Lighting for Underwater Photos

Committee report relative to liaison with the Illuminating Engineering Society.

INTRODUCTION

The Underwater Lighting Committee of the Illuminating Engineering Society has been active since mid-1969. One of its members, Mr. V. A. Seifert, who is also chairman of the Task Force on Cameras of the ASP Underwater Photography Committee, reported on the activities of this group and its Task Force on Lighting. In view of the common interest of the two groups in illumination as it relates to photography, an inter-society liaison has been initiated. Mr. Gomer McNeil, Chairman of the ASP Underwater Photography Committee was recently appointed to membership of the IES Underwater Lighting Committee. Mr. Jay Harford, IES committee member, has been appointed by Mr. McNeil as Chairman of the ASP Committee’s Task Force on Lighting. The intent of this report is to present a brief review of the history and accomplishments of the Illuminating Engineering Society and to review the objectives and programs of the IES Underwater Lighting Committee.

The Illuminating Engineering Society

Illumination provides an important function in virtually every phase of modern living. At the turn of the century as lighting came into more general use two needs became evident: a need for the establishment of scientific lighting standards, and a need for an organization to develop and promulgate these standards. The Illuminating Engineering Society was created in 1906 and today it is firmly established as the recognized professional authority on lighting, spokesman for the profession of illumination, and a public forum for all matters having to do with illumination. Its object is the advancement of the theory and practice of illuminating engineering and the dissemination of knowledge relating thereto.

More than 500 major firms are sustaining members, and the individual membership of over 10,000 includes lighting engineers and specialists, architects, engineers, physicians, optometrists, professors, students, consultants, lamp and equipment manufacturers, distributors and others. The Society has over 110 sections and chapters, organized into various regions in the U.S., Canada and Mexico. In a typical year, more than 800 regular and special technical meetings are held on national, state and local levels, bringing together outstanding leaders in the profession to discuss and report on the latest developments in lighting. In the area of education, basic and advanced courses in lighting and lighting design are developed and made available for presentation by Sections and Chapters. The Illuminating Engineering Research Institute, established by IES, is the independent basic research organization of...
the lighting industry. Research programs are sponsored by IERI at a number of universities.

The IES Lighting Handbook, the authoritative reference guide on lighting, is undergoing revision for publication of the fifth edition. It provides essential information on light and lighting as the result of work done by approximately thirty Technical Committees and other recognized authorities. Among the many other Society activities has been the publication of a monthly technical journal which is currently being replaced by a quarterly, *Journal of the Illuminating Engineering Society*, and a monthly application-oriented magazine, *Lighting Design and Application*.

### THE IES UNDERWATER LIGHTING COMMITTEE

Early in 1969 IES Officers recognized the need for forming a technical committee on Underwater Lighting. The first meeting of the committee, devoted to organization and establishment of programs, was held in July 1969. The Committee's scope was defined as follows: "to study lighting needs and the application of light and lighting to large underwater spaces and functions and to report thereon." The committee is composed of experts in the fields of underwater vision, photography, television and lighting. Its field of interest includes underwater lighting for visual observation and television, still photography and movie photography in both black-and-white and color.

An ambitious program of short- and long-range projects has been established on the premise that the committee should address itself to an objective of refining and advancing engineering design. The more important projects deserve mention:

- Compile and publish an annotated bibliography of papers, articles, etc., pertinent to underwater lighting and viewing.
- Establish a scientific basis for lighting design for underwater viewing by compiling and publishing a glossary of terms associated with this technology, defining parameters and describing light propagation as related to underwater conditions, and establishing recommended test and measurement techniques and instrumentation.
- Provide condensation of useful information for publication in the IES Handbook.
- Prepare pertinent articles for publication in the Society's journals.
- Arrange for informative presentations to the Society to dramatize the application, technology and problem areas of underwater lighting.
- Conduct symposia or seminars in conjunction with oceanology oriented technical societies.

The first compilation of subject matter for inclusion in the bibliography was completed mid-1970. Redrafting the material in appropriate annotated form promises to be a major undertaking and the benefits to be gained from preparing an annotated version will be reconsidered at a later date.

Entire committee effort has in the meantime been diverted to the preparation of a section on underwater lighting for the fifth edition of the IES Handbook which is scheduled for publication by January 1972. This will be the initial introduction of information on underwater lighting, making the task considerably more difficult than revision of existing material. Deadline date for submittal of manuscript permitting, the following subjects have been selected for inclusion:

- Information on the parameters of underwater lighting.
- A general discussion of the filtering properties of water.
- A list of currently available light sources applicable to underwater visual observation, television and photography, including their pertinent characteristics.
- A general review of sensor characteristics, referred to by type, which can be used as a source of information for developing associated underwater lighting equipment.
- A glossary of the most important and popular underwater lighting terms. Time and technical circumstances will not permit preparation of a comprehensive list but, rather, it is intended that an intermediate list be provided.
- If possible, provide a general discussion on test and measurement techniques and instrumentation.

Longer-range projects will include the preparation of a more complete glossary and a comprehensive treatment of test and measurement technology. Separate publication of this information, perhaps as a Recommended Practice, will be considered.

### SUMMARY

It is obvious that the projects and programs of the Underwater Lighting Committee are intended to encompass all aspects of the technology. Interprofessional liaison projects with other technical groups is encouraged by both the Illuminating Engineering Society and the American Society of Photogrammetry. Exchange of ideas and information on subjects of mutual interest and possibility of joint task groups for special assignments offer the benefits of minimizing duplication of effort and more expeditious dissemination of technical information. Initial steps to promote active liaison between the IES Underwater Lighting and the ASP Underwater Photography Committees were taken with these advantages in mind. Principals of both committees are supporting the liaison action and a beneficial working relationship is expected.