

Glover

Elect Fields  
VDT'S  
BEARS  
(ref last page)

✓ G-53 EFFECTS OF CATHODE RAY VIDEO DISPLAYS ON HUMAN HEALTH. Charles Wallach  
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DC voltage gradients as high as 50 KV/meter have occasionally been measured between the operator's face and the screen of a word processor, computer, radar, television, or video-game CRT display. Such displays are commonly associated with high incidences of eye, nose, throat, and skin irritations, headaches, dizziness, nausea, pain malaise, and premature births or miscarriages where prolonged and repeated use is a factor. These same symptoms (except skin irritation) correlate closely with the biochemical modifications and symptomology known to result from prolonged exposure to high +/- ratios of small atmospheric ions. This suggests that the high positive surface charge on the outer display face, which is the common factor peculiar to all CRT displays, may be responsible because it (1) neutralizes negative ions, (2) increases positive ion concentrations, and (3) repels airborne particles and aeroallergens at high velocities, in the respiratory airspace of the operator. (1) and (2) clearly increase the positive-to-negative ion ratio (PNIR), and (3) may account for skin and eye irritation. In view of the widespread and growing number of such operator complaints being compiled in the U.S. and Europe, various technical means for removing this common apparent cause are being actively explored.

### Sensory Effects

G-54 STAGES IN DEVELOPMENT OF A MICROWAVE CATARACT IN THE RABBIT EYE, VIEWED IN COLOR STEREOPHOTOGRAPHS. Russell L. Carpenter. Bureau of Radiological Health, 109 Holton Street, Winchester, MA 01890

Successive stages in the development of a posterior subcapsular cataract induced in the rabbit eye by 2.45 GHz continuous wave radiation are demonstrated by means of color stereophotographs. Taken with a Donaldson stereo-ophthalmic camera using electronic flash illumination and an initial magnification of two and one half times on the film, the photographs are exhibited in a Donaldson special viewing apparatus by which the consecutive stages in development of a cataract can be brought into view by turning a circular knob. The eye appears to the viewer as if it were being seen in the living animal through a magnifying lens.

G-55 EVALUATION OF OCULAR DAMAGES CAUSED BY LASER. J. Grapperon<sup>o</sup>, D. Bruschera<sup>o</sup>, J. CERB, B.P. 610, 83300 Toulon Naval, France

Safety thresholds for human exposures are derived from experimental results obtained with rabbits have received isolated or multiple effects on the eye were assessed by chemical assays.

G-56 MODIFICATION OF A FLUORESCENCE SPECTROPHOTOMETER FOR MILLIMETER WAVE EXPOSURE SYSTEMS. S.M. Metzkin, Departments of Life Sciences, Electrical Engineering, Polytechnic Institute of New York, Brooklyn, NY

Limitations inherent in millimeter wave analysis of fluorescent molecules are overcome by the use of fiber optic probes, sensitive to temperature and active mechanisms by examining alteration of a fluorescence spectrophotometer. The specimen enables simultaneous excitation beam and to millimeter wave surface illumination most of the fluorescence of the suspension exposed to maximum. Such a system bypasses the problem of the specimen enables the examination of molecular structure than following it, thus permitting the use of a fiber optic exposure cell, radiating horn of the spectrophotometer. A calibration system utilizing two horns to calibrate the fluorescence of vesicles and cell membranes in suspension will be examined.

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ABSTRACTS

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