

UNIVERSITI TEKNOLOGI MARA

**COMPARATIVE STUDY ON NOISE EXPOSURE
OF WORKERS AT PLANT AND SITE OF THE
ELECTRIFIED DOUBLE TRACK RAIL PROJECT
IPOH TO PADANG BESAR STRETCH**

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Declaration by Student

Project entitled "Comparative Study on Noise Exposure of Workers at Plant and Site of The Electrified Double Track Rail Project Ipoh to Padang Besar Stretch" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mr. Hashim Bin Ahmad, as Project Supervisor and Mr. Ahmad Razali Bin Ishak as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).



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ABSTRACT

Comparative Study on Noise Exposure of Workers at Plant and Site of The Electrified Double Track Rail Project Ipoh to Padang Besar Stretch

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Electrified Double Track Project (EDTP) is a project initiated by Ministry of Transport to enhance the public transport system in Malaysia. For the purpose of power supply, mast needed to be installed along the railway track. During mast installation, workers are exposed to noise which can cause hearing loss. The study design used was cross-sectional study. The study group had been selected from Plant's workers and Site's workers to compare hearing loss between different workplace. Measurements of noise levels at Plant and Site were performed by using a precision integrated sound level meter. The status of hearing loss of the worker was determined from medical record of audiometric testing. Questionnaires were given to the workers to obtain demographic data and workers behavior that contributed to hearing loss. The association between hearing loss and workplace were analyzed using SPSS for statistical analysis. Result from independent sample t-test showed the mean different between Lmean of Plant and Site are statistically significant ($p=0.008$, 95% CI -6.04, -0.92). Lmean for Plant was 81.76 ± 5.06 dB(A) for Site was 85.24 ± 5.94 dB(A). From chi-square test performed, there is a significant association between different types of workplace and hearing loss since $p\text{-value} < 0.05$. There is higher proportion of hearing loss among respondent who working at Site compared to respondents working at the Plant. The workers at Site are over expose to higher level of noise due to incorporation of many kinds of machines, hand tools and vehicles usage to perform the task. The same task was repeatedly performed by the Site workers for the whole day. Noise at Plant was emitted from fabrication process, welding work, generator and some hand tools which taken place when some modifications need to be done on some items that will be use by Site workers. As a conclusion, workers from Site and Plant are exposing to risk of getting hearing loss caused by excessive noise from their workplace. The control of noise at Plant and Site are highly recommended through the implementation of engineering or administrative noise control and the use of hearing protection that suite with the task during working.

Keywords: noise, hearing loss, construction.