

CHAPTER 4
HEALTH AND SAFETY CONCERNS
TABLE OF CONTENTS

<u>BACKGROUND</u>	4-3
<u>POWER DENSITIES</u>	4-3
Microwave Demonstration Video	4-3
<u>OPERATIONAL PROCEDURES</u>	4-3
<u>MOUNTING SAFETY</u>	4-4

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CHAPTER 4

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1. BACKGROUND.

a. The California Highway Patrol (CHP) has researched studies from the American National Standards Institute, the Institute of Electronic and Electrical Engineers, the National Council on Radiation Protection and Measurements, and the National Institute of Standards and Technology (NIST) regarding possible health effects from the microwave emissions of traffic radar devices. All of these studies were related to the comparison of health effects of microwave radiation at low-power densities.

b. The NIST review of research data concluded that exposure to low levels of microwave radiation (such as that found in traffic radar) cannot be shown to be harmful. However, **the exposure to low levels of microwave radiation cannot be proven to be free of hazards**, as the experiments used to obtain the data were inconclusive or flawed. The absorption rate also varies greatly between different parts of the body and is affected by changes in frequency. The NIST concluded more research is needed on this phenomenon. There is some indication the eye may be more susceptible to damage from these emissions.

2. POWER DENSITIES.

a. The maximum power densities of radar equipment are below the established "safe" standard; however, there is some debate within the scientific community as to the validity of current power-density standards.

b. Microwave Demonstration Video. A demonstration video (CHP Video Number 1309) is available from the Television Unit at the Academy. The March 1993 comparison video demonstrates the output power of several traffic radar devices and other common microwave equipment (e.g., cellular telephone, microwave oven). Copies of this video are available for other agencies who desire information on this topic.

3. OPERATIONAL PROCEDURES. To minimize microwave exposure, all operators shall ensure the following procedures are adhered to when operating radar devices:

a. Turn off the radar transmission when the traffic radar is not in use, by either turning the unit off or placing it in the "**RF HOLD**" mode.

- b. Avoid allowing persons to remain within two feet of the front of any transmitting radar antenna.
- c. When checking speeds in front of or behind the patrol vehicle, mount interior radar antennas as close as possible to the windshield or rear window to minimize reflections from within the vehicle.
- d. Point the antenna away from persons when performing tuning fork calibration checks.
- e. When using a single-piece radar unit (hand-held), turn off the antenna (use “**RF HOLD**”) when the equipment is not directed at a target vehicle (e.g., when placed on the passenger seat or lap between speed checks).

4. MOUNTING SAFETY. All radar antennas and display units shall be securely attached to the patrol vehicle. All patrol vehicles are pre-equipped with secure mounting brackets and cables prior to delivery to Area. Areas shall not change or modify radar mounting brackets without concurrence from Fleet Operations Section (FOS). Replacement brackets and cables are available from FOS.