

Thesis Title: THE CONDITION-BASED MAINTENANCE MODULE
DEVELOPMENT BY USING FMECA AND ITS
APPLICATION IN ROLLING STOCK (TRAINS)

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ABSTRACT

This research aimed to develop a module for Condition Based Maintenance in order to replace Overhaul Scheduling Maintenance of the Rolling Stock by applying the technique of Failure Mode Effects and Criticality Analysis (FMECA) to the air supply compressor which a component of the Rolling Stock

Air supply compressor needs overhaul maintenance at every 8 years or approximately 12,000 operating hours prescribed by the manufacture. The report shows that the air supply compressor is still in good condition even after that specific time. Therefore, the researcher applies FMECA technique to develop a module for Condition Based Maintenance for the air supply compressor.

Findings from this study suggest that the technique of Failure Mode Effects and Criticality Analysis (FMECA) applied for the development of a module for maintenance of air supply compressor can extend the period of Overhaul Scheduling Maintenance from 8 years to 12 years which have no adverse effect on health, safety, environment and operation. This resulted in saving the maintenance cost amount 350,846 Baht cost reduction. Findings from this study have been proposed for actual practice in both maintenance depots in Thailand. Moreover, the FMECA technique has been publicized at a number of companies where the same series of air supply compressor are being utilized.