

## Introduction of

# Underwater Photography Panel

*Gomer T. McNeil, Moderator\**

**T**HE AMERICAN SOCIETY of Photogrammetry and the Marine Technology Society welcome Captain Treadwell, the distinguished participants of the Underwater Photography Panel, and our many members and guests comprising this splendid audience.

When I extended an invitation to Captain Treadwell to present a brief introduction at

\* Presented at the Annual Convention of the American Society of Photogrammetry, Washington, D. C., March 1967. The several papers follow herein.

the Underwater Photography Panel session, he graciously accepted the invitation and enthusiastically pointed out that he had planned to attend anyway. Captain Treadwell further elaborated that he could not afford to miss the session as it would be a very difficult task even for the government to contract at one time the services of all the experts constituting the panel. It is my honor and pleasure to present the Deputy Oceanographer of the U.S. Navy, Captain T. K. Treadwell.

## Introductory Remarks

*Captain T. K. Treadwell, U. S. Navy*

**I** WOULD LIKE TO make it immediately clear that I am here primarily to listen, not to talk. Gomer McNeil has set up a fine slate of speakers and we will all benefit a great deal more from listening to them than to me.

As a hydrographer, cartographer, and photogrammetrist recently converted to oceanography, I am particularly happy that this panel has been arranged. One of the principal things that we have to avoid in present day technology is re-inventing the wheel; all too frequently workers in one discipline will be unaware of the fact that much applicable work has been done already in other fields. I suspect that this may well be the case in underwater photography; many of the things that photogrammetrists and optical experts have considered routine for years may be unknown to the bulk of underwater scientists. Meetings like this provide an excellent opportunity to exchange information in both directions.

There are still a great many reasons why the human eye is a very valuable piece of survey equipment. It can assimilate and evaluate great masses of information, and provide a subjective approach which is extremely difficult to get through any piece of optics or a computer. For this reason many of our early underwater ventures have relied primarily upon the human element, and this approach will certainly continue until we know a lot more surveying, however, the eye has always had several limitations, and these are as valid under water as they are on dry land. In the first place, human memory being what it is, the impressions received are essentially fugitive. There is no permanent record of the details that one observes so vividly during the course of a dive to the ocean's bottom. Again, except for gross estimates, human vision is essentially non-metrical; that is to say, it cannot be relied upon for accurate measurements of physical dimensions necessary for cartographic compilations.

Photography, either under water or in the air, admirably supplements the eye in these matters, since it provides not only a permanent record but under proper circumstances is metrical to almost any required degree of accuracy. I foresee that as we

pass from the exploratory stage in underwater work, into the more routine phases of survey and exploitation, that photography and photogrammetric techniques will be increasingly used. We will hope to turn to people like you in the American Society of Photogrammetry, for assistance in attacking our specialized problems. We look forward to a long and mutually beneficial association.

Our audience this afternoon appears on the surface to be similar to the many attentive and scholarly audiences that we have enjoyed for many years at our ASP annual conventions. This condition holds true again this year; however, I must admit that our audience is heavily loaded. Yes, we have imported professional ringers, as a figure of speech, to assure a lively discussion period later in the program. Since the effectiveness of the discussion period is the key to the success of this session, I have extended invitations for audience participation to personnel from the Naval Air Systems Command, Naval Photographic Center, Naval Reconnaissance and Technical Support Center, Naval Research Laboratory, Navy Mine Defense Laboratory and industrial organizations. Special recognition is extended to Mr. Paul Kruse of the Navy Mine Defense Laboratory for the outstanding work that he has accomplished in the initiation of meetings on underwater photography. Paul served as Chairman of the Underwater Instrumentation session at the SPIE 10th Technical Symposium in August 1965 at San Francisco. Paul also served in organizing the SPIE Underwater Photo-Optics Seminar in October 1966 at Santa Barbara. As I drove Paul to the nearest taxicab stand after a recent underwater photography seminar, he smiled as he waxed a wee bit of philosophy relative to the inevitable doom that is expressed by some who conclude that because water is dirty, photography is obviously excluded.

The initial thought for the organization of this panel occurred at the Underwater Photography Committee meeting that was held during the June 1966 annual convention of the Marine Technology Society. During the course of business affairs, Dimitri Rebikoff, Chairman of the Underwater Photography Committee, requested nominations for task chairmen of standards committees for lighting, optics, and film. Dr. Harold Edgerton was elected Chairman, Underwater Lighting Standards Committee. Dr. Edgerton then nominated me for Chairman of the Optics Standards Committee. I thanked Dr. Edgerton for his generous gesture; however, I was obliged to decline the nomination in deference

to a professional optical designer or physicist. Then Dr. Edgerton, in his unique style, returned to the floor and emphasized that much can be gained immediately in underwater photography by exploiting and utilizing the background and experience of the photogrammetrist. Needless to say that when Dr. Edgerton had finished his eloquent dissertation, a photogrammetrist was elected as Chairman, Optics Standards Committee. Based on the photogrammetric interest displayed by Dr. Edgerton, it then occurred to me that an underwater photography panel co-sponsored by the American Society of Photogrammetry and the Marine Technology Society would be a worthwhile inter-society effort.

Following the MTS meeting, I telephoned our ASP President, Captain Swanson, and recommended that it was timely for the American Society of Photogrammetry to present a panel on Underwater Photography during the annual convention. President Swanson's affirmative response was in the order of milliseconds. Within five minutes I received a telephone call from Glenn Welden, Chairman, Technical Program Committee, advising that the Underwater Photography Panel was already programmed for the annual convention.

I then contacted Dimitri Rebikoff, Chair-



GOMER T. MCNEIL, MODERATOR



man of the Underwater Photography Committee of the Marine Technology Society, to obtain official approval from the MTS to co-sponsor the Underwater Photography Panel with the American Society of Photogrammetry. RAdm. M. H. Simons, Jr., Executive Secretary, presented a hearty official approval of the Marine Technology Society.

The American Society of Photogrammetry has been engaged for more than thirty years in the art and science of recording, reading, and measuring photographs. With a humble beginning these functions were pursued effectively in the initial role of mapping the face of mother earth. Then came the challenge and objective of outer space. The American Society of Photogrammetry was the nucleus for other scientists and engineers with a diverse knowledge to join with the mother

lode. The combined nuclei proceeded to fulfill the initial objectives of outer space. The American Society of Photogrammetry remains as a living nucleus once again to be joined by other disciplines to meet and solve some of the objectives of inner space.

The purpose of the Underwater Photography Panel is (1) to establish the philosophy of where we have been, where we are, and where we are going, (2) to establish a working inter-society relationship of technical information dissemination, and (3) to expose the membership of the American Society of Photogrammetry to the problems of underwater photography in the interest of soliciting their photogrammetric capabilities in quantitative and qualitative analyses for the solution of some of the problems of inner space.

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