

BOOKS, PAMPHLETS AND NOTICES

- 321 Masers and Lasers: How They Work, What They Do. M. Brotherton. 201 pp. plus index. (March, 1964). AVAILABLE FROM: McGraw-Hill Book Company, 330 West 42nd Street, New York, N. Y. 10036 PRICE: \$8.50.

The basic principles and ideas involved in masers and lasers, the development of the master principle, and the method of producing laser action by harnessing the orbital electron system of atoms and molecules are discussed. The author provides a simple explanation of quanta, energy transitions, and other concepts of atomic theory which are essential to the development of electronics at optical frequencies. The sixteen chapters of the book include discussions on: Electromagnetic waves, laser radiation, spectroscopy, atomic theory, nature of the atom, concept of the photon, concept of stimulated emission, traveling-wave ruby masers, ruby and helium-neon lasers, the semiconductor junction laser, uses of masers and lasers, communicating with lasers, significance of frequency band-width, and a capsule history of masers and lasers.

- 322 Guide for Conservation of Hearing in Noise. Revised 1964. A Supplement to the Transactions of the American Academy of Ophthalmology and Otolaryngology. Prepared by Subcommittee on Noise of the Committee on Conservation of Hearing and Research Center Subcommittee on Noise. A. Glorig, Director. 40 pp. (1964). AVAILABLE FROM: Research Center of the Subcommittee on Noise, 327 South Alvarado Street, Los Angeles, California, 90057. PRICE: Not given.

The purpose of this Guide is to assist members of the industrial community in their efforts to protect hearing. The information presented here describes how to determine whether a noise-exposure calls for hearing conservation; and if it does, how to organize, conduct, and monitor a practical hearing conservation program. The initiation of a hearing conservation program should be considered whenever persons have:

1. Difficulty communicating by speech while they are in the noise, or
2. Head noises or ringing in their ears after working in the noise for several hours,
3. A temporary loss of hearing that has the effect of muffling speech and certain other sounds after several hours of exposure to the noise.

Absence of pain when exposed to noise should not be construed to mean absence of hearing loss. Pain may be felt in the ear during exposure to noise levels of the order of 130 decibels: noise-induced hearing loss, however, may be produced at considerably lower noise levels. Pain and annoyance are not reliable indicators of a potential noise-induced hearing loss. The decision to initiate a hearing conservation program should not be influenced by the presence or absence of these symptoms. Ultimately, the analysis of noise-exposure is the only completely satisfactory way of establishing the need for hearing conservation. A HEARING CONSERVATION PROGRAM CONSISTS OF THREE PARTS I. Analysis of Noise-Exposure — Noise-exposures are analyzed in terms of:

- (a) overall level
- (b) composition of the noise
- (c) duration and distribution of exposure during a typical work-day
- (d) total exposure time during a work-life.

Measurement of each of these four factors of noise-exposure is important for hearing conservation. Even though two different noises have the same overall level, their compositions may differ considerably (to such an extent, in fact, that one may produce a permanent hearing loss while the other may not). Also, the auditory effects of continuous noise-exposure are different from the effects of intermittent exposure to the same noise.

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