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⑨ Technical
memo.

⑫ 7

⑬ SR 10403

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BATHY THERMOGRAPH TRACES FROM PARKA

by

⑩

Warrett N. Jones and Thomas A. Bender

USL Technical Memorandum No. 2213-118-69

⑪ 20 May 69

⑭ NUSL-TM-2213-118-69
INTRODUCTION

700501 C104

The first transit leg of project PARKA between New London and Honolulu during the month of July, 1968, involved a number of acoustic and oceanographic missions. Among these were the systematic collection of sub-surface (depth of 100 ft.) seawater samples at frequent intervals along the entire track. The special purpose of the sampling was to establish trace metal concentrations over an extended range. Trace constituent concentration appears to be a useful parameter which aids in determining the rate and direction of motion of ocean water masses. In support of the regional seawater sampling, bathythermograph casts were taken several times a day and concurrently with water samples. Bathythermographic data provide a check on seawater movement as interpreted from the trace constituent chemistry. Bathythermograph records were also useful to NAVOCEANO's opportunity data collection program as well as to the Navy weather forecast centers.

A description of the temperature profiles is reported here for areas classified by similar bathythermographs.

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U. S. NAVY UNDERWATER SOUND LABORATORY
FORT TRUMBULL, NEW LONDON, CONNECTICUT

USL Problem No.
9-A-100-03-00/241
⑭ SR 1010301-12856

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DISCUSSION

The slides shown here are representative of a total of 73 bathythermograph lowerings made during the 6650 mile transit mentioned above. Slides Nos. 6 and 7, taken in the North Atlantic between New London and the Windward Passage, show an early summer trace in which the isothermal layer, developed through turbulent mixing from winter storms is disappearing and a pronounced thermocline is developing. Slides Nos. 13 and 17, taken in the Caribbean Sea show a marked isothermal layer, probably due to the northeast trade winds.

Crossing into the Pacific Ocean a marked cold water mass becomes apparent a short distance beneath the surface. This is shown in Slides Nos. 24 and 28 where there is a 24°F drop in temperature within 180 feet from the surface. During this portion of the trip the SANDS proceeded northwesterly along the coast of Central America. The cool water, lying just beneath the heated surface water, and apparently a remnant of the Humbolt Current does not disappear until reaching the vicinity of Slide No. 44.

The northeast trade winds apparently exert their influence in that all traces west of Slide No. 48 are characterized by an isothermal layer that extends, at times, to depths greater than 200 feet, as shown in Slide No. 62.

Progressing westward across the Pacific there now becomes apparent a noticeable drop in the surface water temperature. It goes below 75°, as seen in Slide No. 48, before rising again gradually to 79° in the area of Slide No. 72 where it remains constant to the conclusion of the cruise on 1 August in Honolulu.

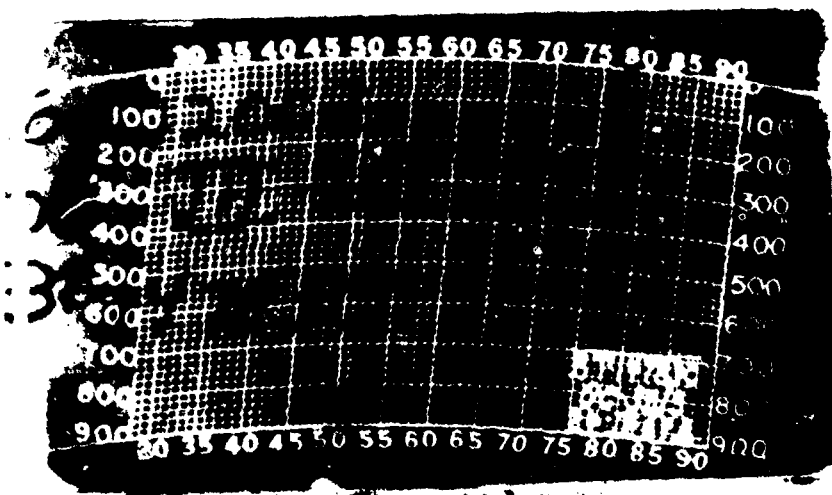
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Everett N. Jones

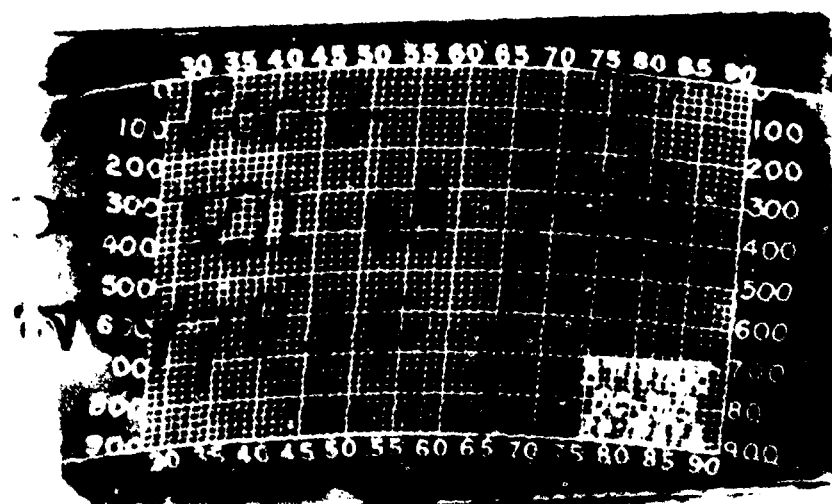
EVERETT N. JONES
Chemical Oceanographer

Thomas A. Bender

THOMAS A. BENDER
Physical Oceanographer



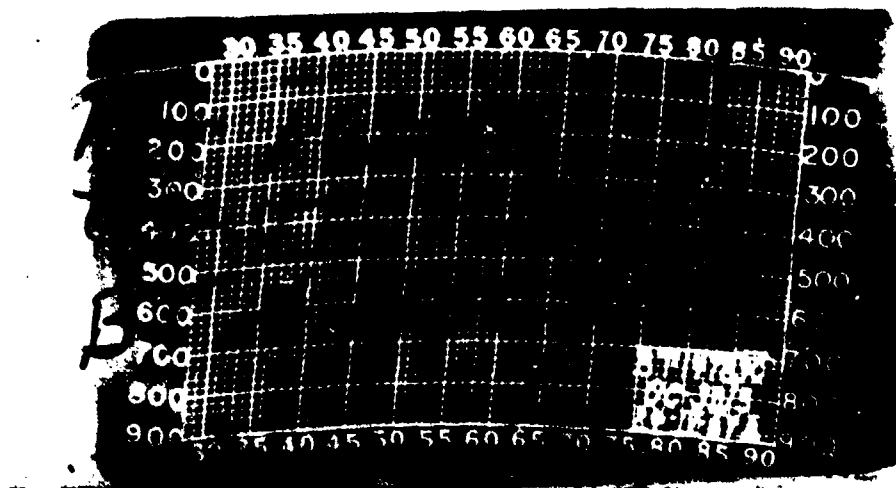
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72°41'W



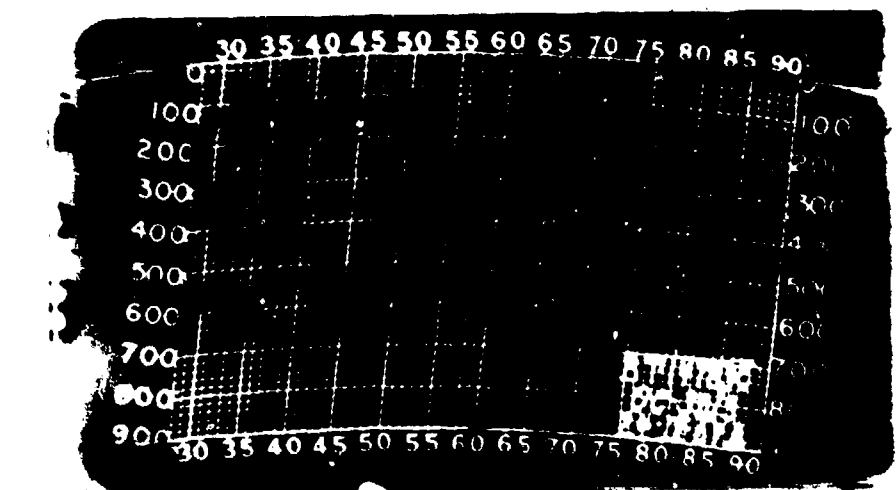
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NP24 - 35545 - 4 - 69

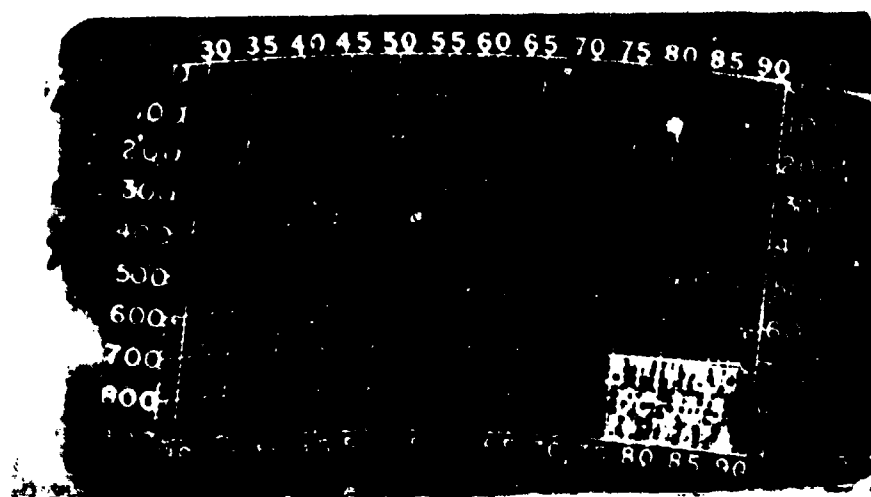
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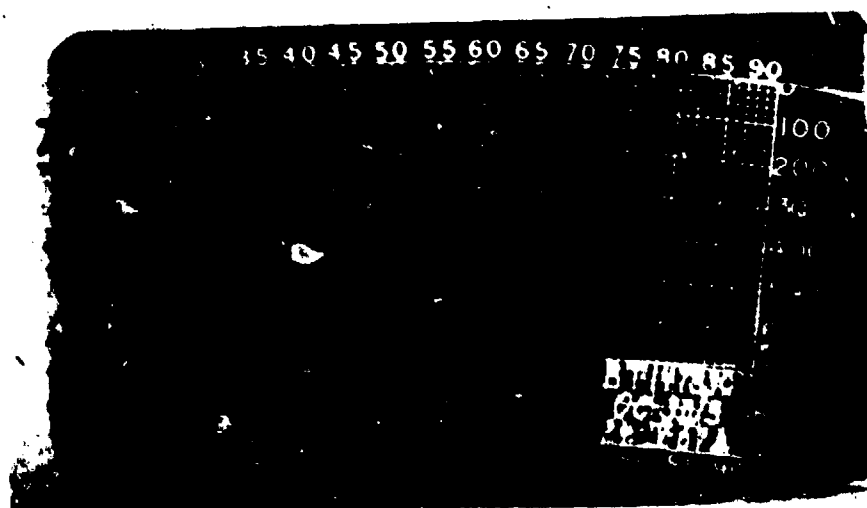
17°13'N
75°46'W



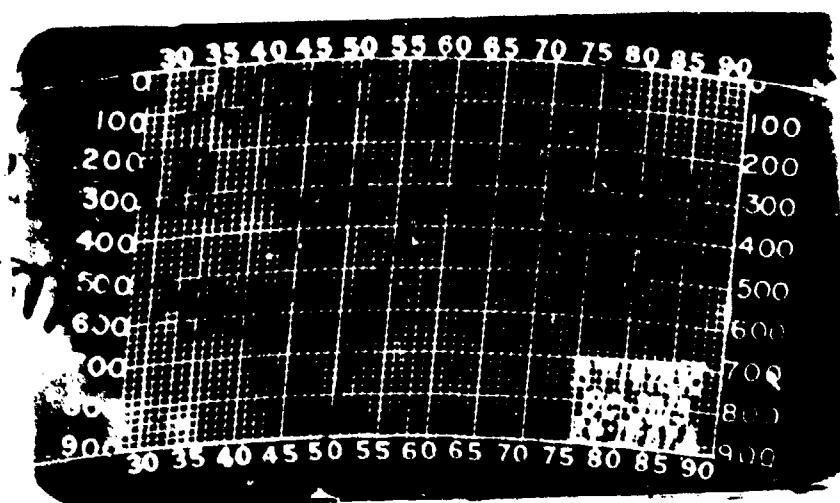
13°42'N
77°48'W



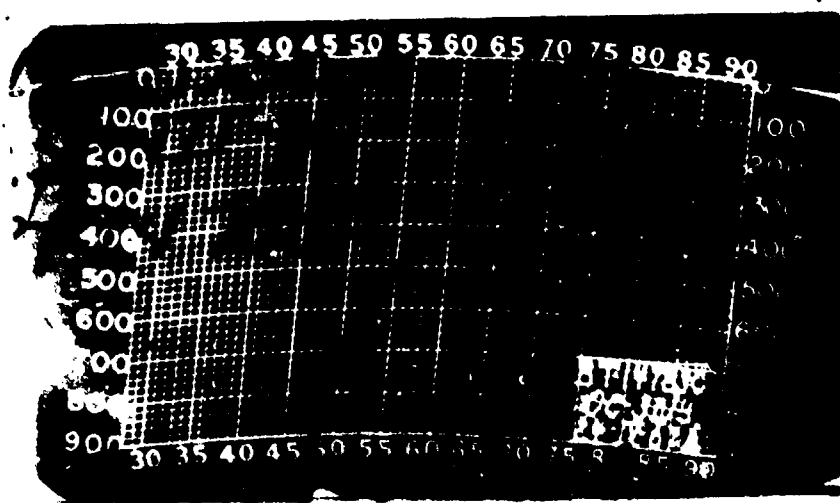
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87°09'W



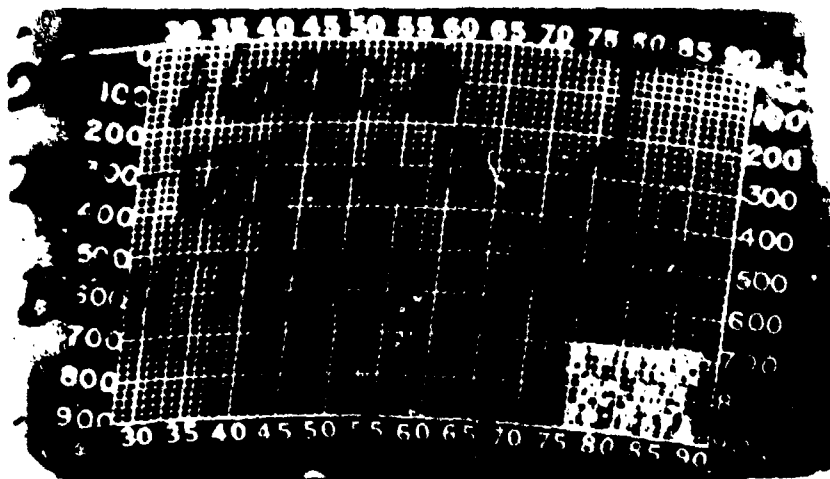
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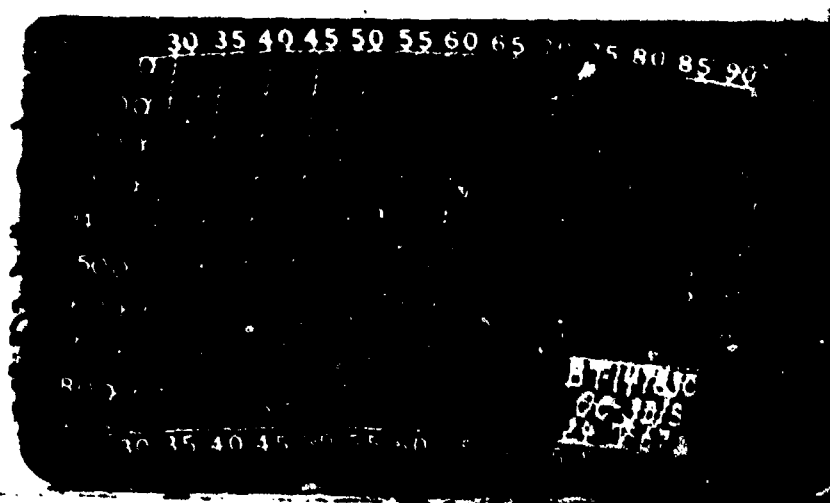
20°33'N
117°48'W



20°46'N
122°28'W



22°00'N
143°43'N



21°26'N
155°19'W

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800 NORTH QUINCY STREET
ARLINGTON, VA 22217-5660

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10 Mar 99

From: Chief of Naval Research
To: Commander, Naval Meteorology and Oceanography Command
1020 Balch Boulevard
Stennis Space Center MS 39529-5005

Subj: DECLASSIFICATION OF PARKA I AND PARKA II REPORTS

Ref: (a) CNMOC ltr 3140 Ser 5/110 of 12 Aug 97

Encl: (1) Listing of Known Classified PARKA Reports

1. In response to reference (a), the Chief of Naval Operations (N874) has reviewed a number of Pacific Acoustic Research Kaneohe-Alaska (PARKA) Experiment documents and has determined that all PARKA I and PARKA II reports may be declassified and marked as follows:

Classification changed to UNCLASSIFIED by authority of Chief of Naval Research letter Ser 93/160, 10 Mar 99.

DISTRIBUTION STATEMENT A: Approved for public release. Distribution is unlimited.

2. Enclosure (1) is a listing of known classified PARKA reports. The marking on those documents should be changed as noted in paragraph 1 above. When other PARKA I and PARKA II reports are identified, their markings should be changed and a copy of the title page and a notation of how many pages the document contained should be provided to Chief of Naval Research (ONR 93), 800 N. Quincy Street, Arlington, VA 22217-5660. This will enable me to maintain a master list of downgraded PARKA reports.
3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

PEGGY LAMBERT
By direction

Copy to:
NUWC Newport Technical Library (Code 5441)
NRL Washington (Mary Templeman, Code 5227)
NRL SSC (Roger Swanton, Code 7031)
✓DTIC (Bill Bush, DTIC-OCQ)

LISTING OF KNOWN CLASSIFIED PARKA REPORTS

Operation Plan, Pacific Acoustic Research Kaneohe-Alaska PARKA Experiment, Undated, ONR, 48 pages
(NUSC NL Accession # 49531)

Fleet Research Project 109 PARKA II, Undated, COMASWFORPAC-OPORD-303-69, Antisubmarine Warfare Force, Pacific Fleet, Unknown # of pages
(NUSC NL Accession # 093561)

Preliminary Operation Plan Pacific Acoustic Research Kaneohe-Alaska PARKA Experiment, June 1968, ONR, Unknown # of pages
(NUSC NL Accession # 023063)

LRAPP Briefing Report on the PARKA Series, May 1969, MC Report 001, Maury Center for Ocean Science (ONR), 20 pages
(NUSC NL Accession # 023375)

Bathythermograph Traces from PARKA, 20 May 1969, NUSL-TM-2213-118-69, 7 pages
(DTIC # B952 259)

Bathymetric Strip Charts in the North Pacific Ocean for Project PARKA II, 20 June 1969, Naval Oceanographic Office, Unknown # of pages
(NUSC NL Accession # 051659)

PARKA II Experiment Utilizing Sea Spider ONR Scientific Plan 2-69, 26 June 1969, MC-PLAN-01, 172 pages
(DTIC # B020 846)

PARKA I - Acoustic Processing and Results, 28 July 1969, USL Technical Memorandum No. 2210-015-69, NUSC New London, 115 pages
(NUSC NL Accession # 202993-001) (NRL SSC Accession # 85009134)

A Scheduled At-Sea Simulation of Adaptive Beamforming, 19 September 1969, NUSL-TM-2211-162-69, 23 pages
(DTIC # B026 991)

Biological Data Collected on the PARKA I Transit, 23 October 1969, NUSL-TM-2213-262-69, 15 pages
(DTIC # B952 263)

PARKA I Experiment, November 1969, MC Report 003, Volume 1, Maury Center for Ocean Science (ONR), 84 pages
(NRL Accession # 466930) (NRL SSC Accession # 85004881) (DTIC # 506 209)