring does not require the substantial training or equipment costs in Plan 1. Semi-Annual monitoring has proven to be extremely effective in detecting typical machinery faults and cost effective to implement and support world-wide.



Summary

Substantial maintenance savings are attainable in the Marine Industry due to deferred maintenance, increased machinery reliability, and substantially reduced unscheduled downtime when a PDM program is implemented. Due to fierce competition, no Marine Operator should be without a Predictive Maintenance strategy.