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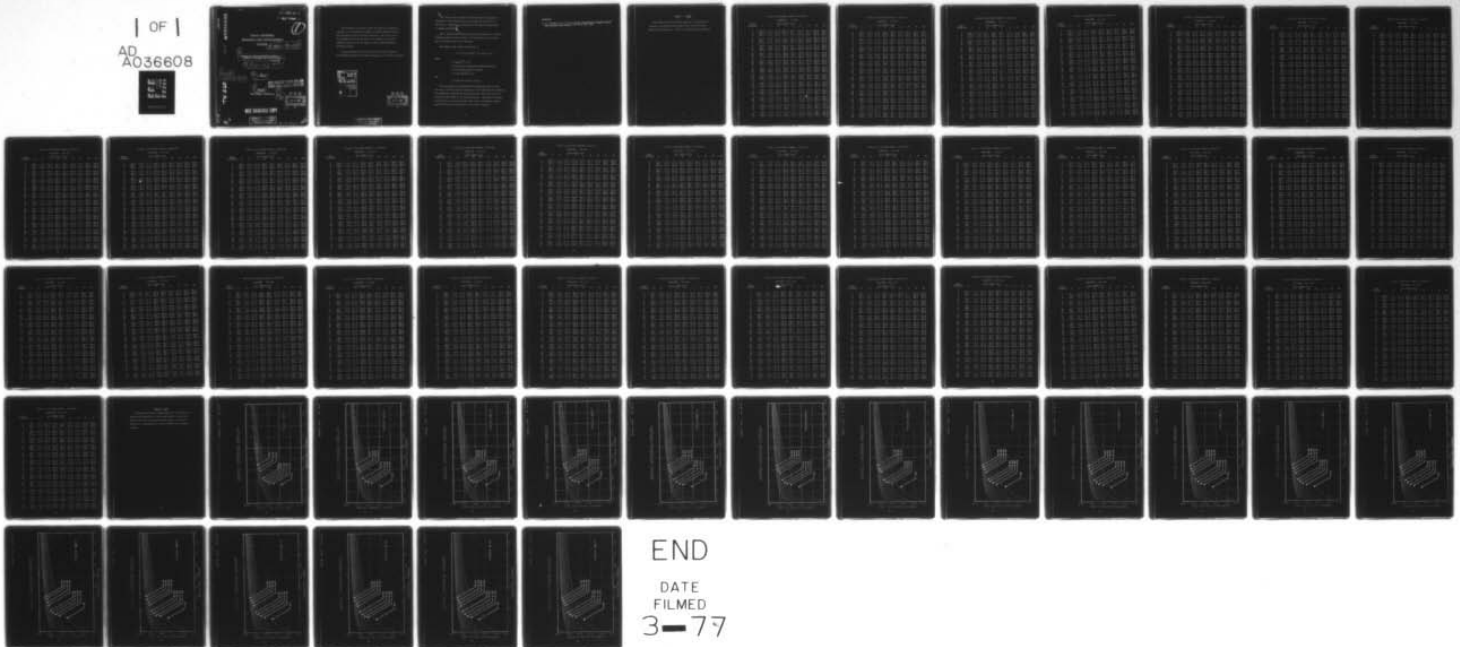
NAVAL UNDERSEA RESEARCH AND DEVELOPMENT CENTER SAN D--ETC F/G 20/1
COMPUTED SEA SURFACE SCATTERING STRENGTHS AS A FUNCTION OF FREQ--ETC(U)
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COMPUTED SEA SURFACE SCATTERING STRENGTHS AS A
FUNCTION OF FREQUENCY AND WIND VELOCITY.

9 Technical note

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By
L. P. Berger

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This technical note presents tables and plots of an expression presently in use in prediction models at the Naval Undersea Research and Development Center, San Diego, California. This note is not to be considered an official NUC report. Its purpose is to present tabulated results for use in support of sonar system performance prediction studies.

The work described in this technical note has been supported under NAVSHIP Exploratory Development subproject SF 11-121-500, Task 8704.

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↙
This report presents computer determined tabular and graphical evaluations of the backscattering of low frequency sound from the sea surface. Computations were made using the empirical expressions of Chapman and Harris. ↘

Part I contains tables giving the scattering strength as a function of grazing angle and wind velocity for 18 frequencies (.5 to 20 kHz).

Part II contains plots of this same data.

The equation used in these calculations is

$$S = 3.3 B \log (P/30) - 42.4 \log B + 2.6$$

where

$$B = 158 / (vf^{1/3})^{.58}$$

S is the surface scattering strength (db/sq yd),

P is the grazing angle in degrees,

f is the frequency in Hz,

and

v is the wind velocity in knots.

The above equation was determined from measurements made in winds from zero to 30 knots and with frequency in octave bands from 400 to 6400 Hz. For completeness, computations have been made for some cases which fall outside the data limits of the original analysis. Similarly, no attempt has been made to place a small angle lower limit on scattering strength resulting from near surface bubble or biological scatterers.

REFERENCES

1. R. P. Chapman and J. H. Harris, Surface Backscattering Strength Measured with Explosive Sound Sources, JASA, 34:10, Oct. 1962.

PART I - TABLES

The surface scattering strength (dB/sq yd) is tabulated as a function of the grazing angle (degrees) and the wind velocity (knots) for 18 frequencies. There are two pages for each frequency.

SURFACE SCATTERING STRENGTH (DB/DOYD)

ANGLE (DEGREES)	FREQUENCY .5 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-184.5	-136.2	-114.6	-101.5	-92.4	-85.6	-80.2	-75.8	-72.1
4	-152.9	-115.1	-97.9	-87.4	-80.0	-74.4	-70.0	-66.4	-63.3
6	-134.4	-102.7	-88.1	-79.1	-72.7	-67.9	-64.0	-60.8	-58.1
8	-121.3	-94.0	-81.2	-73.2	-67.6	-63.3	-59.8	-56.9	-54.5
10	-111.1	-87.2	-75.8	-68.7	-63.6	-59.7	-56.5	-53.9	-51.6
12	-102.8	-81.6	-71.4	-65.0	-60.3	-56.7	-53.8	-51.4	-49.3
14	-95.8	-76.9	-67.7	-61.8	-57.6	-54.2	-51.5	-49.3	-47.3
16	-89.7	-72.9	-64.5	-59.1	-55.2	-52.1	-49.6	-47.5	-45.6
18	-84.4	-69.3	-61.7	-56.7	-53.1	-50.2	-47.8	-45.9	-44.1
20	-79.6	-66.0	-59.1	-54.6	-51.2	-48.5	-46.3	-44.4	-42.8
22	-75.2	-63.1	-56.8	-52.6	-49.5	-47.0	-44.9	-43.1	-41.6
24	-71.3	-60.5	-54.7	-50.8	-47.9	-45.6	-43.6	-41.9	-40.5
26	-67.6	-58.1	-52.8	-49.2	-46.5	-44.3	-42.4	-40.8	-39.5
28	-64.2	-55.8	-51.0	-47.7	-45.1	-43.1	-41.3	-39.8	-38.5
30	-61.1	-53.7	-49.4	-46.3	-43.9	-42.0	-40.3	-38.9	-37.6
32	-58.2	-51.7	-47.8	-45.0	-42.8	-40.9	-39.4	-38.0	-36.8
34	-55.4	-49.9	-46.3	-43.7	-41.7	-39.9	-38.5	-37.2	-36.0
36	-52.8	-48.1	-45.0	-42.6	-40.6	-39.0	-37.6	-36.4	-35.3
38	-50.3	-46.5	-43.7	-41.5	-39.7	-38.2	-36.8	-35.7	-34.6
40	-48.0	-44.9	-42.4	-40.4	-38.8	-37.3	-36.1	-35.0	-34.0
42	-45.8	-43.4	-41.3	-39.4	-37.9	-36.5	-35.4	-34.3	-33.3
44	-43.6	-42.0	-40.1	-38.5	-37.0	-35.8	-34.7	-33.7	-32.8
46	-41.6	-40.7	-39.1	-37.6	-36.3	-35.1	-34.0	-33.1	-32.2
48	-39.7	-39.4	-38.0	-36.7	-35.5	-34.4	-33.4	-32.5	-31.6
50	-37.8	-38.1	-37.1	-35.9	-34.8	-33.7	-32.8	-31.9	-31.1
52	-36.0	-36.9	-36.1	-35.1	-34.1	-33.1	-32.2	-31.4	-30.6
54	-34.3	-35.8	-35.2	-34.3	-33.4	-32.5	-31.7	-30.9	-30.1
56	-32.7	-34.7	-34.3	-33.6	-32.7	-31.9	-31.1	-30.4	-29.7
58	-31.1	-33.6	-33.5	-32.8	-32.1	-31.3	-30.6	-29.9	-29.2
60	-29.5	-32.6	-32.7	-32.2	-31.5	-30.8	-30.1	-29.4	-28.8
64	-26.6	-30.6	-31.1	-30.8	-30.3	-29.7	-29.1	-28.6	-28.0
68	-23.8	-28.8	-29.6	-29.6	-29.2	-28.8	-28.3	-27.7	-27.2
72	-21.2	-27.0	-28.3	-28.4	-28.2	-27.9	-27.4	-26.9	-26.5
76	-18.7	-25.4	-27.0	-27.3	-27.3	-27.0	-26.6	-26.2	-25.8
82	-15.3	-23.0	-25.1	-25.8	-25.9	-25.8	-25.5	-25.2	-24.8
90	-11.0	-20.2	-22.0	-23.9	-24.2	-24.3	-24.1	-23.9	-23.6

SURFACE SCATTERING STRENGTH (DB/SDUD)

ANGLE (DEGREES)	FREQUENCY .5 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-69.0	-66.2	-63.8	-61.6	-59.6	-57.8	-56.2	-54.7	-53.3
4	-60.6	-58.3	-56.3	-54.4	-52.8	-51.3	-49.9	-48.6	-47.4
6	-55.8	-53.7	-51.9	-50.3	-48.8	-47.4	-46.2	-45.0	-43.9
8	-52.3	-50.5	-48.8	-47.3	-45.9	-44.7	-43.5	-42.5	-41.5
10	-49.7	-47.9	-46.4	-45.0	-43.7	-42.6	-41.5	-40.5	-39.6
12	-47.5	-45.9	-44.4	-43.1	-41.9	-40.9	-39.8	-38.9	-38.0
14	-45.6	-44.1	-42.8	-41.5	-40.4	-39.4	-38.4	-37.5	-36.7
16	-44.0	-42.6	-41.3	-40.2	-39.1	-38.1	-37.2	-36.4	-35.6
18	-42.6	-41.3	-40.1	-39.0	-37.9	-37.0	-36.1	-35.3	-34.6
20	-41.4	-40.1	-38.9	-37.9	-36.9	-36.0	-35.2	-34.4	-33.7
22	-40.2	-39.0	-37.9	-36.9	-36.0	-35.1	-34.3	-33.6	-32.9
24	-39.2	-38.0	-37.0	-36.0	-35.1	-34.3	-33.5	-32.8	-32.1
26	-38.2	-37.1	-36.1	-35.2	-34.3	-33.5	-32.8	-32.1	-31.4
28	-37.3	-36.3	-35.3	-34.4	-33.6	-32.8	-32.1	-31.4	-30.8
30	-36.5	-35.5	-34.6	-33.7	-32.9	-32.2	-31.5	-30.8	-30.2
32	-35.7	-34.8	-33.9	-33.0	-32.3	-31.6	-30.9	-30.3	-29.7
34	-35.0	-34.1	-33.2	-32.4	-31.7	-31.0	-30.3	-29.7	-29.2
36	-34.3	-33.4	-32.6	-31.8	-31.1	-30.4	-29.8	-29.2	-28.7
38	-33.7	-32.8	-32.0	-31.3	-30.6	-29.9	-29.3	-28.8	-28.2
40	-33.1	-32.2	-31.5	-30.7	-30.1	-29.4	-28.9	-28.3	-27.8
42	-32.5	-31.7	-30.9	-30.2	-29.6	-29.0	-28.4	-27.9	-27.4
44	-31.9	-31.1	-30.4	-29.8	-29.1	-28.5	-28.0	-27.5	-27.0
46	-31.4	-30.6	-29.9	-29.3	-28.7	-28.1	-27.6	-27.1	-26.6
48	-30.9	-30.2	-29.5	-28.9	-28.3	-27.7	-27.2	-26.7	-26.2
50	-30.4	-29.7	-29.0	-28.4	-27.9	-27.3	-26.8	-26.3	-25.9
52	-29.9	-29.2	-28.6	-28.0	-27.5	-27.0	-26.5	-26.0	-25.5
54	-29.5	-28.8	-28.2	-27.7	-27.1	-26.6	-26.1	-25.7	-25.2
56	-29.0	-28.4	-27.8	-27.3	-26.8	-26.3	-25.8	-25.3	-24.9
58	-28.6	-28.0	-27.4	-26.9	-26.4	-25.9	-25.5	-25.0	-24.6
60	-28.2	-27.6	-27.1	-26.6	-26.1	-25.6	-25.2	-24.7	-24.3
64	-27.4	-26.9	-26.4	-25.9	-25.4	-25.0	-24.6	-24.2	-23.8
68	-26.7	-26.2	-25.7	-25.3	-24.8	-24.4	-24.0	-23.6	-23.3
72	-26.0	-25.6	-25.1	-24.7	-24.3	-23.9	-23.5	-23.1	-22.8
76	-25.4	-24.9	-24.5	-24.1	-23.7	-23.4	-23.0	-22.6	-22.3
82	-24.5	-24.1	-23.7	-23.4	-23.0	-22.6	-22.3	-22.0	-21.7
90	-23.3	-23.0	-22.7	-22.4	-22.1	-21.8	-21.5	-21.2	-20.9

SURFACE SCATTERING STRENGTH (DB/SDU)

FREQUENCY 1.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-166.5	-123.4	-103.9	-92.1	-83.9	-77.7	-72.7	-68.7	-65.3
4	-138.9	-104.9	-89.3	-79.7	-73.0	-67.9	-63.8	-60.5	-57.6
6	-122.8	-94.1	-80.8	-72.5	-66.7	-62.2	-58.0	-55.6	-53.1
8	-111.3	-86.5	-74.7	-67.4	-62.1	-58.1	-54.9	-52.2	-49.0
10	-102.4	-80.5	-70.0	-63.4	-58.6	-55.0	-52.0	-49.5	-47.4
12	-95.1	-75.6	-66.2	-60.2	-55.8	-52.4	-49.7	-47.3	-45.4
14	-89.0	-71.5	-63.0	-57.4	-53.4	-50.2	-47.7	-45.5	-43.7
16	-83.7	-68.0	-60.1	-55.0	-51.3	-48.4	-45.9	-43.9	-42.2
18	-79.0	-64.8	-57.7	-52.9	-49.4	-46.7	-44.4	-42.5	-40.9
20	-74.8	-62.0	-55.4	-51.1	-47.8	-45.2	-43.1	-41.3	-39.7
22	-71.0	-59.5	-53.4	-49.4	-46.3	-43.9	-41.8	-40.1	-38.6
24	-67.5	-57.2	-51.6	-47.8	-44.9	-42.6	-40.7	-39.1	-37.6
26	-64.3	-55.0	-49.9	-46.4	-43.7	-41.5	-39.7	-38.1	-36.8
28	-61.4	-53.1	-48.3	-45.1	-42.5	-40.5	-38.7	-37.2	-35.9
30	-58.6	-51.2	-46.9	-43.8	-41.4	-39.5	-37.8	-36.4	-35.2
32	-56.1	-49.5	-45.5	-42.7	-40.4	-38.6	-37.0	-35.6	-34.4
34	-53.6	-47.9	-44.3	-41.6	-39.5	-37.7	-36.2	-34.9	-33.8
36	-51.4	-46.4	-43.1	-40.6	-38.6	-36.9	-35.5	-34.2	-33.1
38	-49.2	-44.9	-41.9	-39.6	-37.7	-36.2	-34.8	-33.6	-32.5
40	-47.2	-43.6	-40.8	-38.7	-36.9	-35.4	-34.1	-33.0	-32.0
42	-45.2	-42.3	-39.8	-37.8	-36.2	-34.7	-33.2	-32.4	-31.4
44	-43.4	-41.0	-38.8	-37.0	-35.4	-34.1	-32.9	-31.9	-30.9
46	-41.6	-39.8	-37.9	-36.2	-34.7	-33.5	-32.3	-31.3	-30.4
48	-39.9	-38.7	-37.0	-35.4	-34.1	-32.9	-31.8	-30.8	-29.9
50	-38.3	-37.6	-36.1	-34.7	-33.4	-32.3	-31.3	-30.3	-29.5
52	-36.7	-36.6	-35.3	-34.0	-32.8	-31.7	-30.8	-29.9	-29.0
54	-35.2	-35.6	-34.5	-33.3	-32.2	-31.2	-30.3	-29.4	-28.6
56	-33.8	-34.6	-33.7	-32.7	-31.7	-30.7	-29.8	-29.0	-28.2
58	-32.4	-33.7	-33.0	-32.1	-31.1	-30.2	-29.3	-28.6	-27.8
60	-31.0	-32.7	-32.3	-31.5	-30.6	-29.7	-28.9	-28.2	-27.4
64	-28.4	-31.0	-30.9	-30.3	-29.6	-28.8	-28.1	-27.4	-26.7
68	-26.0	-29.4	-29.7	-29.2	-28.6	-28.0	-27.3	-26.7	-26.0
72	-23.7	-27.9	-28.5	-28.2	-27.7	-27.2	-26.6	-26.0	-25.4
76	-21.6	-26.4	-27.3	-27.2	-26.9	-26.4	-25.9	-25.3	-24.8
82	-18.6	-24.4	-25.7	-25.9	-25.7	-25.3	-24.9	-24.4	-24.0
90	-14.9	-21.9	-23.7	-24.2	-24.2	-24.0	-23.7	-23.3	-22.9

SURFACE SCATTERING STRENGTH (DB/SQYD)

FREQUENCY 1.0 KHZ

ANGLF (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-62.4	-59.9	-57.6	-55.6	-53.8	-52.1	-50.6	-49.2	-47.9
4	-55.2	-53.0	-51.1	-49.4	-47.8	-46.4	-45.1	-43.9	-42.8
6	-50.9	-49.0	-47.3	-45.7	-44.3	-43.0	-41.9	-40.8	-39.8
8	-47.9	-46.1	-44.6	-43.1	-41.8	-40.7	-39.6	-38.6	-37.6
10	-45.5	-43.9	-42.4	-41.1	-39.9	-38.8	-37.8	-36.8	-35.9
12	-43.6	-42.1	-40.7	-39.5	-38.3	-37.3	-36.3	-35.4	-34.6
14	-42.0	-40.6	-39.3	-38.1	-37.0	-36.0	-35.1	-34.2	-33.4
16	-40.6	-39.3	-38.0	-36.9	-35.9	-34.9	-34.0	-33.2	-32.4
18	-39.4	-38.1	-36.9	-35.8	-34.8	-33.9	-33.1	-32.3	-31.6
20	-38.3	-37.0	-35.9	-34.9	-33.9	-33.1	-32.3	-31.5	-30.8
22	-37.3	-36.1	-35.0	-34.0	-33.1	-32.3	-31.5	-30.8	-30.1
24	-36.4	-35.2	-34.2	-33.2	-32.4	-31.6	-30.8	-30.1	-29.4
26	-35.5	-34.4	-33.4	-32.5	-31.7	-30.9	-30.2	-29.5	-28.8
28	-34.8	-33.7	-32.7	-31.9	-31.0	-30.3	-29.6	-28.9	-28.3
30	-34.0	-33.0	-32.1	-31.2	-30.4	-29.7	-29.0	-28.4	-27.8
32	-33.4	-32.4	-31.5	-30.7	-29.9	-29.2	-28.5	-27.9	-27.3
34	-32.7	-31.8	-30.9	-30.1	-29.4	-28.7	-28.0	-27.4	-26.8
36	-32.1	-31.2	-30.4	-29.6	-28.9	-28.2	-27.6	-27.0	-26.4
38	-31.6	-30.7	-29.9	-29.1	-28.4	-27.7	-27.1	-26.5	-26.0
40	-31.0	-30.2	-29.4	-28.6	-28.0	-27.3	-26.7	-26.2	-25.6
42	-30.5	-29.7	-28.9	-28.2	-27.5	-26.9	-26.3	-25.8	-25.3
44	-30.0	-29.2	-28.5	-27.8	-27.1	-26.5	-26.0	-25.4	-24.9
46	-29.6	-28.8	-28.1	-27.4	-26.8	-26.2	-25.6	-25.1	-24.6
48	-29.1	-28.4	-27.7	-27.0	-26.4	-25.8	-25.3	-24.7	-24.3
50	-28.7	-28.0	-27.3	-26.6	-26.0	-25.5	-24.9	-24.4	-24.0
52	-28.3	-27.6	-26.9	-26.3	-25.7	-25.1	-24.6	-24.1	-23.7
54	-27.9	-27.2	-26.5	-25.9	-25.4	-24.8	-24.3	-23.8	-23.4
56	-27.5	-26.8	-26.2	-25.6	-25.1	-24.5	-24.0	-23.6	-23.1
58	-27.1	-26.5	-25.9	-25.3	-24.8	-24.2	-23.6	-23.3	-22.8
60	-26.8	-26.1	-25.6	-25.0	-24.5	-24.0	-23.5	-23.0	-22.6
64	-26.1	-25.5	-24.9	-24.4	-23.9	-23.4	-23.0	-22.5	-22.1
68	-25.5	-24.9	-24.4	-23.9	-23.4	-22.9	-22.5	-22.1	-21.7
72	-24.9	-24.3	-23.8	-23.4	-22.9	-22.5	-22.0	-21.6	-21.2
76	-24.3	-23.8	-23.3	-22.9	-22.4	-22.0	-21.6	-21.2	-20.8
82	-23.5	-23.0	-22.6	-22.2	-21.8	-21.4	-21.0	-20.6	-20.3
90	-22.5	-22.1	-21.7	-21.3	-21.0	-20.6	-20.3	-19.9	-19.6

SURFACE SCATTERING STRENGTH (DB/50YD)

ANGLE (DEGREES)	FREQUENCY 1.5 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-156.9	-116.5	-98.2	-87.0	-79.2	-73.3	-68.7	-64.8	-61.6
4	-131.4	-99.4	-84.7	-75.6	-69.2	-64.3	-60.4	-57.2	-54.5
6	-116.5	-89.4	-76.8	-68.9	-63.3	-59.0	-55.6	-52.7	-50.3
8	-105.9	-82.4	-71.2	-64.2	-59.1	-55.3	-52.2	-49.6	-47.3
10	-97.7	-76.9	-66.9	-60.5	-55.9	-52.4	-49.5	-47.1	-45.0
12	-90.9	-72.4	-63.3	-57.5	-53.3	-50.0	-47.5	-45.1	-43.2
14	-85.3	-68.6	-60.3	-54.9	-51.0	-48.0	-45.5	-43.4	-41.6
16	-80.3	-65.3	-57.7	-52.7	-49.1	-46.2	-43.9	-41.9	-40.2
18	-76.0	-62.4	-55.4	-50.8	-47.4	-44.7	-42.5	-40.6	-39.0
20	-72.1	-59.8	-53.3	-49.1	-45.9	-43.3	-41.2	-39.4	-37.9
22	-68.6	-57.4	-51.5	-47.5	-44.5	-42.1	-40.1	-38.4	-36.9
24	-65.4	-55.3	-49.8	-46.1	-43.2	-41.0	-39.1	-37.4	-36.0
26	-62.5	-53.3	-48.2	-44.7	-42.1	-39.9	-38.1	-36.6	-35.2
28	-59.7	-51.5	-46.8	-43.5	-41.0	-38.9	-37.2	-35.7	-34.4
30	-57.2	-49.8	-45.5	-42.4	-40.0	-38.0	-36.4	-35.0	-33.7
32	-54.8	-48.2	-44.2	-41.3	-39.1	-37.2	-35.6	-34.3	-33.1
34	-52.6	-46.7	-43.0	-40.3	-38.2	-36.4	-34.9	-33.6	-32.4
36	-50.5	-45.3	-41.9	-39.4	-37.4	-35.7	-34.2	-33.0	-31.8
38	-48.5	-44.0	-40.8	-38.5	-36.6	-35.0	-33.6	-32.4	-31.3
40	-46.6	-42.7	-39.8	-37.6	-35.8	-34.3	-33.0	-31.8	-30.8
42	-44.8	-41.5	-38.9	-36.8	-35.1	-33.7	-32.4	-31.3	-30.3
44	-43.1	-40.3	-38.0	-36.1	-34.4	-33.1	-31.8	-30.8	-29.8
46	-41.4	-39.2	-37.1	-35.3	-33.8	-32.5	-31.3	-30.3	-29.3
48	-39.9	-38.2	-36.3	-34.6	-33.2	-31.9	-30.8	-29.8	-28.9
50	-38.4	-37.2	-35.5	-34.0	-32.6	-31.4	-30.3	-29.3	-28.5
52	-36.9	-36.2	-34.7	-33.3	-32.0	-30.9	-29.8	-28.9	-28.1
54	-35.5	-35.3	-34.0	-32.7	-31.5	-30.4	-29.4	-28.5	-27.7
56	-34.2	-34.4	-33.3	-32.1	-31.0	-29.9	-29.0	-28.1	-27.3
58	-32.9	-33.5	-32.6	-31.5	-30.4	-29.5	-28.5	-27.7	-26.9
60	-31.6	-32.7	-31.9	-31.0	-30.0	-29.0	-28.1	-27.3	-26.6
64	-29.3	-31.1	-30.7	-29.9	-29.0	-28.2	-27.4	-26.6	-25.9
68	-27.0	-29.6	-29.5	-28.9	-28.1	-27.4	-26.7	-26.0	-25.3
72	-24.9	-28.2	-28.4	-27.9	-27.3	-26.6	-26.0	-25.3	-24.7
76	-22.9	-26.9	-27.3	-27.1	-26.5	-25.9	-25.3	-24.7	-24.1
82	-20.1	-25.0	-25.9	-25.8	-25.4	-24.9	-24.4	-23.9	-23.4
90	-16.7	-22.7	-24.1	-24.3	-24.1	-23.7	-23.3	-22.9	-22.4

SURFACE SCATTERING STRENGTH (DB/SDYD)

ANGLE (DEGREES)	FREQUENCY 1.5 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-58.8	-56.4	-54.3	-52.3	-50.6	-49.0	-47.6	-46.2	-45.0
4	-52.1	-50.0	-48.2	-46.6	-45.1	-43.7	-42.4	-41.3	-40.2
6	-48.2	-46.3	-44.7	-43.2	-41.8	-40.6	-39.4	-38.4	-37.4
8	-45.4	-43.7	-42.2	-40.8	-39.5	-38.4	-37.3	-36.3	-35.4
10	-43.2	-41.6	-40.2	-38.9	-37.8	-36.7	-35.7	-34.8	-33.9
12	-41.5	-40.0	-38.6	-37.4	-36.3	-35.3	-34.3	-33.5	-32.6
14	-40.0	-38.6	-37.3	-36.1	-35.1	-34.1	-33.2	-32.4	-31.6
16	-38.7	-37.3	-36.1	-35.0	-34.0	-33.1	-32.2	-31.4	-30.6
18	-37.5	-36.3	-35.1	-34.0	-33.1	-32.2	-31.3	-30.6	-29.8
20	-36.5	-35.3	-34.2	-33.2	-32.2	-31.4	-30.6	-29.8	-29.1
22	-35.6	-34.4	-33.3	-32.4	-31.5	-30.6	-29.9	-29.1	-28.5
24	-34.8	-33.6	-32.6	-31.6	-30.8	-30.0	-29.2	-28.5	-27.9
26	-34.0	-32.9	-31.9	-31.0	-30.1	-29.4	-28.6	-27.9	-27.3
28	-33.3	-32.2	-31.2	-30.4	-29.5	-28.8	-28.1	-27.4	-26.8
30	-32.6	-31.6	-30.6	-29.8	-29.0	-28.3	-27.6	-26.9	-26.3
32	-32.0	-31.0	-30.1	-29.3	-28.5	-27.8	-27.1	-26.5	-25.9
34	-31.4	-30.4	-29.6	-28.7	-28.0	-27.3	-26.6	-26.0	-25.5
36	-30.8	-29.9	-29.1	-28.3	-27.5	-26.9	-26.2	-25.6	-25.1
38	-30.3	-29.4	-28.6	-27.8	-27.1	-26.5	-25.8	-25.2	-24.7
40	-29.8	-28.9	-28.1	-27.4	-26.7	-26.1	-25.5	-24.9	-24.3
42	-29.3	-28.5	-27.7	-27.0	-26.3	-25.7	-25.1	-24.5	-24.0
44	-28.9	-28.1	-27.3	-26.6	-25.9	-25.3	-24.7	-24.2	-23.7
46	-28.5	-27.7	-26.9	-26.2	-25.6	-25.0	-24.4	-23.9	-23.4
48	-28.0	-27.3	-26.5	-25.9	-25.3	-24.7	-24.1	-23.6	-23.1
50	-27.6	-26.9	-26.2	-25.5	-24.9	-24.3	-23.8	-23.3	-22.8
52	-27.3	-26.5	-25.9	-25.2	-24.6	-24.0	-23.5	-23.0	-22.5
54	-26.9	-26.2	-25.5	-24.9	-24.3	-23.8	-23.2	-22.7	-22.3
56	-26.5	-25.9	-25.2	-24.6	-24.0	-23.5	-23.0	-22.5	-22.0
58	-26.2	-25.5	-24.9	-24.3	-23.7	-23.2	-22.7	-22.2	-21.8
60	-25.9	-25.2	-24.6	-24.0	-23.5	-23.0	-22.5	-22.0	-21.5
64	-25.3	-24.6	-24.0	-23.5	-23.0	-22.5	-22.0	-21.5	-21.1
68	-24.7	-24.1	-23.5	-23.0	-22.5	-22.0	-21.5	-21.1	-20.7
72	-24.1	-23.5	-23.0	-22.5	-22.0	-21.6	-21.1	-20.7	-20.3
76	-23.6	-23.1	-22.5	-22.1	-21.6	-21.1	-20.7	-20.3	-19.9
82	-22.8	-22.4	-21.9	-21.4	-21.0	-20.6	-20.2	-19.8	-19.4
90	-21.9	-21.5	-21.1	-20.6	-20.2	-19.8	-19.5	-19.1	-18.7

SURFACE SCATTERING STRENGTH (DB/DOYD)

FREQUENCY 2.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-150.5	-111.9	-94.3	-83.6	-76.1	-70.4	-65.9	-62.2	-59.1
4	-126.4	-95.7	-81.6	-72.8	-66.6	-61.9	-58.1	-55.0	-52.3
6	-112.2	-86.3	-74.1	-66.5	-61.0	-56.9	-53.5	-50.7	-48.4
8	-102.2	-79.6	-68.8	-62.0	-57.1	-53.3	-50.3	-47.7	-45.6
10	-94.4	-74.4	-64.7	-58.5	-54.0	-50.6	-47.8	-45.4	-43.4
12	-88.1	-70.1	-61.3	-55.6	-51.5	-48.3	-45.7	-43.5	-41.6
14	-82.7	-66.5	-58.5	-53.2	-49.4	-46.4	-44.0	-41.9	-40.1
16	-78.1	-63.4	-56.0	-51.2	-47.6	-44.8	-42.5	-40.5	-38.8
18	-74.0	-60.7	-53.8	-49.3	-46.0	-43.3	-41.1	-39.3	-37.7
20	-70.3	-58.2	-51.9	-47.7	-44.5	-42.0	-39.9	-38.2	-36.6
22	-67.0	-56.0	-50.1	-46.2	-43.2	-40.8	-38.9	-37.2	-35.7
24	-63.9	-54.0	-48.5	-44.8	-42.0	-39.8	-37.9	-36.3	-34.9
26	-61.1	-52.1	-47.1	-43.6	-40.9	-38.8	-37.0	-35.4	-34.1
28	-58.6	-50.4	-45.7	-42.4	-39.9	-37.9	-36.2	-34.7	-33.4
30	-56.2	-48.8	-44.4	-41.4	-39.0	-37.0	-35.4	-34.0	-32.7
32	-53.9	-47.3	-43.2	-40.3	-38.1	-36.2	-34.7	-33.3	-32.1
34	-51.8	-45.8	-42.1	-39.4	-37.3	-35.5	-34.0	-32.6	-31.5
36	-49.8	-44.5	-41.1	-38.5	-36.5	-34.8	-33.3	-32.0	-30.9
38	-47.9	-43.2	-40.1	-37.7	-35.7	-34.1	-32.7	-31.5	-30.4
40	-46.1	-42.1	-39.1	-36.9	-35.0	-33.5	-32.1	-31.0	-29.9
42	-44.4	-40.9	-38.2	-36.1	-34.4	-32.9	-31.6	-30.4	-29.4
44	-42.8	-39.8	-37.4	-35.4	-33.7	-32.3	-31.1	-30.0	-29.0
46	-41.3	-38.8	-36.6	-34.7	-33.1	-31.8	-30.6	-29.5	-28.5
48	-39.8	-37.8	-35.8	-34.0	-32.5	-31.2	-30.1	-29.0	-28.1
50	-38.4	-36.8	-35.0	-33.4	-32.0	-30.7	-29.6	-28.6	-27.7
52	-37.0	-35.9	-34.3	-32.8	-31.4	-30.2	-29.2	-28.2	-27.3
54	-35.7	-35.1	-33.6	-32.2	-30.9	-29.8	-28.8	-27.8	-27.0
56	-34.4	-34.2	-32.9	-31.6	-30.4	-29.3	-28.3	-27.4	-26.6
58	-33.2	-33.4	-32.3	-31.1	-29.9	-28.9	-27.9	-27.1	-26.3
60	-32.0	-32.6	-31.7	-30.5	-29.5	-28.5	-27.6	-26.7	-25.9
64	-29.8	-31.1	-30.5	-29.5	-28.6	-27.7	-26.8	-26.0	-25.3
68	-27.6	-29.7	-29.3	-28.6	-27.8	-26.9	-26.2	-25.4	-24.7
72	-25.7	-28.3	-28.3	-27.7	-27.0	-26.2	-25.5	-24.8	-24.2
76	-23.8	-27.1	-27.3	-26.9	-26.2	-25.6	-24.9	-24.3	-23.6
82	-21.1	-25.3	-25.9	-25.7	-25.2	-24.6	-24.0	-23.5	-22.9
90	-17.9	-23.1	-24.2	-24.2	-23.9	-23.5	-23.0	-22.5	-22.0

SURFACE SCATTERING STRENGTH (DB/SDYD)

ANGLE (DEGREES)	FREQUENCY 2.0 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-56.4	-54.0	-52.0	-50.1	-48.4	-46.9	-45.4	-44.1	-42.9
4	-50.0	-48.0	-46.2	-44.6	-43.2	-41.8	-40.6	-39.5	-38.4
6	-46.3	-44.5	-42.9	-41.4	-40.1	-38.9	-37.8	-36.7	-35.8
8	-43.7	-42.0	-40.5	-39.2	-37.9	-36.8	-35.6	-34.8	-33.9
10	-41.6	-40.1	-38.7	-37.4	-36.3	-35.2	-34.2	-33.3	-32.5
12	-40.0	-38.5	-37.2	-36.0	-34.9	-33.9	-32.9	-32.1	-31.3
14	-38.6	-37.2	-35.9	-34.8	-33.7	-32.8	-31.9	-31.0	-30.3
16	-37.3	-36.0	-34.8	-33.7	-32.7	-31.8	-30.9	-30.1	-29.4
18	-36.3	-35.0	-33.8	-32.8	-31.8	-30.9	-30.1	-29.3	-28.6
20	-35.3	-34.1	-33.0	-32.0	-31.0	-30.2	-29.4	-28.6	-27.9
22	-34.4	-33.2	-32.2	-31.2	-30.3	-29.5	-28.7	-28.0	-27.3
24	-33.6	-32.5	-31.5	-30.5	-29.7	-28.9	-28.1	-27.4	-26.7
26	-32.9	-31.8	-30.8	-29.9	-29.1	-28.3	-27.5	-26.9	-26.2
28	-32.2	-31.1	-30.2	-29.3	-28.5	-27.7	-27.0	-26.4	-25.7
30	-31.6	-30.6	-29.6	-28.8	-28.0	-27.2	-26.5	-25.9	-25.3
32	-31.0	-30.0	-29.1	-28.3	-27.5	-26.8	-26.1	-25.5	-24.9
34	-30.4	-29.5	-28.6	-27.8	-27.0	-26.3	-25.7	-25.1	-24.5
36	-29.9	-29.0	-28.1	-27.3	-26.6	-25.9	-25.3	-24.7	-24.1
38	-29.4	-28.5	-27.7	-26.9	-26.2	-25.5	-24.9	-24.3	-23.8
40	-28.9	-28.1	-27.2	-26.5	-25.8	-25.2	-24.5	-24.0	-23.4
42	-28.5	-27.6	-26.8	-26.1	-25.4	-24.8	-24.2	-23.6	-23.1
44	-28.1	-27.2	-26.5	-25.8	-25.1	-24.5	-23.9	-23.3	-22.8
46	-27.7	-26.8	-26.1	-25.4	-24.8	-24.1	-23.6	-23.0	-22.5
48	-27.3	-26.5	-25.7	-25.1	-24.4	-23.8	-23.3	-22.7	-22.2
50	-26.9	-26.1	-25.4	-24.7	-24.1	-23.5	-23.0	-22.5	-22.0
52	-26.5	-25.8	-25.1	-24.4	-23.8	-23.3	-22.7	-22.2	-21.7
54	-26.2	-25.5	-24.8	-24.1	-23.5	-23.0	-22.4	-21.9	-21.5
56	-25.8	-25.1	-24.5	-23.9	-23.3	-22.7	-22.2	-21.7	-21.2
58	-25.5	-24.8	-24.2	-23.6	-23.0	-22.5	-21.9	-21.5	-21.0
60	-25.2	-24.5	-23.9	-23.3	-22.7	-22.2	-21.7	-21.2	-20.8
64	-24.6	-24.0	-23.4	-22.8	-22.3	-21.7	-21.3	-20.8	-20.4
68	-24.1	-23.5	-22.9	-22.3	-21.8	-21.3	-20.8	-20.4	-20.0
72	-23.5	-23.0	-22.4	-21.9	-21.4	-20.9	-20.4	-20.0	-19.6
76	-23.0	-22.5	-22.0	-21.4	-21.0	-20.5	-20.1	-19.6	-19.2
82	-22.4	-21.8	-21.3	-20.9	-20.4	-20.0	-19.5	-19.1	-18.7
90	-21.5	-21.0	-20.6	-20.1	-19.7	-19.3	-18.9	-18.5	-18.1

SURFACE SCATTERING STRENGTH (DB/SQYD)

ANGLE (DEGREES)	FREQUENCY 2.5 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-145.7	-108.4	-91.4	-81.0	-73.7	-68.2	-63.8	-60.2	-57.2
4	-122.6	-92.9	-79.2	-70.7	-64.6	-60.0	-56.5	-53.3	-50.7
6	-109.1	-83.9	-72.0	-64.6	-59.3	-55.2	-52.0	-49.2	-46.9
8	-99.5	-77.5	-67.0	-60.3	-55.5	-51.8	-48.9	-46.4	-44.2
10	-92.0	-72.5	-63.0	-57.0	-52.6	-49.2	-46.4	-44.1	-42.2
12	-85.9	-68.4	-59.8	-54.2	-50.2	-47.0	-44.5	-42.3	-40.5
14	-80.8	-65.0	-57.1	-51.9	-48.2	-45.2	-42.8	-40.8	-39.0
16	-76.3	-62.0	-54.7	-49.9	-46.4	-43.7	-41.4	-39.4	-37.8
18	-72.4	-59.4	-52.6	-48.2	-44.9	-42.3	-40.1	-38.3	-36.7
20	-68.9	-57.0	-50.8	-46.6	-43.5	-41.0	-39.0	-37.2	-35.7
22	-65.7	-54.9	-49.1	-45.2	-42.2	-39.9	-37.9	-36.3	-34.8
24	-62.8	-52.9	-47.6	-43.9	-41.1	-38.9	-37.0	-35.4	-34.0
26	-60.1	-51.2	-46.2	-42.7	-40.1	-37.9	-36.1	-34.6	-33.2
28	-57.7	-49.5	-44.9	-41.6	-39.1	-37.0	-35.5	-33.8	-32.5
30	-55.4	-48.0	-43.6	-40.6	-38.2	-36.2	-34.6	-33.2	-31.9
32	-53.2	-46.5	-42.5	-39.6	-37.3	-35.5	-33.9	-32.5	-31.3
34	-51.2	-45.2	-41.4	-38.7	-36.5	-34.8	-33.2	-31.9	-30.7
36	-49.3	-43.9	-40.4	-37.8	-35.8	-34.1	-32.6	-31.3	-30.2
38	-47.5	-42.7	-39.5	-37.0	-35.1	-33.4	-32.0	-30.8	-29.7
40	-45.8	-41.5	-38.6	-36.3	-34.4	-32.8	-31.5	-30.3	-29.2
42	-44.1	-40.5	-37.7	-35.5	-33.8	-32.3	-31.0	-29.8	-28.8
44	-42.6	-39.4	-36.9	-34.8	-33.2	-31.7	-30.4	-29.3	-28.3
46	-41.1	-38.4	-36.1	-34.2	-32.6	-31.2	-30.0	-28.9	-27.9
48	-39.7	-37.5	-35.3	-33.5	-32.0	-30.7	-29.5	-28.5	-27.5
50	-38.3	-36.6	-34.6	-32.9	-31.5	-30.2	-29.1	-28.1	-27.1
52	-37.0	-35.7	-33.9	-32.3	-31.0	-29.7	-28.6	-27.7	-26.8
54	-35.7	-34.8	-33.3	-31.8	-30.5	-29.3	-28.2	-27.3	-26.4
56	-34.5	-34.0	-32.6	-31.2	-30.0	-28.9	-27.8	-26.9	-26.1
58	-33.4	-33.2	-32.0	-30.7	-29.5	-28.4	-27.5	-26.6	-25.7
60	-32.2	-32.5	-31.4	-30.2	-29.1	-28.0	-27.1	-26.2	-25.4
64	-30.1	-31.0	-30.3	-29.2	-28.2	-27.3	-26.4	-25.6	-24.8
68	-28.1	-29.7	-29.2	-28.3	-27.4	-26.6	-25.7	-25.0	-24.3
72	-26.1	-28.4	-28.2	-27.5	-26.7	-25.9	-25.1	-24.4	-23.7
76	-24.3	-27.2	-27.2	-26.7	-26.0	-25.3	-24.5	-23.9	-23.2
82	-21.8	-25.5	-25.9	-25.5	-25.0	-24.4	-23.7	-23.1	-22.5
90	-18.7	-23.4	-24.2	-24.2	-23.8	-23.3	-22.7	-22.2	-21.6

SURFACE SCATTERING STRENGTH (DB/SDUD)

FREQUENCY 2.5 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-54.5	-52.3	-50.2	-48.4	-46.7	-45.2	-43.9	-42.6	-41.4
4	-48.5	-46.5	-44.7	-43.2	-41.7	-40.4	-39.2	-38.1	-37.1
6	-44.9	-43.1	-41.5	-40.1	-38.8	-37.6	-36.5	-35.5	-34.5
8	-42.4	-40.7	-39.3	-37.9	-36.7	-35.6	-34.6	-33.6	-32.7
10	-40.4	-38.9	-37.5	-36.3	-35.1	-34.1	-33.1	-32.2	-31.4
12	-38.8	-37.4	-36.1	-34.9	-33.8	-32.8	-31.9	-31.0	-30.2
14	-37.5	-36.1	-34.8	-33.7	-32.7	-31.7	-30.8	-30.0	-29.3
16	-36.3	-35.0	-33.8	-32.7	-31.7	-30.8	-30.0	-29.2	-28.4
18	-35.3	-34.0	-32.9	-31.8	-30.9	-30.0	-29.2	-28.4	-27.7
20	-34.3	-33.1	-32.0	-31.0	-30.1	-29.3	-28.5	-27.7	-27.0
22	-33.5	-32.3	-31.3	-30.3	-29.4	-28.6	-27.8	-27.1	-26.4
24	-32.7	-31.6	-30.6	-29.7	-28.8	-28.0	-27.2	-26.5	-25.9
26	-32.0	-30.9	-30.0	-29.1	-28.2	-27.4	-26.7	-26.0	-25.4
28	-31.4	-30.3	-29.4	-28.5	-27.7	-26.9	-26.2	-25.6	-24.9
30	-30.8	-29.8	-28.8	-28.0	-27.2	-26.4	-25.8	-25.1	-24.5
32	-30.2	-29.2	-28.3	-27.5	-26.7	-26.0	-25.3	-24.7	-24.1
34	-29.7	-28.7	-27.8	-27.0	-26.3	-25.6	-24.9	-24.3	-23.7
36	-29.2	-28.2	-27.4	-26.6	-25.9	-25.2	-24.5	-23.9	-23.4
38	-28.7	-27.8	-27.0	-26.2	-25.5	-24.8	-24.2	-23.6	-23.0
40	-28.2	-27.4	-26.6	-25.8	-25.1	-24.4	-23.8	-23.3	-22.7
42	-27.8	-27.0	-26.2	-25.4	-24.8	-24.1	-23.5	-22.9	-22.4
44	-27.4	-26.6	-25.8	-25.1	-24.4	-23.8	-23.2	-22.6	-22.1
46	-27.0	-26.2	-25.5	-24.7	-24.1	-23.5	-22.9	-22.3	-21.8
48	-26.6	-25.9	-25.1	-24.4	-23.8	-23.2	-22.6	-22.1	-21.6
50	-26.3	-25.5	-24.8	-24.1	-23.5	-22.9	-22.3	-21.8	-21.3
52	-25.9	-25.2	-24.5	-23.8	-23.2	-22.6	-22.1	-21.6	-21.1
54	-25.6	-24.9	-24.2	-23.5	-22.9	-22.4	-21.8	-21.3	-20.8
56	-25.3	-24.6	-23.9	-23.3	-22.7	-22.1	-21.6	-21.1	-20.6
58	-25.0	-24.3	-23.6	-23.0	-22.4	-21.9	-21.3	-20.9	-20.4
60	-24.7	-24.0	-23.4	-22.7	-22.2	-21.6	-21.1	-20.6	-20.2
64	-24.1	-23.5	-22.8	-22.3	-21.7	-21.2	-20.7	-20.2	-19.8
68	-23.6	-23.0	-22.4	-21.8	-21.3	-20.8	-20.3	-19.8	-19.4
72	-23.1	-22.5	-21.9	-21.4	-20.9	-20.4	-19.9	-19.5	-19.0
76	-22.6	-22.0	-21.5	-21.0	-20.5	-20.0	-19.5	-19.1	-18.7
82	-21.9	-21.4	-20.9	-20.4	-19.9	-19.5	-19.0	-18.6	-18.2
90	-21.1	-20.6	-20.2	-19.7	-19.2	-18.8	-18.4	-18.0	-17.6

SURFACE SCATTERING STRENGTH (DB/DOYD)

ANGLE (DEGREES)	FREQUENCY 3.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-142.0	-105.7	-89.1	-79.0	-71.8	-66.4	-62.2	-58.6	-55.6
4	-119.6	-90.7	-77.3	-69.0	-63.1	-58.5	-54.9	-51.9	-49.4
6	-106.6	-82.0	-70.4	-63.1	-57.9	-53.9	-50.7	-48.0	-45.7
8	-97.3	-75.8	-65.5	-59.0	-54.3	-50.6	-47.7	-45.3	-43.2
10	-90.1	-71.0	-61.7	-55.8	-51.4	-48.1	-45.4	-43.1	-41.1
12	-84.2	-67.1	-58.6	-53.1	-49.1	-46.0	-43.5	-41.3	-39.5
14	-79.3	-63.7	-56.0	-50.9	-47.2	-44.3	-41.9	-39.9	-38.1
16	-75.0	-60.9	-53.7	-49.0	-45.5	-42.7	-40.5	-38.6	-36.9
18	-71.2	-58.3	-51.7	-47.3	-44.0	-41.4	-39.3	-37.4	-35.9
20	-67.8	-56.1	-49.0	-45.8	-42.7	-40.2	-38.2	-36.4	-34.9
22	-64.7	-54.0	-48.3	-44.4	-41.5	-39.1	-37.2	-35.5	-34.0
24	-61.9	-52.1	-46.8	-43.1	-40.4	-38.1	-36.3	-34.7	-33.3
26	-59.3	-50.4	-45.4	-42.0	-39.3	-37.2	-35.4	-33.9	-32.5
28	-56.9	-48.8	-44.2	-40.9	-38.4	-36.4	-34.7	-33.2	-31.9
30	-54.7	-47.3	-43.0	-39.9	-37.5	-35.6	-33.9	-32.5	-31.3
32	-52.6	-45.9	-41.9	-39.0	-36.7	-34.8	-33.3	-31.9	-30.7
34	-50.7	-44.6	-40.9	-38.1	-35.9	-34.2	-32.6	-31.3	-30.1
36	-48.8	-43.4	-39.9	-37.3	-35.2	-33.5	-32.0	-30.7	-29.6
38	-47.1	-42.2	-39.0	-36.5	-34.5	-32.9	-31.5	-30.2	-29.1
40	-45.4	-41.1	-38.1	-35.8	-33.9	-32.3	-30.9	-29.7	-28.7
42	-43.9	-40.1	-37.3	-35.1	-33.3	-31.7	-30.4	-29.3	-28.2
44	-42.4	-39.1	-36.5	-34.4	-32.7	-31.2	-29.9	-28.8	-27.8
46	-40.9	-38.1	-35.7	-33.7	-32.1	-30.7	-29.5	-28.4	-27.4
48	-39.6	-37.2	-35.0	-33.1	-31.6	-30.2	-29.0	-28.0	-27.0
50	-38.3	-36.3	-34.3	-32.5	-31.1	-29.8	-28.6	-27.6	-26.6
52	-37.0	-35.5	-33.6	-32.0	-30.6	-29.3	-28.2	-27.2	-26.3
54	-35.8	-34.6	-33.0	-31.4	-30.1	-28.9	-27.8	-26.8	-26.0
56	-34.6	-33.9	-32.4	-30.9	-29.6	-28.5	-27.4	-26.5	-25.6
58	-33.5	-33.1	-31.8	-30.4	-29.2	-28.1	-27.1	-26.1	-25.3
60	-32.4	-32.4	-31.2	-29.9	-28.7	-27.7	-26.7	-25.8	-25.0
64	-30.3	-31.0	-30.1	-29.0	-27.9	-26.9	-26.0	-25.2	-24.4
68	-28.4	-29.7	-29.0	-28.1	-27.2	-26.3	-25.4	-24.6	-23.9
72	-26.5	-28.4	-28.1	-27.3	-26.4	-25.6	-24.8	-24.1	-23.4
76	-24.8	-27.3	-27.1	-26.5	-25.8	-25.0	-24.2	-23.5	-22.9
82	-22.7	-25.6	-25.9	-25.4	-24.8	-24.1	-23.5	-22.8	-22.2
90	-19.3	-23.6	-24.3	-24.1	-23.6	-23.1	-22.5	-21.9	-21.4

SURFACE SCATTERING STRENGTH (DB/SCYD)

ANGLE (DEGREES)	FREQUENCY 3.0 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-53.1	-50.8	-48.8	-47.0	-45.4	-43.9	-42.6	-41.3	-40.2
4	-47.2	-45.3	-43.5	-42.0	-40.6	-39.3	-38.1	-37.0	-36.0
6	-43.8	-42.0	-40.4	-39.0	-37.6	-36.6	-35.5	-34.5	-33.5
8	-41.3	-39.7	-38.3	-36.9	-35.7	-34.6	-33.6	-32.7	-31.8
10	-39.4	-37.9	-36.6	-35.3	-34.2	-33.2	-32.2	-31.3	-30.5
12	-37.4	-36.5	-35.2	-34.0	-32.9	-31.9	-31.0	-30.2	-29.4
14	-36.6	-35.2	-34.0	-32.9	-31.8	-30.9	-30.0	-29.2	-28.4
16	-35.5	-34.1	-33.0	-31.9	-30.9	-30.0	-29.2	-28.4	-27.6
18	-34.5	-33.2	-32.1	-31.0	-30.1	-29.2	-28.4	-27.6	-26.9
20	-33.6	-32.4	-31.3	-30.3	-29.4	-28.5	-27.7	-27.0	-26.3
22	-32.8	-31.6	-30.5	-29.6	-28.7	-27.9	-27.1	-26.4	-25.7
24	-32.0	-30.9	-29.9	-28.9	-28.1	-27.3	-26.5	-25.8	-25.2
26	-31.3	-30.3	-29.3	-28.4	-27.5	-26.8	-26.0	-25.3	-24.7
28	-30.7	-29.7	-28.7	-27.8	-27.0	-26.3	-25.6	-24.9	-24.3
30	-30.1	-29.1	-28.2	-27.3	-26.5	-25.8	-25.1	-24.5	-23.8
32	-29.6	-28.6	-27.7	-26.9	-26.1	-25.4	-24.7	-24.1	-23.5
34	-29.1	-28.1	-27.2	-26.4	-25.7	-25.0	-24.3	-23.7	-23.1
36	-28.6	-27.6	-26.8	-26.0	-25.3	-24.6	-23.9	-23.3	-22.7
38	-28.1	-27.2	-26.4	-25.6	-24.9	-24.2	-23.6	-23.0	-22.4
40	-27.7	-26.8	-26.0	-25.2	-24.5	-23.9	-23.2	-22.7	-22.1
42	-27.3	-26.4	-25.6	-24.9	-24.2	-23.5	-22.9	-22.4	-21.8
44	-26.9	-26.0	-25.3	-24.5	-23.9	-23.2	-22.6	-22.1	-21.5
46	-26.5	-25.7	-24.9	-24.2	-23.6	-22.9	-22.3	-21.8	-21.3
48	-26.1	-25.3	-24.6	-23.9	-23.3	-22.6	-22.1	-21.5	-21.0
50	-25.8	-25.0	-24.3	-23.6	-23.0	-22.4	-21.8	-21.3	-20.8
52	-25.5	-24.7	-24.0	-23.3	-22.7	-22.1	-21.6	-21.0	-20.5
54	-25.1	-24.4	-23.7	-23.0	-22.4	-21.9	-21.3	-20.8	-20.3
56	-24.8	-24.1	-23.4	-22.8	-22.2	-21.6	-21.1	-20.6	-20.1
58	-24.5	-23.8	-23.2	-22.5	-21.9	-21.4	-20.9	-20.4	-19.9
60	-24.3	-23.5	-22.9	-22.3	-21.7	-21.2	-20.6	-20.1	-19.7
64	-23.7	-23.0	-22.4	-21.8	-21.2	-20.7	-20.2	-19.7	-19.3
68	-23.2	-22.5	-21.9	-21.4	-20.8	-20.3	-19.8	-19.4	-18.9
72	-22.7	-22.1	-21.5	-21.0	-20.4	-19.9	-19.5	-19.0	-18.6
76	-22.2	-21.7	-21.1	-20.6	-20.1	-19.6	-19.1	-18.7	-18.2
82	-21.6	-21.0	-20.5	-20.0	-19.5	-19.1	-18.6	-18.2	-17.8
90	-20.8	-20.3	-19.8	-19.3	-18.9	-18.4	-18.0	-17.6	-17.2

SURFACE SCATTERING STRENGTH (DB/DOYD)

FREQUENCY 3.5 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-138.9	-113.4	-87.2	-77.3	-70.3	-65.0	-60.8	-57.3	-54.4
4	-117.2	-88.9	-75.8	-67.6	-61.8	-57.3	-53.8	-50.8	-48.3
6	-104.5	-80.4	-69.0	-61.9	-56.8	-52.8	-49.7	-47.0	-44.8
8	-95.5	-74.4	-64.3	-57.9	-53.2	-49.7	-46.8	-44.3	-42.3
10	-88.5	-69.7	-60.6	-54.7	-50.5	-47.2	-44.5	-42.2	-40.3
12	-82.8	-65.9	-57.6	-52.2	-48.2	-45.2	-42.7	-40.5	-38.7
14	-78.0	-62.7	-55.0	-50.0	-46.4	-43.5	-41.1	-39.1	-37.4
16	-73.8	-59.9	-52.8	-48.2	-44.7	-42.0	-39.7	-37.8	-36.2
18	-70.1	-57.5	-50.9	-46.5	-43.3	-40.7	-38.6	-36.7	-35.2
20	-66.8	-55.2	-49.1	-45.0	-42.0	-39.5	-37.5	-35.8	-34.2
22	-63.9	-53.3	-47.6	-43.7	-40.8	-38.5	-36.5	-34.9	-33.4
24	-61.1	-51.4	-46.1	-42.5	-39.7	-37.5	-35.6	-34.0	-32.7
26	-58.6	-49.8	-44.8	-41.4	-38.7	-36.6	-34.8	-33.3	-32.0
28	-56.3	-48.2	-43.6	-40.3	-37.8	-35.8	-34.1	-32.6	-31.3
30	-54.2	-46.8	-42.4	-39.4	-37.0	-35.0	-33.4	-32.0	-30.7
32	-52.1	-45.4	-41.4	-38.5	-36.2	-34.3	-32.7	-31.4	-30.1
34	-50.3	-44.1	-40.4	-37.6	-35.4	-33.6	-32.1	-30.8	-29.6
36	-48.5	-43.0	-39.4	-36.8	-34.7	-33.0	-31.5	-30.3	-29.1
38	-46.8	-41.8	-38.5	-36.1	-34.1	-32.4	-31.0	-29.7	-28.6
40	-45.2	-40.7	-37.7	-35.3	-33.4	-31.8	-30.5	-29.3	-28.2
42	-43.6	-39.7	-36.9	-34.7	-32.8	-31.3	-30.0	-28.8	-27.8
44	-42.2	-38.8	-36.1	-34.0	-32.3	-30.8	-29.5	-28.4	-27.4
46	-40.8	-37.8	-35.4	-33.4	-31.7	-30.3	-29.1	-28.0	-27.0
48	-39.5	-36.9	-34.7	-32.8	-31.2	-29.8	-28.6	-27.6	-26.6
50	-38.2	-36.1	-34.0	-32.2	-30.7	-29.4	-28.2	-27.2	-26.2
52	-37.0	-35.3	-33.3	-31.7	-30.2	-28.9	-27.8	-26.8	-25.9
54	-35.8	-34.5	-32.7	-31.1	-29.8	-28.5	-27.4	-26.5	-25.6
56	-34.6	-33.7	-32.1	-30.6	-29.3	-28.1	-27.1	-26.1	-25.2
58	-33.6	-33.0	-31.5	-30.1	-28.9	-27.7	-26.7	-25.8	-24.9
60	-32.5	-32.3	-31.0	-29.7	-28.5	-27.4	-26.4	-25.5	-24.6
64	-30.5	-30.9	-29.9	-28.8	-27.7	-26.7	-25.7	-24.9	-24.1
68	-28.6	-29.6	-28.9	-27.9	-26.9	-26.0	-25.1	-24.3	-23.5
72	-26.8	-28.4	-28.0	-27.1	-26.2	-25.3	-24.5	-23.8	-23.0
76	-25.1	-27.3	-27.1	-26.4	-25.5	-24.7	-24.0	-23.3	-22.6
82	-22.7	-25.7	-25.8	-25.3	-24.6	-23.9	-23.2	-22.5	-21.9
90	-19.8	-23.8	-24.3	-24.0	-23.5	-22.9	-22.3	-21.7	-21.1

SURFACE SCATTERING STRENGTH (DB/DOYD)

ANGLE (DEGREES)	FREQUENCY 3.5 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-51.0	-49.6	-47.7	-45.9	-44.3	-42.9	-41.5	-40.3	-39.1
4	-46.2	-44.2	-42.5	-41.0	-39.6	-38.3	-37.2	-36.1	-35.1
6	-42.8	-41.1	-39.5	-38.1	-36.9	-35.7	-34.6	-33.6	-32.7
8	-40.4	-38.8	-37.4	-36.1	-34.9	-33.8	-32.8	-31.9	-31.0
10	-38.6	-37.1	-35.8	-34.5	-33.4	-32.4	-31.4	-30.6	-29.7
12	-37.1	-35.7	-34.4	-33.2	-32.2	-31.2	-30.3	-29.4	-28.7
14	-35.8	-34.5	-33.3	-32.2	-31.1	-30.2	-29.3	-28.5	-27.8
16	-34.7	-33.5	-32.3	-31.2	-30.2	-29.3	-28.5	-27.7	-27.0
18	-33.8	-32.5	-31.4	-30.4	-29.4	-28.6	-27.8	-27.0	-26.3
20	-32.9	-31.7	-30.6	-29.6	-28.7	-27.9	-27.1	-26.4	-25.7
22	-32.1	-31.0	-29.9	-29.0	-28.1	-27.3	-26.5	-25.8	-25.1
24	-31.4	-30.3	-29.3	-28.4	-27.5	-26.7	-26.0	-25.3	-24.6
26	-30.8	-29.7	-28.7	-27.8	-27.0	-26.2	-25.5	-24.8	-24.1
28	-30.1	-29.1	-28.1	-27.3	-26.4	-25.7	-25.0	-24.3	-23.7
30	-29.6	-28.6	-27.6	-26.8	-26.0	-25.2	-24.6	-23.9	-23.3
32	-29.0	-28.1	-27.2	-26.3	-25.5	-24.8	-24.2	-23.5	-22.9
34	-28.5	-27.6	-26.7	-25.9	-25.1	-24.4	-23.8	-23.2	-22.6
36	-28.1	-27.1	-26.3	-25.5	-24.7	-24.1	-23.4	-22.8	-22.2
38	-27.6	-26.7	-25.9	-25.1	-24.4	-23.7	-23.1	-22.5	-21.9
40	-27.2	-26.3	-25.5	-24.7	-24.0	-23.4	-22.8	-22.2	-21.6
42	-26.8	-25.9	-25.1	-24.4	-23.7	-23.1	-22.4	-21.9	-21.3
44	-26.4	-25.6	-24.8	-24.1	-23.4	-22.8	-22.2	-21.6	-21.1
46	-26.1	-25.2	-24.5	-23.8	-23.1	-22.5	-21.9	-21.3	-20.8
48	-25.7	-24.9	-24.2	-23.5	-22.8	-22.2	-21.6	-21.1	-20.5
50	-25.4	-24.6	-23.8	-23.2	-22.5	-21.9	-21.4	-20.8	-20.3
52	-25.1	-24.3	-23.6	-22.9	-22.3	-21.7	-21.1	-20.6	-20.1
54	-24.7	-24.0	-23.3	-22.6	-22.0	-21.4	-20.9	-20.4	-19.9
56	-24.4	-23.7	-23.0	-22.4	-21.8	-21.2	-20.6	-20.1	-19.6
58	-24.2	-23.4	-22.8	-22.1	-21.5	-21.0	-20.4	-19.9	-19.4
60	-23.9	-23.2	-22.5	-21.9	-21.3	-20.7	-20.2	-19.7	-19.2
64	-23.3	-22.7	-22.0	-21.4	-20.9	-20.3	-19.8	-19.3	-18.9
68	-22.8	-22.2	-21.6	-21.0	-20.4	-19.9	-19.4	-19.0	-18.5
72	-22.4	-21.7	-21.2	-20.6	-20.1	-19.6	-19.1	-18.6	-18.2
76	-21.9	-21.3	-20.8	-20.2	-19.7	-19.2	-18.7	-18.3	-17.9
82	-21.3	-20.7	-20.2	-19.7	-19.2	-18.7	-18.3	-17.8	-17.4
90	-20.5	-20.0	-19.5	-19.0	-18.5	-18.1	-17.7	-17.3	-16.9

SURFACE SCATTERING STRENGTH (DB/SCYD)

ANGLE (DEGREES)	FREQUENCY 4.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-136.2	-101.5	-85.6	-75.8	-69.0	-63.8	-59.6	-56.2	-53.3
4	-115.1	-87.4	-74.4	-66.4	-60.6	-56.3	-52.8	-49.9	-47.4
6	-102.7	-79.1	-67.9	-60.8	-55.8	-51.9	-48.8	-46.2	-43.9
8	-94.0	-73.2	-63.3	-56.9	-52.3	-48.8	-45.9	-43.5	-41.5
10	-87.2	-68.7	-59.7	-53.9	-49.7	-46.4	-43.7	-41.5	-39.6
12	-81.6	-65.0	-56.7	-51.4	-47.5	-44.4	-41.9	-39.8	-38.0
14	-76.9	-61.8	-54.2	-49.3	-45.6	-42.8	-40.4	-38.4	-36.7
16	-72.9	-59.1	-52.1	-47.5	-44.0	-41.3	-39.1	-37.2	-35.6
18	-69.3	-56.7	-50.2	-45.9	-42.6	-40.1	-37.9	-36.1	-34.6
20	-66.0	-54.6	-48.5	-44.4	-41.4	-38.9	-36.9	-35.2	-33.7
22	-63.1	-52.6	-47.0	-43.1	-40.2	-37.9	-36.0	-34.3	-32.9
24	-60.5	-50.8	-45.6	-41.9	-39.2	-37.0	-35.1	-33.5	-32.1
26	-58.1	-49.2	-44.3	-40.8	-38.2	-36.1	-34.3	-32.8	-31.4
28	-55.8	-47.7	-43.1	-39.8	-37.3	-35.3	-33.6	-32.1	-30.8
30	-53.7	-46.3	-42.0	-38.9	-36.5	-34.6	-32.9	-31.5	-30.2
32	-51.7	-45.0	-40.9	-38.0	-35.7	-33.9	-32.3	-30.9	-29.7
34	-49.9	-43.7	-39.9	-37.2	-35.0	-33.2	-31.7	-30.3	-29.2
36	-48.1	-42.6	-39.0	-36.4	-34.3	-32.6	-31.1	-29.8	-28.7
38	-46.5	-41.5	-38.2	-35.7	-33.7	-32.0	-30.6	-29.3	-28.2
40	-44.9	-40.4	-37.3	-35.0	-33.1	-31.5	-30.1	-28.9	-27.8
42	-43.4	-39.4	-36.5	-34.3	-32.5	-30.9	-29.6	-28.4	-27.4
44	-42.0	-38.5	-35.8	-33.7	-31.9	-30.4	-29.1	-28.0	-27.0
46	-40.7	-37.6	-35.1	-33.1	-31.4	-29.9	-28.7	-27.6	-26.6
48	-39.4	-36.7	-34.4	-32.5	-30.9	-29.5	-28.3	-27.2	-26.2
50	-38.1	-35.9	-33.7	-31.9	-30.4	-29.0	-27.9	-26.8	-25.9
52	-36.9	-35.1	-33.1	-31.4	-29.9	-28.6	-27.5	-26.5	-25.5
54	-35.8	-34.3	-32.5	-30.9	-29.5	-28.2	-27.1	-26.1	-25.2
56	-34.7	-33.6	-31.9	-30.4	-29.0	-27.8	-26.8	-25.8	-24.9
58	-33.6	-32.8	-31.3	-29.9	-28.6	-27.4	-26.4	-25.5	-24.6
60	-32.6	-32.2	-30.8	-29.4	-28.2	-27.1	-26.1	-25.2	-24.3
64	-30.6	-30.8	-29.7	-28.6	-27.4	-26.4	-25.4	-24.6	-23.8
68	-28.8	-29.6	-28.8	-27.7	-26.7	-25.7	-24.8	-24.0	-23.3
72	-27.0	-28.4	-27.9	-26.9	-26.0	-25.1	-24.3	-23.5	-22.8
76	-25.4	-27.3	-27.0	-26.2	-25.4	-24.5	-23.7	-23.0	-22.3
82	-23.0	-25.8	-25.8	-25.2	-24.5	-23.7	-23.0	-22.3	-21.7
90	-20.2	-23.9	-24.3	-23.9	-23.3	-22.7	-22.1	-21.5	-20.9

SURFACE SCATTERING STRENGTH (DB/SQYD)

ANGLE (DEGREES)	FREQUENCY 4.0 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-50.8	-48.6	-46.7	-44.9	-43.4	-41.9	-40.6	-39.4	-38.3
4	-45.3	-43.4	-41.7	-40.2	-38.8	-37.5	-36.4	-35.3	-34.3
6	-42.0	-40.3	-38.8	-37.4	-36.1	-35.0	-33.9	-32.9	-32.0
8	-39.7	-38.1	-36.7	-35.4	-34.2	-33.1	-32.1	-31.2	-30.4
10	-37.9	-36.4	-35.1	-33.9	-32.8	-31.7	-30.8	-29.9	-29.1
12	-36.4	-35.0	-33.8	-32.6	-31.6	-30.6	-29.7	-28.8	-28.0
14	-35.2	-33.9	-32.7	-31.5	-30.5	-29.6	-28.7	-27.9	-27.2
16	-34.1	-32.9	-31.7	-30.6	-29.7	-28.8	-27.9	-27.1	-26.4
18	-33.2	-32.0	-30.8	-29.8	-28.9	-28.0	-27.2	-26.4	-25.7
20	-32.4	-31.2	-30.1	-29.1	-28.2	-27.3	-26.6	-25.8	-25.1
22	-31.6	-30.4	-29.4	-28.4	-27.6	-26.7	-26.0	-25.3	-24.6
24	-30.9	-29.8	-28.8	-27.8	-27.0	-26.2	-25.4	-24.7	-24.1
26	-30.2	-29.2	-28.2	-27.3	-26.5	-25.7	-25.0	-24.3	-23.6
28	-29.7	-28.6	-27.7	-26.8	-26.0	-25.2	-24.5	-23.8	-23.2
30	-29.1	-28.1	-27.2	-26.3	-25.5	-24.8	-24.1	-23.4	-22.8
32	-28.6	-27.6	-26.7	-25.9	-25.1	-24.4	-23.7	-23.1	-22.5
34	-28.1	-27.1	-26.3	-25.4	-24.7	-24.0	-23.3	-22.7	-22.1
36	-27.6	-26.7	-25.8	-25.0	-24.3	-23.6	-23.0	-22.4	-21.8
38	-27.2	-26.3	-25.4	-24.7	-23.9	-23.3	-22.6	-22.0	-21.5
40	-26.8	-25.9	-25.1	-24.3	-23.6	-22.9	-22.3	-21.7	-21.2
42	-26.4	-25.5	-24.7	-24.0	-23.3	-22.6	-22.0	-21.5	-20.9
44	-26.0	-25.2	-24.4	-23.7	-23.0	-22.3	-21.7	-21.2	-20.6
46	-25.7	-24.8	-24.1	-23.4	-22.7	-22.1	-21.5	-20.9	-20.4
48	-25.3	-24.5	-23.8	-23.1	-22.4	-21.8	-21.2	-20.7	-20.1
50	-25.0	-24.2	-23.5	-22.8	-22.1	-21.5	-21.0	-20.4	-19.9
52	-24.7	-23.9	-23.2	-22.5	-21.9	-21.3	-20.7	-20.2	-19.7
54	-24.4	-23.6	-22.9	-22.3	-21.6	-21.0	-20.5	-20.0	-19.5
56	-24.1	-23.3	-22.7	-22.0	-21.4	-20.8	-20.3	-19.8	-19.3
58	-23.8	-23.1	-22.4	-21.8	-21.2	-20.6	-20.1	-19.5	-19.1
60	-23.5	-22.8	-22.2	-21.5	-20.9	-20.4	-19.9	-19.3	-18.9
64	-23.0	-22.3	-21.7	-21.1	-20.5	-20.0	-19.5	-19.0	-18.5
68	-22.5	-21.9	-21.3	-20.7	-20.1	-19.6	-19.1	-18.6	-18.2
72	-22.1	-21.4	-20.8	-20.3	-19.7	-19.2	-18.7	-18.3	-17.8
76	-21.6	-21.0	-20.5	-19.9	-19.4	-18.9	-18.4	-18.0	-17.5
82	-21.0	-20.5	-19.9	-19.4	-18.9	-18.4	-17.9	-17.5	-17.1
90	-20.3	-19.8	-19.2	-18.7	-18.3	-17.8	-17.4	-17.0	-16.6

SURFACE SCATTERING STRENGTH (DB/DOYD)

ANGLE (DEGREES)	FREQUENCY 4.5 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-133.9	-99.8	-84.2	-74.6	-67.8	-62.7	-58.0	-55.2	-52.4
4	-113.3	-86.0	-73.3	-65.3	-59.7	-55.4	-51.9	-49.0	-46.6
6	-101.2	-77.9	-66.9	-59.9	-54.9	-51.1	-48.0	-45.4	-43.2
8	-92.6	-72.2	-62.4	-56.1	-51.6	-48.1	-45.2	-42.9	-40.8
10	-86.0	-67.8	-58.8	-53.1	-49.0	-45.7	-43.1	-40.9	-39.0
12	-80.6	-64.1	-56.0	-50.7	-46.8	-43.8	-41.5	-39.2	-37.4
14	-76.0	-61.1	-53.5	-48.6	-45.0	-42.2	-39.8	-37.9	-36.2
16	-72.0	-58.4	-51.4	-46.8	-43.4	-40.8	-38.5	-36.7	-35.0
18	-68.5	-56.1	-49.6	-45.3	-42.1	-39.5	-37.4	-35.6	-34.1
20	-65.4	-54.0	-47.9	-43.9	-40.8	-38.4	-36.4	-34.7	-33.2
22	-62.5	-52.1	-46.4	-42.6	-39.7	-37.4	-35.5	-33.8	-32.4
24	-59.9	-50.3	-45.1	-41.4	-38.7	-36.5	-34.6	-33.1	-31.7
26	-57.5	-48.7	-43.8	-40.4	-37.8	-35.6	-33.9	-32.5	-31.0
28	-55.3	-47.2	-42.6	-39.4	-36.9	-34.9	-33.2	-31.7	-30.4
30	-53.3	-45.9	-41.5	-38.5	-36.1	-34.1	-32.5	-31.1	-29.8
32	-51.4	-44.6	-40.5	-37.6	-35.3	-33.5	-31.9	-30.5	-29.3
34	-49.5	-43.4	-39.6	-36.8	-34.6	-32.8	-31.5	-29.9	-28.8
36	-47.8	-42.2	-38.7	-36.0	-33.9	-32.2	-30.7	-29.4	-28.3
38	-46.2	-41.2	-37.8	-35.3	-33.3	-31.6	-30.2	-29.0	-27.8
40	-44.7	-40.1	-37.0	-34.6	-32.7	-31.1	-29.7	-28.5	-27.4
42	-43.2	-39.2	-36.2	-34.0	-32.1	-30.6	-29.2	-28.1	-27.0
44	-41.9	-38.2	-35.5	-33.4	-31.6	-30.1	-28.8	-27.6	-26.6
46	-40.5	-37.4	-34.8	-32.8	-31.1	-29.6	-28.4	-27.3	-26.2
48	-39.3	-36.5	-34.1	-32.2	-30.6	-29.2	-28.0	-26.9	-25.9
50	-38.1	-35.7	-33.5	-31.7	-30.1	-28.8	-27.6	-26.5	-25.6
52	-36.9	-34.9	-32.9	-31.1	-29.6	-28.3	-27.2	-26.2	-25.2
54	-35.8	-34.2	-32.3	-30.6	-29.2	-27.9	-26.8	-25.8	-24.9
56	-34.7	-33.4	-31.7	-30.1	-28.8	-27.6	-26.5	-25.5	-24.6
58	-33.6	-32.7	-31.2	-29.7	-28.4	-27.2	-26.1	-25.2	-24.3
60	-32.6	-32.1	-30.6	-29.2	-28.0	-26.8	-25.8	-24.9	-24.0
64	-30.7	-30.8	-29.6	-28.4	-27.2	-26.2	-25.2	-24.3	-23.5
68	-28.9	-29.6	-28.6	-27.6	-26.5	-25.5	-24.6	-23.8	-23.0
72	-27.2	-28.4	-27.7	-26.8	-25.8	-24.9	-24.1	-23.3	-22.5
76	-25.6	-27.3	-26.9	-26.1	-25.2	-24.3	-23.5	-22.8	-22.1
82	-23.3	-25.8	-25.7	-25.1	-24.3	-23.5	-22.8	-22.1	-21.4
90	-20.5	-24.0	-24.2	-23.8	-23.2	-22.6	-21.9	-21.3	-20.7

SURFACE SCATTERING STRENGTH (DB/SDYD)

ANGLE (DEGREES)	FREQUENCY 4.5 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-49.6	-47.7	-45.8	-44.1	-42.5	-41.1	-39.8	-38.6	-37.5
4	-44.5	-42.6	-40.9	-39.4	-38.1	-36.8	-35.7	-34.6	-33.6
6	-41.3	-39.6	-38.1	-36.7	-35.5	-34.3	-33.3	-32.3	-31.4
8	-39.0	-37.5	-36.1	-34.8	-33.6	-32.5	-31.5	-30.6	-29.8
10	-37.3	-35.8	-34.5	-33.3	-32.2	-31.2	-30.2	-29.3	-28.5
12	-35.6	-34.5	-33.2	-32.0	-31.0	-30.0	-29.1	-28.3	-27.5
14	-34.7	-33.3	-32.1	-31.0	-30.0	-29.1	-28.2	-27.4	-26.7
16	-33.6	-32.3	-31.2	-30.1	-29.1	-28.2	-27.4	-26.6	-25.9
18	-32.7	-31.5	-30.3	-29.3	-28.4	-27.5	-26.7	-26.0	-25.3
20	-31.9	-30.7	-29.6	-28.6	-27.7	-26.9	-26.1	-25.3	-24.7
22	-31.1	-30.0	-28.9	-28.0	-27.1	-26.3	-25.5	-24.8	-24.1
24	-30.4	-29.3	-28.3	-27.4	-26.5	-25.7	-25.0	-24.3	-23.6
26	-29.8	-28.7	-27.7	-26.8	-26.0	-25.2	-24.5	-23.8	-23.2
28	-29.2	-28.2	-27.2	-26.3	-25.5	-24.8	-24.1	-23.4	-22.8
30	-28.7	-27.7	-26.7	-25.9	-25.1	-24.4	-23.7	-23.0	-22.4
32	-28.2	-27.2	-26.3	-25.4	-24.7	-24.0	-23.3	-22.6	-22.0
34	-27.7	-26.7	-25.9	-25.0	-24.3	-23.6	-22.9	-22.3	-21.7
36	-27.3	-26.3	-25.4	-24.7	-23.9	-23.2	-22.6	-22.0	-21.4
38	-26.8	-25.9	-25.1	-24.3	-23.6	-22.9	-22.3	-21.7	-21.1
40	-26.4	-25.5	-24.7	-23.9	-23.2	-22.6	-21.9	-21.4	-20.8
42	-26.0	-25.2	-24.4	-23.6	-22.9	-22.3	-21.7	-21.1	-20.5
44	-25.7	-24.8	-24.0	-23.3	-22.6	-22.0	-21.4	-20.8	-20.3
46	-25.3	-24.5	-23.7	-23.0	-22.3	-21.7	-21.1	-20.6	-20.0
48	-25.0	-24.2	-23.4	-22.7	-22.1	-21.4	-20.9	-20.3	-19.8
50	-24.7	-23.9	-23.1	-22.4	-21.8	-21.2	-20.6	-20.1	-19.6
52	-24.4	-23.6	-22.9	-22.2	-21.5	-20.9	-20.4	-19.8	-19.3
54	-24.1	-23.3	-22.6	-21.9	-21.3	-20.7	-20.2	-19.6	-19.1
56	-23.8	-23.0	-22.3	-21.7	-21.1	-20.5	-19.9	-19.4	-18.9
58	-23.5	-22.8	-22.1	-21.4	-20.8	-20.3	-19.7	-19.2	-18.7
60	-23.3	-22.5	-21.8	-21.2	-20.6	-20.1	-19.5	-19.0	-18.5
64	-22.7	-22.0	-21.4	-20.8	-20.2	-19.7	-19.1	-18.7	-18.2
68	-22.3	-21.6	-21.0	-20.4	-19.8	-19.3	-18.8	-18.3	-17.8
72	-21.8	-21.2	-20.6	-20.0	-19.4	-18.9	-18.4	-18.0	-17.5
76	-21.4	-20.8	-20.2	-19.6	-19.1	-18.6	-18.1	-17.7	-17.2
82	-20.8	-20.2	-19.6	-19.1	-18.6	-18.1	-17.7	-17.2	-16.8
90	-20.1	-19.5	-19.0	-18.5	-18.0	-17.5	-17.1	-16.7	-16.3

SURFACE SCATTERING STRENGTH (DB/DOYD)

ANGLE (DEGREES)	FREQUENCY 5.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-131.0	-98.4	-83.0	-73.5	-66.8	-61.7	-57.7	-54.4	-51.5
4	-111.7	-84.8	-72.3	-64.4	-58.8	-54.6	-51.1	-48.3	-45.9
6	-99.9	-76.9	-66.0	-59.1	-54.2	-50.4	-47.3	-44.8	-42.6
8	-91.5	-71.3	-61.6	-55.4	-50.9	-47.4	-44.6	-42.2	-40.2
10	-85.0	-66.9	-58.1	-52.4	-48.3	-45.1	-42.5	-40.3	-38.4
12	-79.6	-63.4	-55.3	-50.1	-46.2	-43.2	-40.8	-38.7	-36.9
14	-75.1	-60.4	-52.9	-48.0	-44.5	-41.6	-39.3	-37.3	-35.7
16	-71.2	-57.8	-50.9	-46.3	-42.9	-40.3	-38.1	-36.2	-34.6
18	-67.8	-55.5	-49.0	-44.8	-41.6	-39.0	-36.9	-35.2	-33.6
20	-64.7	-53.4	-47.4	-43.4	-40.4	-37.9	-35.9	-34.2	-32.7
22	-62.0	-51.6	-46.0	-42.1	-39.3	-37.0	-35.0	-33.4	-32.0
24	-59.4	-49.9	-44.6	-41.0	-38.3	-36.1	-34.2	-32.6	-31.3
26	-57.1	-48.3	-43.4	-40.0	-37.4	-35.2	-33.5	-31.9	-30.6
28	-54.9	-46.8	-42.2	-39.0	-36.5	-34.5	-32.8	-31.3	-30.0
30	-52.9	-45.5	-41.2	-38.1	-35.7	-33.8	-32.1	-30.7	-29.4
32	-51.0	-44.2	-40.2	-37.2	-35.0	-33.1	-31.5	-30.1	-28.9
34	-49.2	-43.1	-39.2	-36.5	-34.3	-32.5	-30.9	-29.6	-28.4
36	-47.6	-41.9	-38.4	-35.7	-33.6	-31.9	-30.4	-29.1	-27.9
38	-46.0	-40.9	-37.5	-35.0	-33.0	-31.3	-29.9	-28.6	-27.5
40	-44.5	-39.9	-36.7	-34.3	-32.4	-30.8	-29.4	-28.2	-27.1
42	-43.1	-38.9	-36.0	-33.7	-31.8	-30.3	-28.9	-27.7	-26.7
44	-41.7	-38.0	-35.3	-33.1	-31.3	-29.8	-28.5	-27.3	-26.3
46	-40.4	-37.1	-34.6	-32.5	-30.8	-29.3	-28.1	-27.0	-25.9
48	-39.2	-36.3	-33.9	-32.0	-30.3	-28.9	-27.7	-26.6	-25.6
50	-38.0	-35.5	-33.3	-31.4	-29.8	-28.5	-27.3	-26.2	-25.3
52	-36.8	-34.8	-32.7	-30.9	-29.4	-28.1	-26.9	-25.9	-24.9
54	-35.7	-34.0	-32.1	-30.4	-29.0	-27.7	-26.6	-25.6	-24.6
56	-34.7	-33.3	-31.5	-29.9	-28.5	-27.3	-26.2	-25.2	-24.3
58	-33.7	-32.6	-31.0	-29.5	-28.1	-27.0	-25.9	-24.9	-24.1
60	-32.7	-32.0	-30.5	-29.0	-27.8	-26.6	-25.6	-24.6	-23.8
64	-30.8	-30.7	-29.5	-28.2	-27.0	-25.9	-25.0	-24.1	-23.2
68	-29.0	-29.5	-28.5	-27.4	-26.3	-25.3	-24.4	-23.5	-22.8
72	-27.3	-28.4	-27.7	-26.7	-25.7	-24.7	-23.8	-23.0	-22.3
76	-25.8	-27.3	-26.8	-26.0	-25.0	-24.2	-23.3	-22.6	-21.8
82	-23.5	-25.9	-25.6	-25.0	-24.2	-23.4	-22.6	-21.9	-21.2
90	-20.8	-24.0	-24.2	-23.7	-23.1	-22.4	-21.7	-21.1	-20.5

SURFACE SCATTERING STRENGTH (DB/SDYD)

ANGLE (DEGREES)	FREQUENCY 5.0 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-49.1	-47.0	-45.1	-43.4	-41.8	-40.4	-39.1	-37.9	-36.8
4	-43.8	-41.9	-40.3	-38.8	-37.4	-36.2	-35.1	-34.0	-33.0
6	-40.7	-39.0	-37.5	-36.1	-34.9	-33.7	-32.7	-31.7	-30.8
8	-38.5	-36.9	-35.5	-34.2	-33.1	-32.0	-31.0	-30.1	-29.2
10	-36.7	-35.3	-33.9	-32.7	-31.7	-30.6	-29.7	-28.8	-28.0
12	-35.3	-33.9	-32.7	-31.5	-30.5	-29.5	-28.6	-27.8	-27.0
14	-34.2	-32.8	-31.6	-30.5	-29.5	-28.6	-27.7	-26.9	-26.2
16	-33.1	-31.9	-30.7	-29.6	-28.7	-27.8	-27.0	-26.2	-25.5
18	-32.2	-31.0	-29.9	-28.9	-27.9	-27.1	-26.3	-25.5	-24.8
20	-31.4	-30.2	-29.2	-28.2	-27.3	-26.4	-25.7	-24.9	-24.2
22	-30.7	-29.5	-28.5	-27.5	-26.7	-25.9	-25.1	-24.4	-23.7
24	-30.0	-28.9	-27.9	-27.0	-26.1	-25.3	-24.6	-23.9	-23.2
26	-29.4	-28.3	-27.3	-26.4	-25.6	-24.8	-24.1	-23.4	-22.8
28	-28.8	-27.8	-26.8	-26.0	-25.1	-24.4	-23.7	-23.0	-22.4
30	-28.3	-27.3	-26.4	-25.5	-24.7	-24.0	-23.3	-22.6	-22.0
32	-27.8	-26.8	-25.9	-25.1	-24.3	-23.6	-22.9	-22.3	-21.7
34	-27.3	-26.4	-25.5	-24.7	-23.9	-23.2	-22.6	-21.9	-21.3
36	-26.9	-26.0	-25.1	-24.3	-23.6	-22.9	-22.2	-21.6	-21.0
38	-26.5	-25.6	-24.7	-23.9	-23.2	-22.5	-21.9	-21.3	-20.7
40	-26.1	-25.2	-24.4	-23.6	-22.9	-22.2	-21.6	-21.0	-20.5
42	-25.7	-24.8	-24.0	-23.3	-22.6	-21.9	-21.3	-20.7	-20.2
44	-25.4	-24.5	-23.7	-23.0	-22.3	-21.7	-21.0	-20.5	-19.9
46	-25.0	-24.2	-23.4	-22.7	-22.0	-21.4	-20.8	-20.2	-19.7
48	-24.7	-23.9	-23.1	-22.4	-21.7	-21.1	-20.5	-20.0	-19.5
50	-24.4	-23.6	-22.8	-22.1	-21.5	-20.9	-20.3	-19.8	-19.2
52	-24.1	-23.3	-22.6	-21.9	-21.2	-20.6	-20.1	-19.5	-19.0
54	-23.8	-23.0	-22.3	-21.6	-21.0	-20.4	-19.9	-19.3	-18.8
56	-23.5	-22.8	-22.0	-21.4	-20.8	-20.2	-19.6	-19.1	-18.6
58	-23.2	-22.5	-21.8	-21.2	-20.5	-20.0	-19.4	-18.9	-18.4
60	-23.0	-22.3	-21.6	-20.9	-20.3	-19.8	-19.2	-18.7	-18.2
64	-22.5	-21.8	-21.1	-20.5	-19.9	-19.4	-18.9	-18.4	-17.9
68	-22.0	-21.3	-20.7	-20.1	-19.5	-19.0	-18.5	-18.0	-17.6
72	-21.6	-20.9	-20.3	-19.7	-19.2	-18.7	-18.2	-17.7	-17.2
76	-21.2	-20.5	-19.9	-19.4	-18.8	-18.3	-17.9	-17.4	-17.0
82	-20.6	-20.0	-19.4	-18.9	-18.4	-17.9	-17.4	-17.0	-16.5
90	-19.9	-19.3	-18.8	-18.3	-17.8	-17.3	-16.9	-16.4	-16.0

SURFACE SCATTERING STRENGTH (DB/SQYD)

ANGLE (DEGREES)	FREQUENCY 6.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-128.6	-95.9	-80.9	-71.6	-65.1	-60.1	-56.2	-52.9	-50.1
4	-109.0	-82.8	-70.5	-62.9	-57.4	-53.2	-49.8	-47.0	-44.7
6	-97.6	-75.2	-64.5	-57.7	-52.9	-49.2	-46.1	-43.6	-41.5
8	-89.5	-69.8	-60.2	-54.1	-49.7	-46.3	-43.5	-41.2	-39.2
10	-83.2	-65.6	-56.9	-51.3	-47.2	-44.1	-41.5	-39.3	-37.4
12	-78.1	-62.1	-54.2	-49.0	-45.2	-42.2	-39.8	-37.8	-36.0
14	-73.7	-59.2	-51.9	-47.1	-43.5	-40.7	-38.4	-36.5	-34.8
16	-70.0	-56.7	-49.9	-45.4	-42.0	-39.4	-37.2	-35.3	-33.7
18	-66.6	-54.5	-48.1	-43.9	-40.7	-38.2	-36.1	-34.4	-32.8
20	-63.7	-52.5	-46.6	-42.6	-39.6	-37.2	-35.2	-33.5	-32.0
22	-61.0	-50.7	-45.1	-41.4	-38.5	-36.2	-34.3	-32.7	-31.2
24	-58.5	-49.1	-43.8	-40.3	-37.5	-35.3	-33.5	-31.9	-30.5
26	-56.3	-47.5	-42.6	-39.2	-36.6	-34.5	-32.8	-31.2	-29.9
28	-54.2	-46.1	-41.5	-38.3	-35.8	-33.8	-32.1	-30.6	-29.3
30	-52.2	-44.8	-40.5	-37.4	-35.1	-33.1	-31.5	-30.0	-28.8
32	-50.4	-43.6	-39.6	-36.6	-34.3	-32.5	-30.9	-29.5	-28.3
34	-48.7	-42.5	-38.7	-35.9	-33.7	-31.9	-30.3	-29.0	-27.8
36	-47.1	-41.4	-37.8	-35.1	-33.0	-31.3	-29.8	-28.5	-27.3
38	-45.6	-40.4	-37.0	-34.5	-32.4	-30.8	-29.3	-28.0	-26.9
40	-44.1	-39.4	-36.2	-33.8	-31.9	-30.2	-28.8	-27.6	-26.5
42	-42.8	-38.5	-35.5	-33.2	-31.3	-29.8	-28.4	-27.2	-26.1
44	-41.5	-37.6	-34.8	-32.6	-30.8	-29.3	-28.0	-26.8	-25.8
46	-40.2	-36.8	-34.1	-32.1	-30.3	-28.9	-27.6	-26.4	-25.4
48	-39.0	-36.0	-33.5	-31.5	-29.9	-28.4	-27.2	-26.1	-25.1
50	-37.0	-35.2	-32.9	-31.0	-29.4	-28.0	-26.8	-25.7	-24.8
52	-36.7	-34.5	-32.3	-30.5	-29.0	-27.6	-26.5	-25.4	-24.4
54	-35.7	-33.8	-31.8	-30.0	-28.5	-27.3	-26.1	-25.1	-24.2
56	-34.7	-33.1	-31.2	-29.6	-28.1	-26.9	-25.8	-24.8	-23.9
58	-33.7	-32.4	-30.7	-29.1	-27.8	-26.5	-25.5	-24.5	-23.6
60	-32.7	-31.8	-30.2	-28.7	-27.4	-26.2	-25.1	-24.2	-23.3
64	-30.0	-30.6	-29.2	-27.9	-26.7	-25.6	-24.6	-23.6	-22.8
68	-29.2	-29.4	-28.3	-27.1	-26.0	-25.0	-24.0	-23.1	-22.3
72	-27.6	-28.3	-27.5	-26.4	-25.4	-24.4	-23.5	-22.7	-21.9
76	-26.1	-27.3	-26.7	-25.7	-24.8	-23.8	-23.0	-22.2	-21.5
82	-23.0	-25.9	-25.5	-24.8	-23.9	-23.1	-22.3	-21.6	-20.9
90	-21.3	-24.1	-24.1	-23.6	-22.9	-22.2	-21.5	-20.8	-20.1

SURFACE SCATTERING STRENGTH (DB/30YD)

ANGLE (DEGREES)	FREQUENCY 6.0 KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-47.7	-45.6	-43.8	-42.1	-40.6	-39.2	-37.9	-36.7	-35.7
4	-42.6	-40.8	-39.1	-37.7	-36.4	-35.1	-34.0	-33.0	-32.0
6	-39.4	-37.9	-36.4	-35.1	-33.9	-32.8	-31.7	-30.8	-29.9
8	-37.5	-35.9	-34.5	-33.3	-32.1	-31.1	-30.1	-29.2	-28.3
10	-35.8	-34.3	-33.0	-31.8	-30.8	-29.8	-28.8	-28.0	-27.2
12	-34.4	-33.1	-31.8	-30.7	-29.7	-28.7	-27.8	-27.0	-26.2
14	-33.3	-32.0	-30.8	-29.7	-28.7	-27.8	-26.9	-26.1	-25.4
16	-32.3	-31.0	-29.9	-28.9	-27.9	-27.0	-26.2	-25.4	-24.7
18	-31.4	-30.2	-29.1	-28.1	-27.2	-26.3	-25.5	-24.8	-24.1
20	-30.7	-29.5	-28.4	-27.4	-26.5	-25.7	-24.9	-24.2	-23.5
22	-30.0	-28.8	-27.8	-26.8	-26.0	-25.1	-24.4	-23.7	-23.0
24	-29.3	-28.2	-27.2	-26.3	-25.4	-24.6	-23.9	-23.2	-22.6
26	-28.7	-27.6	-26.7	-25.8	-24.9	-24.2	-23.4	-22.8	-22.1
28	-28.2	-27.1	-26.2	-25.3	-24.5	-23.7	-23.0	-22.4	-21.7
30	-27.7	-26.6	-25.7	-24.9	-24.1	-23.3	-22.6	-22.0	-21.4
32	-27.2	-26.2	-25.3	-24.4	-23.7	-22.9	-22.3	-21.6	-21.0
34	-26.7	-25.8	-24.9	-24.1	-23.3	-22.6	-21.9	-21.3	-20.7
36	-26.3	-25.4	-24.5	-23.7	-23.0	-22.3	-21.6	-21.0	-20.4
38	-25.9	-25.0	-24.1	-23.4	-22.6	-21.9	-21.3	-20.7	-20.1
40	-25.5	-24.6	-23.8	-23.0	-22.3	-21.6	-21.0	-20.4	-19.9
42	-25.2	-24.3	-23.5	-22.7	-22.0	-21.4	-20.7	-20.2	-19.6
44	-24.8	-24.0	-23.2	-22.4	-21.7	-21.1	-20.5	-19.9	-19.4
46	-24.5	-23.6	-22.9	-22.1	-21.5	-20.8	-20.2	-19.7	-19.1
48	-24.2	-23.3	-22.6	-21.9	-21.2	-20.6	-20.0	-19.4	-18.9
50	-23.9	-23.1	-22.3	-21.6	-20.9	-20.3	-19.8	-19.2	-18.7
52	-23.6	-22.8	-22.0	-21.4	-20.7	-20.1	-19.5	-19.0	-18.5
54	-23.3	-22.5	-21.8	-21.1	-20.5	-19.9	-19.3	-18.8	-18.3
56	-23.0	-22.3	-21.5	-20.9	-20.3	-19.7	-19.1	-18.6	-18.1
58	-22.8	-22.0	-21.3	-20.7	-20.0	-19.5	-18.9	-18.4	-17.9
60	-22.5	-21.8	-21.1	-20.4	-19.8	-19.3	-18.7	-18.2	-17.7
64	-22.0	-21.3	-20.7	-20.0	-19.4	-18.9	-18.4	-17.9	-17.4
68	-21.6	-20.9	-20.3	-19.6	-19.1	-18.5	-18.0	-17.5	-17.1
72	-21.2	-20.5	-19.9	-19.3	-18.7	-18.2	-17.7	-17.2	-16.8
76	-20.8	-20.1	-19.5	-18.9	-18.4	-17.9	-17.4	-16.9	-16.5
82	-20.2	-19.6	-19.0	-18.5	-17.9	-17.4	-17.0	-16.5	-16.1
90	-19.5	-18.9	-18.4	-17.9	-17.4	-16.9	-16.4	-16.0	-15.6

SURFACE SCATTERING STRENGTH (DB/SQYD)

FREQUENCY 7.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-125.8	-93.6	-79.1	-70.0	-63.6	-58.8	-54.9	-51.7	-48.9
4	-106.8	-81.2	-69.1	-61.6	-56.2	-52.1	-48.7	-46.0	-43.6
6	-95.7	-73.7	-63.2	-56.6	-51.8	-48.1	-45.2	-42.7	-40.5
8	-87.0	-68.5	-59.1	-53.1	-48.7	-45.4	-42.6	-40.3	-38.3
10	-81.7	-64.4	-55.9	-50.3	-46.3	-43.2	-40.6	-38.5	-36.6
12	-76.8	-61.1	-53.2	-48.1	-44.4	-41.4	-39.0	-37.0	-35.2
14	-72.5	-58.2	-51.0	-46.2	-42.7	-39.9	-37.7	-35.7	-34.1
16	-68.9	-55.8	-49.1	-44.6	-41.3	-38.6	-36.5	-34.6	-33.0
18	-65.7	-53.6	-47.4	-43.1	-40.0	-37.5	-35.4	-33.7	-32.1
20	-62.8	-51.7	-45.8	-41.9	-38.9	-36.5	-34.5	-32.8	-31.3
22	-60.2	-50.0	-44.5	-40.7	-37.8	-35.6	-33.7	-32.0	-30.6
24	-57.8	-48.4	-43.2	-39.6	-36.9	-34.7	-32.9	-31.3	-29.9
26	-55.6	-46.9	-42.0	-38.6	-36.1	-33.9	-32.2	-30.7	-29.3
28	-53.6	-45.6	-41.0	-37.7	-35.3	-33.2	-31.5	-30.1	-28.8
30	-51.7	-44.3	-40.0	-36.9	-34.5	-32.6	-30.9	-29.5	-28.2
32	-49.9	-43.1	-39.0	-36.1	-33.8	-31.9	-30.5	-29.0	-27.7
34	-48.3	-42.0	-38.2	-35.4	-33.2	-31.4	-29.8	-28.5	-27.3
36	-46.7	-41.0	-37.3	-34.7	-32.6	-30.8	-29.5	-28.0	-26.8
38	-45.2	-40.0	-36.5	-34.0	-32.0	-30.3	-28.8	-27.6	-26.4
40	-43.8	-39.0	-35.8	-33.4	-31.4	-29.8	-28.4	-27.1	-26.0
42	-42.5	-38.1	-35.1	-32.8	-30.9	-29.3	-27.9	-26.7	-25.7
44	-41.2	-37.3	-34.4	-32.2	-30.4	-28.9	-27.5	-26.4	-25.3
46	-40.0	-36.5	-33.8	-31.7	-29.9	-28.4	-27.1	-26.0	-25.0
48	-38.8	-35.7	-33.2	-31.1	-29.5	-28.0	-26.8	-25.6	-24.6
50	-37.7	-35.0	-32.6	-30.6	-29.0	-27.6	-26.4	-25.3	-24.3
52	-36.7	-34.2	-32.0	-30.2	-28.6	-27.2	-26.1	-25.0	-24.0
54	-35.6	-33.5	-31.5	-29.7	-28.2	-26.9	-25.7	-24.7	-23.7
56	-34.6	-32.9	-30.9	-29.3	-27.8	-26.5	-25.4	-24.4	-23.5
58	-33.7	-32.2	-30.4	-28.8	-27.4	-26.2	-25.1	-24.1	-23.2
60	-32.7	-31.6	-29.9	-28.4	-27.1	-25.9	-24.8	-23.8	-22.9
64	-31.0	-30.4	-29.0	-27.6	-26.4	-25.2	-24.2	-23.3	-22.4
68	-29.3	-29.3	-28.1	-26.9	-25.7	-24.6	-23.7	-22.8	-22.0
72	-27.8	-28.3	-27.3	-26.2	-25.1	-24.1	-23.2	-22.3	-21.5
76	-26.3	-27.3	-26.5	-25.5	-24.5	-23.6	-22.7	-21.9	-21.1
82	-24.2	-25.4	-25.4	-24.6	-23.7	-22.8	-22.0	-21.3	-20.5
90	-21.7	-24.2	-24.1	-23.4	-22.7	-21.9	-21.2	-20.5	-19.8

SURFACE SCATTERING STRENGTH (DB/DOYD)

FREQUENCY 7.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-46.6	-44.5	-42.7	-41.0	-39.5	-38.2	-36.9	-35.8	-34.7
4	-41.6	-39.8	-38.2	-36.8	-35.4	-34.2	-33.1	-32.1	-31.1
6	-38.7	-37.0	-35.6	-34.3	-33.0	-31.9	-30.9	-30.0	-29.1
8	-36.6	-35.1	-33.7	-32.5	-31.3	-30.3	-29.3	-28.4	-27.6
10	-35.0	-33.6	-32.3	-31.1	-30.0	-29.0	-28.1	-27.3	-26.5
12	-33.7	-32.3	-31.1	-30.0	-28.9	-28.0	-27.1	-26.3	-25.5
14	-32.6	-31.3	-30.1	-29.0	-28.0	-27.1	-26.3	-25.5	-24.7
16	-31.6	-30.4	-29.2	-28.2	-27.2	-26.4	-25.5	-24.8	-24.0
18	-30.8	-29.6	-28.5	-27.5	-26.5	-25.7	-24.9	-24.1	-23.4
20	-30.0	-28.9	-27.8	-26.8	-25.9	-25.1	-24.3	-23.6	-22.9
22	-29.3	-28.2	-27.2	-26.2	-25.4	-24.5	-23.8	-23.1	-22.4
24	-28.7	-27.6	-26.6	-25.7	-24.8	-24.0	-23.3	-22.6	-22.0
26	-28.1	-27.1	-26.1	-25.2	-24.4	-23.6	-22.9	-22.2	-21.6
28	-27.6	-26.6	-25.6	-24.7	-23.9	-23.2	-22.5	-21.8	-21.2
30	-27.1	-26.1	-25.2	-24.3	-23.5	-22.8	-22.1	-21.4	-20.8
32	-26.6	-25.7	-24.7	-23.9	-23.1	-22.4	-21.7	-21.1	-20.5
34	-26.2	-25.2	-24.4	-23.5	-22.8	-22.1	-21.4	-20.8	-20.2
36	-25.8	-24.8	-24.0	-23.2	-22.4	-21.7	-21.1	-20.5	-19.9
38	-25.4	-24.5	-23.6	-22.8	-22.1	-21.4	-20.8	-20.2	-19.6
40	-25.0	-24.1	-23.3	-22.5	-21.8	-21.1	-20.5	-19.9	-19.4
42	-24.7	-23.8	-23.0	-22.2	-21.5	-20.9	-20.2	-19.7	-19.1
44	-24.4	-23.5	-22.7	-21.9	-21.2	-20.6	-20.0	-19.4	-18.9
46	-24.0	-23.2	-22.4	-21.7	-21.0	-20.3	-19.7	-19.2	-18.6
48	-23.7	-22.9	-22.1	-21.4	-20.7	-20.1	-19.5	-19.0	-18.4
50	-23.4	-22.6	-21.9	-21.2	-20.5	-19.9	-19.3	-18.7	-18.2
52	-23.2	-22.3	-21.6	-20.9	-20.3	-19.7	-19.1	-18.5	-18.0
54	-22.9	-22.1	-21.4	-20.7	-20.0	-19.4	-18.9	-18.3	-17.8
56	-22.6	-21.8	-21.1	-20.5	-19.8	-19.2	-18.7	-18.1	-17.6
58	-22.4	-21.6	-20.9	-20.2	-19.6	-19.0	-18.5	-18.0	-17.5
60	-22.1	-21.4	-20.7	-20.0	-19.4	-18.8	-18.3	-17.8	-17.3
64	-21.7	-20.9	-20.3	-19.6	-19.0	-18.5	-17.9	-17.4	-17.0
68	-21.2	-20.5	-19.9	-19.3	-18.7	-18.1	-17.6	-17.1	-16.6
72	-20.8	-20.1	-19.5	-18.9	-18.3	-17.8	-17.3	-16.8	-16.4
76	-20.4	-19.8	-19.1	-18.6	-18.0	-17.5	-17.0	-16.5	-16.1
82	-19.9	-19.2	-18.7	-18.1	-17.6	-17.1	-16.6	-16.1	-15.7
90	-19.2	-18.6	-18.1	-17.5	-17.0	-16.5	-16.1	-15.6	-15.2

SURFACE SCATTERING STRENGTH (DB/SQLD)

ANGLE (DEGREES)	FREQUENCY 8.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-123.4	-92.1	-77.7	-68.7	-62.4	-57.6	-53.8	-50.6	-47.9
4	-104.9	-79.7	-67.9	-60.5	-55.2	-51.1	-47.8	-45.1	-42.8
6	-94.1	-72.5	-62.2	-55.6	-50.9	-47.3	-44.3	-41.9	-39.8
8	-86.5	-67.4	-58.1	-52.2	-47.9	-44.6	-41.8	-39.6	-37.6
10	-80.5	-63.4	-55.0	-49.5	-45.5	-42.4	-39.9	-37.8	-35.9
12	-75.6	-60.2	-52.4	-47.3	-43.6	-40.7	-38.3	-36.3	-34.6
14	-71.5	-57.4	-50.2	-45.5	-42.0	-39.3	-37.0	-35.1	-33.4
16	-68.0	-55.0	-48.4	-43.9	-40.6	-38.0	-35.9	-34.0	-32.4
18	-64.8	-52.9	-46.7	-42.5	-39.4	-36.9	-34.8	-33.1	-31.6
20	-62.0	-51.1	-45.2	-41.3	-38.3	-35.9	-33.9	-32.3	-30.8
22	-59.5	-49.4	-43.9	-40.1	-37.3	-35.0	-33.1	-31.5	-30.1
24	-57.2	-47.8	-42.6	-39.1	-36.4	-34.2	-32.4	-30.8	-29.4
26	-55.0	-46.4	-41.5	-38.1	-35.5	-33.4	-31.7	-30.2	-28.8
28	-53.1	-45.1	-40.5	-37.2	-34.8	-32.7	-31.0	-29.6	-28.3
30	-51.2	-43.8	-39.5	-36.4	-34.0	-32.1	-30.4	-29.0	-27.8
32	-49.5	-42.7	-38.6	-35.6	-33.4	-31.5	-29.9	-28.5	-27.3
34	-47.9	-41.6	-37.7	-34.9	-32.7	-30.9	-29.4	-28.0	-26.8
36	-46.4	-40.6	-36.9	-34.2	-32.1	-30.4	-28.9	-27.6	-26.4
38	-44.9	-39.6	-36.2	-33.6	-31.6	-29.9	-28.4	-27.1	-26.0
40	-43.6	-38.7	-35.4	-33.0	-31.0	-29.4	-28.0	-26.7	-25.6
42	-42.3	-37.8	-34.7	-32.4	-30.5	-28.9	-27.5	-26.3	-25.3
44	-41.0	-37.0	-34.1	-31.9	-30.0	-28.5	-27.1	-26.0	-24.9
46	-39.8	-36.2	-33.5	-31.3	-29.6	-28.1	-26.8	-25.6	-24.6
48	-38.7	-35.4	-32.9	-30.8	-29.1	-27.7	-26.4	-25.3	-24.3
50	-37.6	-34.7	-32.3	-30.3	-28.7	-27.3	-26.0	-24.9	-24.0
52	-36.6	-34.0	-31.7	-29.9	-28.3	-26.9	-25.7	-24.6	-23.7
54	-35.6	-33.3	-31.2	-29.4	-27.9	-26.5	-25.4	-24.3	-23.4
56	-34.6	-32.7	-30.7	-29.0	-27.5	-26.2	-25.1	-24.0	-23.1
58	-33.7	-32.1	-30.2	-28.6	-27.1	-25.9	-24.8	-23.8	-22.8
60	-32.7	-31.5	-29.7	-28.2	-26.8	-25.6	-24.5	-23.5	-22.6
64	-31.0	-30.3	-28.8	-27.4	-26.1	-24.9	-23.9	-23.0	-22.1
68	-29.4	-29.2	-28.0	-26.7	-25.5	-24.4	-23.4	-22.5	-21.7
72	-27.9	-28.2	-27.2	-26.0	-24.9	-23.8	-22.9	-22.0	-21.2
76	-26.4	-27.2	-26.4	-25.3	-24.3	-23.3	-22.4	-21.6	-20.8
80	-24.8	-25.9	-25.3	-24.4	-23.5	-22.6	-21.8	-21.0	-20.3
90	-21.9	-24.2	-24.0	-23.3	-22.5	-21.7	-21.0	-20.3	-19.6

SURFACE SCATTERING STRENGTH (DB/SDYD)

ANGLE (DEGREES)	FREQUENCY P.O. KHZ								
	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-45.6	-43.6	-41.8	-40.1	-38.7	-37.3	-36.1	-34.9	-33.9
4	-40.8	-39.0	-37.4	-36.0	-34.7	-33.5	-32.4	-31.4	-30.4
6	-37.9	-36.3	-34.8	-33.5	-32.3	-31.2	-30.2	-29.3	-28.4
8	-35.0	-34.4	-33.0	-31.8	-30.7	-29.6	-28.7	-27.8	-26.9
10	-34.3	-32.9	-31.6	-30.4	-29.4	-28.4	-27.5	-26.6	-25.8
12	-33.1	-31.7	-30.5	-29.3	-28.3	-27.4	-26.5	-25.7	-24.9
14	-32.0	-30.7	-29.5	-28.4	-27.4	-26.5	-25.7	-24.9	-24.2
16	-31.0	-29.8	-28.7	-27.6	-26.7	-25.8	-25.0	-24.2	-23.5
18	-30.2	-29.0	-27.9	-26.9	-26.0	-25.1	-24.3	-23.6	-22.9
20	-29.5	-28.3	-27.2	-26.3	-25.4	-24.5	-23.8	-23.1	-22.4
22	-28.8	-27.7	-26.6	-25.7	-24.8	-24.0	-23.3	-22.6	-21.9
24	-28.2	-27.1	-26.1	-25.2	-24.3	-23.5	-22.8	-22.1	-21.5
26	-27.6	-26.6	-25.6	-24.7	-23.9	-23.1	-22.4	-21.7	-21.1
28	-27.1	-26.1	-25.1	-24.2	-23.4	-22.7	-22.0	-21.3	-20.7
30	-26.6	-25.6	-24.7	-23.8	-23.0	-22.3	-21.6	-21.0	-20.4
32	-26.2	-25.2	-24.3	-23.4	-22.7	-21.9	-21.3	-20.6	-20.0
34	-25.8	-24.8	-23.9	-23.1	-22.3	-21.6	-20.9	-20.3	-19.7
36	-25.4	-24.4	-23.5	-22.7	-22.0	-21.3	-20.6	-20.0	-19.4
38	-25.0	-24.0	-23.2	-22.4	-21.7	-21.0	-20.4	-19.7	-19.2
40	-24.6	-23.7	-22.9	-22.1	-21.4	-20.7	-20.1	-19.5	-18.9
42	-24.3	-23.4	-22.6	-21.8	-21.1	-20.4	-19.8	-19.2	-18.7
44	-23.9	-23.1	-22.3	-21.5	-20.8	-20.2	-19.6	-19.0	-18.4
46	-23.6	-22.8	-22.0	-21.3	-20.6	-19.9	-19.3	-18.8	-18.2
48	-23.3	-22.5	-21.7	-21.0	-20.3	-19.7	-19.1	-18.5	-18.0
50	-23.1	-22.2	-21.5	-20.8	-20.1	-19.5	-18.9	-18.3	-17.8
52	-22.8	-22.0	-21.2	-20.5	-19.9	-19.3	-18.7	-18.1	-17.6
54	-22.5	-21.7	-21.0	-20.3	-19.6	-19.0	-18.5	-17.9	-17.4
56	-22.3	-21.5	-20.7	-20.1	-19.4	-18.8	-18.3	-17.7	-17.2
58	-22.0	-21.2	-20.5	-19.9	-19.2	-18.6	-18.1	-17.6	-17.1
60	-21.8	-21.0	-20.3	-19.7	-19.0	-18.5	-17.9	-17.4	-16.9
64	-21.3	-20.6	-19.9	-19.3	-18.7	-18.1	-17.6	-17.1	-16.6
68	-20.9	-20.2	-19.5	-18.9	-18.3	-17.8	-17.2	-16.7	-16.3
72	-20.5	-19.8	-19.2	-18.6	-18.0	-17.5	-16.9	-16.5	-16.0
76	-20.1	-19.4	-18.8	-18.2	-17.7	-17.2	-16.7	-16.2	-15.7
82	-19.6	-18.9	-18.3	-17.8	-17.2	-16.7	-16.2	-15.8	-15.3
90	-18.9	-18.3	-17.8	-17.2	-16.7	-16.2	-15.7	-15.3	-14.9

SURFACE SCATTERING STRENGTH (DB/SD)D

ANGLE (DEGREES)	FREQUENCY 9.0 KHZ								
	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-121.4	-90.6	-76.4	-67.6	-61.4	-56.6	-52.6	-49.7	-47.1
4	-103.3	-78.5	-66.8	-59.5	-54.3	-50.2	-47.0	-44.3	-42.0
6	-92.7	-71.5	-61.2	-54.8	-50.1	-46.5	-43.0	-41.2	-39.1
8	-85.2	-66.4	-57.3	-51.4	-47.2	-43.9	-41.2	-38.9	-37.0
10	-79.4	-62.6	-54.2	-48.8	-44.9	-41.8	-39.5	-37.2	-35.3
12	-74.7	-59.4	-51.7	-46.7	-43.0	-40.1	-37.7	-35.7	-34.0
14	-70.7	-56.7	-49.6	-44.9	-41.4	-38.7	-36.4	-34.5	-32.9
16	-67.2	-54.4	-47.7	-43.3	-40.1	-37.5	-35.5	-33.5	-31.9
18	-64.1	-52.3	-46.1	-42.0	-38.8	-36.4	-34.5	-32.6	-31.1
20	-61.4	-50.5	-44.7	-40.7	-37.8	-35.4	-33.4	-31.8	-30.3
22	-58.9	-48.8	-43.3	-39.6	-36.8	-34.5	-32.6	-31.0	-29.6
24	-56.6	-47.3	-42.1	-38.6	-35.9	-33.7	-31.9	-30.3	-29.0
26	-54.5	-45.9	-41.0	-37.7	-35.1	-33.0	-31.2	-29.7	-28.4
28	-52.6	-44.6	-40.0	-36.8	-34.3	-32.3	-30.6	-29.1	-27.8
30	-50.8	-43.4	-39.1	-36.0	-33.6	-31.7	-30.0	-28.6	-27.3
32	-49.1	-42.3	-38.2	-35.2	-33.0	-31.1	-29.5	-28.1	-26.9
34	-47.5	-41.2	-37.3	-34.5	-32.3	-30.5	-29.0	-27.6	-26.4
36	-46.1	-40.2	-36.6	-33.9	-31.7	-30.0	-28.5	-27.2	-26.0
38	-44.6	-39.3	-35.8	-33.2	-31.2	-29.5	-28.0	-26.8	-25.6
40	-43.3	-38.4	-35.1	-32.6	-30.7	-29.0	-27.6	-26.4	-25.2
42	-42.0	-37.5	-34.4	-32.1	-30.2	-28.6	-27.2	-26.0	-24.9
44	-40.8	-36.7	-33.8	-31.5	-29.7	-28.1	-26.8	-25.6	-24.5
46	-39.7	-36.0	-33.2	-31.0	-29.2	-27.7	-26.4	-25.3	-24.2
48	-38.6	-35.2	-32.6	-30.5	-28.8	-27.3	-26.1	-24.9	-23.9
50	-37.5	-34.5	-32.0	-30.0	-28.4	-27.0	-25.7	-24.6	-23.6
52	-36.5	-33.8	-31.5	-29.6	-28.0	-26.6	-25.4	-24.3	-23.3
54	-35.5	-33.2	-31.0	-29.1	-27.6	-26.3	-25.1	-24.0	-23.1
56	-34.5	-32.5	-30.5	-28.7	-27.2	-25.9	-24.8	-23.7	-22.8
58	-33.6	-31.9	-30.0	-28.3	-26.9	-25.6	-24.5	-23.5	-22.5
60	-32.7	-31.3	-29.5	-27.9	-26.5	-25.3	-24.2	-23.2	-22.3
64	-31.1	-30.2	-28.6	-27.2	-25.9	-24.7	-23.6	-22.7	-21.8
68	-29.5	-29.1	-27.8	-26.5	-25.2	-24.1	-23.1	-22.2	-21.4
72	-28.0	-28.1	-27.0	-25.6	-24.6	-23.6	-22.6	-21.8	-21.0
76	-26.6	-27.2	-26.3	-25.2	-24.1	-23.1	-22.2	-21.3	-20.6
82	-24.6	-25.9	-25.2	-24.3	-23.3	-22.4	-21.5	-20.8	-20.0
90	-22.2	-24.3	-23.9	-23.2	-22.4	-21.5	-20.8	-20.0	-19.3

SURFACE SCATTERING STRENGTH (DB/SDYD)

FREQUENCY 9.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-44.8	-42.8	-41.0	-39.4	-37.9	-36.6	-35.3	-34.2	-33.1
4	-40.0	-38.3	-36.7	-35.3	-34.0	-32.8	-31.7	-30.7	-29.8
6	-37.2	-35.6	-34.2	-32.9	-31.7	-30.6	-29.6	-28.7	-27.8
8	-35.3	-33.8	-32.4	-31.2	-30.1	-29.0	-28.1	-27.2	-26.4
10	-33.7	-32.3	-31.0	-29.9	-28.8	-27.8	-26.9	-26.1	-25.3
12	-32.5	-31.1	-29.9	-28.8	-27.8	-26.8	-26.0	-25.2	-24.4
14	-31.4	-30.1	-29.0	-27.9	-26.9	-26.0	-25.2	-24.4	-23.7
16	-30.5	-29.3	-28.1	-27.1	-26.2	-25.3	-24.5	-23.7	-23.0
18	-29.7	-28.5	-27.4	-26.4	-25.5	-24.7	-23.9	-23.1	-22.4
20	-29.0	-27.8	-26.8	-25.8	-24.9	-24.1	-23.3	-22.6	-21.9
22	-28.3	-27.2	-26.2	-25.2	-24.4	-23.6	-22.8	-22.1	-21.4
24	-27.7	-26.6	-25.6	-24.7	-23.9	-23.1	-22.4	-21.7	-21.0
26	-27.2	-26.1	-25.1	-24.3	-23.4	-22.7	-21.9	-21.3	-20.6
28	-26.7	-25.6	-24.7	-23.8	-23.0	-22.3	-21.6	-20.9	-20.3
30	-26.2	-25.2	-24.3	-23.4	-22.6	-21.9	-21.2	-20.5	-19.9
32	-25.8	-24.8	-23.9	-23.0	-22.3	-21.5	-20.9	-20.2	-19.6
34	-25.4	-24.4	-23.5	-22.7	-21.9	-21.2	-20.5	-19.9	-19.3
36	-25.0	-24.0	-23.1	-22.3	-21.6	-20.9	-20.2	-19.6	-19.0
38	-24.6	-23.7	-22.8	-22.0	-21.3	-20.6	-20.0	-19.4	-18.8
40	-24.2	-23.3	-22.5	-21.7	-21.0	-20.3	-19.7	-19.1	-18.5
42	-23.9	-23.0	-22.2	-21.4	-20.7	-20.1	-19.4	-18.9	-18.3
44	-23.6	-22.7	-21.9	-21.2	-20.5	-19.8	-19.2	-18.6	-18.1
46	-23.3	-22.4	-21.6	-20.9	-20.2	-19.6	-19.0	-18.4	-17.9
48	-23.0	-22.1	-21.4	-20.6	-20.0	-19.3	-18.7	-18.2	-17.6
50	-22.7	-21.9	-21.1	-20.4	-19.7	-19.1	-18.5	-18.0	-17.4
52	-22.4	-21.6	-20.9	-20.2	-19.5	-18.9	-18.3	-17.8	-17.3
54	-22.2	-21.4	-20.6	-20.0	-19.3	-18.7	-18.1	-17.6	-17.1
56	-21.9	-21.1	-20.4	-19.7	-19.1	-18.5	-17.9	-17.4	-16.9
58	-21.7	-20.9	-20.2	-19.5	-18.9	-18.3	-17.8	-17.2	-16.7
60	-21.5	-20.7	-20.0	-19.3	-18.7	-18.1	-17.6	-17.1	-16.6
64	-21.0	-20.3	-19.6	-19.0	-18.3	-17.8	-17.2	-16.7	-16.2
68	-20.6	-19.9	-19.2	-18.6	-18.0	-17.5	-16.9	-16.4	-15.9
72	-20.2	-19.5	-18.9	-18.3	-17.7	-17.1	-16.6	-16.1	-15.7
76	-19.8	-19.2	-18.5	-17.9	-17.4	-16.8	-16.3	-15.9	-15.4
82	-19.3	-18.7	-18.1	-17.5	-17.0	-16.4	-15.9	-15.5	-15.0
90	-18.7	-18.1	-17.5	-16.9	-16.4	-15.9	-15.5	-15.0	-14.6

SURFACE SCATTERING STRENGTH (DB/SQYD)

FREQUENCY 10.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-119.6	-89.3	-75.3	-66.6	-60.4	-55.7	-52.0	-48.9	-46.3
4	-101.9	-77.4	-65.9	-58.6	-53.5	-49.5	-46.3	-43.6	-41.3
6	-91.5	-70.5	-60.4	-54.0	-49.4	-45.8	-42.9	-40.5	-38.5
8	-84.2	-65.6	-56.5	-50.7	-46.5	-43.2	-40.6	-38.3	-36.4
10	-78.5	-61.8	-53.5	-48.2	-44.3	-41.2	-38.7	-36.6	-34.8
12	-73.8	-58.7	-51.1	-46.1	-42.4	-39.6	-37.2	-35.2	-33.5
14	-69.9	-56.0	-49.0	-44.3	-40.9	-38.2	-35.9	-34.0	-32.4
16	-66.5	-53.8	-47.2	-42.8	-39.6	-37.0	-34.8	-33.0	-31.5
18	-63.5	-51.8	-45.6	-41.5	-38.4	-35.9	-33.9	-32.1	-30.6
20	-60.8	-50.0	-44.2	-40.3	-37.3	-35.0	-33.0	-31.3	-29.9
22	-58.3	-48.3	-42.9	-39.2	-36.4	-34.1	-32.2	-30.6	-29.2
24	-56.1	-46.8	-41.7	-38.2	-35.5	-33.3	-31.5	-29.9	-28.6
26	-54.1	-45.5	-40.6	-37.3	-34.7	-32.6	-30.8	-29.3	-28.0
28	-52.2	-44.2	-39.6	-36.4	-33.9	-31.9	-30.2	-28.7	-27.5
30	-50.4	-43.0	-38.7	-35.6	-33.2	-31.3	-29.6	-28.2	-27.0
32	-48.8	-41.9	-37.8	-34.9	-32.6	-30.7	-29.1	-27.7	-26.5
34	-47.2	-40.9	-37.0	-34.2	-32.0	-30.2	-28.6	-27.3	-26.1
36	-45.8	-39.9	-36.2	-33.5	-31.4	-29.6	-28.1	-26.8	-25.7
38	-44.4	-39.0	-35.5	-32.9	-30.9	-29.2	-27.7	-26.4	-25.3
40	-43.1	-38.1	-34.8	-32.3	-30.4	-28.7	-27.3	-26.0	-24.9
42	-41.8	-37.3	-34.2	-31.8	-29.9	-28.3	-26.9	-25.7	-24.6
44	-40.7	-36.5	-33.5	-31.2	-29.4	-27.8	-26.5	-25.3	-24.2
46	-39.5	-35.7	-32.9	-30.7	-29.0	-27.4	-26.1	-25.0	-23.9
48	-38.4	-35.0	-32.4	-30.3	-28.5	-27.1	-25.8	-24.6	-23.6
50	-37.4	-34.3	-31.8	-29.8	-28.1	-26.7	-25.4	-24.3	-23.3
52	-36.4	-33.6	-31.3	-29.3	-27.7	-26.3	-25.1	-24.0	-23.0
54	-35.4	-33.0	-30.8	-28.9	-27.3	-26.0	-24.8	-23.7	-22.8
56	-34.5	-32.4	-30.3	-28.5	-27.0	-25.7	-24.5	-23.5	-22.5
58	-33.6	-31.8	-29.8	-28.1	-26.6	-25.3	-24.2	-23.2	-22.3
60	-32.7	-31.2	-29.3	-27.7	-26.3	-25.0	-23.9	-22.9	-22.0
64	-31.1	-30.1	-28.5	-27.0	-25.6	-24.5	-23.4	-22.4	-21.6
68	-29.5	-29.1	-27.7	-26.3	-25.0	-23.9	-22.9	-22.0	-21.1
72	-28.1	-28.1	-26.9	-25.6	-24.5	-23.4	-22.4	-21.5	-20.7
76	-26.7	-27.2	-26.1	-25.0	-23.9	-22.9	-22.0	-21.1	-20.3
82	-24.8	-25.9	-25.1	-24.1	-23.1	-22.2	-21.3	-20.5	-19.8
90	-22.4	-24.3	-23.9	-23.1	-22.2	-21.4	-20.6	-19.8	-19.1

SURFACE SCATTERING STRENGTH (DB/SCYD)

FREQUENCY 10.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-44.0	-42.0	-40.3	-38.7	-37.2	-35.9	-34.7	-33.5	-32.5
4	-39.4	-37.6	-36.1	-34.7	-33.4	-32.2	-31.1	-30.1	-29.2
6	-36.6	-35.0	-33.6	-32.3	-31.1	-30.1	-29.0	-28.1	-27.2
8	-34.7	-33.2	-31.9	-30.7	-29.5	-28.5	-27.6	-26.7	-25.9
10	-33.2	-31.8	-30.5	-29.4	-28.3	-27.3	-26.4	-25.6	-24.8
12	-32.0	-30.6	-29.4	-28.3	-27.3	-26.4	-25.5	-24.7	-23.9
14	-31.0	-29.7	-28.5	-27.4	-26.5	-25.6	-24.7	-23.9	-23.2
16	-30.1	-28.8	-27.7	-26.7	-25.7	-24.8	-24.0	-23.3	-22.6
18	-29.3	-28.1	-27.0	-26.0	-25.1	-24.2	-23.4	-22.7	-22.0
20	-28.6	-27.4	-26.3	-25.4	-24.5	-23.7	-22.9	-22.2	-21.5
22	-27.9	-26.8	-25.8	-24.8	-24.0	-23.2	-22.4	-21.7	-21.0
24	-27.3	-26.2	-25.2	-24.3	-23.5	-22.7	-22.0	-21.3	-20.6
26	-26.8	-25.7	-24.8	-23.9	-23.0	-22.3	-21.6	-20.9	-20.2
28	-26.3	-25.3	-24.3	-23.4	-22.6	-21.9	-21.2	-20.5	-19.9
30	-25.8	-24.8	-23.9	-23.0	-22.2	-21.5	-20.8	-20.2	-19.6
32	-25.4	-24.4	-23.5	-22.7	-21.9	-21.2	-20.5	-19.9	-19.3
34	-25.0	-24.0	-23.1	-22.3	-21.6	-20.8	-20.2	-19.6	-19.0
36	-24.6	-23.7	-22.8	-22.0	-21.2	-20.5	-19.9	-19.3	-18.7
38	-24.3	-23.3	-22.5	-21.7	-20.9	-20.3	-19.6	-19.0	-18.4
40	-23.9	-23.0	-22.2	-21.4	-20.7	-20.0	-19.3	-18.8	-18.2
42	-23.6	-22.7	-21.9	-21.1	-20.4	-19.7	-19.1	-18.5	-18.0
44	-23.3	-22.4	-21.6	-20.8	-20.1	-19.5	-18.9	-18.3	-17.7
46	-23.0	-22.1	-21.3	-20.6	-19.9	-19.2	-18.6	-18.1	-17.5
48	-22.7	-21.8	-21.1	-20.3	-19.6	-19.0	-18.4	-17.9	-17.3
50	-22.4	-21.6	-20.8	-20.1	-19.4	-18.8	-18.2	-17.7	-17.1
52	-22.1	-21.3	-20.6	-19.9	-19.2	-18.6	-18.0	-17.5	-16.9
54	-21.9	-21.1	-20.3	-19.6	-19.0	-18.4	-17.8	-17.3	-16.8
56	-21.6	-20.9	-20.1	-19.4	-18.8	-18.2	-17.6	-17.1	-16.6
58	-21.4	-20.6	-19.9	-19.2	-18.6	-18.0	-17.4	-16.9	-16.4
60	-21.2	-20.4	-19.7	-19.0	-18.4	-17.8	-17.3	-16.8	-16.3
64	-20.8	-20.0	-19.3	-18.7	-18.1	-17.5	-16.9	-16.4	-15.9
68	-20.3	-19.6	-18.9	-18.3	-17.7	-17.2	-16.6	-16.1	-15.7
72	-20.0	-19.3	-18.6	-18.0	-17.4	-16.9	-16.3	-15.9	-15.4
76	-19.6	-18.9	-18.3	-17.7	-17.1	-16.6	-16.1	-15.6	-15.1
82	-19.1	-18.4	-17.8	-17.2	-16.7	-16.2	-15.7	-15.2	-14.8
90	-18.5	-17.8	-17.3	-16.7	-16.2	-15.7	-15.2	-14.7	-14.3

SURFACE SCATTERING STRENGTH (DB/30YD)

FREQUENCY 12.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-116.5	-87.0	-73.3	-64.8	-58.8	-54.3	-50.6	-47.6	-45.0
4	-99.4	-75.6	-64.3	-57.2	-52.1	-48.2	-45.1	-42.4	-40.2
6	-89.4	-68.9	-59.0	-52.7	-48.2	-44.7	-41.8	-39.4	-37.4
8	-82.4	-64.2	-55.3	-49.6	-45.4	-42.2	-39.5	-37.3	-35.4
10	-76.9	-60.5	-52.4	-47.1	-43.2	-40.2	-37.8	-35.7	-33.9
12	-72.4	-57.5	-50.0	-45.1	-41.5	-38.6	-36.3	-34.3	-32.6
14	-68.6	-54.9	-48.0	-43.4	-40.0	-37.3	-35.1	-33.2	-31.6
16	-65.3	-52.7	-46.2	-41.9	-38.7	-36.1	-34.0	-32.2	-30.6
18	-62.4	-50.8	-44.7	-40.6	-37.5	-35.1	-33.1	-31.3	-29.8
20	-59.8	-49.1	-43.3	-39.4	-36.5	-34.2	-32.2	-30.6	-29.1
22	-57.4	-47.5	-42.1	-38.4	-35.6	-33.3	-31.5	-29.9	-28.5
24	-55.3	-46.1	-41.0	-37.4	-34.8	-32.6	-30.8	-29.2	-27.9
26	-53.3	-44.7	-39.9	-36.6	-34.0	-31.9	-30.1	-28.6	-27.3
28	-51.5	-43.5	-38.9	-35.7	-33.3	-31.2	-29.5	-28.1	-26.8
30	-49.8	-42.4	-38.0	-35.0	-32.6	-30.6	-29.0	-27.6	-26.3
32	-48.2	-41.3	-37.2	-34.3	-32.0	-30.1	-28.5	-27.1	-25.9
34	-46.7	-40.3	-36.4	-33.6	-31.4	-29.6	-28.0	-26.6	-25.5
36	-45.3	-39.4	-35.7	-33.0	-30.8	-29.1	-27.5	-26.2	-25.1
38	-44.0	-38.5	-35.0	-32.4	-30.3	-28.6	-27.1	-25.8	-24.7
40	-42.7	-37.6	-34.3	-31.8	-29.8	-28.1	-26.7	-25.5	-24.3
42	-41.5	-36.8	-33.7	-31.3	-29.3	-27.7	-26.3	-25.1	-24.0
44	-40.3	-36.1	-33.1	-30.8	-28.9	-27.3	-25.9	-24.7	-23.7
46	-39.2	-35.3	-32.5	-30.3	-28.5	-26.9	-25.6	-24.4	-23.4
48	-38.2	-34.6	-31.9	-29.8	-28.0	-26.5	-25.3	-24.1	-23.1
50	-37.2	-34.0	-31.4	-29.3	-27.6	-26.2	-24.9	-23.8	-22.8
52	-36.2	-33.3	-30.9	-28.9	-27.3	-25.9	-24.6	-23.5	-22.5
54	-35.3	-32.7	-30.4	-28.5	-26.9	-25.5	-24.3	-23.2	-22.3
56	-34.4	-32.1	-29.9	-28.1	-26.5	-25.2	-24.0	-23.0	-22.0
58	-33.5	-31.5	-29.5	-27.7	-26.2	-24.9	-23.7	-22.7	-21.8
60	-32.7	-31.0	-29.0	-27.3	-25.9	-24.6	-23.5	-22.5	-21.5
64	-31.1	-29.9	-28.2	-26.6	-25.3	-24.0	-23.0	-22.0	-21.1
68	-29.6	-28.9	-27.4	-26.0	-24.7	-23.5	-22.5	-21.5	-20.7
72	-28.2	-27.9	-26.6	-25.3	-24.1	-23.0	-22.0	-21.1	-20.3
76	-26.9	-27.1	-25.9	-24.7	-23.6	-22.5	-21.6	-20.7	-19.9
82	-25.9	-25.8	-24.9	-23.9	-22.8	-21.9	-21.0	-20.2	-19.4
90	-22.7	-24.3	-23.7	-22.9	-21.9	-21.1	-20.2	-19.5	-18.7

SURFACE SCATTERING STRENGTH (DB/SDYD)

FREQUENCY 12.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-42.7	-40.8	-39.0	-37.5	-36.0	-34.7	-33.5	-32.4	-31.4
4	-38.3	-36.5	-35.0	-33.6	-32.3	-31.2	-30.1	-29.1	-28.2
6	-35.6	-34.0	-32.6	-31.3	-30.2	-29.1	-28.1	-27.2	-26.3
8	-33.8	-32.3	-31.0	-29.7	-28.6	-27.6	-26.7	-25.8	-25.0
10	-32.3	-30.9	-29.6	-28.5	-27.5	-26.5	-25.6	-24.8	-24.0
12	-31.1	-29.8	-28.6	-27.5	-26.5	-25.6	-24.7	-23.9	-23.1
14	-30.1	-28.8	-27.7	-26.6	-25.7	-24.8	-23.9	-23.2	-22.4
16	-29.3	-28.0	-26.9	-25.9	-24.9	-24.1	-23.3	-22.5	-21.8
18	-28.5	-27.3	-26.2	-25.2	-24.3	-23.5	-22.7	-22.0	-21.3
20	-27.8	-26.7	-25.6	-24.6	-23.8	-22.9	-22.2	-21.5	-20.8
22	-27.2	-26.1	-25.1	-24.1	-23.3	-22.4	-21.7	-21.0	-20.3
24	-26.6	-25.5	-24.5	-23.6	-22.8	-22.0	-21.3	-20.6	-19.9
26	-26.1	-25.0	-24.1	-23.2	-22.4	-21.6	-20.9	-20.2	-19.6
28	-25.6	-24.6	-23.6	-22.8	-22.0	-21.2	-20.5	-19.9	-19.2
30	-25.2	-24.2	-23.2	-22.4	-21.6	-20.9	-20.2	-19.5	-18.9
32	-24.8	-23.8	-22.9	-22.0	-21.3	-20.5	-19.9	-19.2	-18.6
34	-24.4	-23.4	-22.5	-21.7	-20.9	-20.2	-19.6	-18.9	-18.3
36	-24.0	-23.1	-22.2	-21.4	-20.6	-19.9	-19.3	-18.7	-18.1
38	-23.7	-22.7	-21.9	-21.1	-20.3	-19.6	-19.0	-18.4	-17.8
40	-23.3	-22.4	-21.6	-20.8	-20.1	-19.4	-18.8	-18.2	-17.6
42	-23.0	-22.1	-21.3	-20.5	-19.8	-19.1	-18.5	-17.9	-17.4
44	-22.7	-21.8	-21.0	-20.3	-19.6	-18.9	-18.3	-17.7	-17.1
46	-22.4	-21.6	-20.7	-20.0	-19.3	-18.7	-18.1	-17.5	-16.9
48	-22.1	-21.3	-20.5	-19.8	-19.1	-18.5	-17.9	-17.3	-16.7
50	-21.9	-21.0	-20.3	-19.5	-18.9	-18.2	-17.6	-17.1	-16.6
52	-21.6	-20.8	-20.0	-19.3	-18.7	-18.0	-17.5	-16.9	-16.4
54	-21.4	-20.6	-19.8	-19.1	-18.5	-17.8	-17.3	-16.7	-16.2
56	-21.1	-20.3	-19.6	-18.9	-18.3	-17.7	-17.1	-16.5	-16.0
58	-20.9	-20.1	-19.4	-18.7	-18.1	-17.5	-16.9	-16.4	-15.9
60	-20.7	-19.9	-19.2	-18.5	-17.9	-17.3	-16.7	-16.2	-15.7
64	-20.3	-19.5	-18.8	-18.2	-17.6	-17.0	-16.4	-15.9	-15.4
68	-19.9	-19.2	-18.5	-17.8	-17.2	-16.7	-16.1	-15.6	-15.1
72	-19.5	-18.8	-18.1	-17.5	-16.9	-16.4	-15.8	-15.4	-14.9
76	-19.2	-18.5	-17.8	-17.2	-16.6	-16.1	-15.6	-15.1	-14.6
82	-18.7	-18.0	-17.4	-16.8	-16.2	-15.7	-15.2	-14.7	-14.3
90	-18.1	-17.4	-16.8	-16.3	-15.7	-15.2	-14.7	-14.3	-13.8

SURFACE SCATTERING STRENGTH (DB/SDYD)

FREQUENCY 15.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-112.9	-84.3	-71.1	-62.8	-56.9	-52.5	-48.9	-45.9	-43.4
4	-96.5	-73.4	-62.4	-55.5	-50.5	-46.7	-43.6	-41.0	-38.8
6	-87.0	-67.0	-57.3	-51.2	-46.7	-43.3	-40.5	-38.2	-36.1
8	-80.2	-62.5	-53.8	-48.1	-44.1	-40.9	-38.3	-36.1	-34.2
10	-74.9	-58.9	-51.0	-45.8	-42.0	-39.0	-36.6	-34.5	-32.8
12	-70.6	-56.1	-48.7	-43.9	-40.3	-37.5	-35.2	-33.3	-31.6
14	-67.0	-53.6	-46.8	-42.2	-38.9	-36.2	-34.0	-32.2	-30.6
16	-63.8	-51.5	-45.1	-40.8	-37.6	-35.1	-33.0	-31.2	-29.7
18	-61.0	-49.7	-43.6	-39.6	-36.5	-34.1	-32.1	-30.4	-28.9
20	-58.6	-48.0	-42.3	-38.5	-35.6	-33.2	-31.3	-29.6	-28.2
22	-56.3	-46.5	-41.1	-37.5	-34.7	-32.4	-30.6	-29.0	-27.6
24	-54.3	-45.1	-40.0	-36.5	-33.9	-31.7	-29.9	-28.4	-27.0
26	-52.4	-43.8	-39.0	-35.7	-33.1	-31.0	-29.3	-27.8	-26.5
28	-50.6	-42.7	-38.1	-34.9	-32.4	-30.4	-28.7	-27.3	-26.0
30	-49.0	-41.6	-37.3	-34.2	-31.8	-29.9	-28.2	-26.8	-25.5
32	-47.5	-40.6	-36.4	-33.5	-31.2	-29.3	-27.7	-26.3	-25.1
34	-46.0	-39.6	-35.7	-32.9	-30.6	-28.8	-27.2	-25.9	-24.7
36	-44.7	-38.7	-35.0	-32.3	-30.1	-28.3	-26.8	-25.5	-24.3
38	-43.4	-37.9	-34.3	-31.7	-29.6	-27.9	-26.4	-25.1	-24.0
40	-42.2	-37.0	-33.7	-31.1	-29.1	-27.4	-26.0	-24.7	-23.6
42	-41.0	-36.3	-33.1	-30.6	-28.7	-27.0	-25.6	-24.4	-23.3
44	-39.9	-35.5	-32.5	-30.1	-28.2	-26.7	-25.3	-24.1	-23.0
46	-38.9	-34.8	-31.9	-29.7	-27.8	-26.3	-24.9	-23.8	-22.7
48	-37.9	-34.2	-31.4	-29.2	-27.4	-25.9	-24.6	-23.5	-22.4
50	-36.9	-33.5	-30.9	-28.8	-27.1	-25.6	-24.3	-23.2	-22.1
52	-36.0	-32.9	-30.4	-28.4	-26.7	-25.3	-24.0	-22.9	-21.9
54	-35.1	-32.3	-29.9	-28.0	-26.3	-24.9	-23.7	-22.6	-21.6
56	-34.3	-31.7	-29.5	-27.6	-26.0	-24.6	-23.4	-22.4	-21.4
58	-33.4	-31.2	-29.0	-27.2	-25.7	-24.3	-23.2	-22.1	-21.2
60	-32.6	-30.6	-28.6	-26.9	-25.4	-24.1	-22.9	-21.9	-20.9
64	-31.1	-29.6	-27.8	-26.2	-24.8	-23.5	-22.4	-21.4	-20.5
68	-29.7	-28.7	-27.0	-25.5	-24.2	-23.0	-22.0	-21.0	-20.1
72	-28.3	-27.8	-26.3	-24.9	-23.7	-22.5	-21.5	-20.6	-19.7
76	-27.0	-26.9	-25.7	-24.4	-23.2	-22.1	-21.1	-20.2	-19.4
82	-25.3	-25.7	-24.7	-23.6	-22.5	-21.5	-20.5	-19.7	-18.9
90	-23.1	-24.2	-23.5	-22.6	-21.6	-20.7	-19.8	-19.0	-18.3

SURFACE SCATTERING STRENGTH (DB/SMYD)

FREQUENCY 15.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-41.2	-39.3	-37.6	-36.0	-34.6	-33.4	-32.2	-31.1	-30.1
4	-36.9	-35.2	-33.7	-32.3	-31.1	-30.0	-28.9	-27.9	-27.0
6	-34.4	-32.8	-31.4	-30.2	-29.0	-28.0	-27.0	-26.1	-25.2
8	-32.4	-31.1	-29.8	-28.6	-27.6	-26.6	-25.6	-24.8	-24.0
10	-31.2	-29.8	-28.6	-27.5	-26.4	-25.5	-24.6	-23.7	-23.0
12	-30.1	-28.8	-27.6	-26.5	-25.5	-24.6	-23.7	-22.9	-22.2
14	-29.1	-27.9	-26.7	-25.7	-24.7	-23.8	-23.0	-22.2	-21.5
16	-28.3	-27.1	-26.0	-24.9	-24.0	-23.1	-22.3	-21.6	-20.9
18	-27.6	-26.4	-25.3	-24.3	-23.4	-22.6	-21.8	-21.1	-20.4
20	-26.9	-25.8	-24.7	-23.8	-22.9	-22.1	-21.3	-20.6	-19.9
22	-26.3	-25.2	-24.2	-23.2	-22.4	-21.6	-20.8	-20.1	-19.5
24	-25.8	-24.7	-23.7	-22.8	-21.9	-21.2	-20.4	-19.7	-19.1
26	-25.3	-24.2	-23.2	-22.4	-21.5	-20.8	-20.1	-19.4	-18.7
28	-24.8	-23.8	-22.8	-22.0	-21.2	-20.4	-19.7	-19.0	-18.4
30	-24.4	-23.4	-22.4	-21.6	-20.8	-20.1	-19.4	-18.7	-18.1
32	-24.0	-23.0	-22.1	-21.2	-20.5	-19.7	-19.1	-18.4	-17.8
34	-23.6	-22.6	-21.7	-20.9	-20.2	-19.5	-18.8	-18.2	-17.6
36	-23.3	-22.3	-21.4	-20.6	-19.9	-19.2	-18.5	-17.9	-17.3
38	-22.9	-22.0	-21.1	-20.3	-19.6	-18.9	-18.3	-17.6	-17.1
40	-22.6	-21.7	-20.8	-20.1	-19.3	-18.7	-18.0	-17.4	-16.8
42	-22.3	-21.4	-20.6	-19.8	-19.1	-18.4	-17.8	-17.2	-16.6
44	-22.0	-21.1	-20.3	-19.6	-18.8	-18.2	-17.6	-17.0	-16.4
46	-21.7	-20.9	-20.1	-19.3	-18.6	-18.0	-17.4	-16.8	-16.2
48	-21.5	-20.6	-19.8	-19.1	-18.4	-17.8	-17.2	-16.6	-16.0
50	-21.2	-20.4	-19.6	-18.9	-18.2	-17.6	-17.0	-16.4	-15.9
52	-21.0	-20.1	-19.4	-18.7	-18.0	-17.4	-16.8	-16.2	-15.7
54	-20.7	-19.9	-19.2	-18.5	-17.8	-17.2	-16.6	-16.0	-15.5
56	-20.5	-19.7	-19.0	-18.3	-17.6	-17.0	-16.4	-15.9	-15.4
58	-20.3	-19.5	-18.8	-18.1	-17.4	-16.8	-16.3	-15.7	-15.2
60	-20.1	-19.3	-18.6	-17.9	-17.3	-16.7	-16.1	-15.6	-15.1
64	-19.7	-18.9	-18.2	-17.6	-16.9	-16.3	-15.8	-15.3	-14.8
68	-19.3	-18.6	-17.9	-17.2	-16.6	-16.0	-15.5	-15.0	-14.5
72	-19.0	-18.2	-17.6	-16.9	-16.3	-15.8	-15.2	-14.7	-14.3
76	-18.6	-17.9	-17.3	-16.6	-16.1	-15.5	-15.0	-14.5	-14.0
82	-18.2	-17.5	-16.8	-16.2	-15.7	-15.1	-14.6	-14.1	-13.7
90	-17.6	-16.9	-16.3	-15.7	-15.2	-14.7	-14.2	-13.7	-13.3

SURFACE SCATTERING STRENGTH (DB/SCYD)

FREQUENCY 20.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	2	4	6	8	10	12	14	16	18
2	-108.4	-81.0	-68.2	-60.2	-54.5	-50.2	-46.7	-43.9	-41.4
4	-92.0	-70.7	-60.0	-53.3	-48.5	-44.7	-41.7	-39.2	-37.1
6	-83.0	-64.6	-55.2	-49.2	-44.9	-41.5	-38.8	-36.5	-34.5
8	-77.5	-60.3	-51.8	-46.4	-42.4	-39.3	-36.7	-34.6	-32.7
10	-72.5	-57.0	-49.2	-44.1	-40.4	-37.5	-35.1	-33.1	-31.4
12	-68.4	-54.2	-47.0	-42.3	-38.8	-36.1	-33.8	-31.9	-30.2
14	-65.0	-51.9	-45.2	-40.8	-37.5	-34.8	-32.7	-30.8	-29.3
16	-62.0	-49.9	-43.7	-39.4	-36.3	-33.8	-31.7	-30.0	-28.4
18	-59.4	-48.2	-42.3	-38.3	-35.3	-32.9	-30.9	-29.2	-27.7
20	-57.0	-46.6	-41.0	-37.2	-34.3	-32.0	-30.1	-28.5	-27.0
22	-54.0	-45.2	-39.9	-36.3	-33.5	-31.3	-29.4	-27.8	-26.4
24	-52.9	-43.9	-38.9	-35.4	-32.7	-30.6	-28.8	-27.2	-25.9
26	-51.2	-42.7	-37.9	-34.6	-32.0	-30.0	-28.2	-26.7	-25.4
28	-49.5	-41.6	-37.0	-33.8	-31.4	-29.4	-27.7	-26.2	-24.9
30	-48.0	-40.6	-36.2	-33.2	-30.8	-28.8	-27.2	-25.8	-24.5
32	-46.5	-39.6	-35.5	-32.5	-30.2	-28.3	-26.7	-25.3	-24.1
34	-45.2	-38.7	-34.8	-31.9	-29.7	-27.8	-26.5	-24.9	-23.7
36	-43.9	-37.8	-34.1	-31.3	-29.2	-27.4	-25.9	-24.5	-23.4
38	-42.7	-37.0	-33.4	-30.8	-28.7	-27.0	-25.5	-24.2	-23.0
40	-41.5	-36.3	-32.8	-30.3	-28.2	-26.6	-25.1	-23.8	-22.7
42	-40.4	-35.5	-32.3	-29.8	-27.8	-26.2	-24.8	-23.5	-22.4
44	-39.4	-34.8	-31.7	-29.3	-27.4	-25.8	-24.4	-23.2	-22.1
46	-38.4	-34.2	-31.2	-28.9	-27.0	-25.5	-24.1	-22.9	-21.8
48	-37.5	-33.5	-30.7	-28.5	-26.6	-25.1	-23.8	-22.6	-21.6
50	-36.6	-32.9	-30.2	-28.1	-26.3	-24.8	-23.5	-22.3	-21.3
52	-35.7	-32.3	-29.7	-27.7	-25.9	-24.5	-23.2	-22.1	-21.1
54	-34.8	-31.8	-29.3	-27.3	-25.6	-24.2	-22.9	-21.8	-20.8
56	-34.0	-31.2	-28.9	-26.9	-25.3	-23.9	-22.7	-21.6	-20.6
58	-33.2	-30.7	-28.4	-26.6	-25.0	-23.6	-22.4	-21.3	-20.4
60	-32.5	-30.2	-28.0	-26.2	-24.7	-23.4	-22.2	-21.1	-20.2
64	-31.0	-29.2	-27.3	-25.6	-24.1	-22.8	-21.7	-20.7	-19.8
68	-29.7	-28.3	-26.6	-25.0	-23.6	-22.4	-21.3	-20.3	-19.4
72	-28.4	-27.5	-25.9	-24.4	-23.1	-21.9	-20.9	-19.9	-19.0
76	-27.2	-26.7	-25.3	-23.9	-22.6	-21.5	-20.5	-19.5	-18.7
82	-25.5	-25.5	-24.4	-23.1	-21.9	-20.9	-19.9	-19.0	-18.2
90	-23.4	-24.2	-23.3	-22.2	-21.1	-20.2	-19.2	-18.4	-17.6

SURFACE SCATTERING STRENGTH (DB/SDYD)

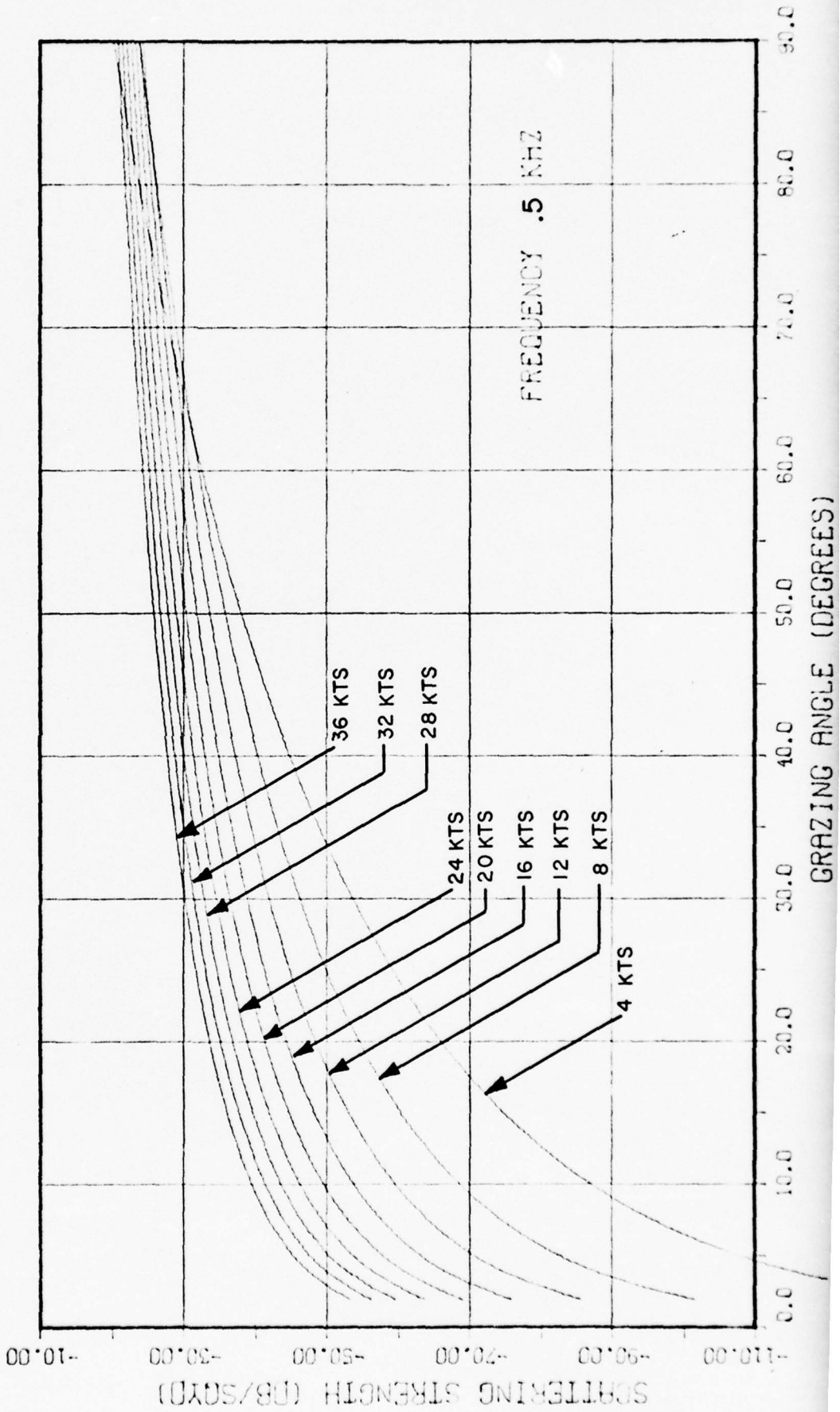
FREQUENCY 20.0 KHZ

ANGLE (DEGREES)	WIND SPEED (KTS)								
	20	22	24	26	28	30	32	34	36
2	-39.3	-37.4	-35.7	-34.2	-32.9	-31.6	-30.5	-29.4	-28.4
4	-35.2	-33.5	-32.1	-30.7	-29.5	-28.4	-27.4	-26.4	-25.5
6	-32.8	-31.3	-29.9	-28.7	-27.6	-26.5	-25.5	-24.7	-23.8
8	-31.1	-29.7	-28.4	-27.2	-26.2	-25.2	-24.3	-23.4	-22.6
10	-29.8	-28.5	-27.2	-26.1	-25.1	-24.1	-23.3	-22.4	-21.7
12	-28.8	-27.4	-26.3	-25.2	-24.2	-23.3	-22.4	-21.7	-20.9
14	-27.8	-26.6	-25.5	-24.4	-23.5	-22.6	-21.8	-21.0	-20.3
16	-27.1	-25.8	-24.7	-23.7	-22.8	-22.0	-21.2	-20.4	-19.7
18	-26.4	-25.2	-24.1	-23.1	-22.2	-21.4	-20.6	-19.9	-19.2
20	-25.8	-24.6	-23.6	-22.6	-21.7	-20.9	-20.2	-19.5	-18.8
22	-25.2	-24.1	-23.1	-22.1	-21.3	-20.5	-19.7	-19.0	-18.4
24	-24.7	-23.6	-22.6	-21.7	-20.9	-20.1	-19.3	-18.7	-18.0
26	-24.2	-23.1	-22.2	-21.3	-20.5	-19.7	-19.0	-18.3	-17.7
28	-23.8	-22.7	-21.8	-20.9	-20.1	-19.4	-18.7	-18.0	-17.4
30	-23.4	-22.4	-21.4	-20.6	-19.8	-19.0	-18.4	-17.7	-17.1
32	-23.0	-22.0	-21.1	-20.2	-19.5	-18.7	-18.1	-17.4	-16.8
34	-22.6	-21.7	-20.8	-19.9	-19.2	-18.5	-17.8	-17.2	-16.6
36	-22.3	-21.3	-20.5	-19.6	-18.9	-18.2	-17.5	-16.9	-16.3
38	-22.0	-21.0	-20.2	-19.4	-18.6	-17.9	-17.3	-16.7	-16.1
40	-21.7	-20.8	-19.9	-19.1	-18.4	-17.7	-17.1	-16.5	-15.9
42	-21.4	-20.5	-19.6	-18.9	-18.2	-17.5	-16.8	-16.3	-15.7
44	-21.1	-20.2	-19.4	-18.6	-17.9	-17.3	-16.6	-16.1	-15.5
46	-20.9	-20.0	-19.2	-18.4	-17.7	-17.1	-16.4	-15.9	-15.3
48	-20.6	-19.7	-18.9	-18.2	-17.5	-16.9	-16.3	-15.7	-15.1
50	-20.4	-19.5	-18.7	-18.0	-17.3	-16.7	-16.1	-15.5	-15.0
52	-20.1	-19.3	-18.5	-17.8	-17.1	-16.5	-15.9	-15.3	-14.8
54	-19.9	-19.1	-18.3	-17.6	-16.9	-16.3	-15.7	-15.2	-14.6
56	-19.7	-18.9	-18.1	-17.4	-16.8	-16.1	-15.6	-15.0	-14.5
58	-19.5	-18.7	-17.9	-17.2	-16.6	-16.0	-15.4	-14.9	-14.3
60	-19.3	-18.5	-17.8	-17.1	-16.4	-15.8	-15.3	-14.7	-14.2
64	-18.9	-18.1	-17.4	-16.7	-16.1	-15.5	-15.0	-14.4	-13.9
68	-18.7	-17.8	-17.1	-16.4	-15.8	-15.2	-14.7	-14.2	-13.7
72	-18.2	-17.5	-16.8	-16.2	-15.5	-15.0	-14.4	-13.9	-13.4
76	-17.9	-17.2	-16.5	-15.9	-15.3	-14.7	-14.2	-13.7	-13.2
82	-17.5	-16.8	-16.1	-15.5	-14.9	-14.4	-13.9	-13.4	-12.9
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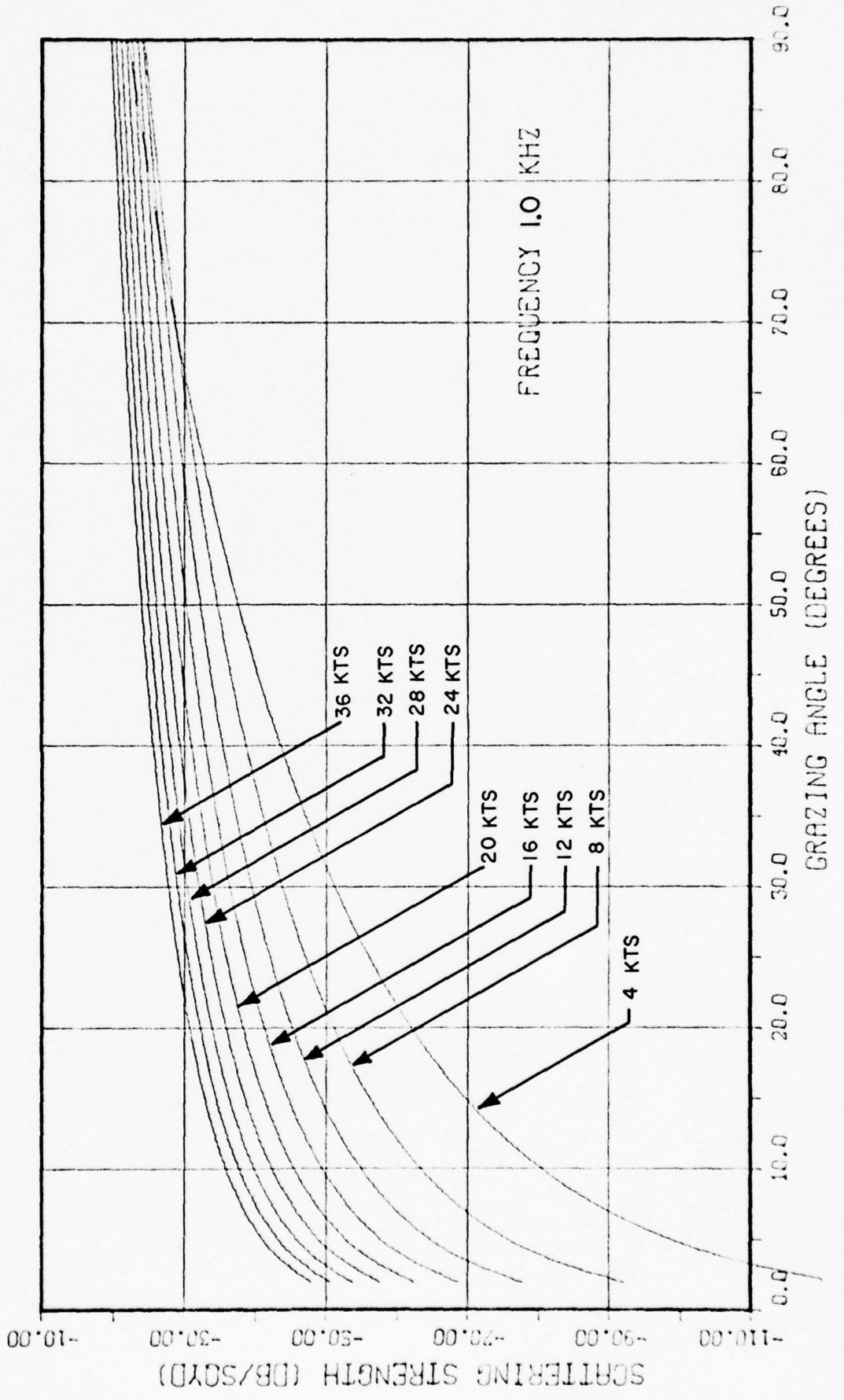
PART II - PLOTS

The surface scattering strength (dB/sq yd) is plotted vs the grazing angle (degrees) for 9 wind speeds (knots) on each graph. There are 18 plots, one for each frequency (kHz). These plots were made on a CALCOMP plotter using the AMESPLOT MK II plotting routines.

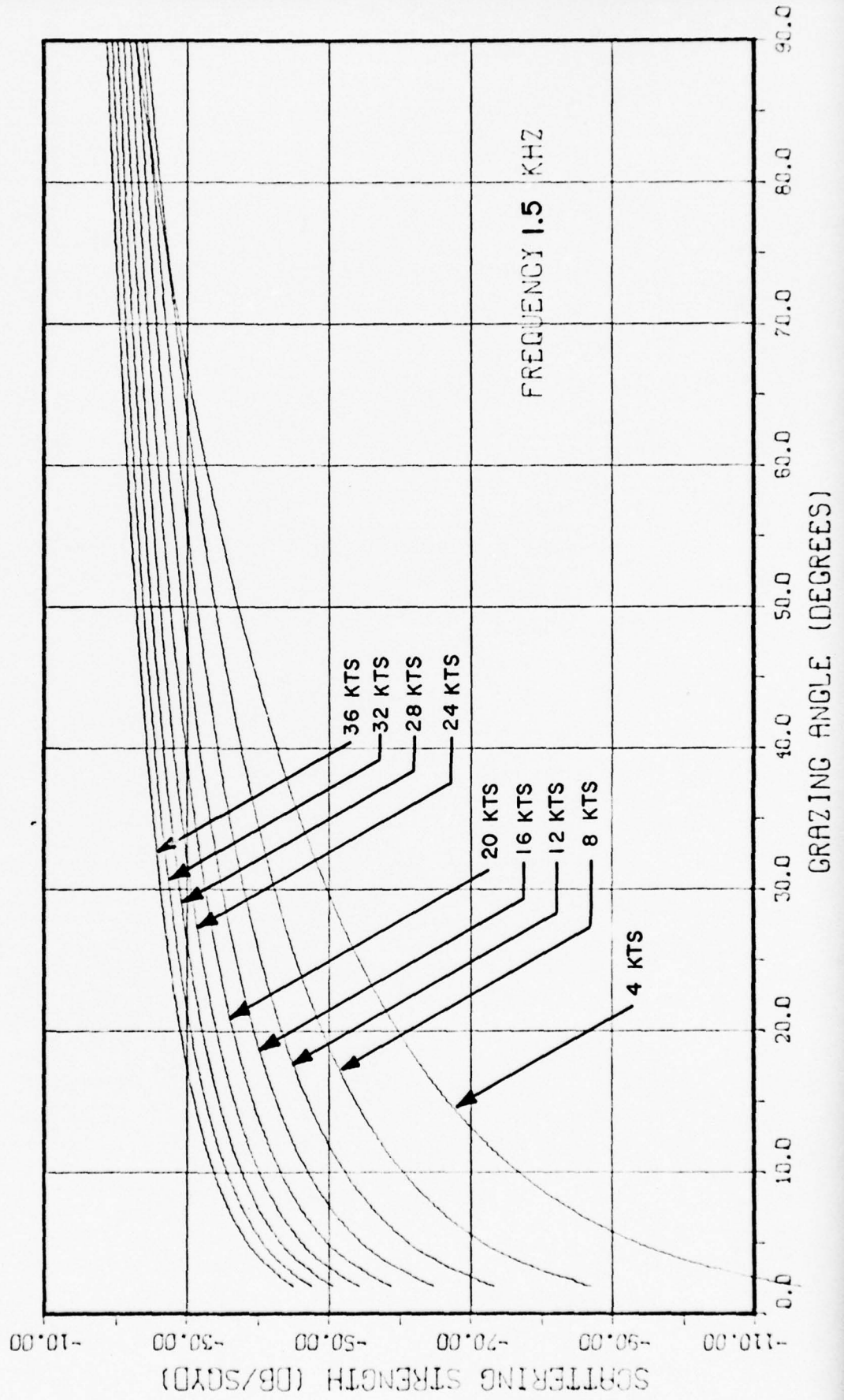
SURFACE SCATTERING STRENGTH



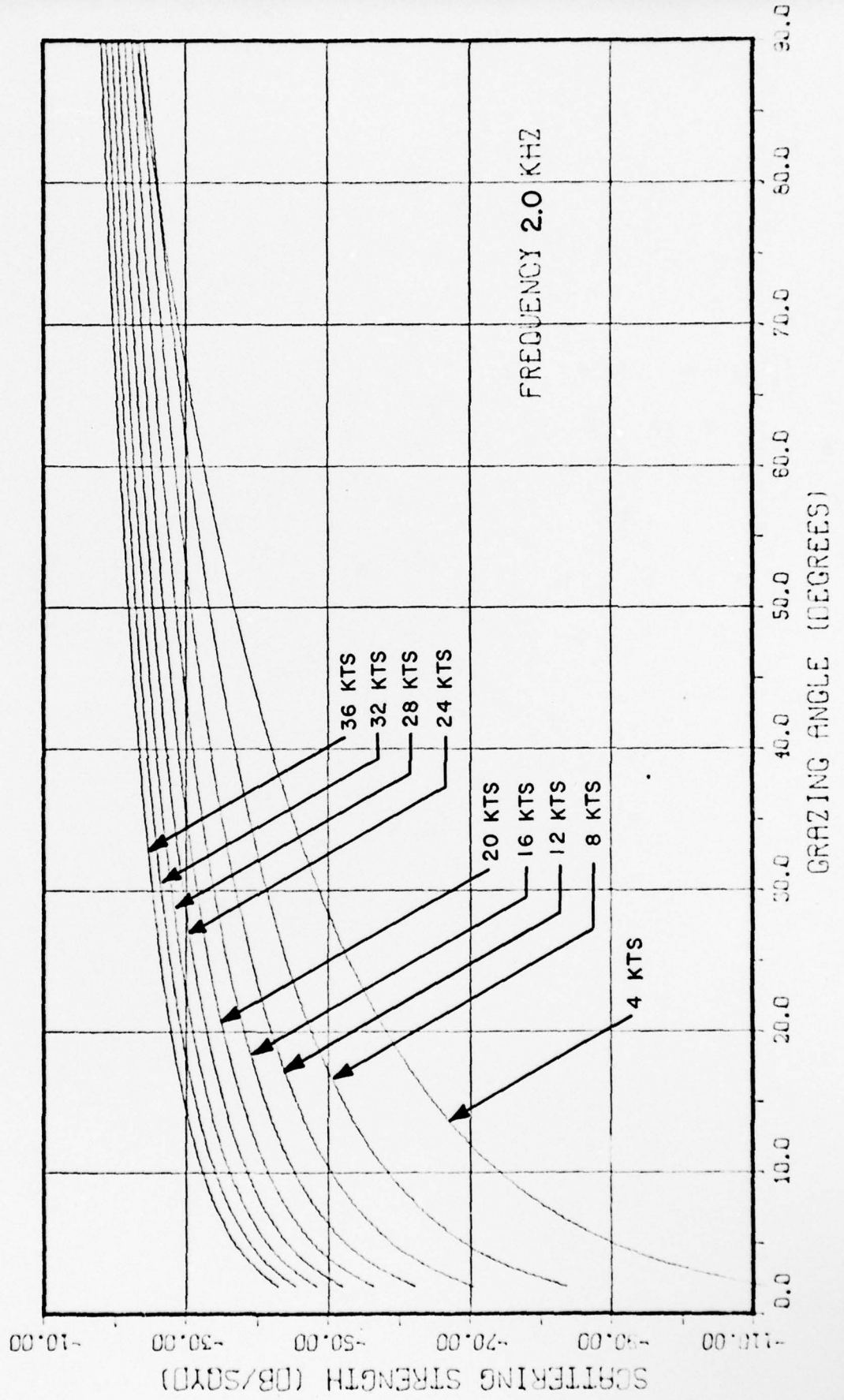
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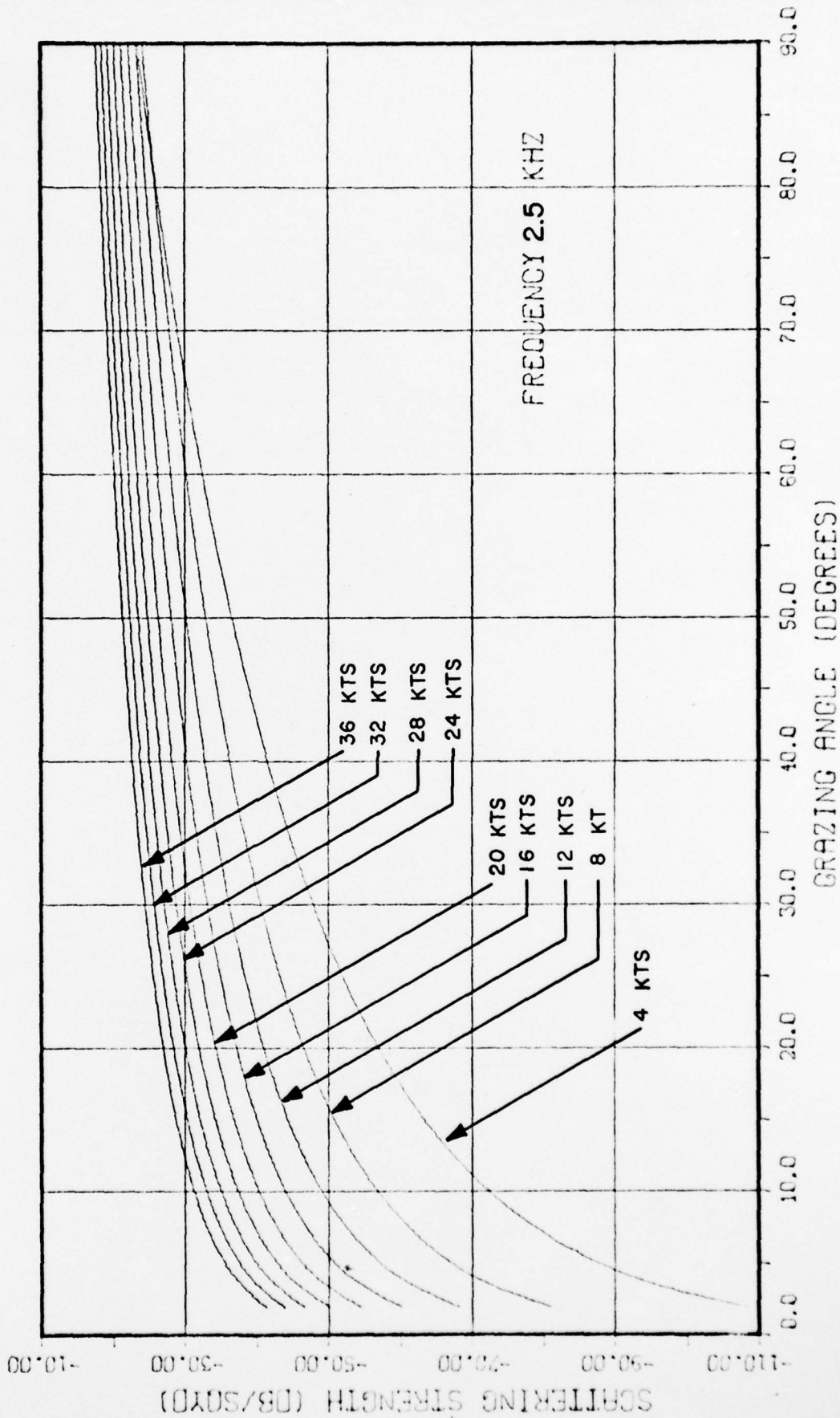
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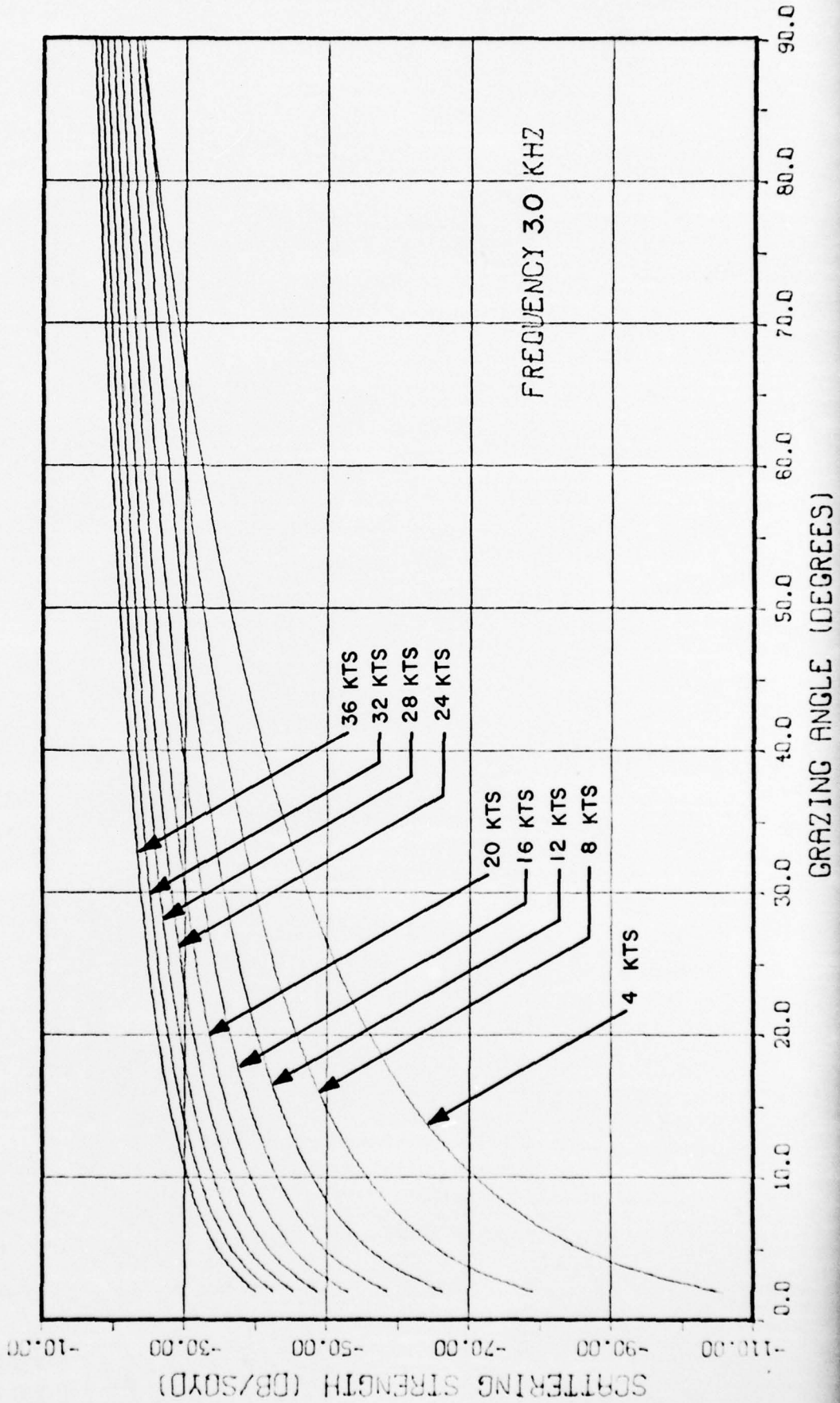
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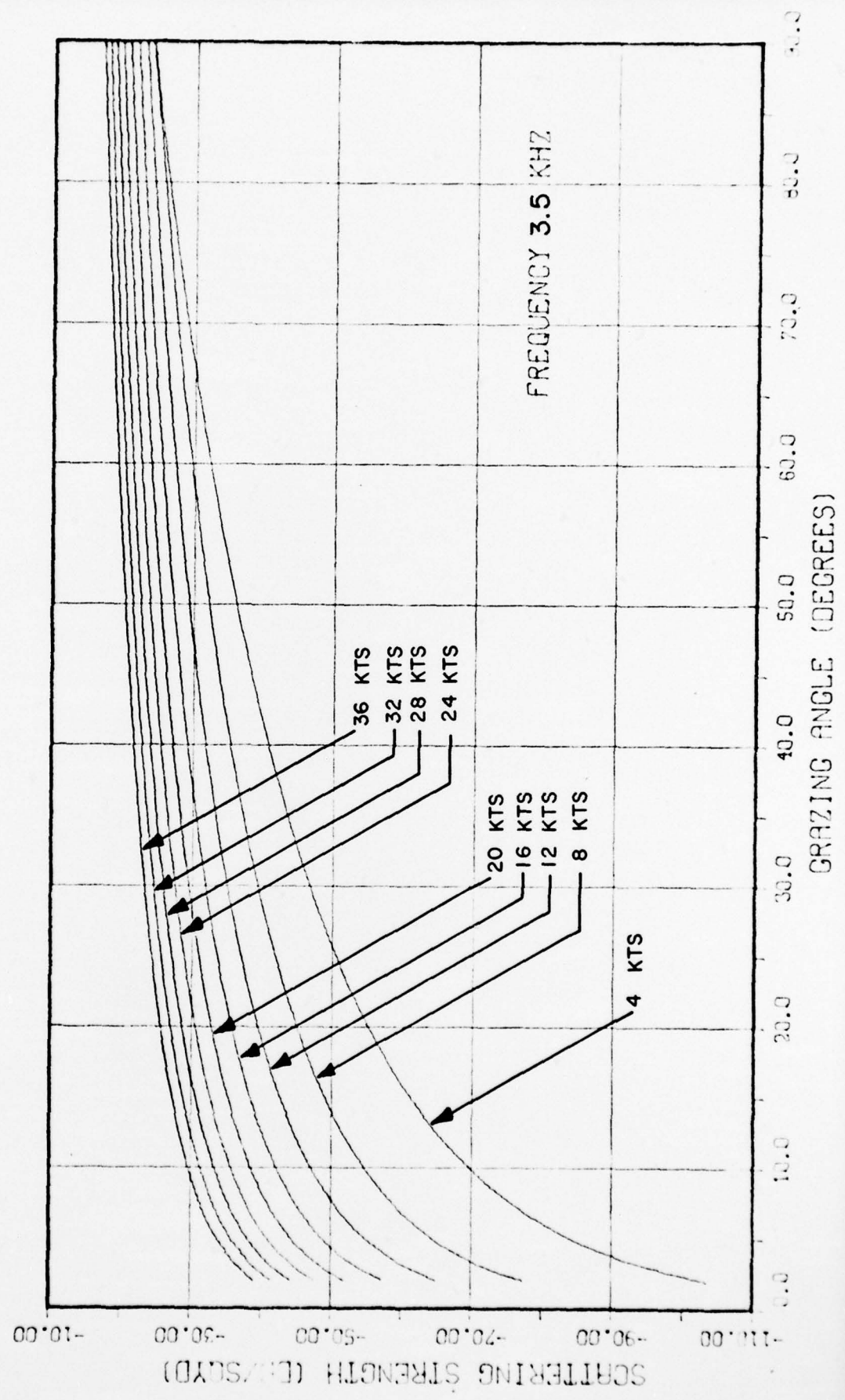
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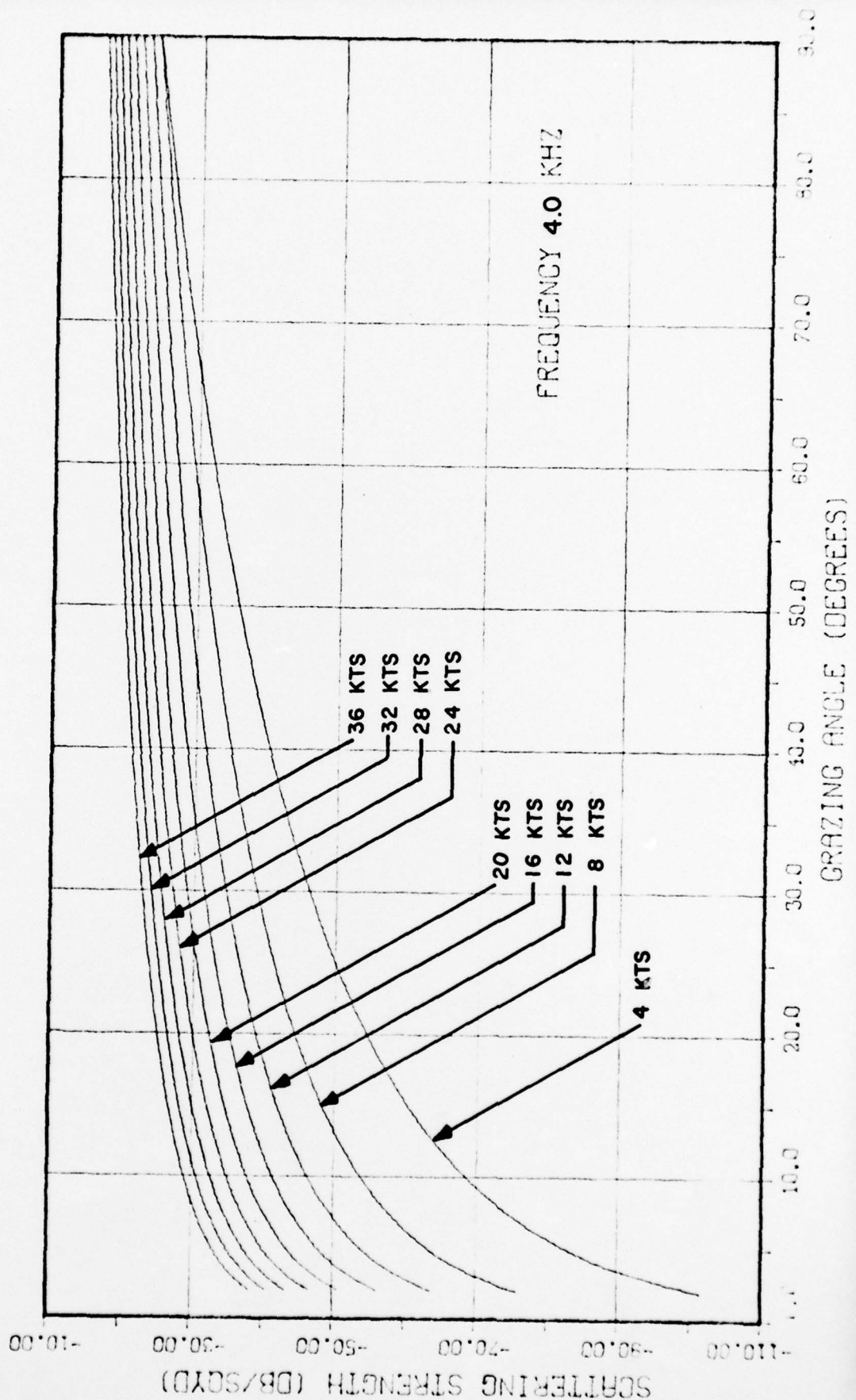
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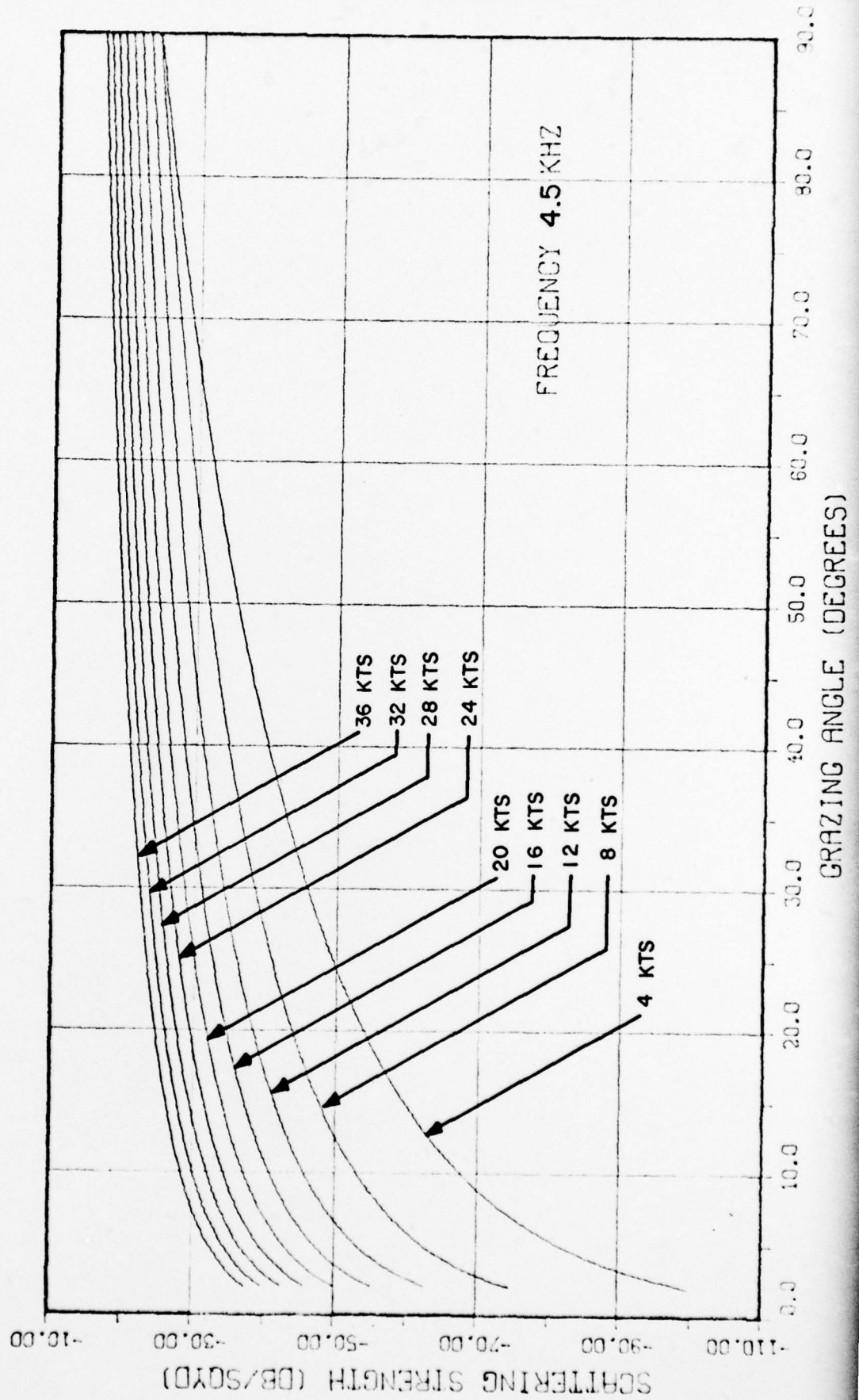
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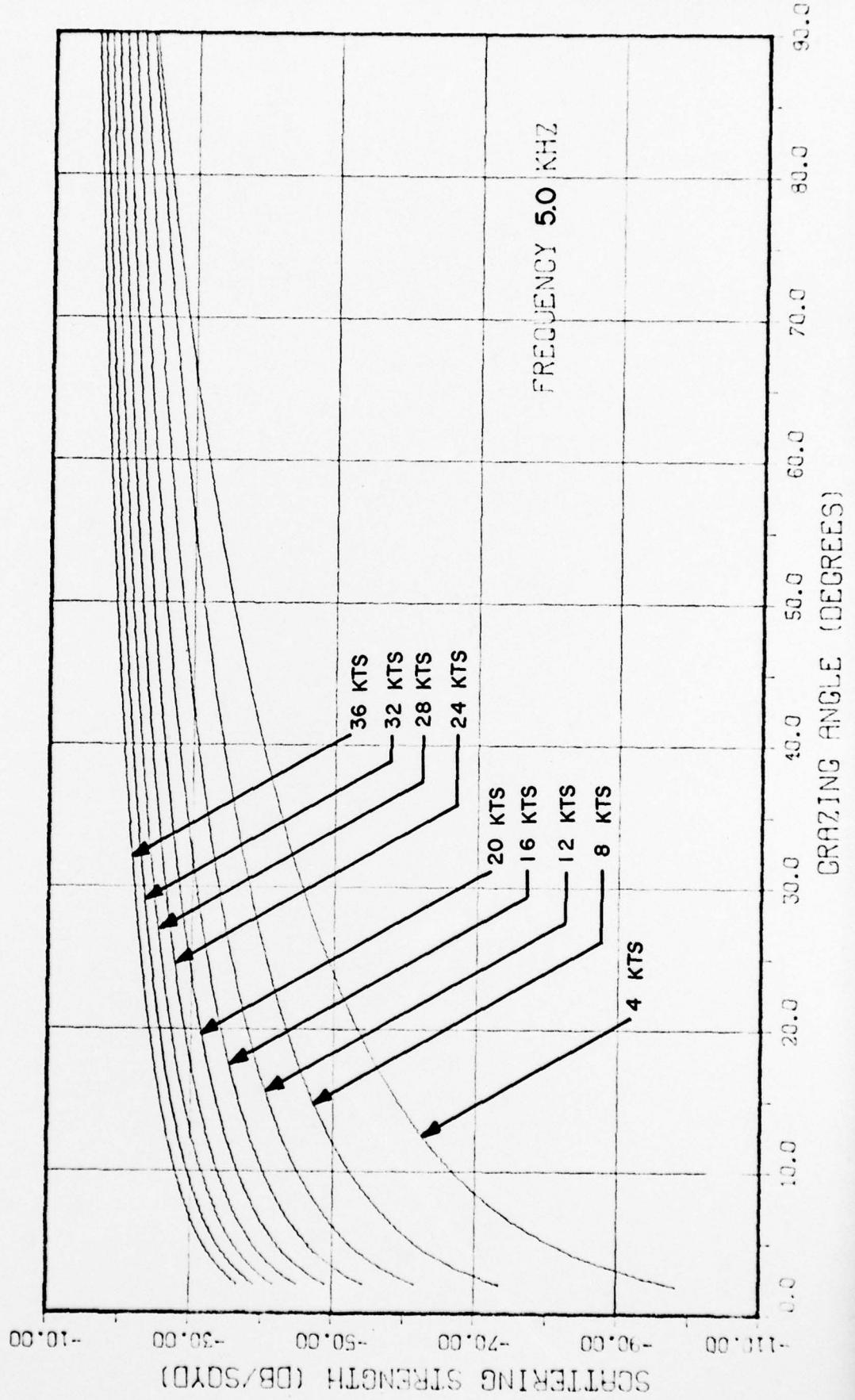
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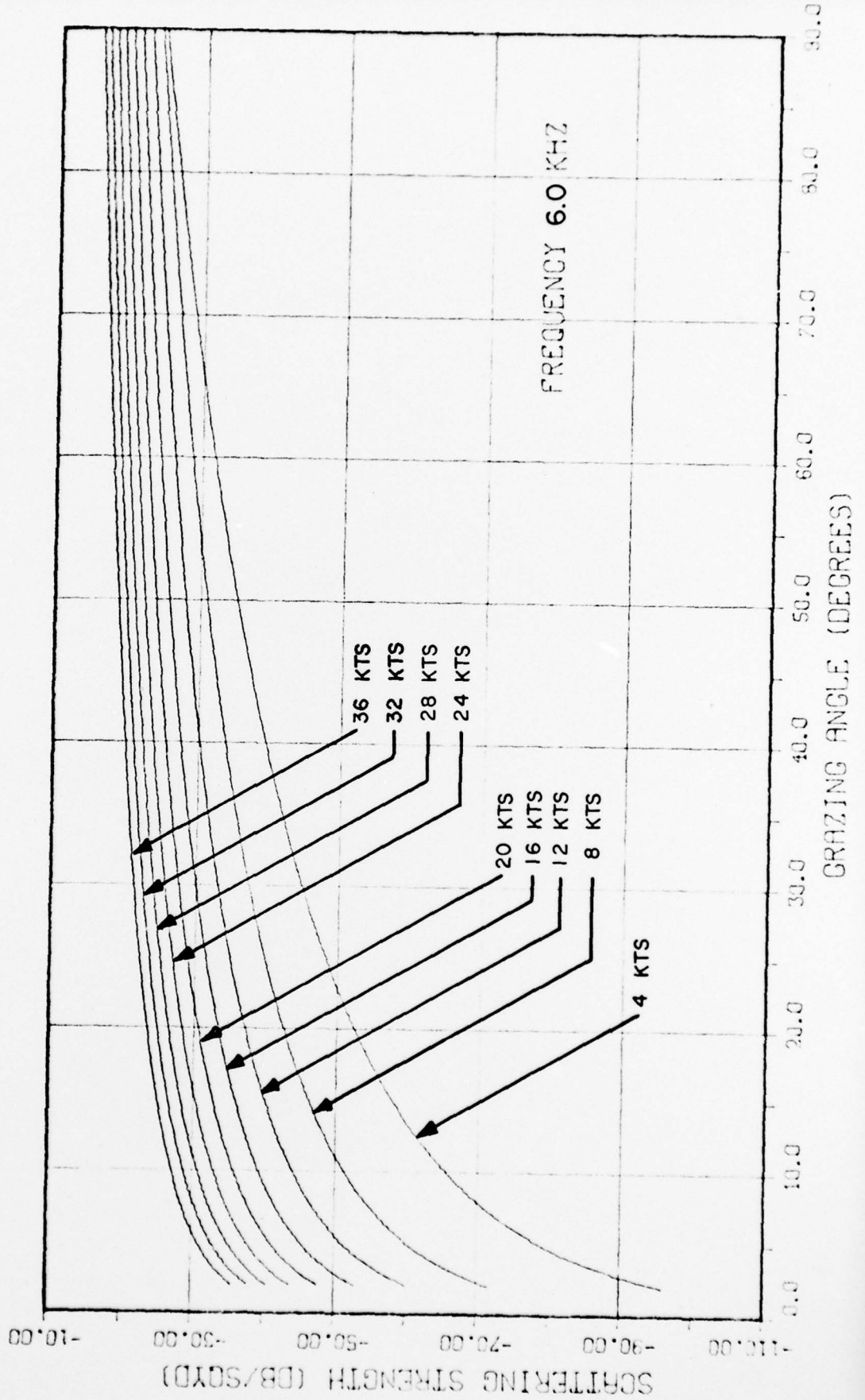
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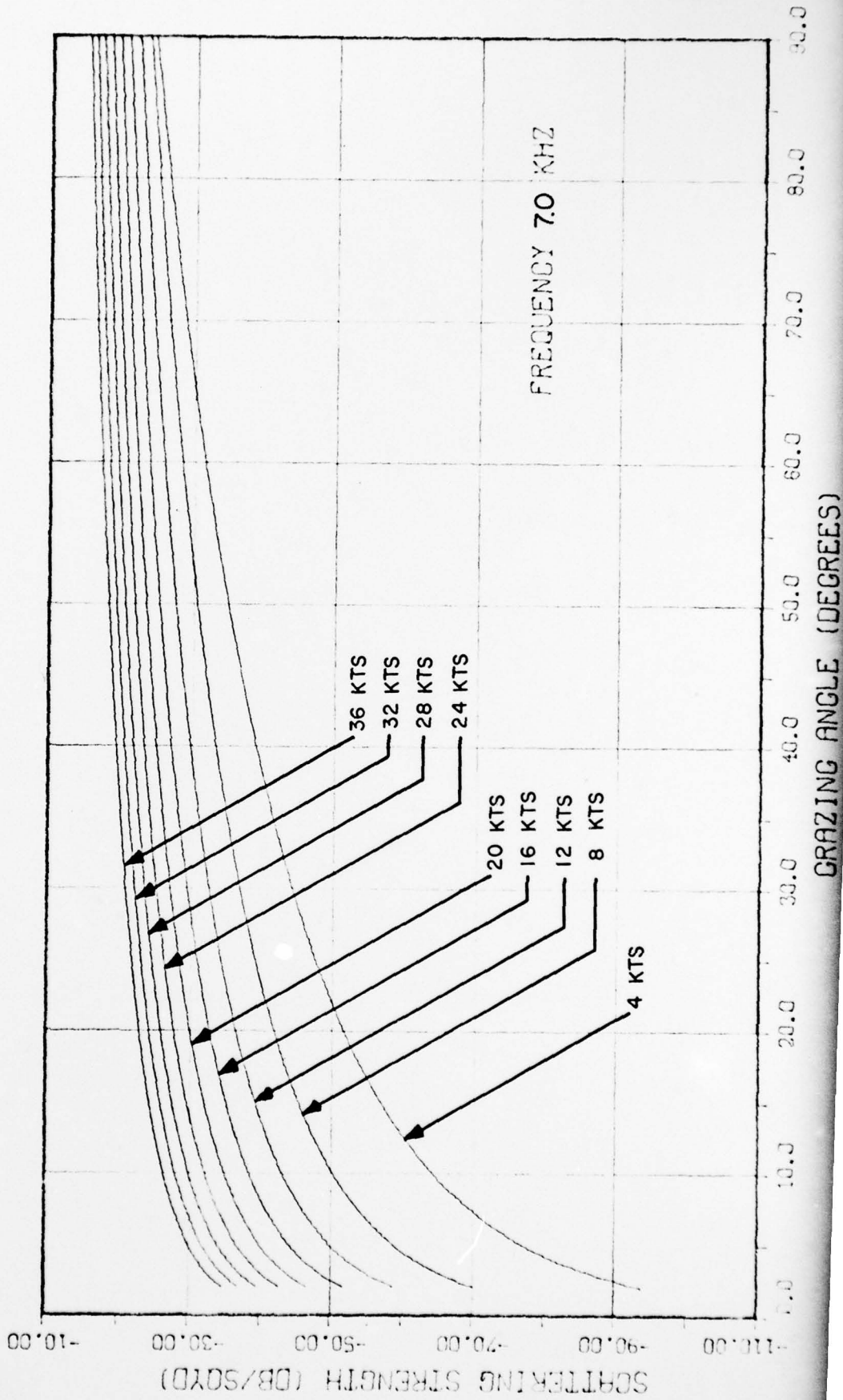
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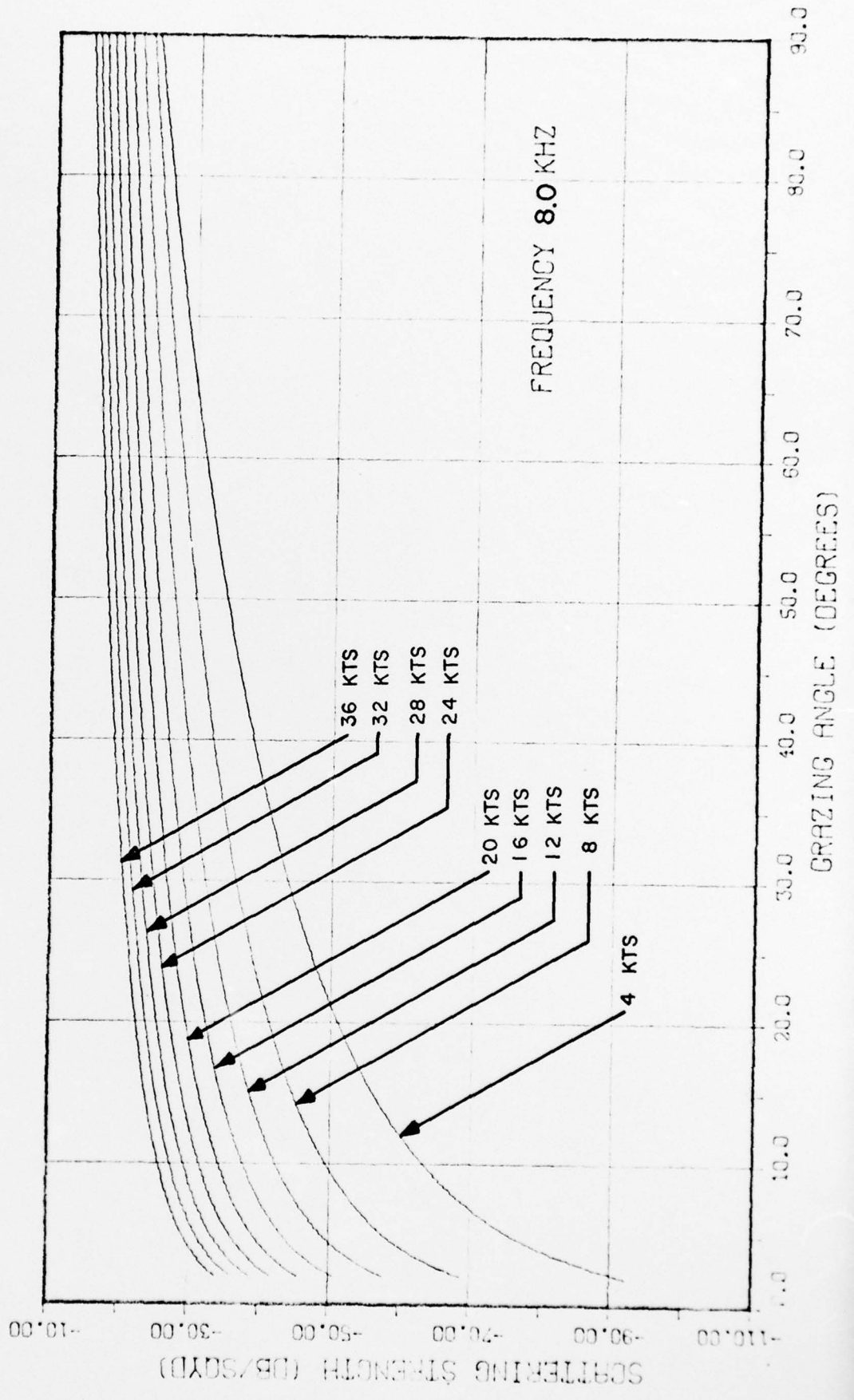
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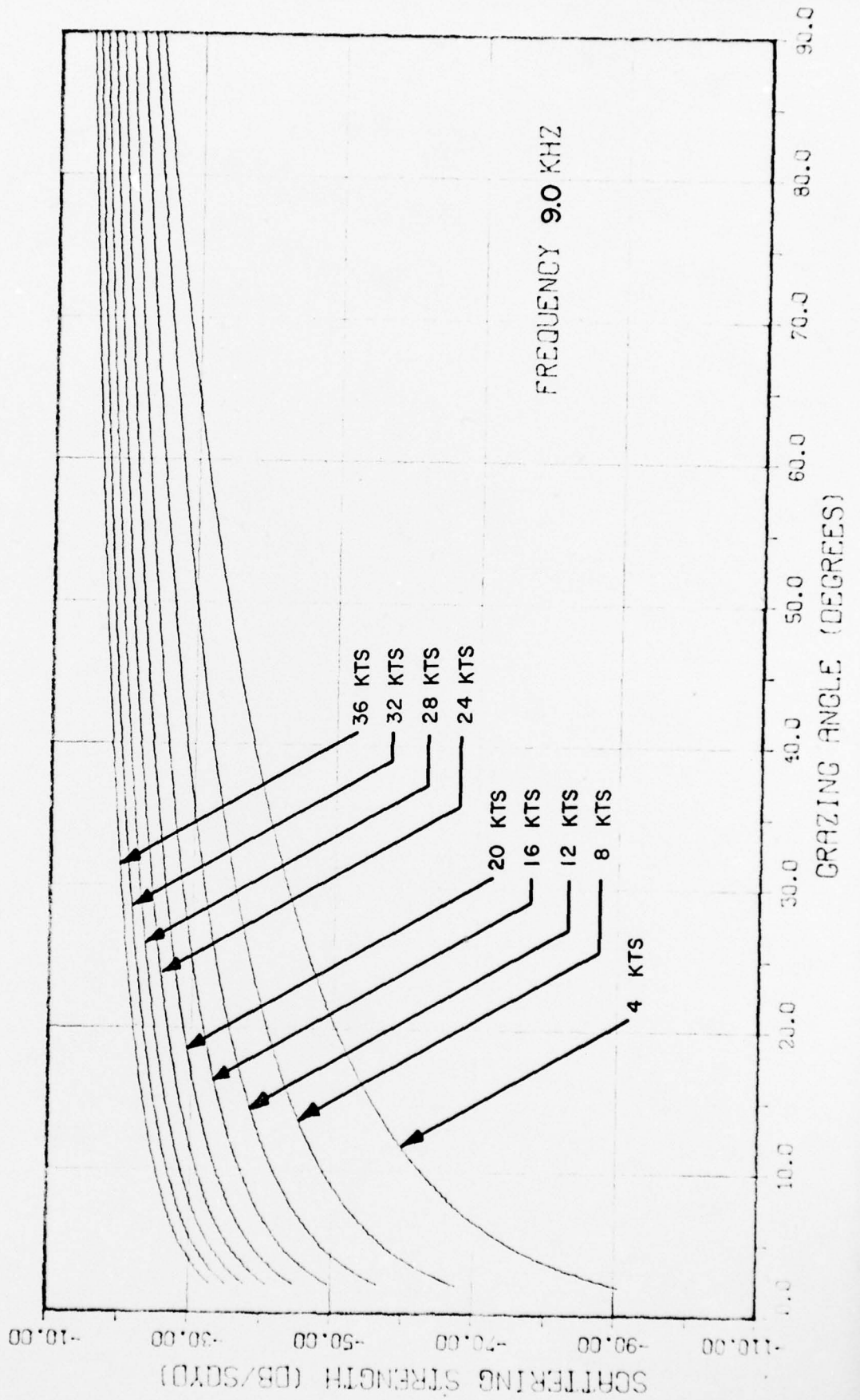
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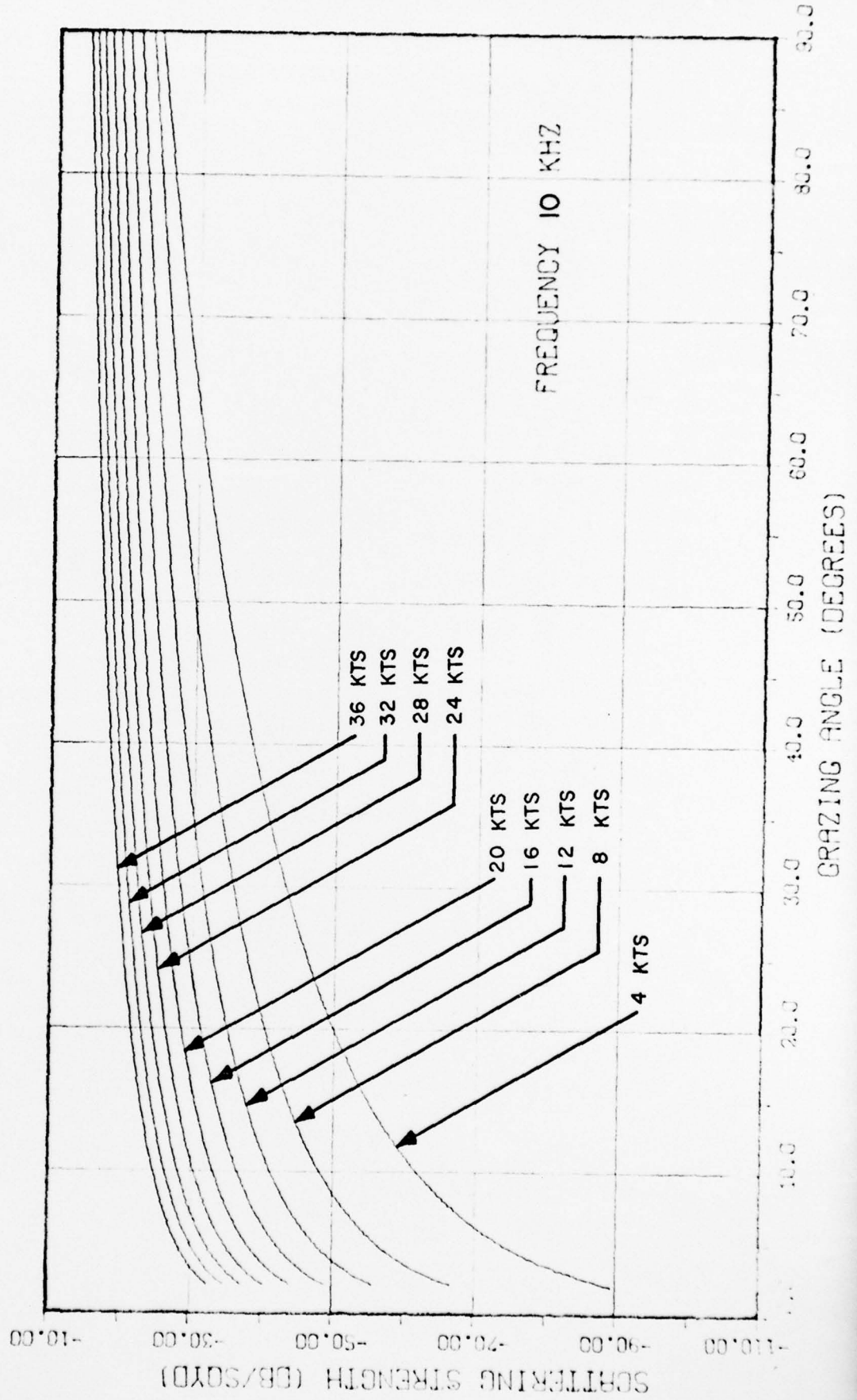
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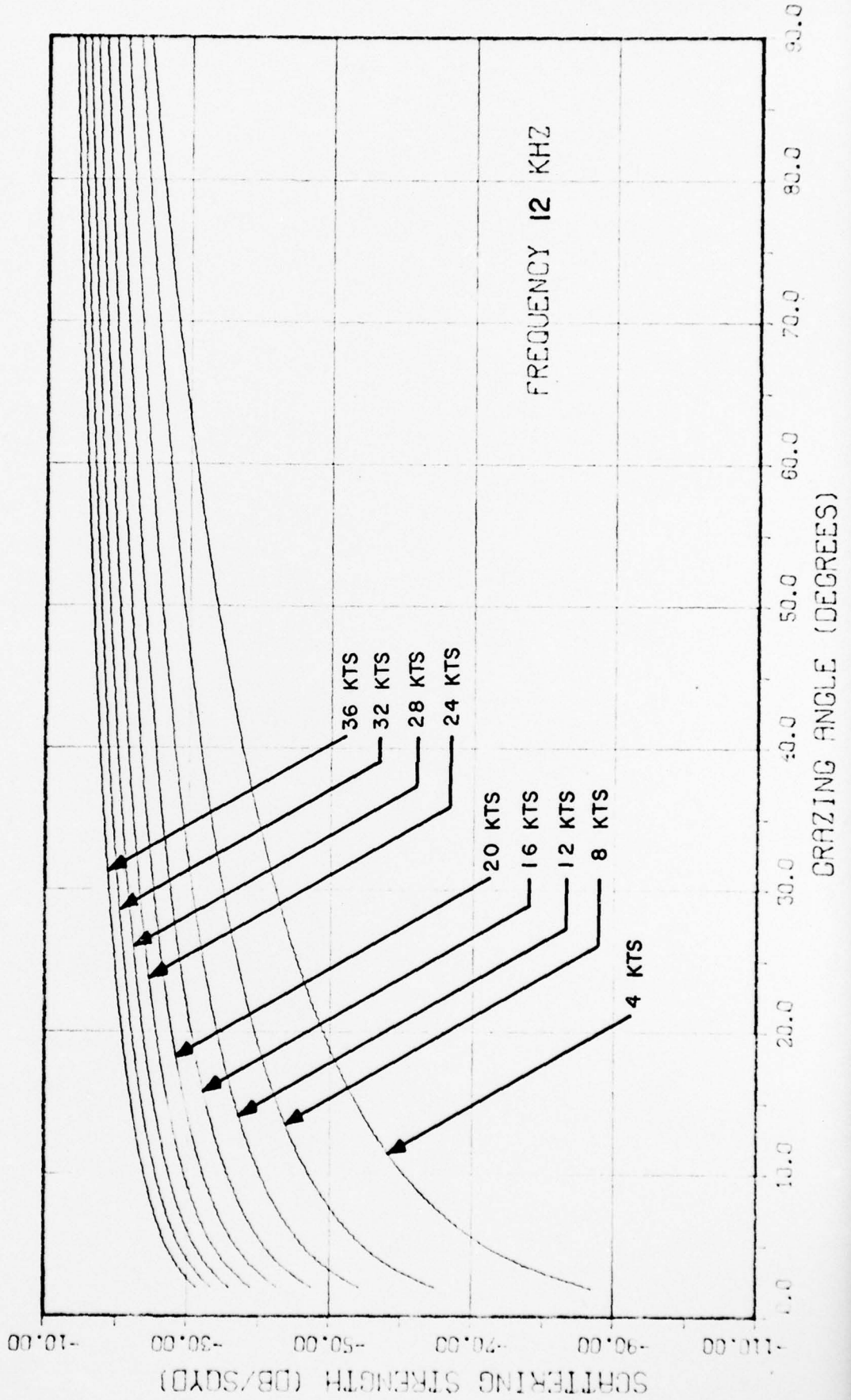
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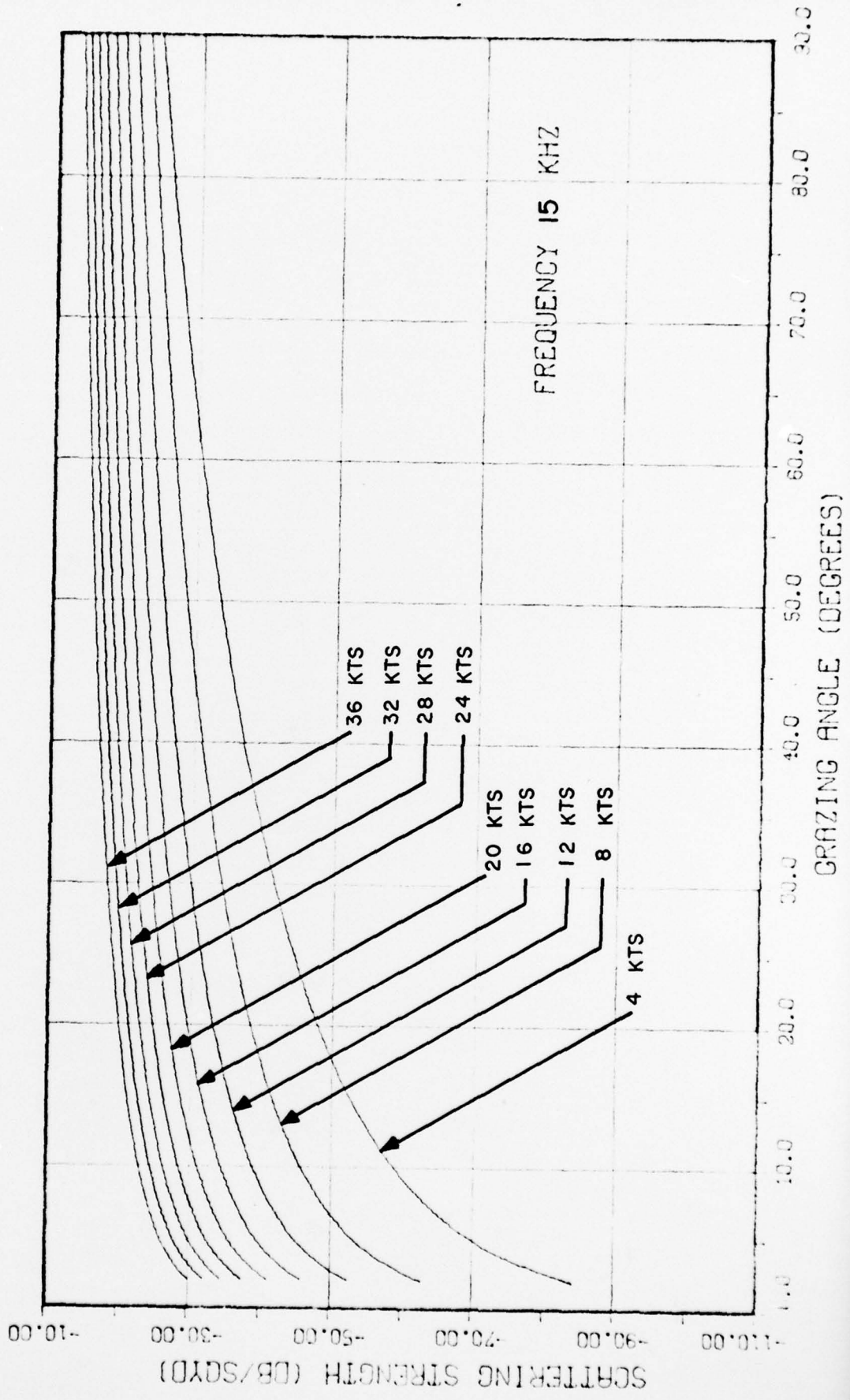
SURFACE SCATTERING STRENGTH



SURFACE SCATTERING STRENGTH



SURFACE SCATTERING STRENGTH



SURFACE SCATTERING STRENGTH

