

Accepting CBM



LR's Danny Shorten discusses the role class plays in adoption of condition based maintenance

Condition Monitoring (CM) and its role in Condition Based Maintenance (CBM) is not a new phenomenon. However the shipping industry has found it particularly difficult to move fully into this 'best practice' approach to achieving reliability. It is vital that class societies maintain a robust and consistent approach irrespective of strategy. "We have often been accused of creating barriers to change by adopting an overly conservative approach to alternative survey strategies such as those based upon external intelligence gathering and diagnostics. This position is certainly not true today as all the major class societies are transparent about the way in which we plan and organise maintenance as well as how we base the decision to do so," says Danny Shorten, lead business development specialist - CBM Services at LR's technical investigations department.

He feels that shipping may appear to lag behind other sectors due to a lack of cohesive understanding about the influence of that stakeholders have on the end user. Accordingly, he feels it is imperative to align with those in the highest positions to design a business strategy from which a modern Maintenance Management Strategy (MMS) can evolve.

Cohesive approach

Shorten points out that the most effective MMS is one that adheres to a company's headline business strategy while meeting its strategic needs at the lowest acceptable cost. As a result it is likely to be formed from a combination of many maintenance methods: Re-Design/Run to Failure/Planned Preventative/On Condition etc. "Managing the human factors is the most significant aspect of CBM, as without acceptance of change and the willingness to do things better, real benefits may remain out of reach," he says.

Performing CM activities without using the additional intelligence it provides, simply adds cost to a business - one of the reasons that CM has failed in the past. In addition to obvious costs (including training, hardware and third party diagnostics), additional costs created by shorter planning windows and the work done to verify alarm and alert values must be factored in. "In time however, as the maintenance activity becomes more acutely knowledgeable about 'how' its systems behave, the benefits of optimisation can be sought," explains Shorten. "Machinery population will be more reliable; there will be fewer unexpected breakdowns and urgent purchase requisitions. To do this however the organisation must change significantly and making this change will incur costs."

Responsibility

In the main, 75% or more of the known maintenance tasks will continue to be traditional calendar based pre-scheduled activities which are based upon OEM guidance literature. However who takes responsibility for the other 25% that moves away from the

OEM guidance? "Ultimately the shipowner is responsible via his nominated manager/operator. However, risks can be mitigated by machinery insurance and adherence to OEM maintenance recommendations," the LR specialist advises.

He continues, "We often hear 'Will class accept this?', or 'If we do not stick to the OEM's guidance and we suffer a breakdown then the insurer will not pay!' Clearly each case will be considered on its own merit, however if there are machinery items that have been assessed for maintainability via a risk based process such as an RCM study, then the OEM should be consulted. In the main when talking about the significant assets such as propulsion, power generation plant, steering gear and the like, most manufacturers are open to such discussion and are very supportive."

He stresses that where Failure Modes Effects and Criticality Analysis (FMECA) is performed during the planning phases of optimisation, it is essential to have the OEM perspective in place - however, he acknowledges that not all 'critical' machinery will be necessarily significant in terms of capital value. Items such as pumps and compressors may be of significant criticality when considered in terms of risk of consequence due to failure but not provided with support post warranty. "What is worth considering is not the large headline failures where insurance is appropriate but the vast number of sub-deductible incidents where no such cover is present and which may be currently considered as the normal costs of doing business! Collectively the costs of these relatively minor occurrences may be significant," he highlights.

Class involvement

The hierarchy of deferment seems to start with the OEM, then class, after which comes the insurer. Thus if the vessel has applied for and been granted approval for PMS and CM as alternative survey arrangements then the issue of risk management is effectively rendered null and void, though this is yet to be tested. Shorten states: "The class society and major OEMs need to be contacted much earlier in the change management cycle to ensure that these key stakeholders are able to advise and form alignment accordingly."

He points out that meeting regulatory standards for machinery is a minimum requirement, below which the vessel will be considered substandard - incurring potential consequences as a result. "CBM is about best practice, about optimisation and alignment with company goals and values. As such, doing anything more than is required by regulation to trade will not be seen as universally attractive. That said, the majority of responsible ship owners/operators and managers are professional and are keen to do the best they can for their companies and shareholders," he says. □