U.S. NAVAL MEDICAL RESEARCH LABORATORY

Submarine Base, New London, Conn.

U.S. NAVAL MEDICAL RESEARCH LABORATORY
U. S. Naval Submarine Base
Groton, Connecticut

MEMORANDUM REPORT NO. 63-2

LIGHTING SURVEY ON U.S.S. IREX (SS482)

MR005.14-1100-1.10 1 March 1963

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SUMMARY PAGE

THE PROBLEM

To conduct a lighting survey aboard the U.S.S. IREX to determine the adequacy of existing illumination.

FINDINGS

Most of the lighting is by incandescent bulbs, often unshielded. The general level of illumination in work areas was found to be very low, generally much below acceptable levels.

APPLICATION

The information presented in this report lists the steps that should be taken to bring the illumination throughout this vessel up to minimum standards.

ADMINISTRATIVE INFORMATION

This investigation was undertaken as a part of Bureau of Medicine and Surgery Research Task MR005.14-1100-1, as a part of Subtask (1), Submarine Photometric Surveys. The present report is No. 10 on this Subtask.

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LIGHTING SURVEY OF THE U.S.S. IREX (SS-482)

NATURE OF REQUEST: That personnel of the Naval Medical Research Laboratory determine what improvements are needed in the lighting aboard U.S.S. IREX to satisfy minimum habitability and safety standards.

REQUEST BY: CO ltr U.S.S. IREX SS482/BJS:gjl 9500 of 21 Feb 1963.

DATE OF THE SURVEY: 5 March 1963.

GENERAL FINDINGS: Most of the lighting is by incandescent bulbs, often unshielded so as to give more light. The general level of illumination in work areas was found to be very low, generally much below acceptable levels.

GENERAL RECOMMENDATIONS:

1) Lighting levels should be brought up to around 20 foot-candles.

2) The replacement of incandescent bulbs by fluorescent fixtures would be desirable. Additional fixtures are needed in several locations, such as the radio room, the sick-bay area, the conning tower and over the torpedoes.

SPECIFIC FINDINGS:

Forward Torpedo Room. All incandescent lamps, range is 1-10 foot-candles, but general level is 2-4 ft-c. Highest readings obtained directly under bulbs. Little light for work on torpedoes; most of light is at tubes.

Conning Tower. Very low level on conning officer's table: 1-3 ft-c. Even directly under the fluorescent fixture, level is only 8 ft-c at the torpedo data computer. On the table there are 15 ft-c under the white desk lamp. At the range indicator, 13 ft-c under the fluorescent, but the general level is very low.

Radio Compartment. There is a bare incandescent light which is an objectionable glare source. Even when fitted with a 100-watt bulb for purposes of measurement, there was only 8 ft-c directly below it. The typewriter had an illumination of 2-4 ft-c; there was 2 ft-c on the work table and 9 ft-c by the radio receiver. Too low on the work areas.

Forward Port Corner of the After Battery - Sick-bay area. There is no illumination for working, examination of patients or dispensing of drugs. Illumination on typewriter was 1.5 ft-c using the

50-watt bare incandescent bulb. Use of additional bunk lights gives very little increase while producing a great deal of glare. Except first shelf, there is no light in the storage locker where the medical supplies are kept. Thus the light level on the second shelf is about 0.1 ft-c.

Engine Rooms. All incandescent lights. The light level is surprisingly even, but it is about 2 ft-c too low for the work that must be done on the engines.

Maneuvering Room. Only 1-6 ft-c on engine control console. An auxiliary light under the housing would be desirable. The incandescent lights gave 4-6 ft-c on the paralleling switchboard.

After Torpedo Room. Worse than Fwd torpedo room. 1-4 ft-c around the torpedoes making it difficult to work on them; maximum of 5-6 ft-c near the tubes with a low of 1.5 ft-c. Control panels had illumination of 1-2 ft-c.