



UNITED STATES MARINE CORPS

2d Marine Division, Fleet Marine Force
Camp Lejeune, North Carolina 28542

DivO 6470.1
16:CFW:yrj
20 Feb 1985

DIVISION ORDER 6470.1

From: Commanding General
To: Distribution List

Subj: Laser Radiation Health Hazards as pertains to AN/GVS-5
Laser, Infrared Observation

Ref: (a) NAVELEX 5100.12
(b) American National Standards for the safe Use of
Lasers, ANSI Z136.1 - 1980 (NOTAL)
(c) NAVMEDCOM 6470.2
(d) NAVSEA 5101.1
(e) MCO 8220.5

Report Required: Situational Suspect Laser Overexposure
Incident Report, (Report Symbol MED 6470-13),
paragraph 7 of this order.

1. Purpose. To provide the following information concerning
laser radiation health hazards:

- a. Medical surveillance requirements
- b. Safety requirements for laser systems used by Fleet
Marine Force activities.
- c. Procedures for reporting a suspected laser overexposure
incident.
- d. Summary of biological effects.

2. Information. This order applies to all 2d Marine Division
units using this system.

3. Exposure Limits And Hazard Evaluation. Exposure limitations
are as defined in references (a) and (b). The AN/GVS-5 is a
class IIIb laser system. The hazard to health from this system
is primarily to the eye, specifically the retinal veins and
arteries macula, fovea centralis and retina. The hazard from
this instrument may manifest itself under the following
conditions:

- a. Personnel gaining exposure to the beam from direct
observation (looking directly into the beam with the unshielded
eye).
- b. Refractive incidences of the beam entering the eye.

c. Observation of the beam at a distance beyond the 1,100 meter point with telescopic or night-vision instrumentation.

d. Failure to observe safety procedures in regards to wearing eye protection.

4. Medical Surveillance Requirements. A medical surveillance program is required for the class IIIb laser system. All personnel designated as incidental laser personnel should have a documented visual acuity screening examination prior to assignment to laser systems operations. Laser personnel should have examinations as required by paragraph 6 below.

5. Safety. Personnel designated as incidental or laser personnel by the Division Laser Safety Officer (LSO), shall be required to wear the proper eye protection when engaged in two-sided tactical exercises. Additionally, any incidental personnel involved in work downrange, i. e., moving targets, shall wear approved eye protection. Approved eye protection is as follows:

a. Goggles, Safety, Laser, NSN 4240-00-258-2054. All personnel shall refrain from viewing the beam as it is discharged from the LRF downrange closer than 1,100 meters without proper eye protection. These goggles provide an optical density rating of 30 at 1064 nanometers. This protection is more than adequate for use with this particular system.

b. Personnel shall refrain from viewing indirectly, the path of the beam by reflective devices or telescopic/night-vision devices. They shall also refrain from looking at flat, glass-like objects downrange.

6. Procedures For Reporting A Suspect Laser Overexposure Incident. Prior to designation or commencement of tasks directly related to laser operations or maintenance; or if an individual is exposed to laser radiation and an eye injury is suspected or observed, a complete medical examination shall be performed as soon as possible. The examination shall consist of:

a. A medical history with emphasis on ocular systems and history of medication usage (particularly potentially photosensitizing drugs).

b. Visual acuity determinations.

c. Examinations of various structures of the eye.

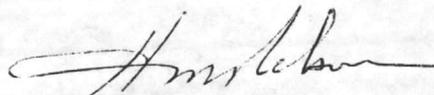
d. Polaroid color photographs of the posterior pole of the funds including the area of the macula and optic nerve.

e. Any other protocol recommended by the cognizant medical officer or by consultation with the Commander, Naval Medical Command (MEDCOM-21).

7. Reporting. A letter report shall be submitted to the Commander, NAVMEDCOM (MEDCOM-21) via the Commanding General, 2d Marine Division (Attn: Surgeon) within thirty (30) days of the incident. As a minimum, the report shall contain a list of personnel exposed, an estimate of the exposure received, a copy of medical examinations performed, and a narrative summary of events leading to the incident.

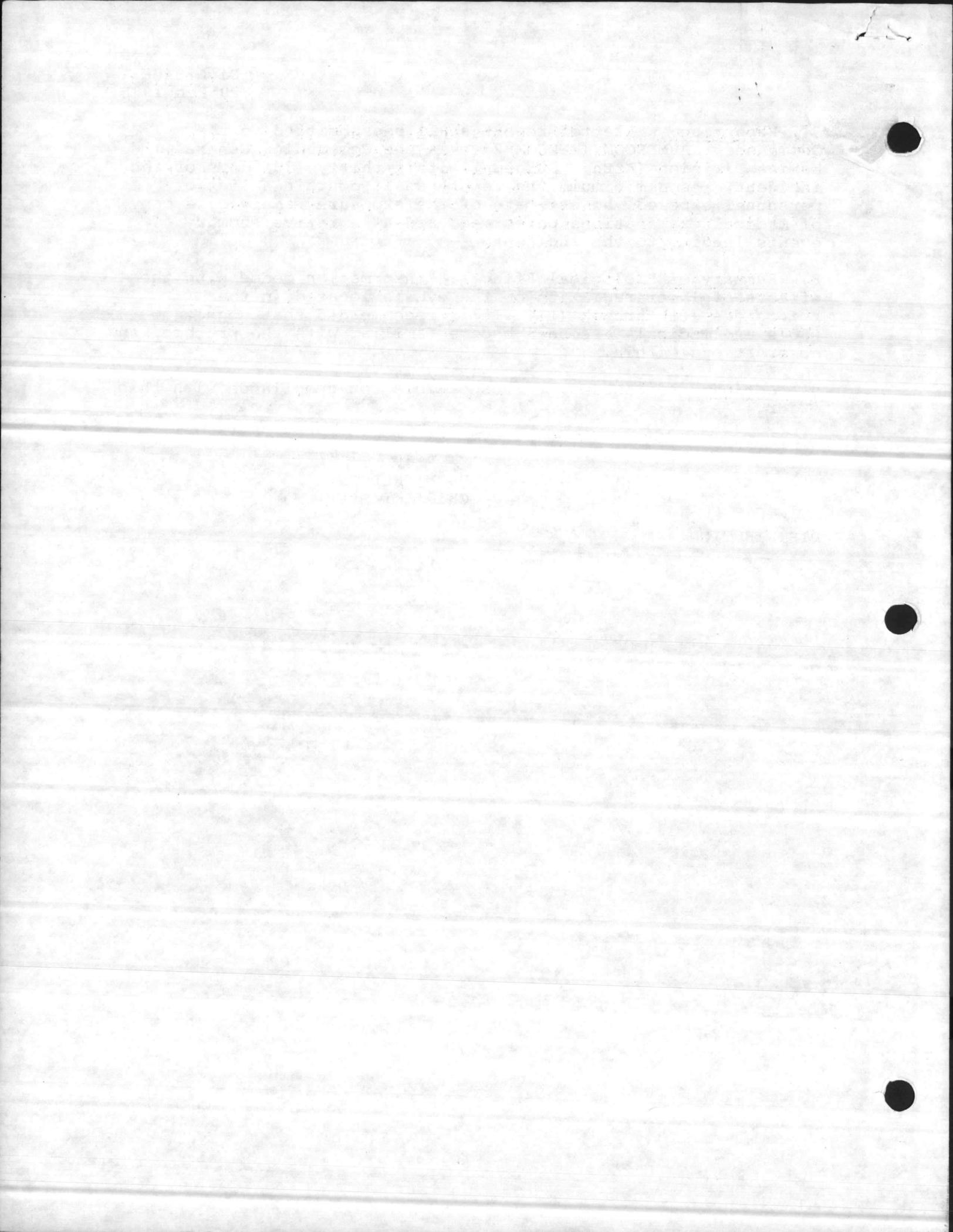
8. Summary Of Biological Effects. Information concerning the effects of laser radiation on the eye is located in the references (a) through (e). It is recommended that cognizant LSO's and medical personnel become familiar with the protocol and observations within.

9. Action. Addressees are responsible for compliance with this order.



H. M. NELSON
Chief of Staff

DISTRIBUTION: A





UNITED STATES MARINE CORPS
2d Marine Division, Fleet Marine Force
Camp Lejeune, North Carolina 28542-5500

DivO 6470.1 Ch 1
16:CFW:mem
29 May 1985

DIVISION ORDER 6470.1 Ch 1

From: Commanding General
To: Distribution List

Subj: Laser Radiation Health Hazards as pertains to AN/GVS-5
Laser, Infrared Observation

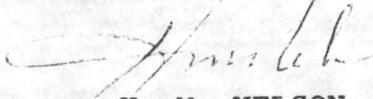
1. Purpose. To direct pen changes to the basic Order.
2. Action. Page 2, delete present paragraph 4 and add the following in place thereof.

"4. Medical Surveillance Requirements. Laser personnel, in addition to a visual acuity test, will have a full ophthalmology examination as specified in reference (b). Visual acuity tests or full ophthalmological examinations greater than three (3) years old will be considered expired and a current examination performed.

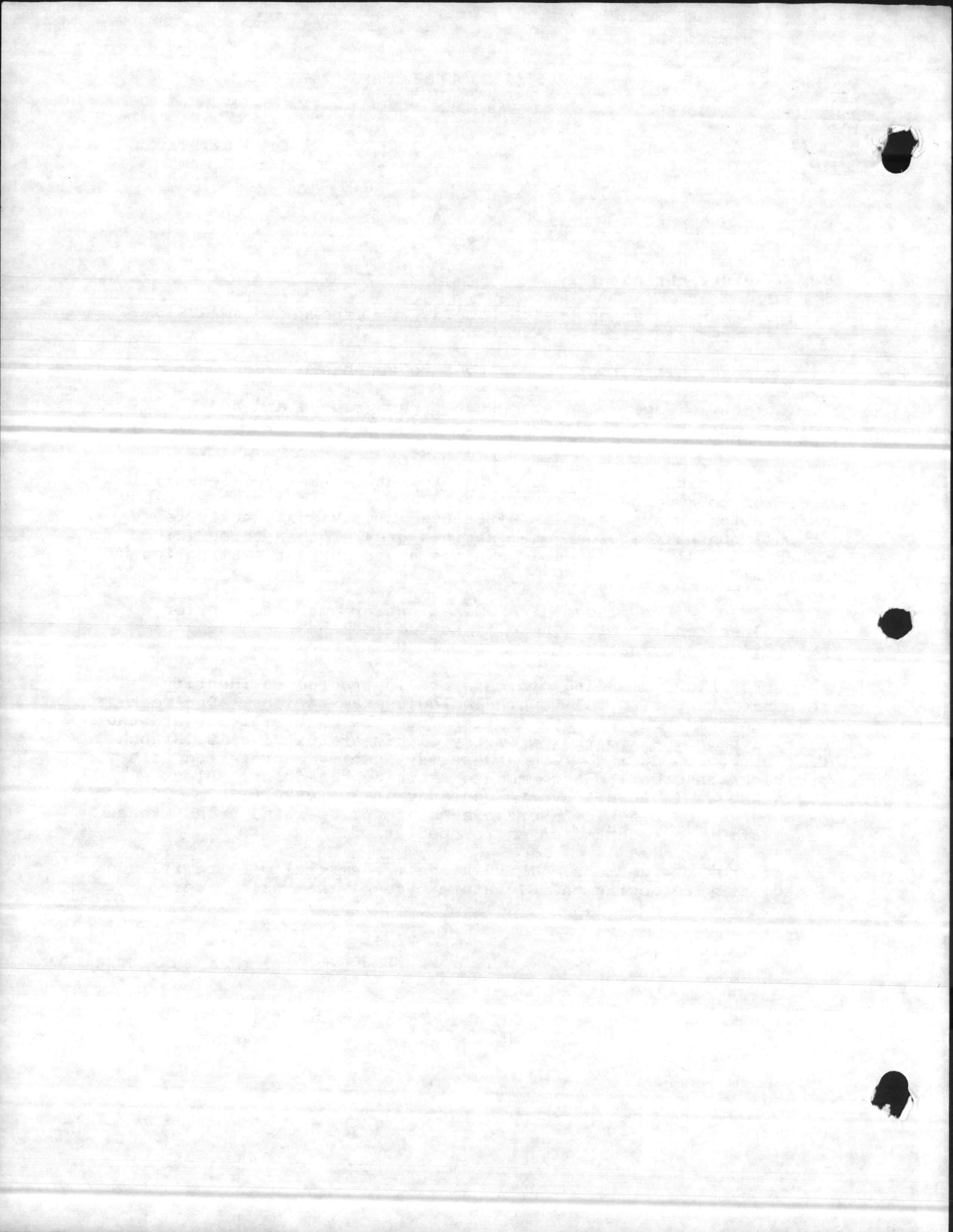
a. Pre-placement examinations are mandatory prior to using laser equipment. There is no requirement for annual or periodic re-examination.

b. Commanding officers are instructed to identify personnel requiring full ophthalmologic examinations. One week prior to the requested examination date the unit will forward the list of personnel to the Optometry Clinic at Building 15, Branch Clinic for scheduling. Commanders may specify a preferred date and block in order to accommodate training schedules. Block times are as follows: Every Wednesday 0730, 0930, 1300 - 20 personnel each block. Lasers are not to be operated unless these examinations are certified and/or performed."

3. Filing Instructions. This Change transmittal will be filed immediately following the signature page of the basic Order.


H. M. NELSON
Chief of Staff

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UNITED STATES MARINE CORPS
2d Marine Division, Fleet Marine Force
Camp Lejeune, North Carolina 28542-5500

IN REPLY REFER TO
DivO 6470.1 Ch 2
16:SJH:bpc
19 Feb 1986

DIVISION ORDER 6470.1 Ch 2

From: Commanding General
To: Distribution List

Subj: Laser Radiation Health Hazards as pertains to AN/GVS-5 Laser,
Infrared Observation

1. Purpose. To direct a pen change to the basic Order.
2. Action. In the basic Order, page 2, paragraph 6d, second line change the word "funds" to read "fundus".
3. Filing Instructions. This Change transmittal will be filed immediately following the signature page of Change 1 of the basic Order.

A handwritten signature in cursive script, appearing to read "H. M. Nelson".

H. M. NELSON
Chief of Staff

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