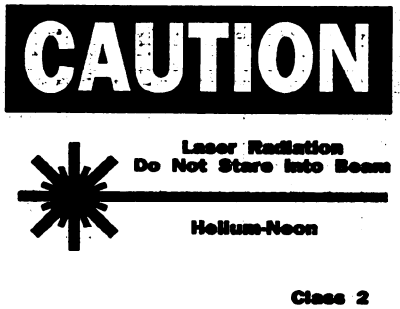
U.S. Army Center for Health Promotion and Preventive Medicine

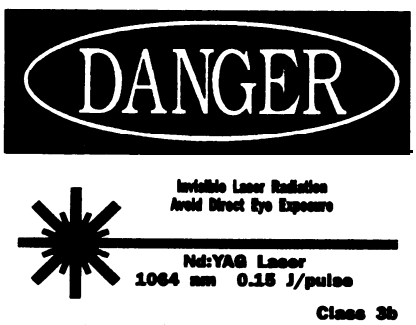
Just the Facts

25-003-0595

Capabilities of the Laser/Optical Radiation Program



- **Laser Safety**
- **Eye Protection**
- **Training**



Hazards of the Modem Battlefield

The Army's commitment to high-technology laser devices for the modem battlefield emphasizes the need for our leadership role in the control of laser/optical radiation hazards including infrared, visible and ultraviolet radiation.

Mission of the Laser/Optical Radiation Program

The Laser/Optical Program manages the Army's laser and high intensity optical source Nonionizing Radiation Protection Program. We provide technical support for Army, DOD, national and international laser and optical source radiation protection standards. We evaluate new or modified lasers and other high intensity optical sources to assess potential health hazards before such equipment enters the Army inventory

We also conduct on-site surveys which include working with the Radiation Protection Officer to evaluate/compile inventories, observe operating procedures and measure these sources as required.

Our Program provides specialized training in laser/optical radiation protection, and we also provide an annual course sponsored by the U.S. Army Medical Department Center and School.

The Laser/Optical Program is always available to offer the detailed technical assistance necessary to enhance the effectiveness of installations' protection programs, thereby preventing adverse health effects to soldiers, employees and the general public.

Military Lasers

The types of sources subject to laser/optical radiation protection control are those sources operating in the 100 nanometer to 1 mm wavelength range. Listed below are some examples of these sources.

- Laser Rangefinders
- Laser Designators
- Laser Training Devices
- Aiming/Pointing Devices
- Optical Countermeasure Sources
- Directed Energy Systems

Public Concerns

- Laser Beacon and Lightshows in Commercial and Military Airspace
- Laser Pointers

Laser/Optical Radiation Program
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Services of the Program

There are five laser laboratories equipped to test laser/optical radiation sources and protective devices. We perform the following services:

+ Detailed Hazard Analysis of Laser and High Intensity Optical Sources

◆ Detailed Hazard Analysis of Force-on-Force Laser Operations

◆ Determination of Nominal Ocular Hazard Distances

◆ Classification of Laser Systems

◆ Determination of Protection Requirements

◆ Testing of Protection Devices

◆ Photopic and Scotopic Transmission

◆ Photopic and Scotopic Transmission Using the P43 Phosphor

◆ Optical Density Evaluations

◆ Laser Range Evaluations

Environmental Testing

The XR35 Weather-Ometer allows us to perform long-term environmental testing of protective devices in a short period of time. The XR35 Weather-Ometer creates weathering conditions by controlling four separate parameters. These are temperature, humidity, light and water spray.

Material specimens undergo repeated exposure to accelerated weather cycles. A typical weather cycle will include freezing and thawing with elevated temperatures, high and low humidity, alternating high intensity light and darkness, and alternating water spray on the test specimens. The test cycle may be repeated over a series of days, months, or years to bring about the desired level of specimen weathering. Since the samples are exposed to constant environmental extremes, weathering takes place at an accelerated rate.

The XR35 Weather-Ometer *is a registered trademark of the Atlas Electric Devices, Co., 4114 North Avenue, Chicago, I.. 60612.*