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NAVAL UNDERSEA WARFARE CENTER SAN DIEGO CALIF
TRANSDUCER CALIBRATION DATA. XU 1313/BQM SERIAL NUMBERS 22 AND --ETC(U)
FEB 68

F/G 17/1

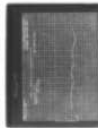
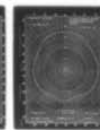
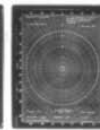
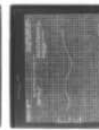
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NUWC-5688

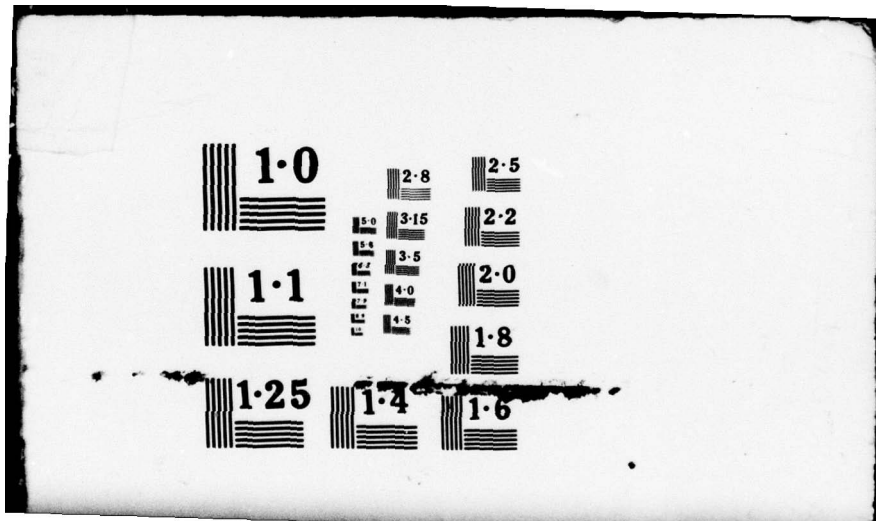
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LEVEL II

MOST Project - 4

XU 1313/BQM Serial Nos. 22 & 59

Report No. 5688 ✓ February 1968

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TRANSDUCER CALIBRATION DATA

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TRANSDUCER EVALUATION CENTER

(14) NUWC-5688

(11) Feb 68

(12) 16 p.

(6)

Transducer Calibration Data,
XU 1313/BQM Serial Numbers
22 and 59.

NAVAL UNDERSEA WARFARE CENTER
Transducer Calibration Facility
San Diego, California 92152

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C O N T E N T S ;

Report No. 5688

XU 1313/BQM S/N's 22 & 59

Page No.

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XU 1313/BQM S/N 22

Receiving Response ----- 5

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Effect of Pressure (2000 psig) ----- 9

XU 1313/BQM S/N 59

Receiving Response ----- 10

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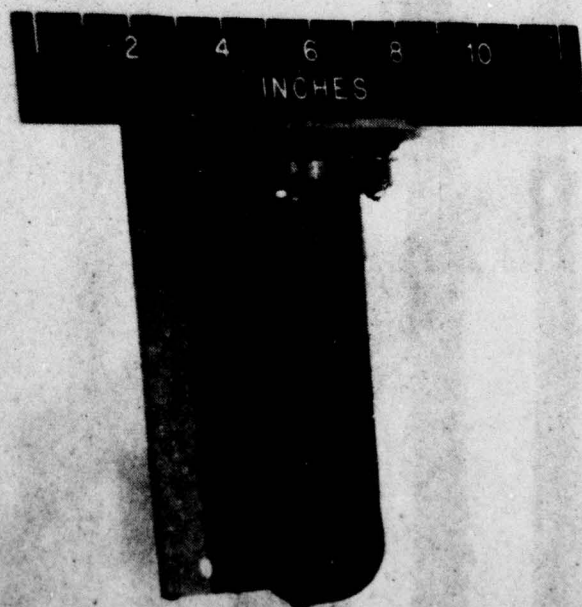
Effect of Pressure (2000 psig) ----- 13

Composite Graphs

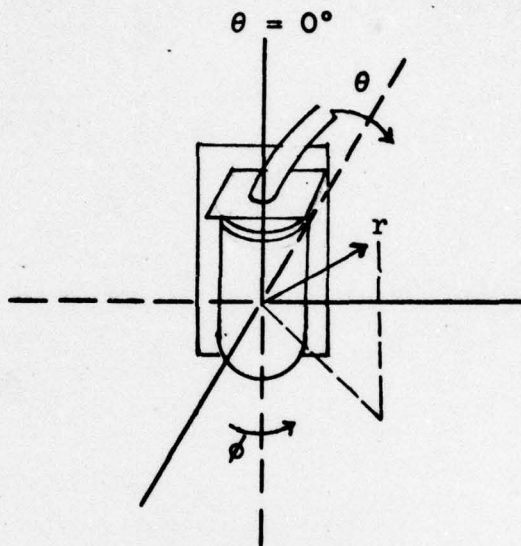
Receiving Response ----- 14

Effect of Pressure ----- 15

✓
T1067



TRANSDUCER COORDINATE DIAGRAM



The spherical coordinate system is used to define the angles in the directivity pattern: θ and ϕ shown in the above diagram give the directions in which the response is measured. The transducer is placed in the frame of reference with its axis of symmetry coincident with $\theta = 0^\circ$, its fiducial mark in the $\phi = 0^\circ$ plane, and its center at $r = 0$.

The two patterns most frequently measured are:

- (1) those made by holding ϕ constant at some angle and rotating θ through 360° .

$(\phi = a^\circ; \text{rotate } \theta)$

- (2) those made by holding θ constant at some angle and rotating ϕ through 360° .

$(\theta = b^\circ; \text{rotate } \phi)$

Measured at TRANSDEC
9 February 1968

NAVAL UNDERSEA WARFARE CENTER
Transducer Calibration Facility
San Diego, California 92152

RECEIVING RESPONSE OF XU 1313/BQM S/N 22

Temperature: 13°C
Depth: 6 meters

Open-circuit voltage measured at
the end of cable supplied with unit.

Measured in the direction of
0° on patterns.

db below 1 volt/microbar

Frequency in kHz

FIGURE 1A

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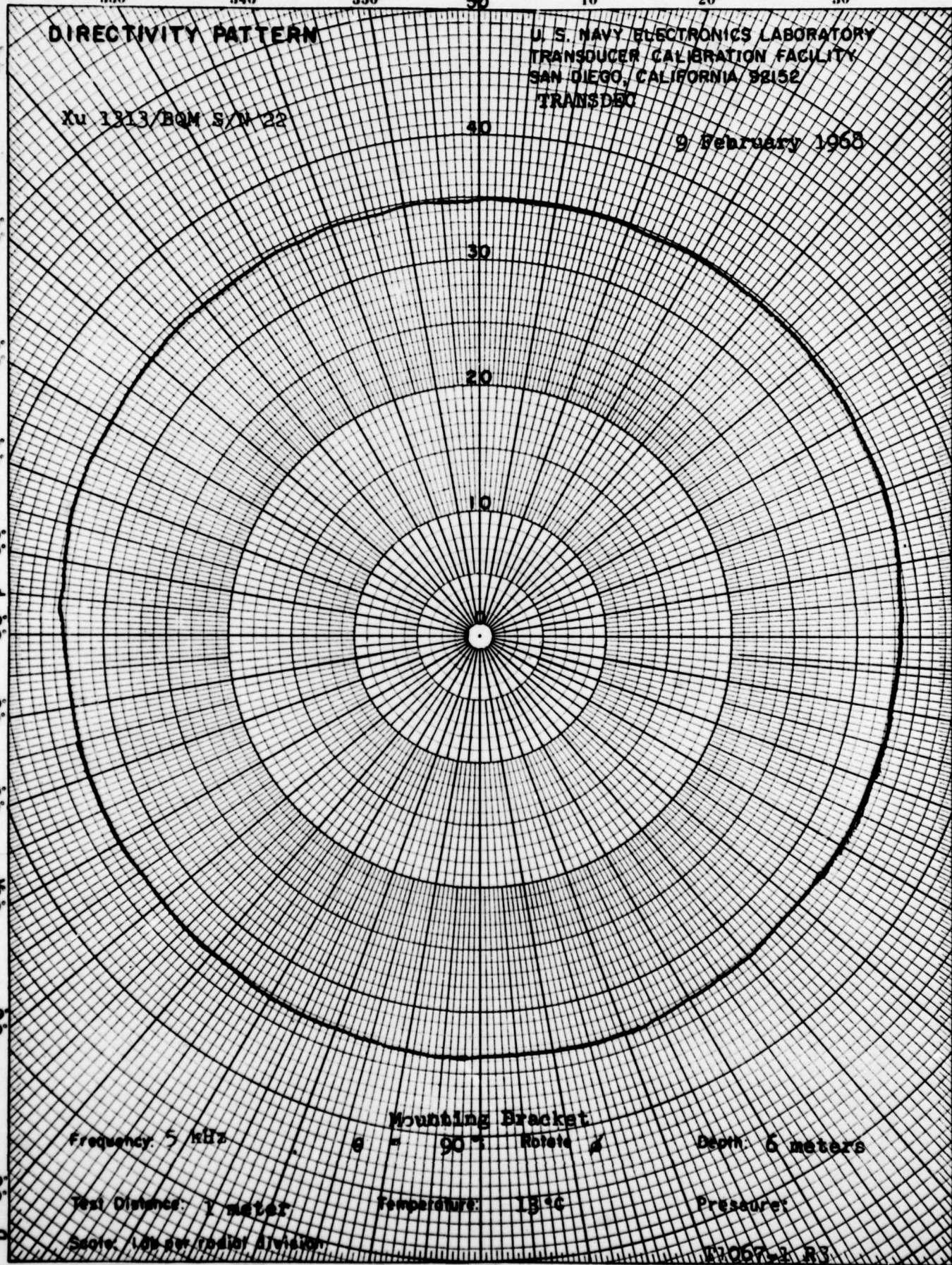
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DIRECTIVITY PATTERN

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SAN DIEGO, CALIFORNIA 92152
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Xu 1313/BQM S/N 22

9 February 1968



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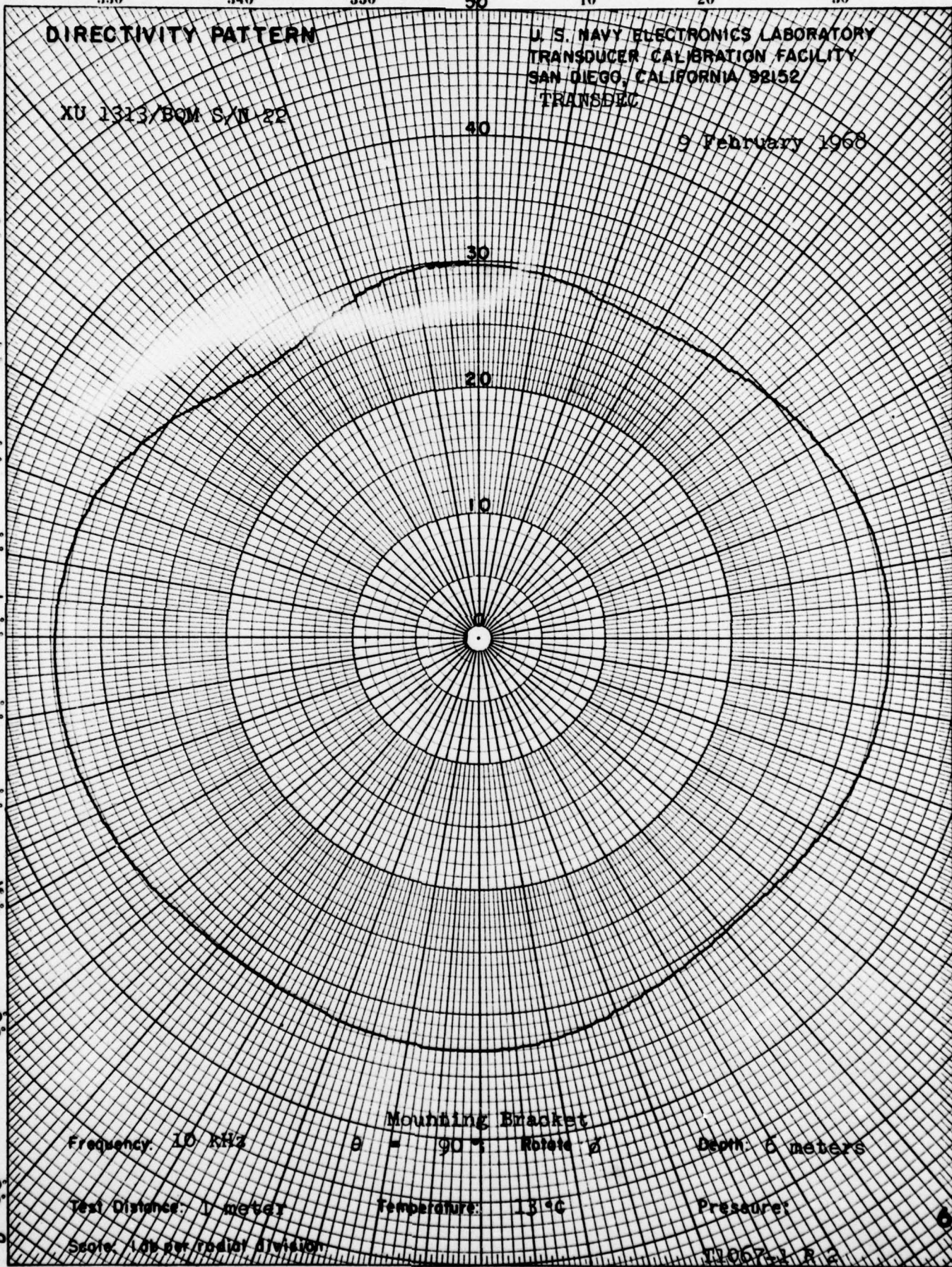
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XU 1313/BOM S/N 22

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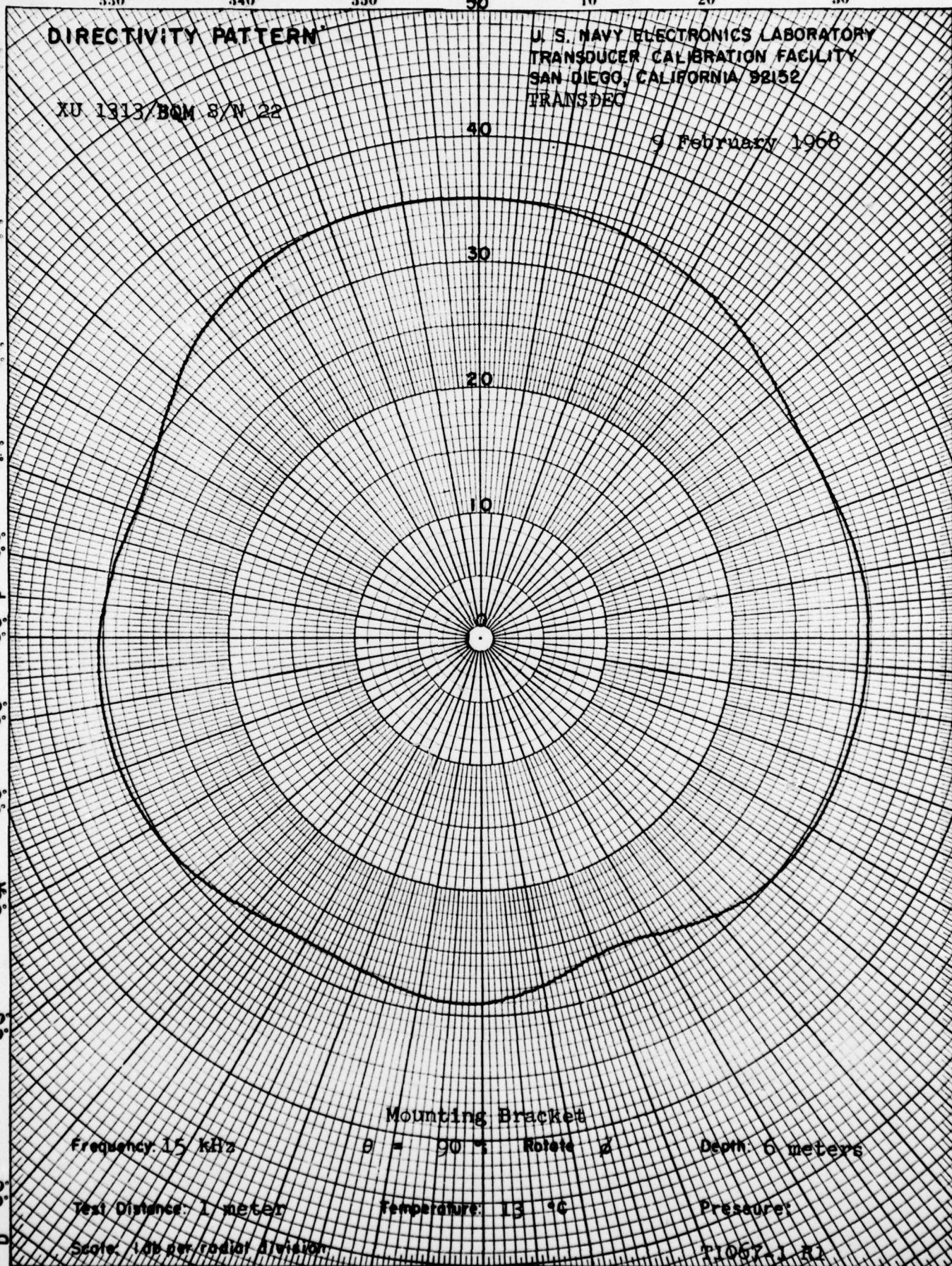
11057-1 R 2

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XU 1313/BQM 8/W 22

9 February 1968



Mounting Bracket

Frequency: 15 kHz

$\theta = 90^\circ$ Rotate z

Depth: 6 meters

Test Distance: 1 meter

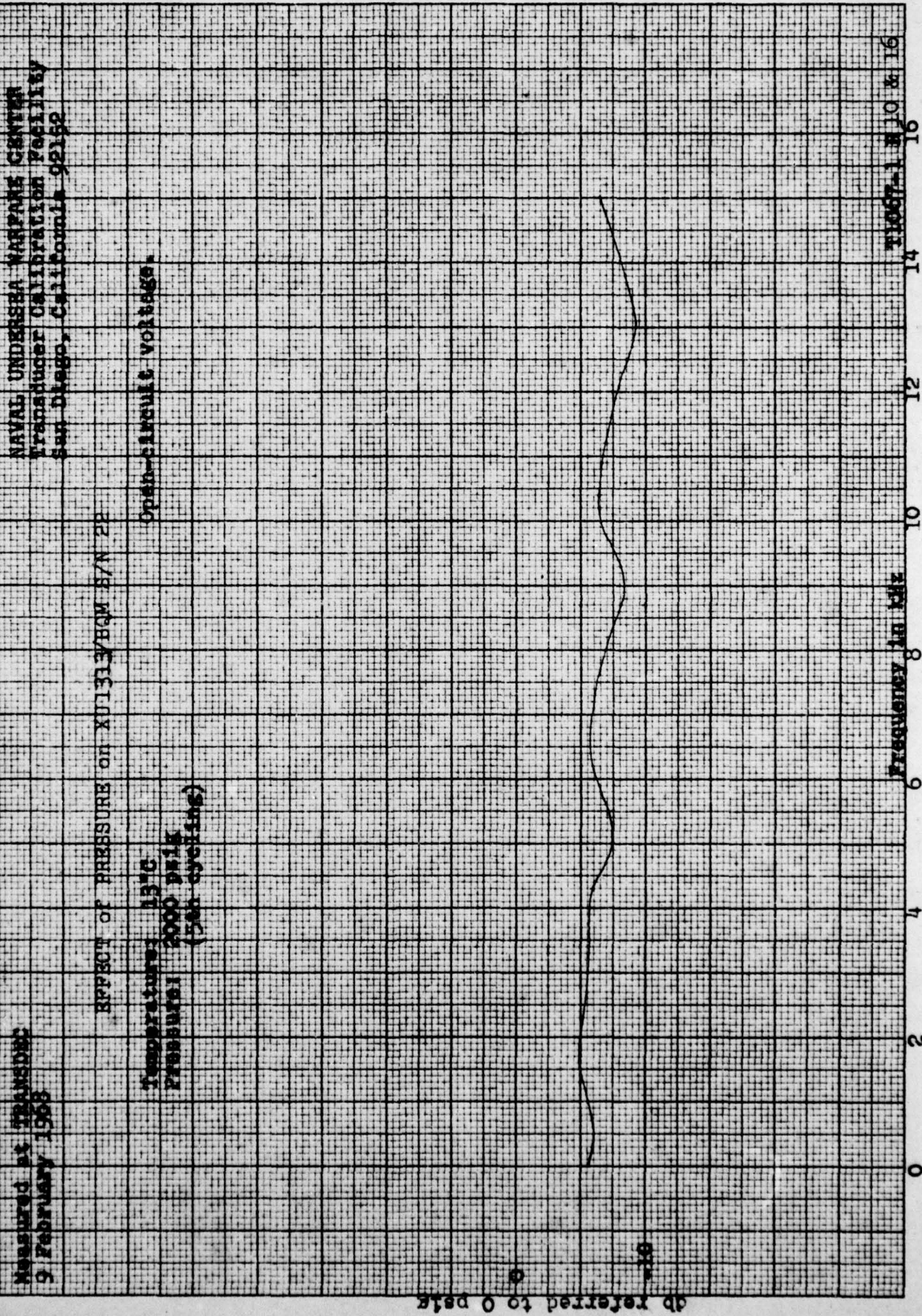
Temperature: 13 °C

Pressure:

Scale: 10 dB per radial division

T1057-1 R1

10 X 10 TO 1/2 INCH 46 1327
 7 1/2 X 10 IN. ALBANY, N.Y.
 KEUFFEL & ESSER CO.



Measured at TRANSDUCER
 9 February 1968

NAVAL UNDERSEA WARFARE CENTER
 Transducer Calibration Facility
 San Diego, California 92152

RECEIVING RESPONSE OF XU 1313/BQM 5/W 59

Temperature: 13°C
 Depth: 6 meters

Open-circuit voltage measured at
 the end of cable supplied with unit.

Measured in the direction of
 0° on patterns.

db below 1 volt/microbar
 120
 100
 80

Frequency in kHz
 0 2 4 6 8 10 12 14 16
 11067-1 R5

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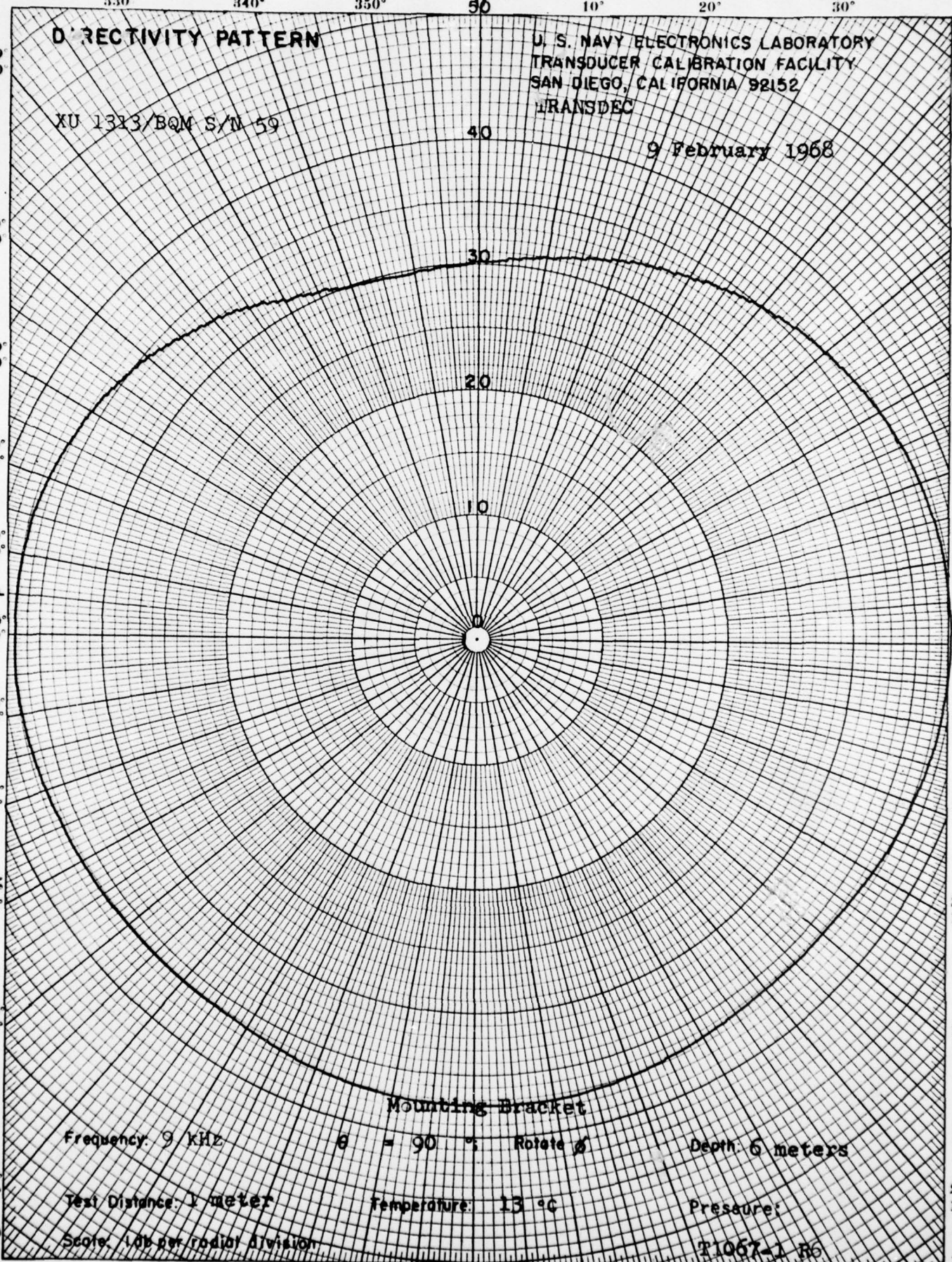
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TRANSDEC

XU 1313/BQM S/N 59

9 February 1968



Mounting Bracket

Frequency: 9 kHz

$\theta = 90^\circ$; Rotate ϕ

Depth: 6 meters

Test Distance: 1 meter

Temperature: 13 °C

Pressure:

Scale: 10 dB per radial division

T1067-1 R6

11ND-N 100/22 (REV 160)
210° 200°

170° 190°

180° 180°

190° 170°

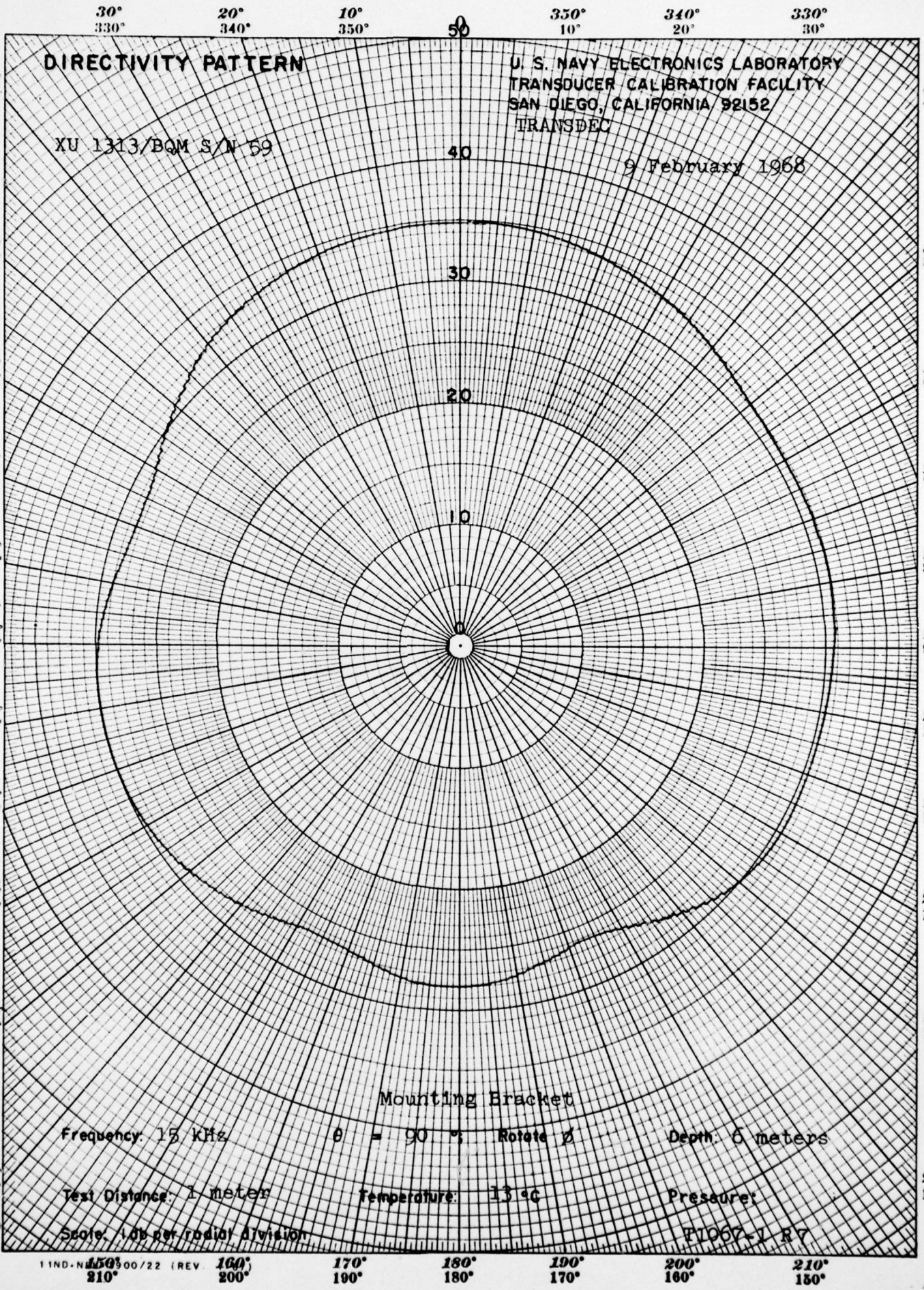
200° 160°

210° 150°

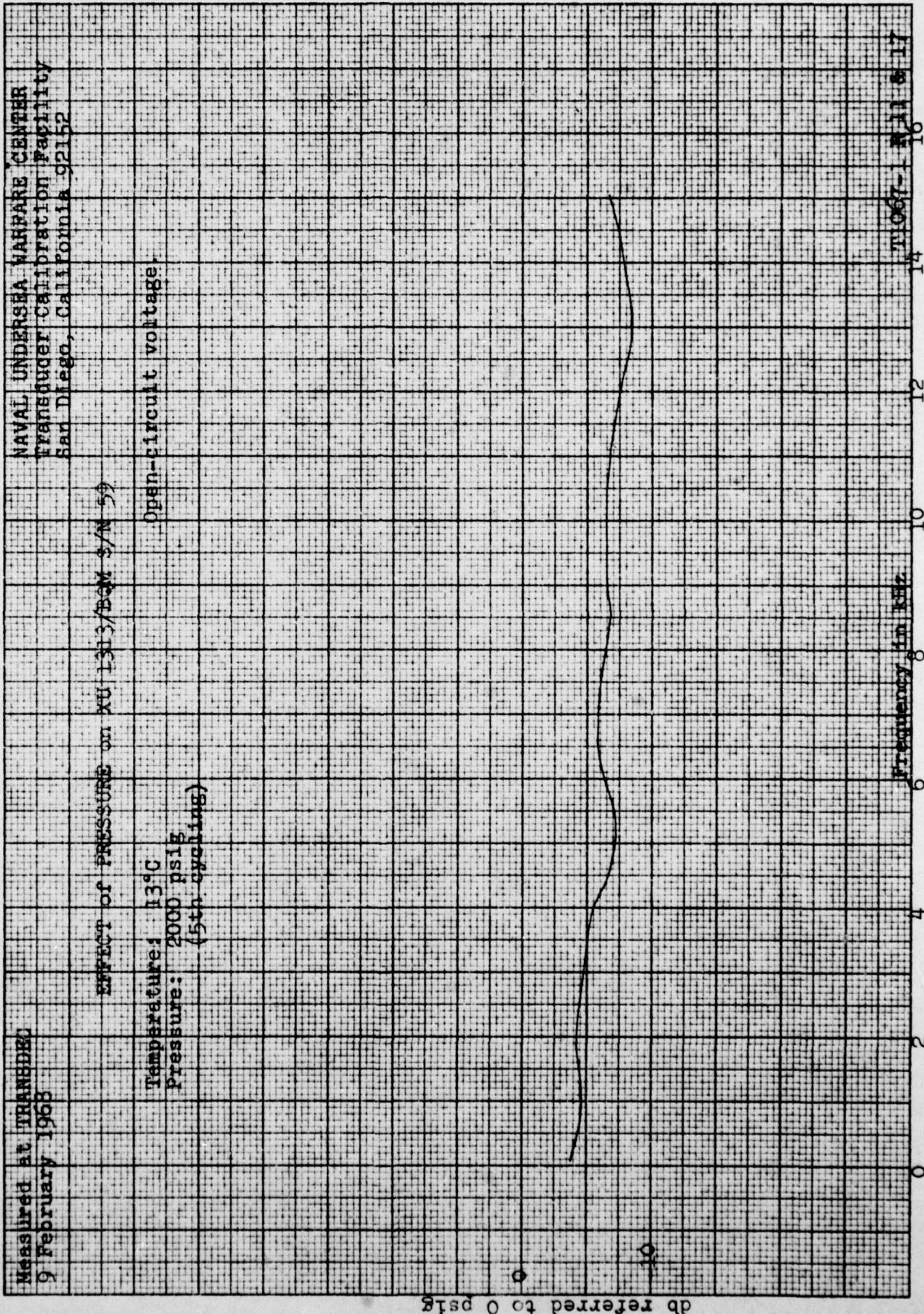
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NO. 3124, POLAR CO-ORDINATE

15Kc
128
1901



1 1/2" x 10" x 10" TO 1 1/2" x 10" x 10" 46 1327
 7/16" x 10" x 10" - ALUMINUM - 6061-T6
 KEUFFEL & ESSER CO.



Measured at TRANSDEC
 9 February 1968

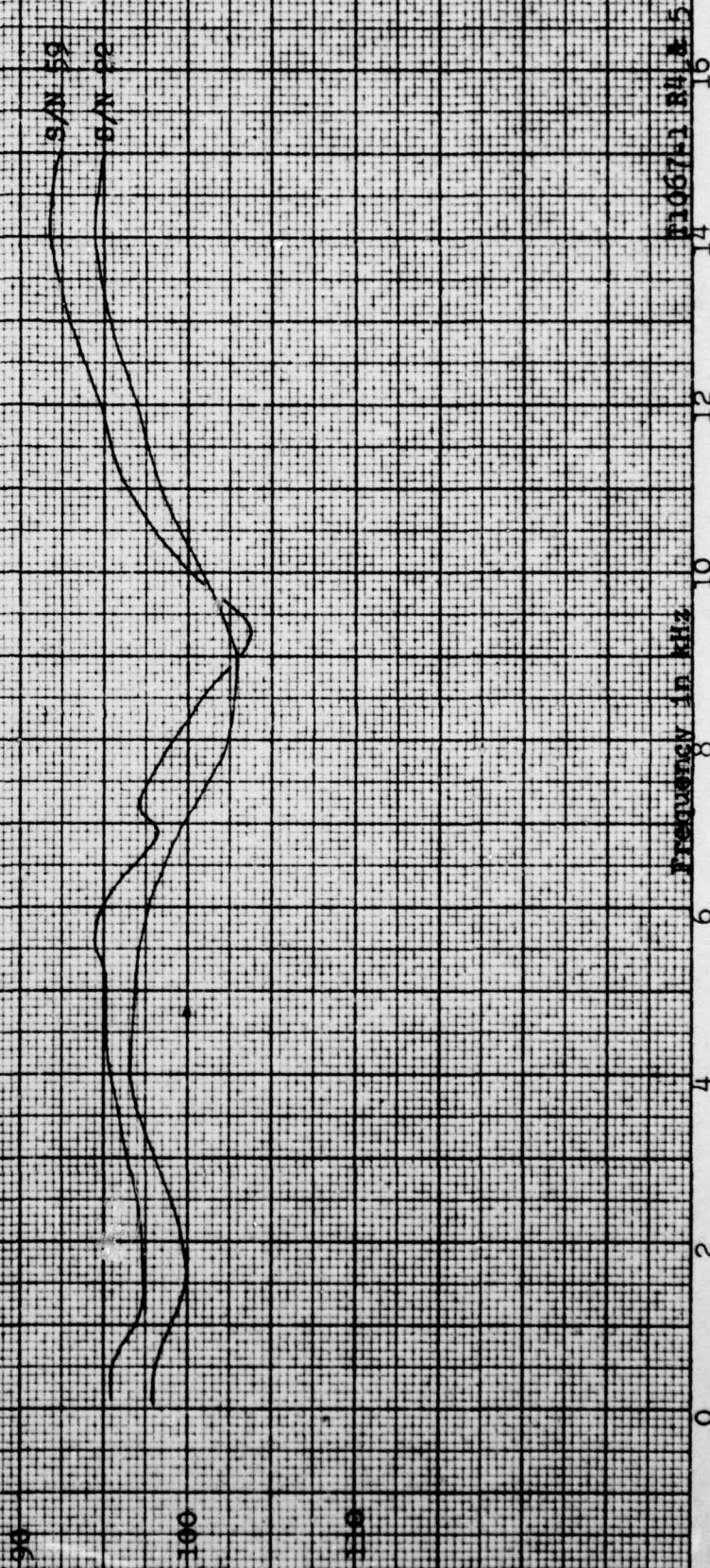
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RECEIVING RESPONSES of XU 1313/BOM S/N's 22 & 59

Temperature: 13°C
 Depth: 6 meters

Open-circuit voltage measured at
 the end of cable supplied with unit.

db below 1 volt/microbar



Measured at TRANSDEC
 9 February 1968

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 Transducer Calibration Facility
 San Diego, California 92152

EFFECT OF PRESSURE ON XU 1313/BQM S/N's 22 & 59

Temperature: 13°C
 Pressure: 2000 psig
 (5th cycling)

Open-circuit voltage.

db referred to 0 psig

