

Accession No.: 86-47

PROCESSING RECORD
SCRIPPS INSTITUTION OF OCEANOGRAPHY ARCHIVES

University of California Division of War Research

University of California Division of War Research Reports, 1942-1946

Physical Description: 4 mss

Description: This collection includes original copies of University of California Division of War Research reports that were received as items in personal libraries donated to the SIO Library. They were gathered into this collection, and comprise a few, but not many, of the UCDWR reports.

Related Collections: Collection 86-14 is a much larger collection of UCDWR reports, primarily photocopies received from the U.S. Navy's library in Point Loma [currently named SPAWAR Library, formerly NRad, NOSC, NEL). UCDWR reports in Accession Number 86-14 cover the following periods: UCDWR, n.d., April 1941-October 1946; Navy Radio and Sound Laboratory, n.d., December 1940-October 1945; and Navy Electronics Laboratory, January 1952-December 1953.

A complete bibliography of all UCDWR reports was prepared at the end of the contract period and is published in the "Completion Report Covering Operations of the UCDWR..." within Appendix A (technical bibliography) and Appendix B (patent bibliography) of

Completion Report Covering Operations of the UCDWR at the U.S. Navy Electronics Lab...Under Contract Nobs-2074 from 26 April 1941 to 30 June 1946, n.d.

A complete set of reports of the UCDWR is located at the SPAWAR Library in San Diego.

Administrative History: The University of California Division of War Research was created in response to the escalation of hostilities in Europe. A committee of the National Academy of Sciences felt a thorough survey of U.S. preparations for subsurface warfare was urgently needed. In 1941 the National Defense Research Committee (NDRC) was approached by the Chief of the Navy Bureau of Ships to assist in the development of a program to improve U.S. wartime technology. NDRC proposed a research and development program that would investigate methods for detecting submerged or partially submerged submarines. With the Navy's approval two laboratories were set up. The Atlantic coast laboratory was located at the U.S. Navy Underwater Sound Laboratory in New London, Connecticut, and was operated under a contract with Columbia University. This laboratory was mainly concerned with the development of equipment and the final design of prototype gear for submarines. The Pacific coast laboratory was located at the U.S. Navy Radio and Sound Laboratory in San Diego with the University of California acting as contract agency. This was the first collaborative effort between the Navy and the University of California on wartime research.

The UCDWR concerned itself primarily with fundamental investigations of techniques and procedures for

detecting and successfully combating submarines. Until the contracts were actually written up between NDRC and the universities, the Office of Scientific Research and Development (OSRD) assumed responsibility for the projects inaugurated by NDRC, and NDRC remained the directing body for the scientific programs. Contract OEMsr-30 between OSRD and the University of California was executed on August 15, 1941. At first several names such as University of California Division of National Defense Research and The San Diego Laboratory were attached to the original university wartime research effort. It was after the U.S. entered the war that the university changed the name to UCDWR to reflect the physical aspects of the laboratory work undertaken.

For many years UCDWR was located in the same building as the U.S. Navy Radio and Sound Laboratory at Point Loma. Problems of overcrowding occurred with the rapid growth in UCDWR and NRSL personnel. There was also confusion as a result of overlapping of certain laboratory programs. The Navy helped to alleviate some of these problems by supplying buildings for UCDWR. Procedural guidelines for duties and responsibilities for civilian and naval personnel were soon developed. Changes in laboratory organization and cooperation from the Navy fostered a close working relationship among UCDWR and NRSL, including other naval commands, U.S. Fleet Sonar School, local submarine squadron, and units of the Pacific fleet.

UCDWR has been credited with improvements to American submarines, the development of sonar devices, echo sounders, and bottom scanners. Though UCDWR was set up as a temporary wartime operation, it was decided that the work of UCDWR should continue at the end of the war, and that a long term permanent organization, rather than a temporary emergency agency such as OSRD should assume responsibility for it. On March 1, 1945, the UCDWR program was transferred to the Navy Department as contract NObs-2074 from OSRD, and the Bureau of Ships assumed responsibility for the direction of the contractor's work. Immediate action had to be taken to convert UCDWR funds and equipment over the use of a new laboratory.

When the war ended abruptly on September 2, 1945, immediate action was taken to complete all the reports for final distribution. This was a very confusing period for all departments associated with UCDWR because many UCDWR staff members had already returned to their pre-war occupations. It took many months to complete all the reports. The original bibliography of UCDWR reports was amended with additional listings of reports.

At the same time the Navy Radio and Sound Laboratory was absorbed by the Navy Electronics Laboratory which eventually inherited all the structures at the Point Loma facility. The major part of UCDWR's program was continued at NEL with NEL's authority to assume cognizance of UCDWR's work according to a schedule that was satisfactory to both programs. In the latter part of June 1946, UCDWR became the Marine Physical Laboratory. The University of California assumed responsibility for Task 10 of contract NObs-2074, which was the extended contract used to set up the new laboratory. The Marine Physical Laboratory was officially opened on June 1, 1946, the date of Carl Eckart's appointment as Director. MPL became part of Scripps Institution of Oceanography on April 1948.

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BOX REPORT

- 1 Manual of Bathythermograph Pilot Instructors, by Training Aids Unit Bathythermograph Instruction Program, 30 September 1944 [UCDWR No. M250]
- 2 Procedure for Handling Bathythermograph Data, by Sonar Data Division, 1 July 1946 [UCDWR No. M442]
- Transmission of 56-KC Sound in Deep Water, by Sonar Data Division, 30 September 1946 [UCDWR No. M440]
- Completion Report for NAD-10 Sound Beacon, by Navy Department – Bureau of Ships under Contract NObs-2074 , 1 October 1946 [File No. 09.453]
- Completion Report for NAD-6 Sound Beacon, by Navy Department – Bureau of Ships under Contract NObs-2074, October 1946 [File No. 09.452]
- Summary Report: Sound Recording at UCDWR, by U.S. Navy Electronics Laboratory, 1 October 1946 [UCDWR No. U450]
- Underwater Sound Transmission at Sonic Frequencies, by Sonar Data Division, 30 September 1946 [UCDWR No. M448]
- Sea-Going Equipment For Sonic Transmission Studies, by U.S. Navy Electronics Laboratory, 30 September 1946 [UCDWR No. M446]
- Studies of the Deep Scattering Layer, by Sonar Data Division, 30 September 1946 [UCDWR No. M445]
- Model Studies of Echo Formation, by Sonar Data Division, 30 September 1946 [UCDWR No. M443]
- 3 Study of Bottom Materials, by Sonar Data Division, 12 September 1946 [UCDWR No. M404]
- Second Model of the Automatic Receiver Gain Changer Used in Transmission Studies, Sonar Data Division, 23 March 1946 [UCDWR No. M401]
- Forward Scattering from the Deep Scattering Layer, by Sonar Data Division, 19 March 1946 [UCDWR No. M398]

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- 3 The Influence of Thermal Conditions on the Transmission of 24-KC Sound, by U.S. Navy Electronics Laboratory, 1 April 1946 [File No. 01.72]

A Proposed Method for Measurement of Swell by Observation of Ship's Roll, by Sonar Data Division, 28 June 1946 [UCDWR No. M392]

Overlays Useful in the Analysis of Sound Transmission Data, by Sonar Data Division, 10 February 1946 [UCDWR No. M391]

Status Report on Self-Noise Measurements of Sonar Installations, by Sonar Data Division, 29 December 1945 [UCDWR No. M385]

Transmission of 24-KC Sound at Short Ranges, by Sonar Data Division, 20 May 1946 [UCDWR No. M421]

Calibration Sets, UCDWR Types AP & AR, by Sonar Data Division, 10 May 1946 [UCDWR No. M420]

Preliminary Instruction Manual – NAD-10A Sound Beacon, by Navy Department - Bureau of Ships under Contract NObs-2074, 1 October 1946 [UCDWR No. M-412]

Processing Low-Frequency Sound Transmission Data, by Sonar Data Division, 10 April 1946 [UCDWR NO: M414]

Directivity Pattern of the JK Projector at 24-KC as a Function of Range, by Sonar Data Division, 25 April 1946 [UCDWR NO. M411]

Some Measurements of Reverberation and Noise in a Very Rough Sea, by Sonar Data Division, 26 March 1946 [UCDWR No. M410]

Transmission of 24-KC Sound from a Deep Projector, by Sonar Data Division, 8 April 1946 [UCDWR No. M409]

An Introduction to the Theory of Time-Series, by Sonar Data Division, 12 August 1946 [UCDWR No. M408]

Dependence of Bottom Reflection Loss on Median Diameter of Bottom Sediment Particles, by Sonar Data Division, 18 July 1946 [UCDWR No. M436]

Thermal Structure of Sweetwater Lake, by Sonar Data Division, 12 August 1946 [UCDWR No. M434]

Completion Report on Transducer Calibration Facilities and Techniques of UCDWR, by U.S. Navy Electronics Laboratory, 30 June 1946 [Report No. U435]

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- 3 Completion Report for Contour Bottom Scanner, by U.S. Navy Electronics Laboratory, 1 September 1946 [UCDWR No. U432]

 Studies of Recognition of Submarine Echoes, by Sonar Data Division, 30 September 1946 [File Report M431]

 Correlation of 24-KC Signals Received Simultaneously on Two Hydrophones, by Sonar Data Division, 1 July 1946 [File Report M429]

 Propagation of 20-KC Sound Over a Submarine Canyon, by Sonar Data Division, 7 June 1946 [UCDWR No. M428]

 Methods of Reverberation Measurements and Preliminary Analysis, by Sonar Data Division, 25 June 1946 [UCDWR No. M424]

 Summary Report: Transmission of 24-KC Sound in Shallow Water, by Sonar Data Division, 28 August 1946 [UCDWR No. M423]
- 4 Additive Analysis with Disproportionate Weighting, by Sonar Data Division, 5 December 1945 [UCDWR No. M379]

 Selection of Sonar Officers, Operators, and Maintenance Men, by U.S. Navy Electronics Laboratory, 8 February 1946 [UCDWR No. M377]

 The Additive Effects of Wind Force, Thermal Gradient, and Particle Size on the Transmission of 24-KC Sound over Sound Bottoms in Shallow Water, by Sonar Data Division, 1 December 1945 [UCDWR No. M375]

 Completion Report for Submarine Evasive Aid Navy Model NAD-3 Sound Beacon, by Navy Department Bureau of Ships, 10 April 1946 [UCDWR No. Su-364]

 Internal Waves Measured at Three Stations, by C.W. Ufford, 15 August 1945 [UCDWR No. M350]

 CXKD and Lead-Line Expendible Sounding Equipment, by U.S. Navy Electronics Laboratory, 1 June 1946 [UCDWR No. U346]

 List of Publications, by University of California Division of War Research at the U.S. Navy Radio and Sound Laboratory, 15 August 1945 [UCDWR No. M348]

 A New Method for Measuring the Acoustical Constants of Sediment Samples, by Sonar Data Division, 21 July 1945 [UCDWR No. M340]

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- 4 Preliminary Charts with Histograms for the Fourth Edition of the Sound Ranging (Sonar) Charts, by University of California Division of War Research and Woods Hole Oceanographic Institution, 8 June 1945 [UCDWR No. M326]

Underwater Noise Caused by Snapping Shrimp, by U.S. Navy Electronics Laboratory, 1 April 1946 [UCDWR No. U337]

Some Theoretical Studies of the Propagation of Sound in Shallow Water, by Glen D. Camp and Carl Eckart, 15 August 1943 [UCDWR No. U102]

Bottom Reverberation: Dependence on Frequency, by Reverberation Group, 16 June 1943 [UCDWR No. U79]

The Discrimination of Transducers Against Reverberation, by Reverberation Group, 31 May 1943 [UCDWR No. U75]

Volume Reverberation: Scattering and Attenuation vs. Frequency, by Reverberation Group, 13 April 1943 [UCDWR No. U50]

Transmission of Explosive Impulses in the Sea, by T.F. Johnston and R.W. Raitt, 2 December 1942 [UCDWR No. U8]

Reverberation Studies at 24-KC, by Reverberation Group, 23 November 1942 [UCDWR No. U7]