DETECTION OF SHIP VIBRATIONS AND ABSORPTION TECHNIQUES

R. ELAVARASI
Assistant Professor, Department of Electrical & Electronics Engineering,
AMET Deemed to be University, Chennai, Tamil Nadu, India

ABSTRACT

Ship Vibration is a major problem which occurs frequently in the on-board vessel. Excessive ship vibration may result in fatigue failure of local structural members, malfunctioning of machineries and equipments. Ship vibration includes machinery vibration and hull vibration. Hull vibration cannot be avoided whereas machinery vibration can be reduced. This paper introduces a system which will detect the vibration of the machinery, in case vibration of the machinery exceeds the ultimate value. The detecting system will trigger the alarm in the panel. Thus, as a response to the alarm the particular machinery is checked for fault and it is attended.

The root cause of the major failures in the machine is due to vibrations. It can’t be noticed easily with the physical appearance of the machines. The consequence of this reason leads to major failures. For example: cracks in machine bed, cracks in the pipeline, wear and tear in bearings and gears.

To overcome this problem, a new system which detects the vibration and gives the alarm is proposed in this paper. This system includes a Vibrometer, Comparator, Amplifier and Alarm system.

Keywords: Vibrometer, Comparator, Amplifier & Alarm System