

REPORT ON ENVIRONMENTAL NOISE IN ONTARIO

WITH REFERENCE TO HEALTH RELATED EFFECTS

The Noise Pollution Control Section, Ontario Ministry of the Environment, has received a new report on environmental noise in Ontario with reference to health related effects. This \$65,000 study was funded in 1978 under the Provincial Lottery Trust Fund and the principal investigators were J. R. Hemingway/(416) 675-3983/and Dr. P. J. Dickinson/(801) 290-3465/. The project managers were SNC/GECO in Toronto. The major conclusions are:-

- Conclusive evidence regarding health effects of environmental noise is lacking. The main body of research has been concerned primarily with effects on human welfare rather than health.
- Because of confidentiality practices recently imposed by government agencies and medical practitioners in Ontario, direct correlation of health effects to noise could not be carried out as originally expected. As a result of this impasse, the study team was unable to determine whether or not environmental sound levels might have an effect on health.
- The audiometric survey did not produce sufficient evidence to indicate that environmental sound levels in the selected areas were a cause of hearing loss. Conversely, there was also no proof that these noise levels do not cause hearing loss.
- Regarding the rating of aircraft noise, no reasons could be found for rating this noise source differently to any other noise source.
- While Leq was found to be the most acceptable universal noise descriptor, it was found that Leq tends to under-emphasize continuous sounds from heavy traffic or steady industrial noise. The study indicated that a better solution lies in changing the trade-off relationship inherent in Leq. Instead of averaging energy or pressure squared, it was felt more appropriate to average simple pressure. This would correct the tendency to under-emphasize long duration sounds without any increase in complication over Leq itself.
- Analysis of the social survey responses indicated that environmental sound levels were perceived as resulting in increased drug purchases and to a lesser extent difficulty in hearing and sleep interference. Near continuous noise such as highway noise, in general, gave stronger indications of these responses than intermittent sounds such as train pass-by noise.
- The final conclusion was that a fixed difference between day and night sound levels (weighting) does not result in an equal response. Noise rating schemes such as Ldn are not wholly supported by this work.

Single free copies may be obtained from John Manuel, Supervisor, Noise Pollution Control Section, Ontario Ministry of Environment, Toronto, M4V 1P5.

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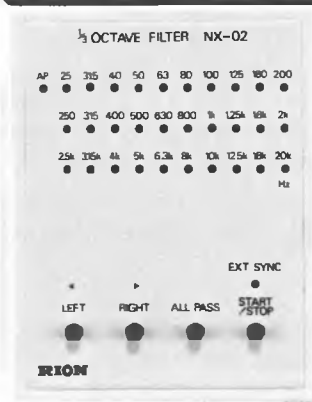
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