

Supervising transmission equipment

Chantiers de l'Atlantique used acoustic emission techniques to check the workings of certain machine equipment on the Queen Mary 2.



Alstom Marine Bernard Biger

OUR CUSTOMER

Corporate name:
Chantiers de l'Atlantique
(part of the Alstom group)

Activity:
Designer and builder of high
value added ships

Total net banking product:
1800 million euro

Country:
France

Context:
With the Queen Mary II,
Chantiers de l'Atlantique
was responsible for the
largest cruise ship ever built.
The company rose to the
challenge and completed the
project in under two years,
totalling eight million hours
of work and 300,000 steel
parts

For the project of constructing the Queen Mary II, Chantiers de l'Atlantique called in the services of Cetim to evaluate the results of a test using acoustic emission. This technique is particularly efficient in early detection of possible damage in transmission mechanisms such as roller bearings. Compared to more traditional techniques, its major advantage is a better signal/noise ratio in the field of ultrasound frequencies and a better temporal resolution to detect impulsional signals.

The two types of test systems on the market

Two types of equipment were used. The first is a monitoring system based on analysing the overall parameters of signals. It

consists of monitoring changes to detect any inconsistencies over time. This device can be installed on the component to be monitored permanently or temporarily. The second device is an expert system that uses advanced functions for processing ultrasound signals to diagnose any anomalies in the equipment functioning, in other words it identifies the nature and intensity of the problems and locates their position within the component. This type of system is used periodically for evaluation operations. Thanks to the recommendations and reactivity of Cetim, Chantiers de l'Atlantique was able to choose and implement the best adapted techniques in the shortest possible time.



Alstom Marine Bernard Biger

Cetim's asset

With 30 years of experience and expertise in the field of acoustic emission, Cetim excels in the application of this technique in varied situations: for pressurised equipment testing, on-line testing of equipment manufacturing processes, surveillance of working installations, etc. The Cetim is the uncontested expert in this domain and participates actively in European standardisation and is the only Cofrend (French Institute of Non-Destructive Testing) certification centre for test operators.

