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MC REPORT 011
Volume 11

AD 912500

ACOUSTIC ENVIRONMENTAL SCENARIOS
AND
PREDICTIONS FOR ASW

VOLUME 11
AREA 4A, SUMMER
PREDICTIONS FOR PASSIVE SONAR

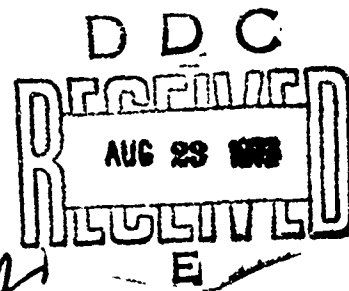
October 1972

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LONG RANGE ACOUSTIC PROPAGATION PROJECT

AD No. _____
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OCEAN SCIENCE PROGRAM

MAURY CENTER FOR OCEAN SCIENCE

Department of the Navy

Washington, D.C.

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Director, Long Range Acoustic Propagation Project (ONR Code 102-08).

Arlington, Va. 22217

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ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

Volume II: AREA 4A SUMMER
PREDICTIONS FOR PASSIVE SONAR.

11 Oct 72

12 243 p.

~~Long Range acoustic propagation project.~~

14 MAC-011-Vol-11

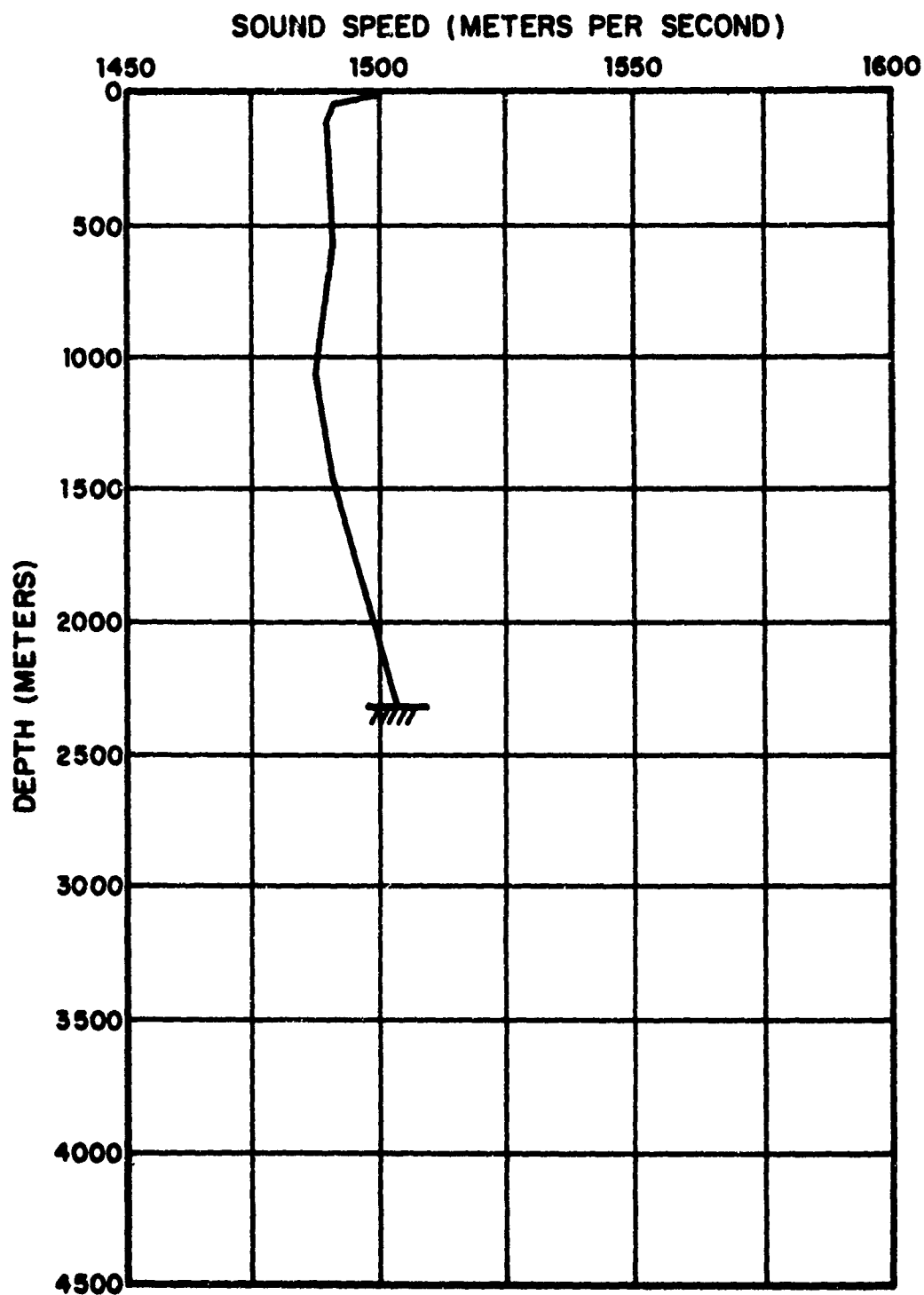
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Vol 1 525 738

Refer to Volume I of this report for an explanation of the
plot format and descriptions of models and ocean areas.

404 409 ✓

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**SOUND SPEED PROFILE
AREA 4A, SUMMER**

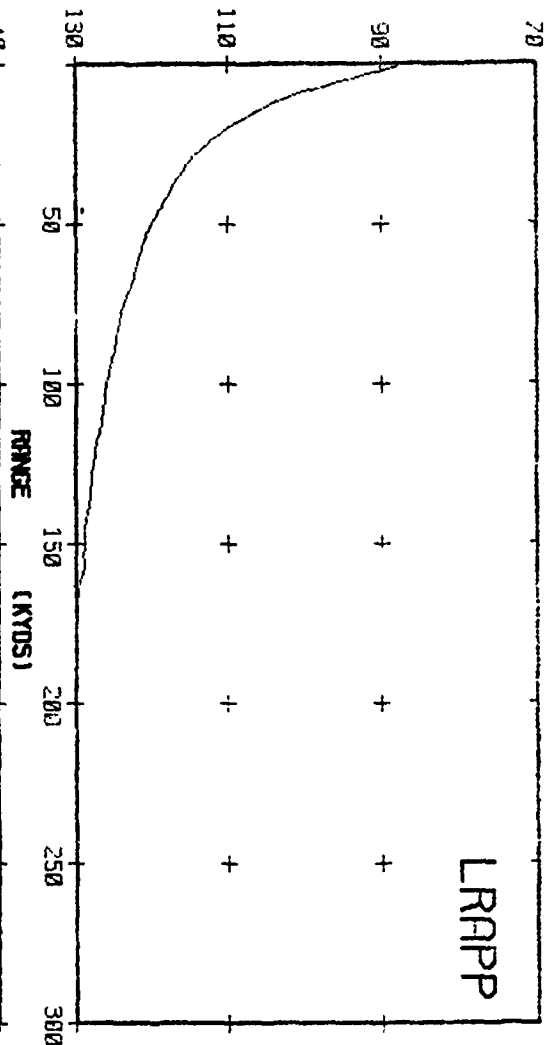
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AREA 49 SUMMER

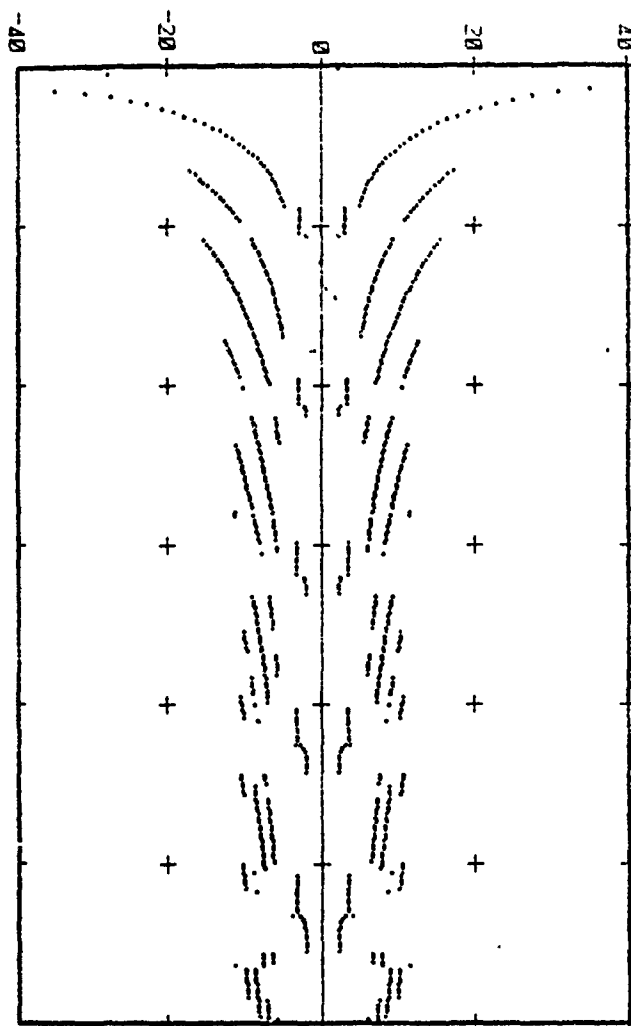
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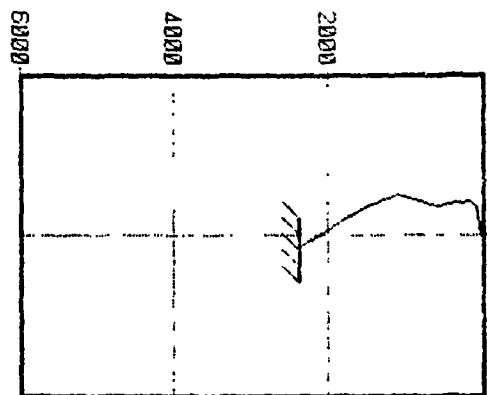
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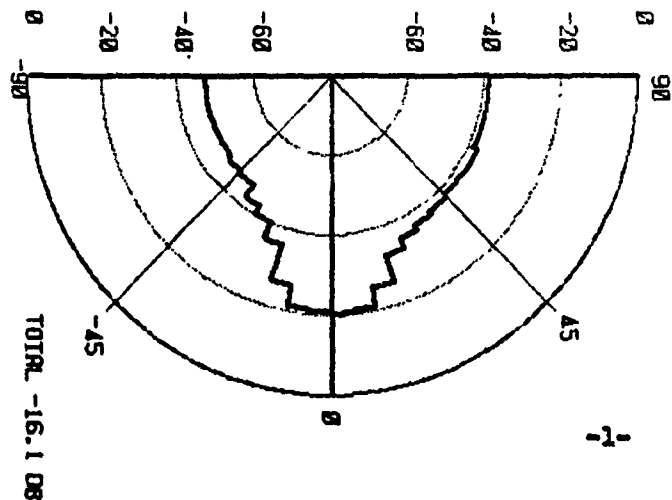
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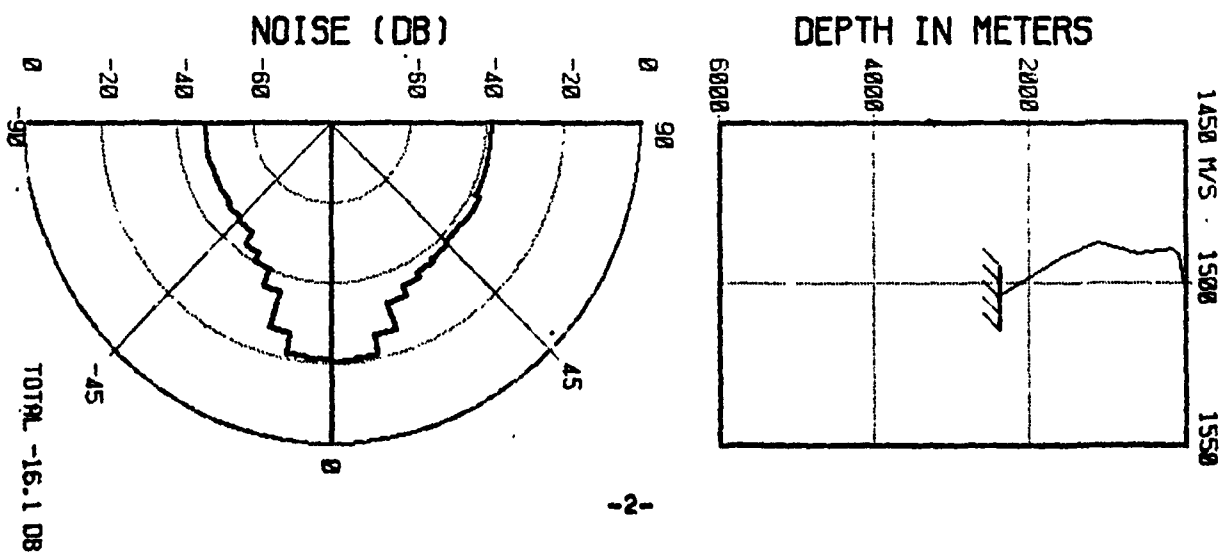
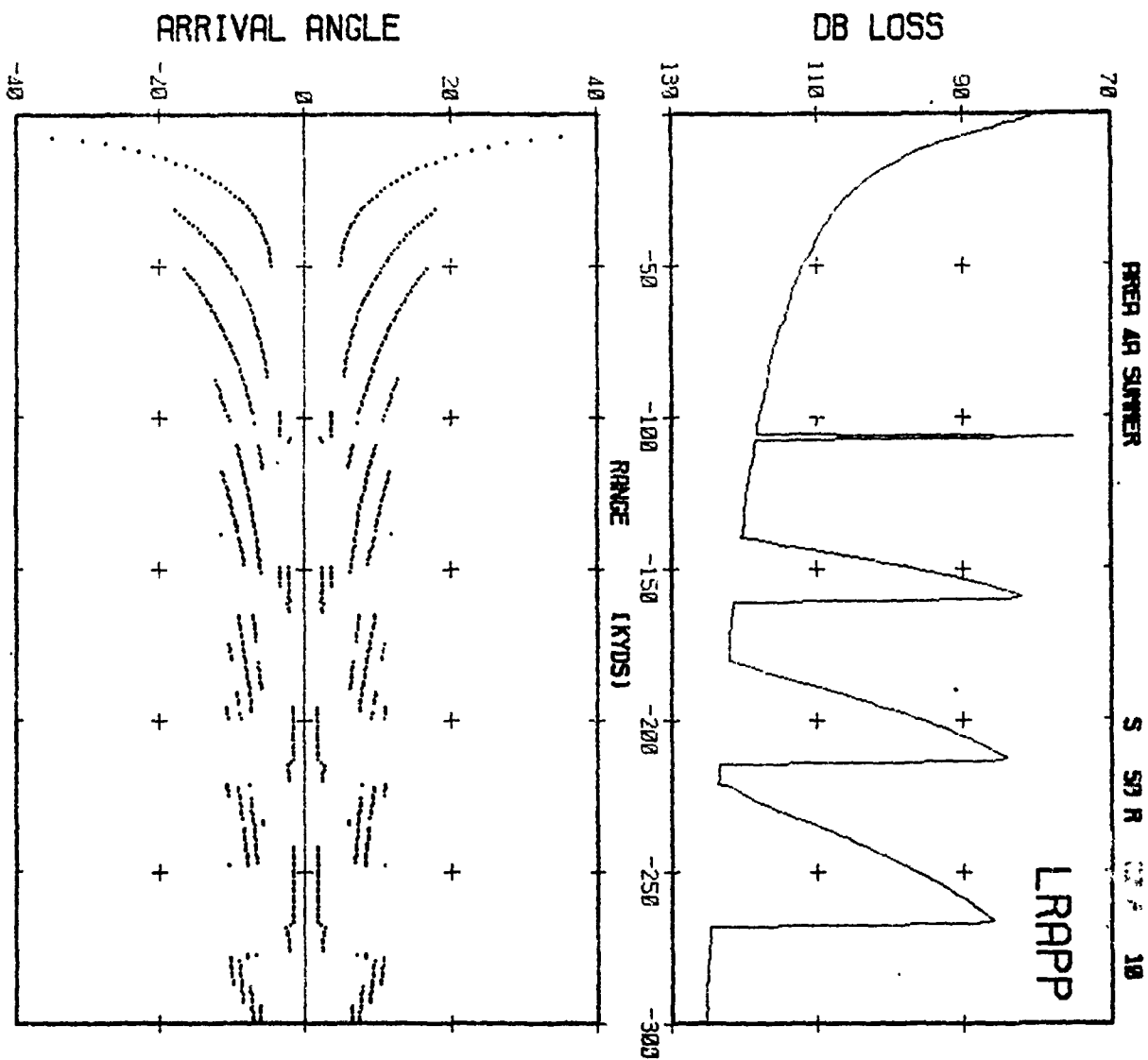


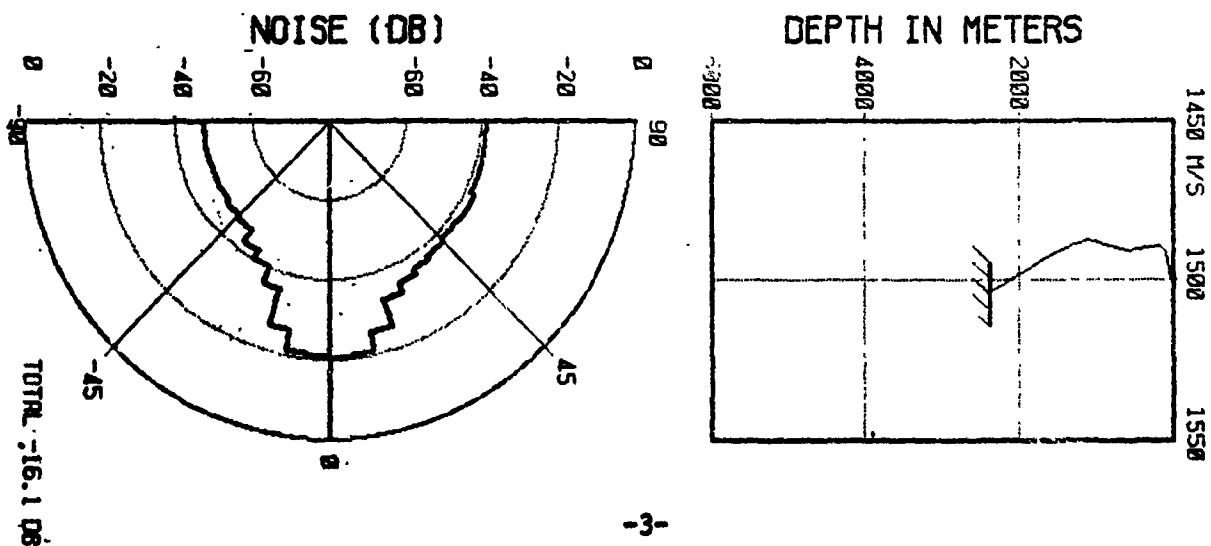
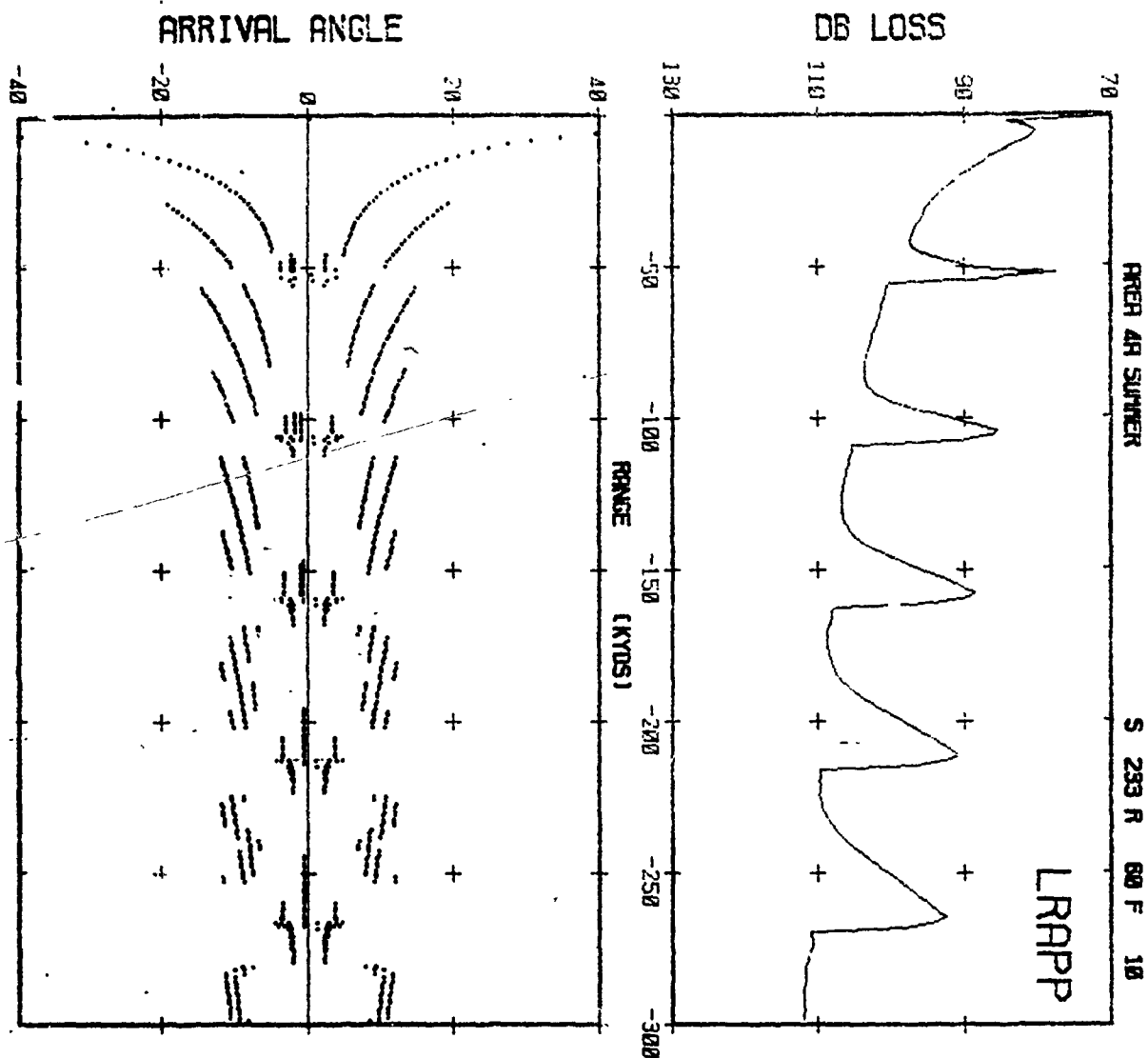
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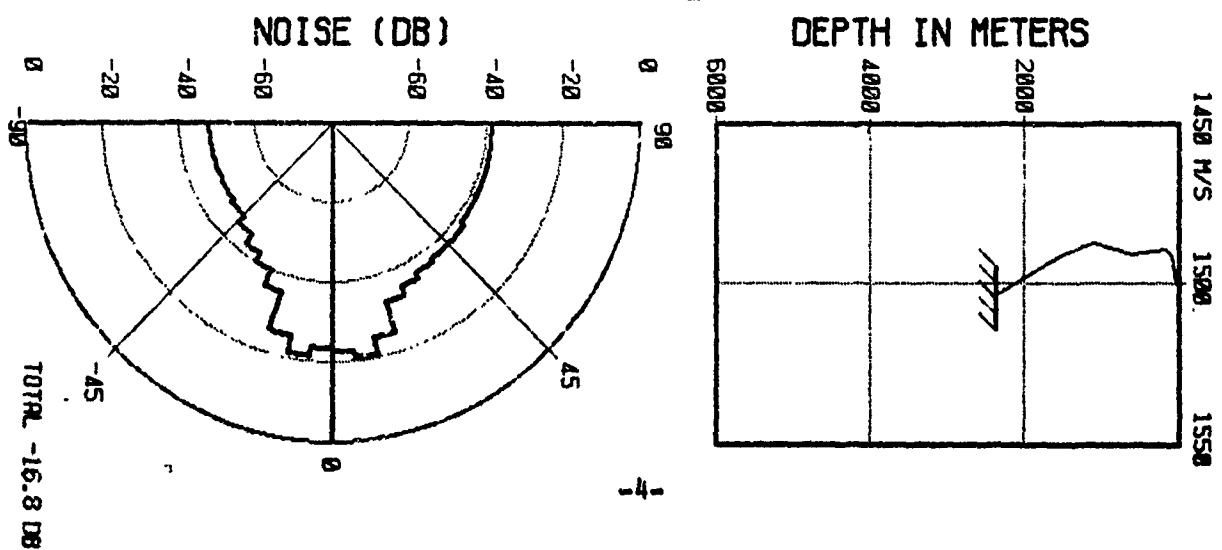
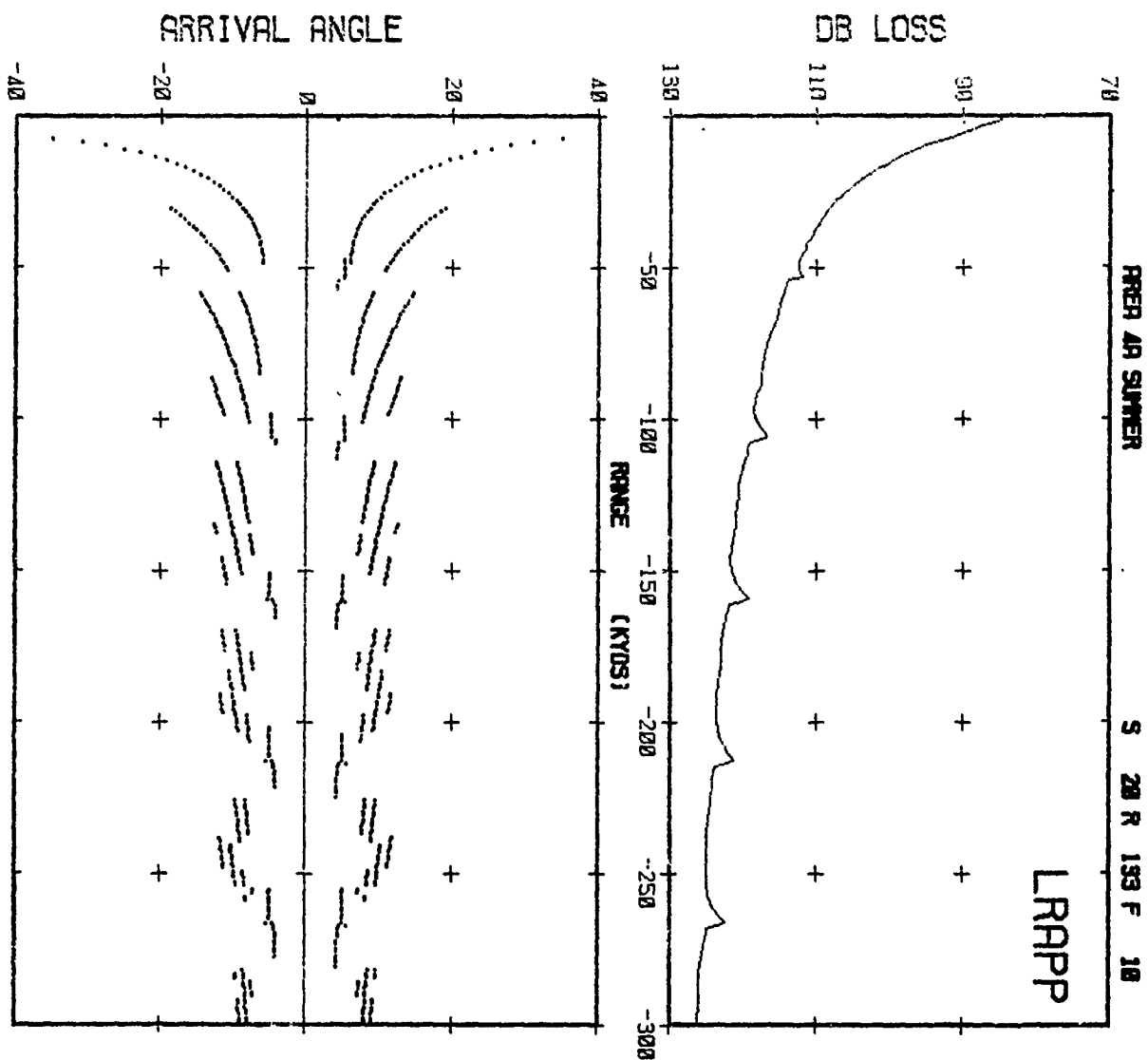


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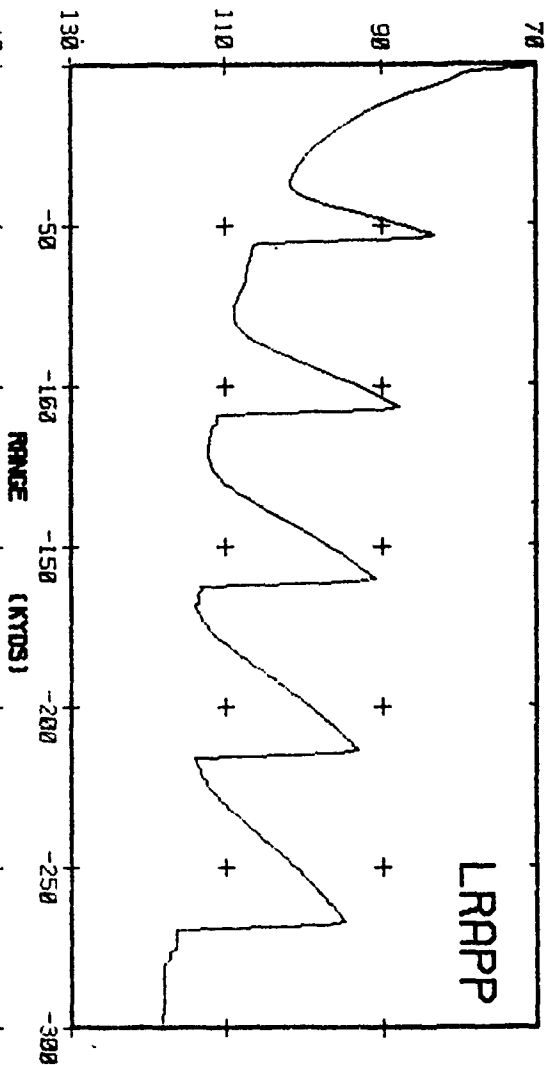


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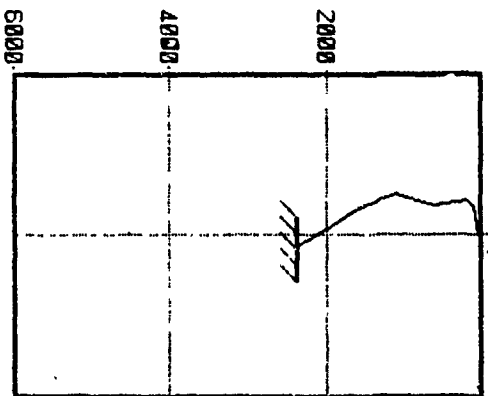
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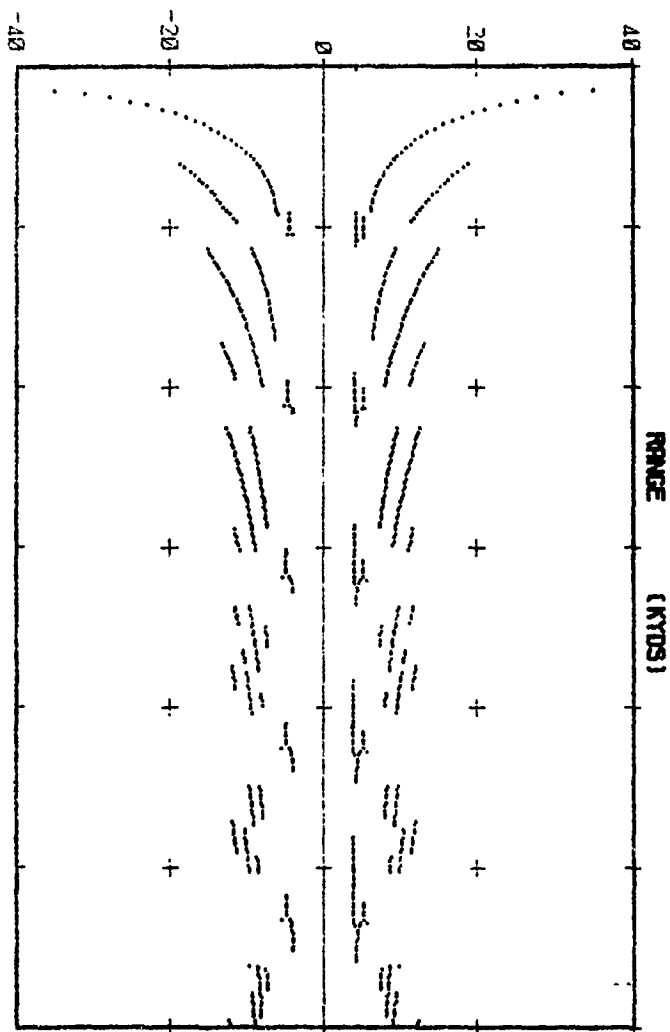
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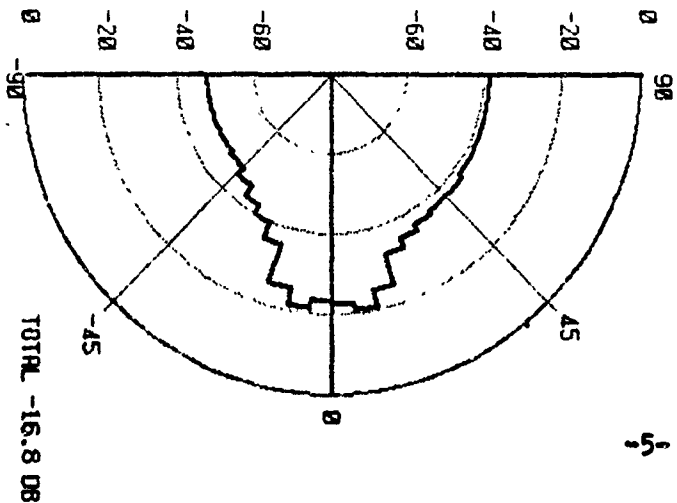
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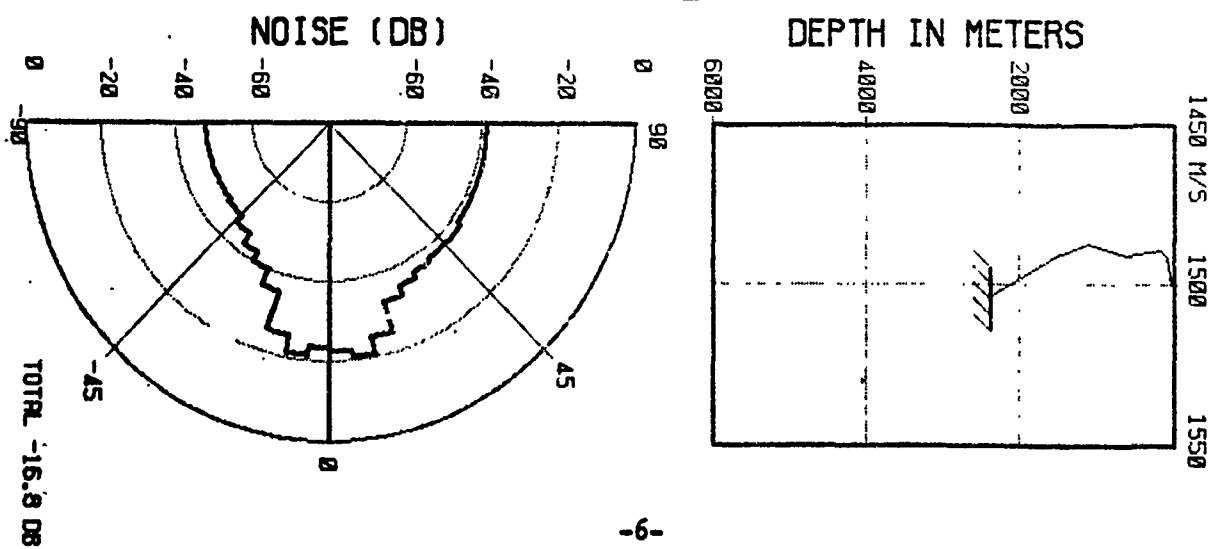
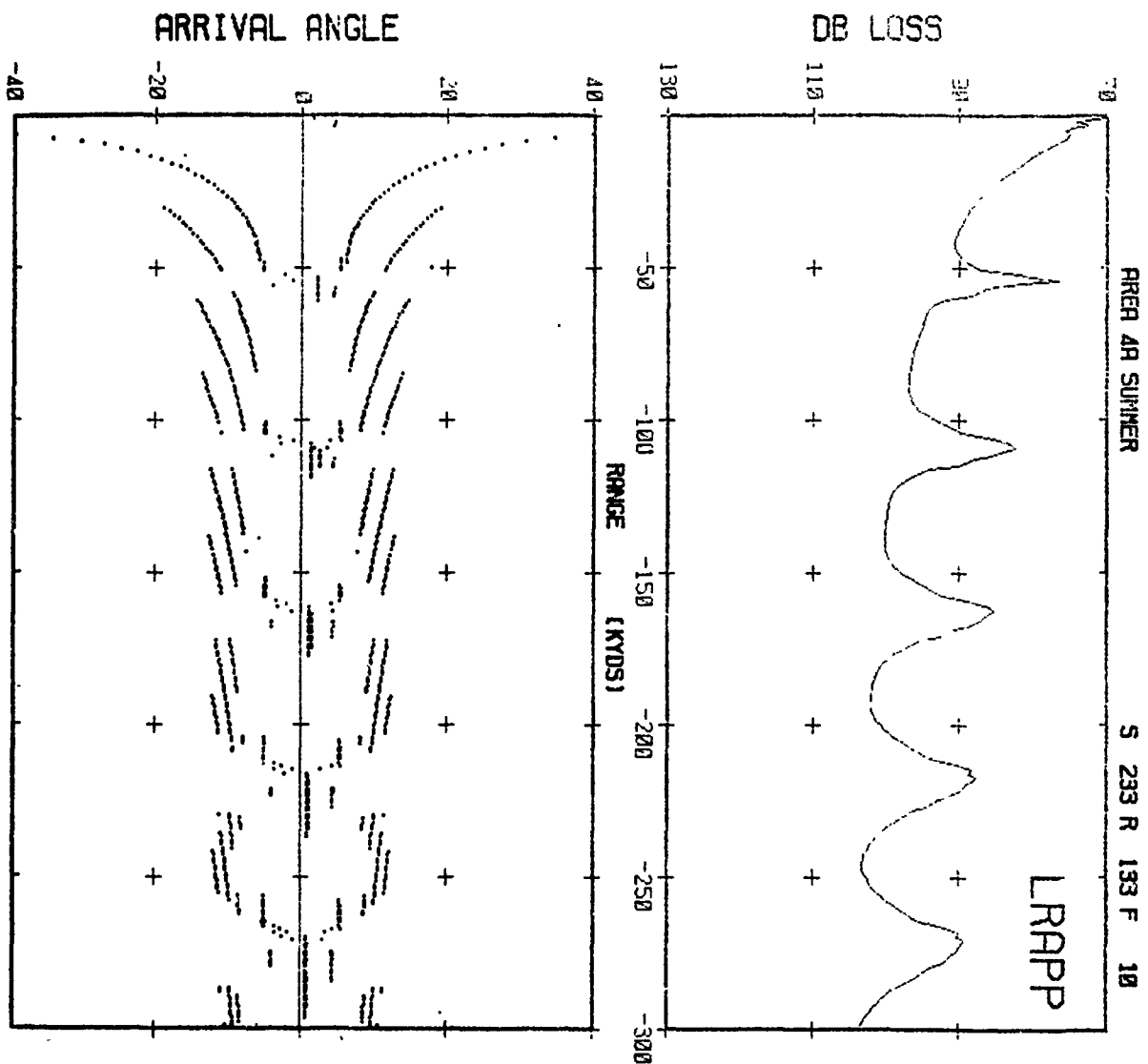


ARRIVAL ANGLE



NOISE (DB)





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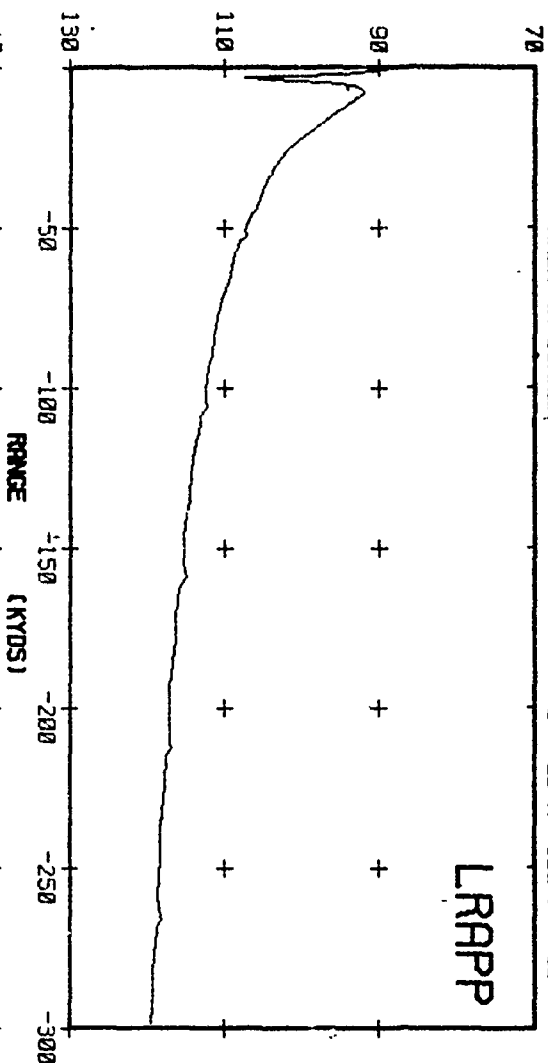
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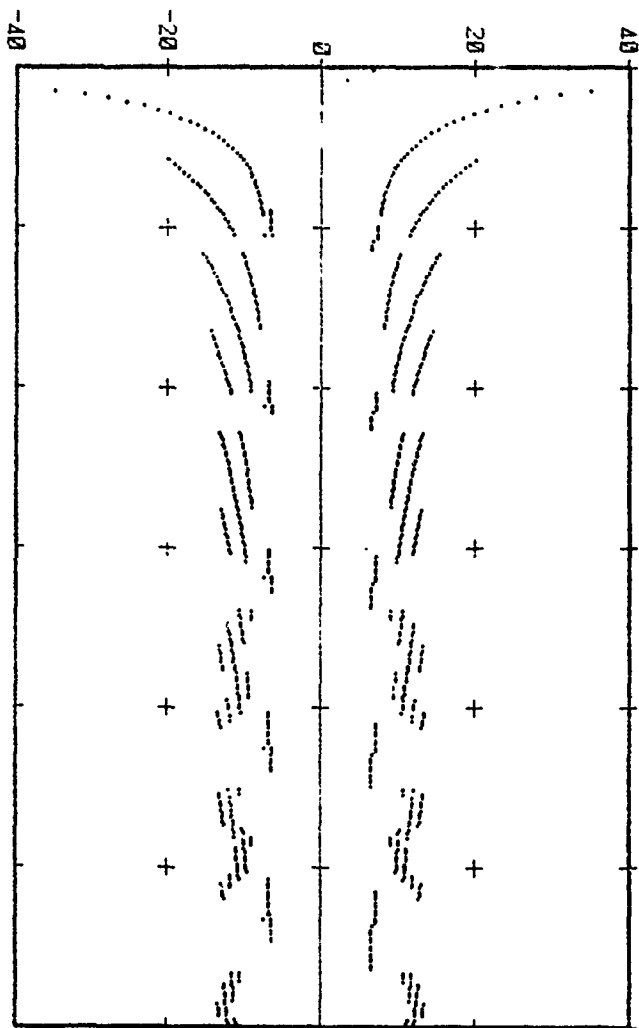
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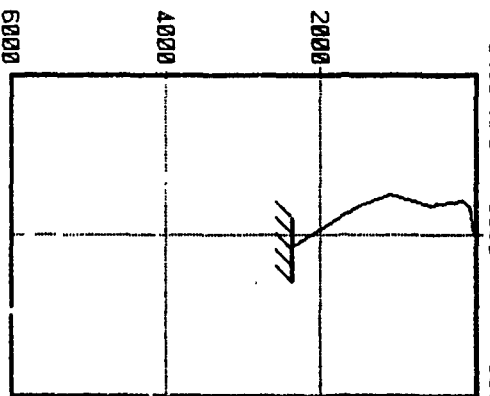
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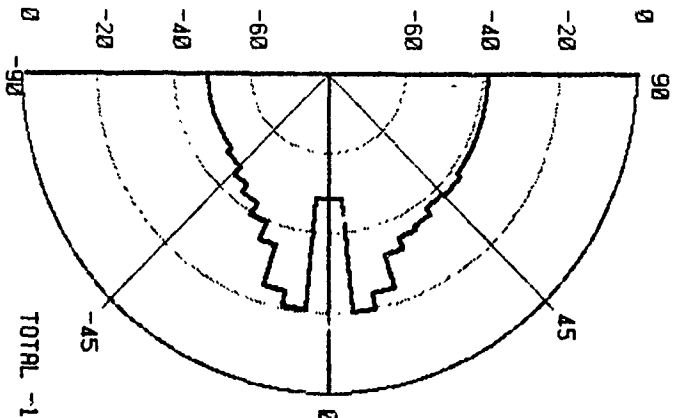
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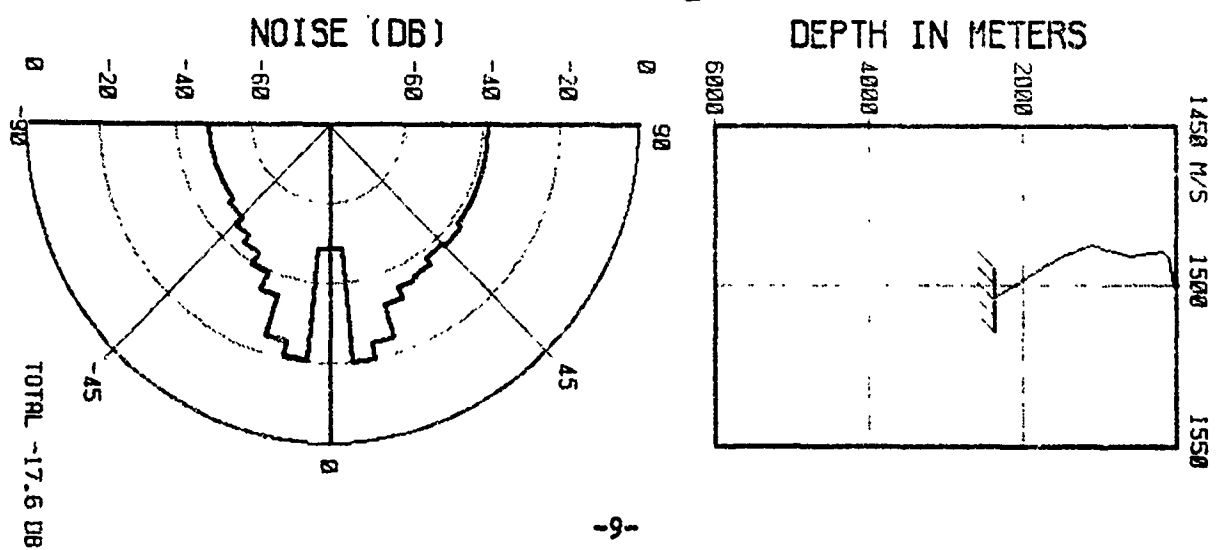
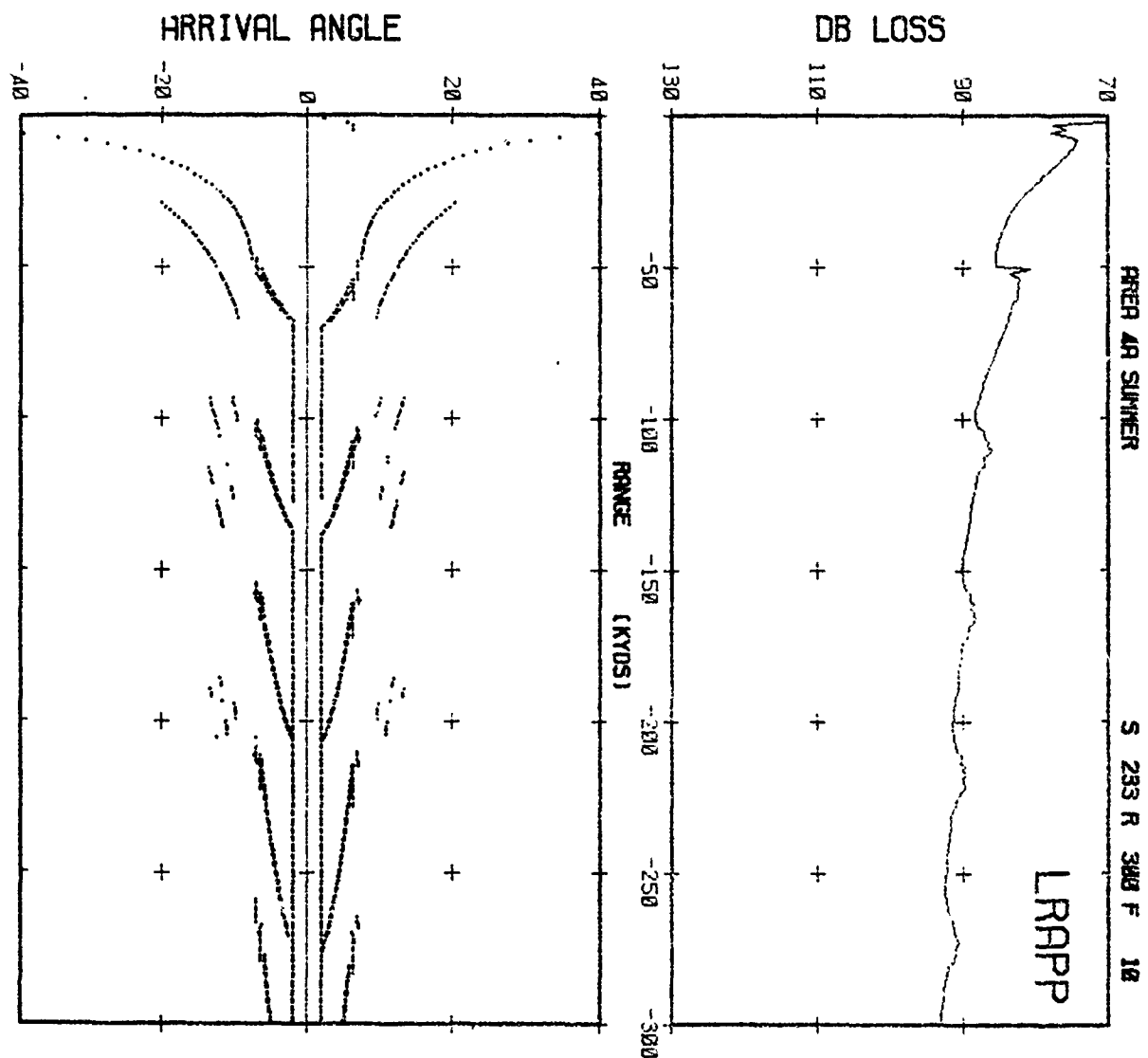


DEPTH IN METERS



NOISE (DB)



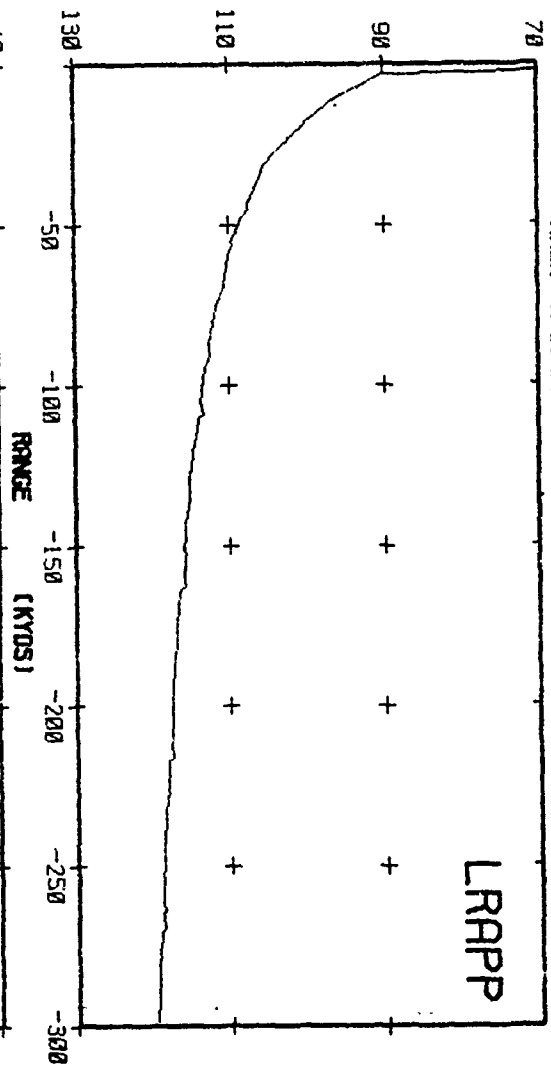


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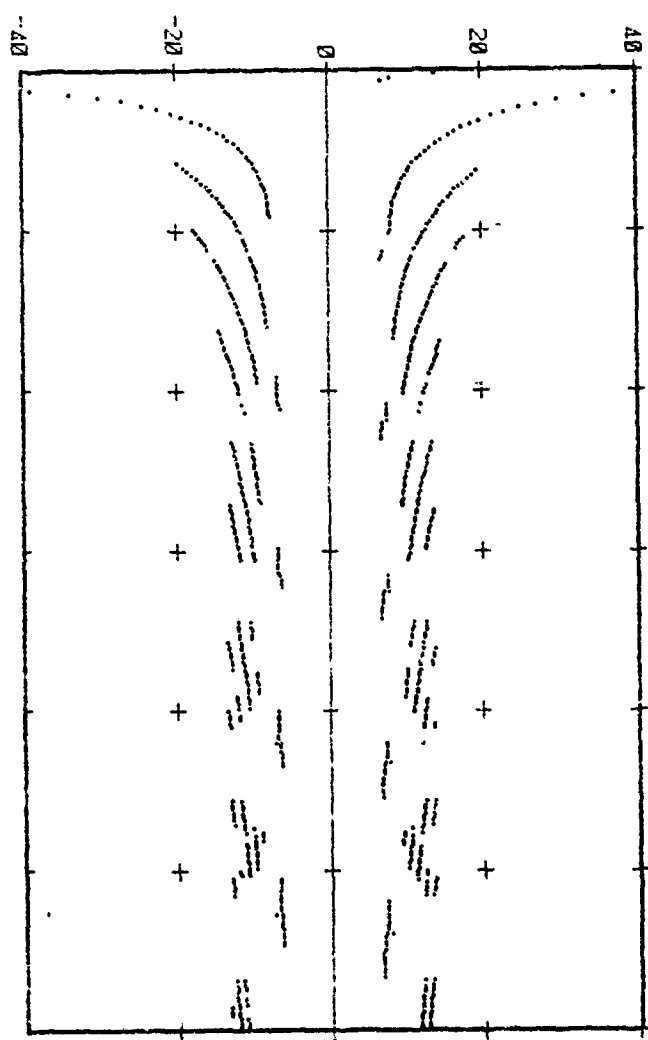
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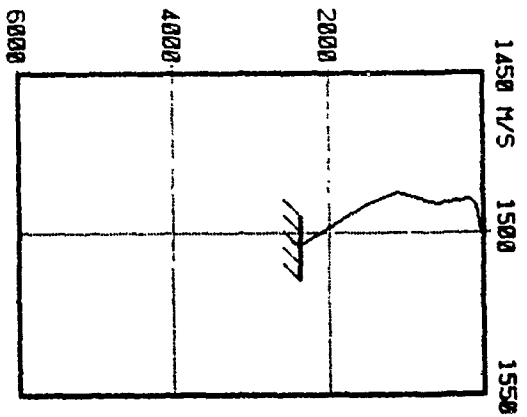
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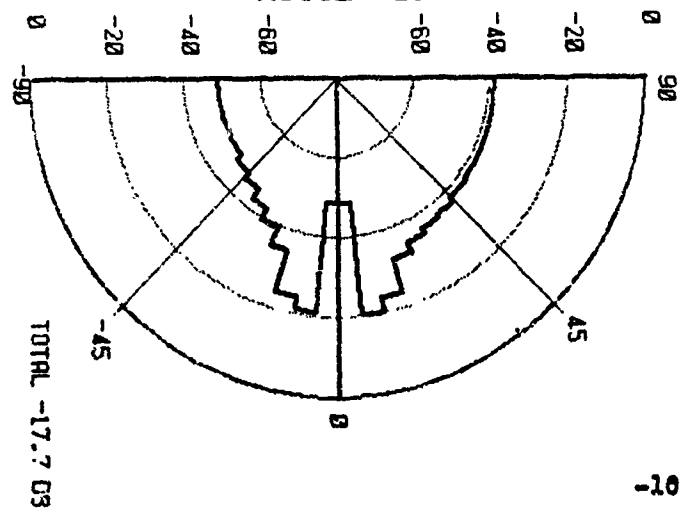
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DEPTH IN METERS



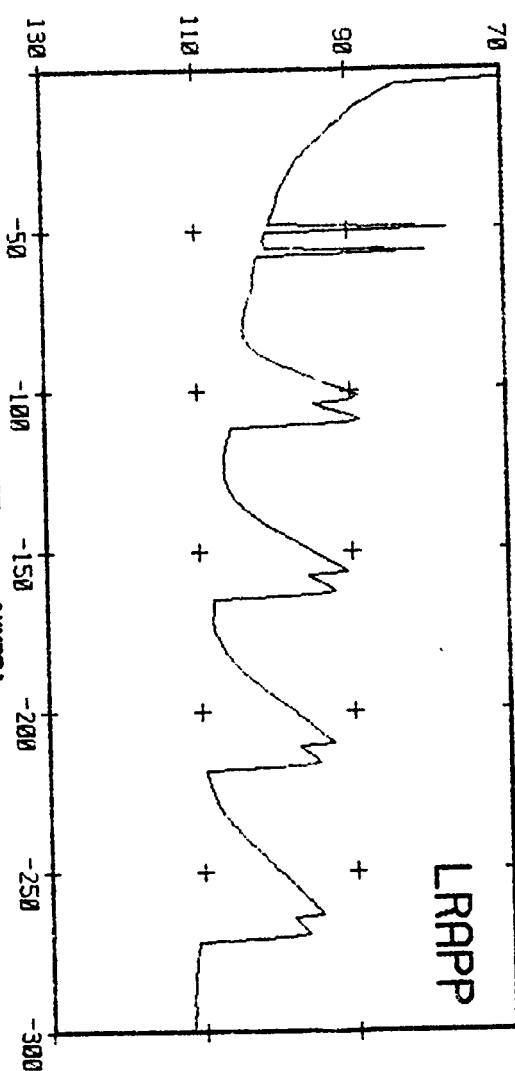
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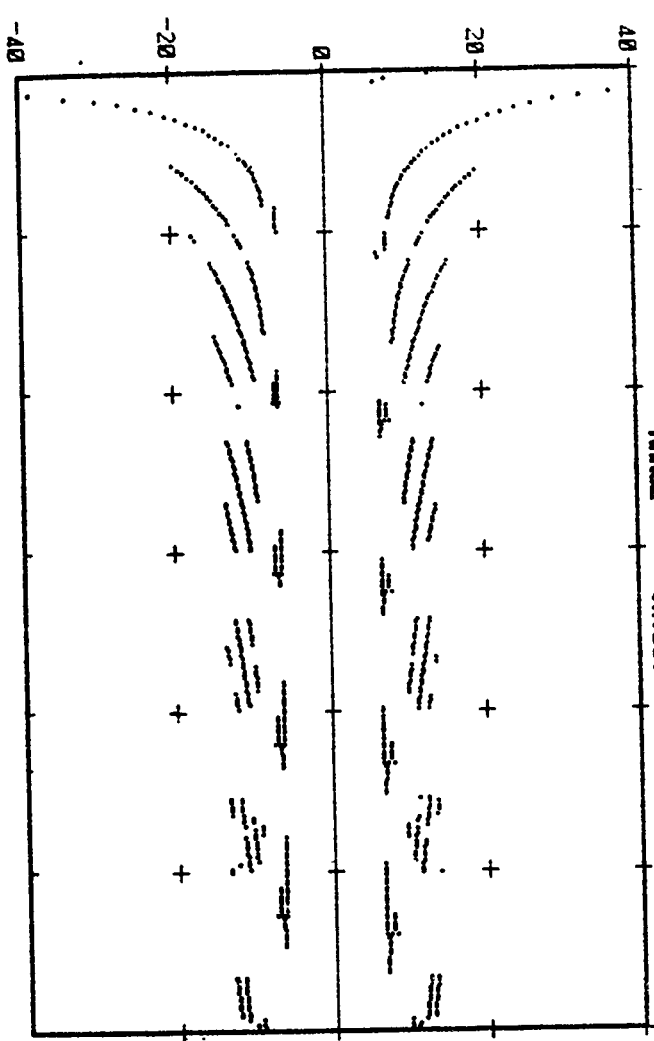
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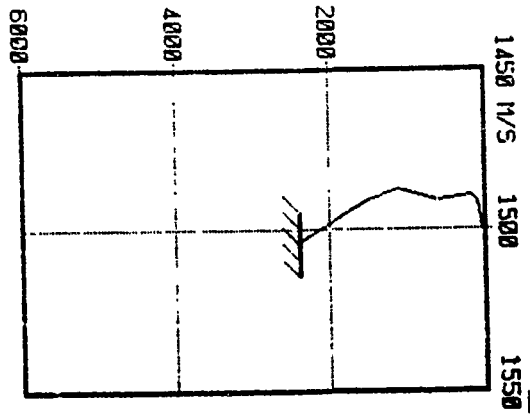
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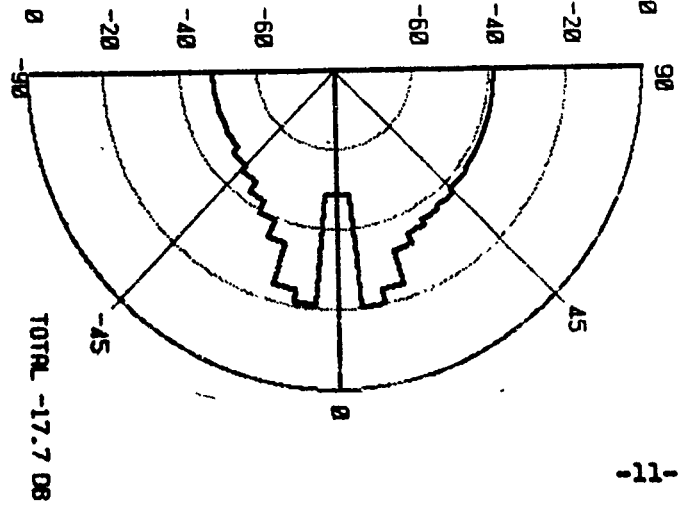
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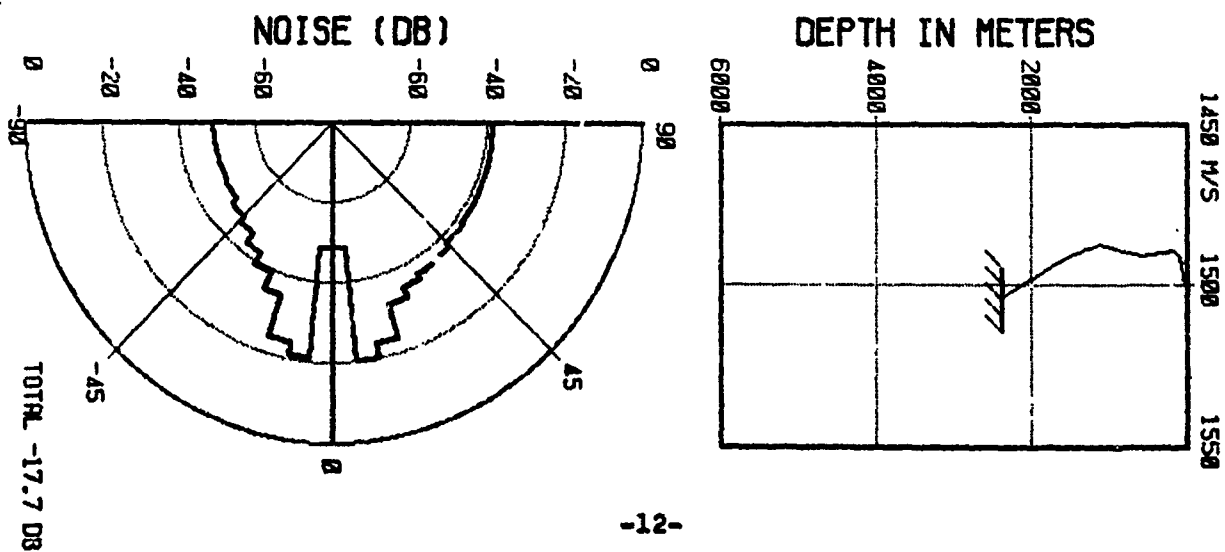
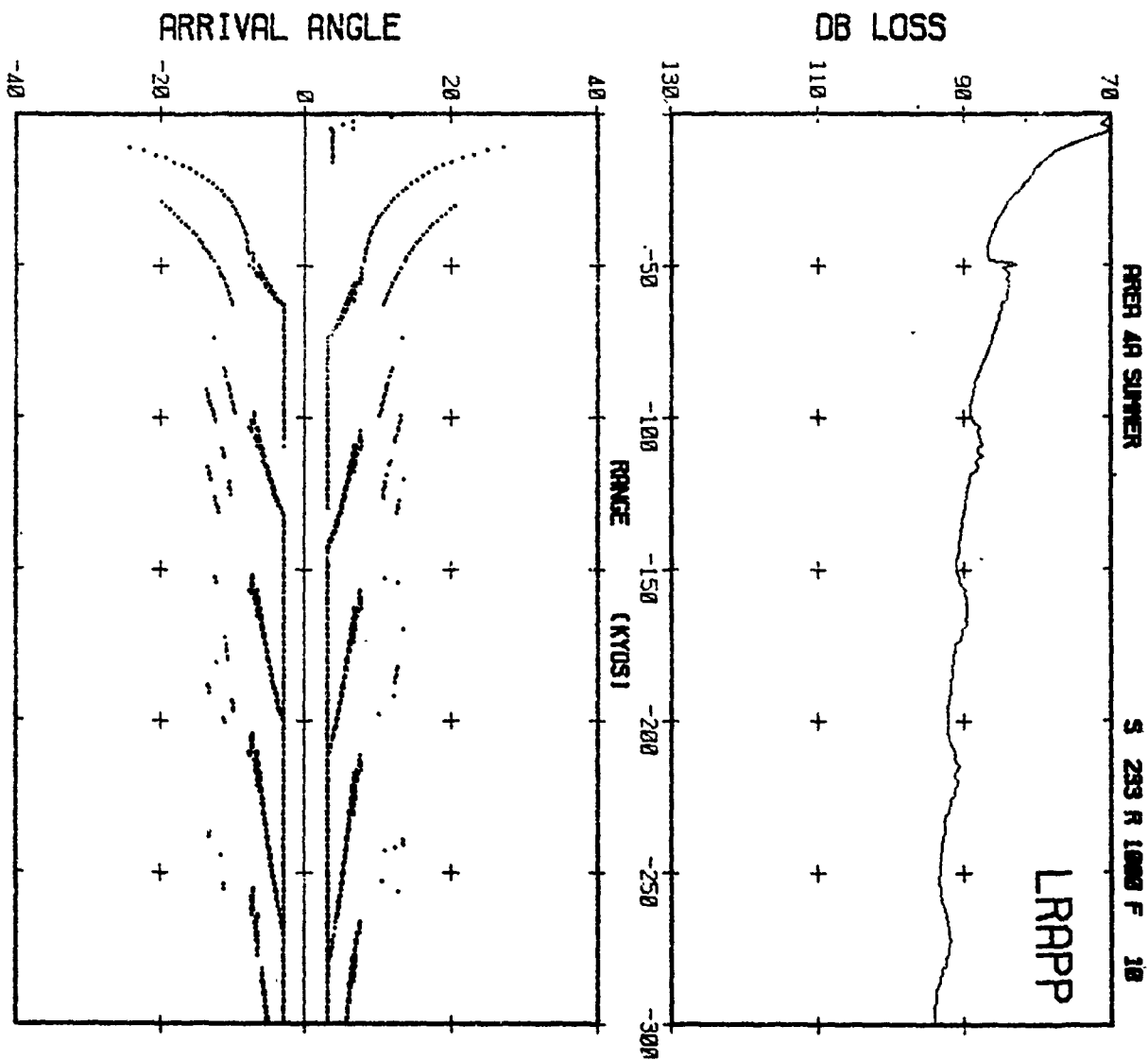


DEPTH IN METERS



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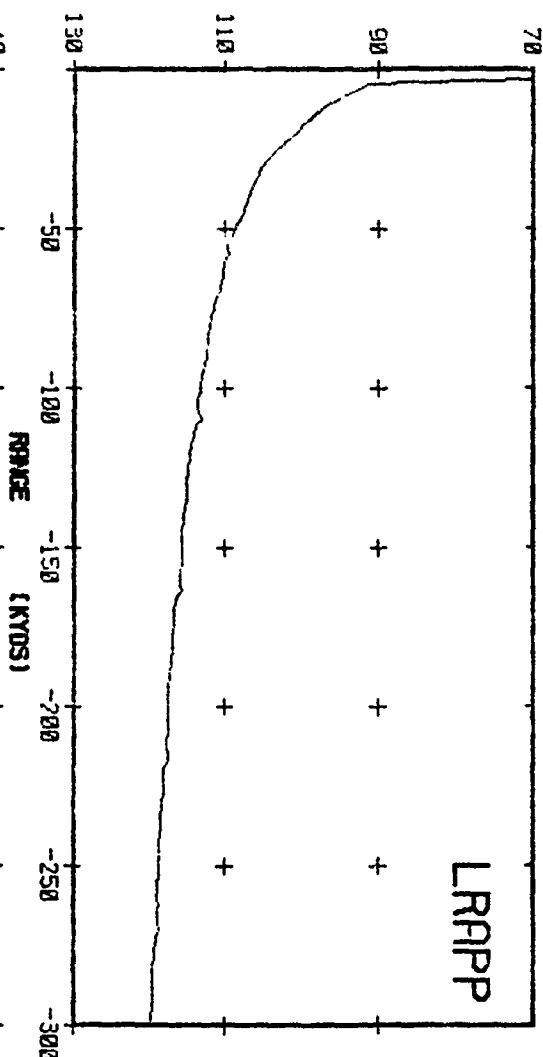




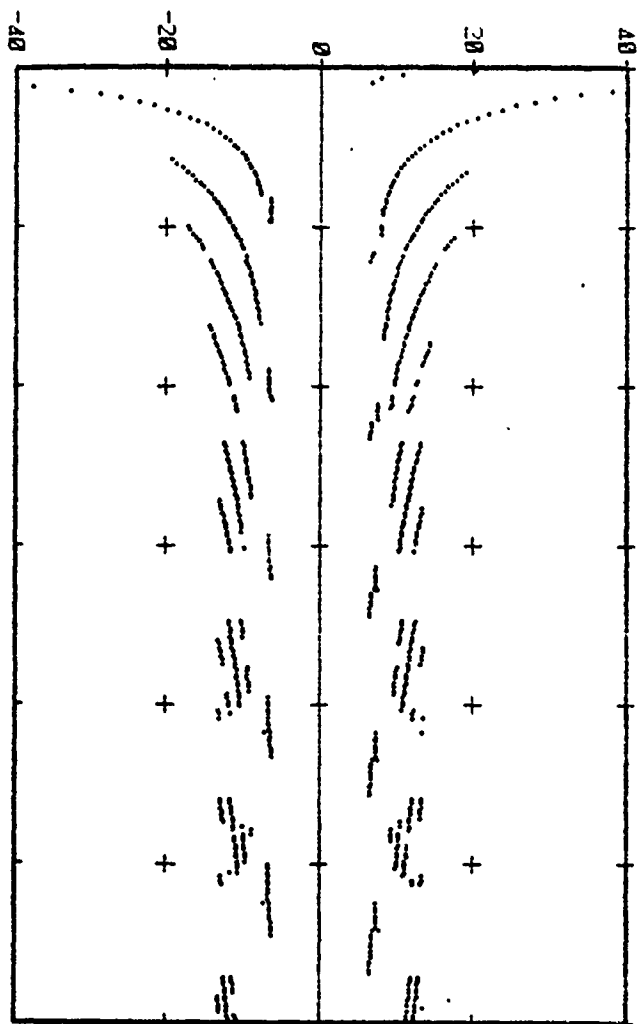
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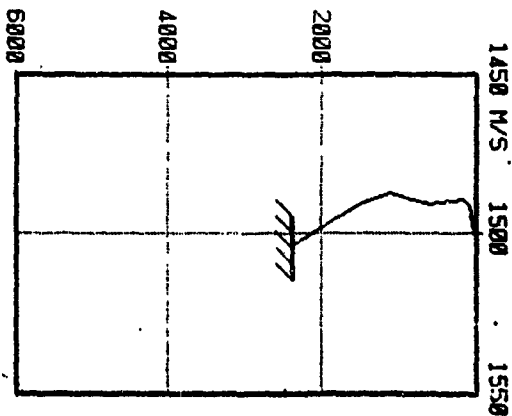
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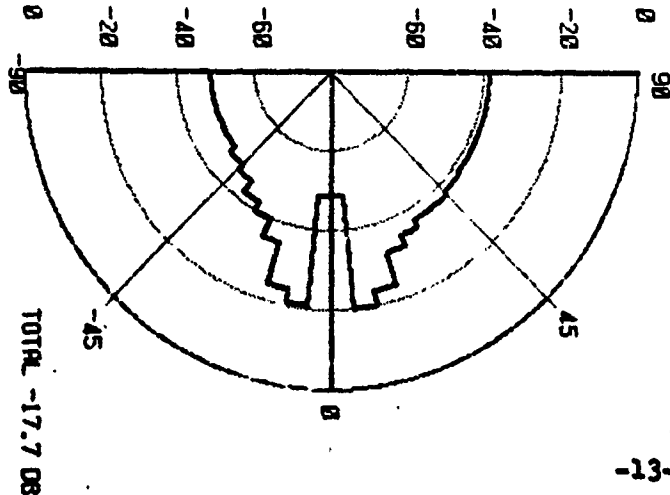
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DEPTH IN METERS



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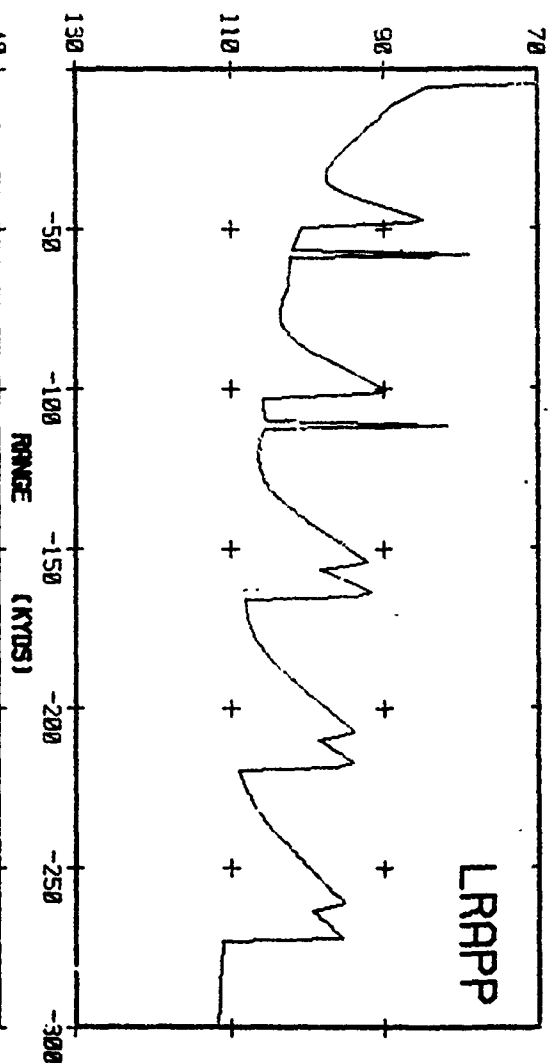


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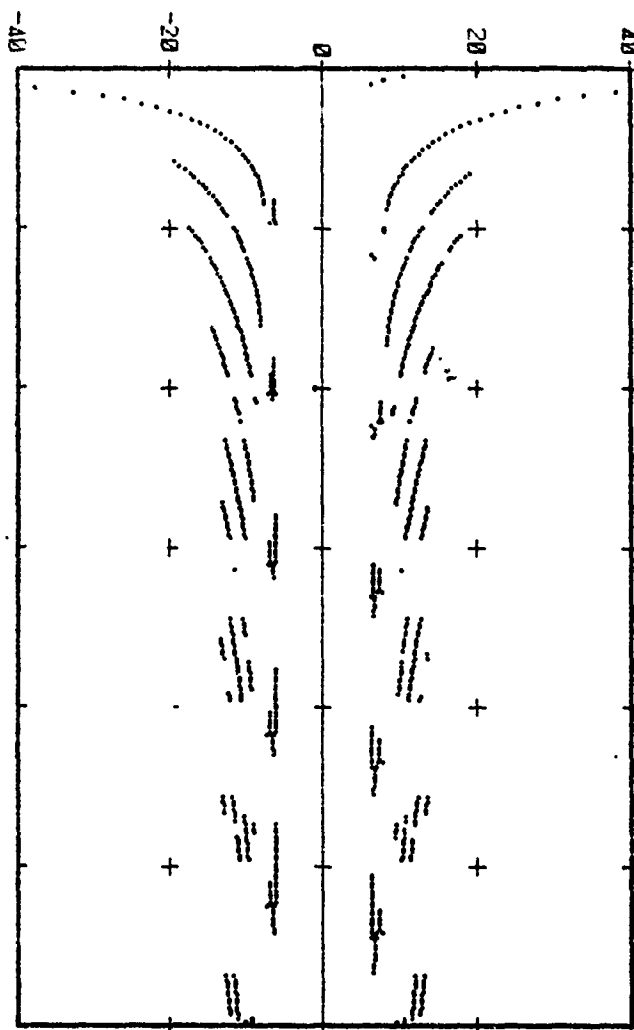
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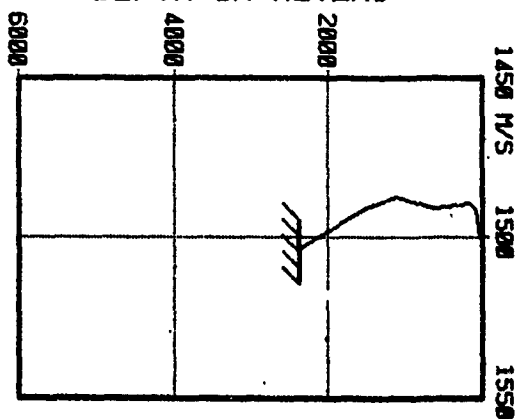
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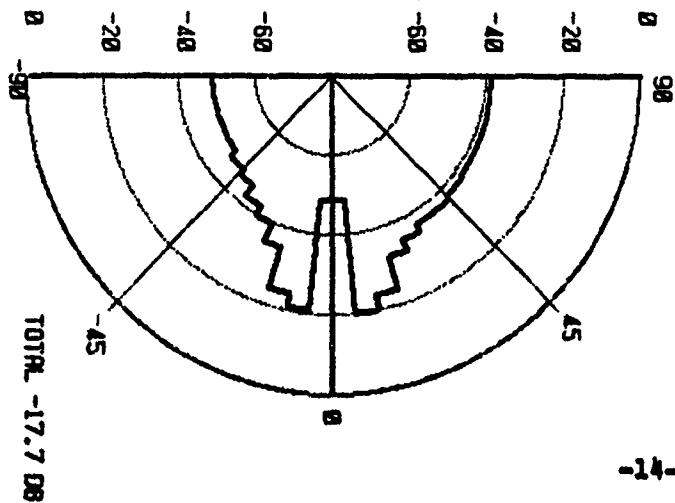
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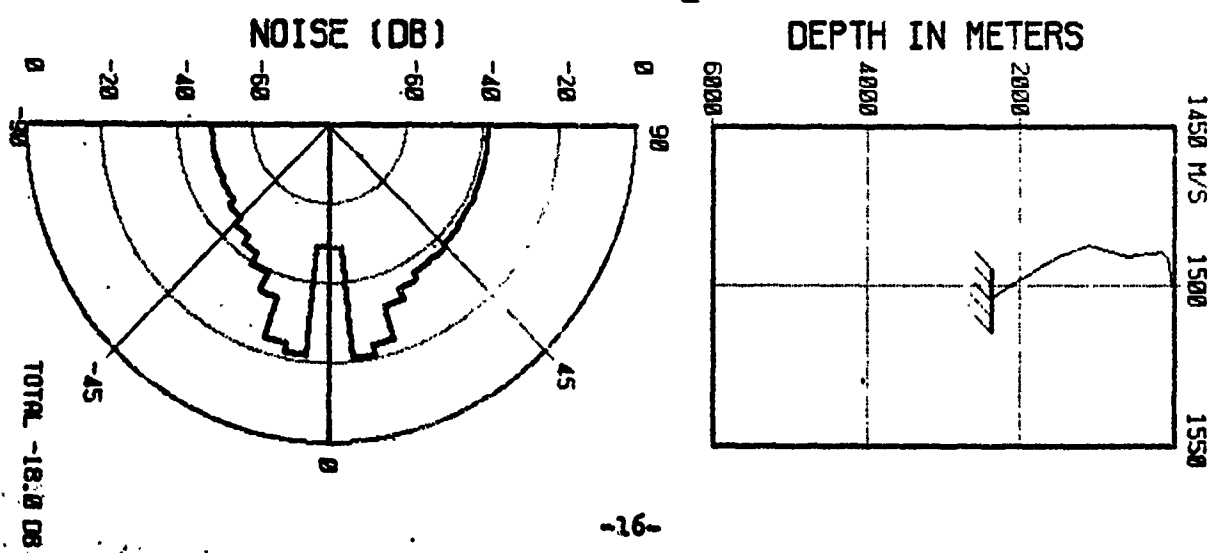
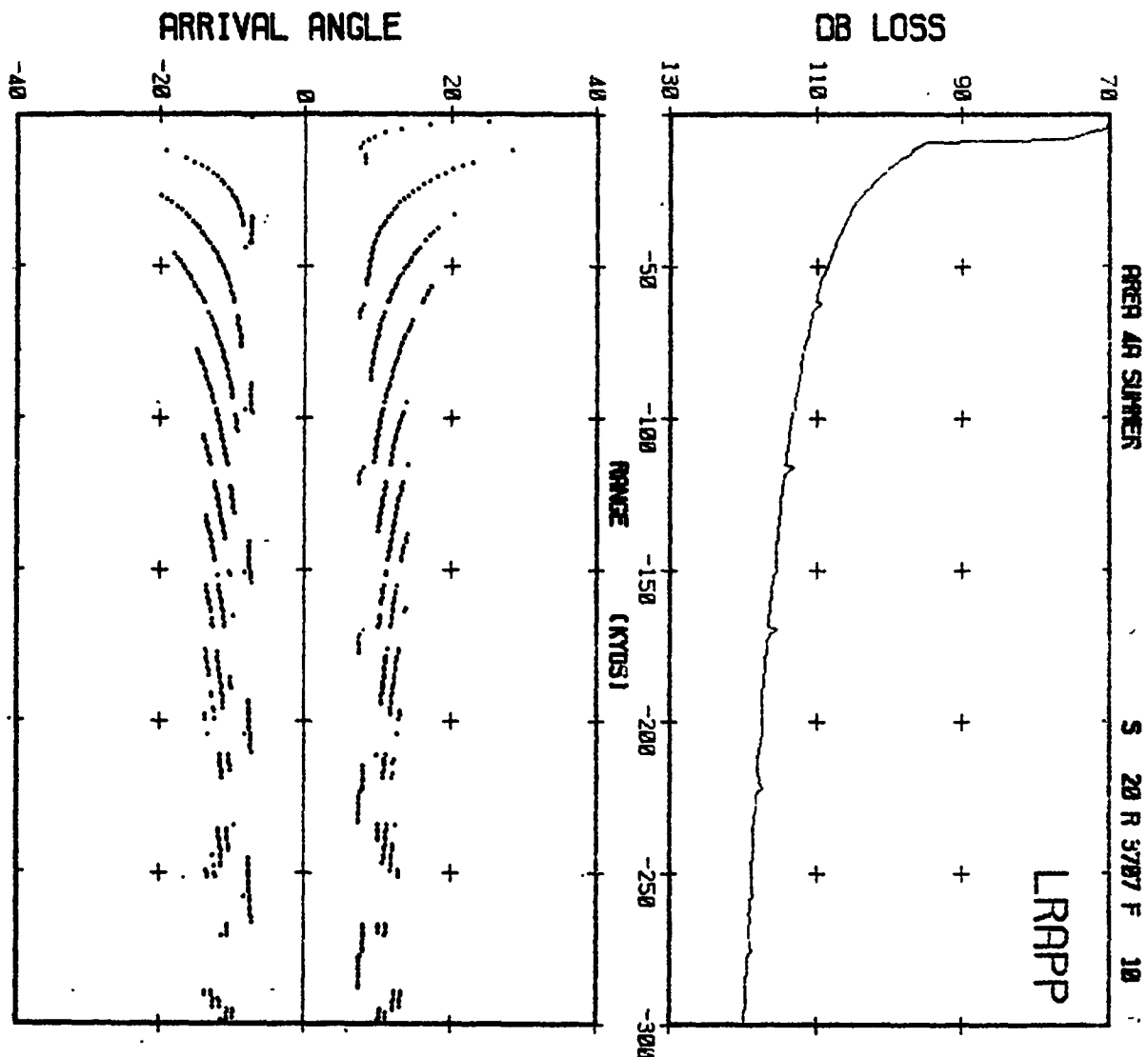


DEPTH IN METERS



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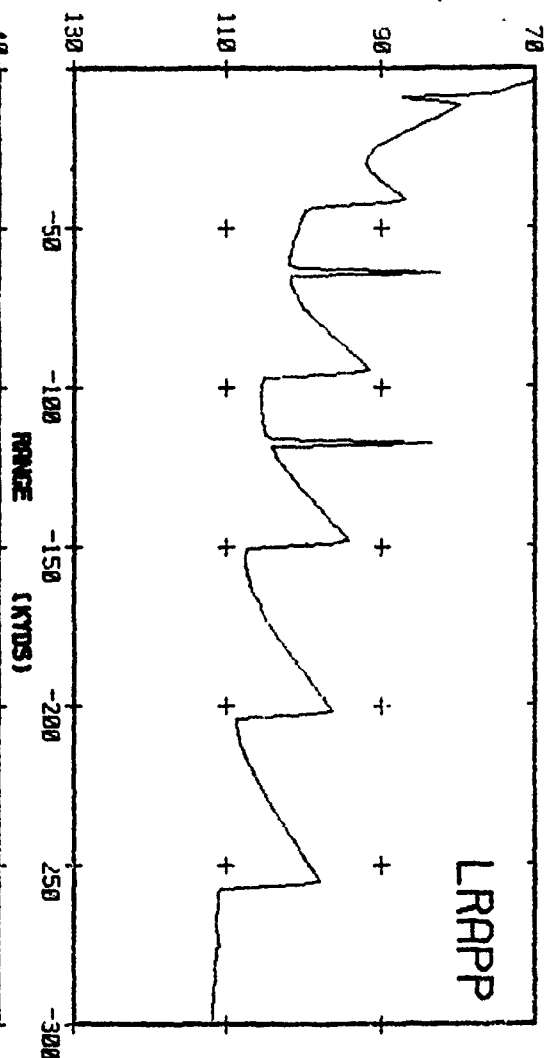


RRR 40 SUMMER

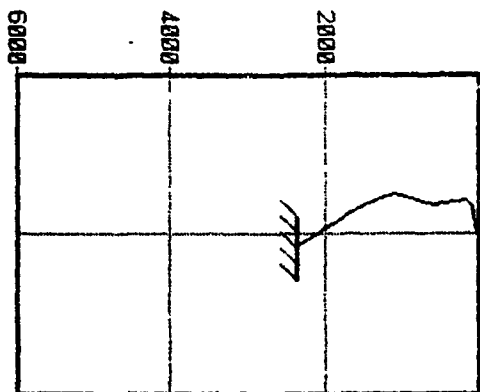
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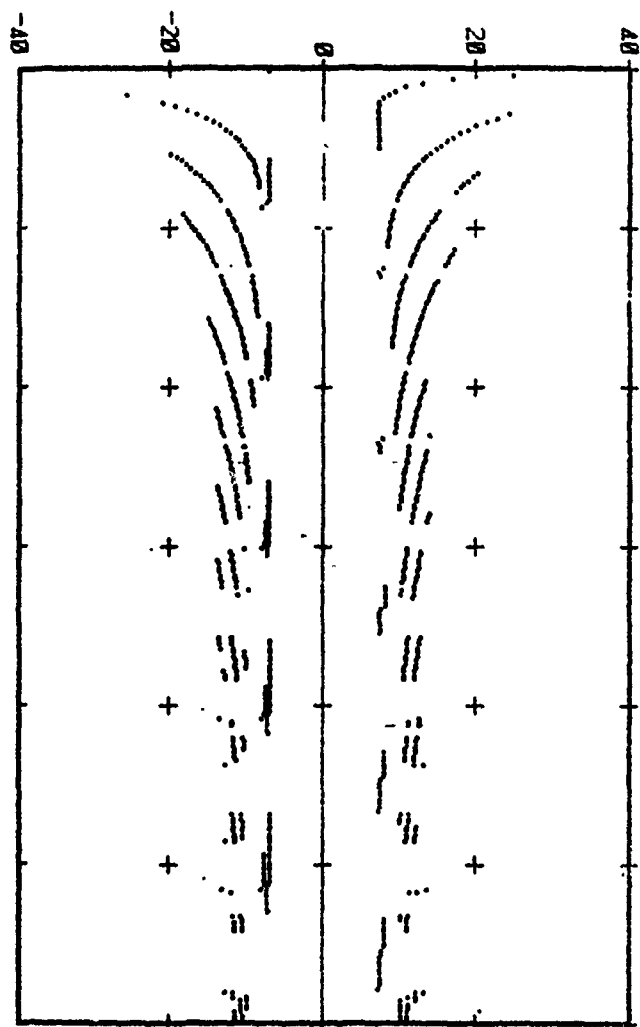
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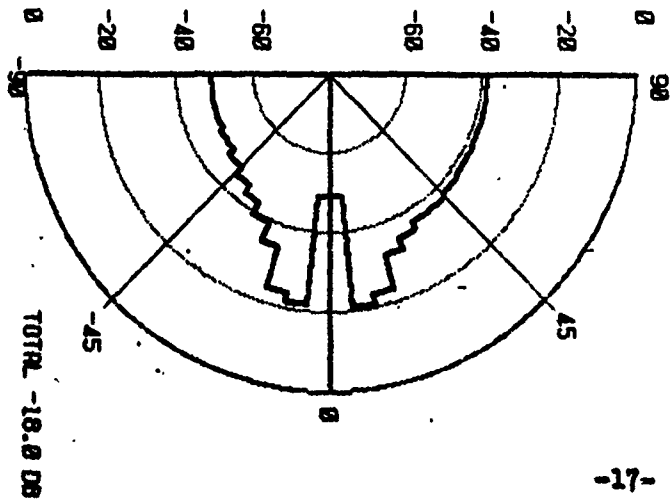
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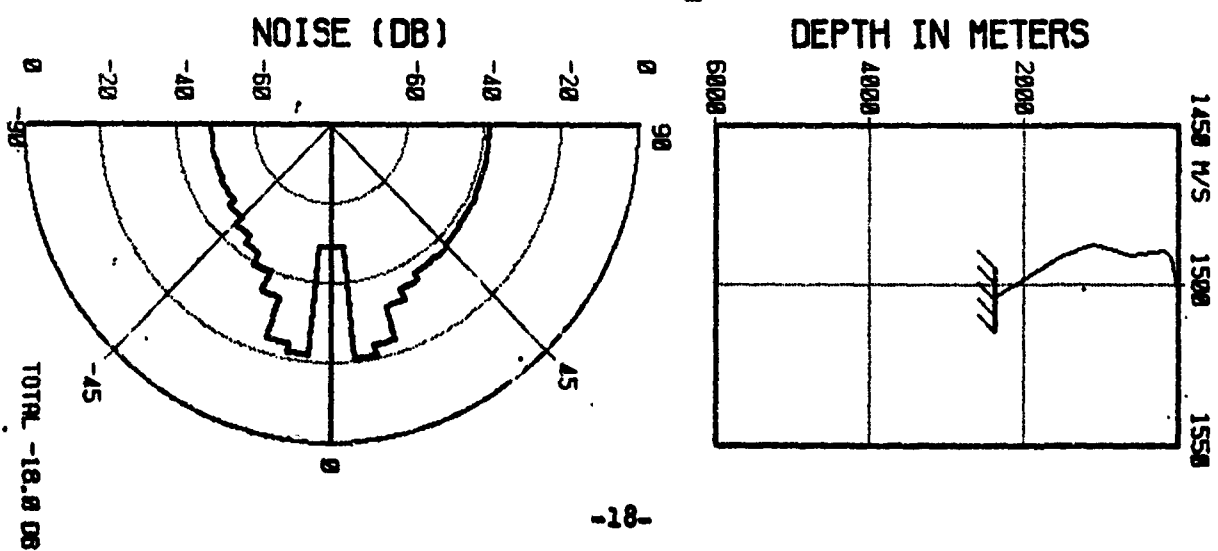
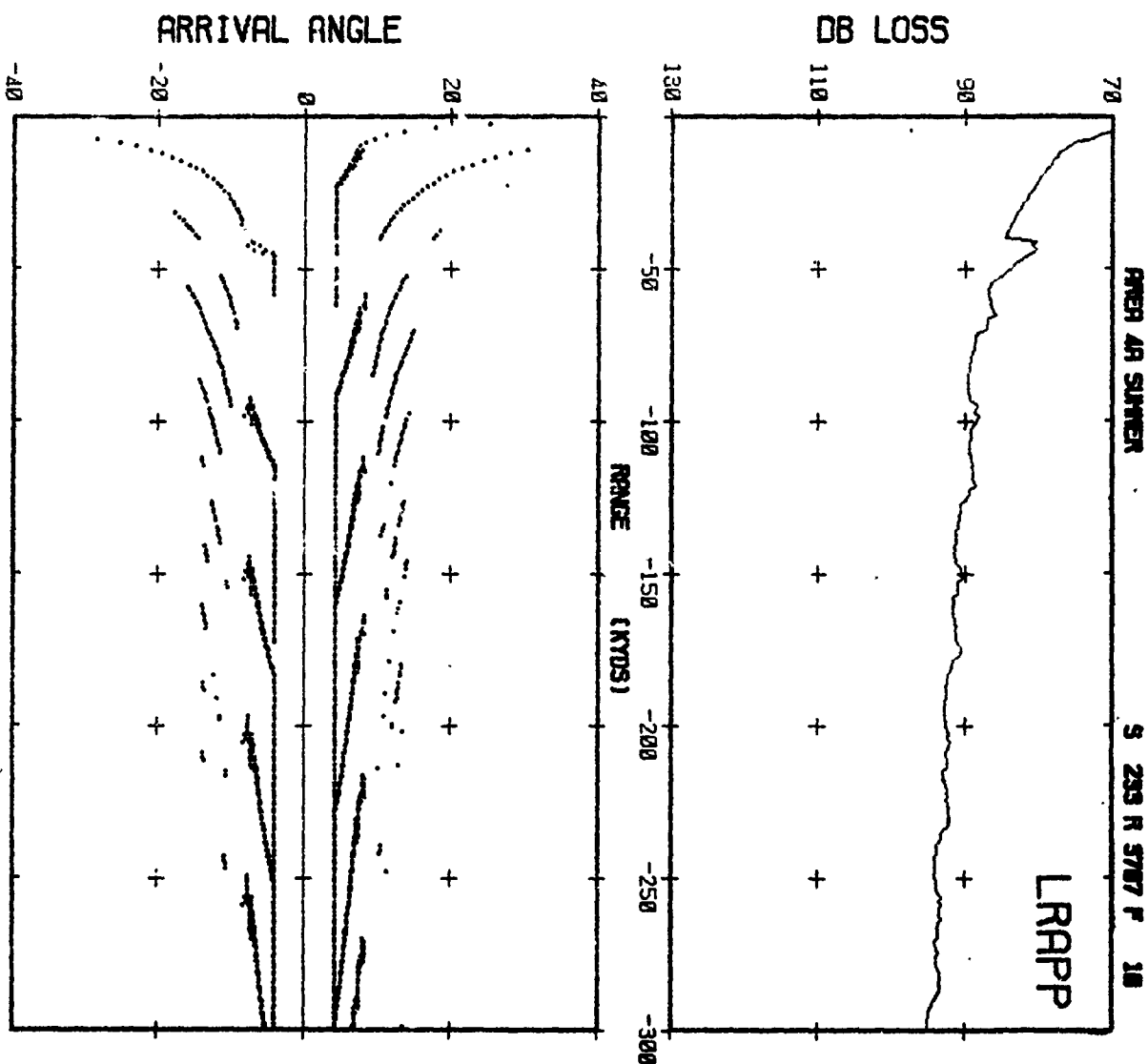


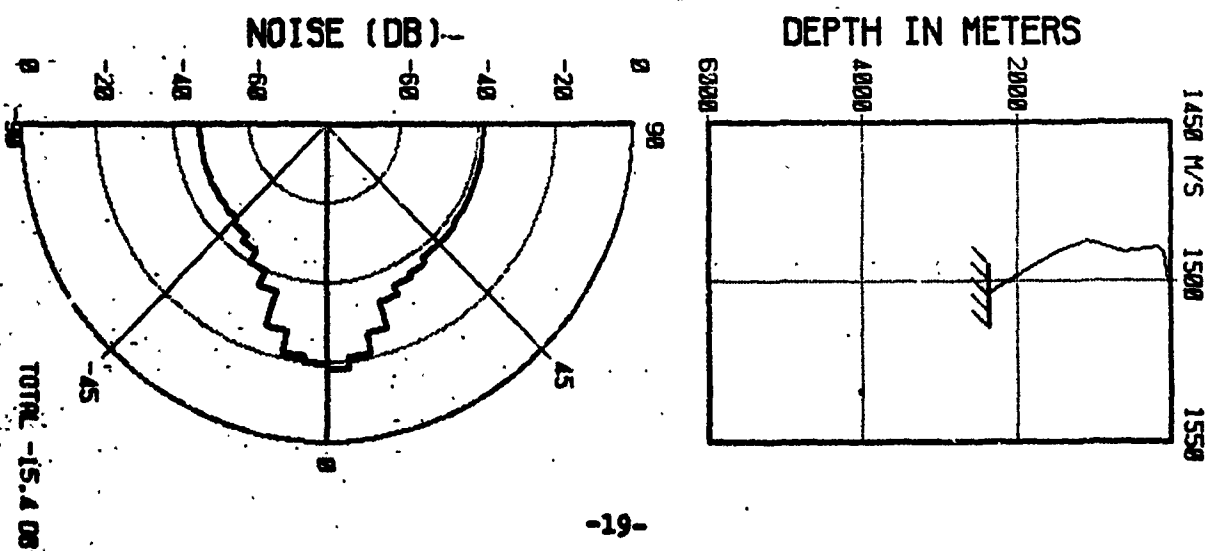
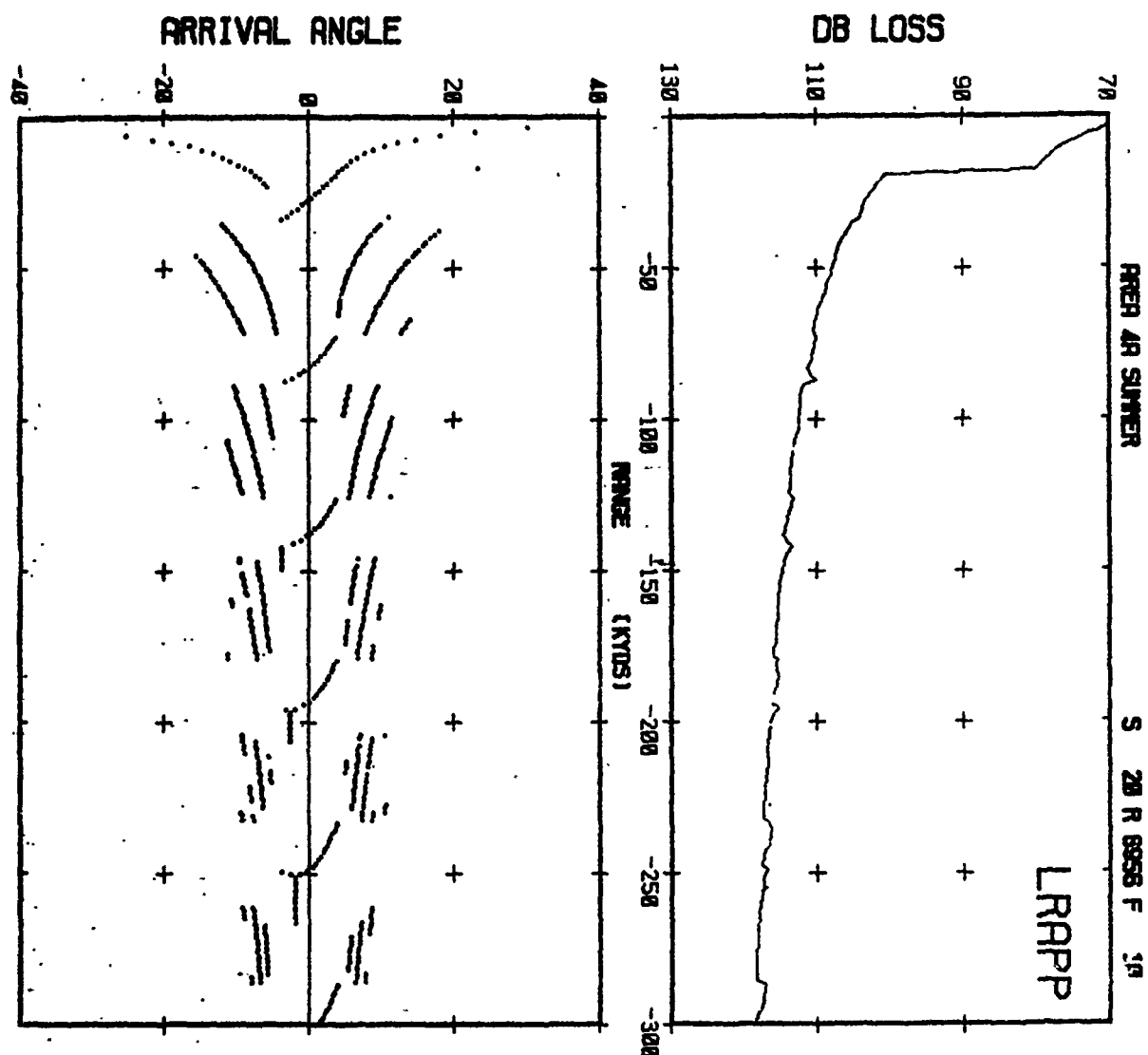
ARRIVAL ANGLE



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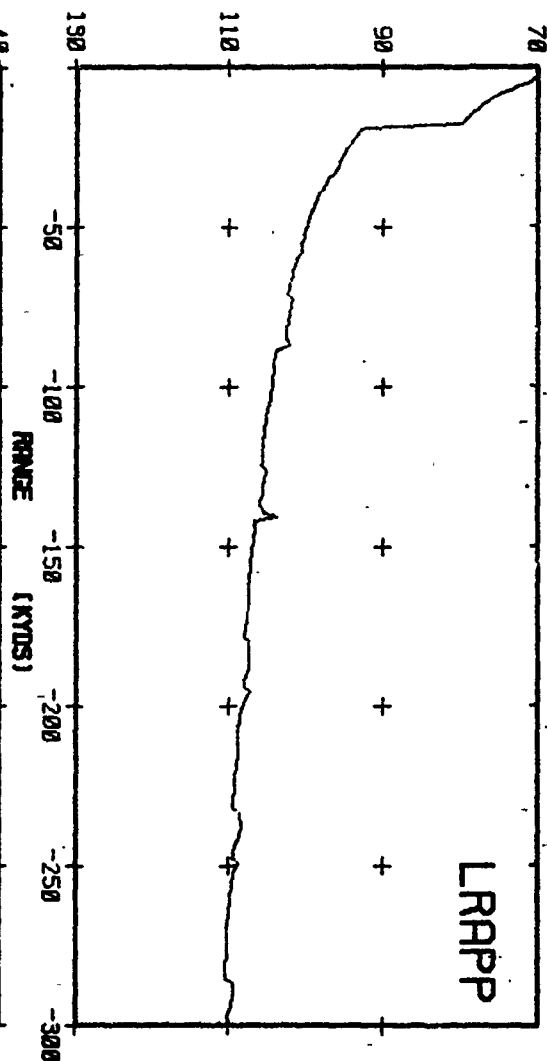


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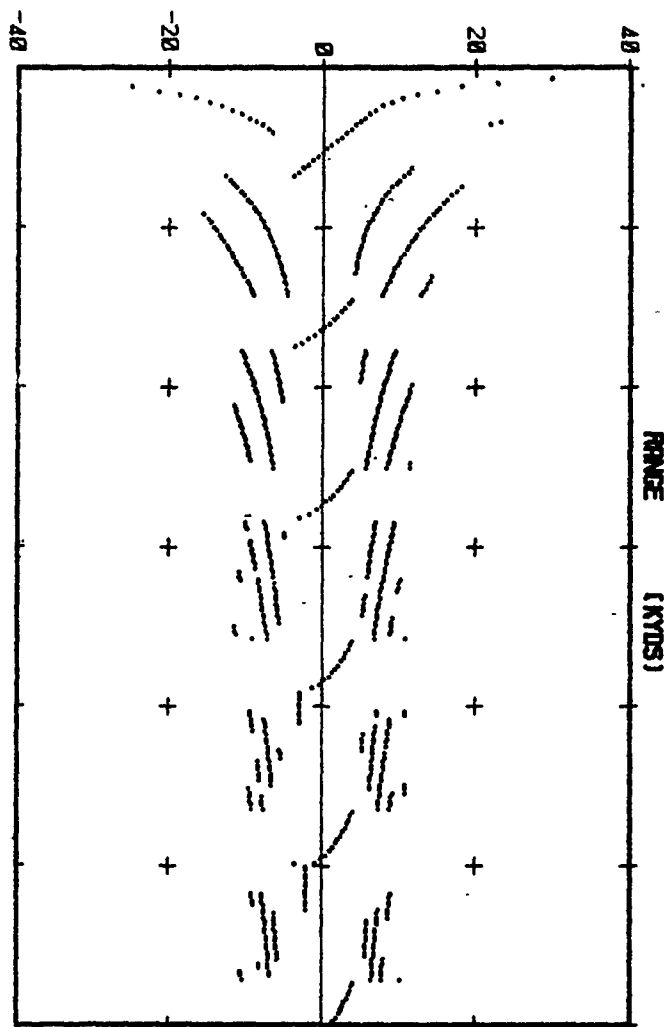
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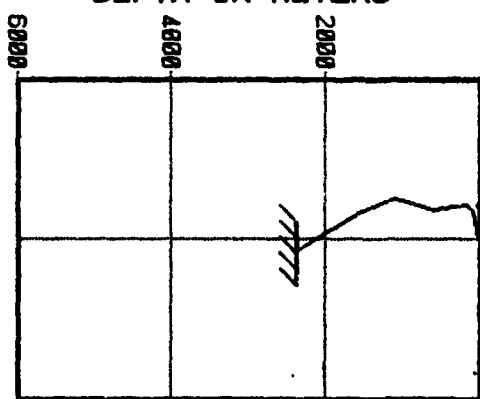
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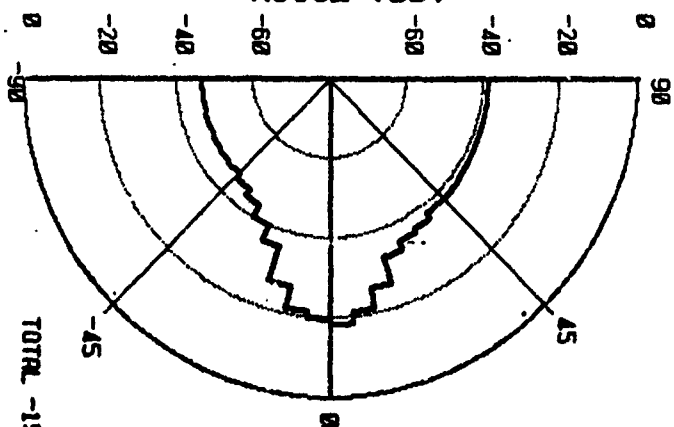
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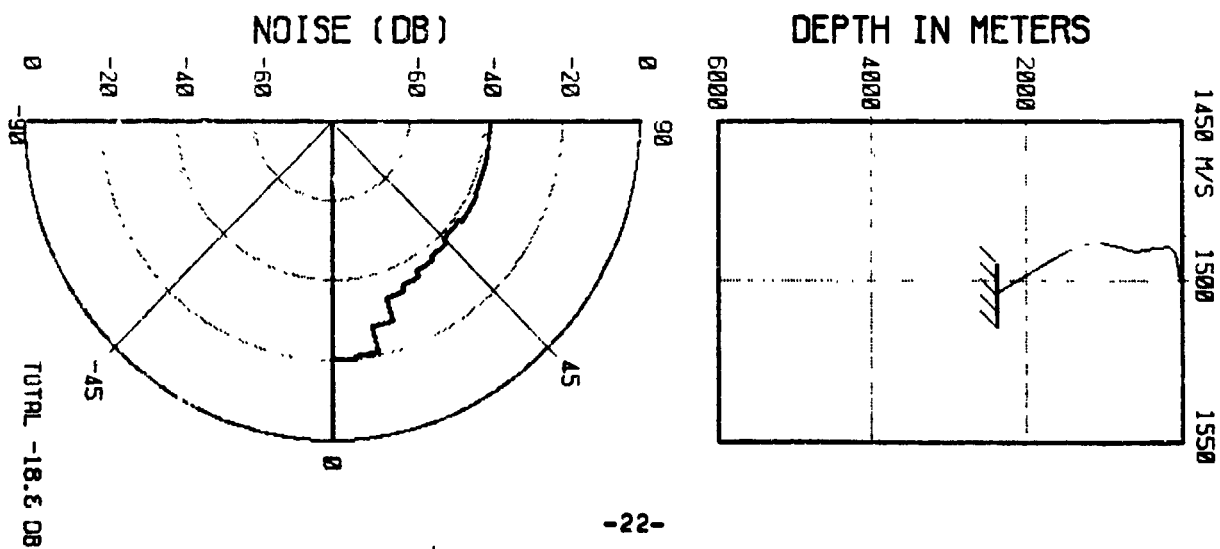
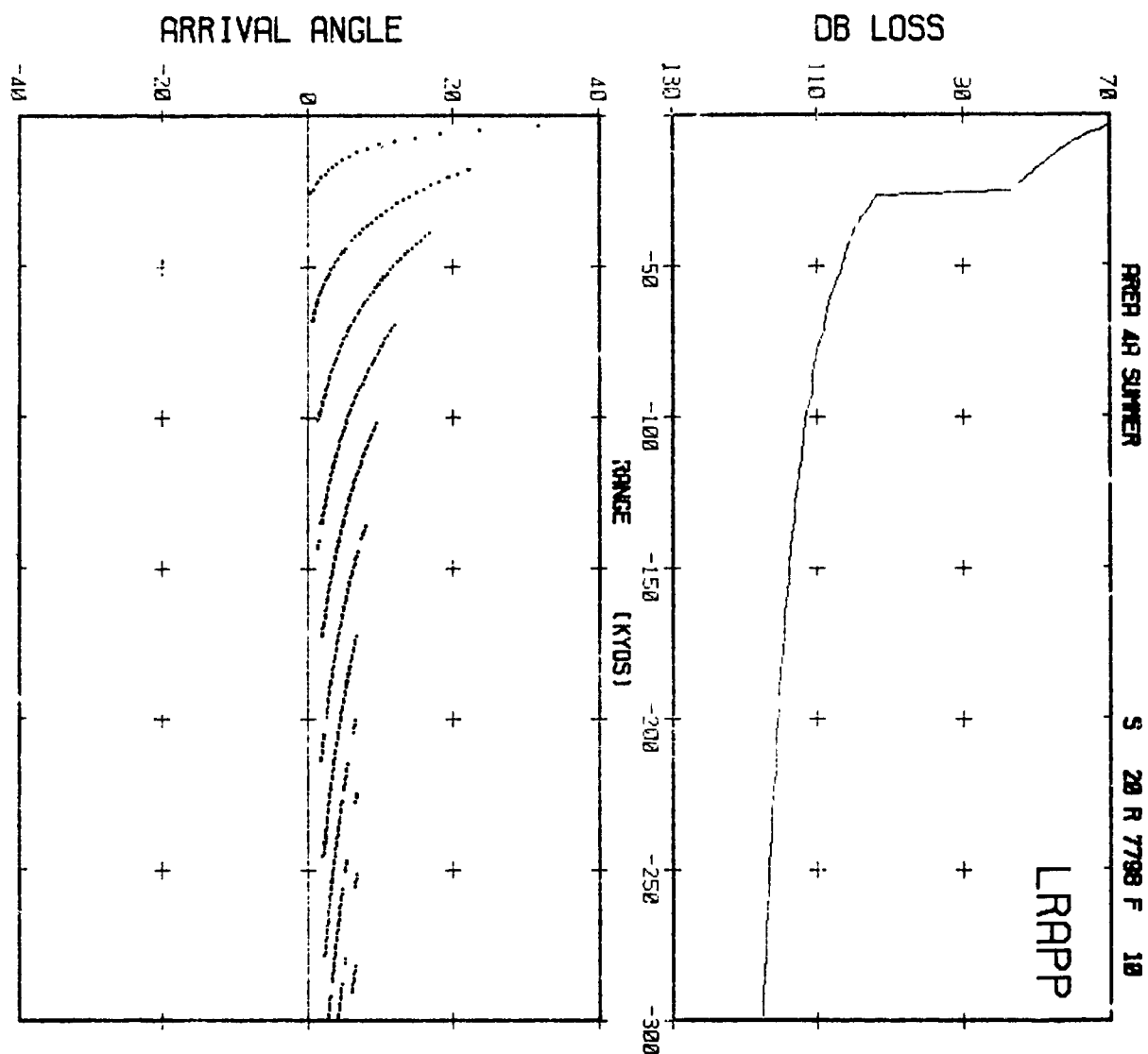


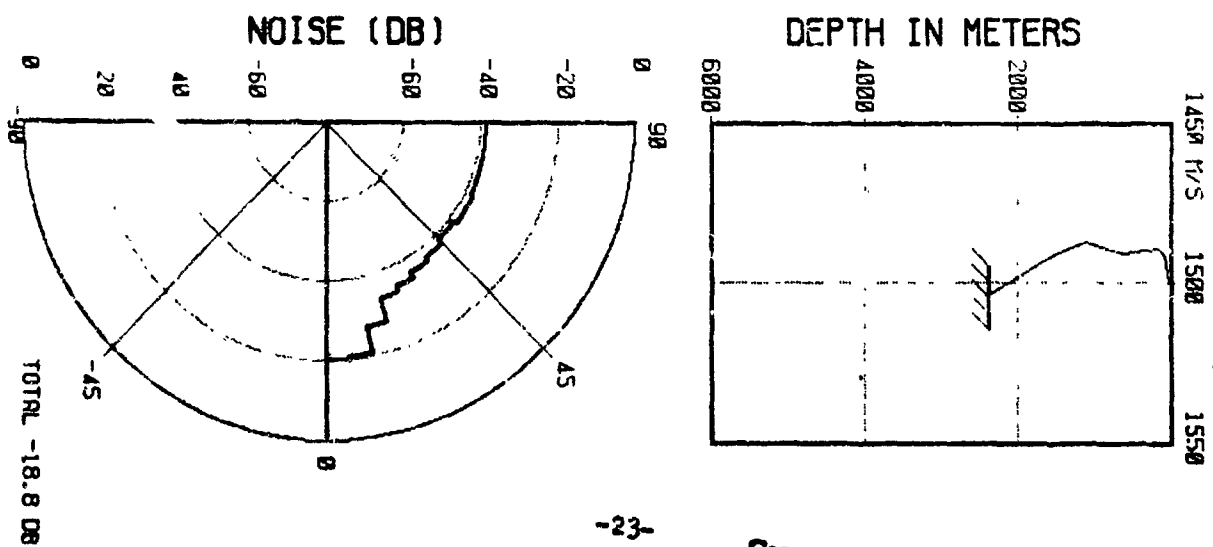
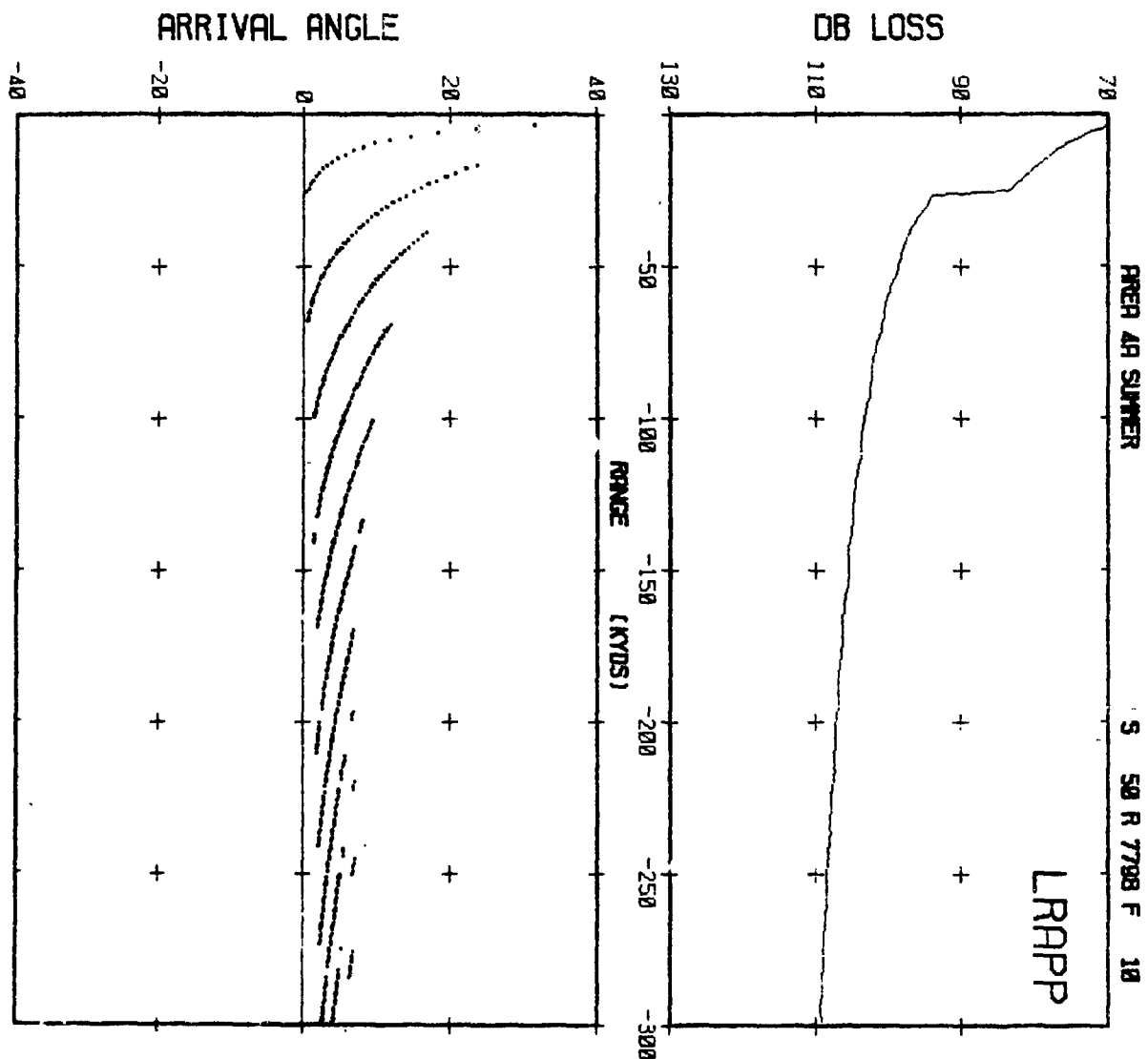
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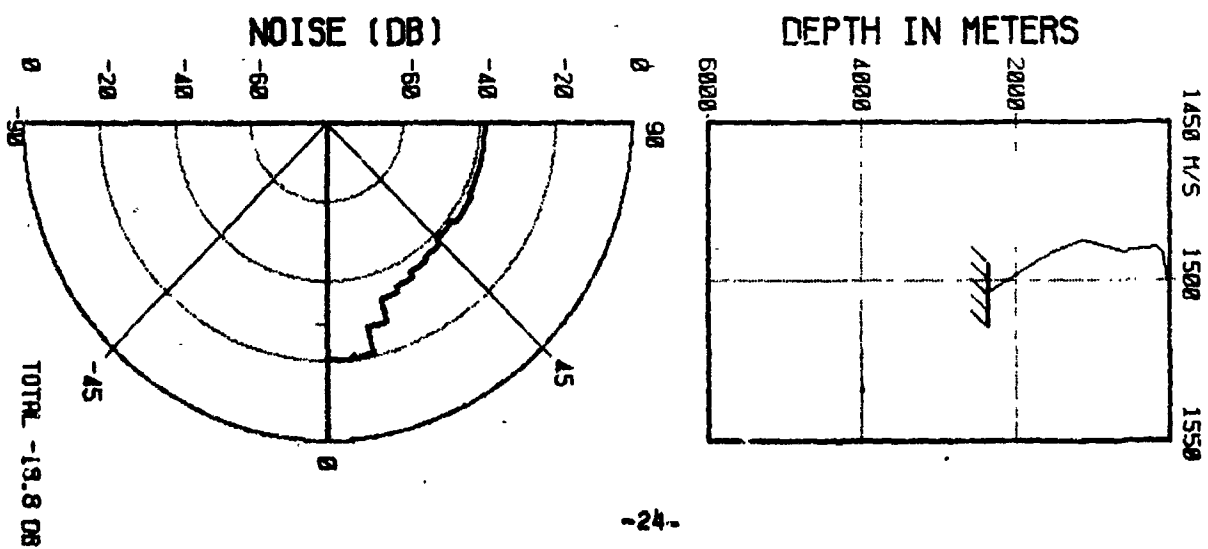
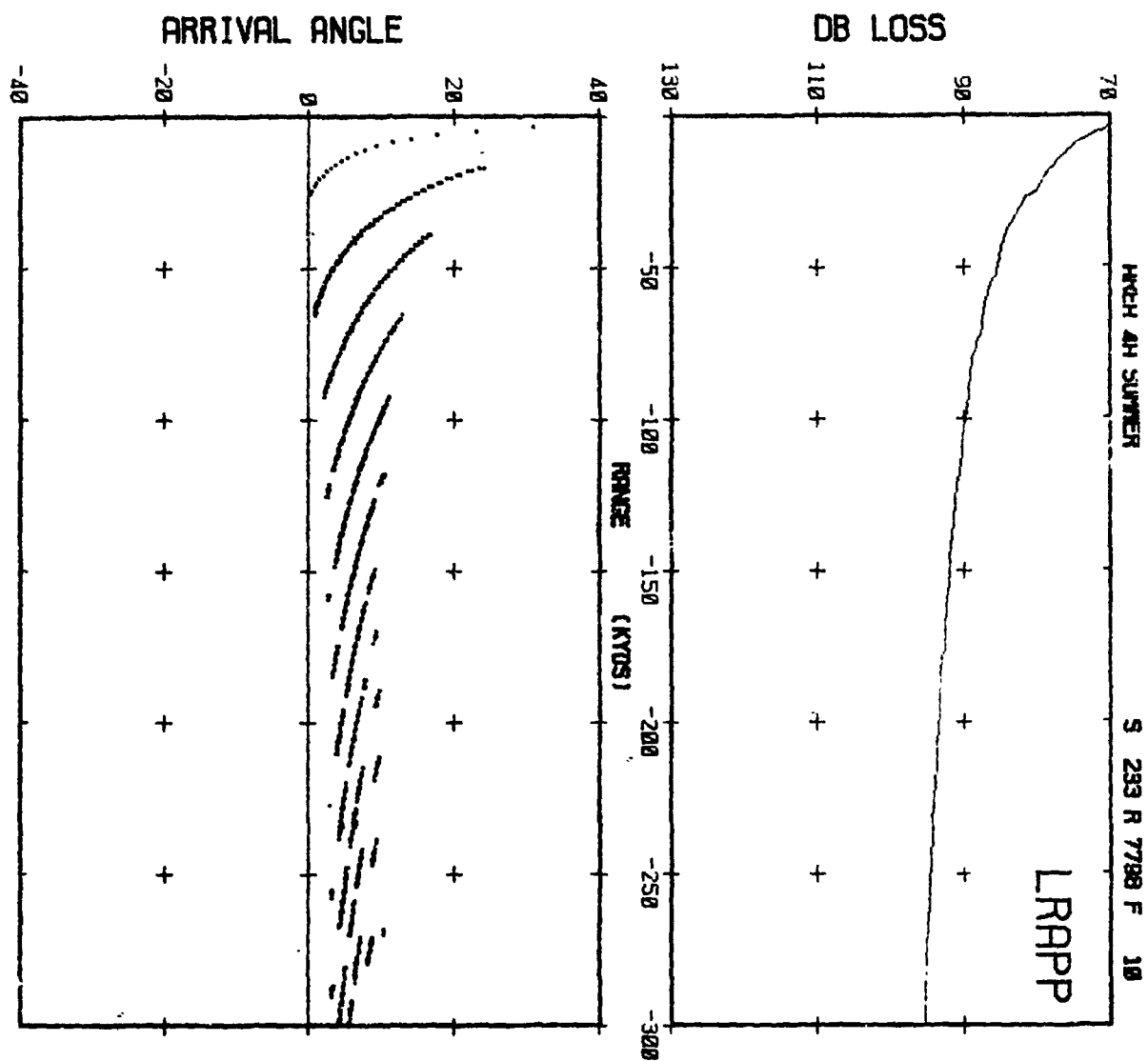


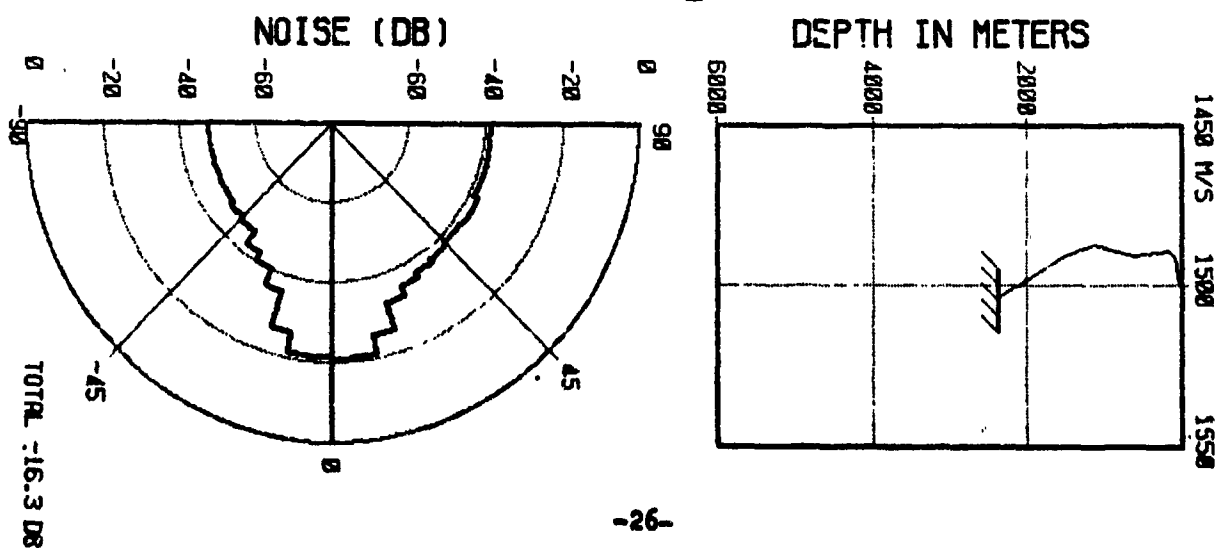
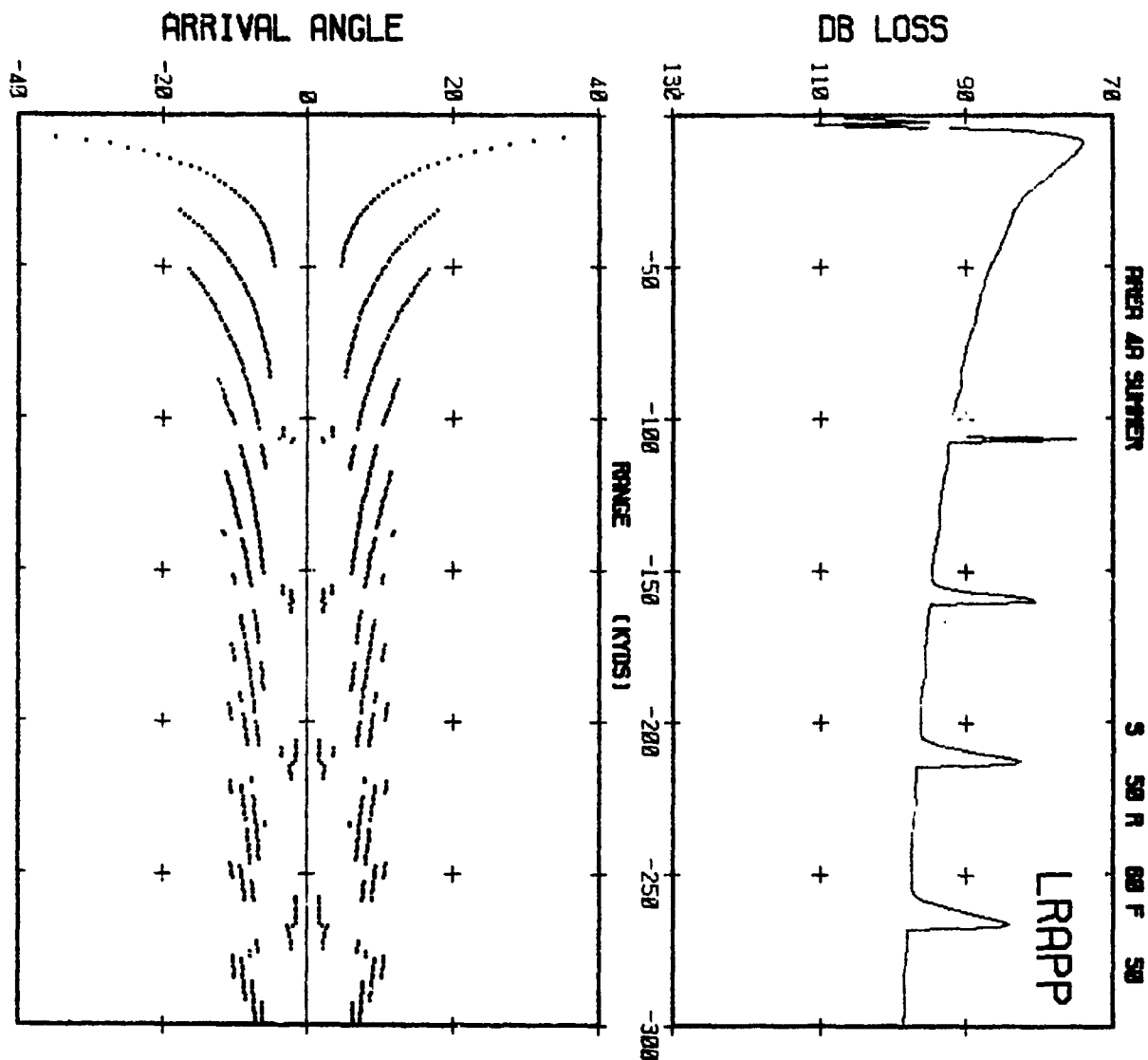
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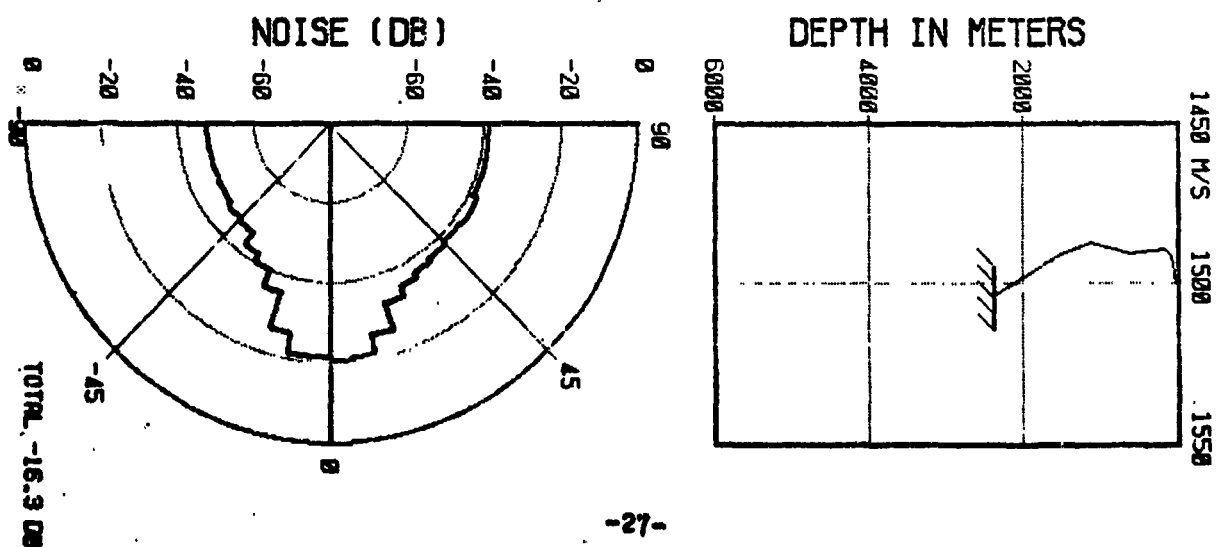
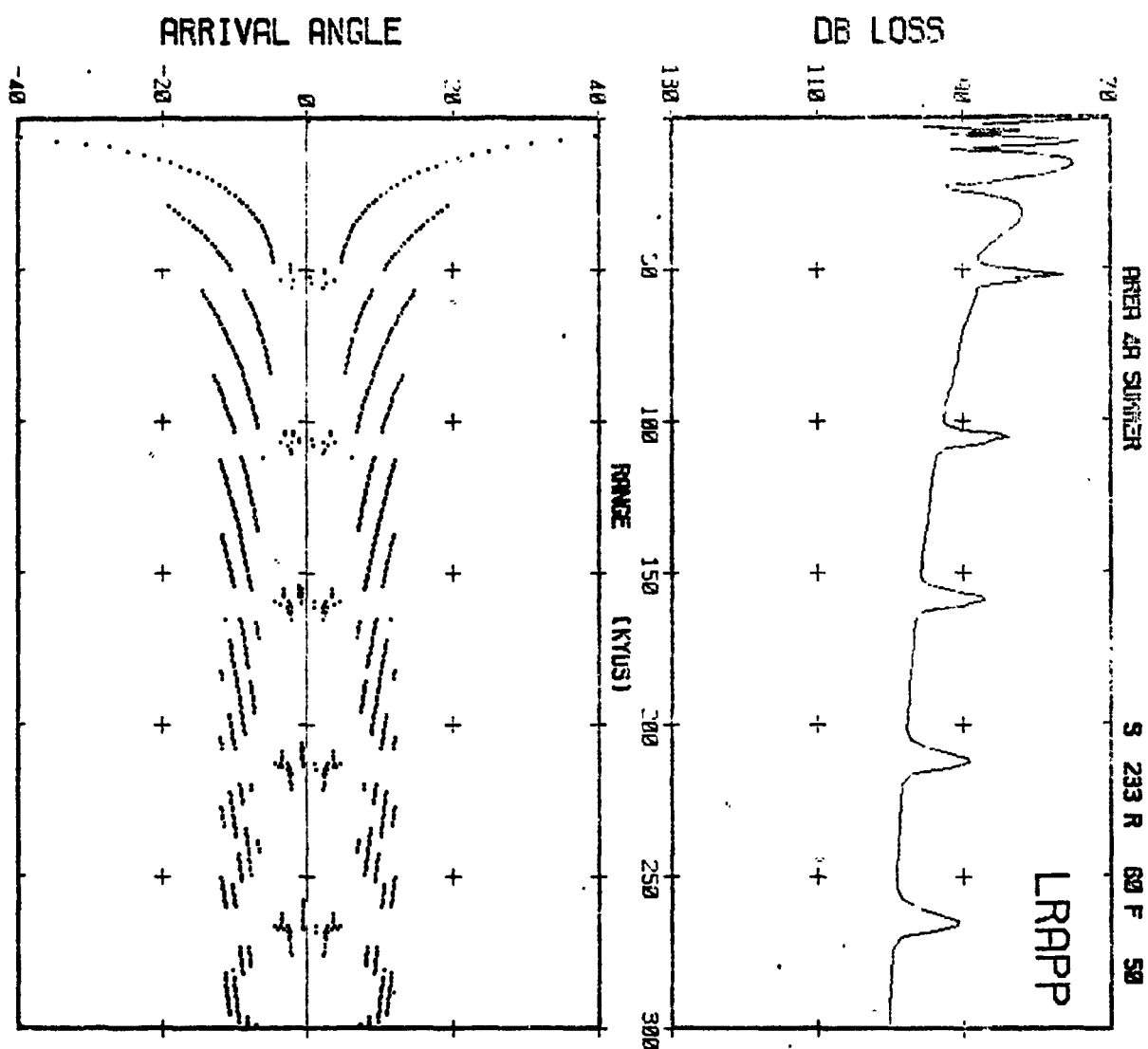


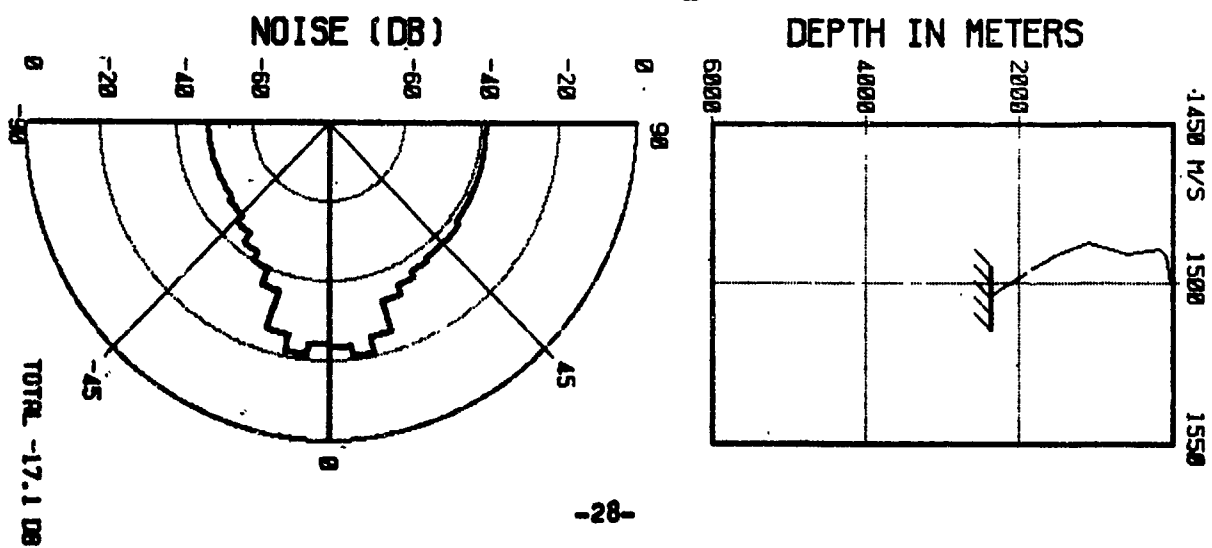
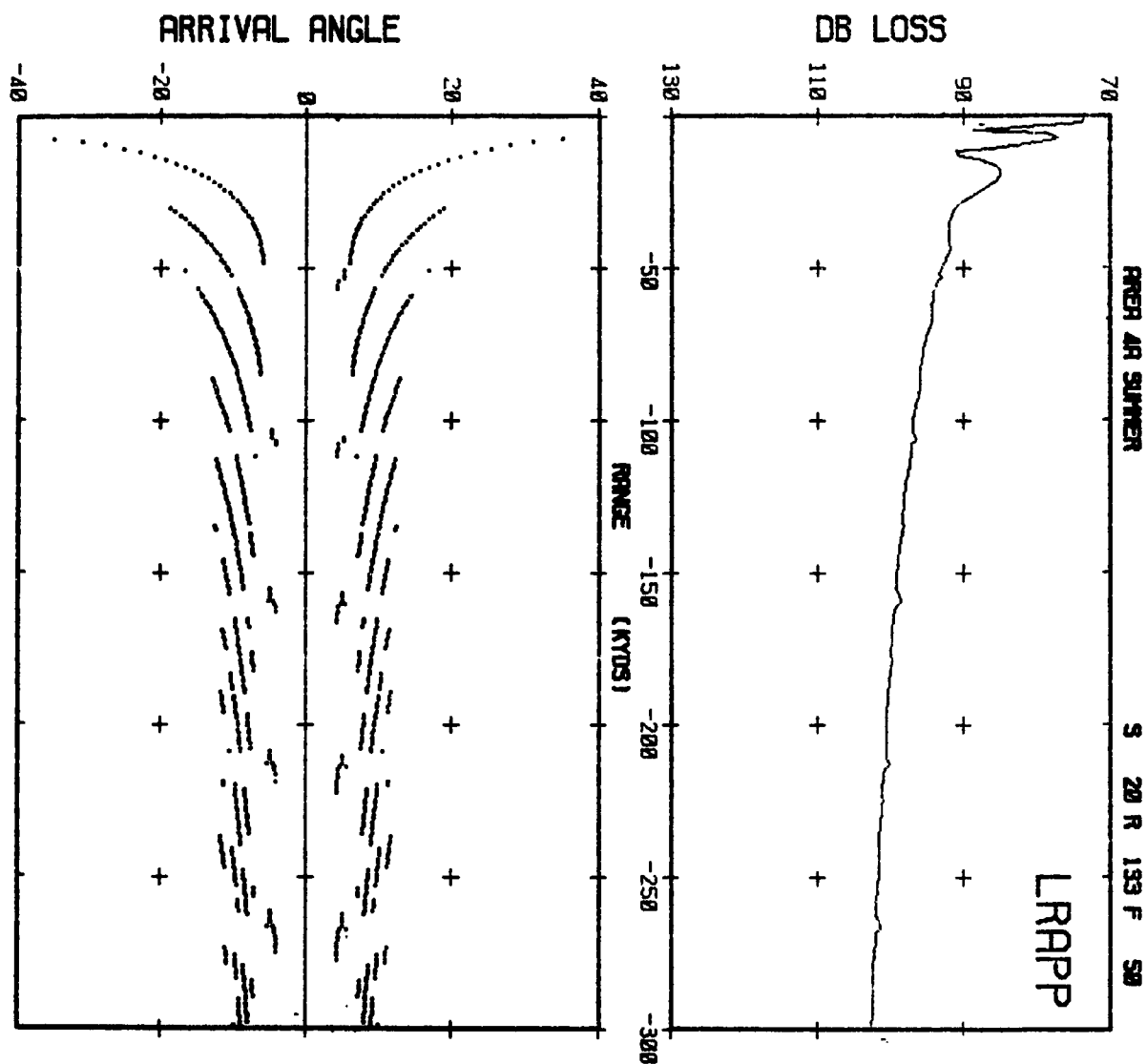


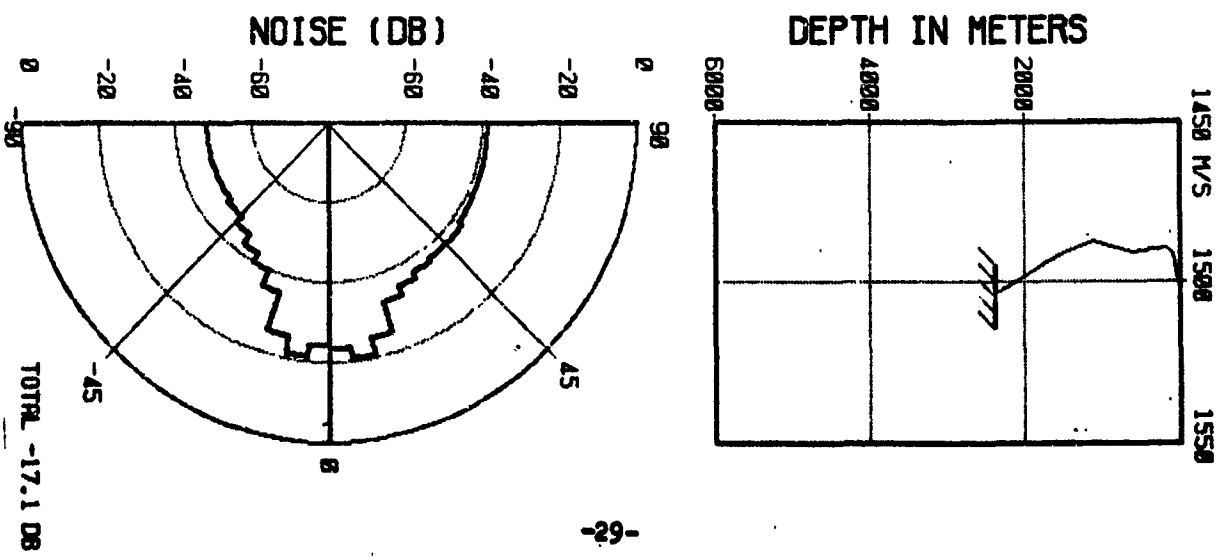
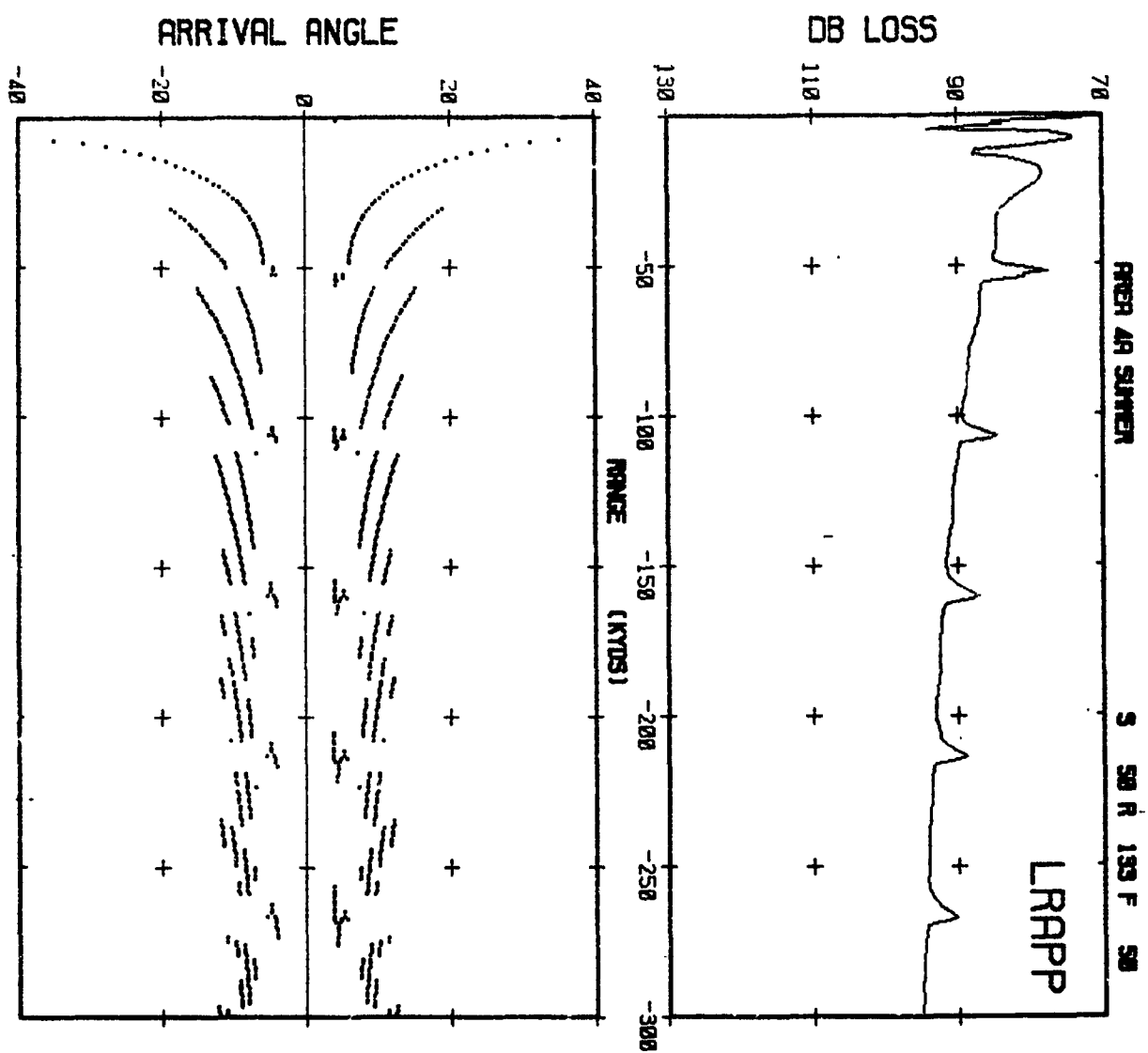


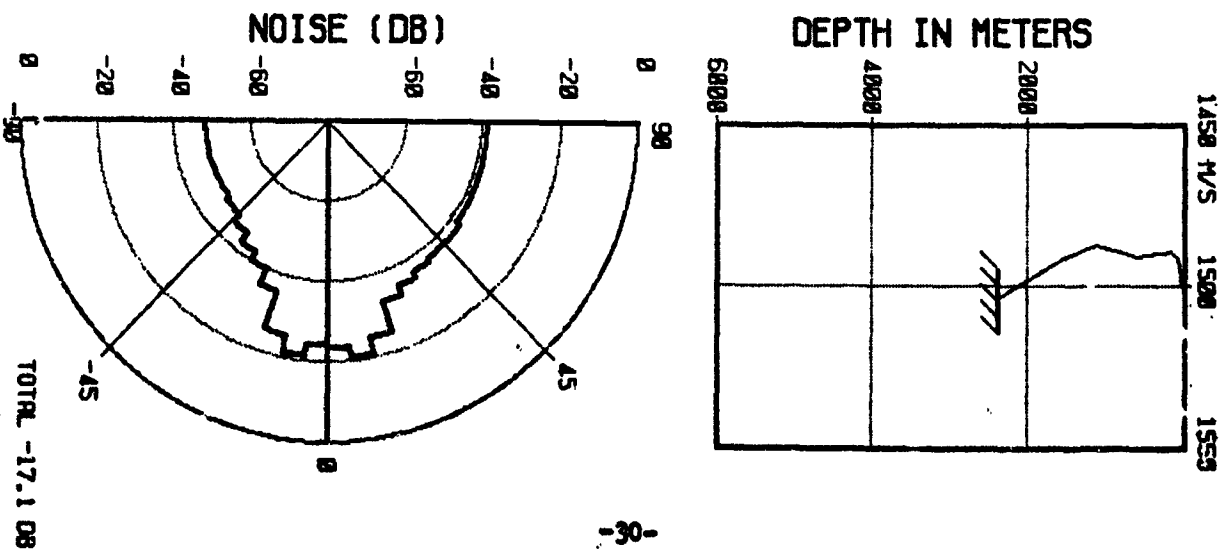
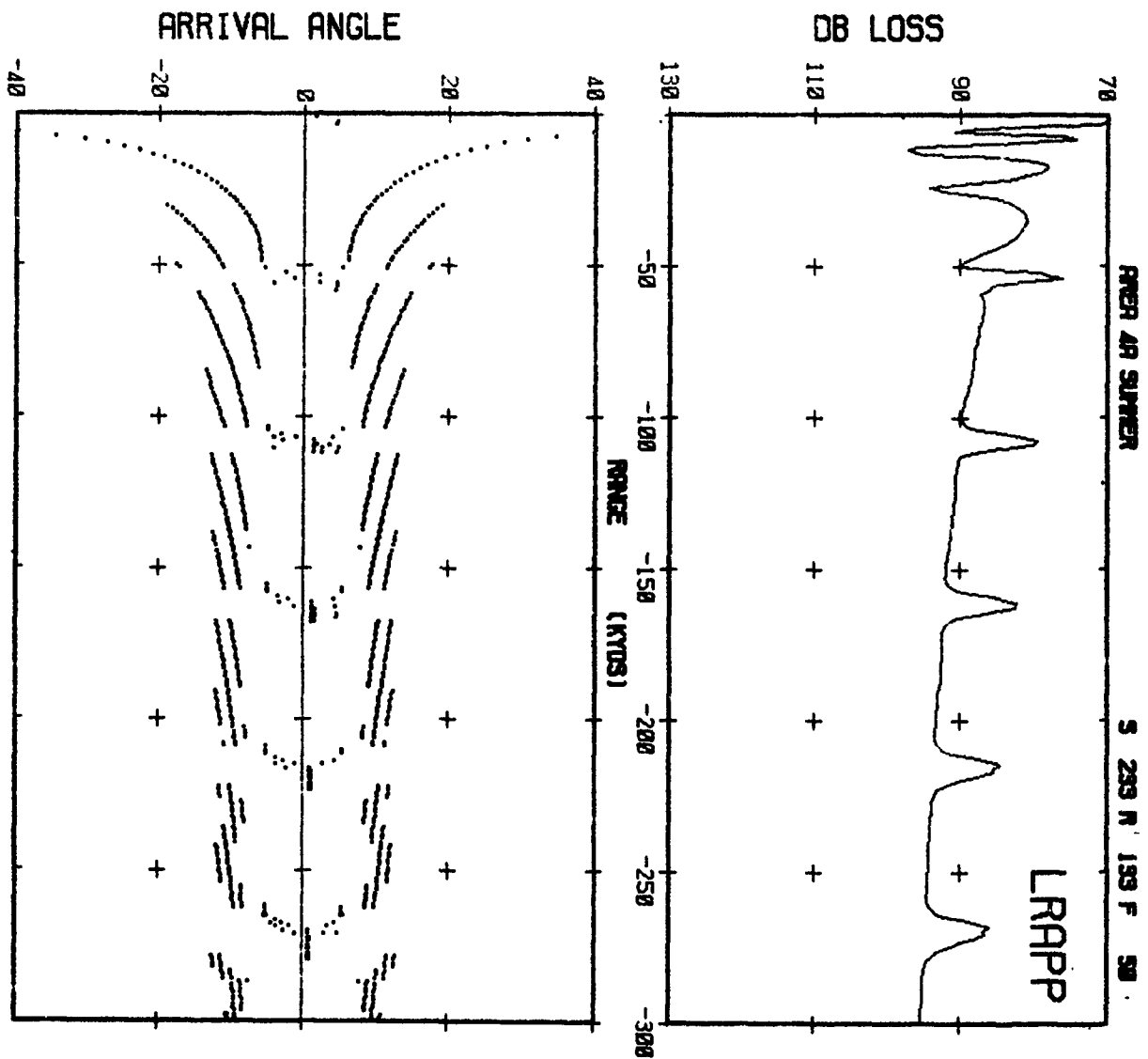


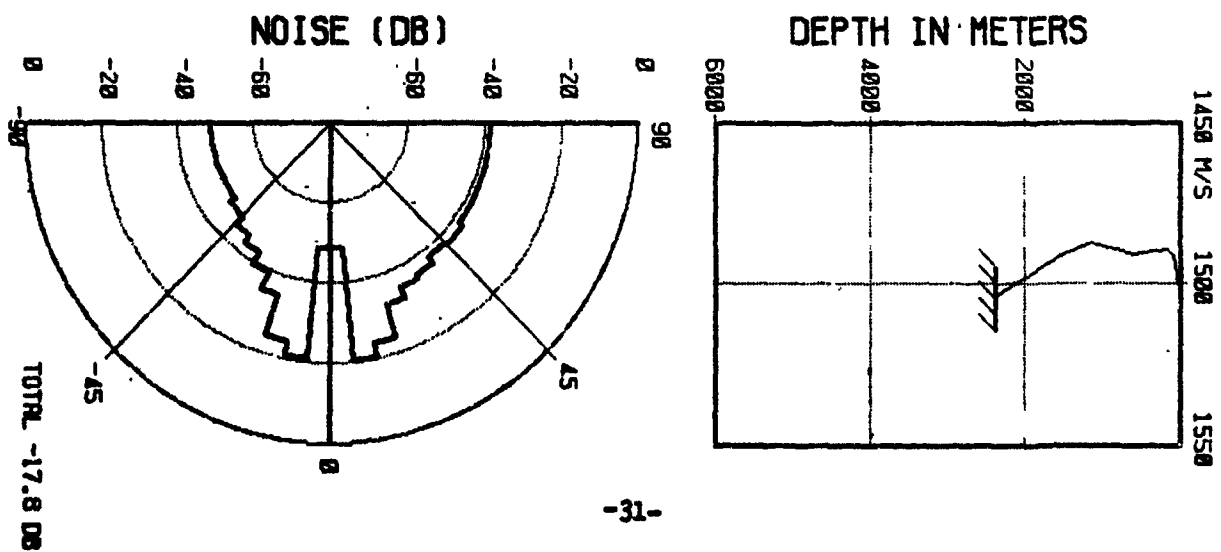
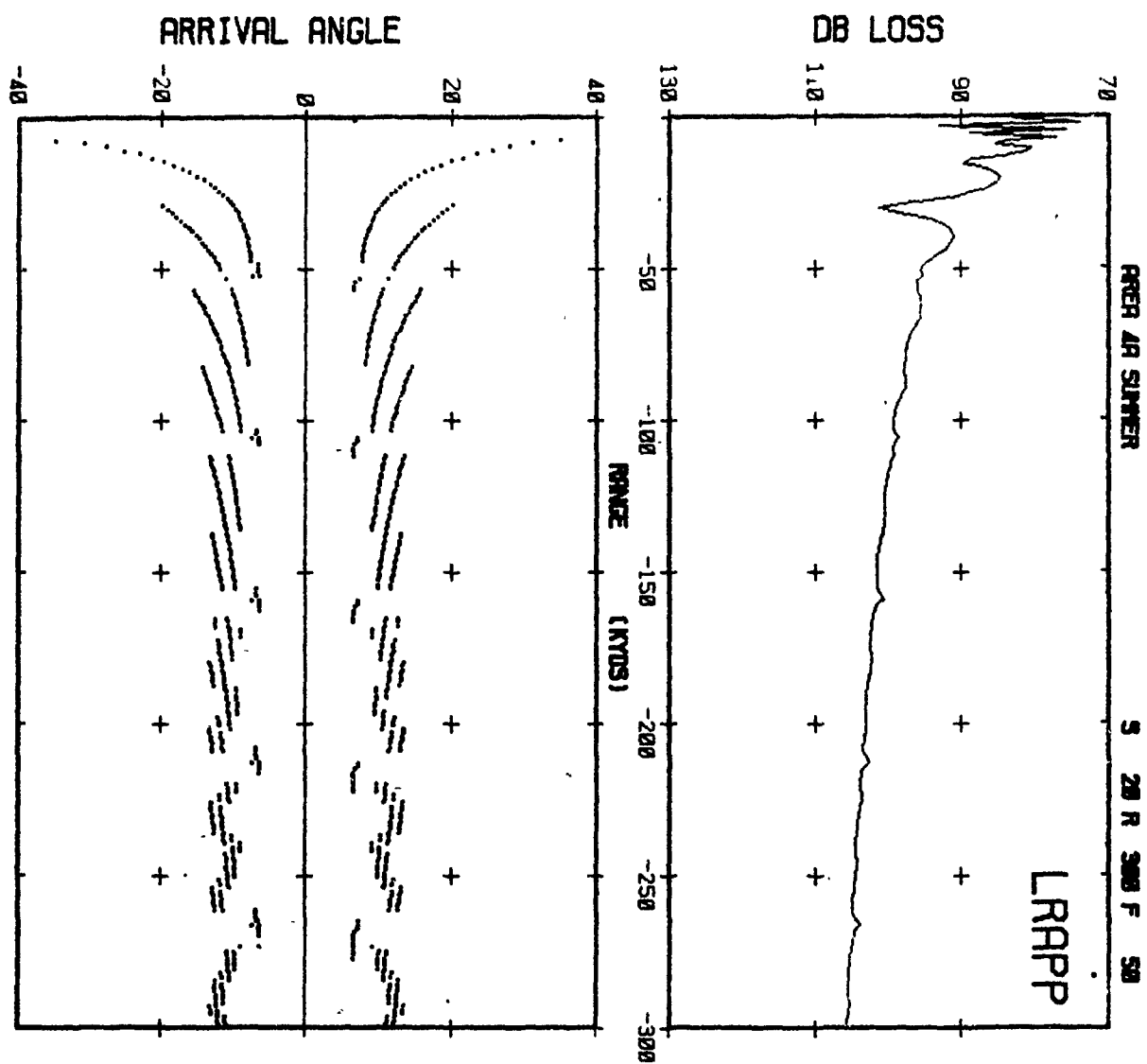


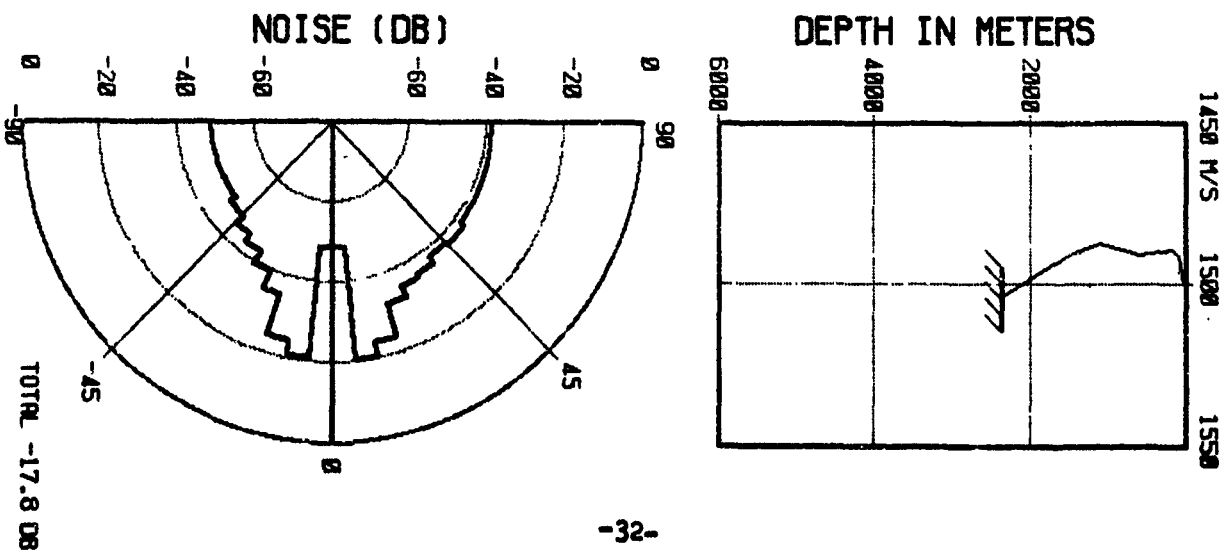
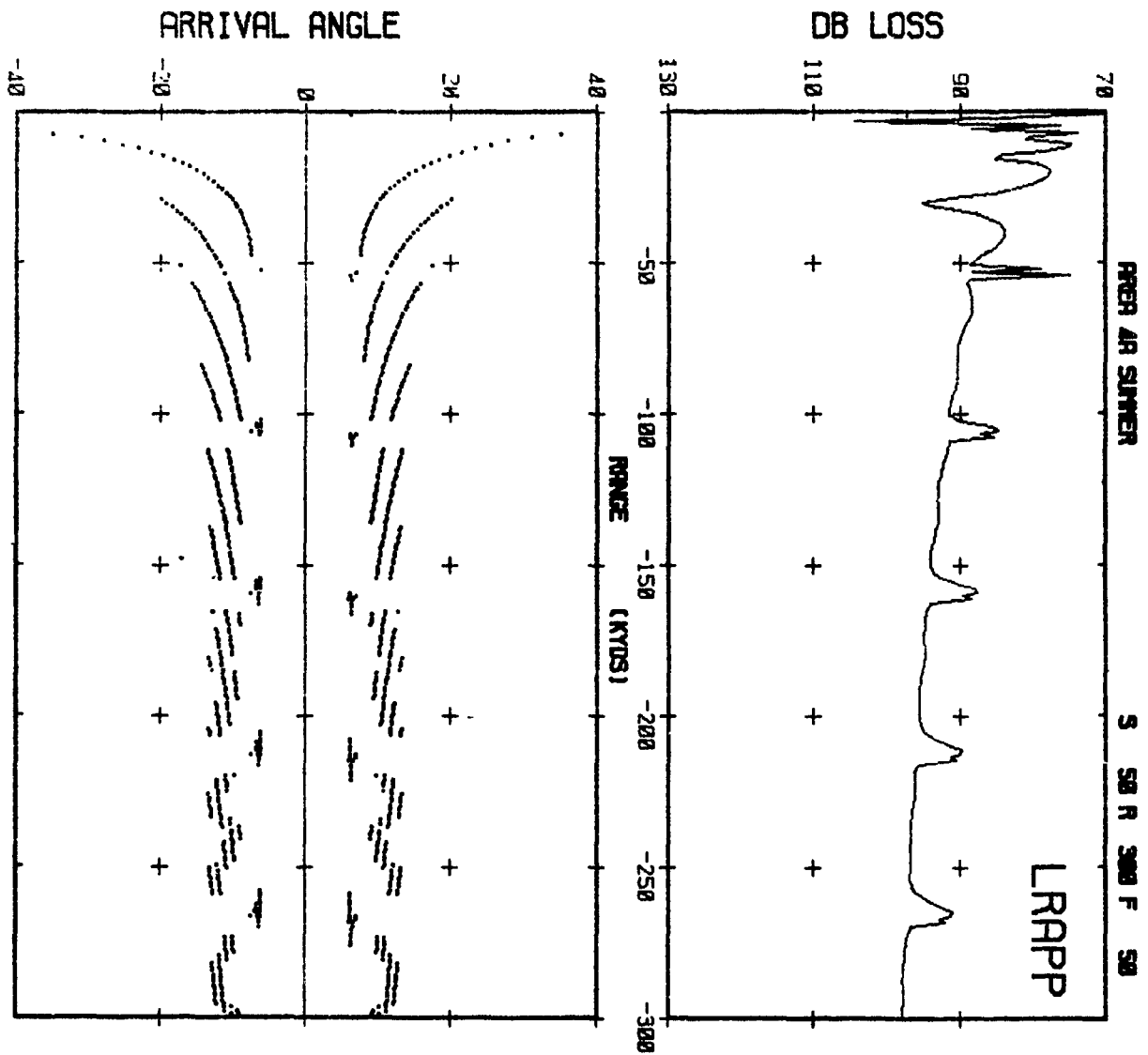










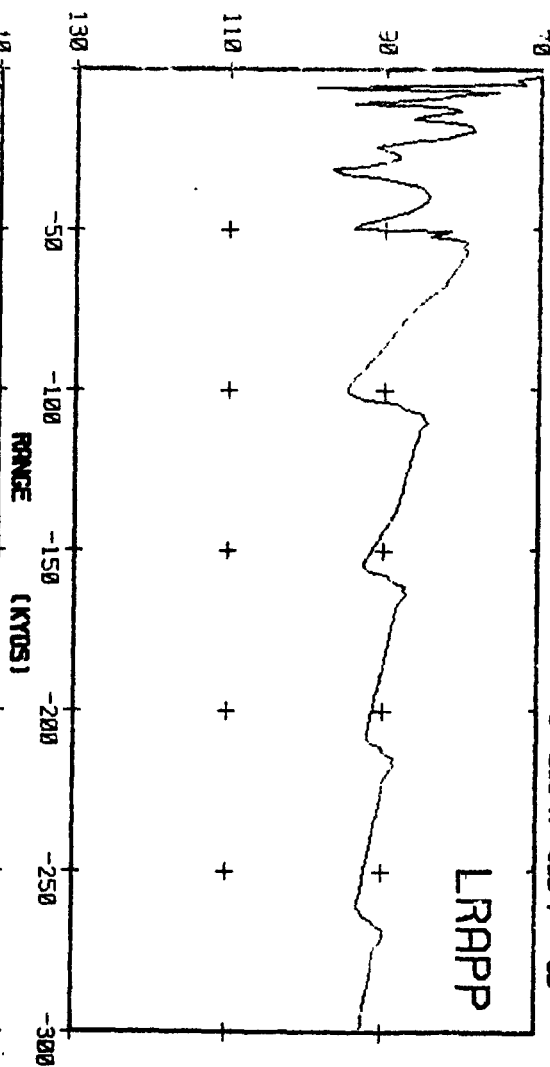


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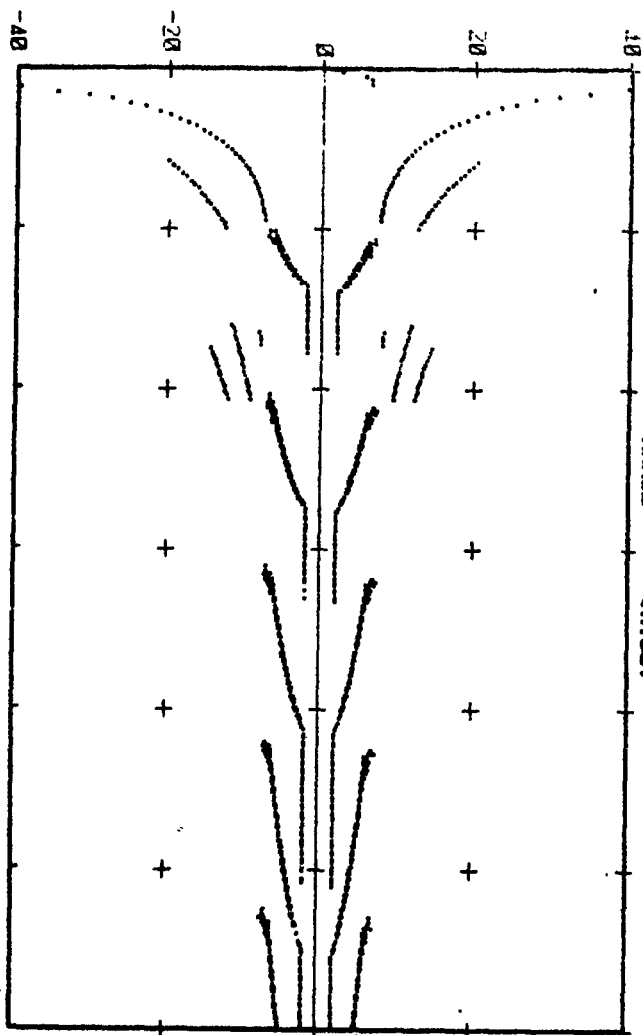
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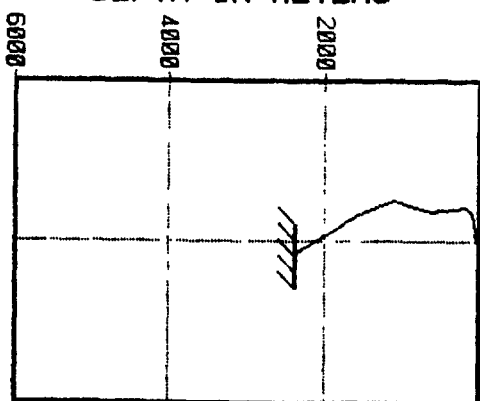
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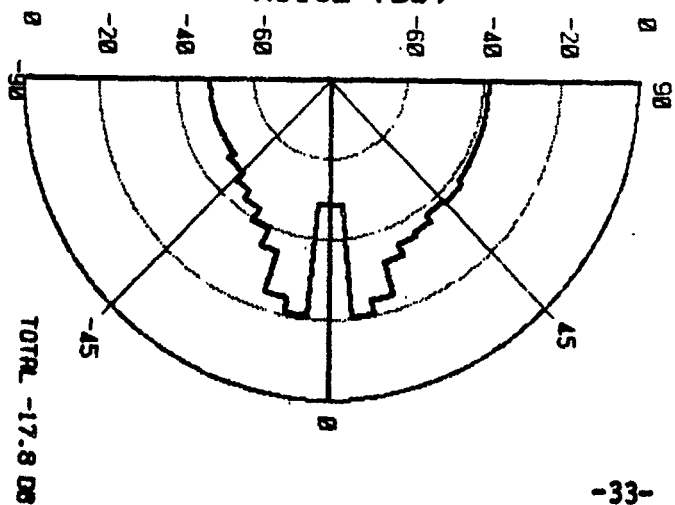
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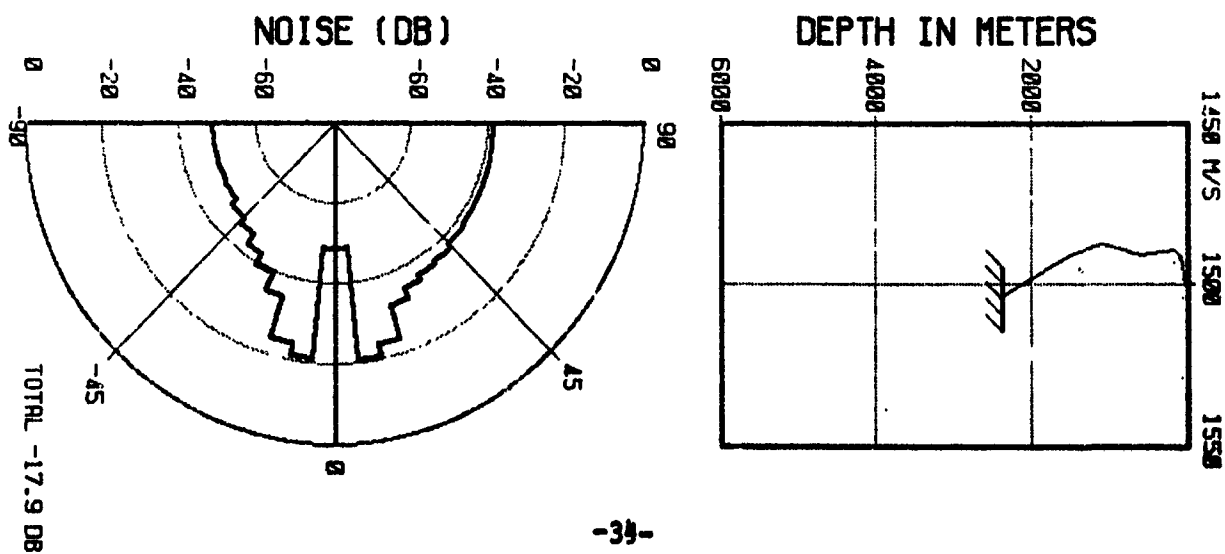
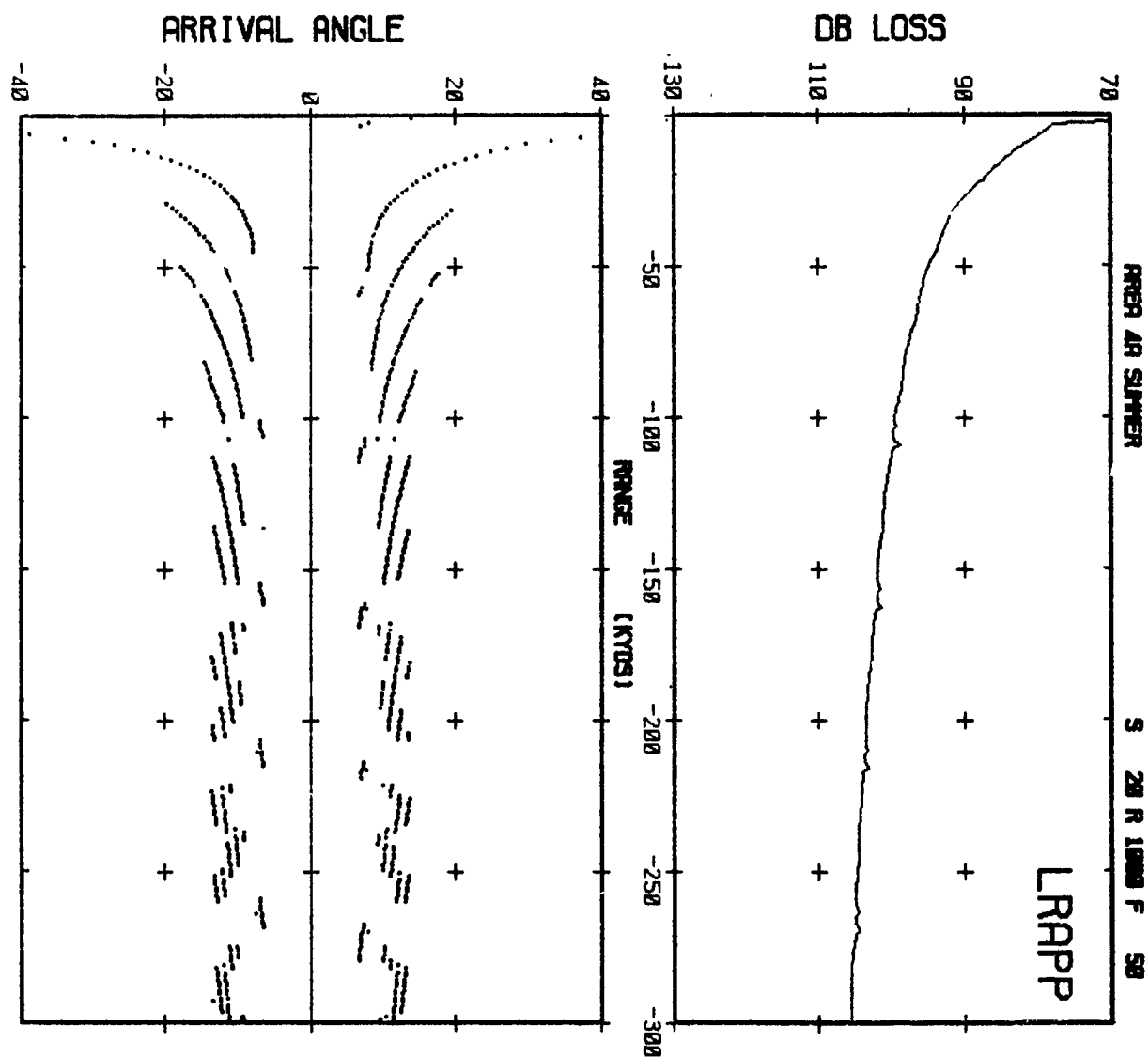


DEPTH IN METERS



NOISE (DB)

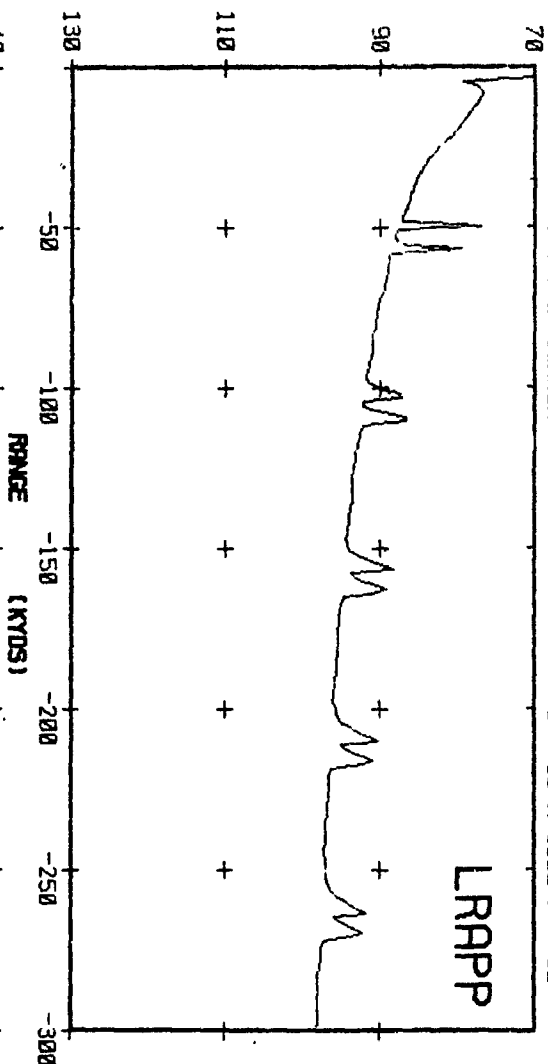




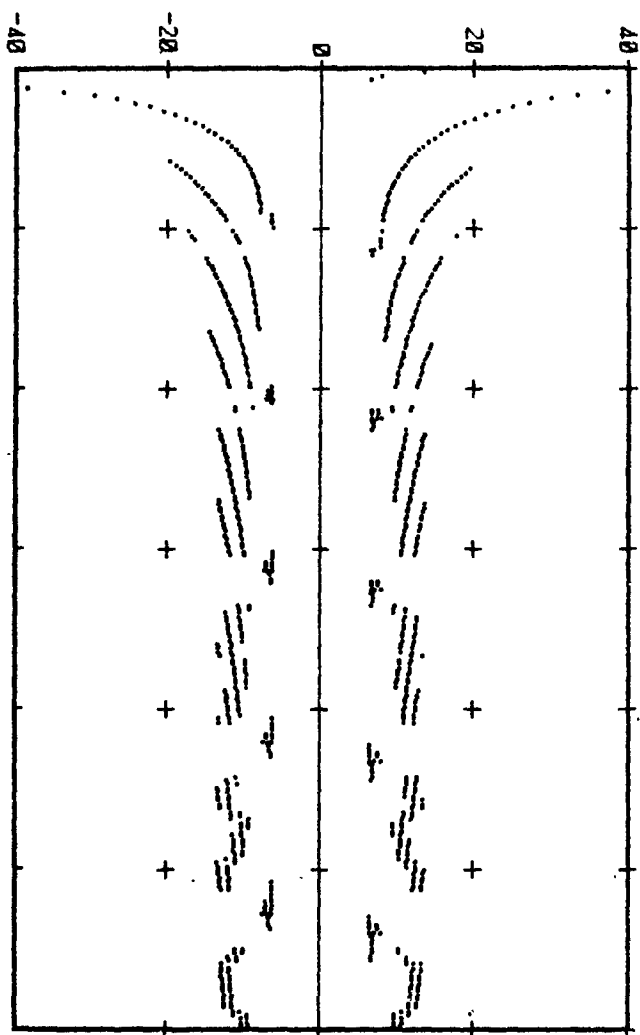
PRER AIR SUMMER

S 50 R 1000 F 50

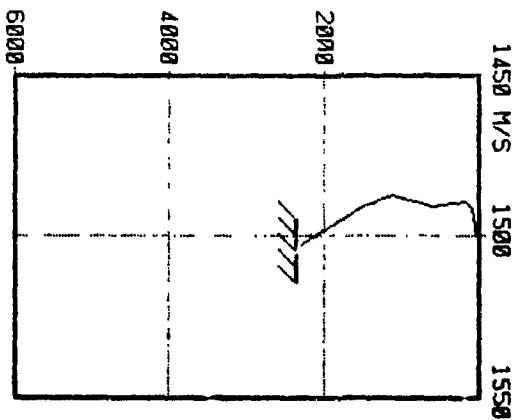
DB LOSS



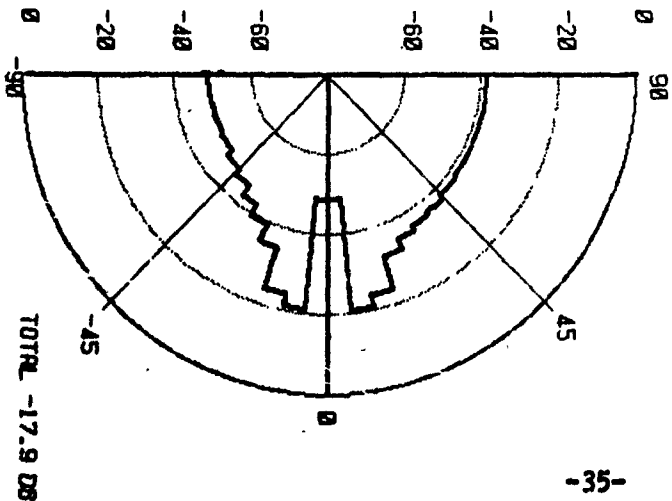
ARRIVAL ANGLE

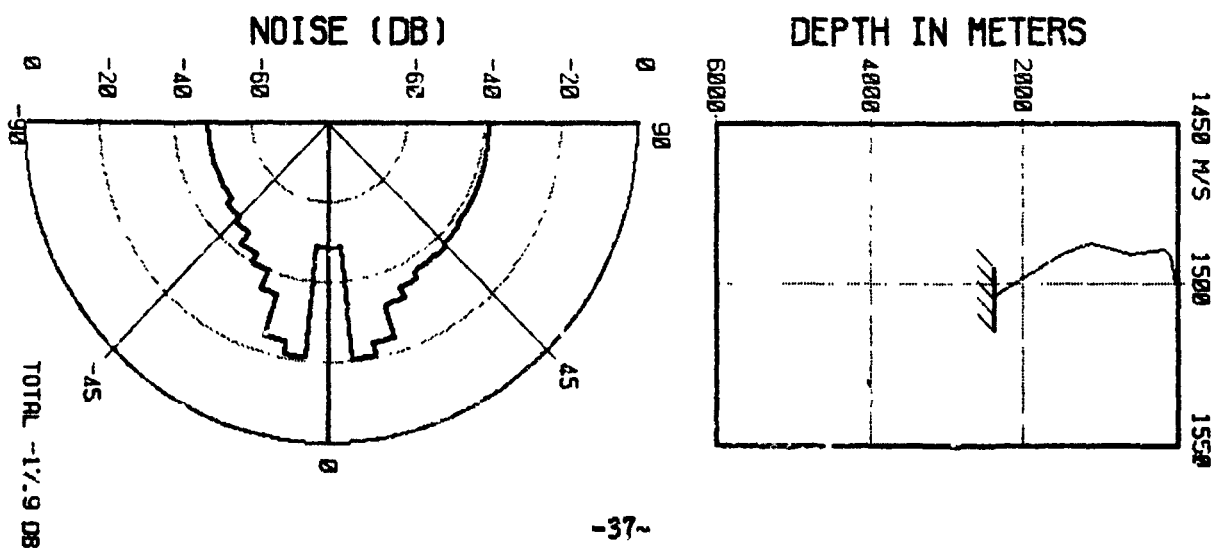
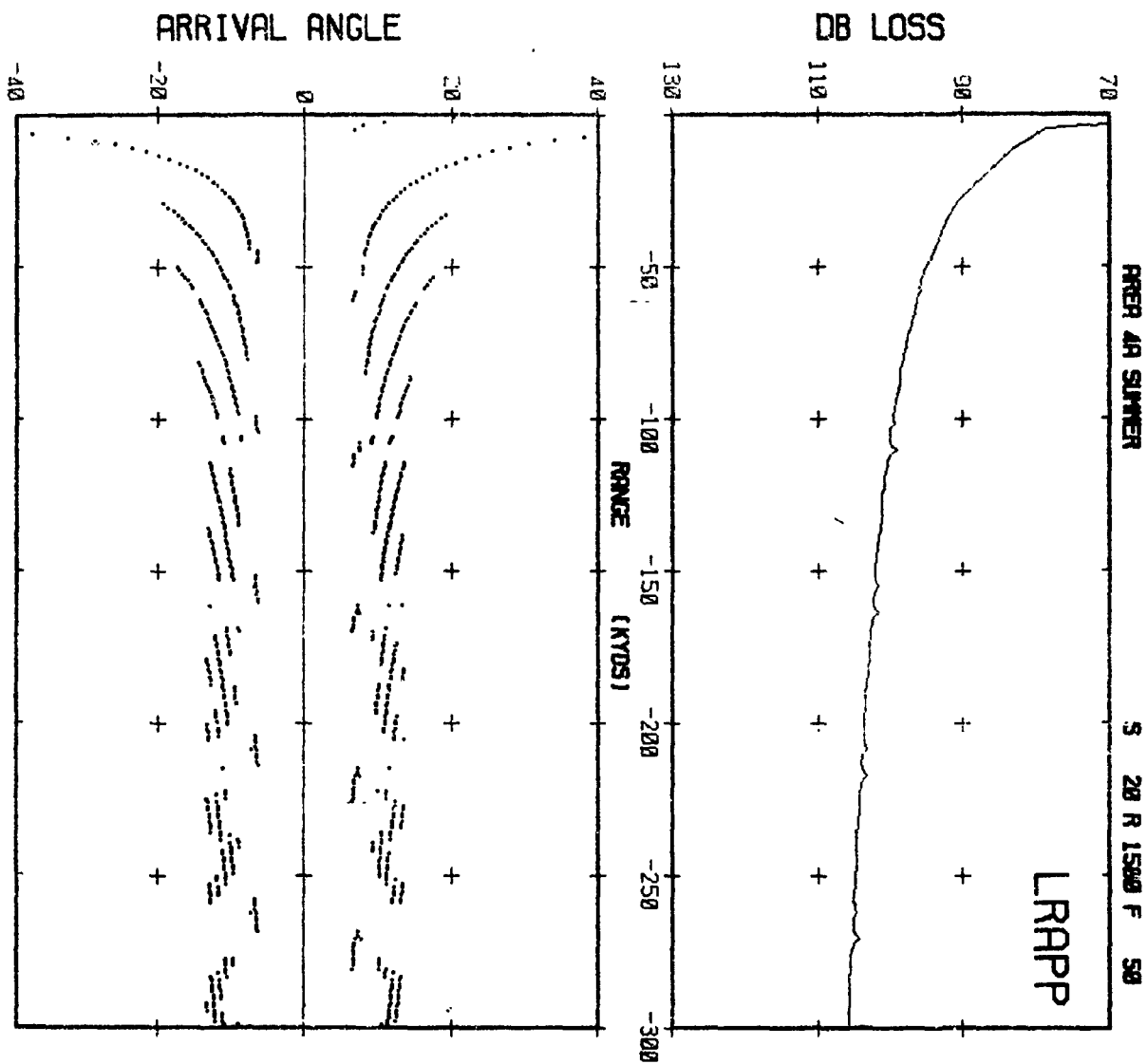


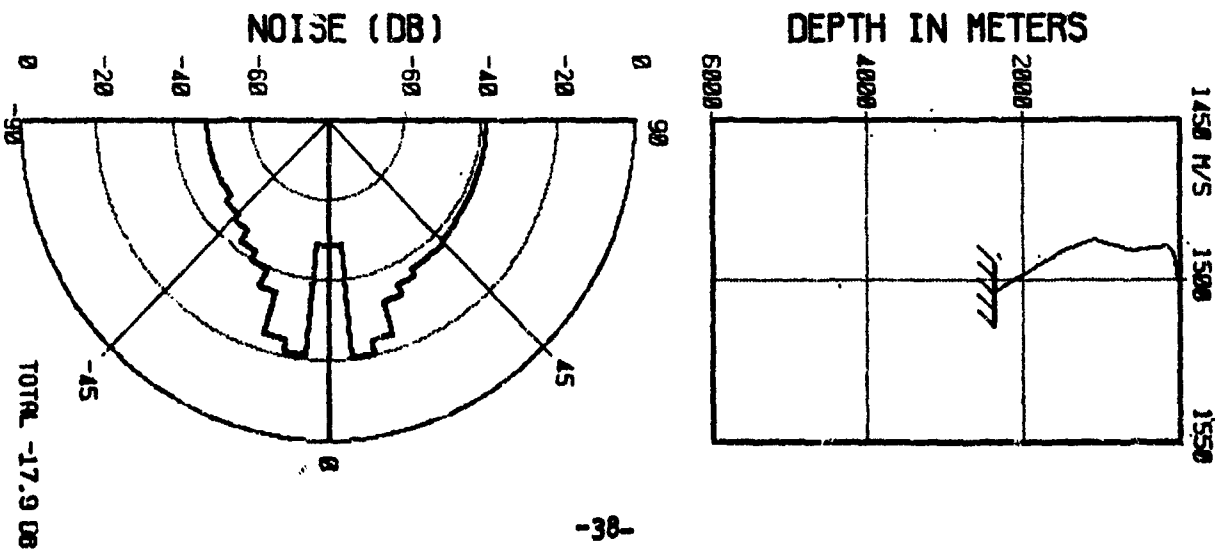
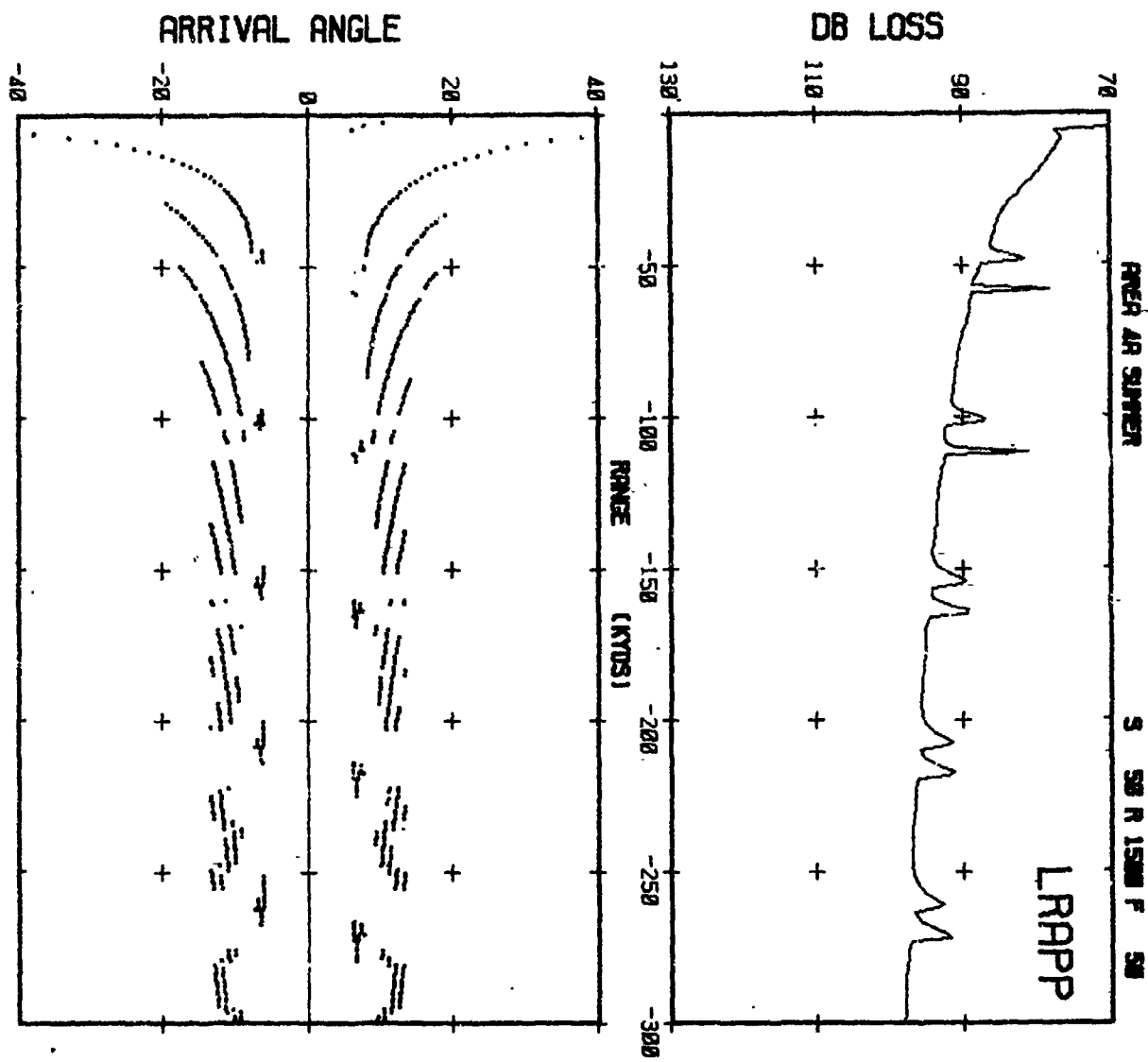
DEPTH IN METERS



NOISE (DB)







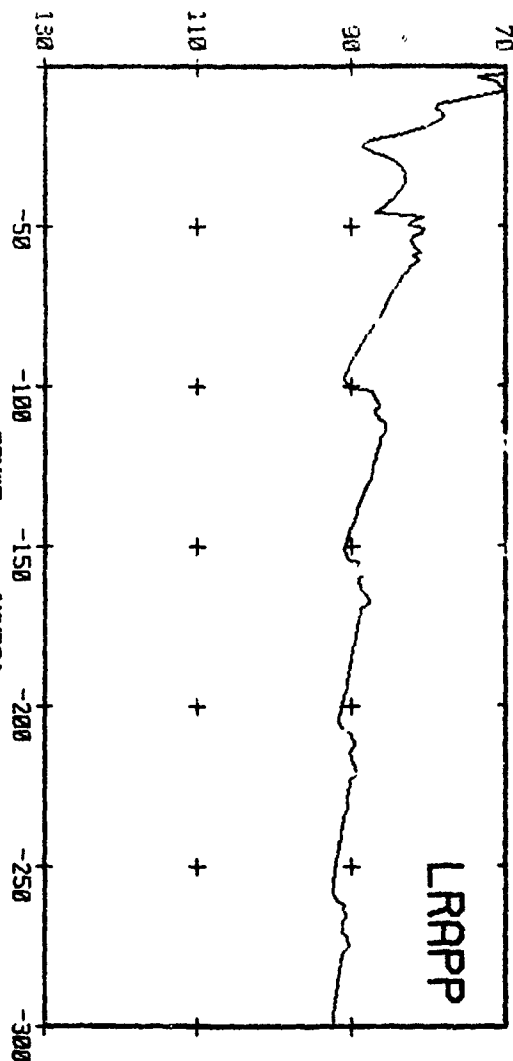
RRR 4R SUMMER

S 230 R 1500 F 50

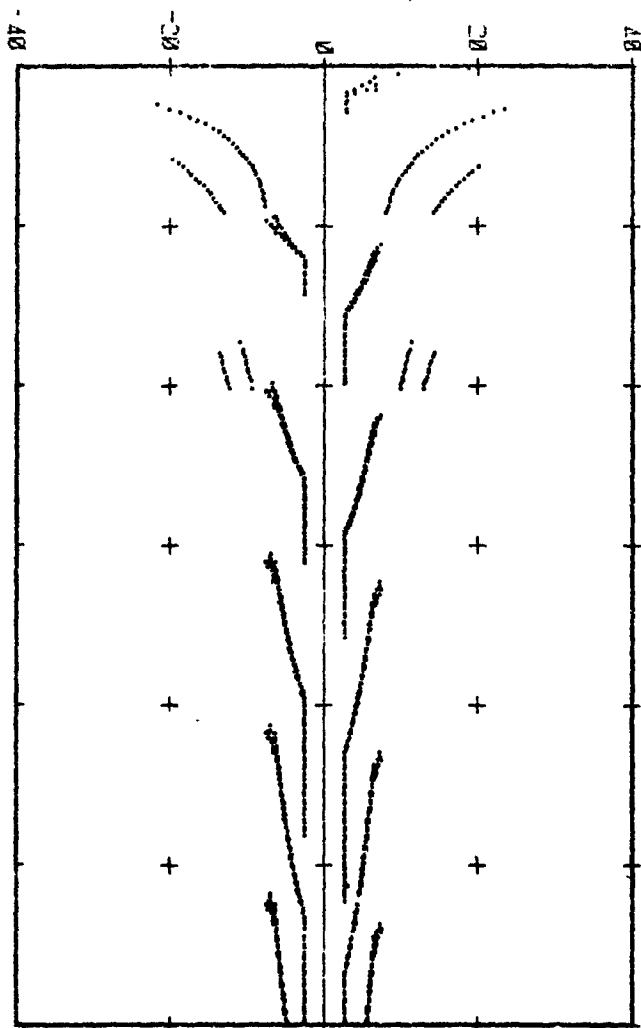
1450 M/S 1500

1550

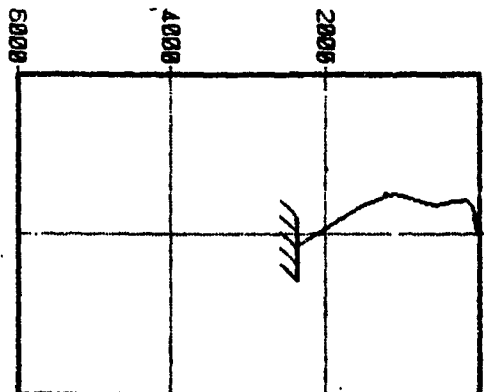
DB LOSS



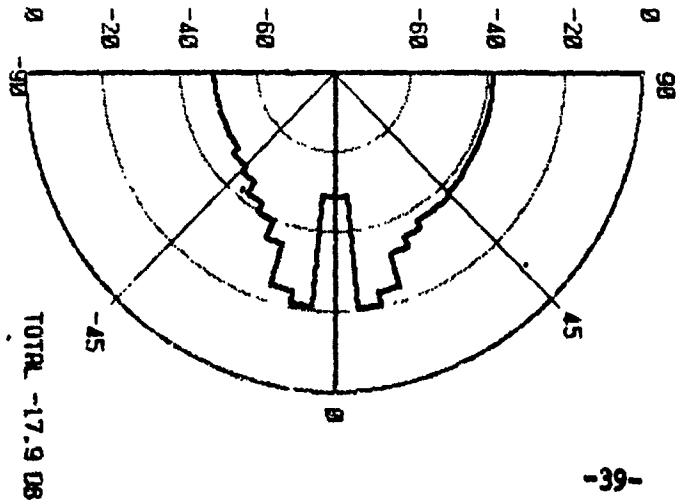
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

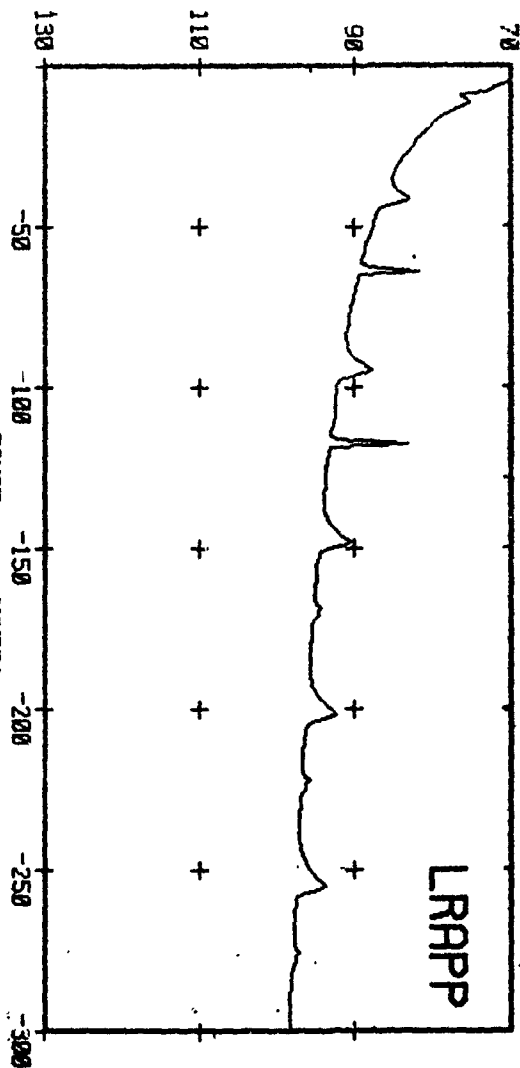


RIVER AR SUMMER

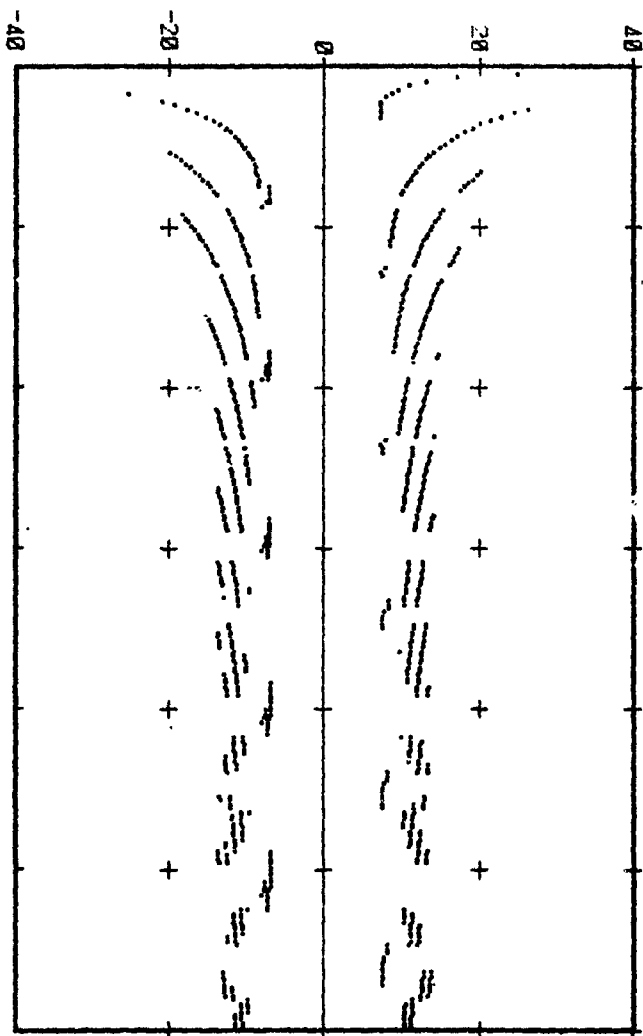
5 50 R 5707 F 90

1450 H/S 1500 1550

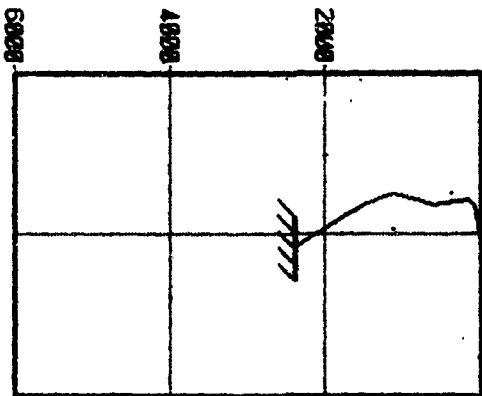
DB LOSS



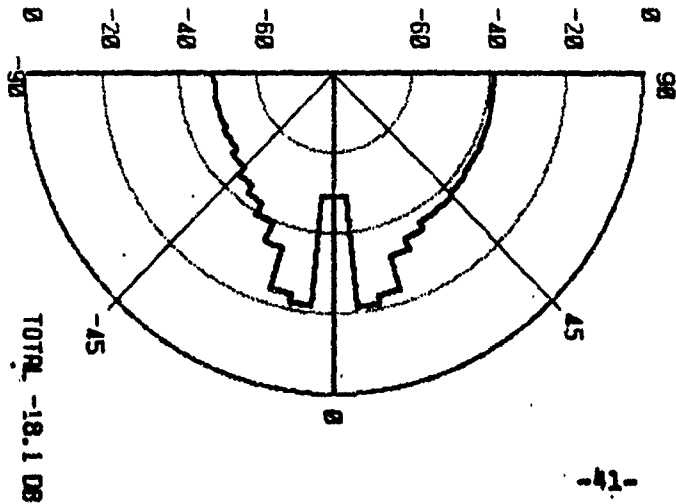
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

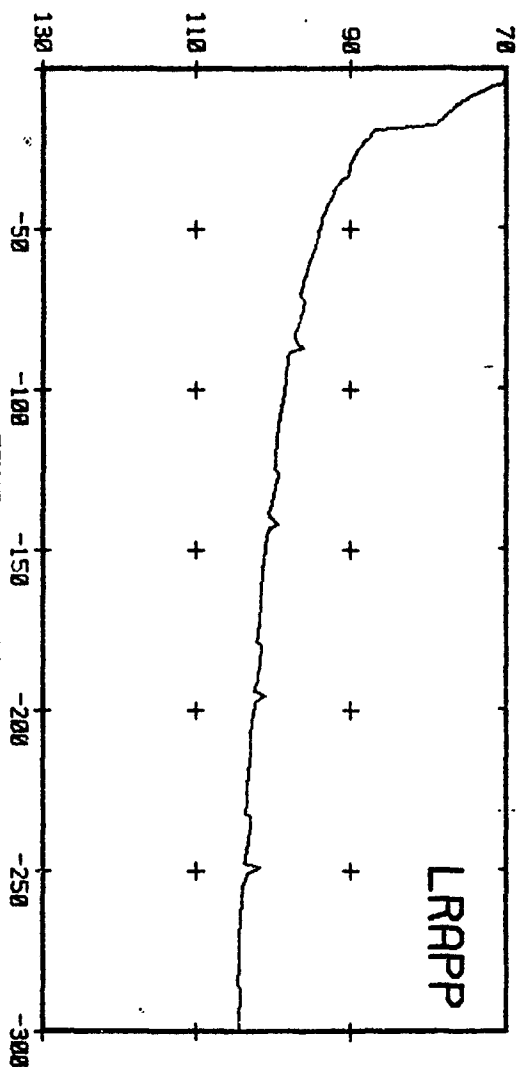


RIVER AIR SUMMER

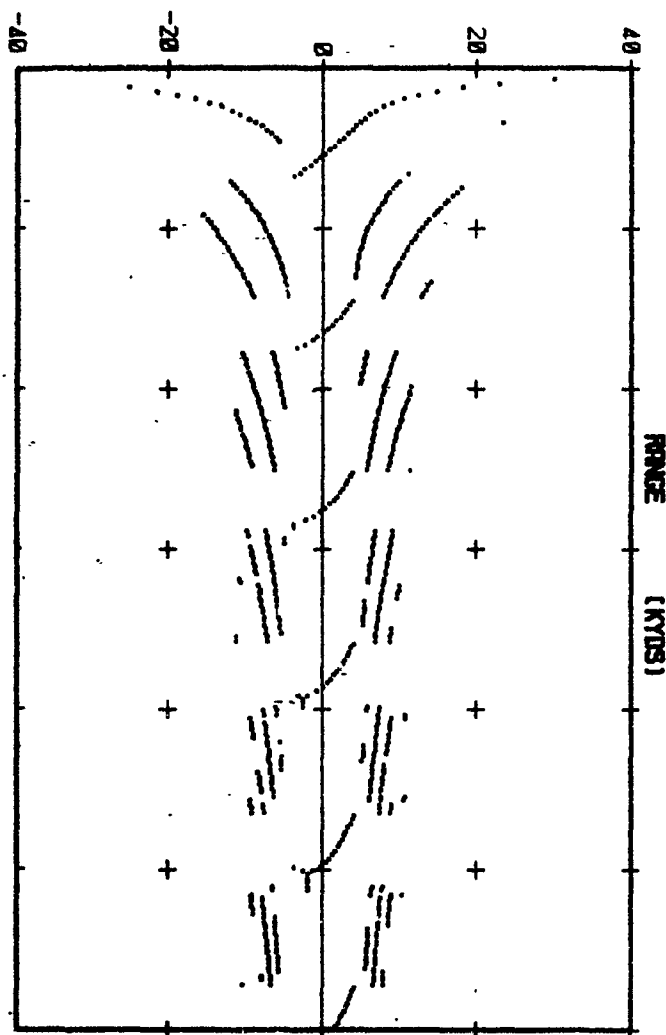
3 28 R 0858 F 50

1450 M/S 1500 1550

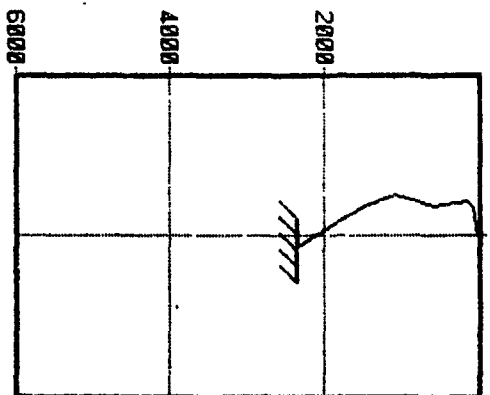
DB LOSS



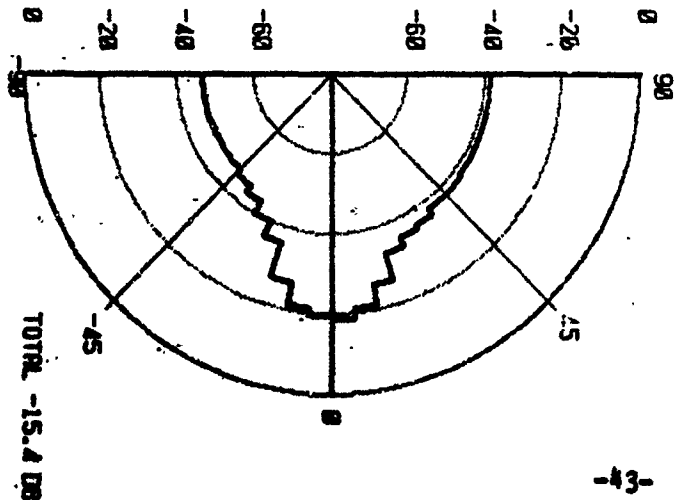
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



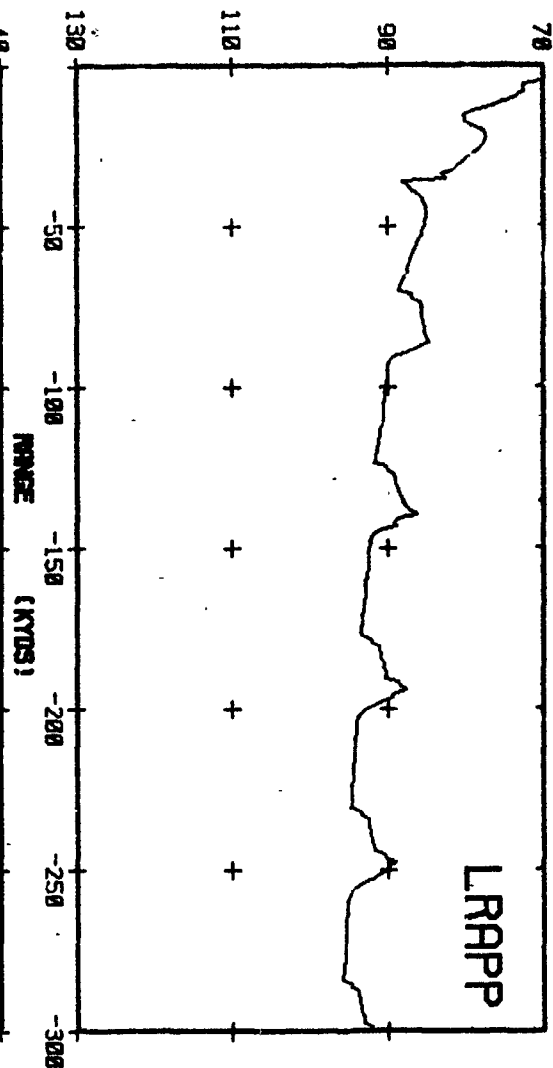
RIVER AR SUMMER

S 253 N 8058 F 58

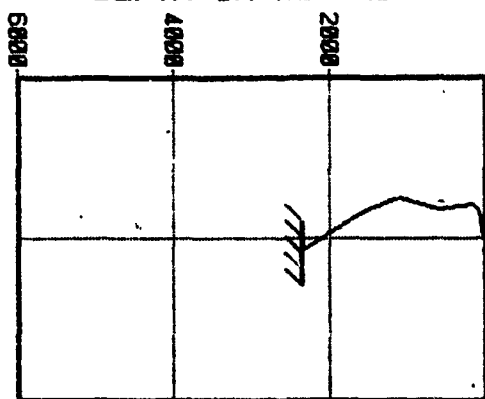
1450 W/S 1500

1550

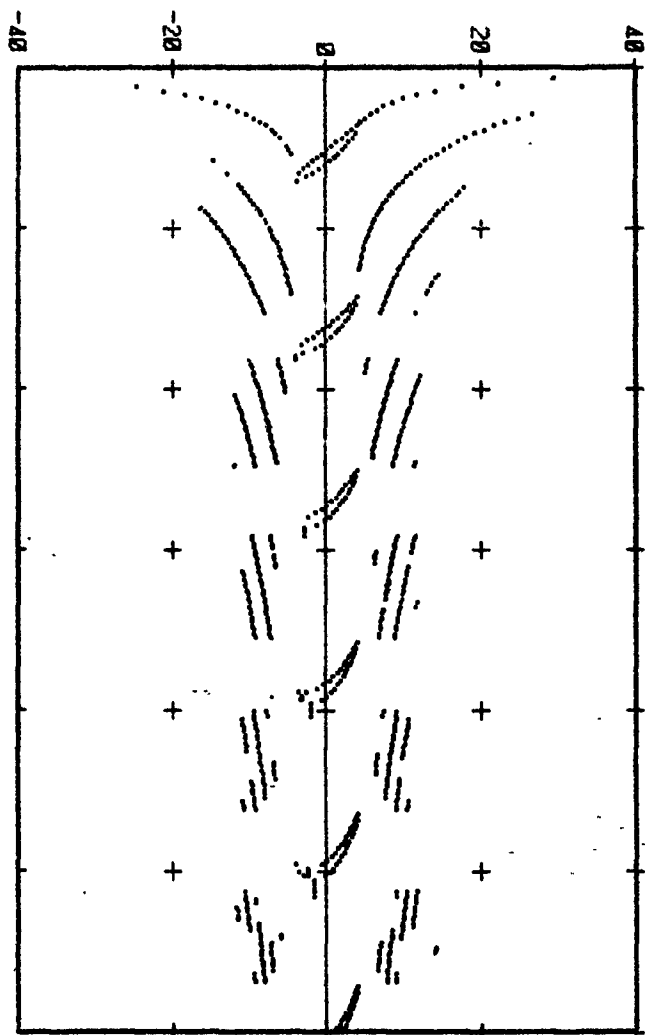
DB LOSS



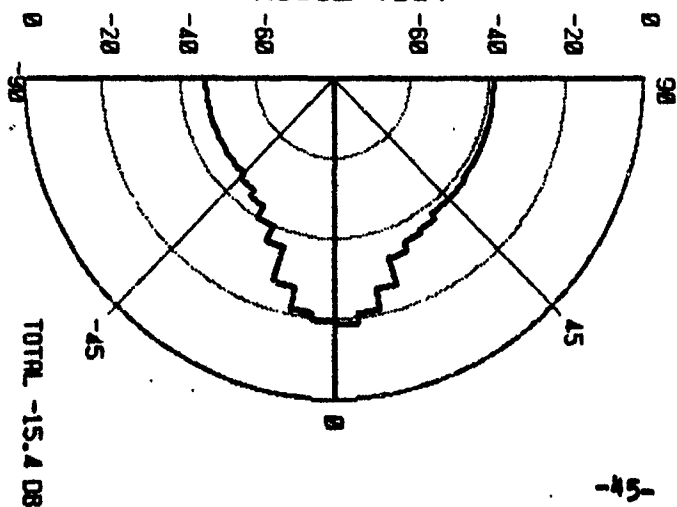
DEPTH IN METERS

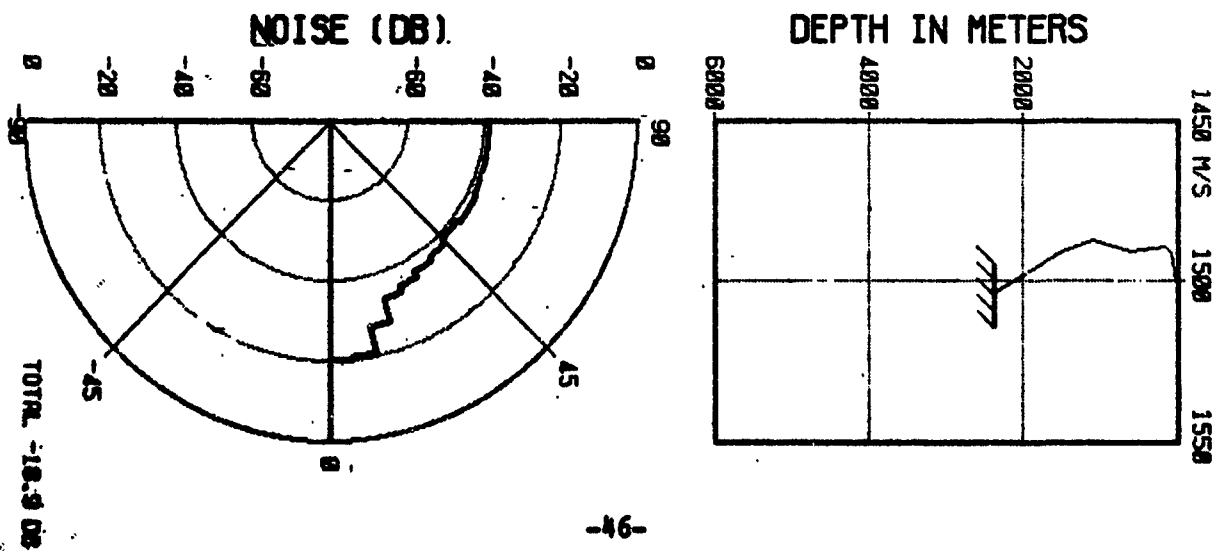
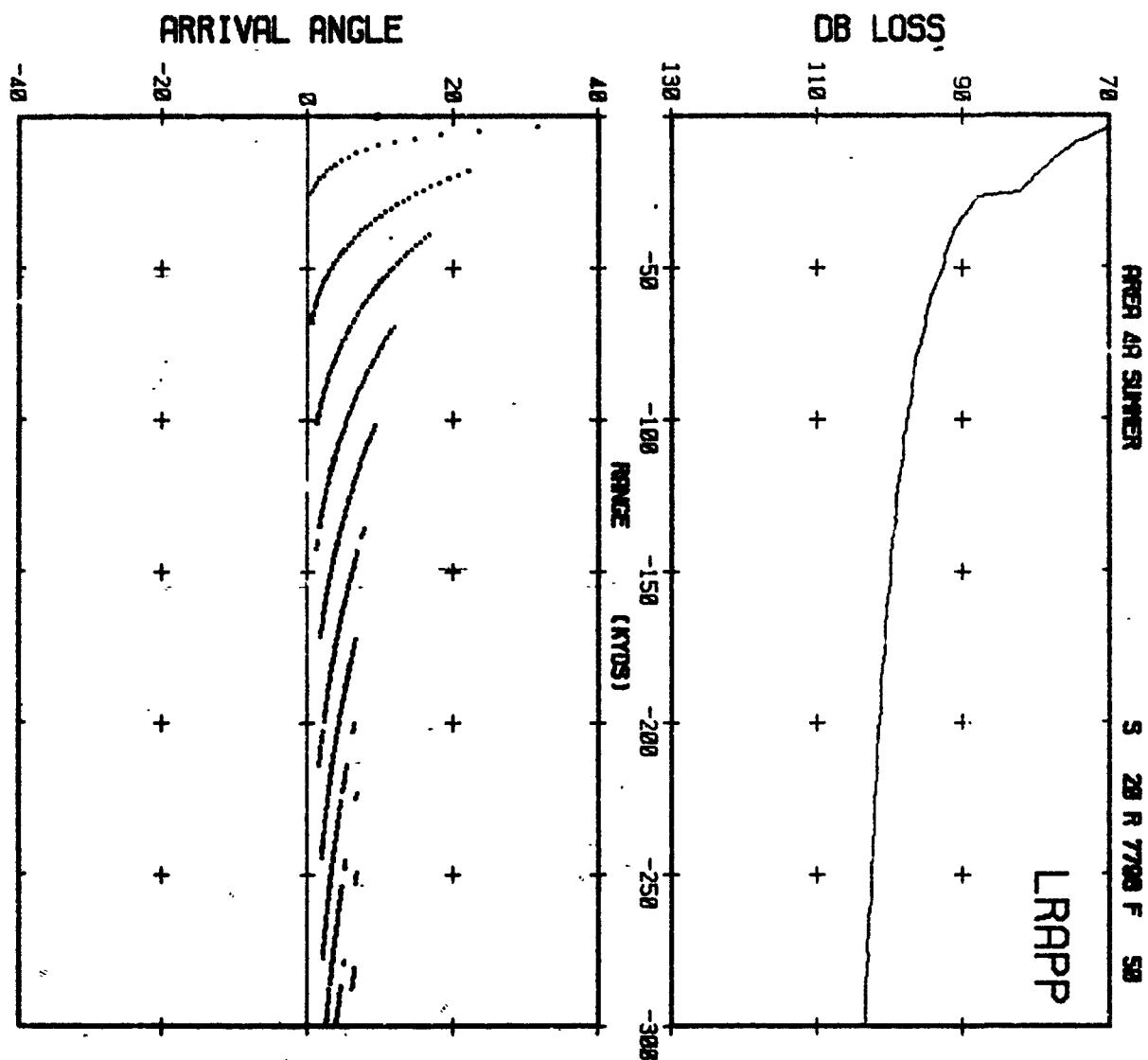


ARRIVAL ANGLE



NOISE (DB)





AREA 44 SURVEY

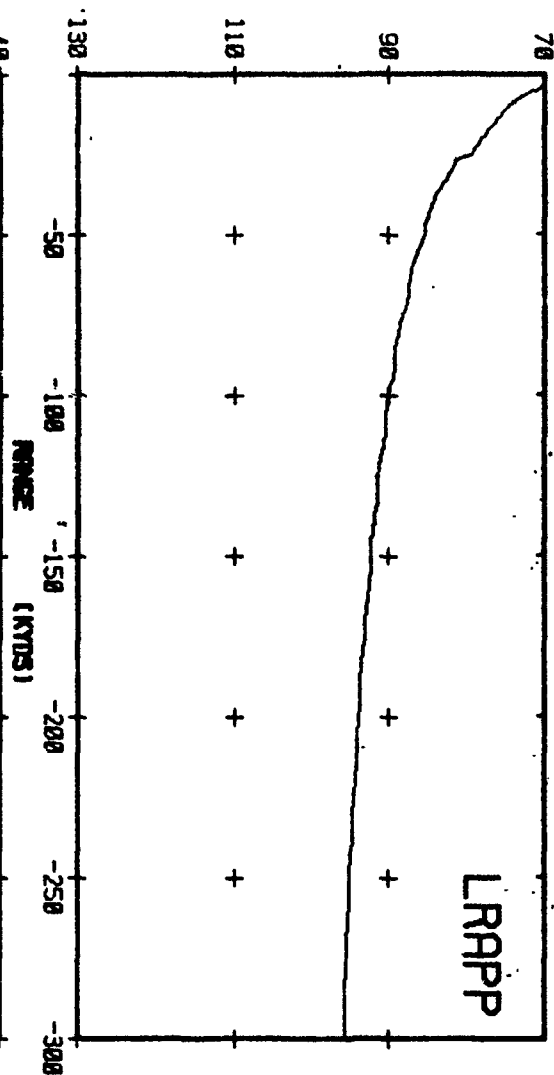
3 20 N 7700 F 50

1450 N/S

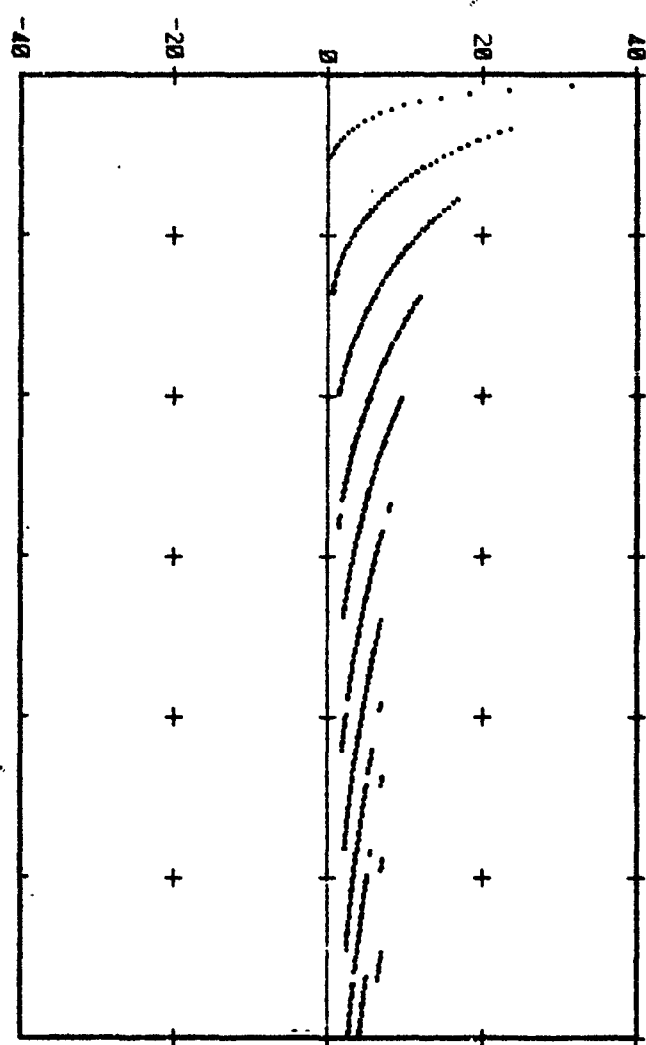
1500

1550

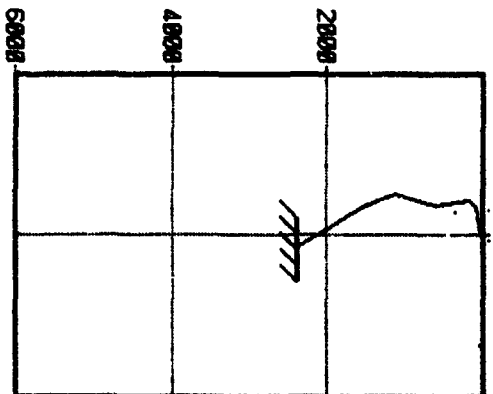
DB LOSS



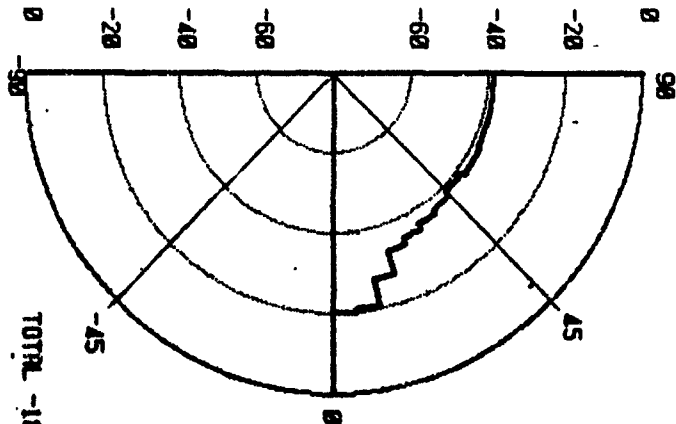
ARRIVAL ANGLE

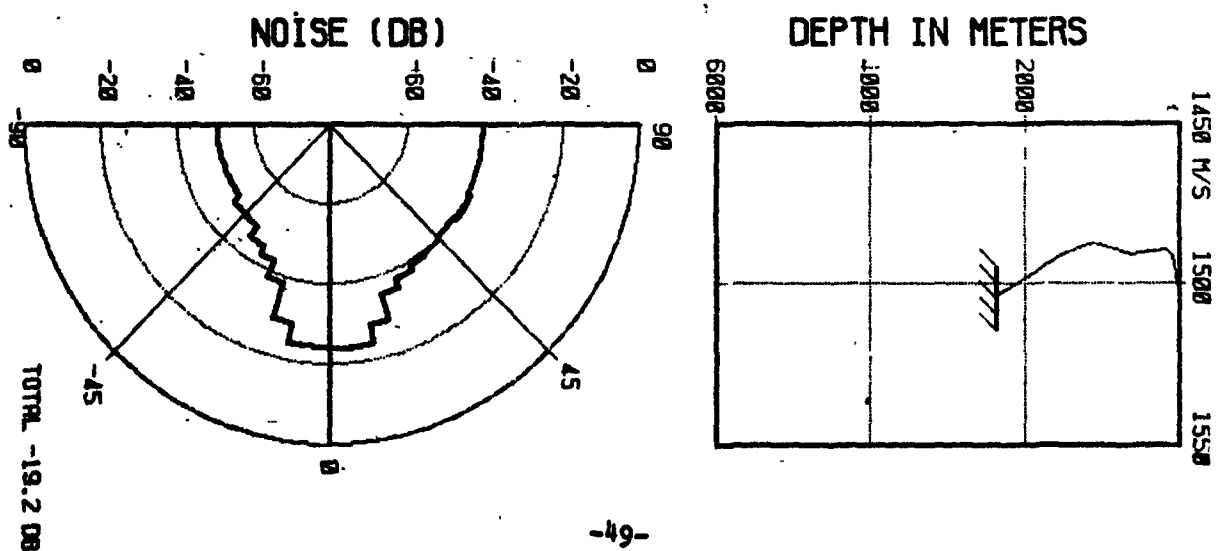
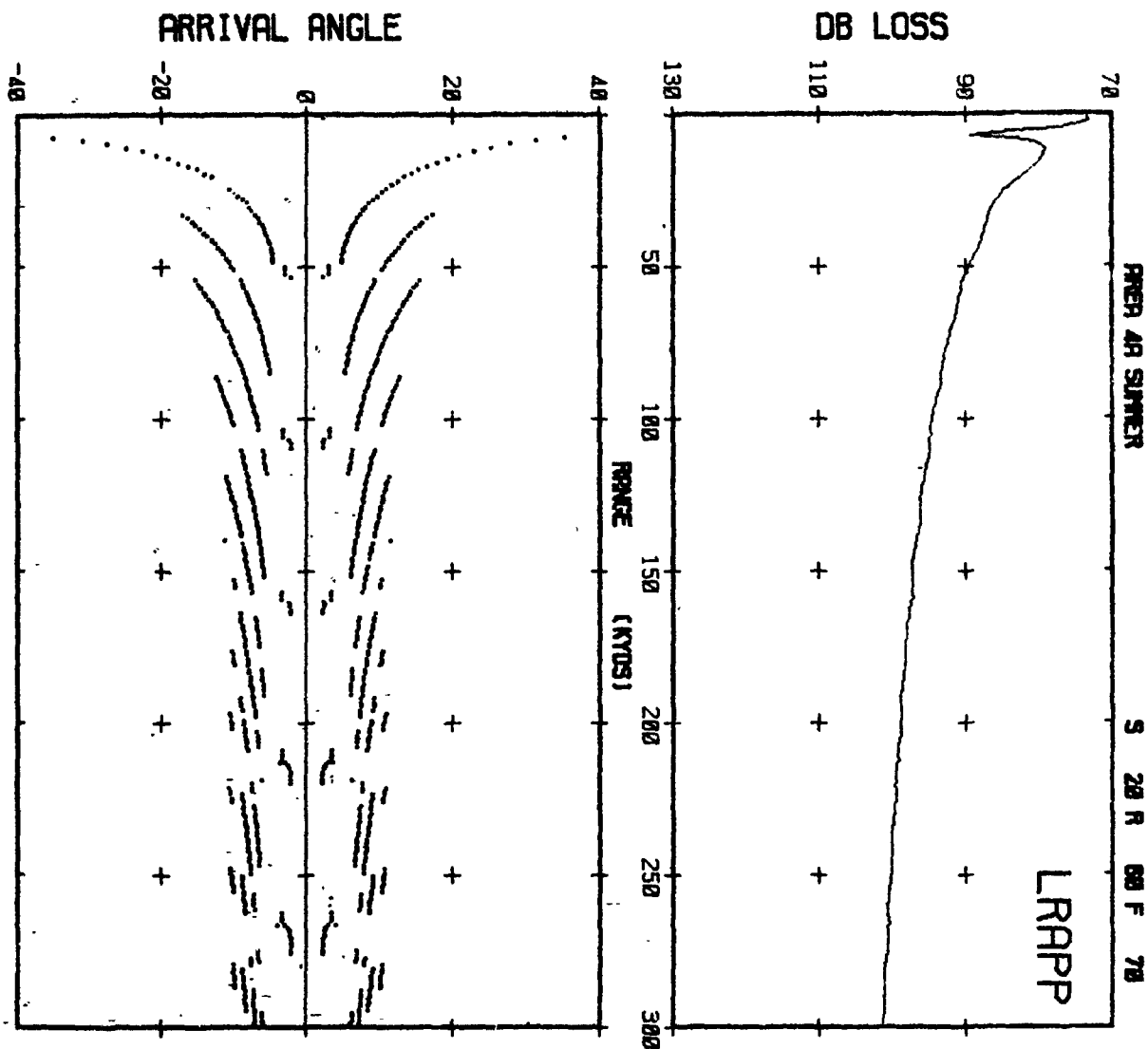


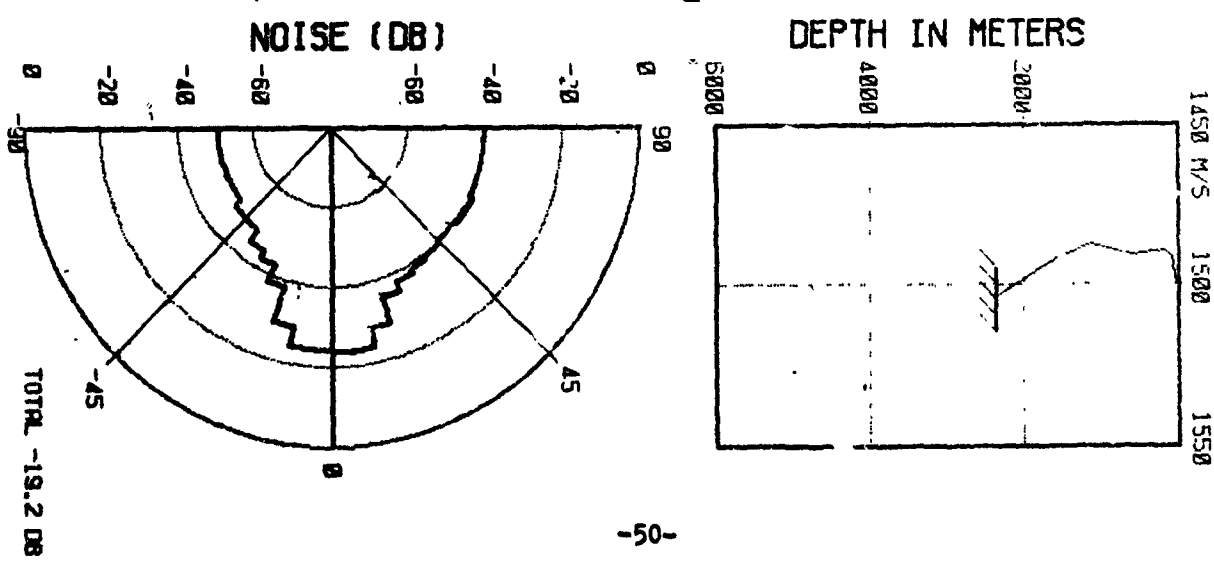
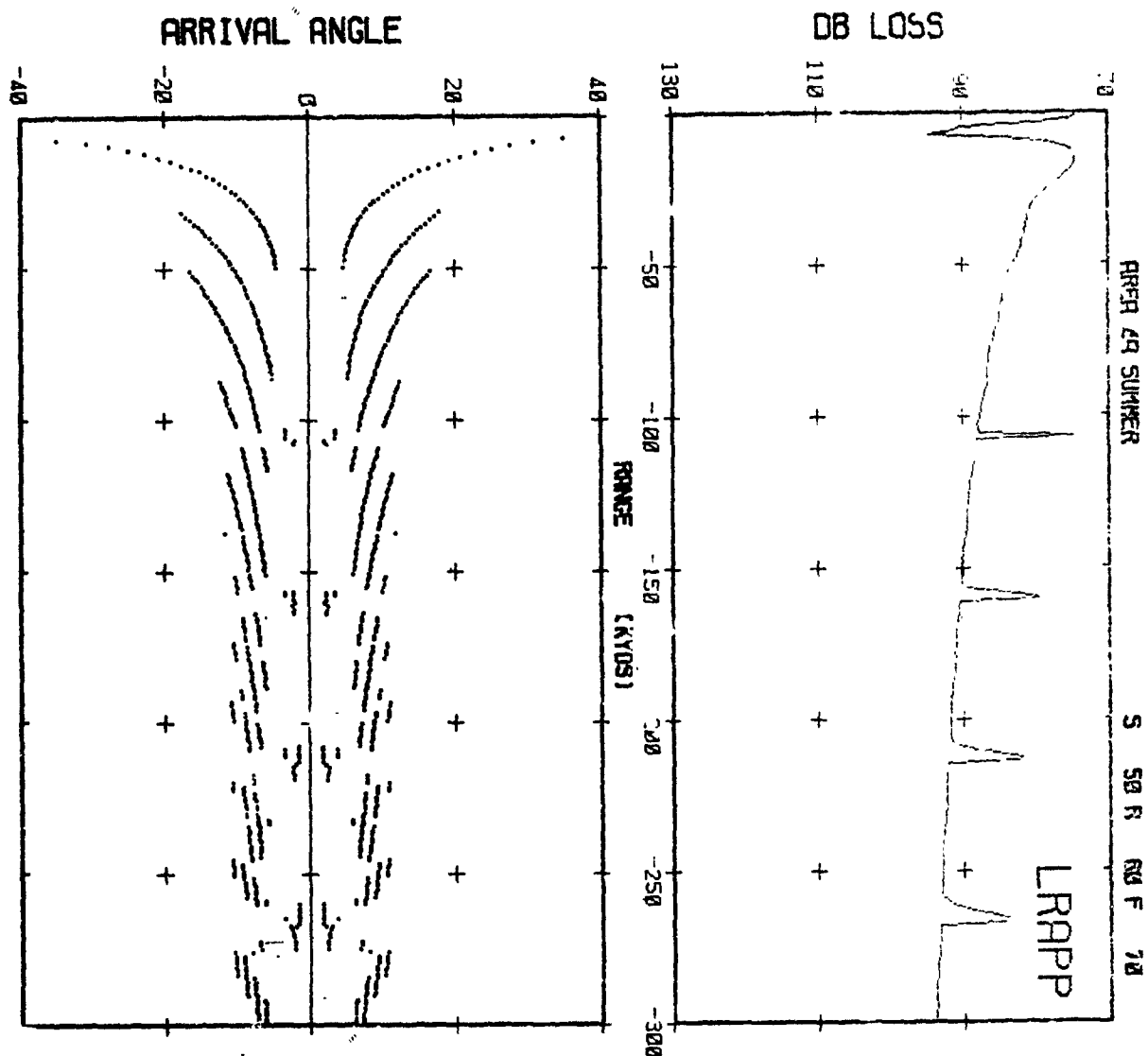
DEPTH IN METERS

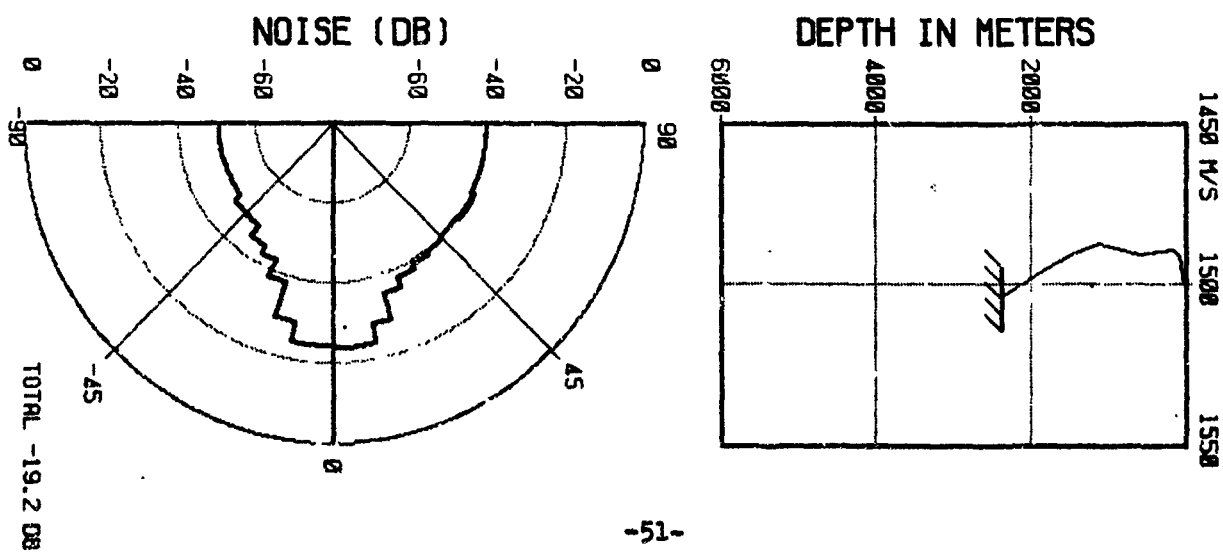
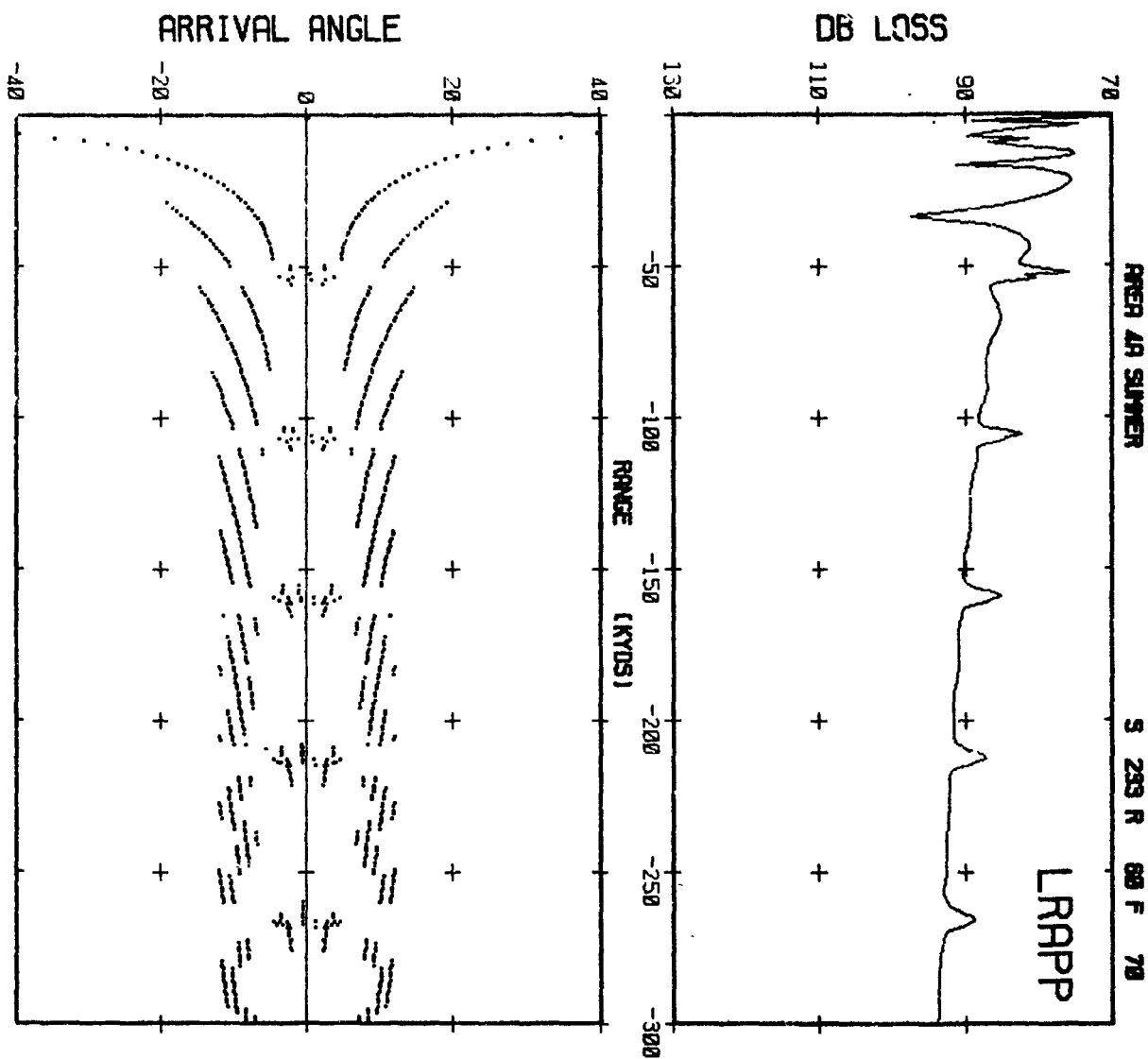


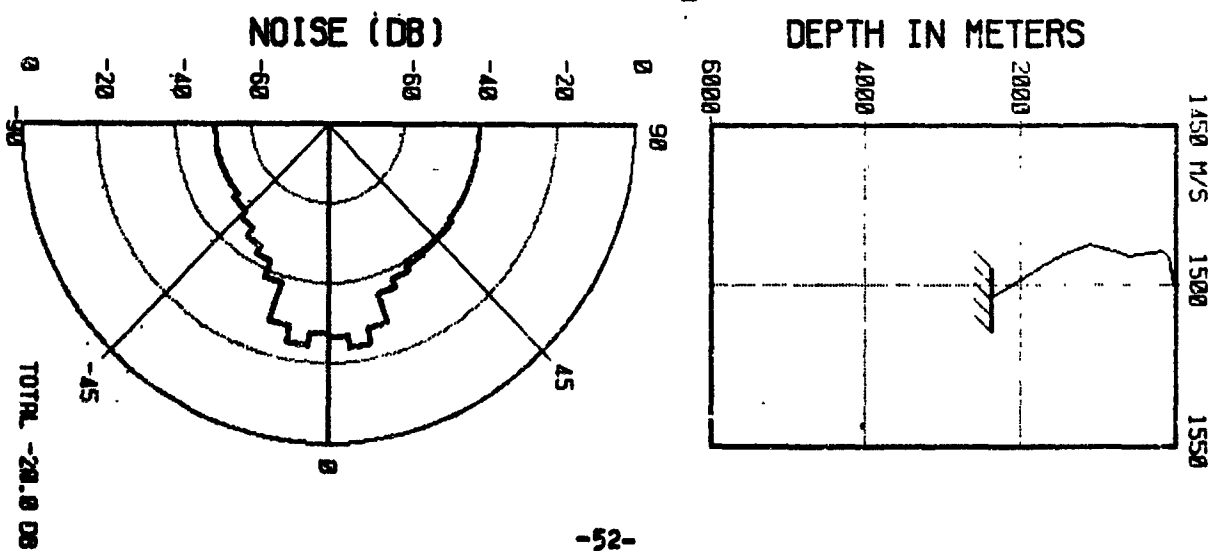
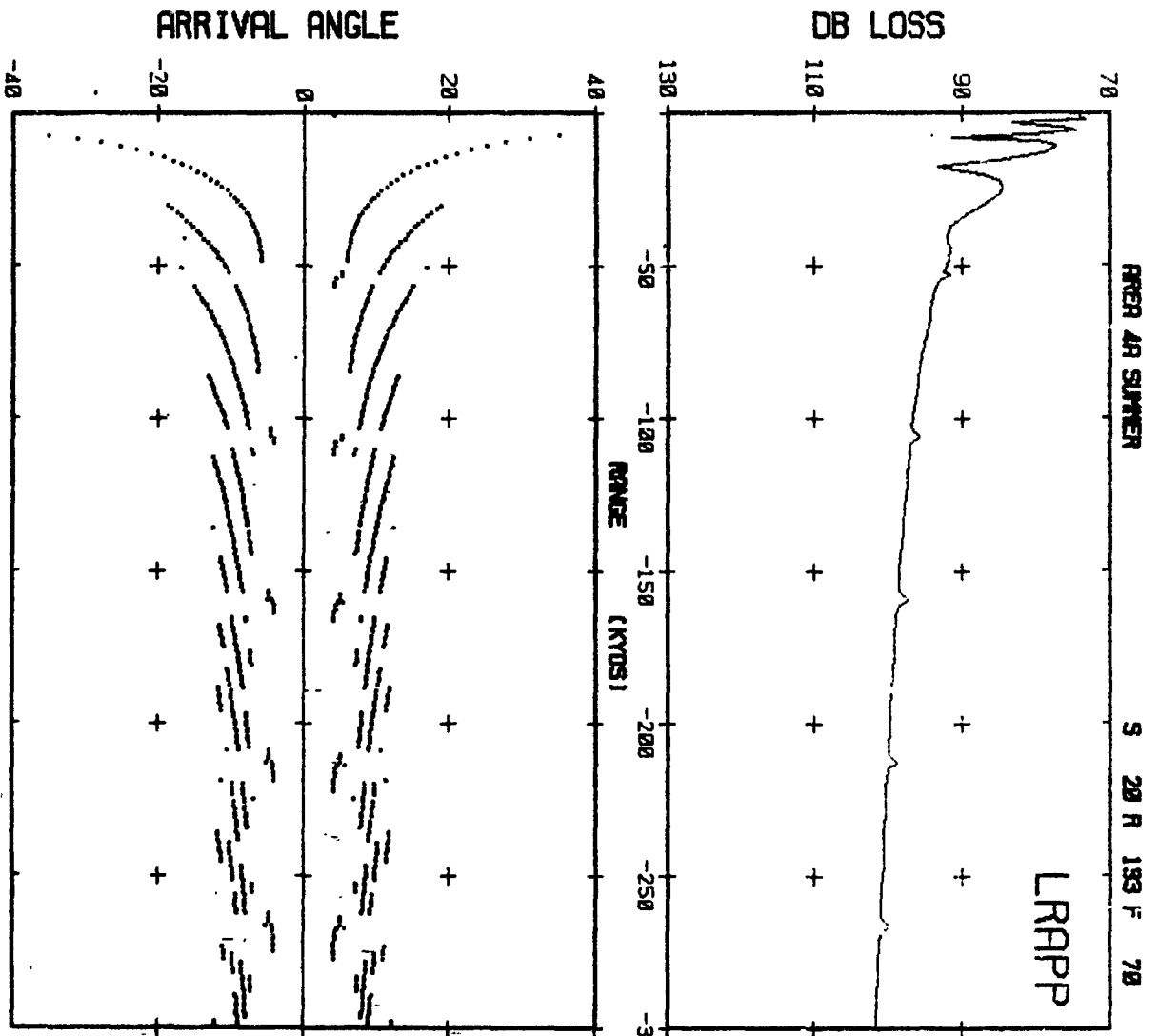
NOISE (DB)

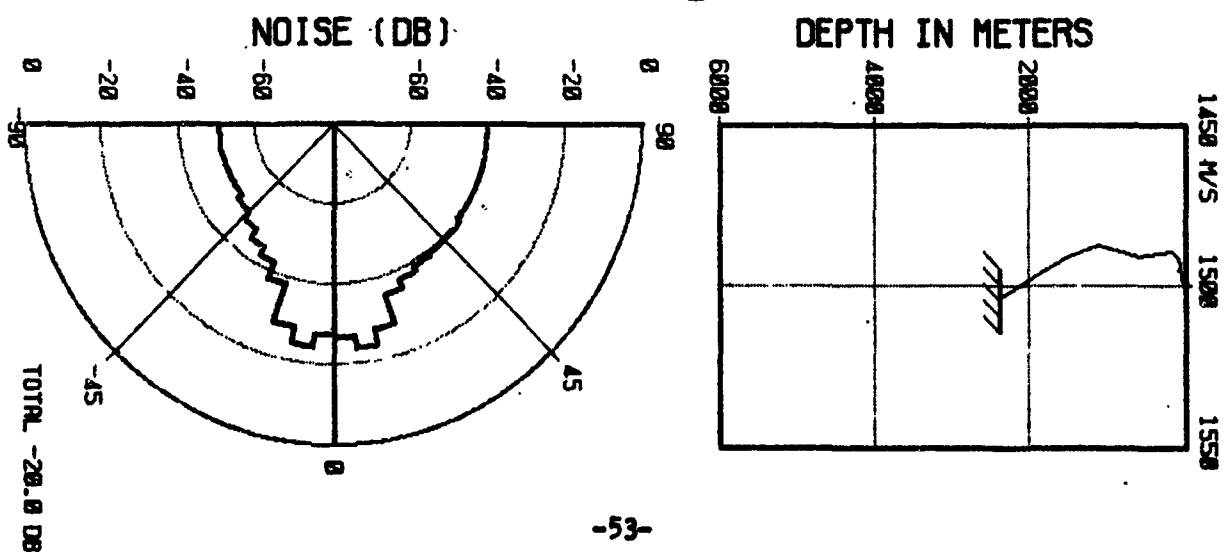
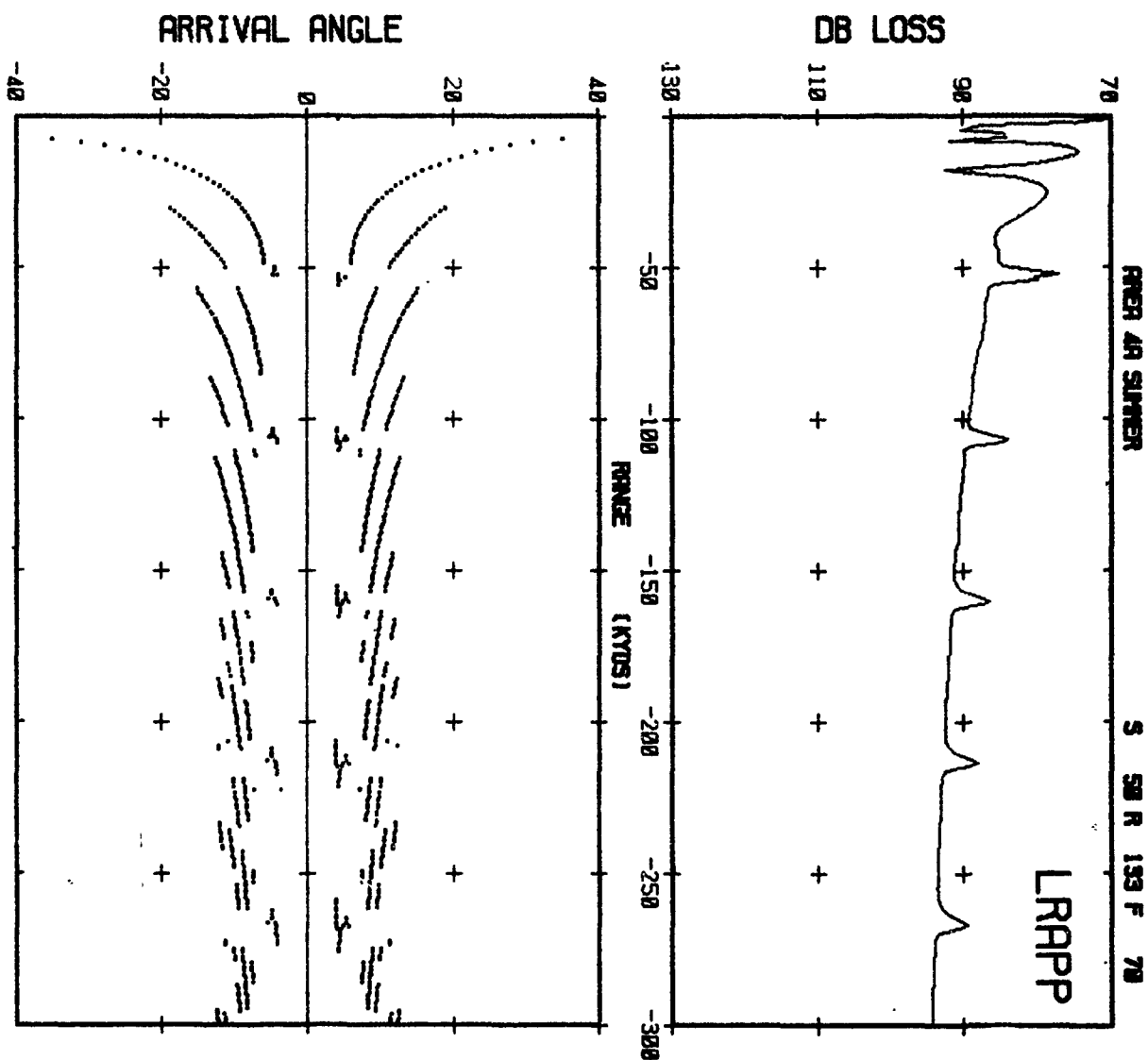


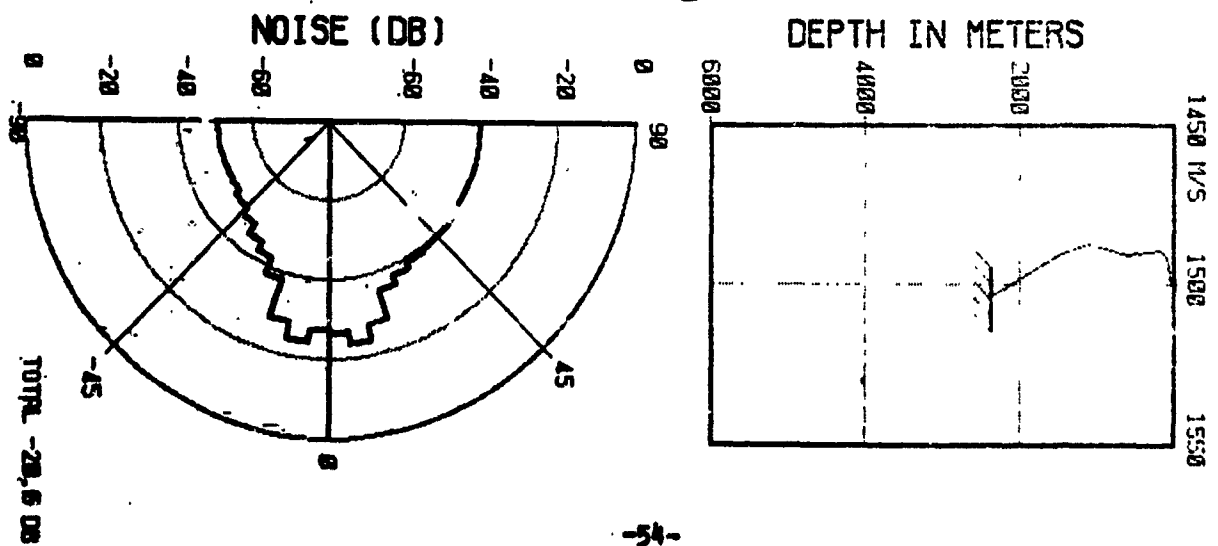
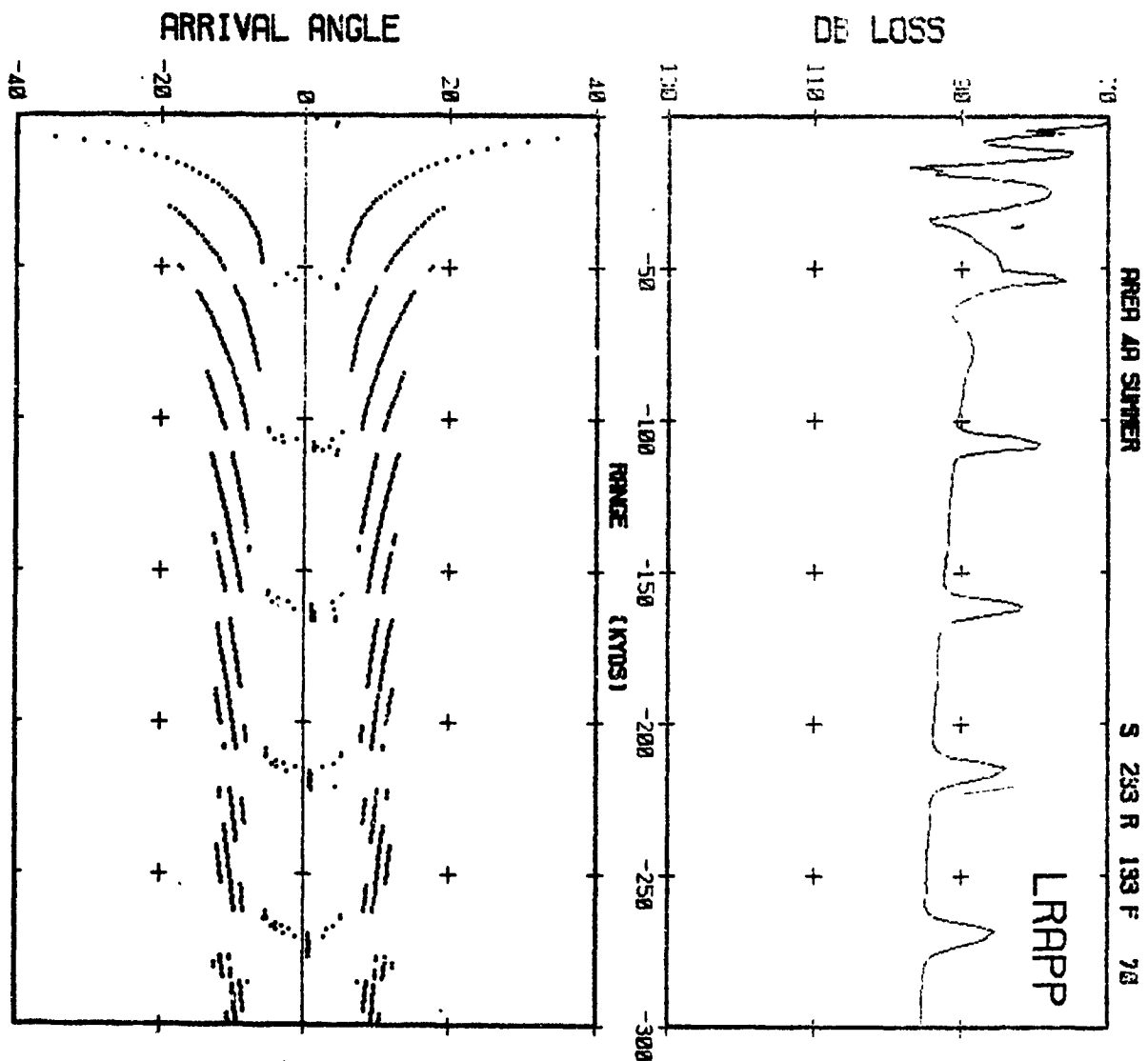








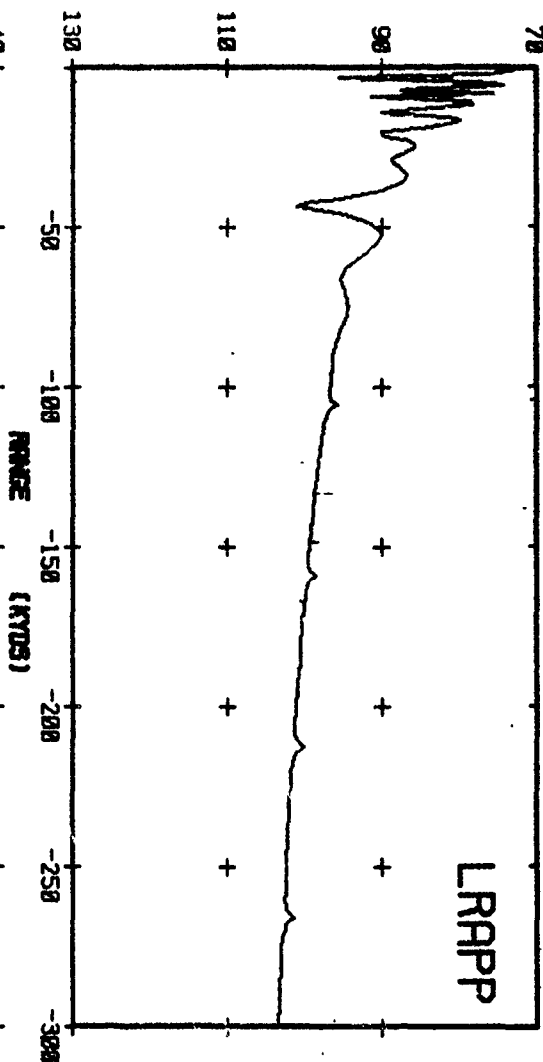




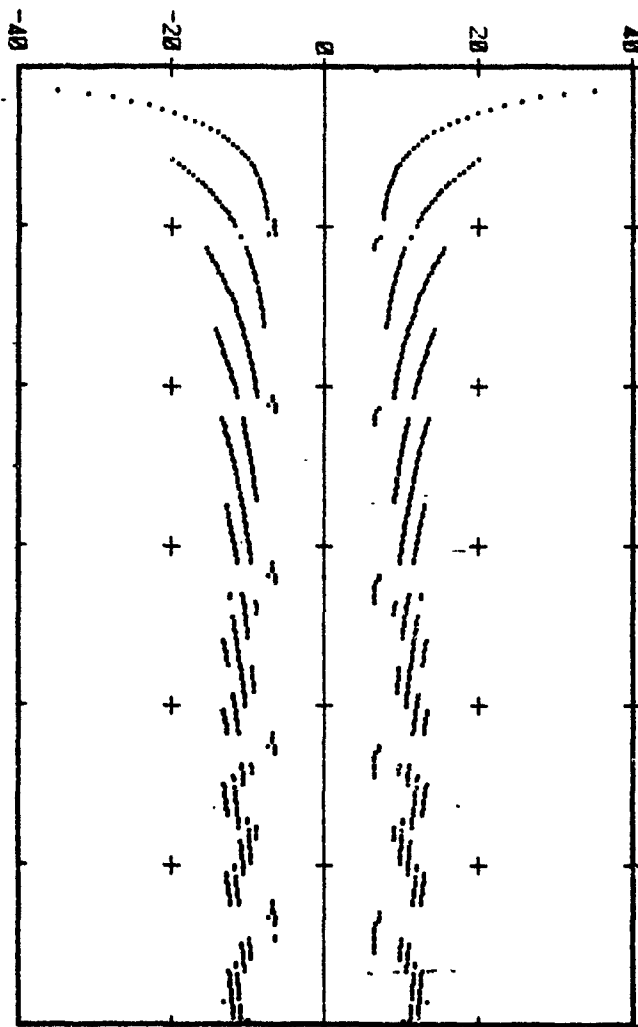
RIVER 40 SUMMER

S 20 R 300 F 70

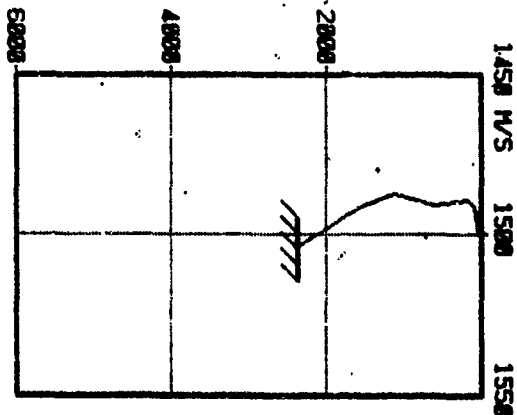
DB LOSS



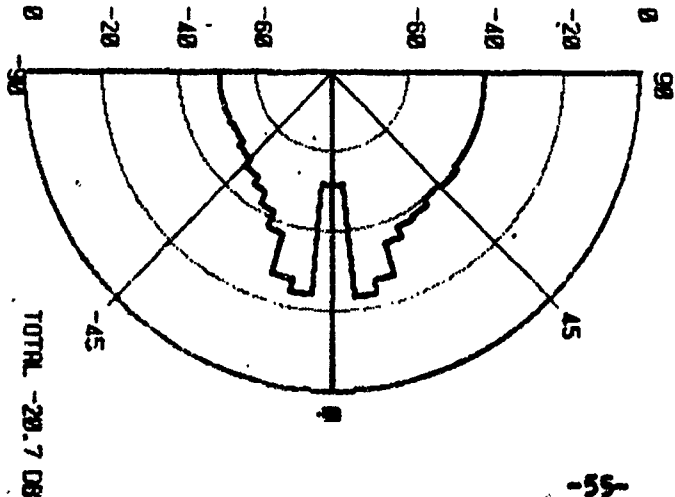
ARRIVAL ANGLE

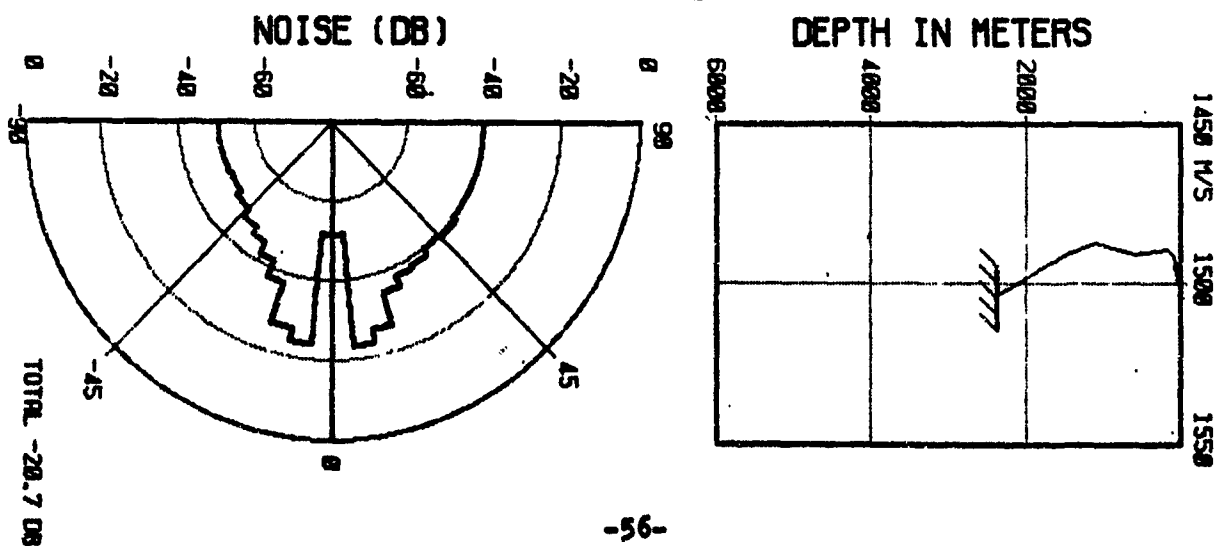
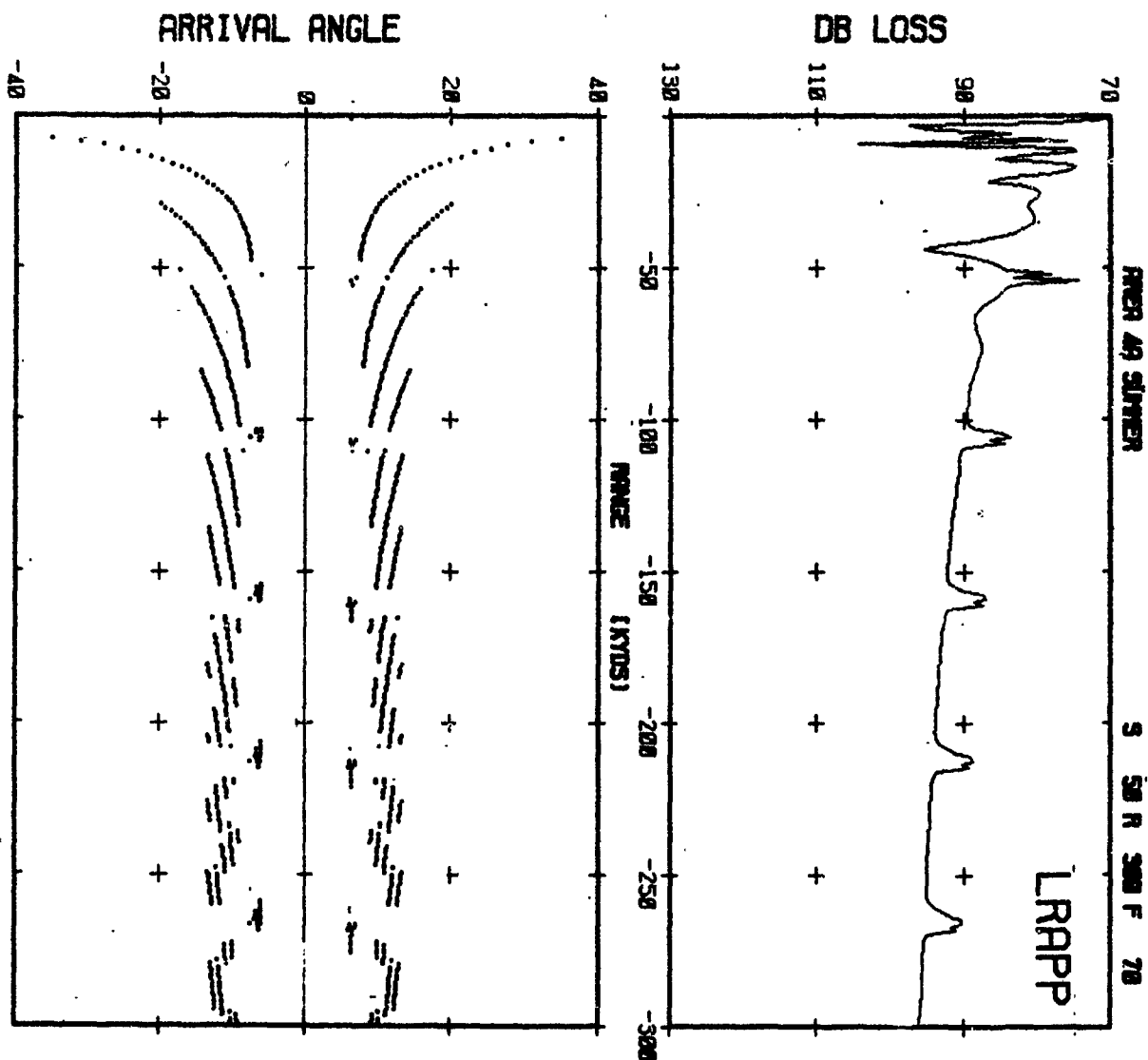


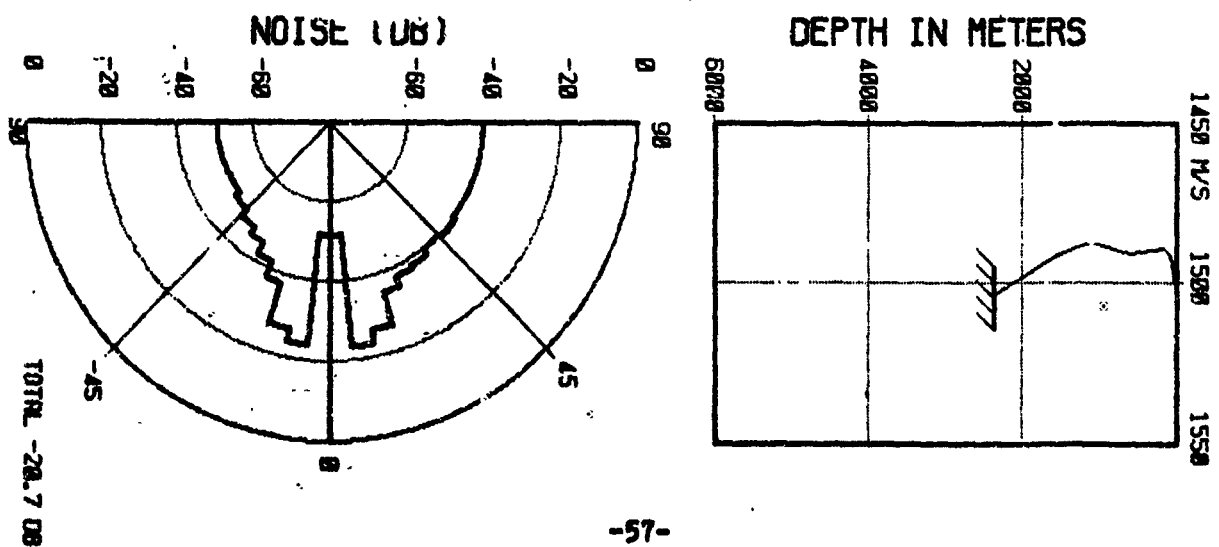
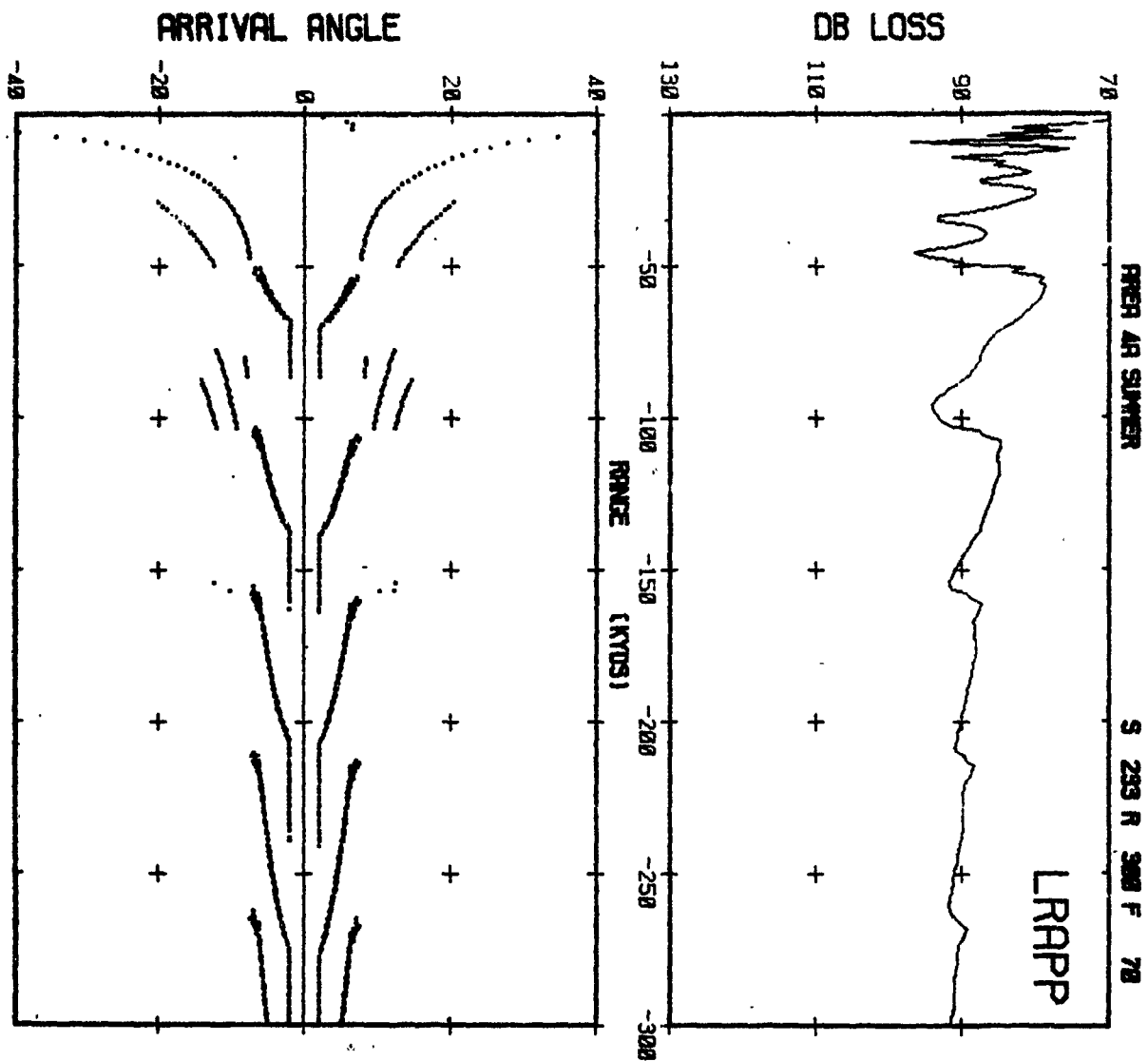
DEPTH IN METERS

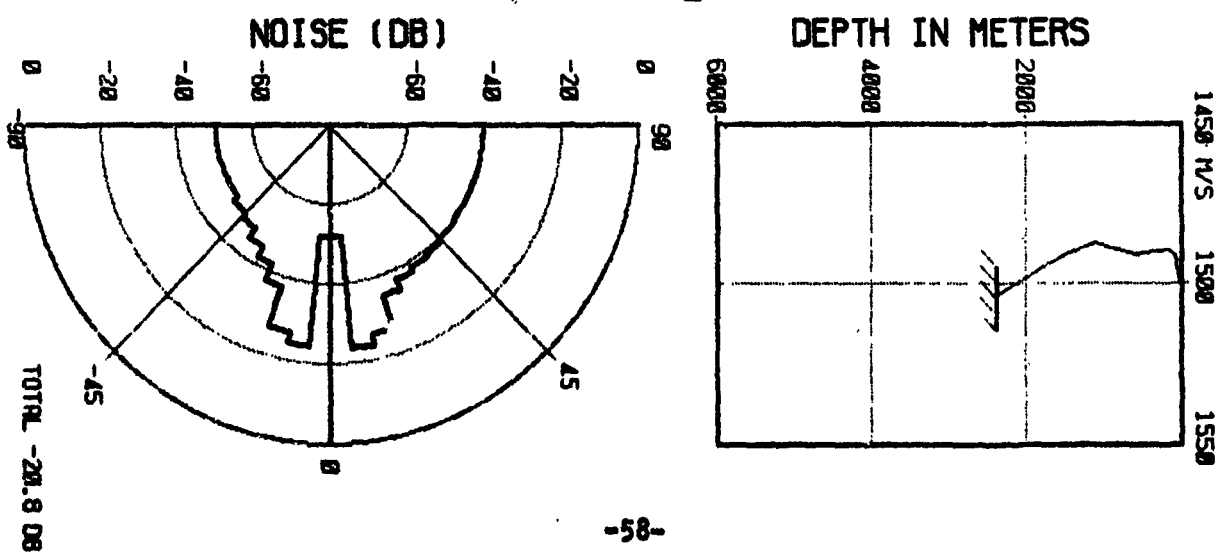
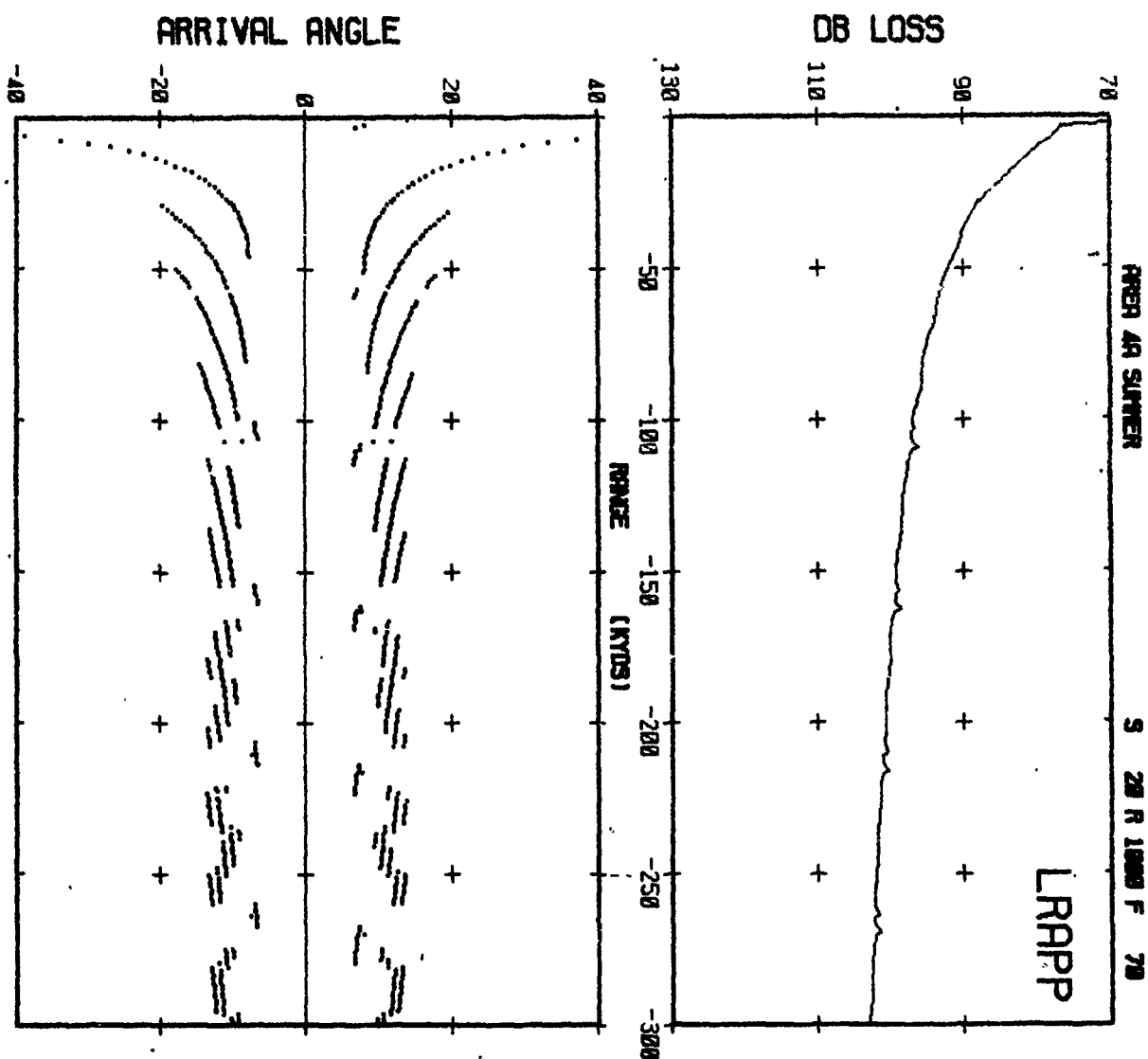


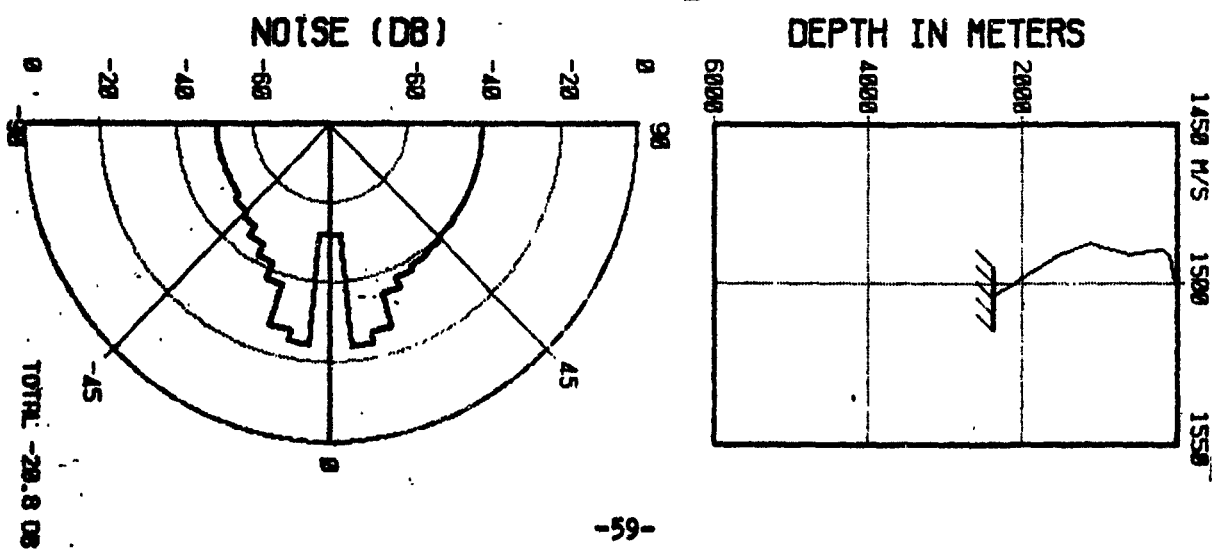
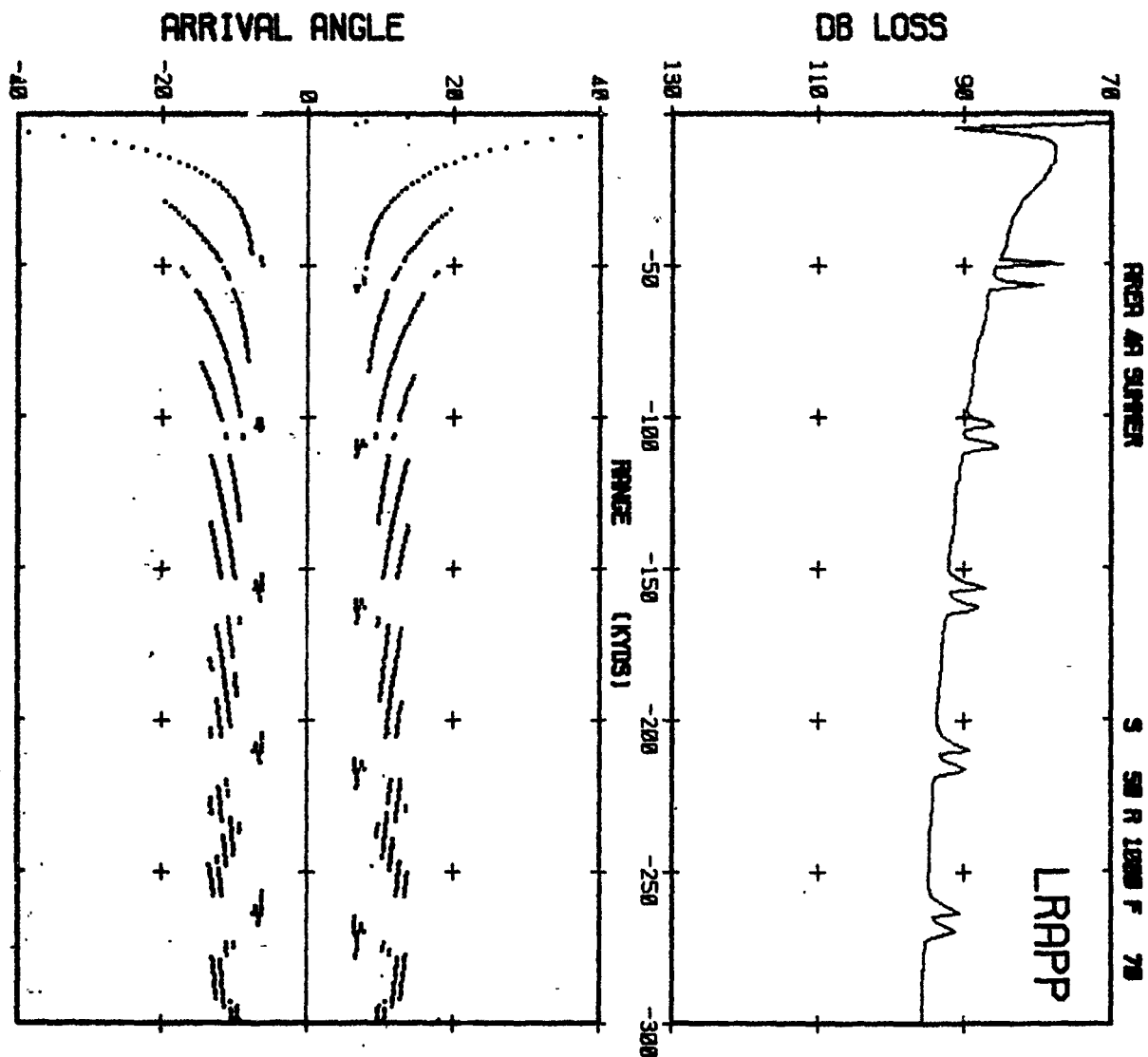
NOISE (DB)

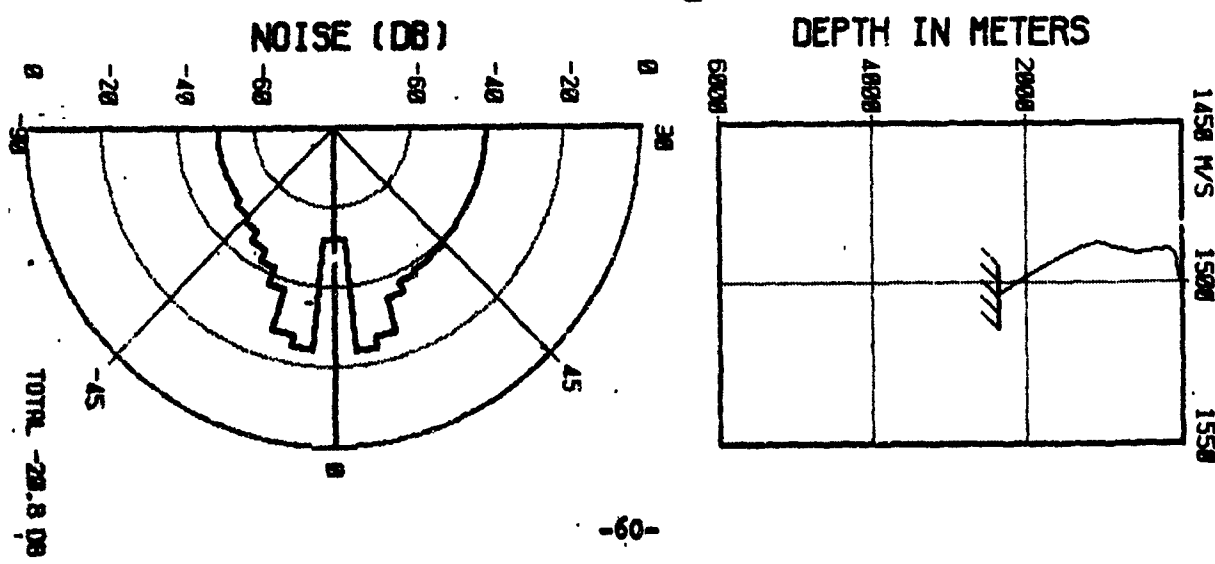
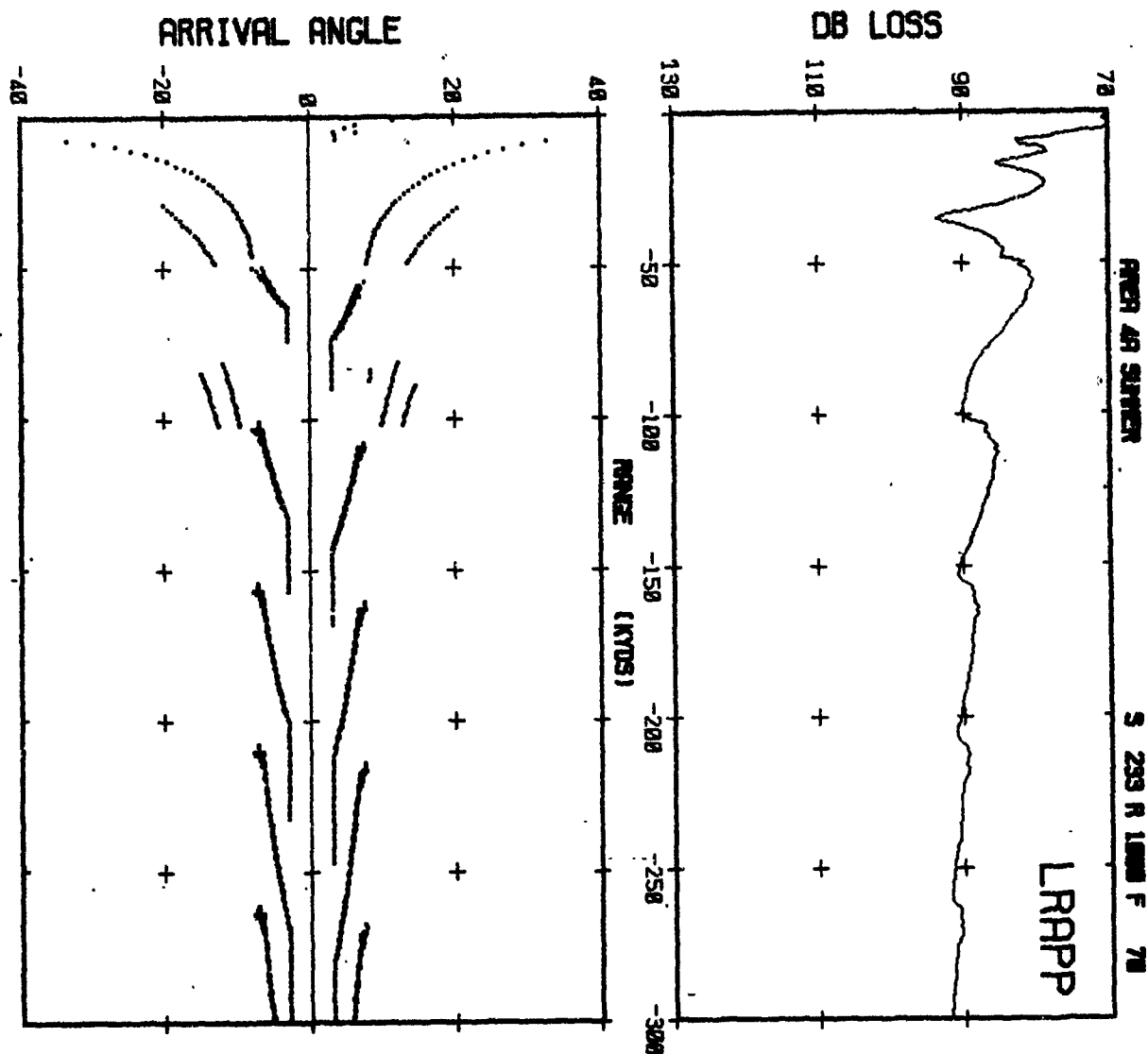








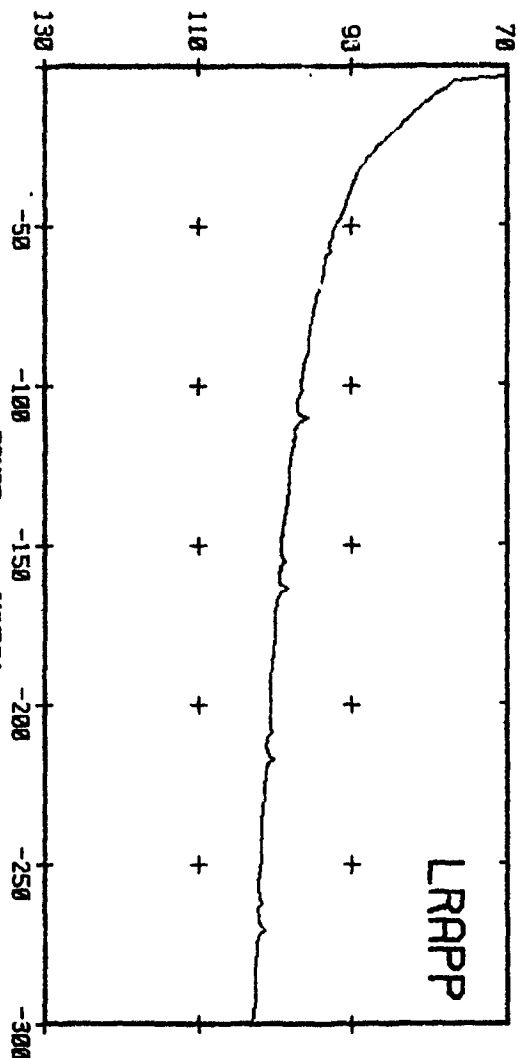




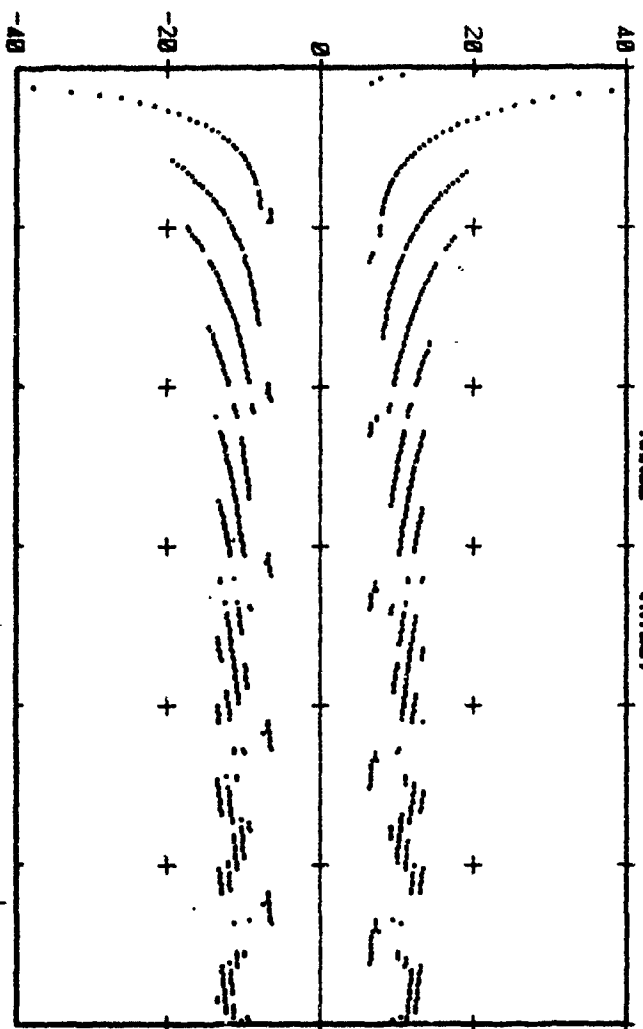
RRR 4R SUMMER

S 20 R 1500 F 70

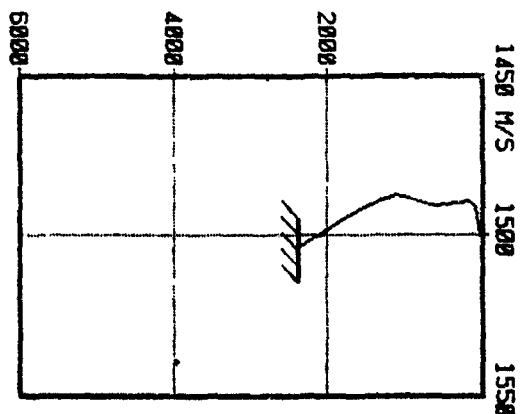
DB LOSS



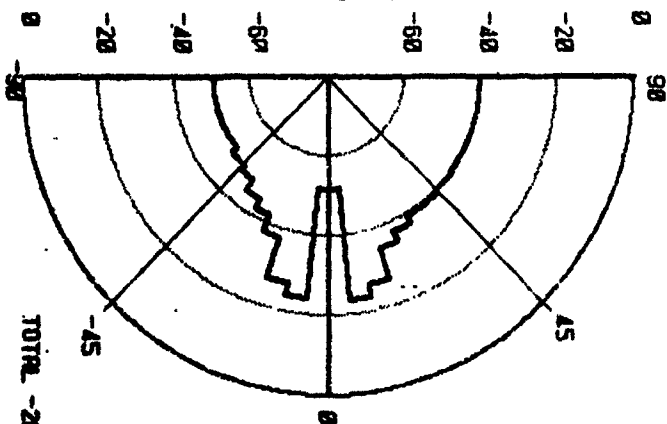
ARRIVAL ANGLE



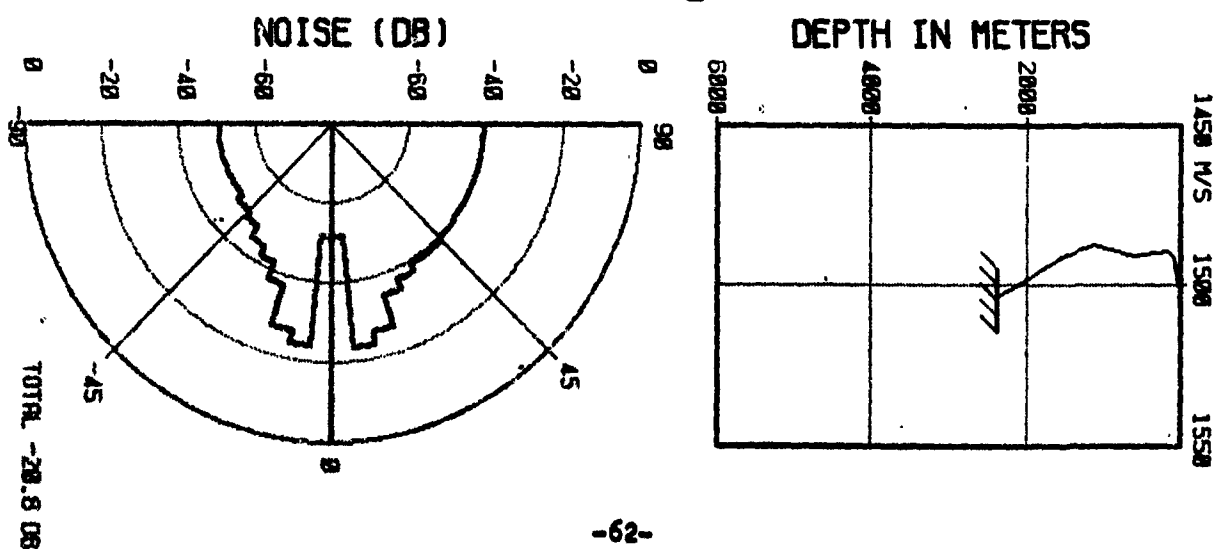
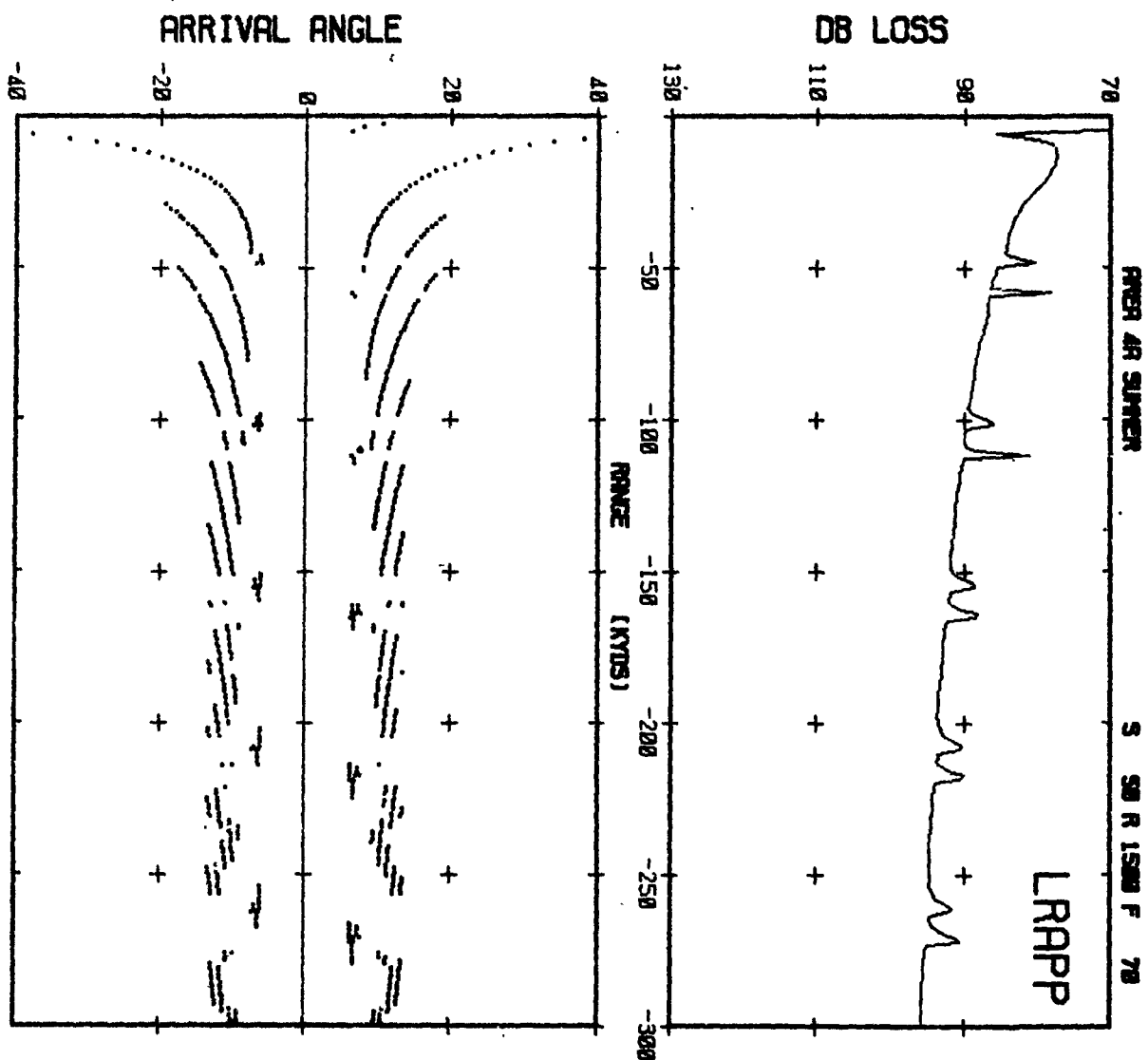
DEPTH IN METERS

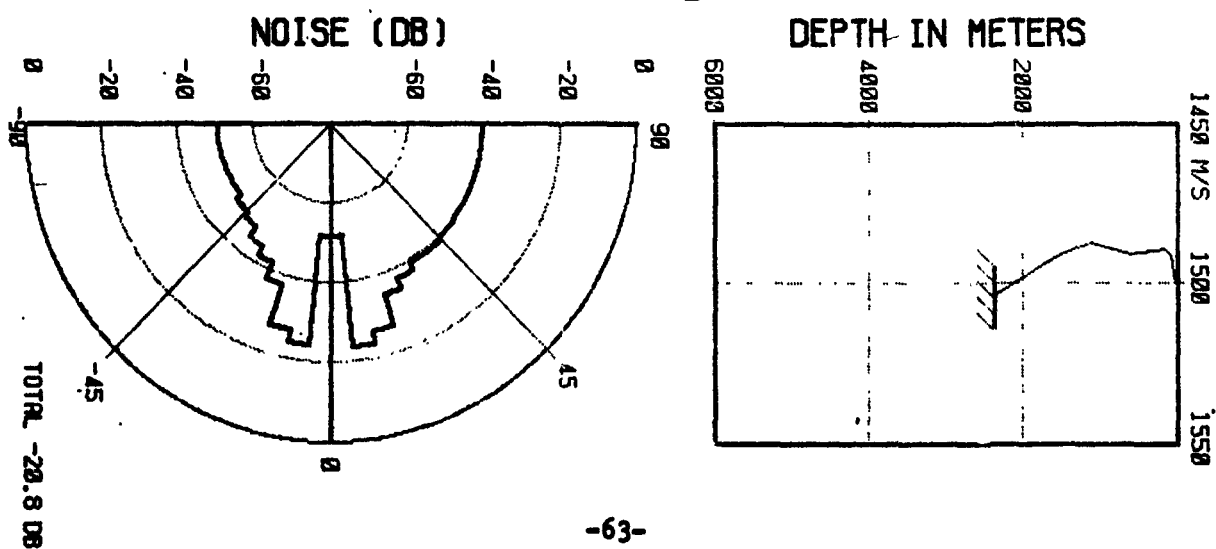
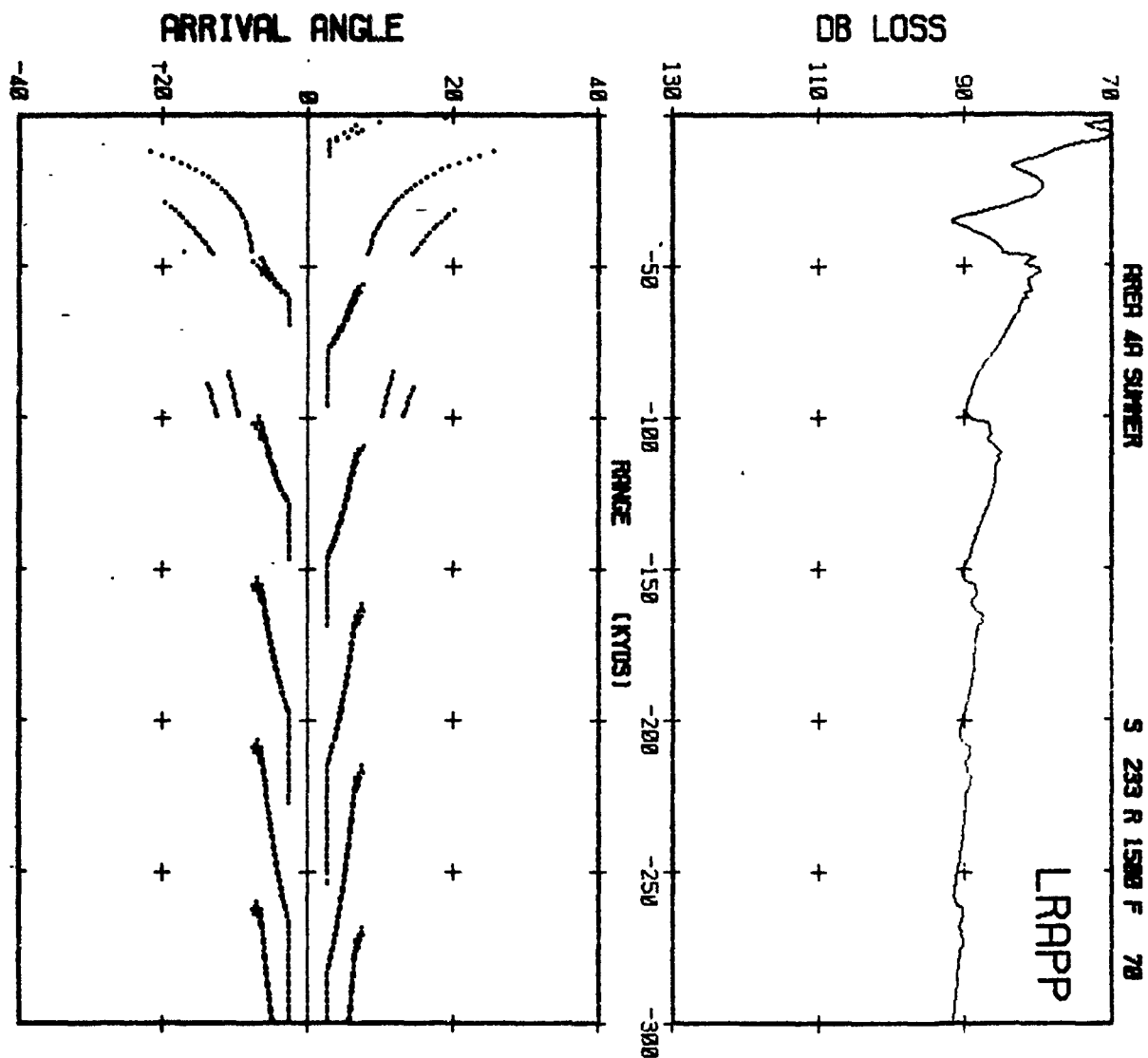


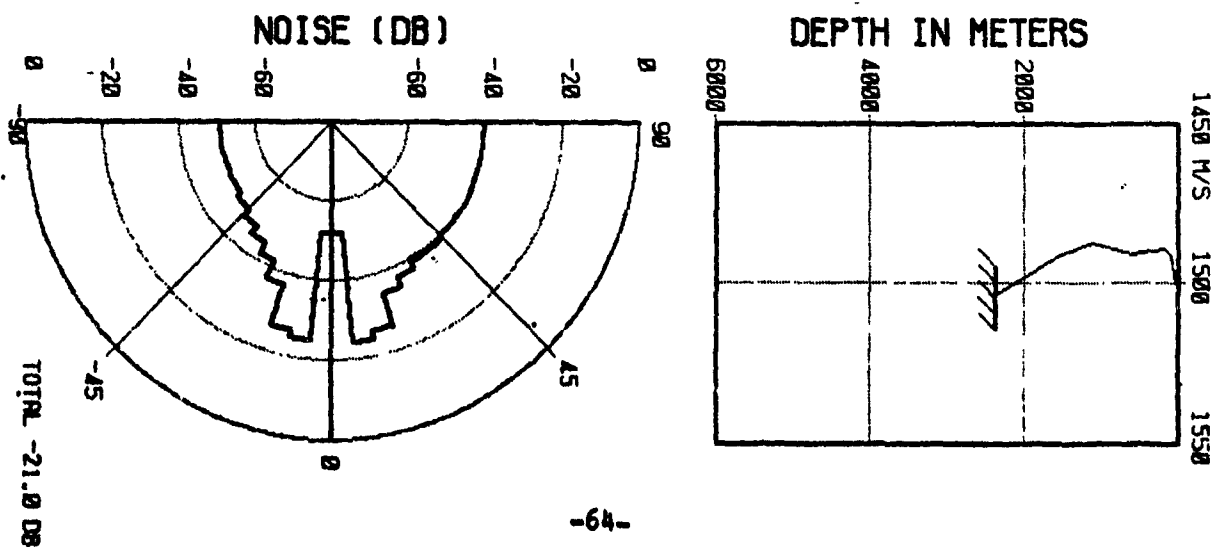
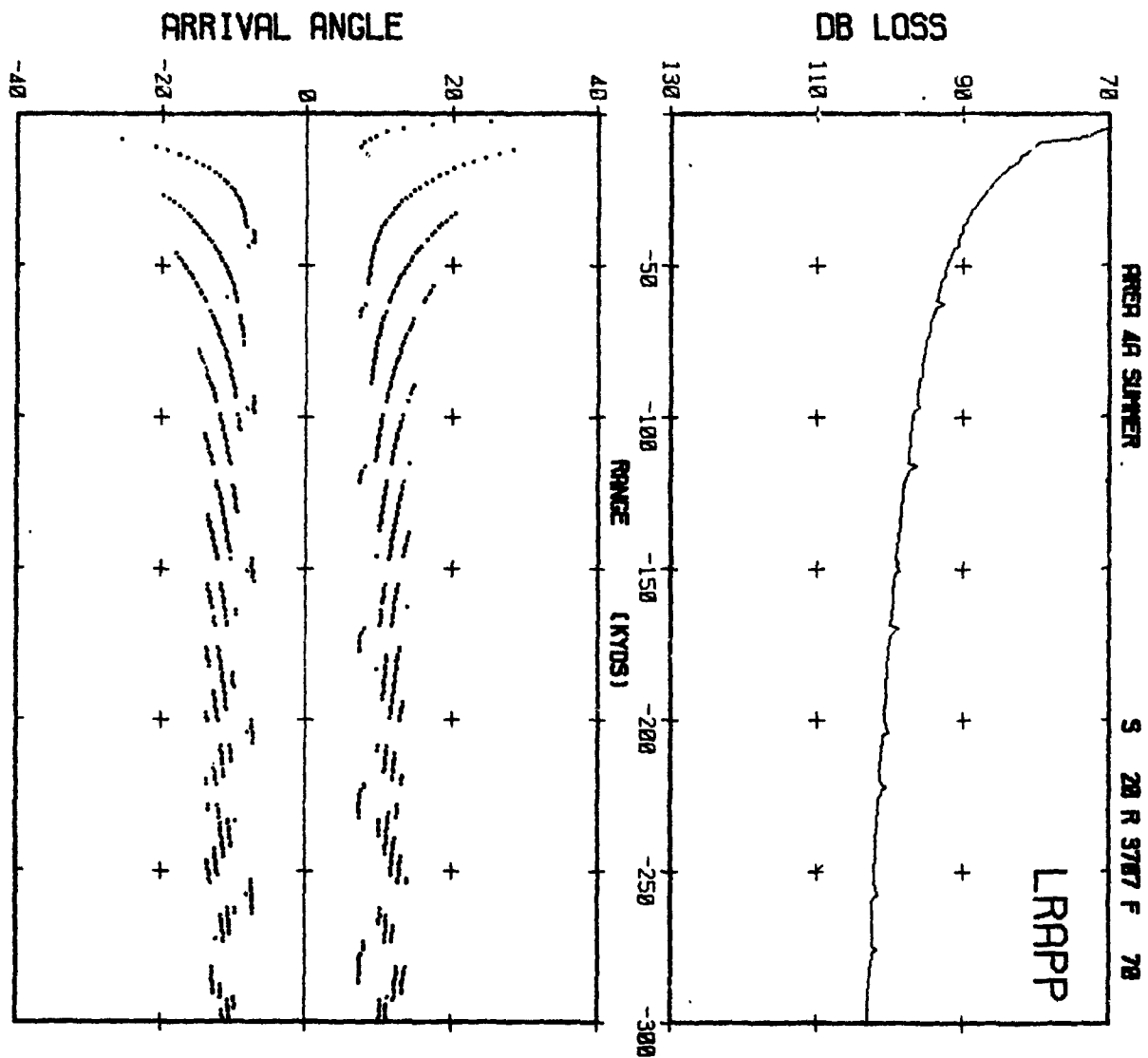
NOISE (DB)

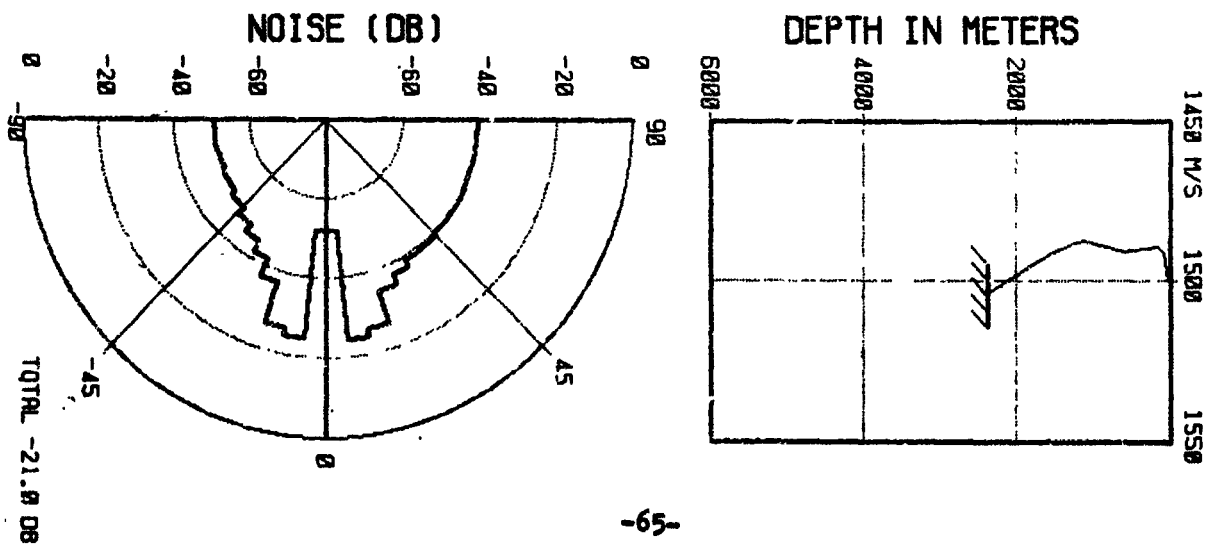
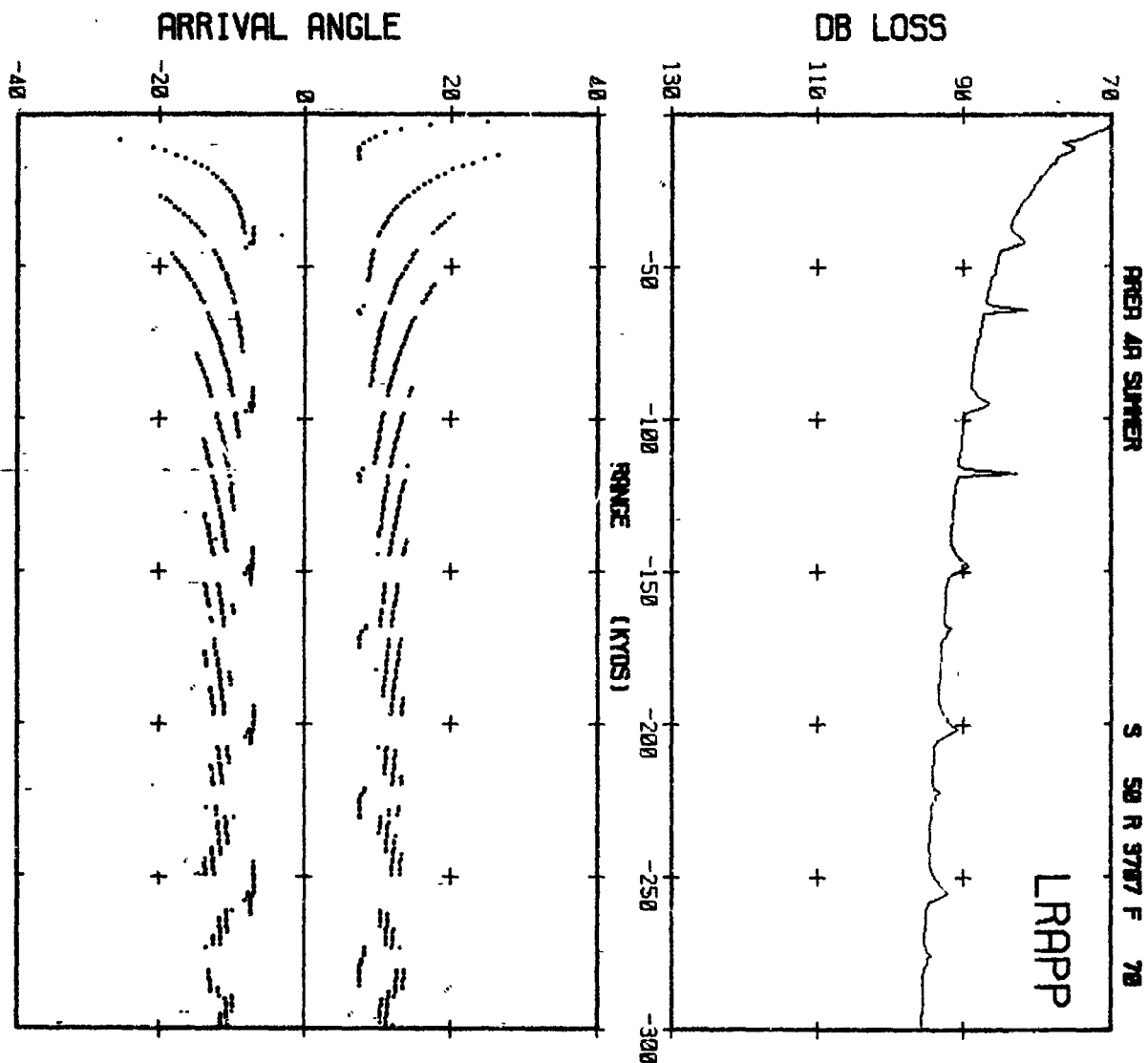


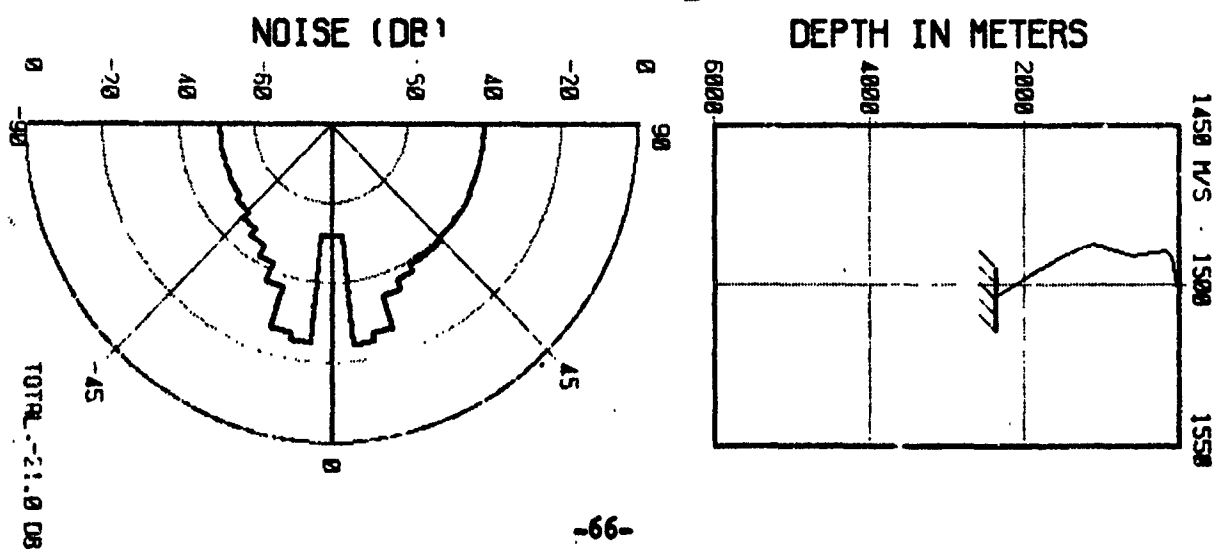
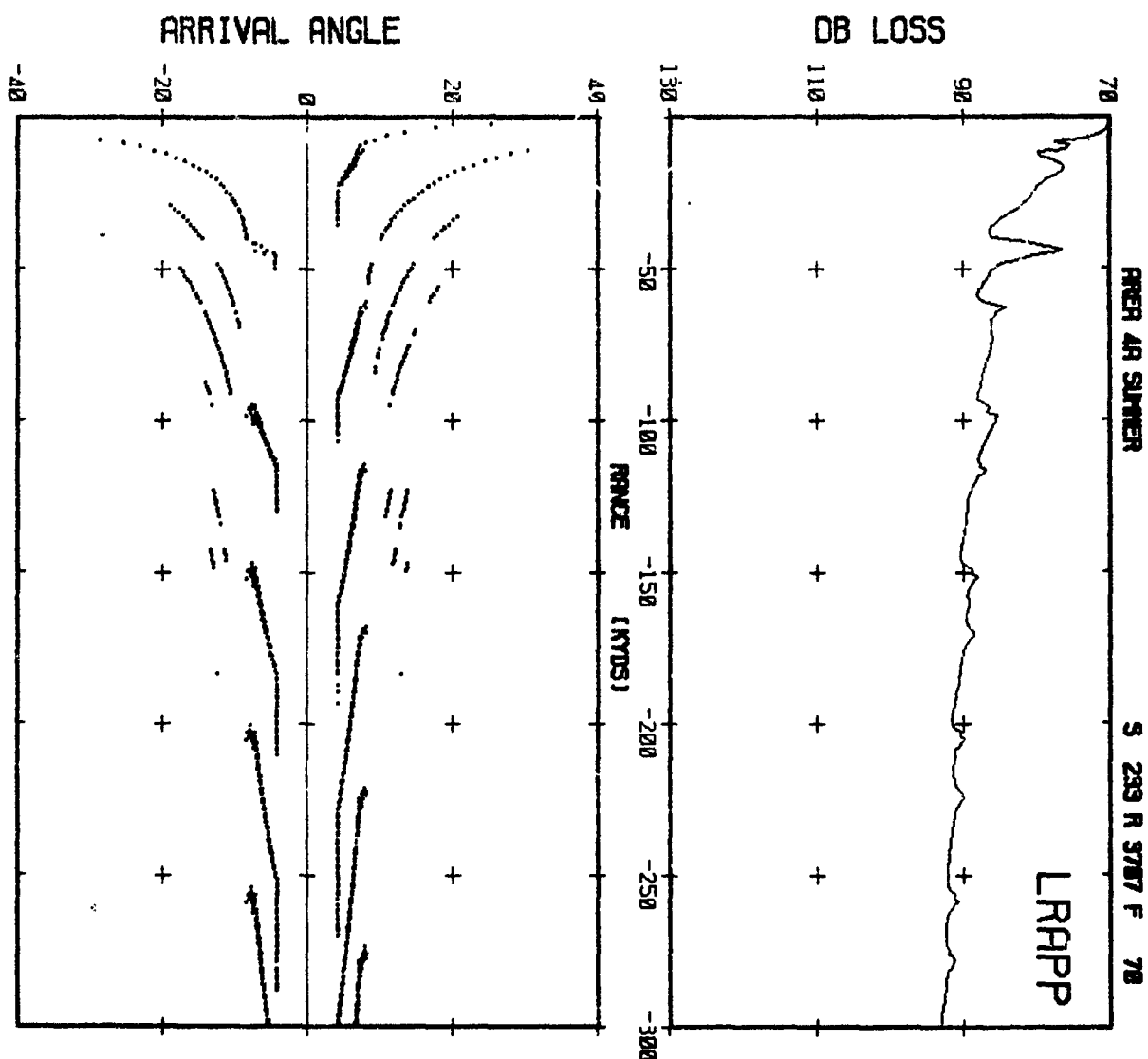
TOTAL -28.8 DB









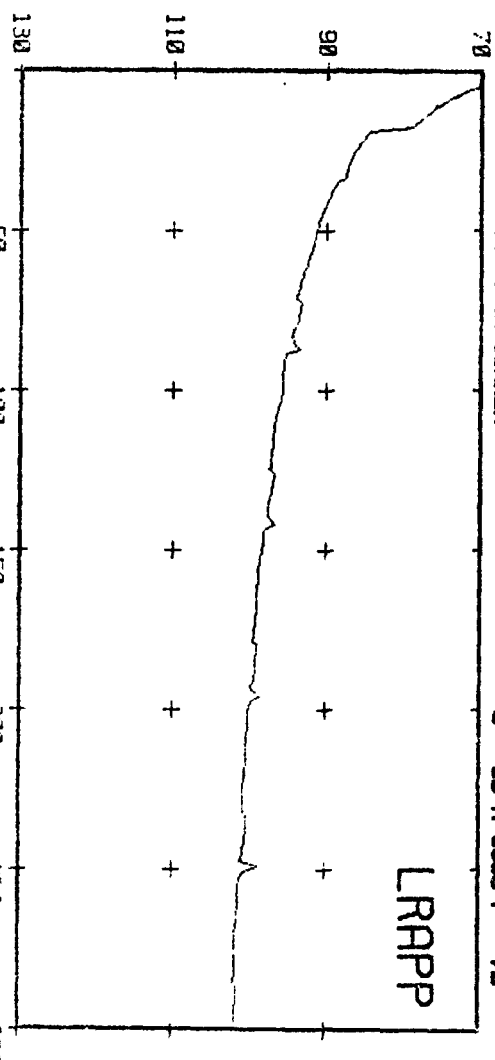


PRER 40 SUMMER

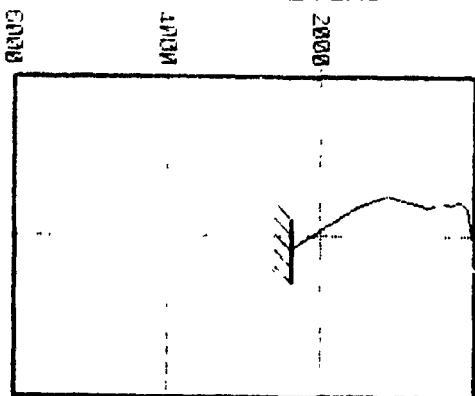
S 20 R 6956 F 74

1450 M/S 1500 1550

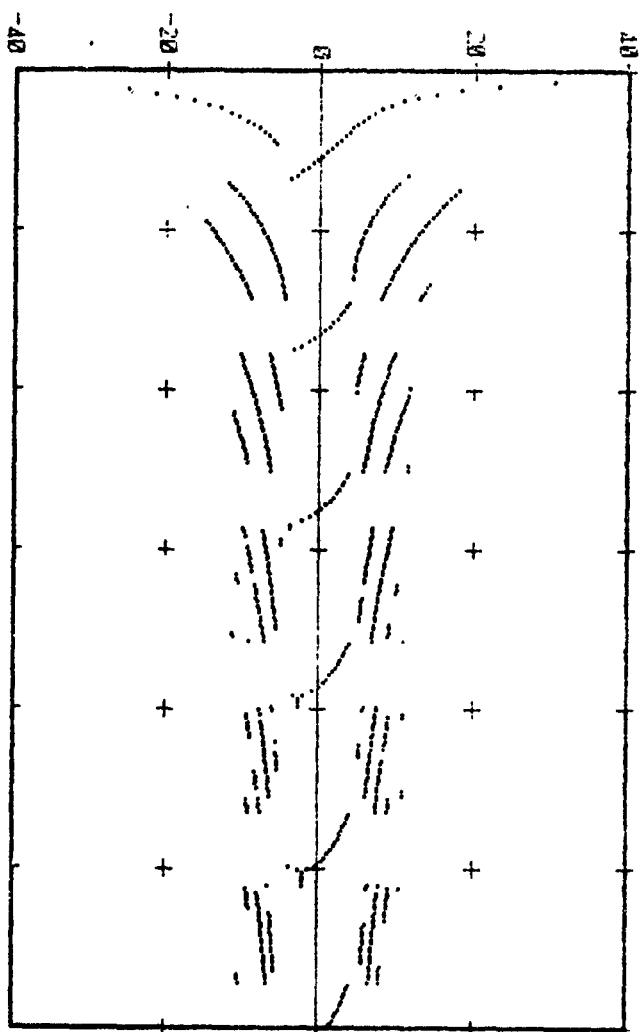
DB LOSS



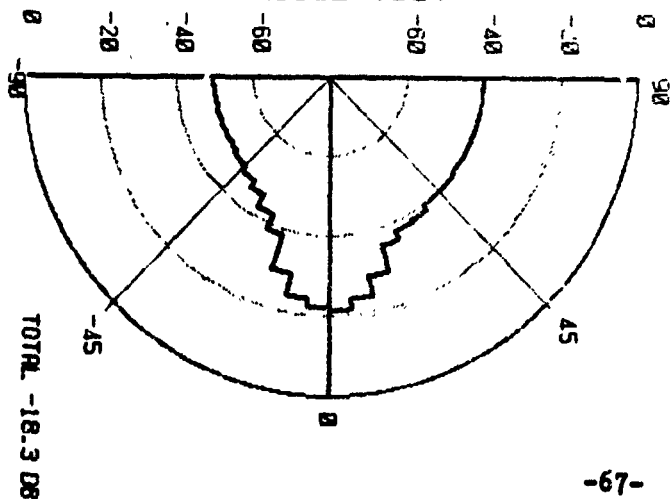
DEPTH IN METERS

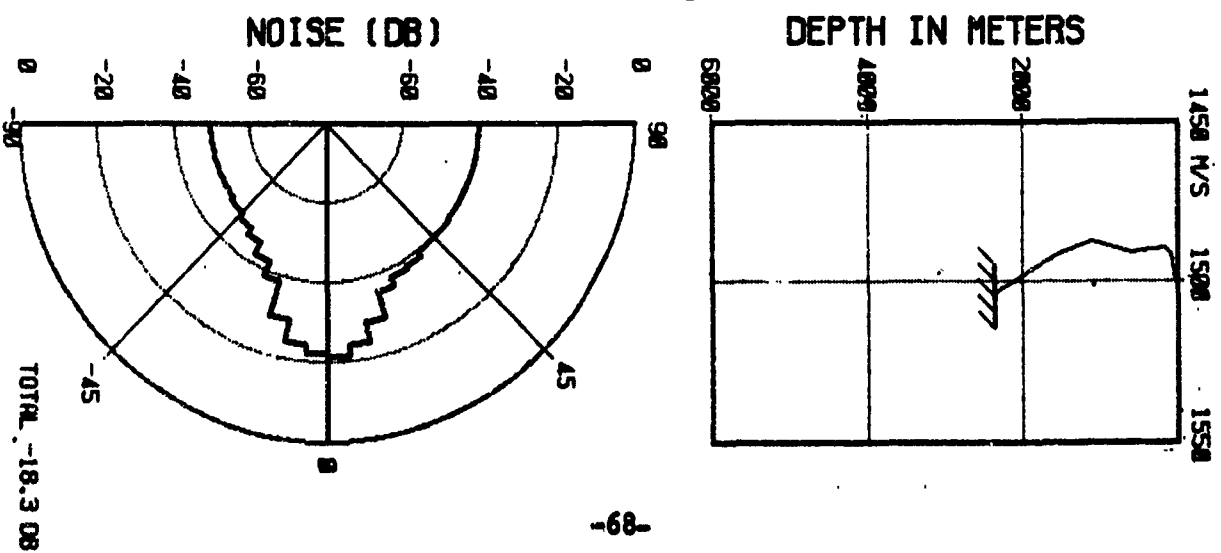
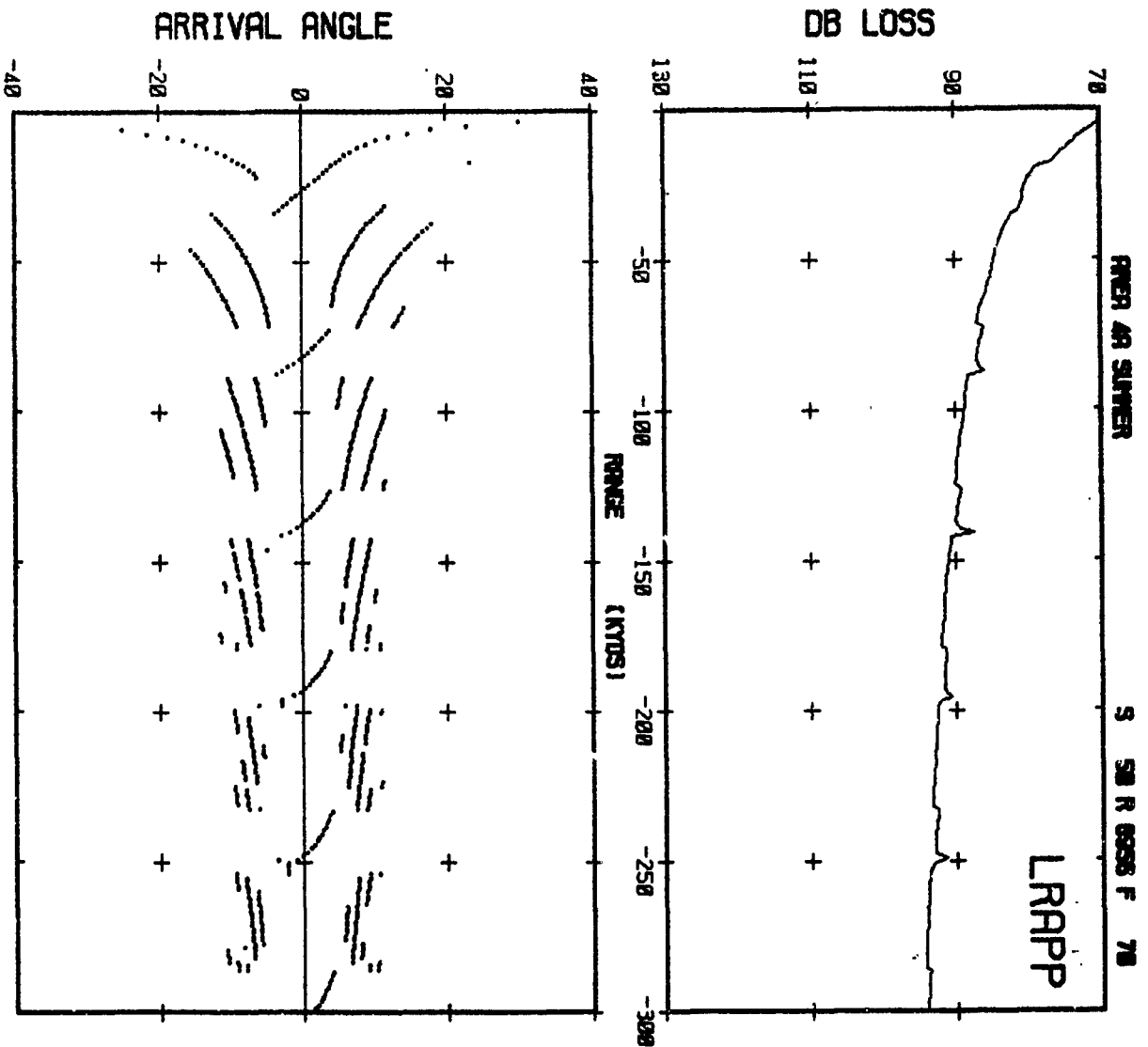


ARRIVAL ANGLE



NOISE (DB)



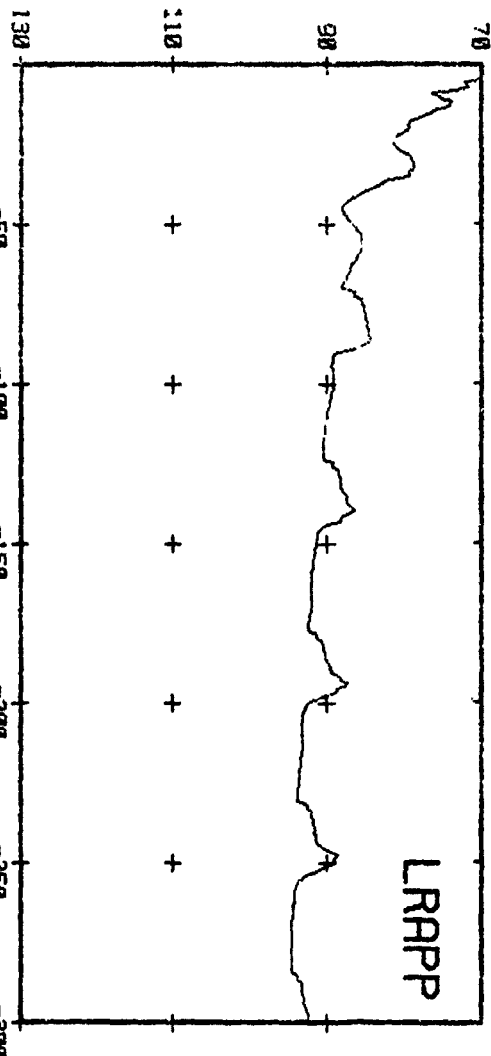


FRER 49 SUMER

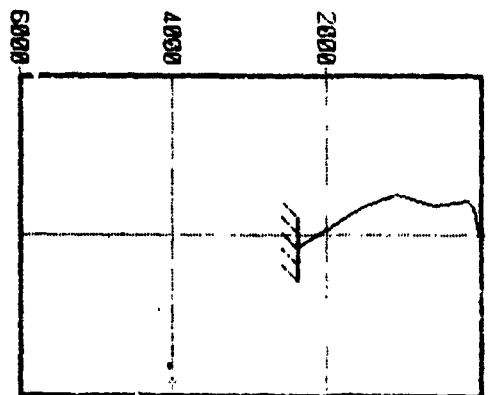
S 299 R 6956 F 70

1450 M/S 1500 1550

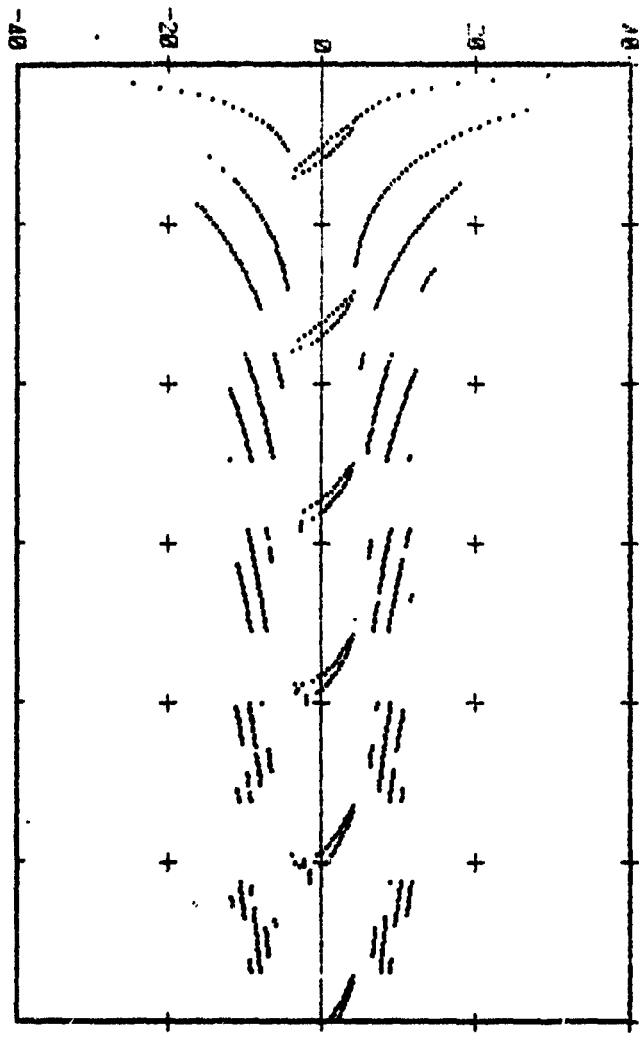
DB LOSS



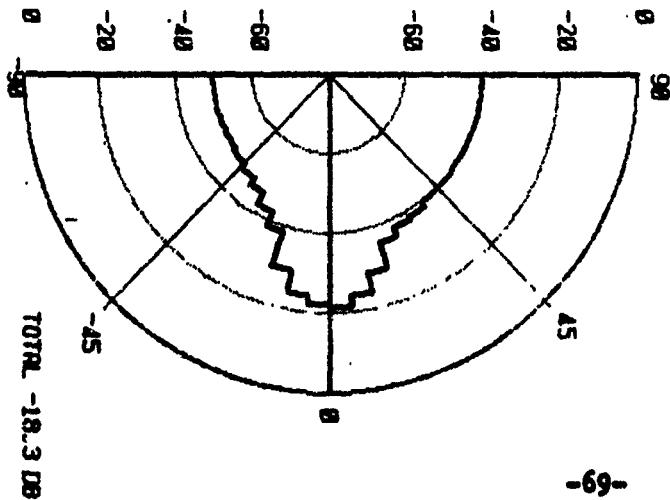
DEPTH IN METERS



ARRIVAL ANGLE



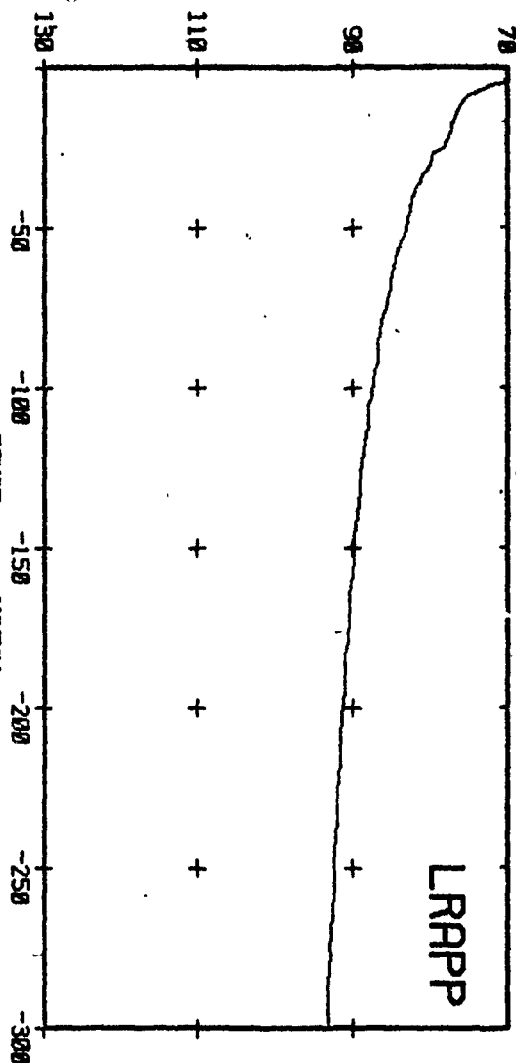
NOISE (DB)



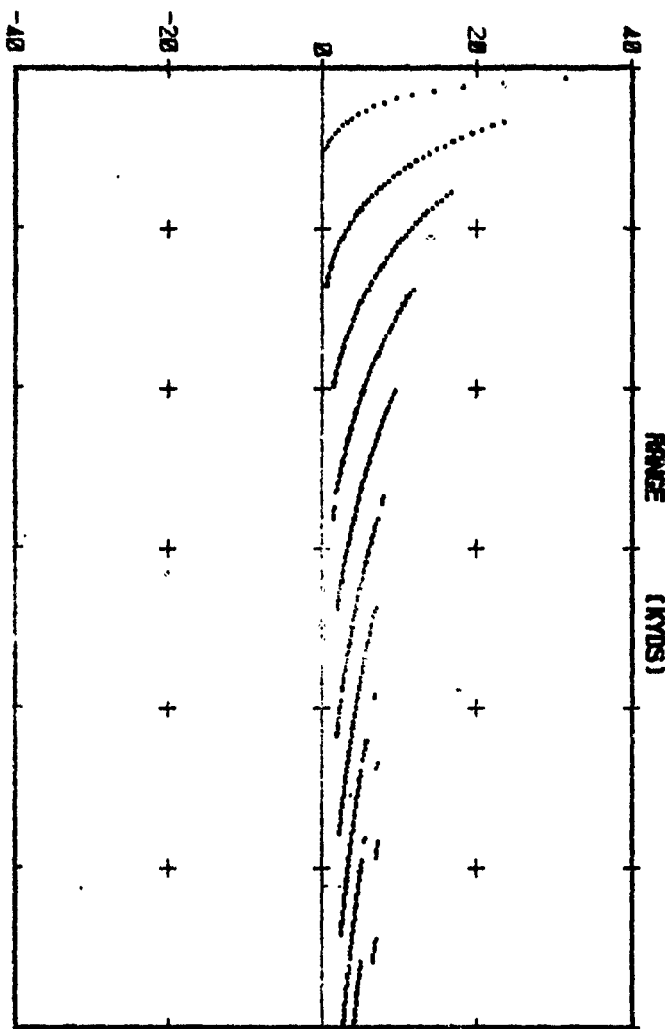
FROM AIR SURVEY

S 50 R 7700 F 70

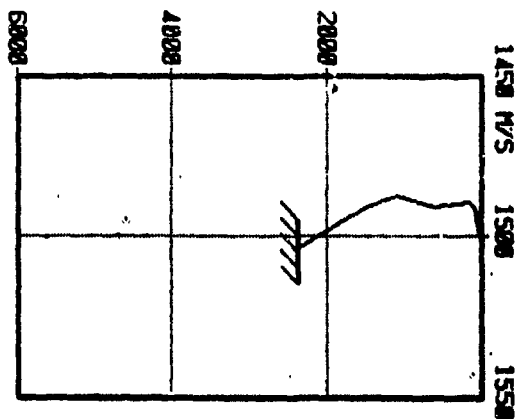
DB LOSS



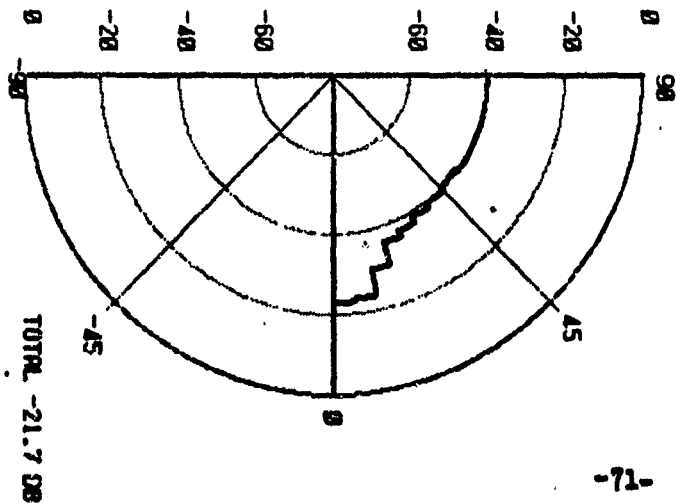
ARRIVAL ANGLE

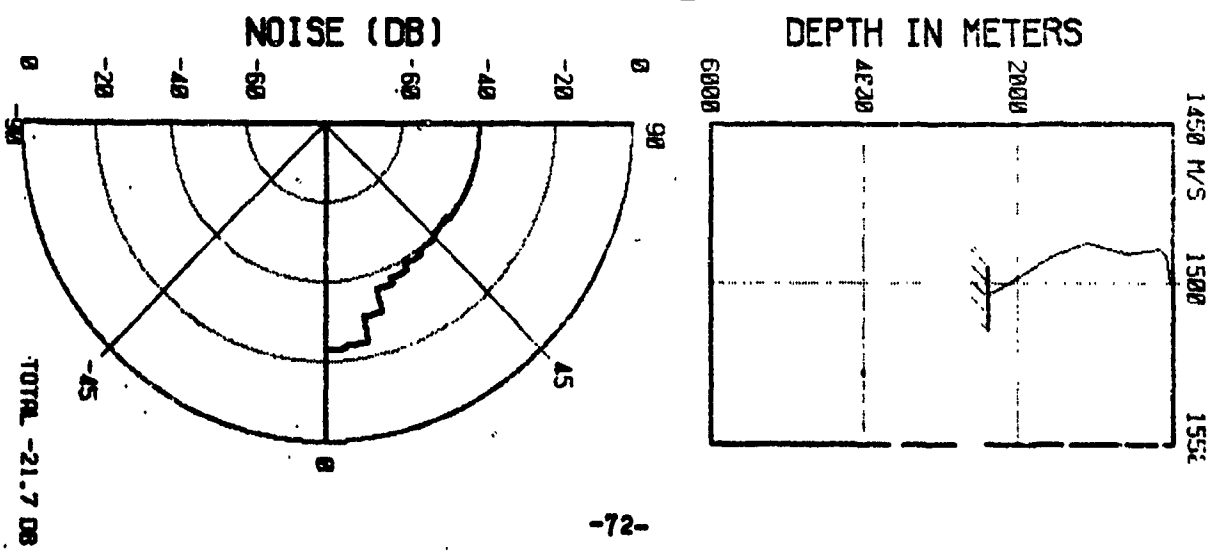
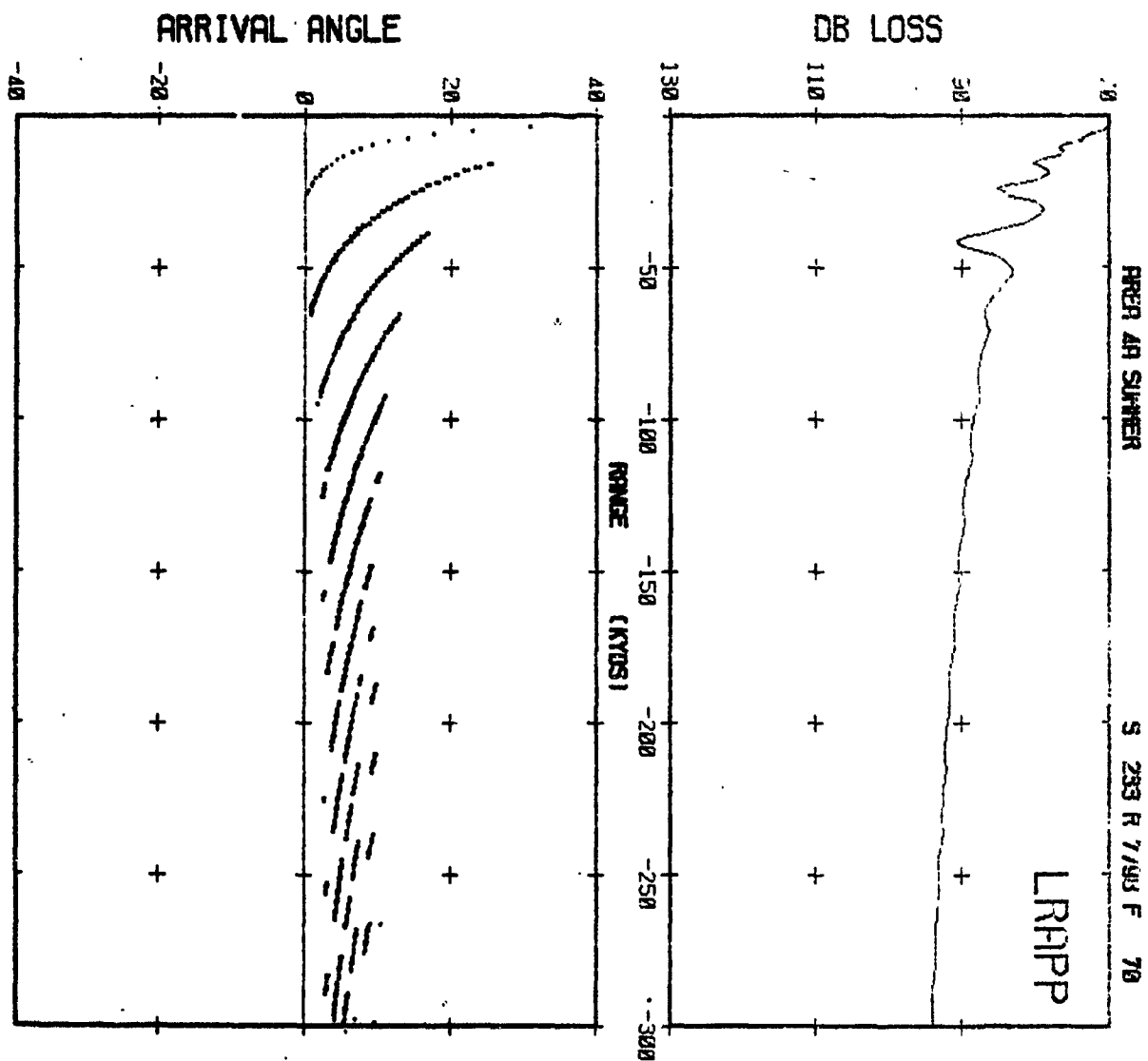


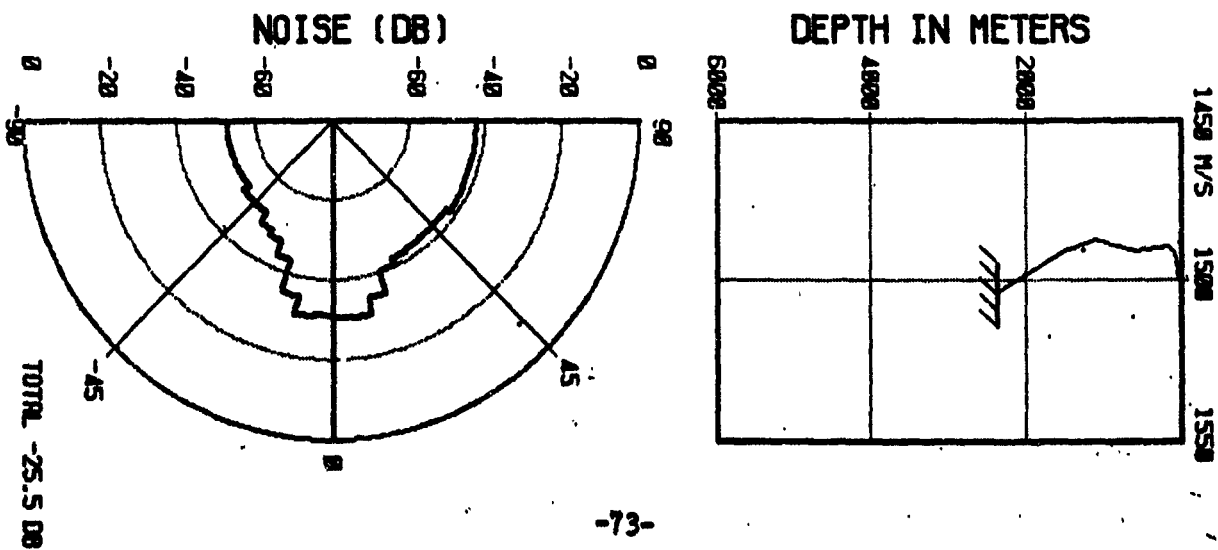
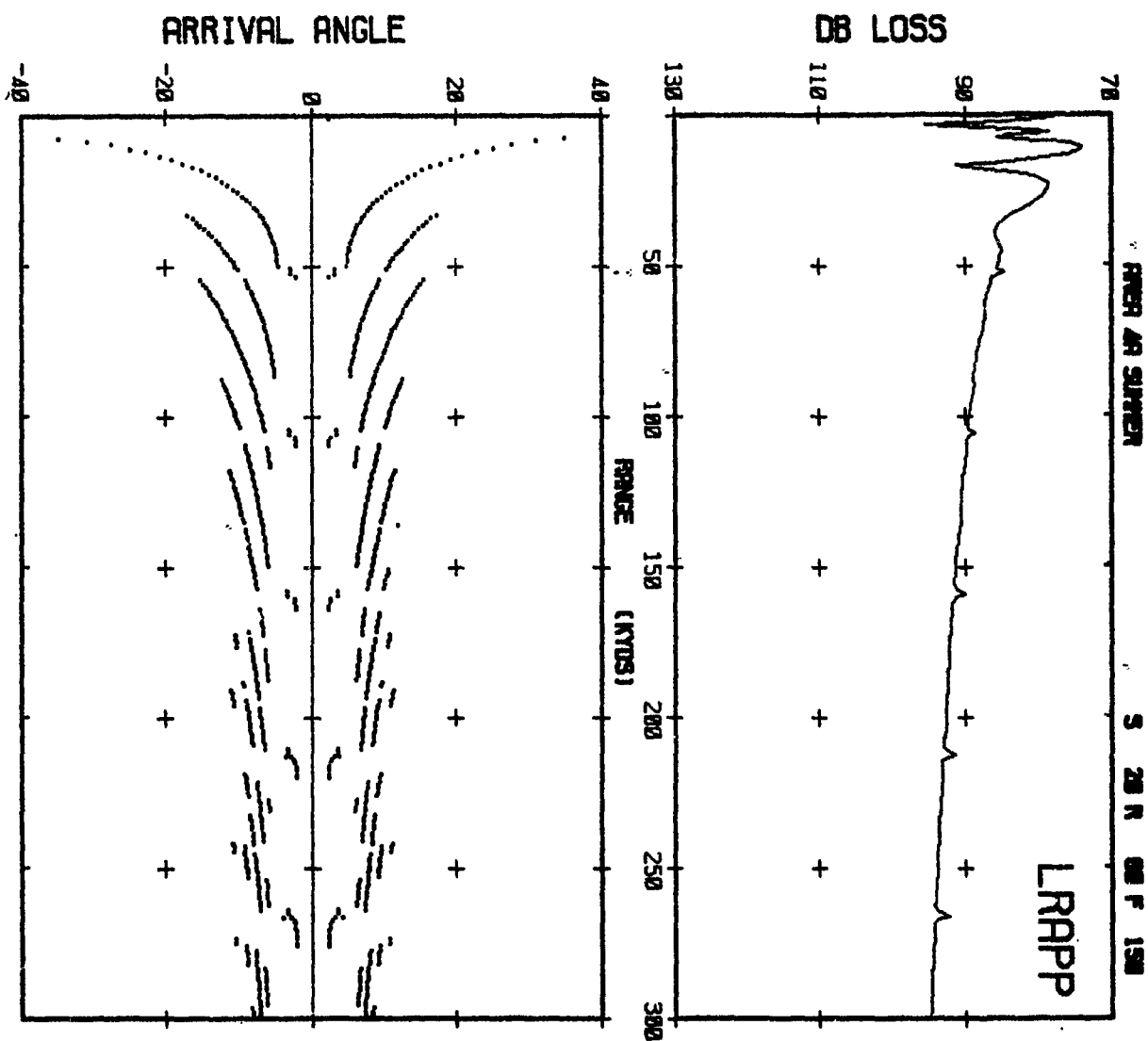
DEPTH IN METERS

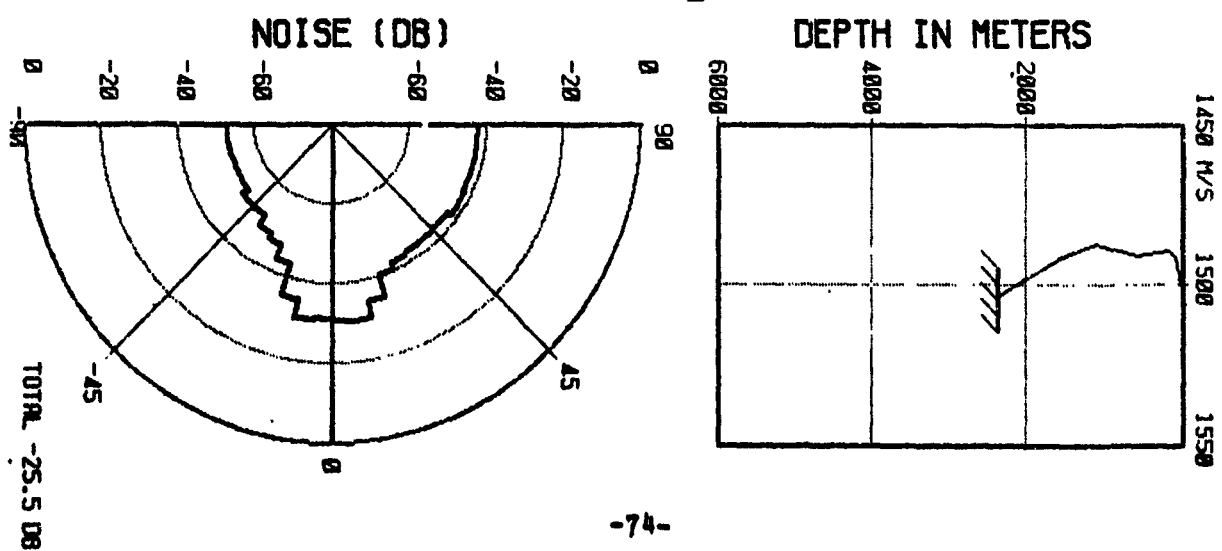
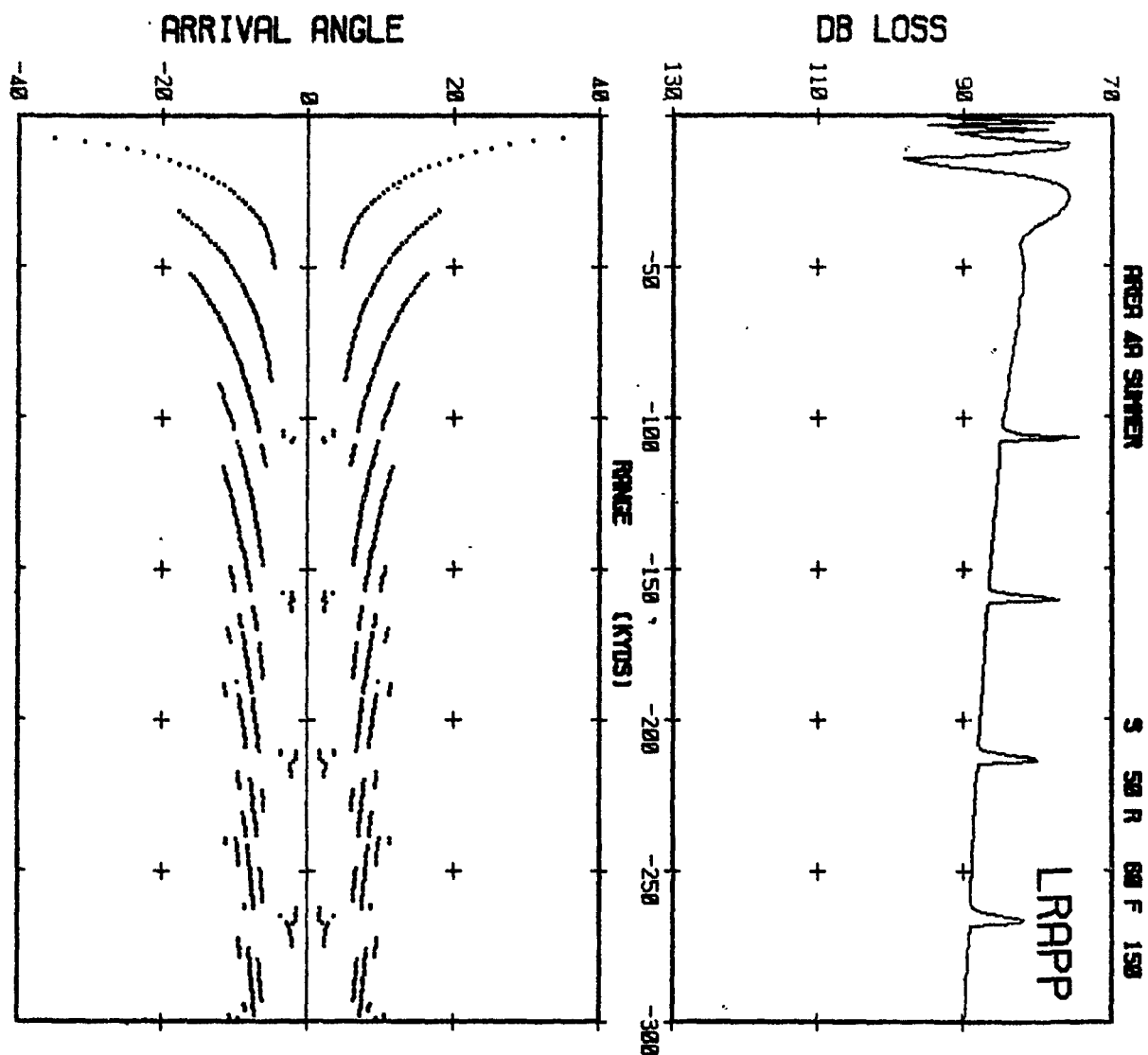


NOISE (DB)







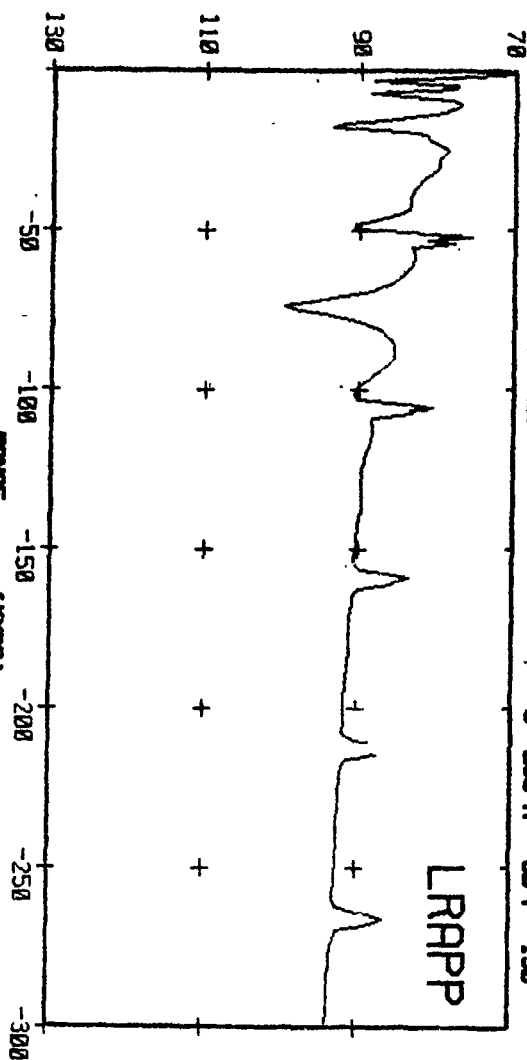


PRER AP SUMMER

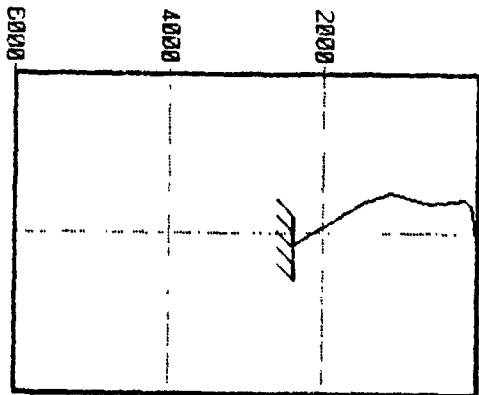
S 233 R 00 F 150

1450 M/S 1500 1550

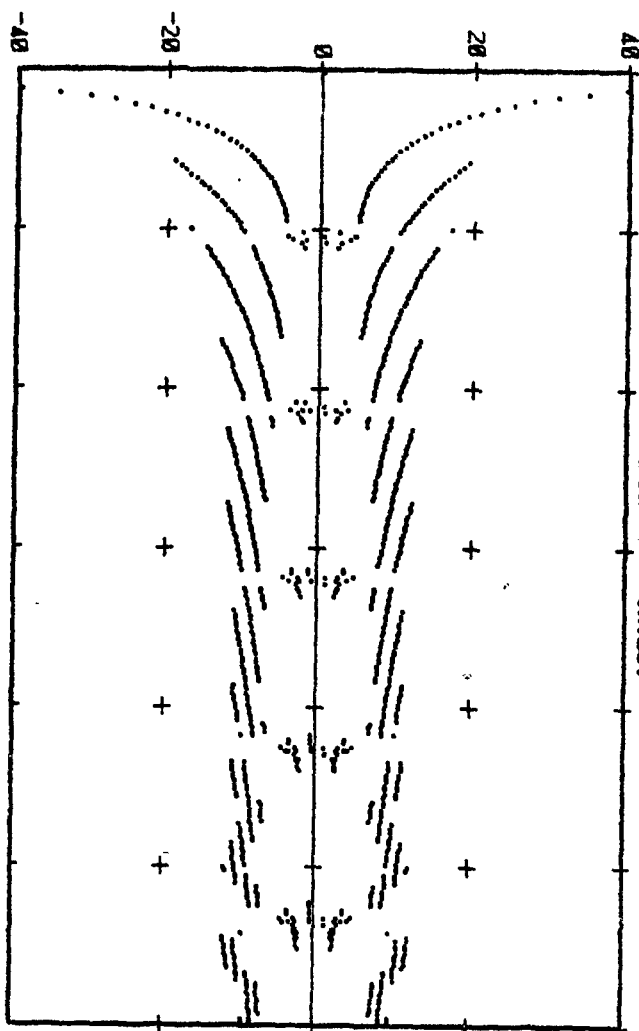
DB LOSS



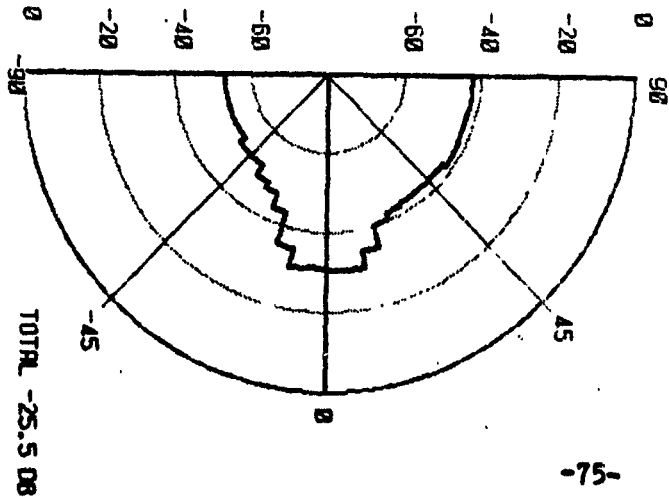
DEPTH IN METERS

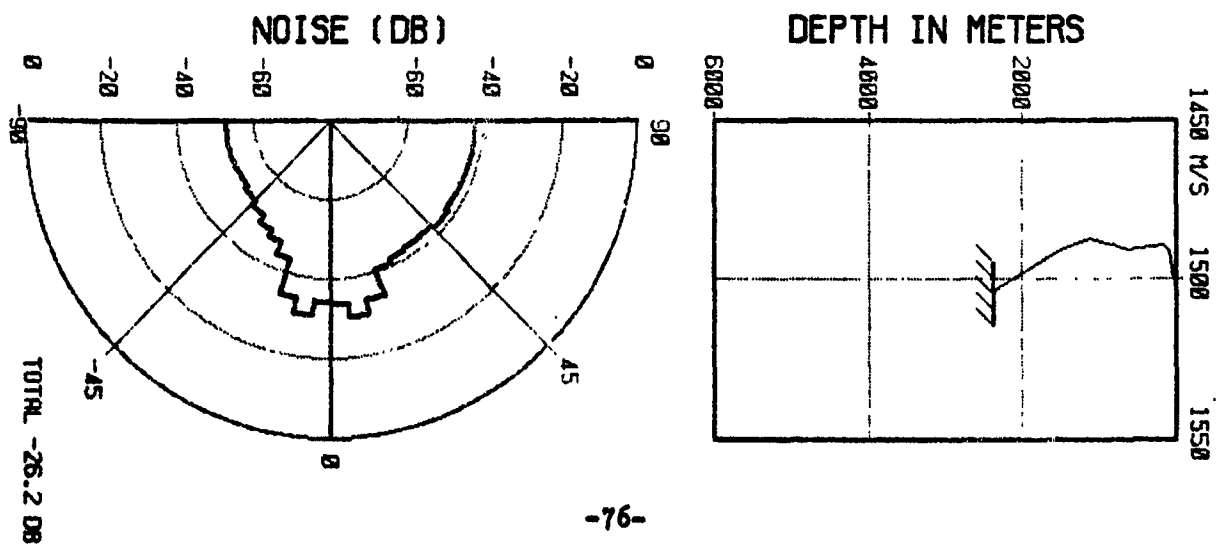
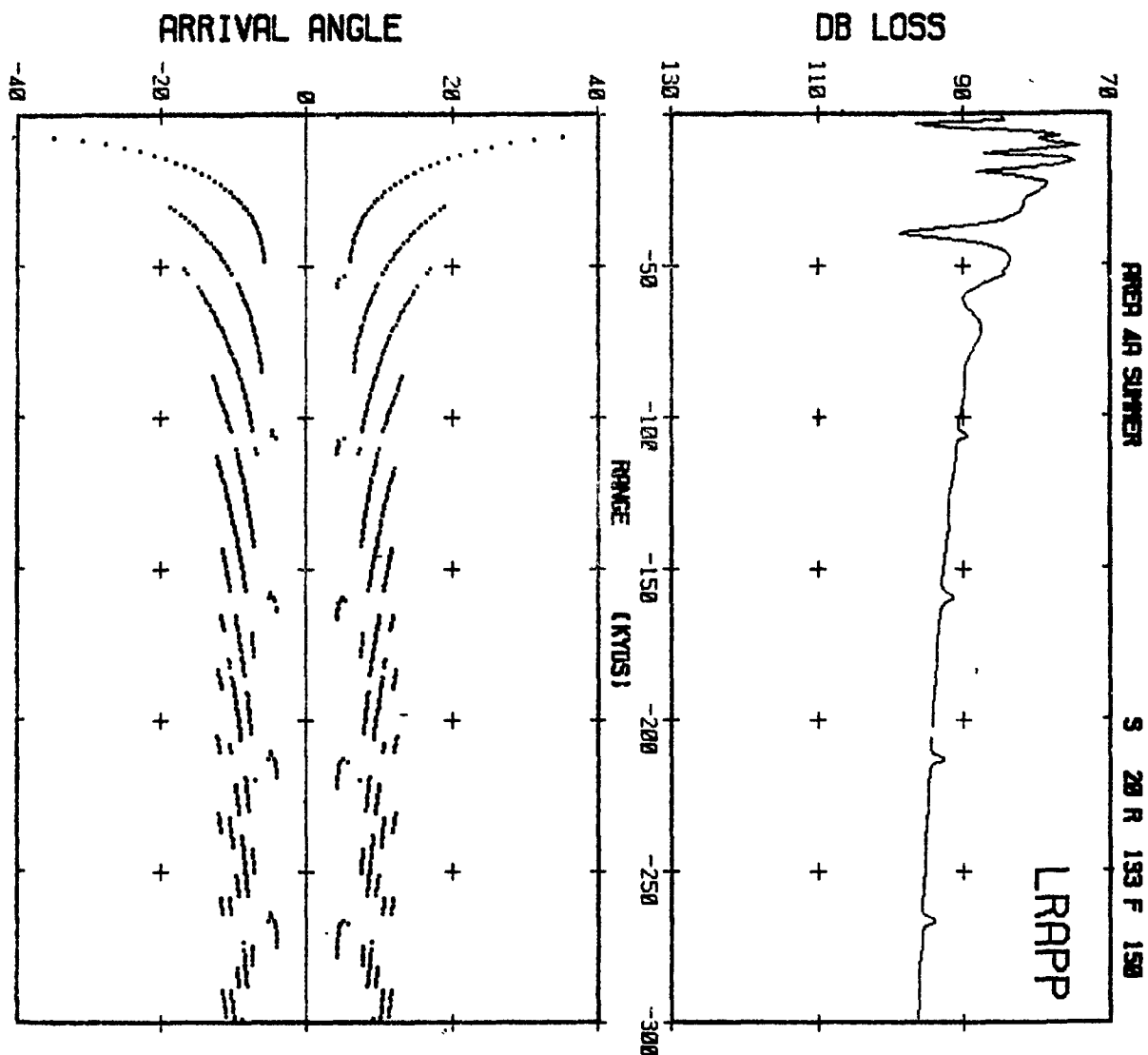


ARRIVAL ANGLE



NOISE (DB)

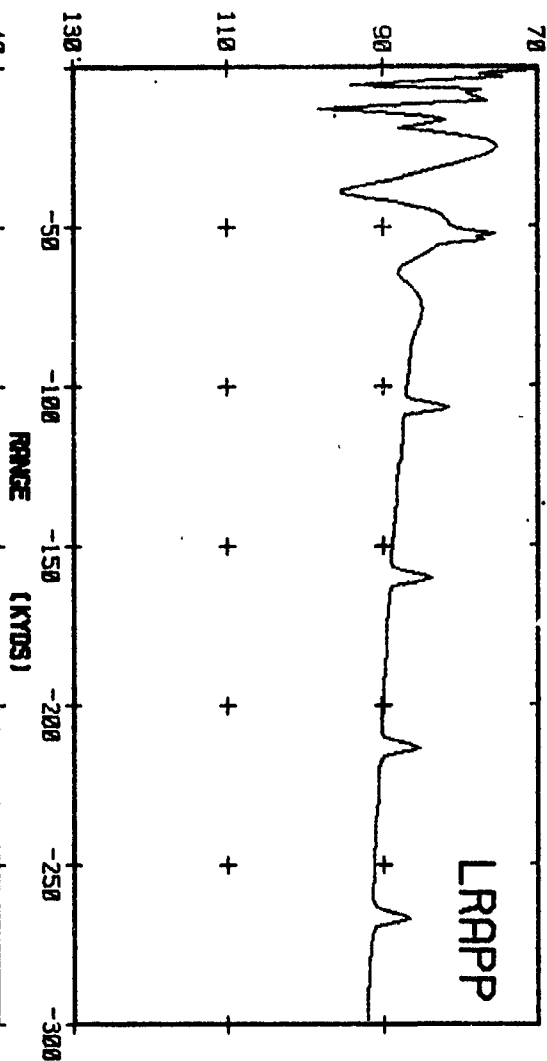




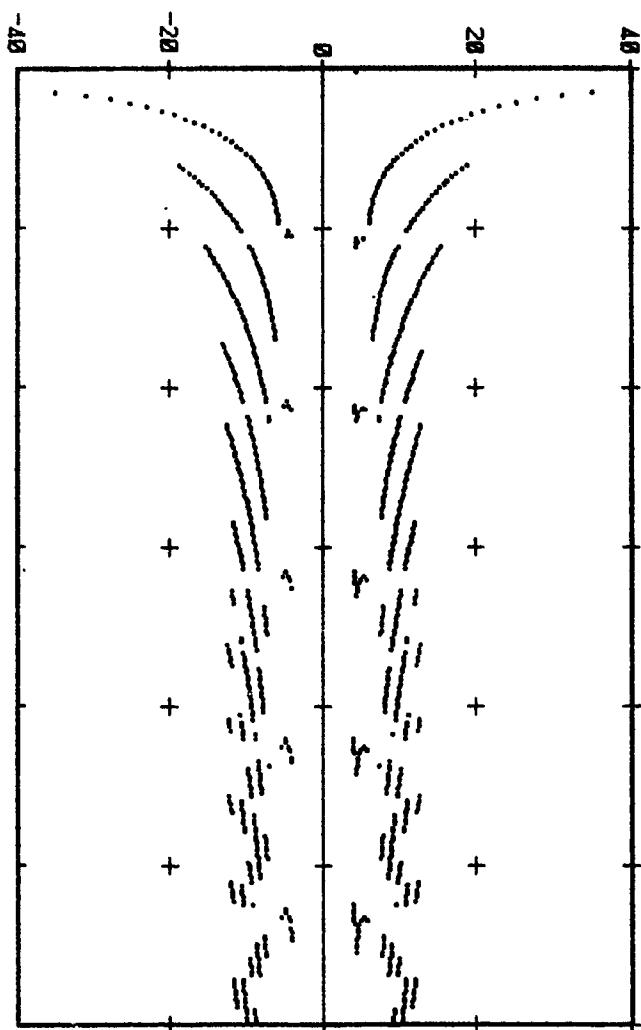
REVER 40 SUMMER

S 50 R 139 F 150

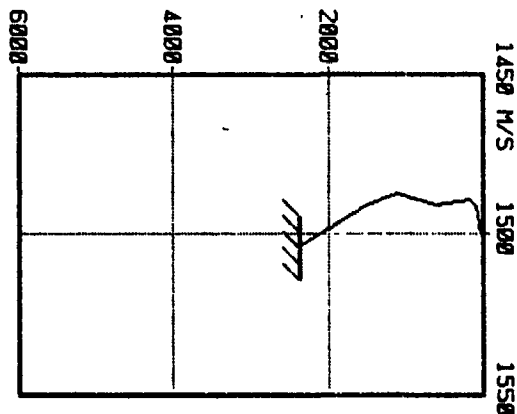
DB LOSS



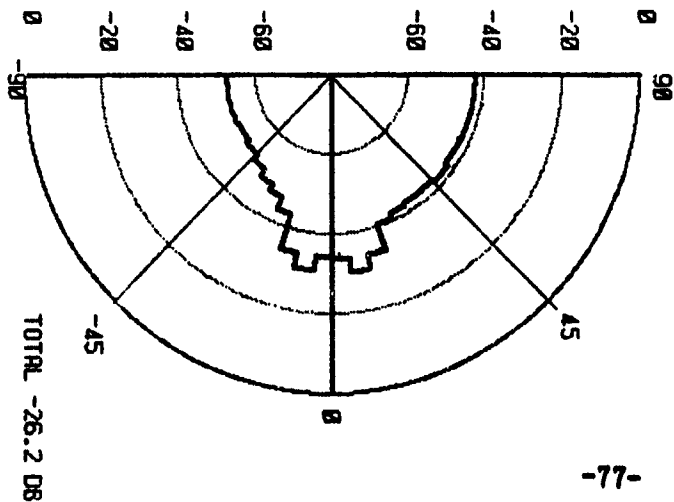
ARRIVAL ANGLE

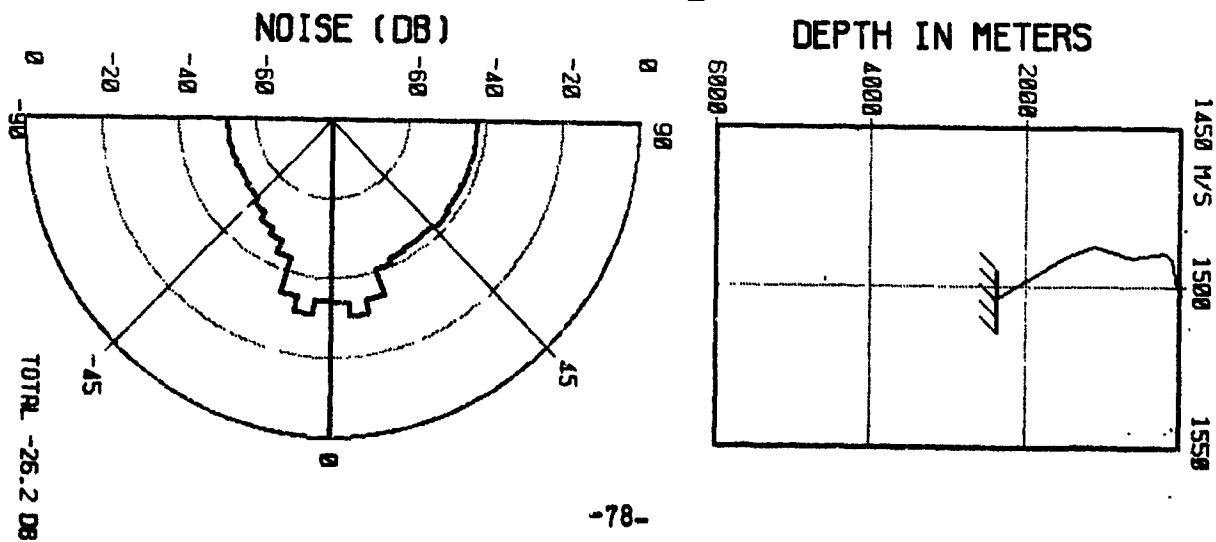
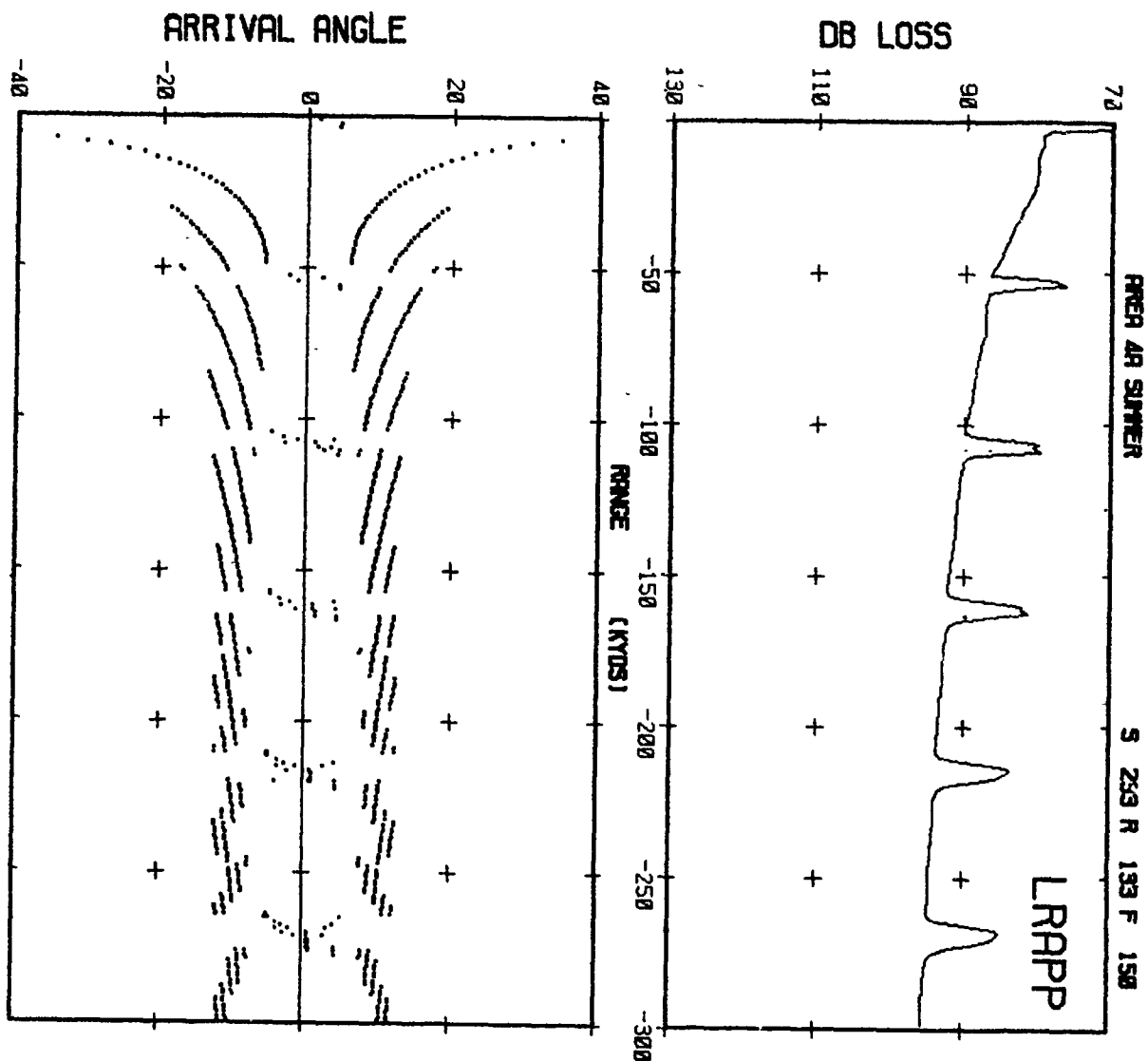


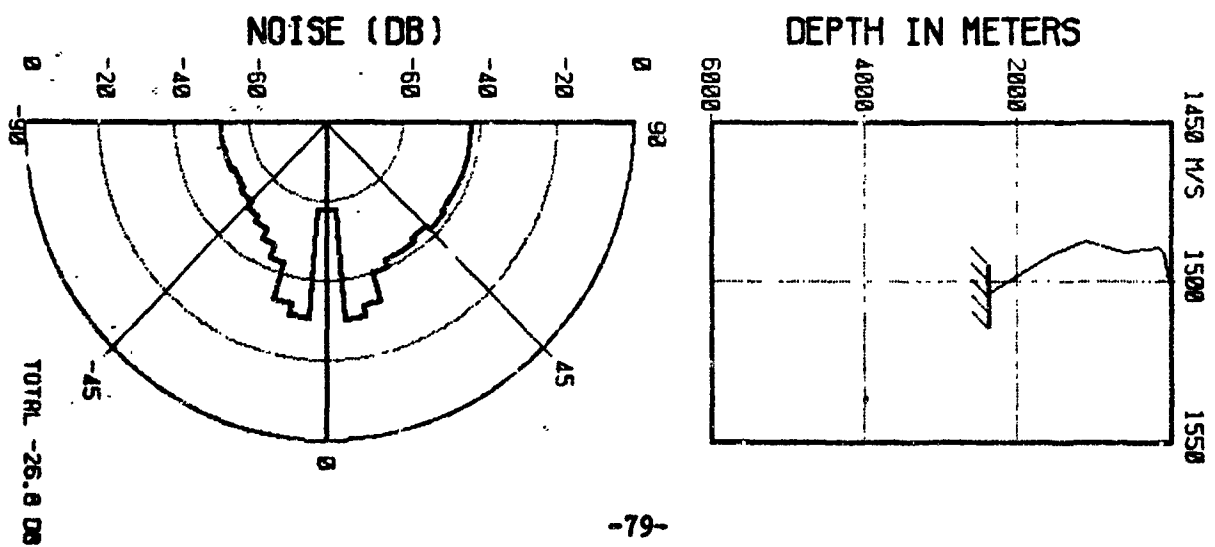
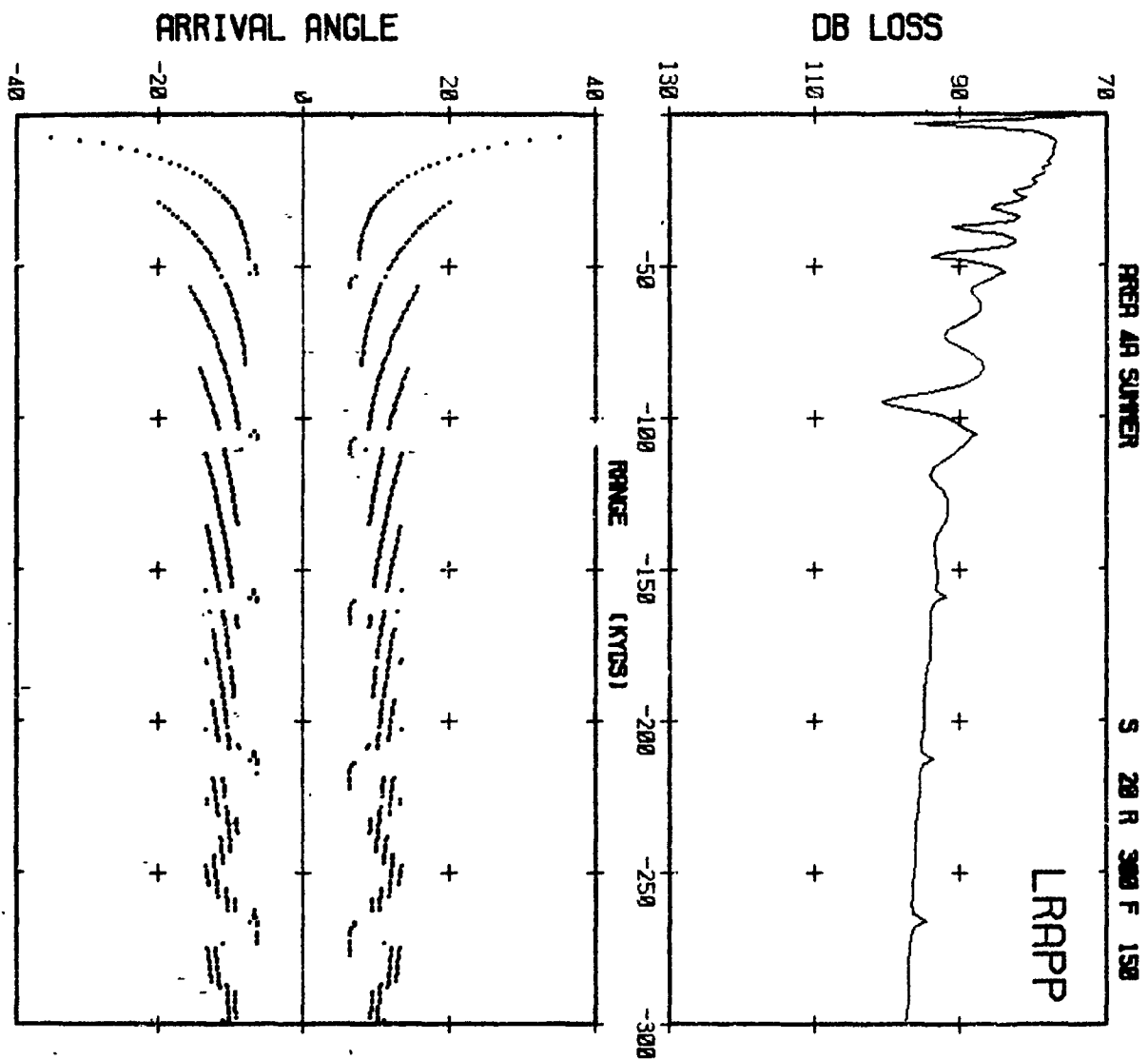
DEPTH IN METERS

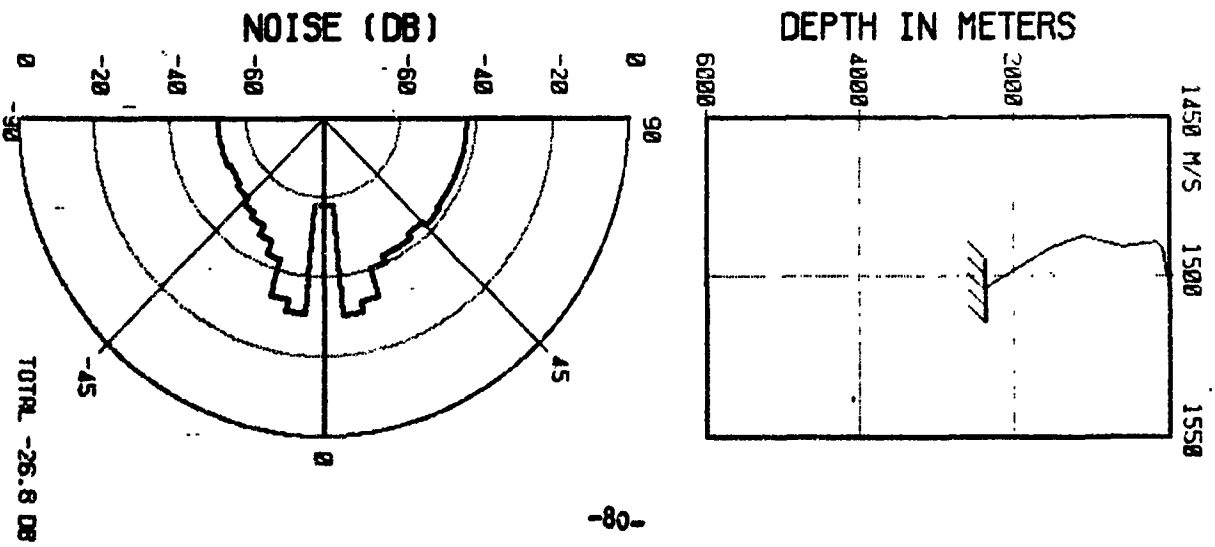
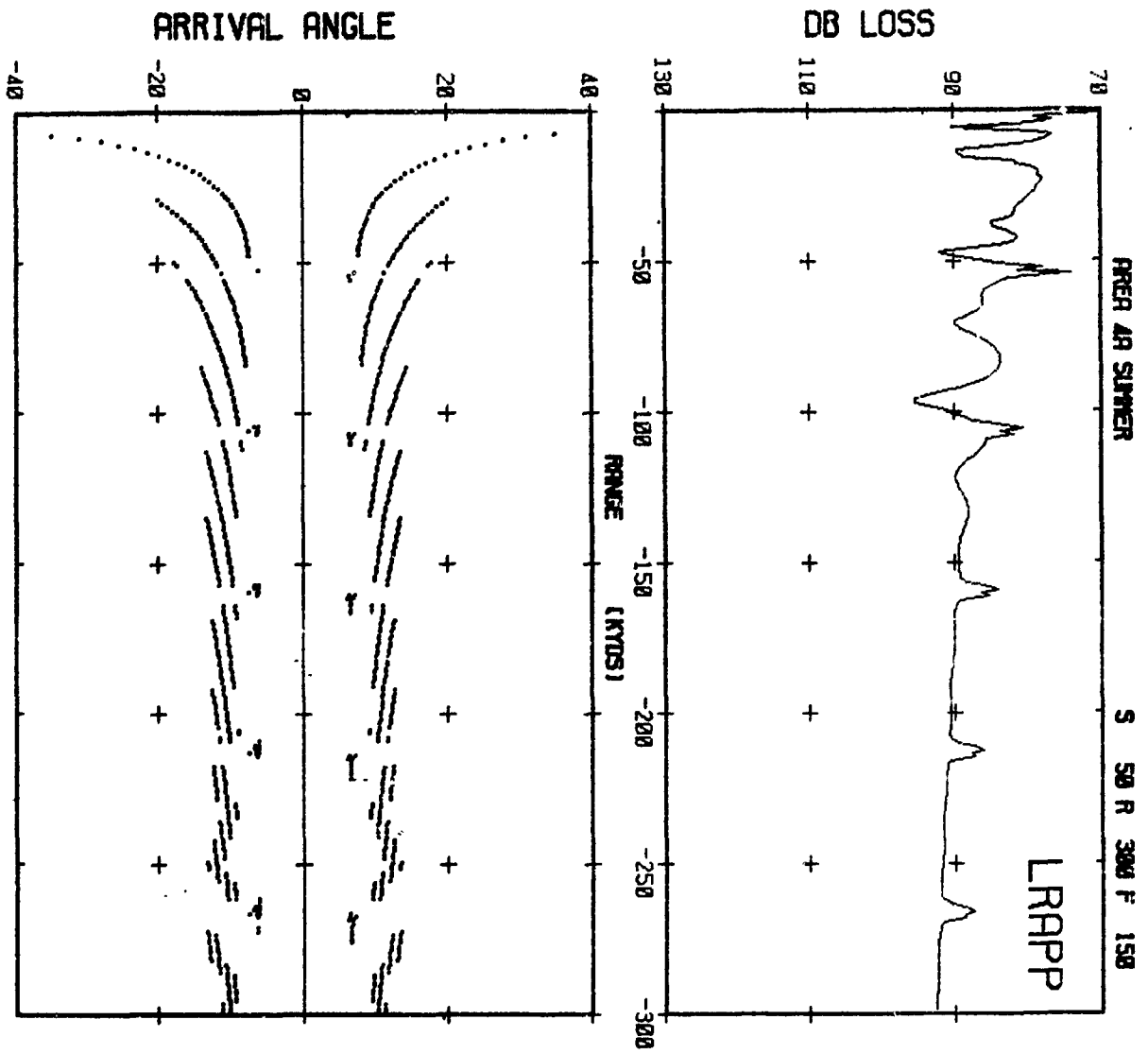


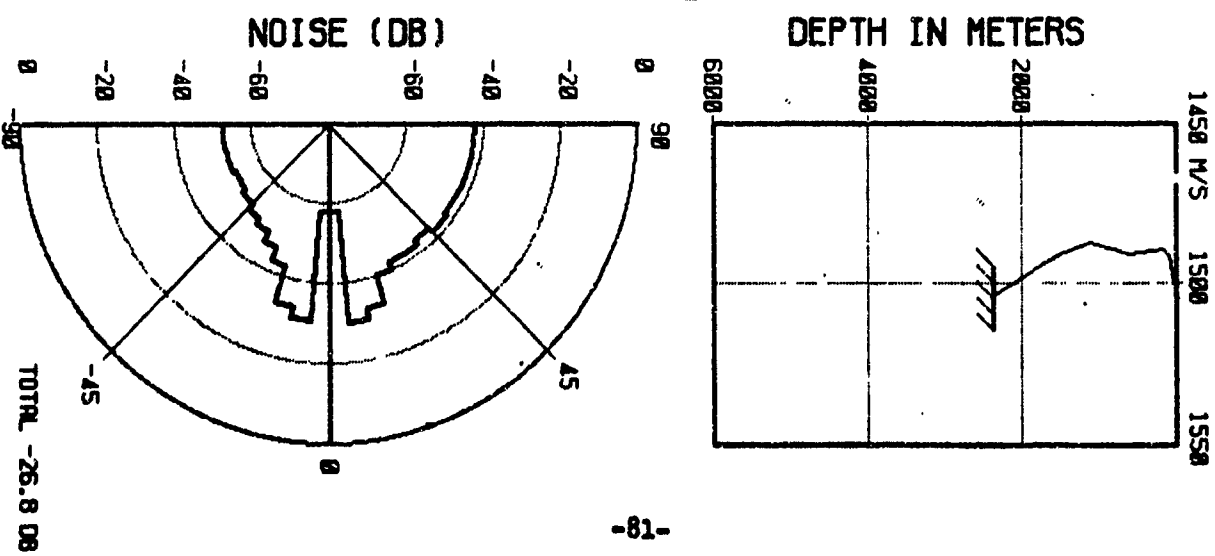
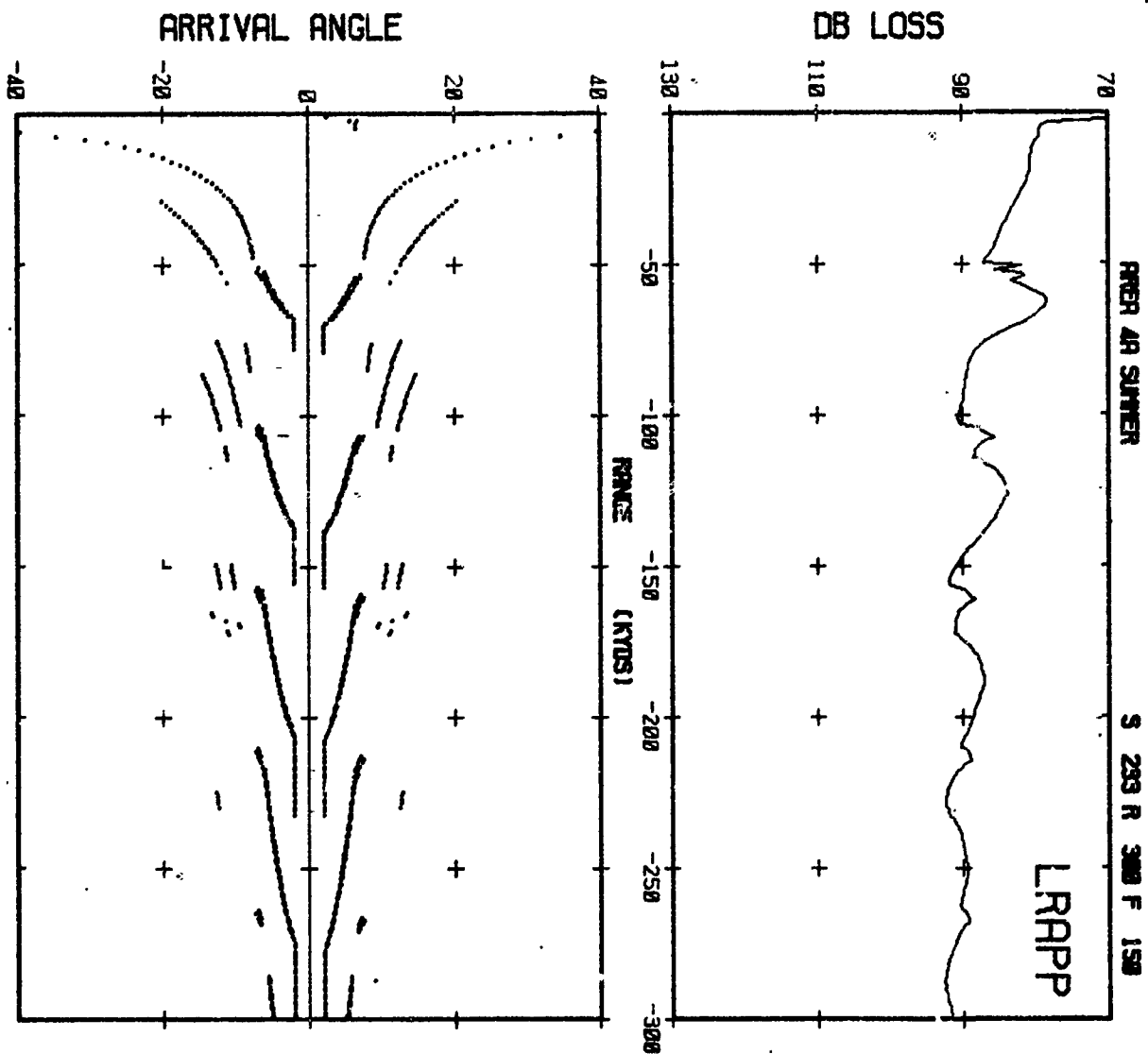
NOISE (DB)

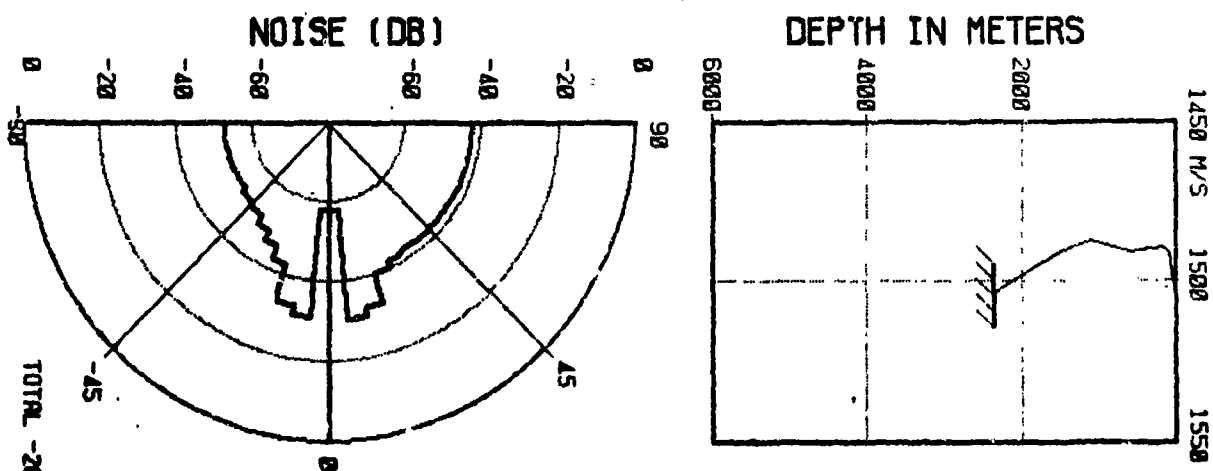
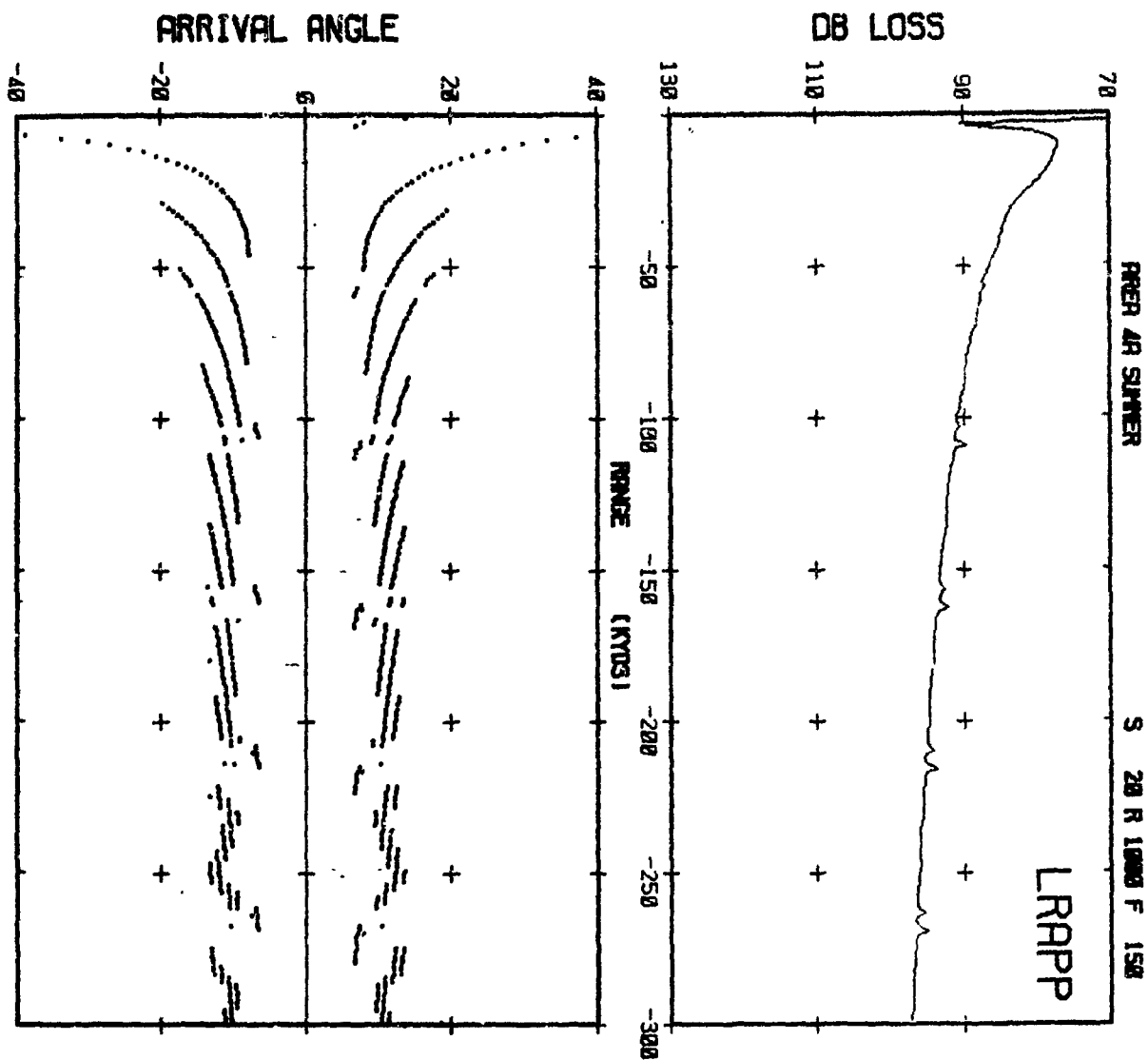


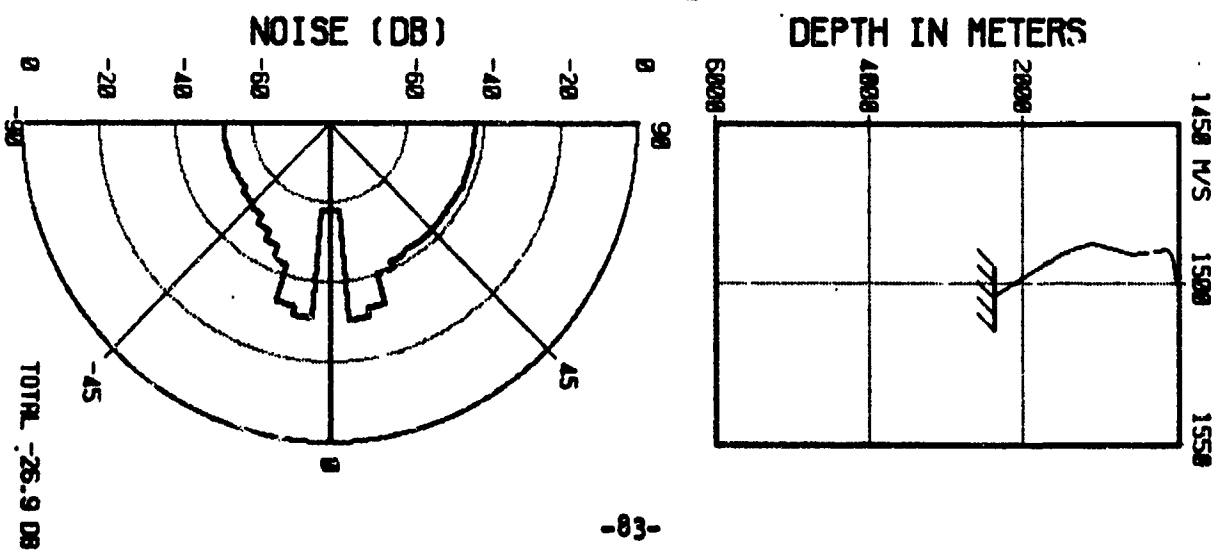
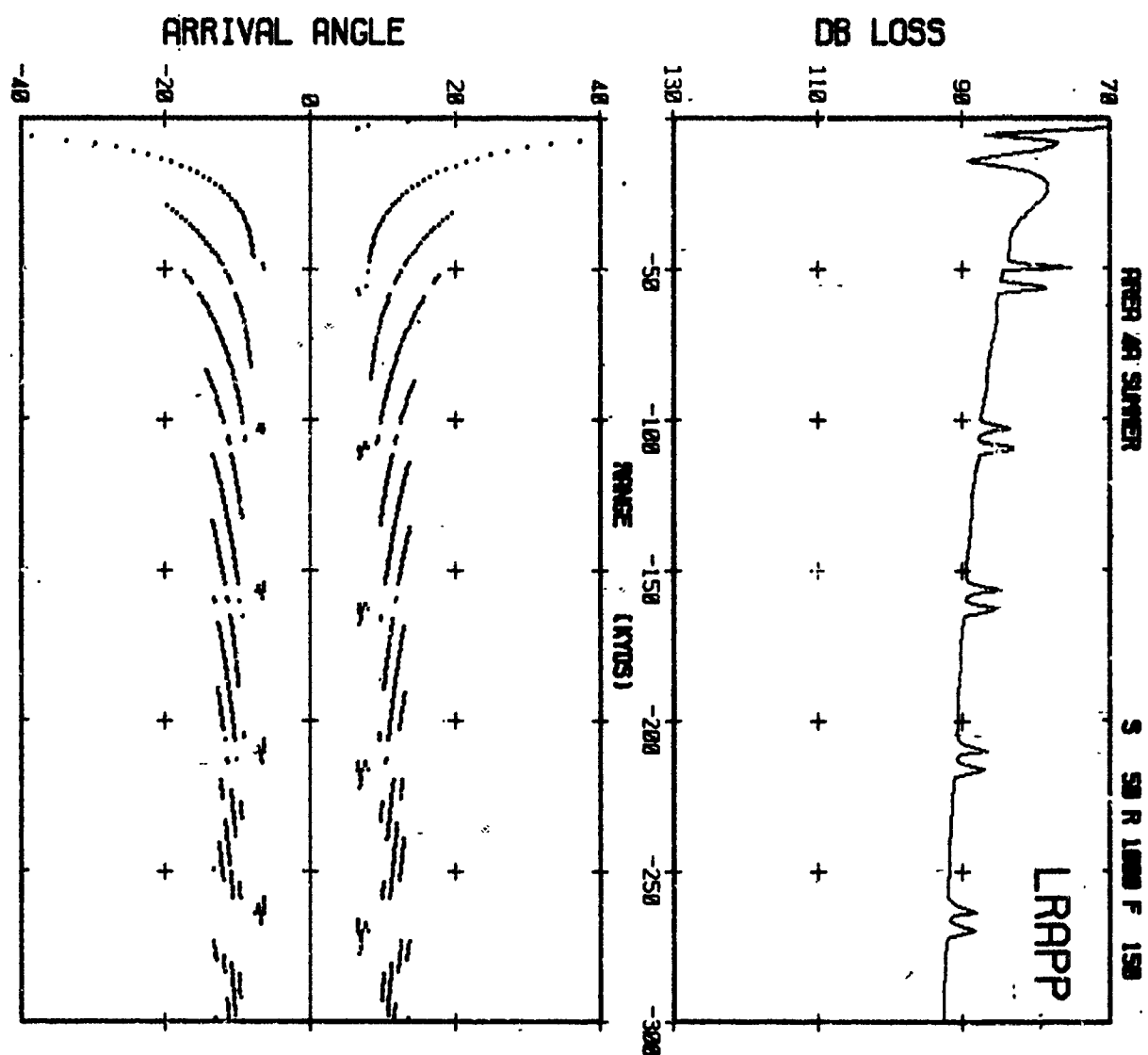


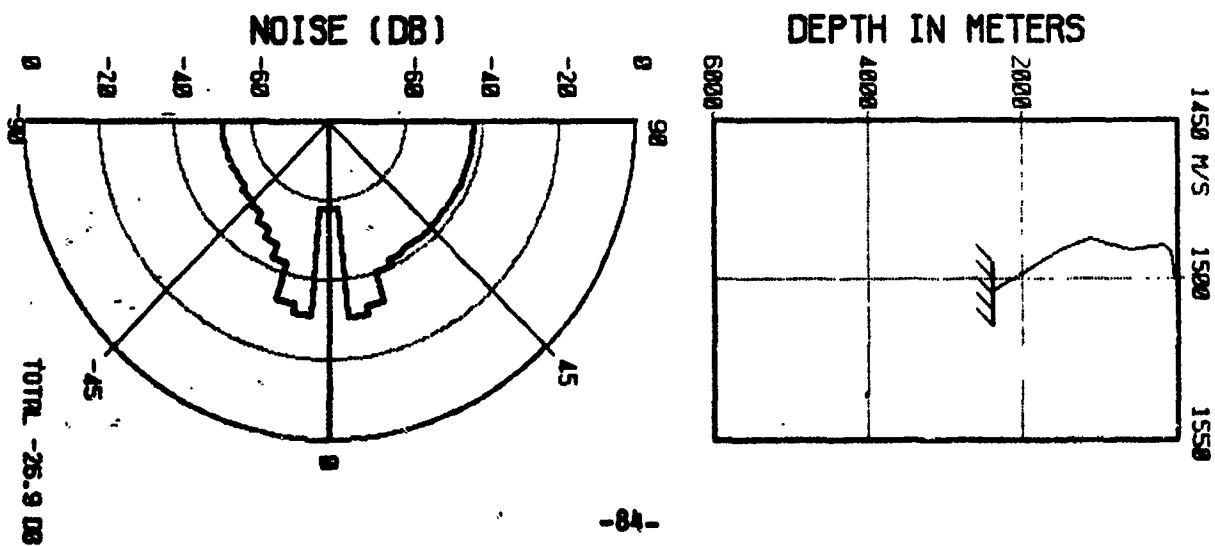
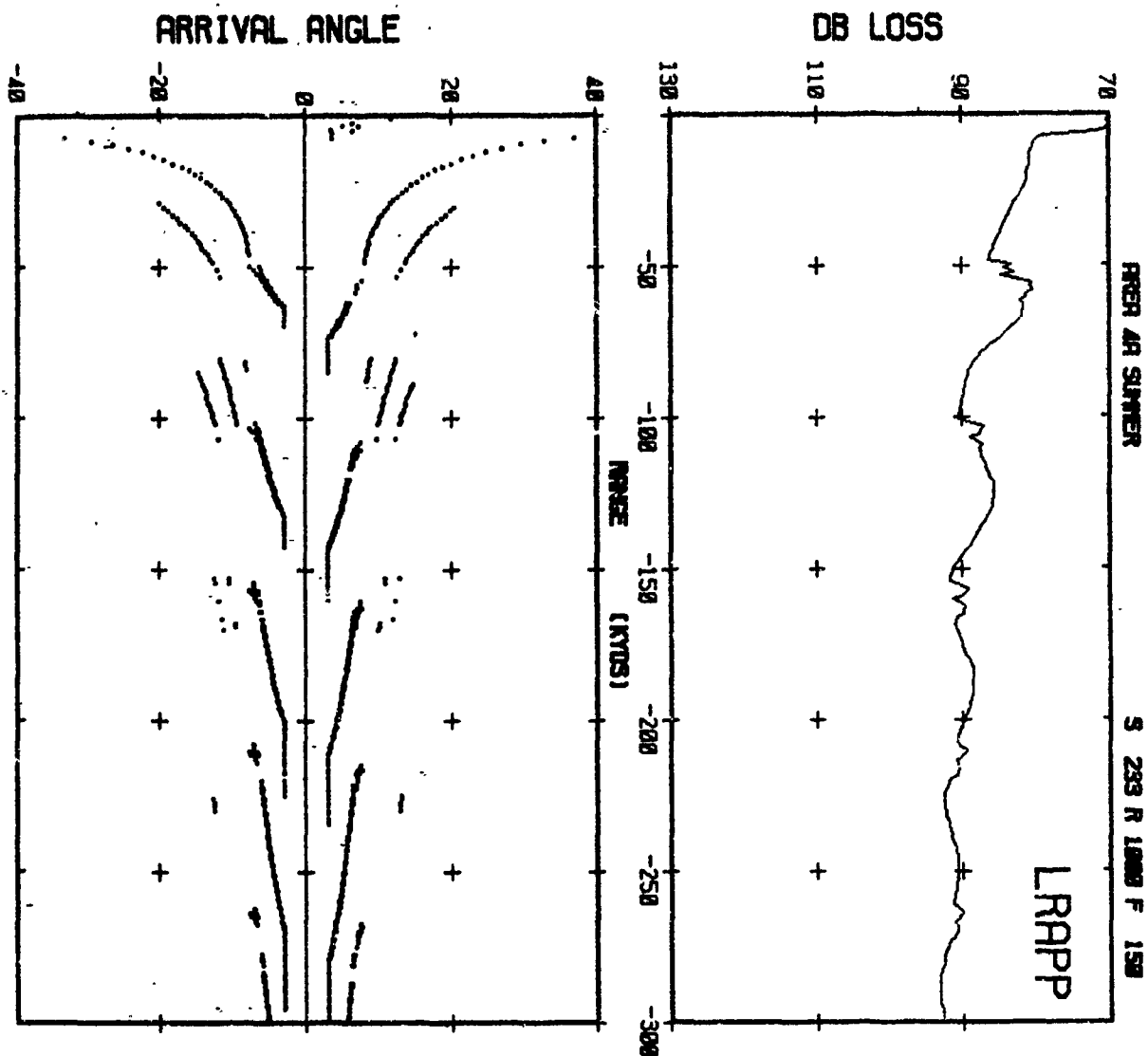








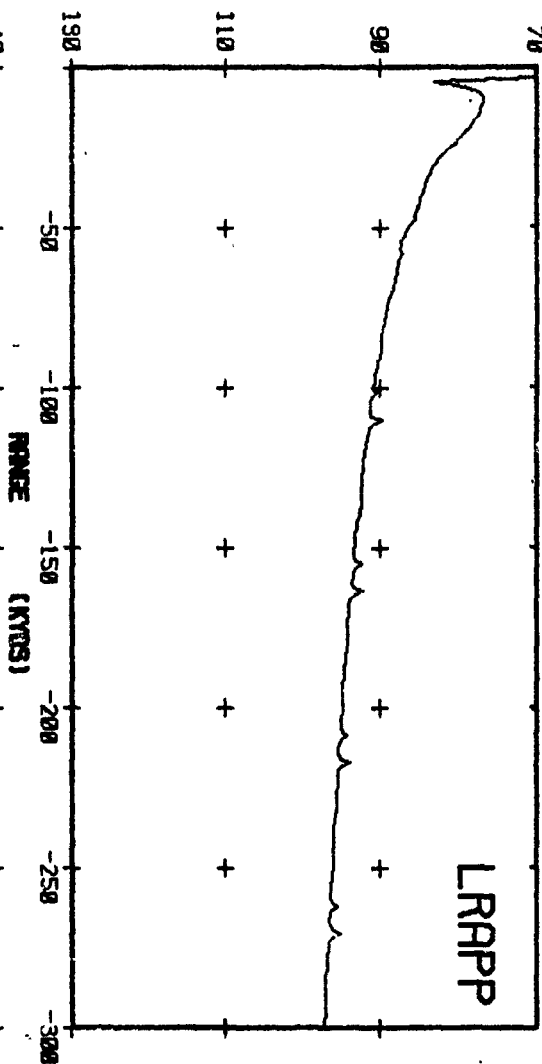




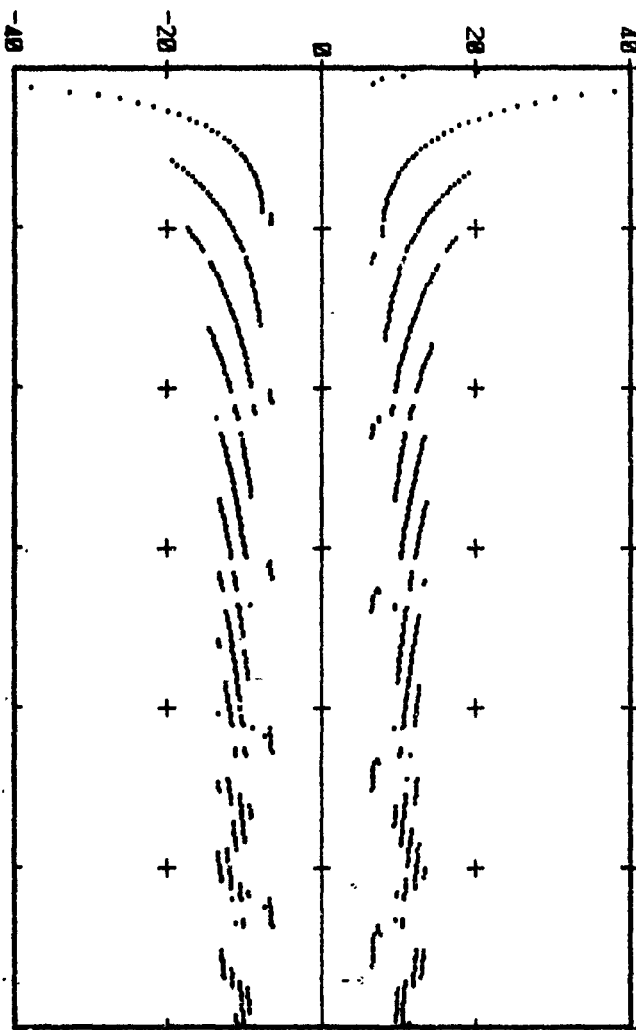
AREA 4A SUMMER

3 20 R 1500 F 150

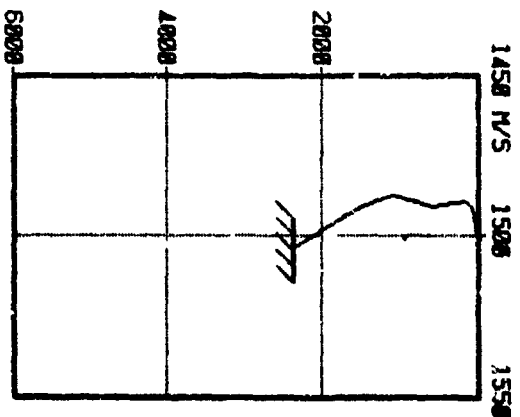
DB LOSS



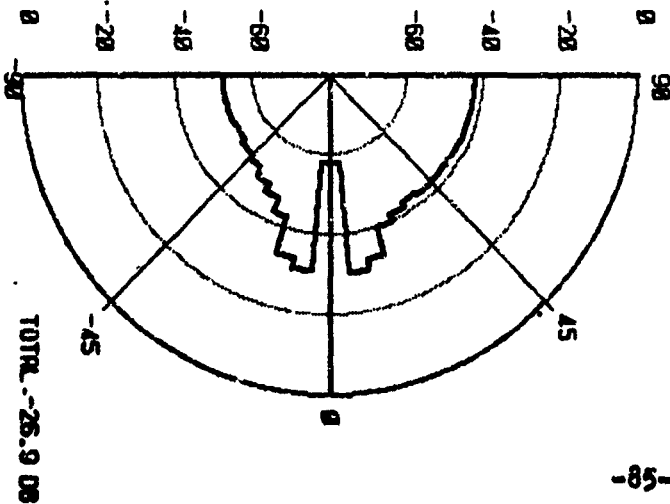
ARRIVAL ANGLE

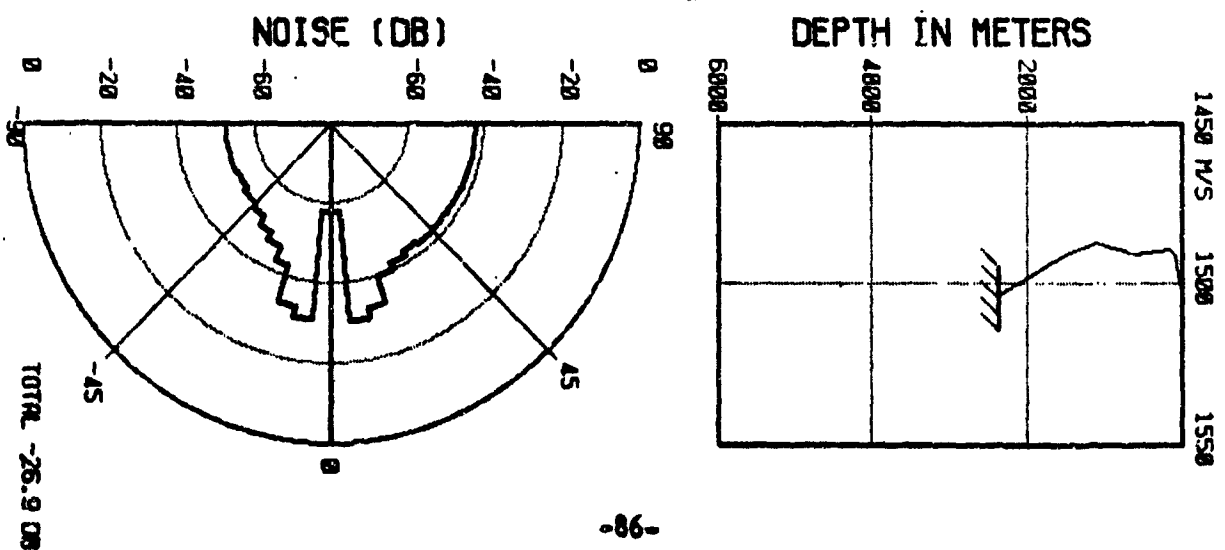
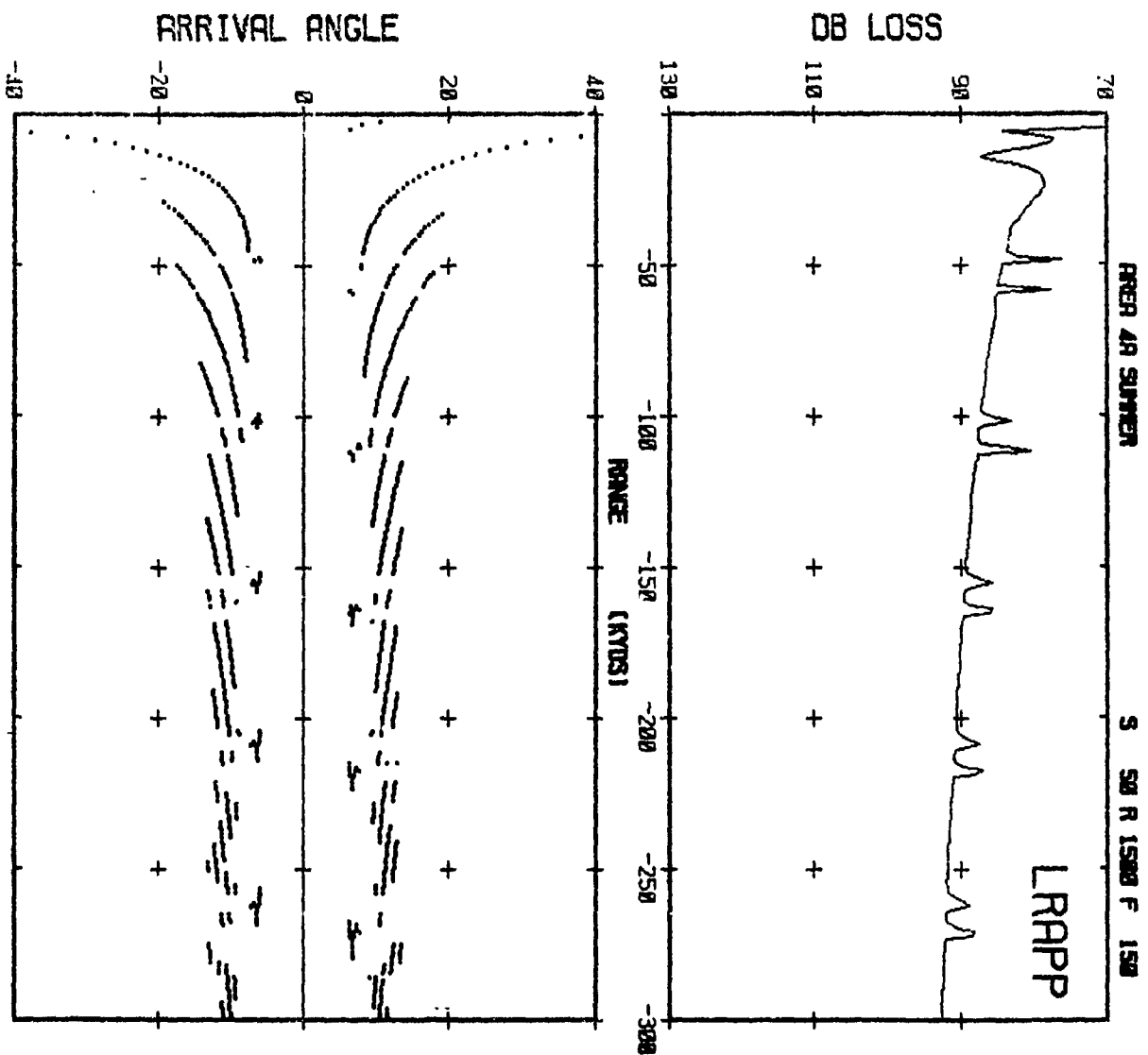


DEPTH IN METERS



NOISE (DB)



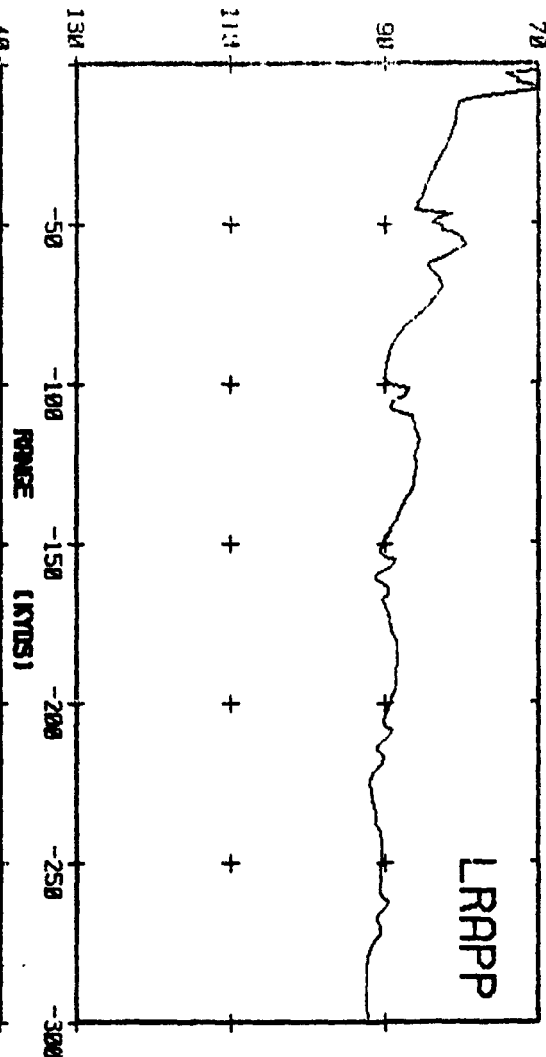


AREA 44 SUMMER

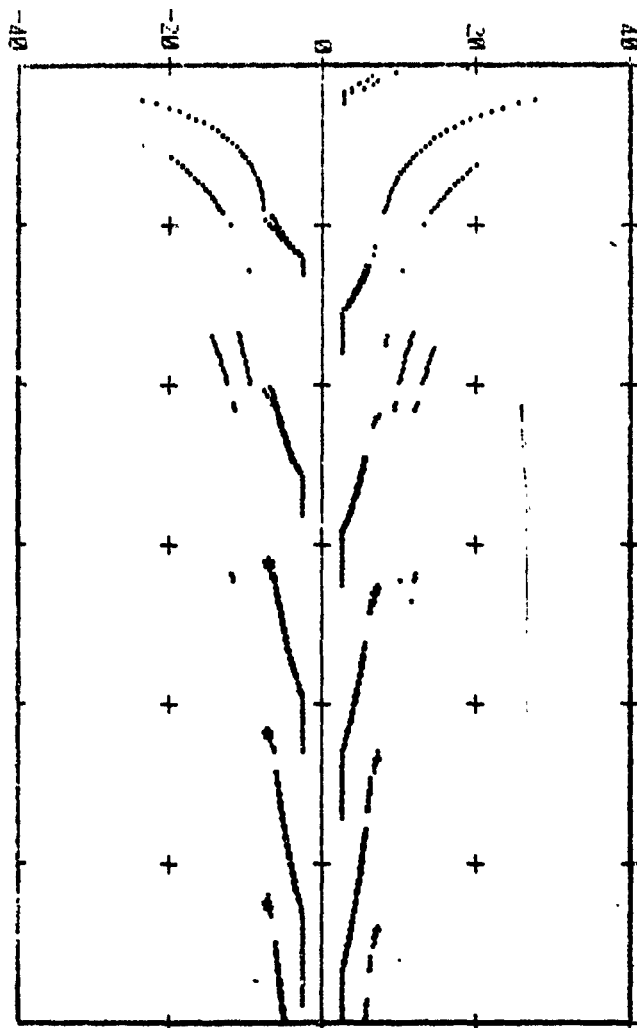
9 239 R 1500 F 150

LRAPP

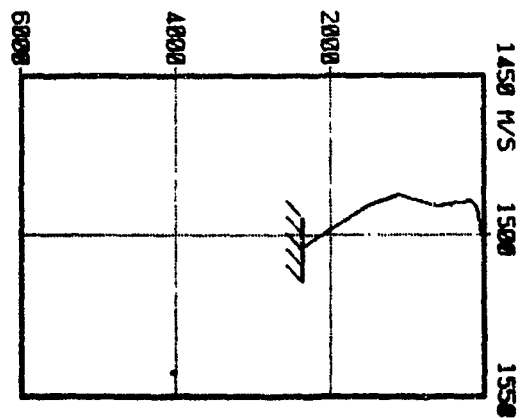
DB LOSS



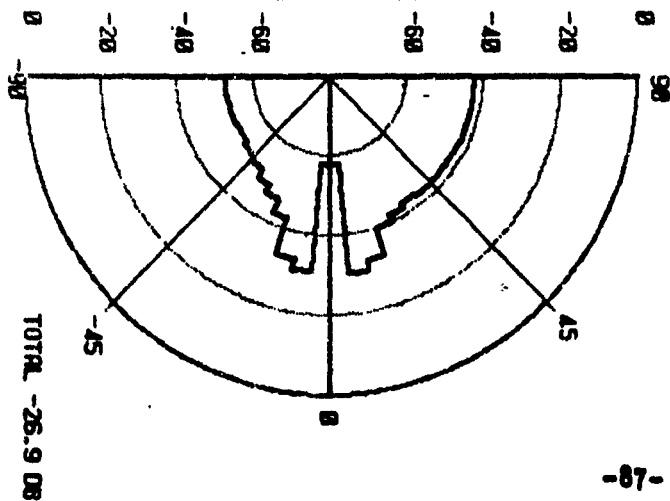
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

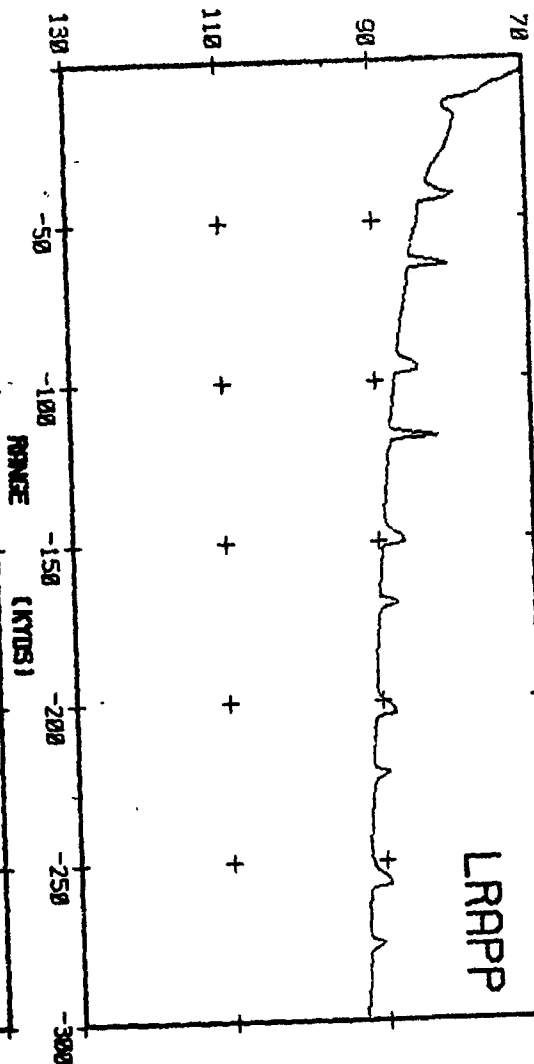


RRR AR SUMMER

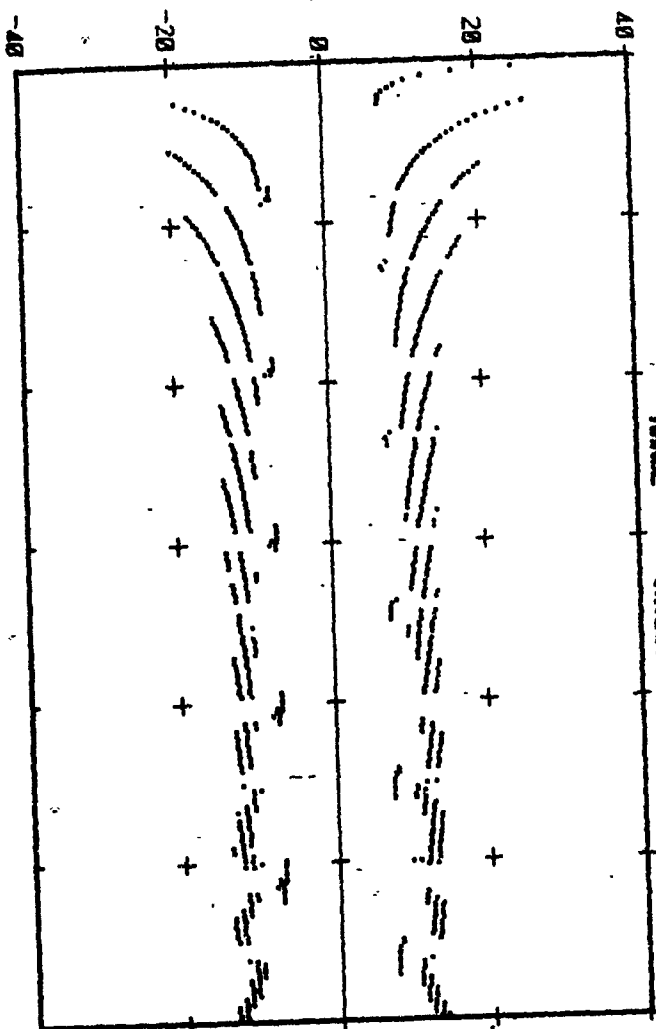
S 50 R 5707 F 150

LRAPP

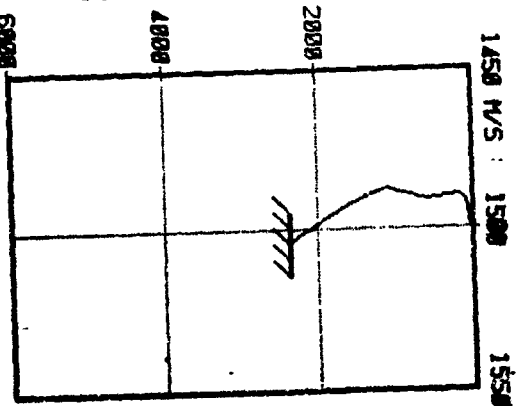
DB LOSS



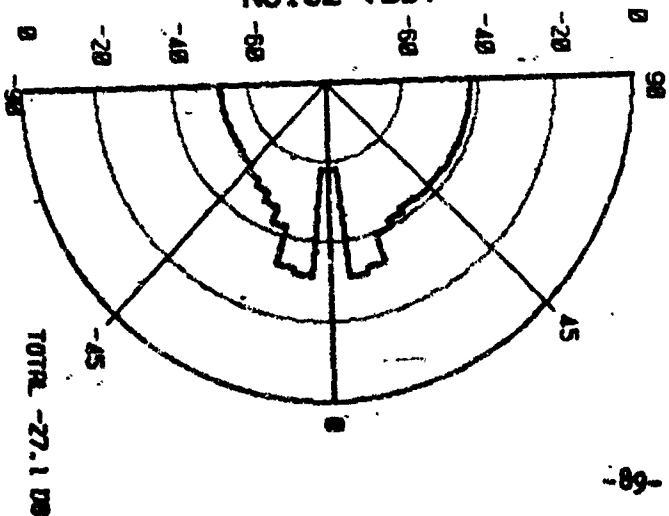
ARRIVAL ANGLE

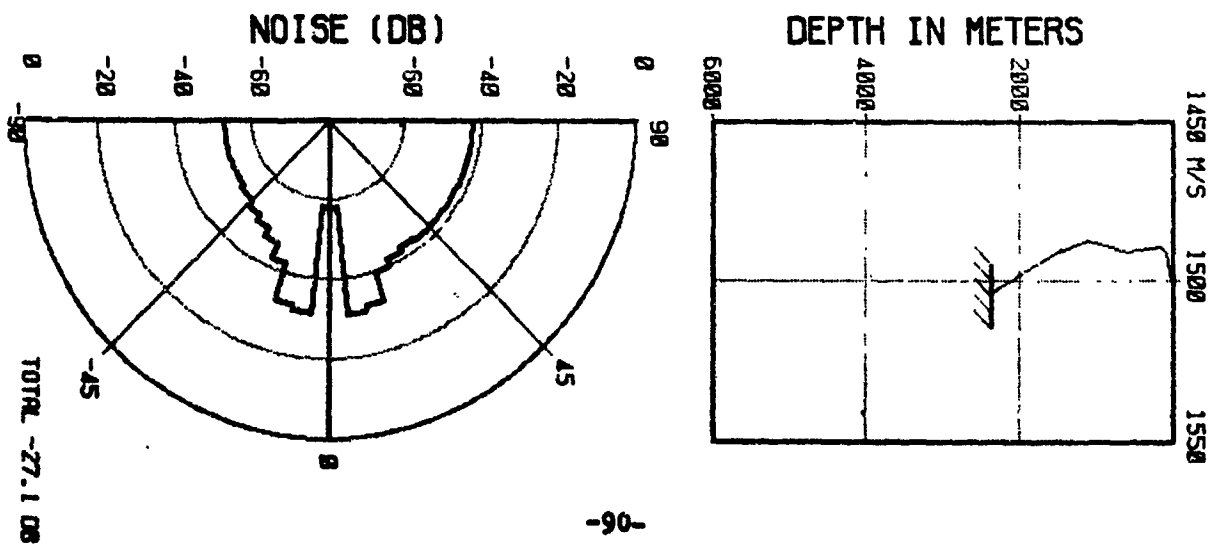
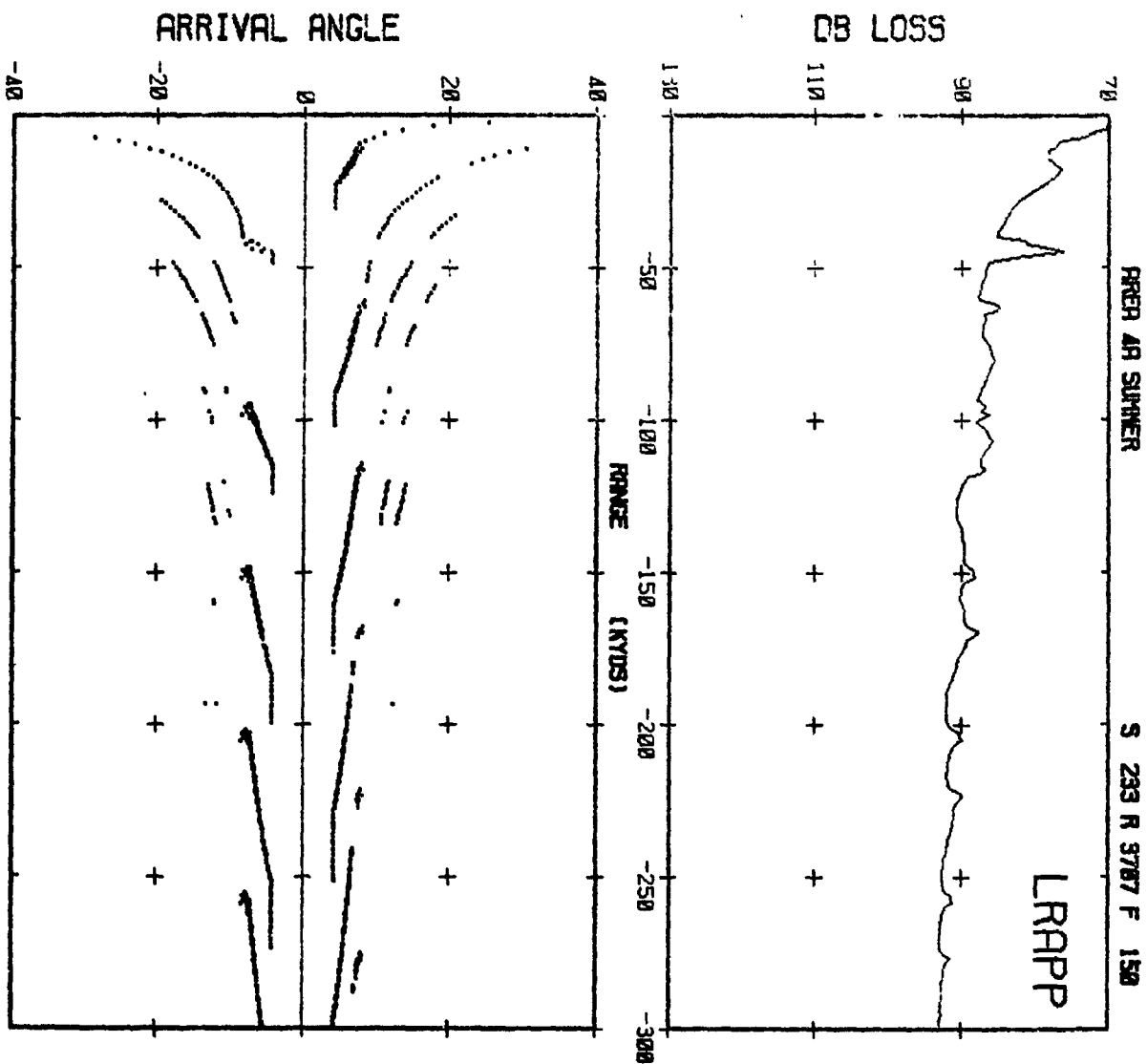


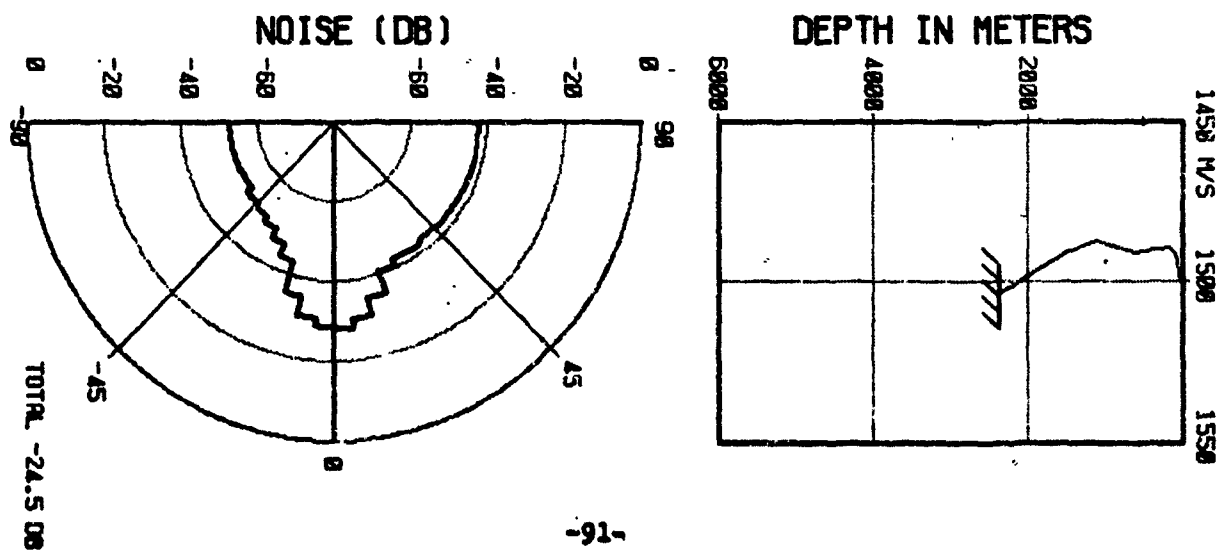
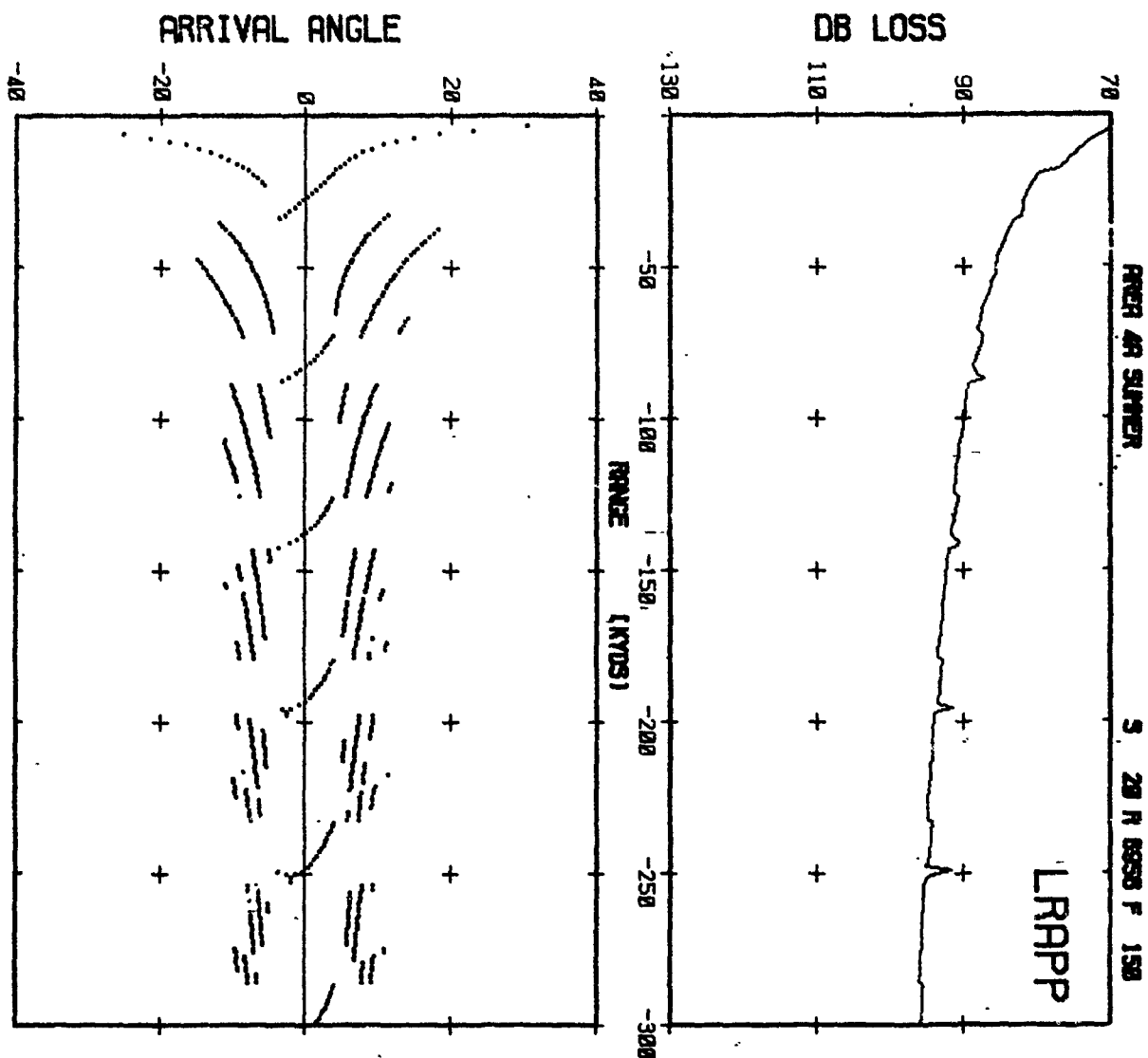
DEPTH IN METERS

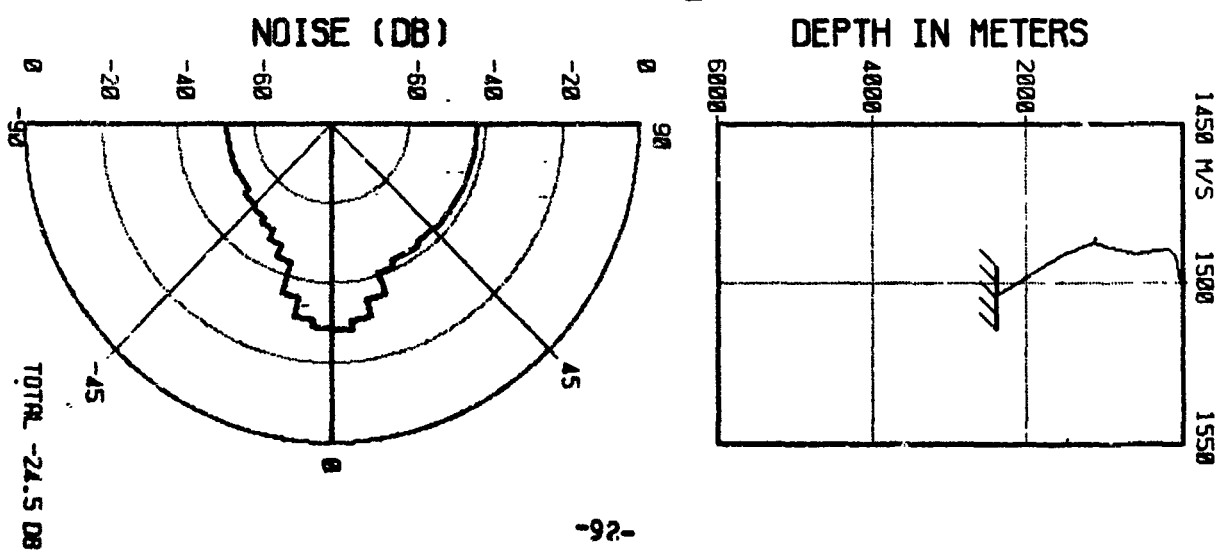
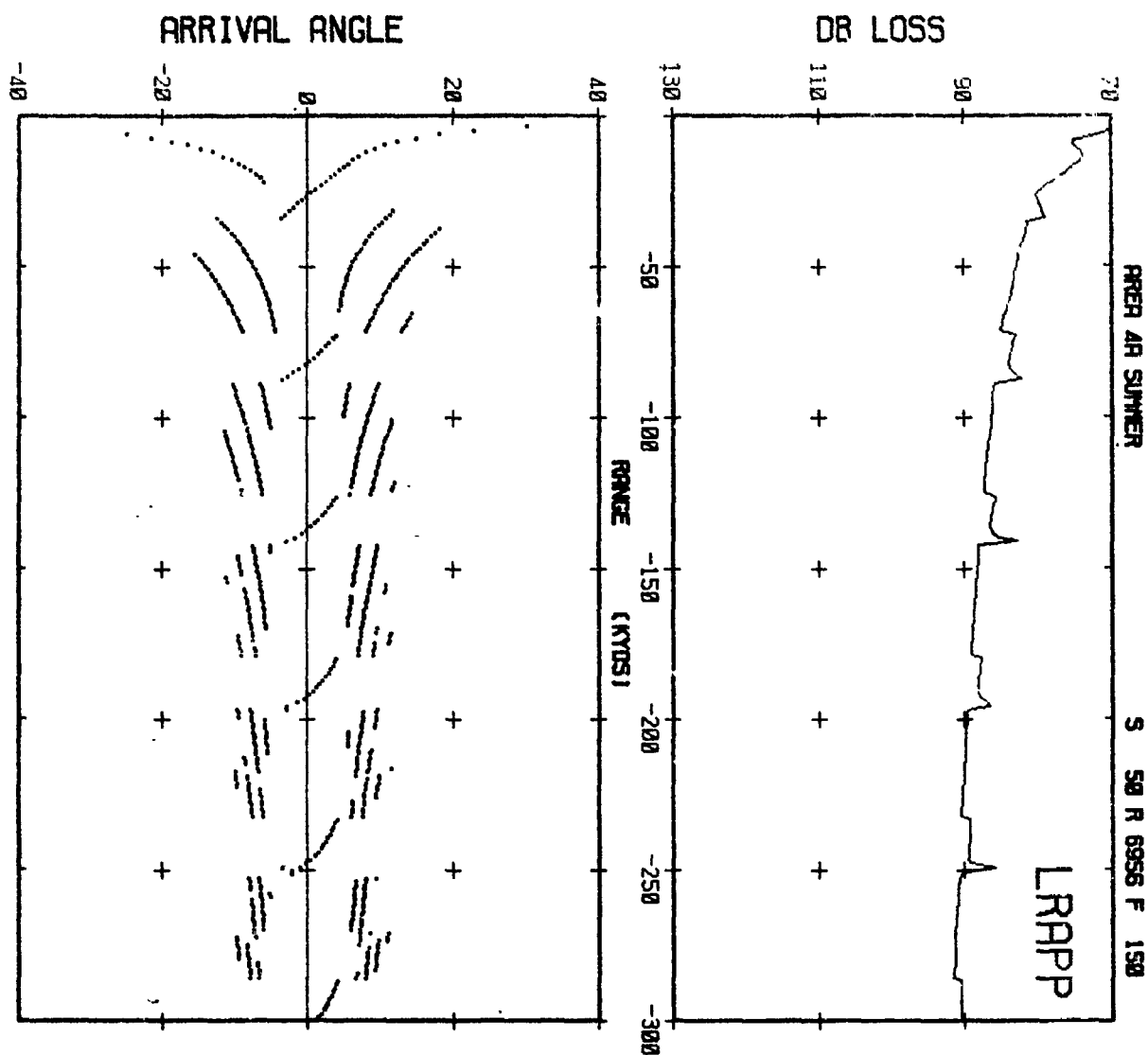


NOISE (DB)







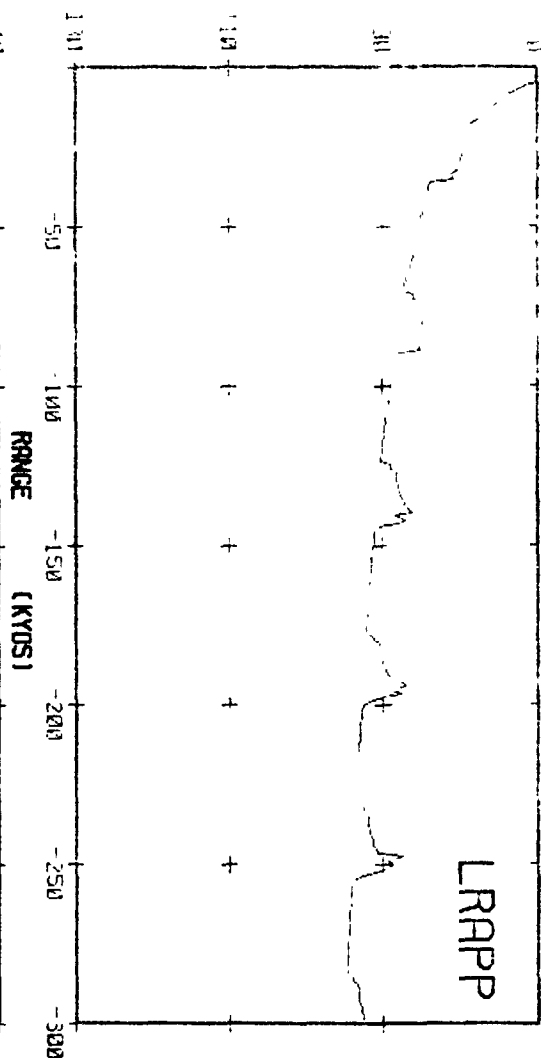


PRSR 4R SUMMER

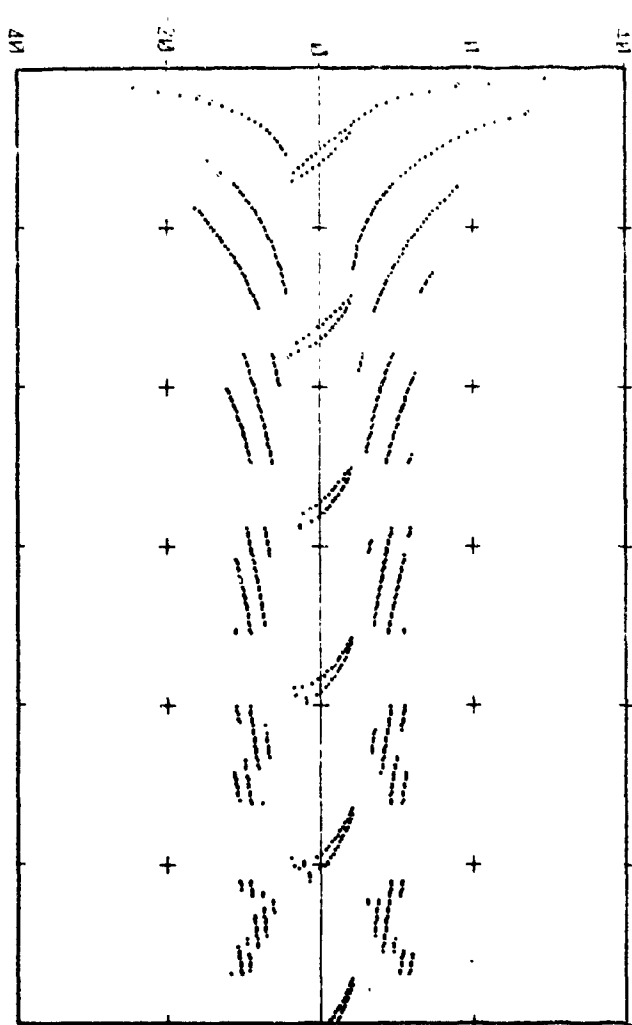
S 233 R 6956 F 150

1450 H/S 1500 1550

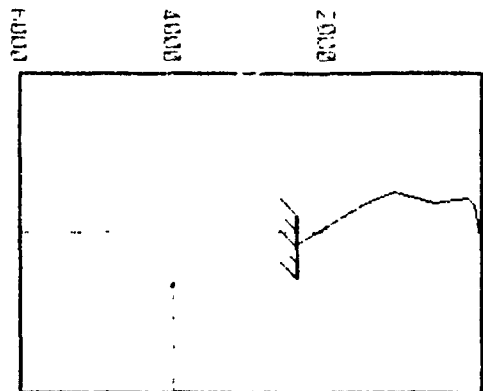
DB LOSS



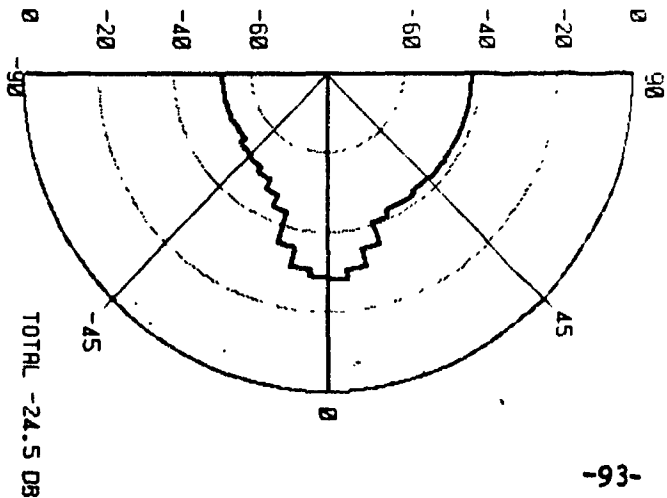
ARRIVAL ANGLE

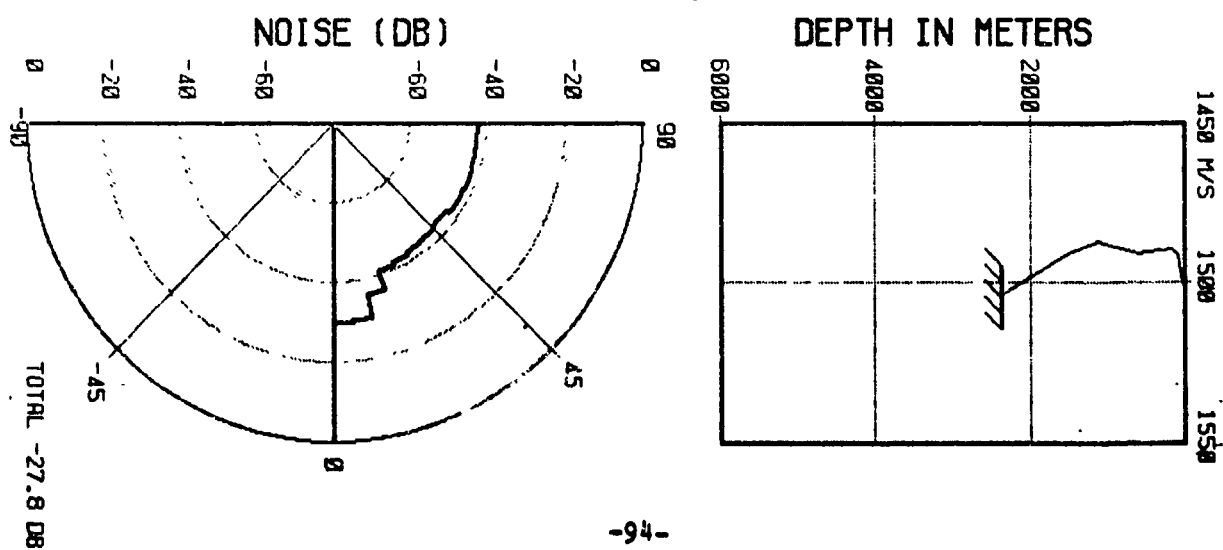
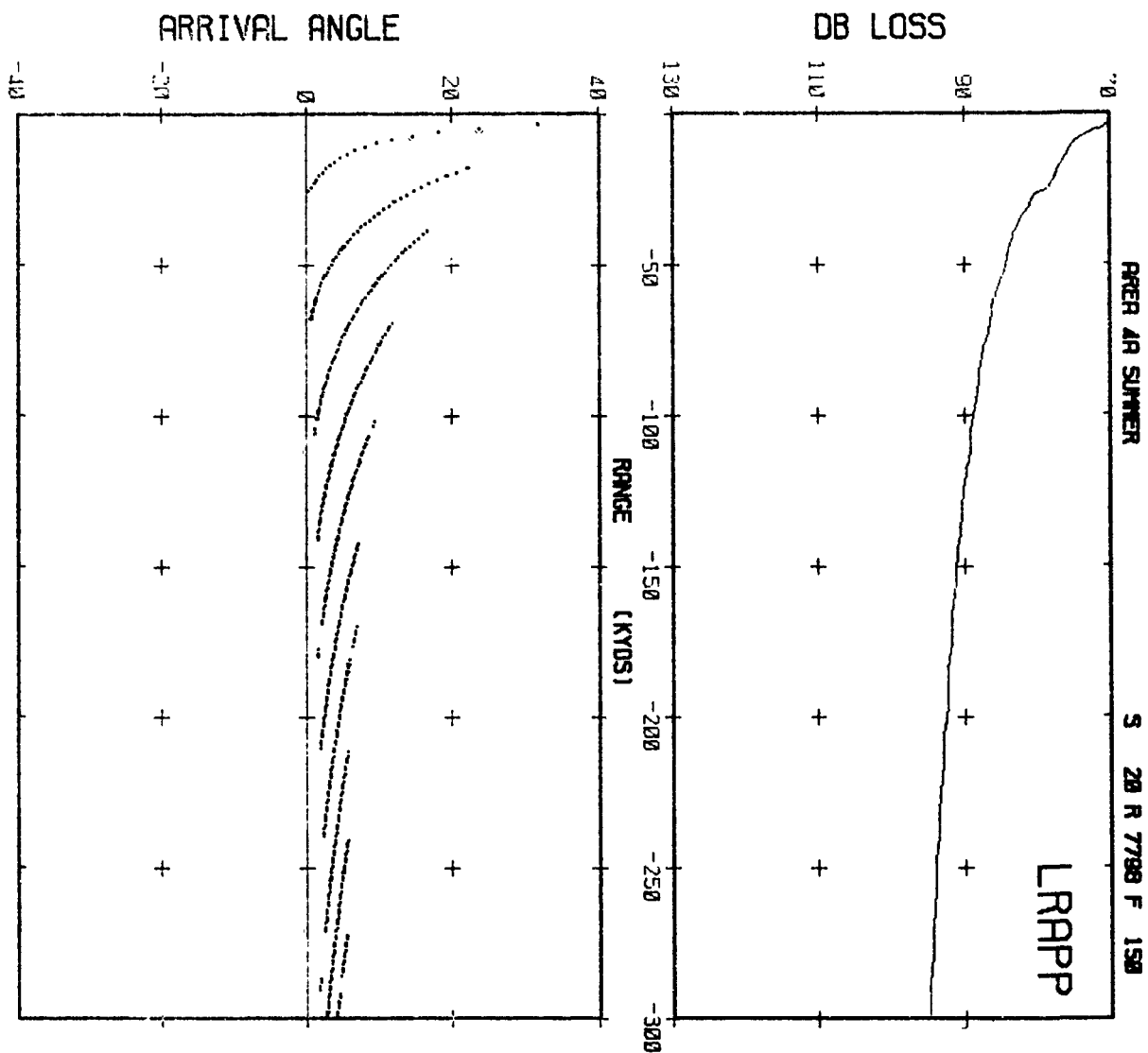


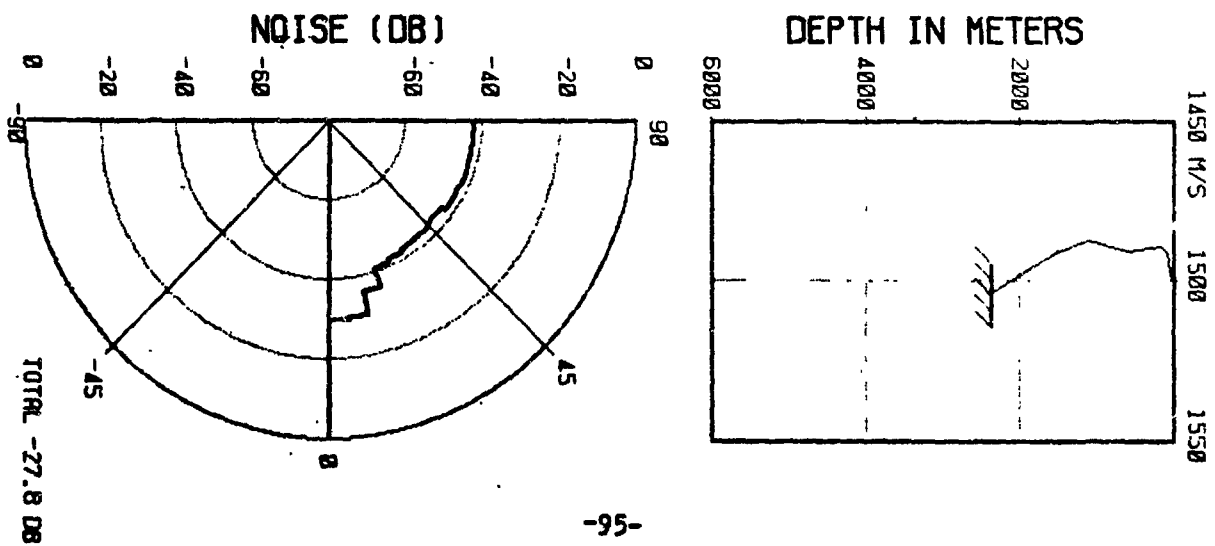
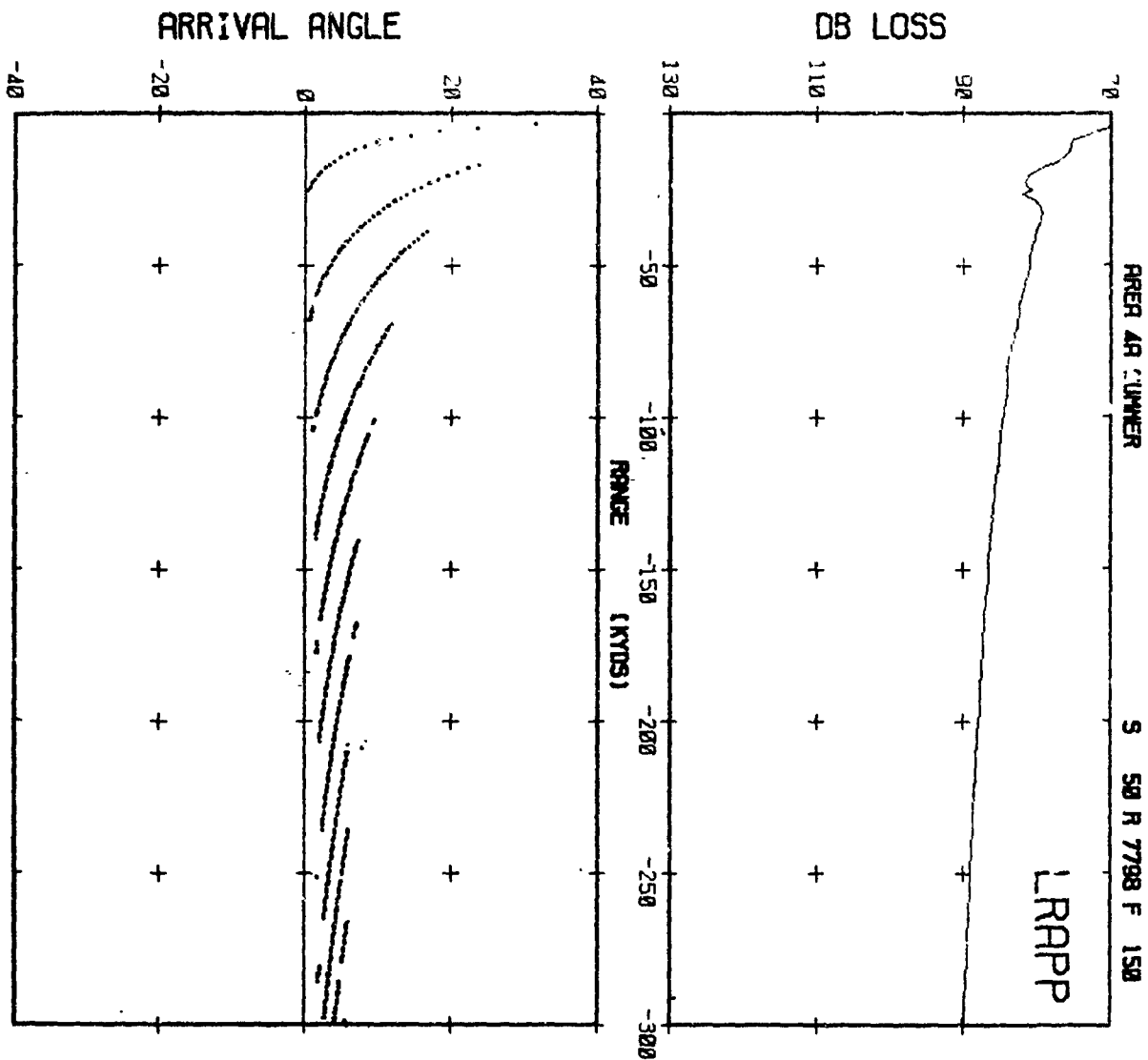
DEPTH IN METERS

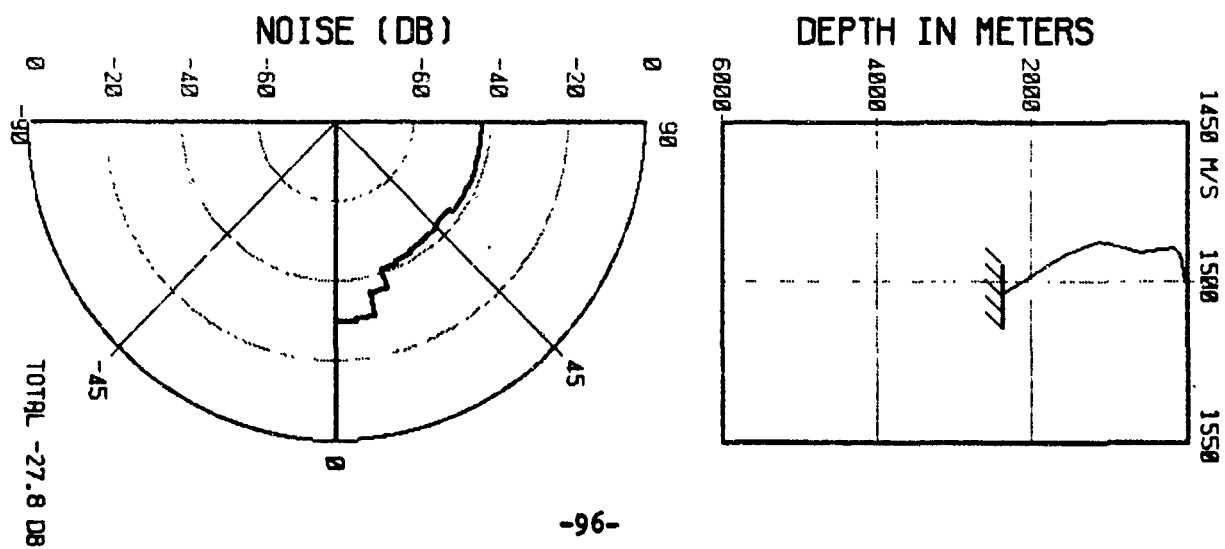
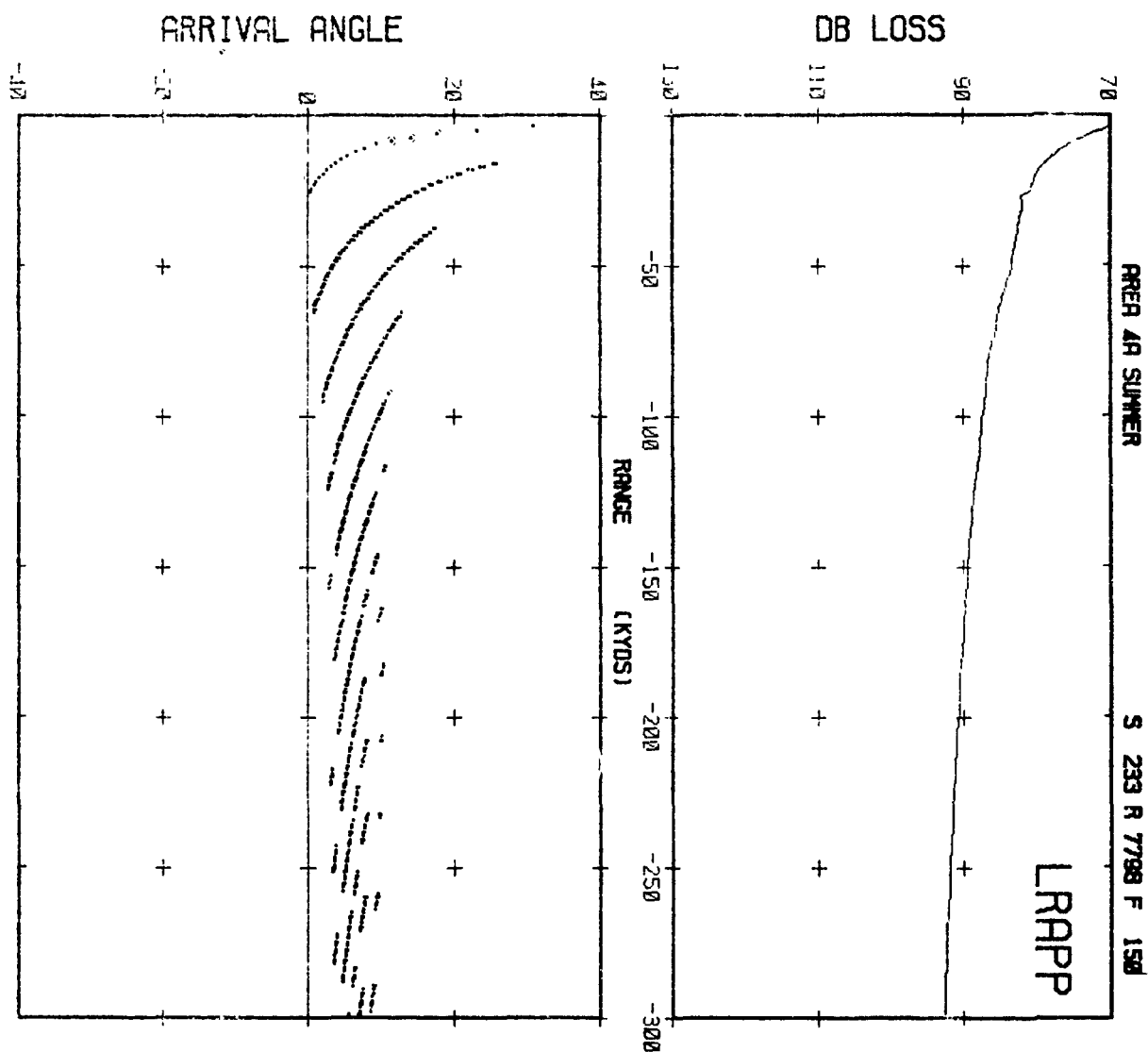


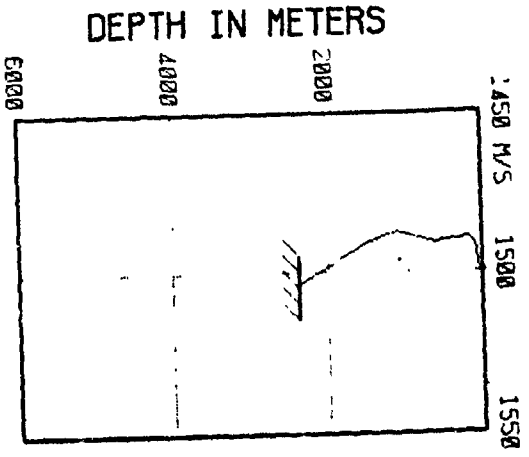
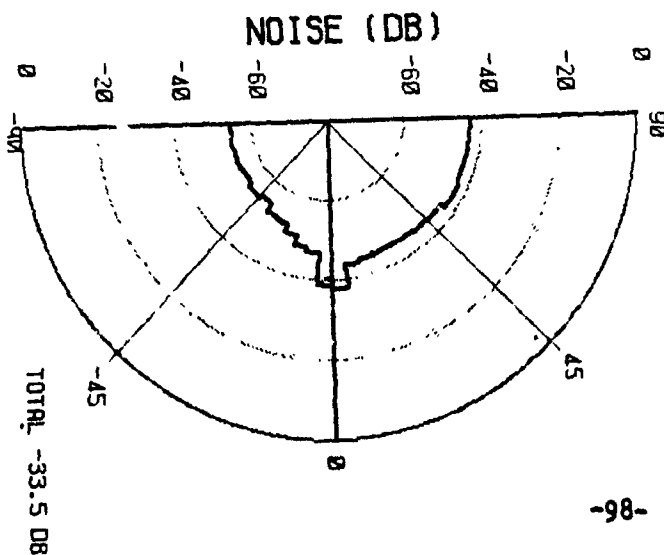
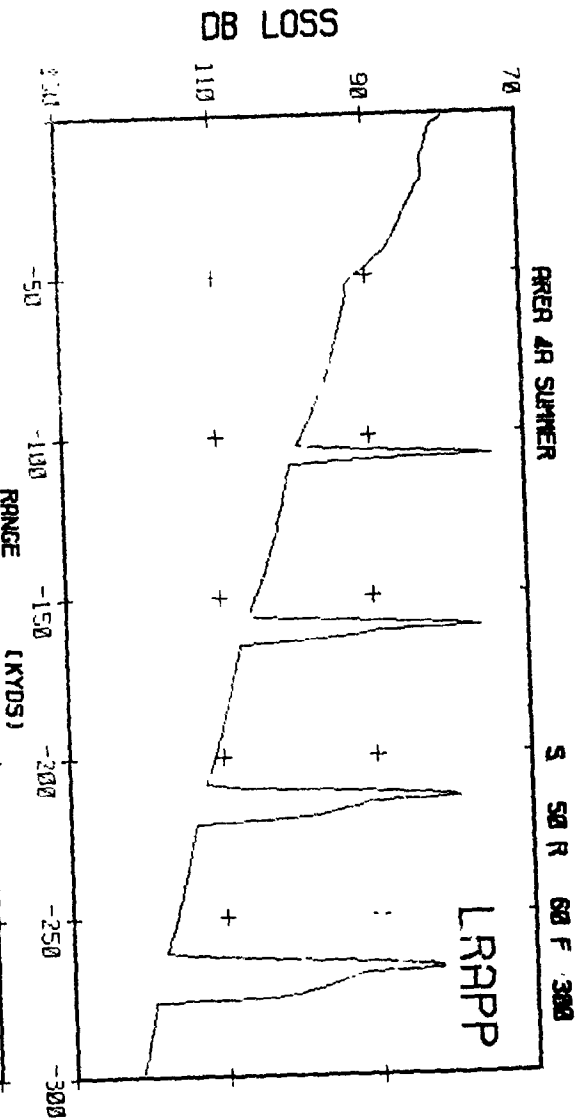
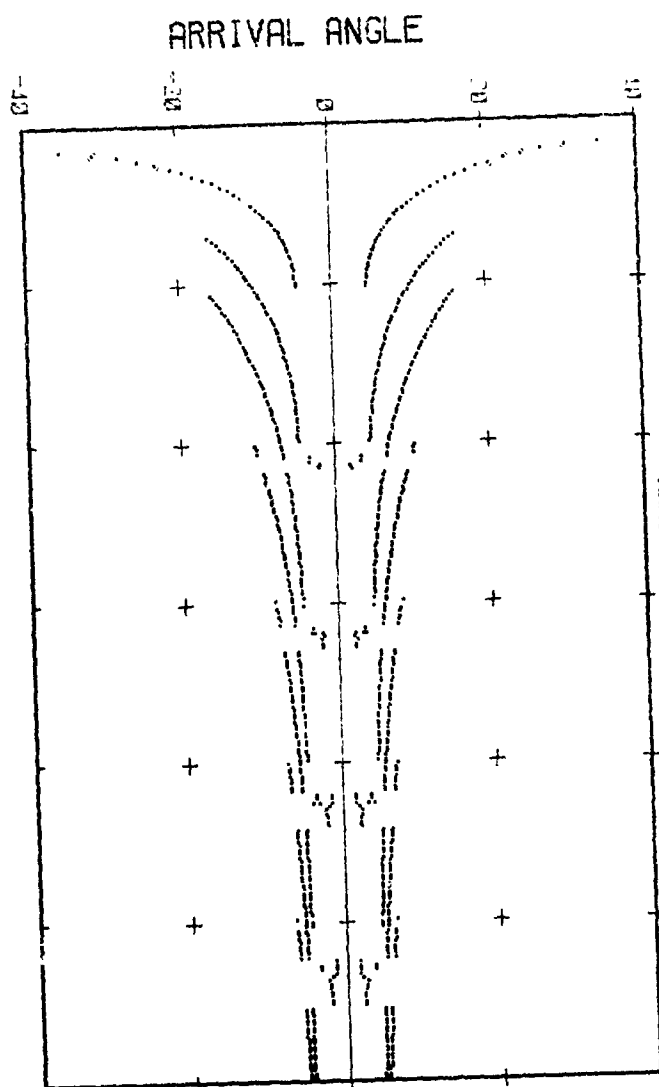
NOISE (DB)









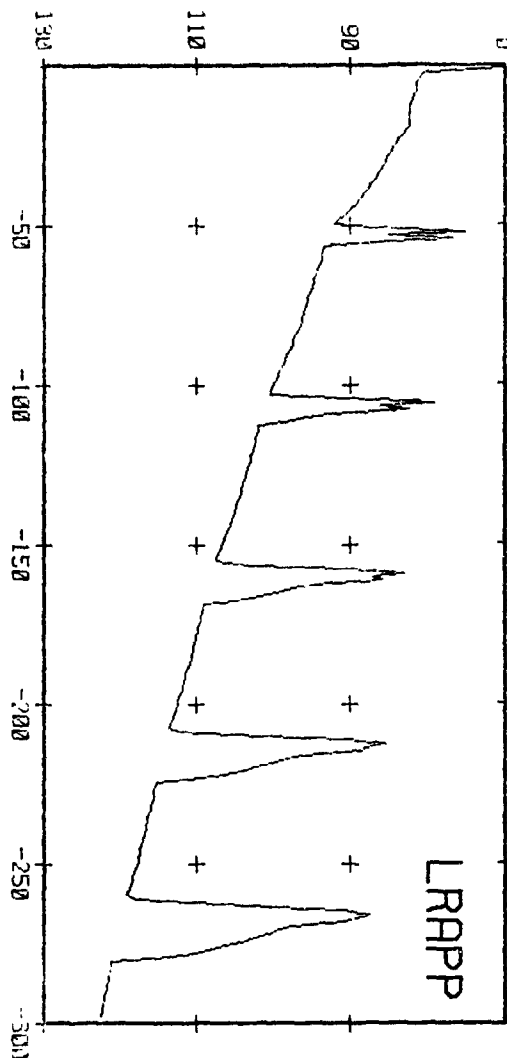


AREA 4A SUMMER

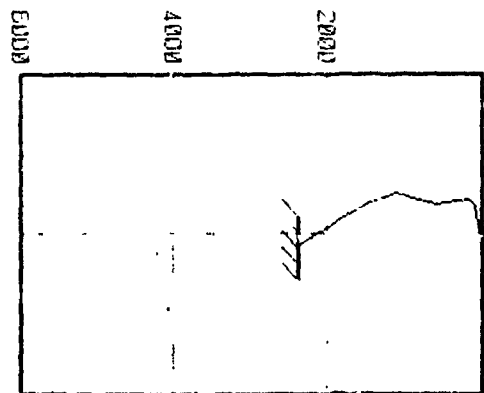
S 233 R 69 F 300

1450 M/S 1500 1550

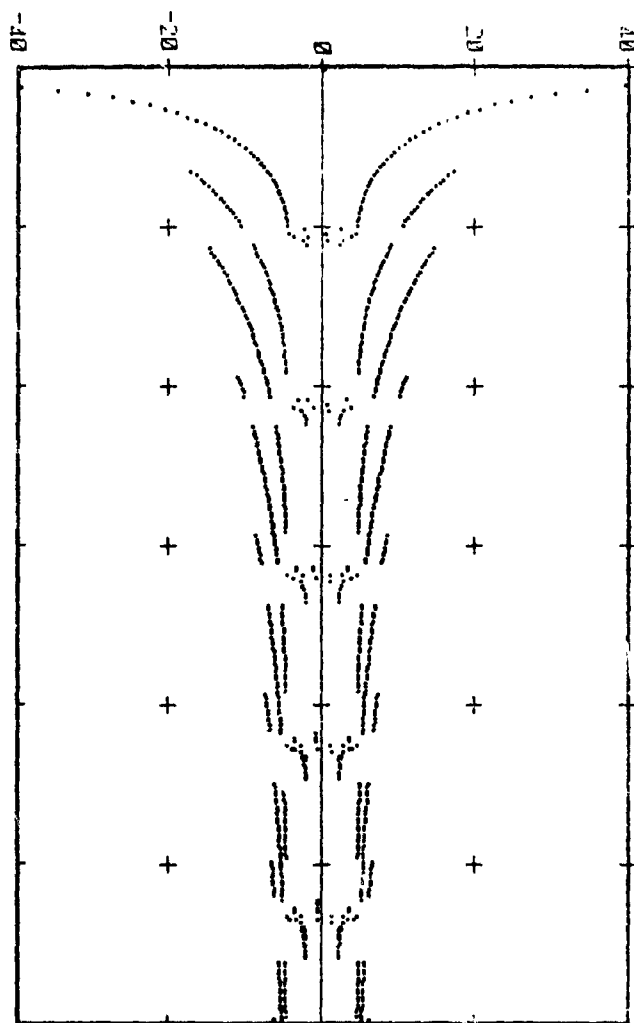
DB LOSS



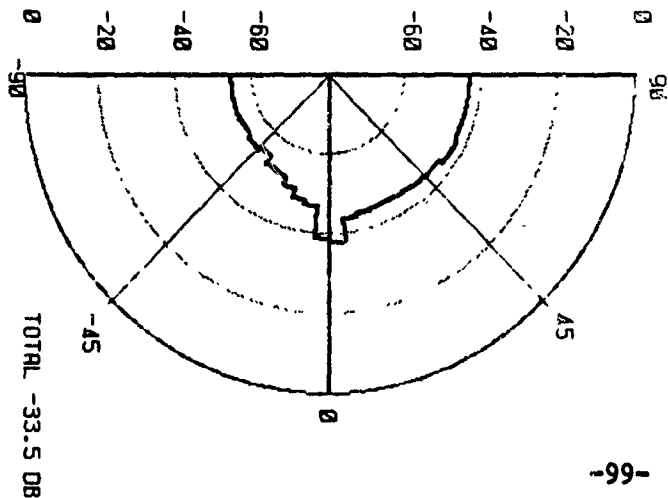
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

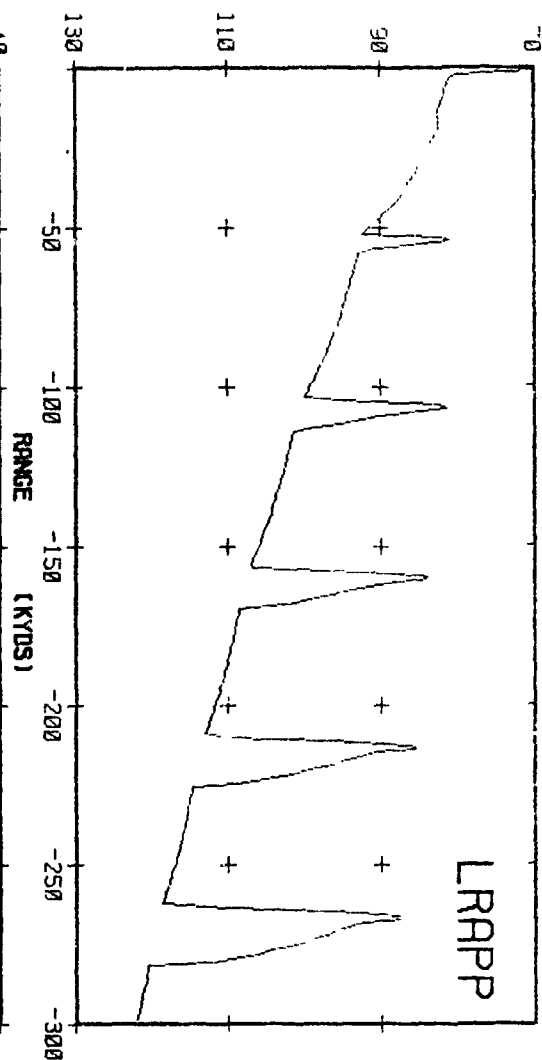


AREA AIR SUMMER

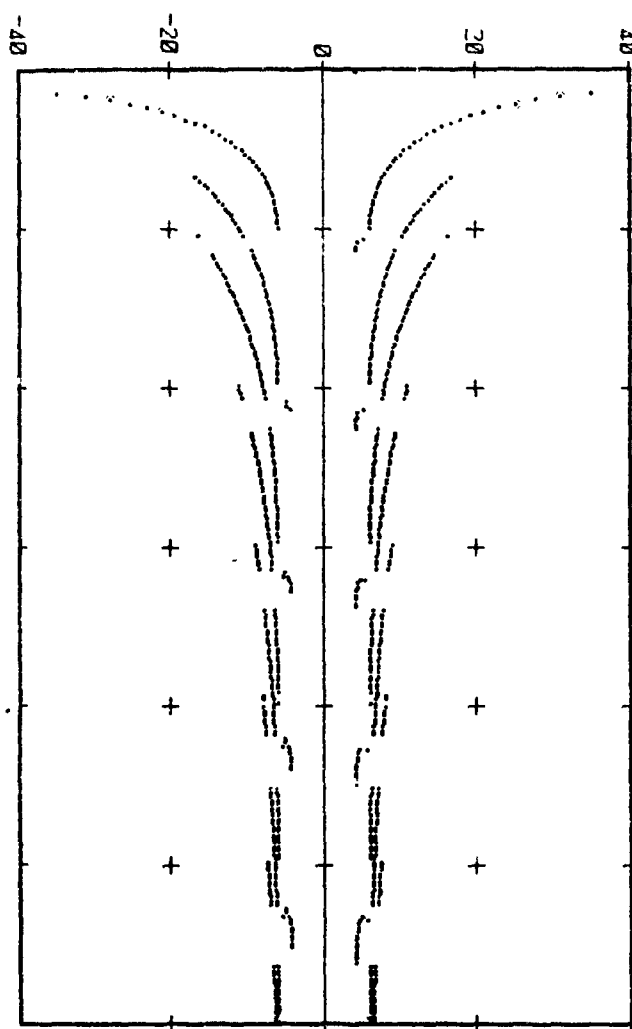
S 20 R 133 F 300

1450 H/S 1500 1550

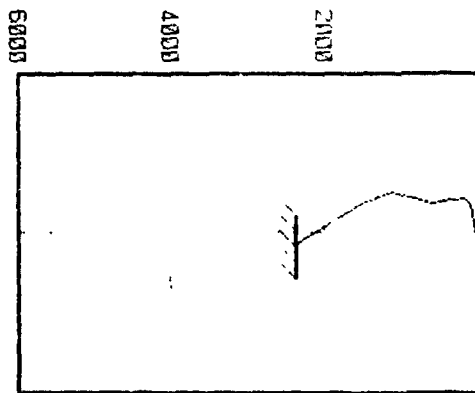
DB LOSS



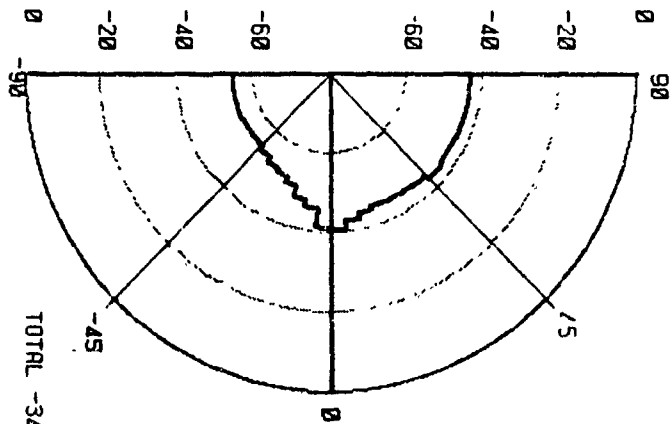
ARRIVAL ANGLE

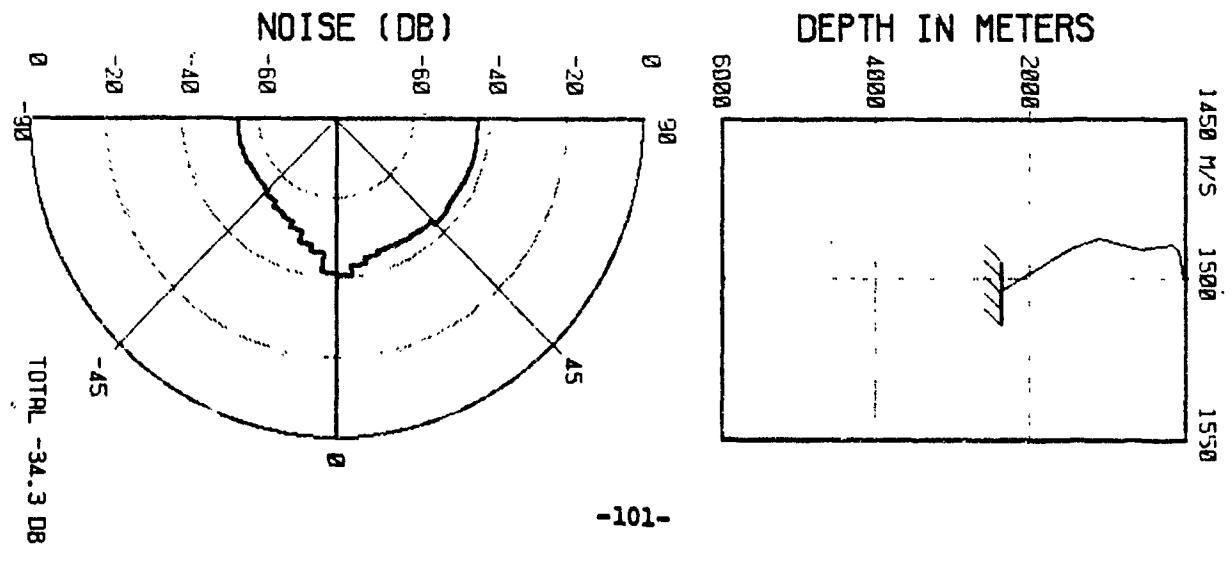
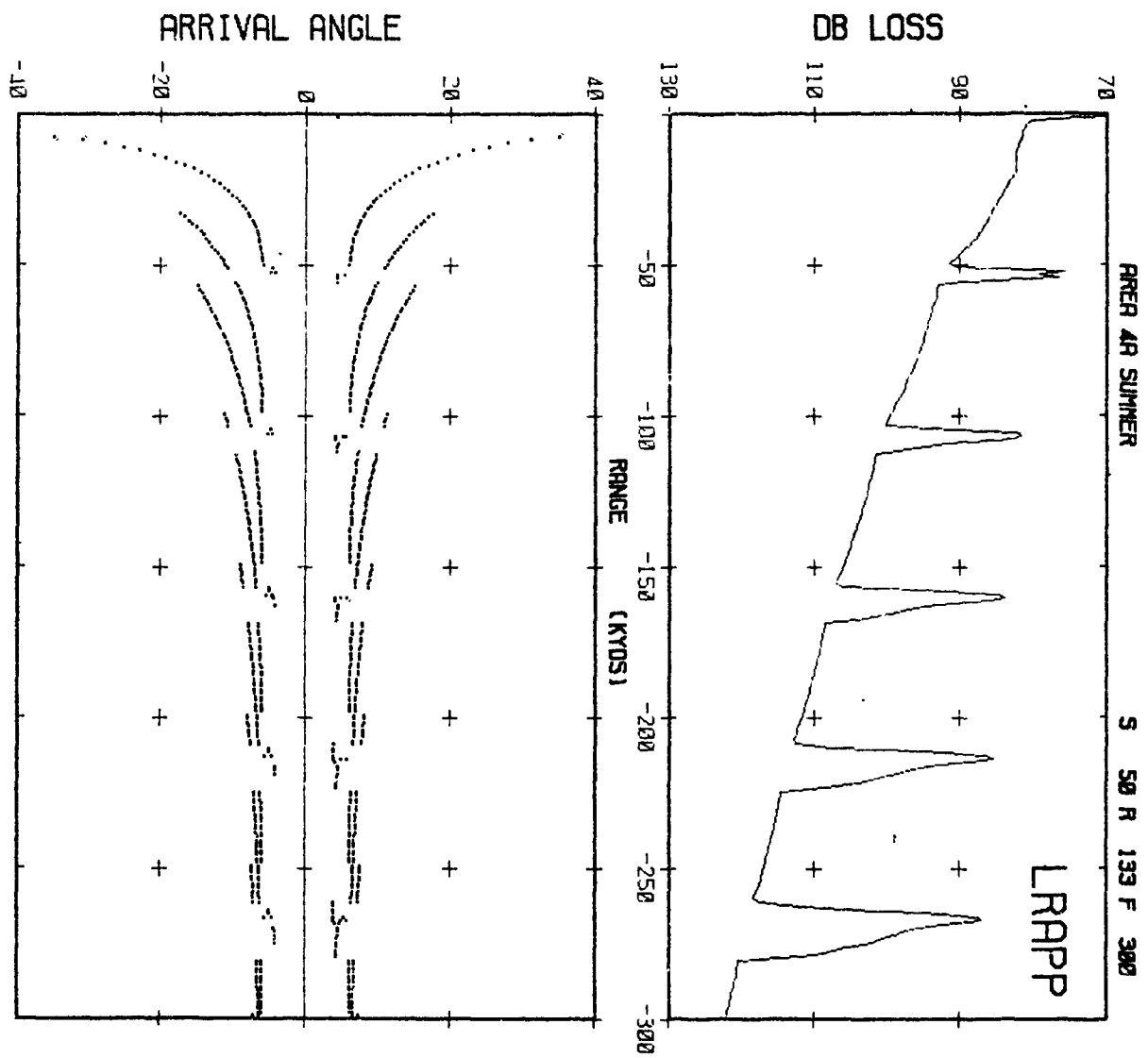


DEPTH IN METERS



NOISE (DB)



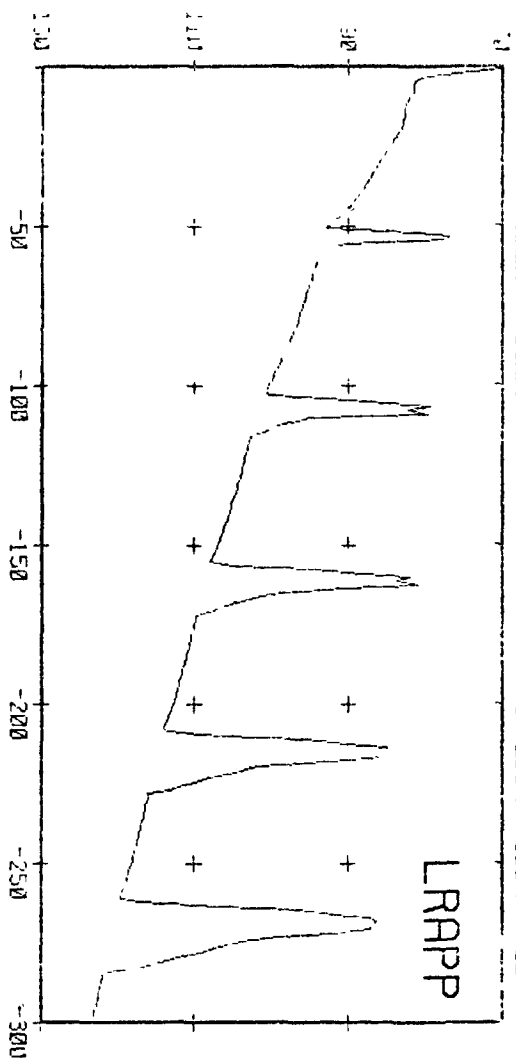


AREA 4A SUMNER

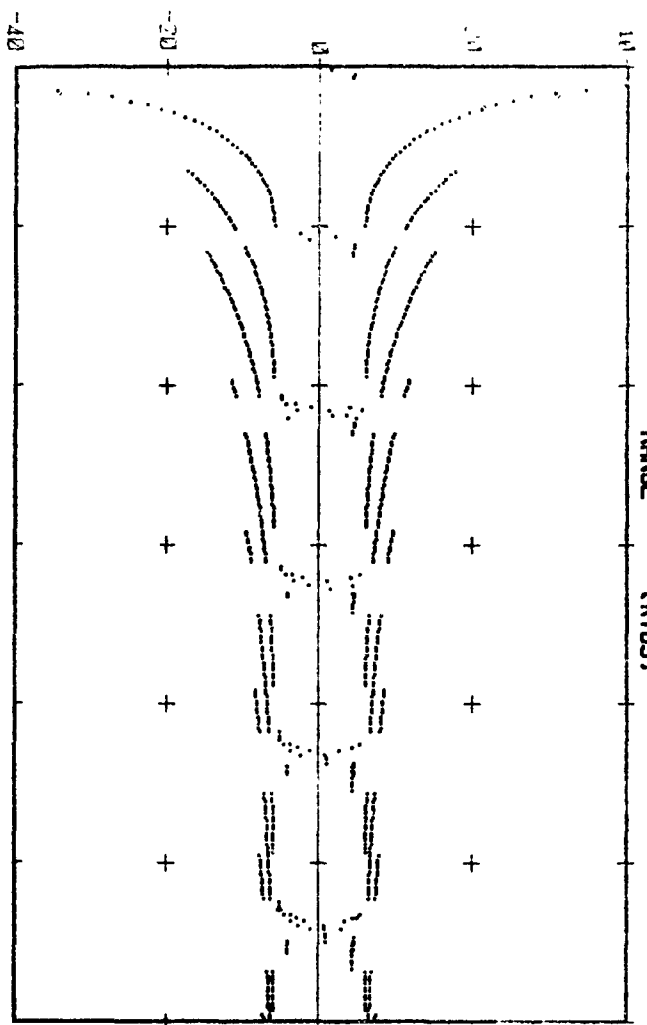
S 233 R 133 F 300

1450 H/5 1500 1550

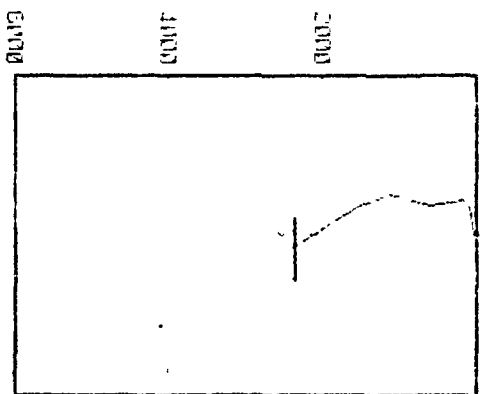
DB LOSS



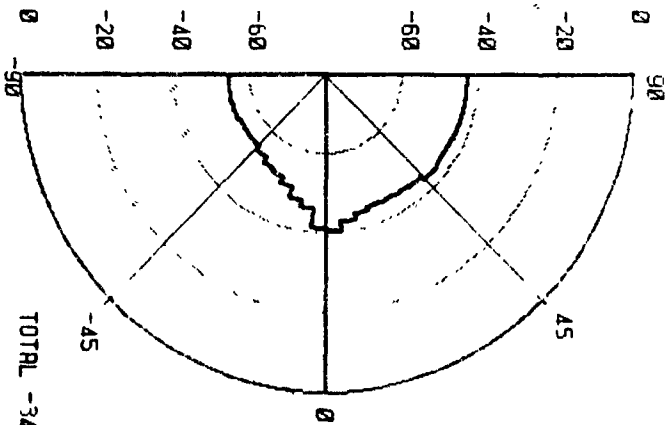
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



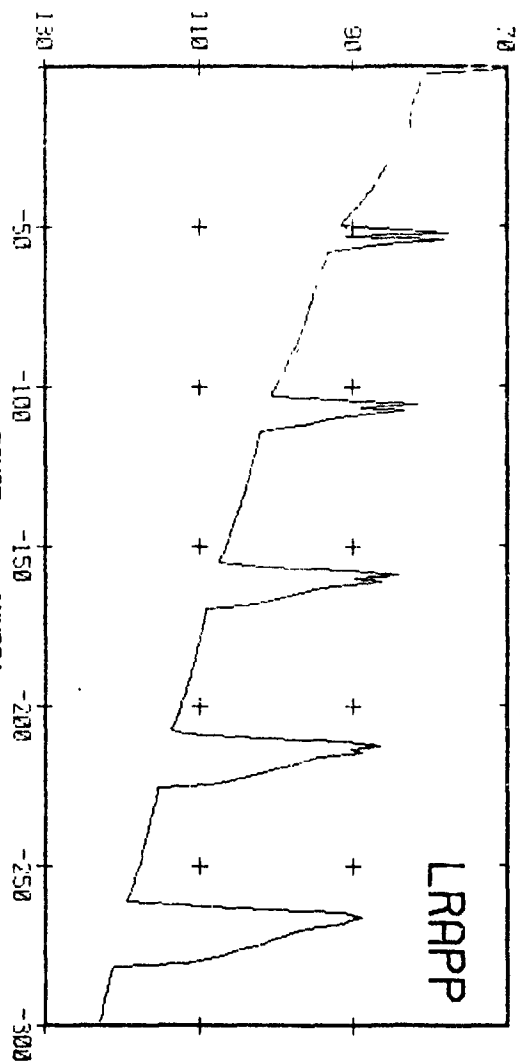
TOTRL -34.3 DB

RRR 4R SUMMER

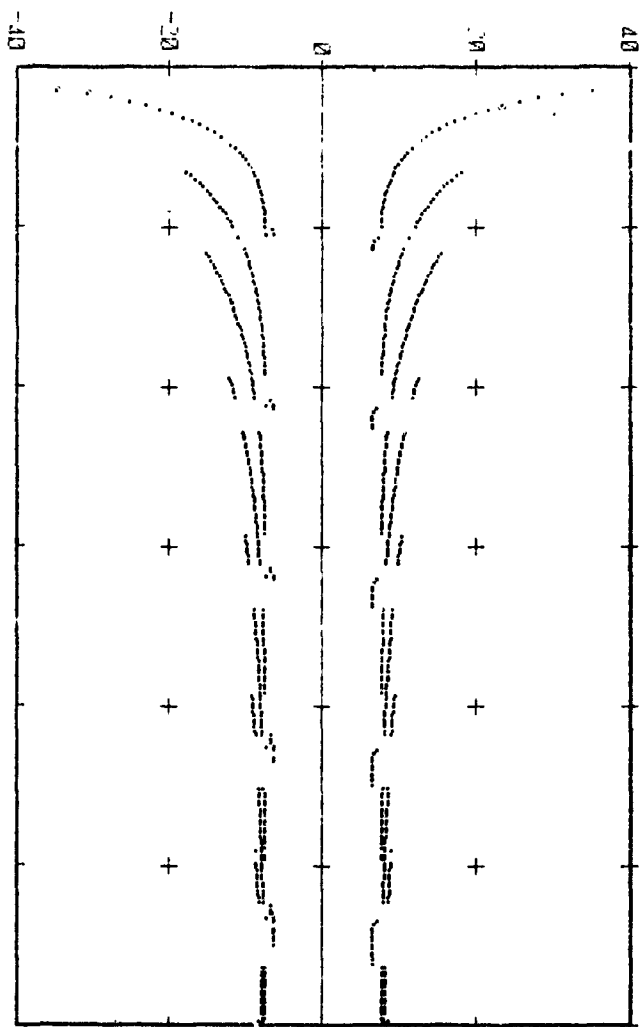
S 20 R 300 F 300

1450 M/S 1500 1550

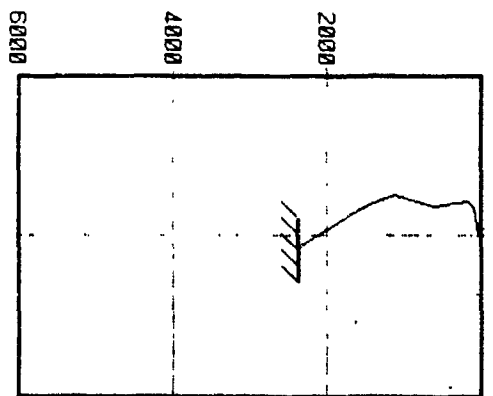
DB LOSS



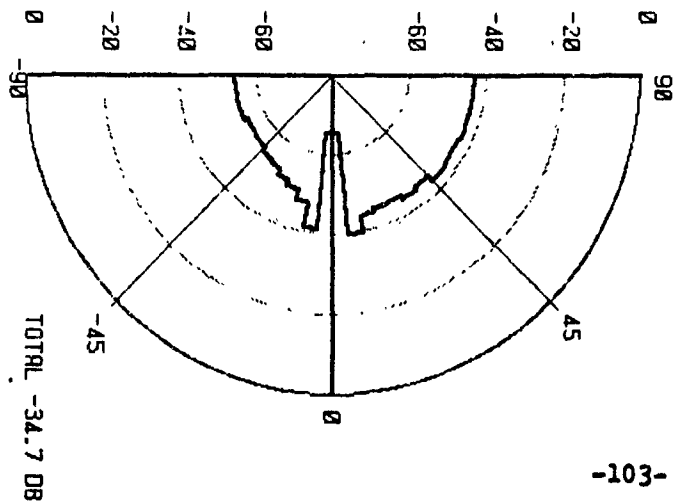
ARRIVAL ANGLE



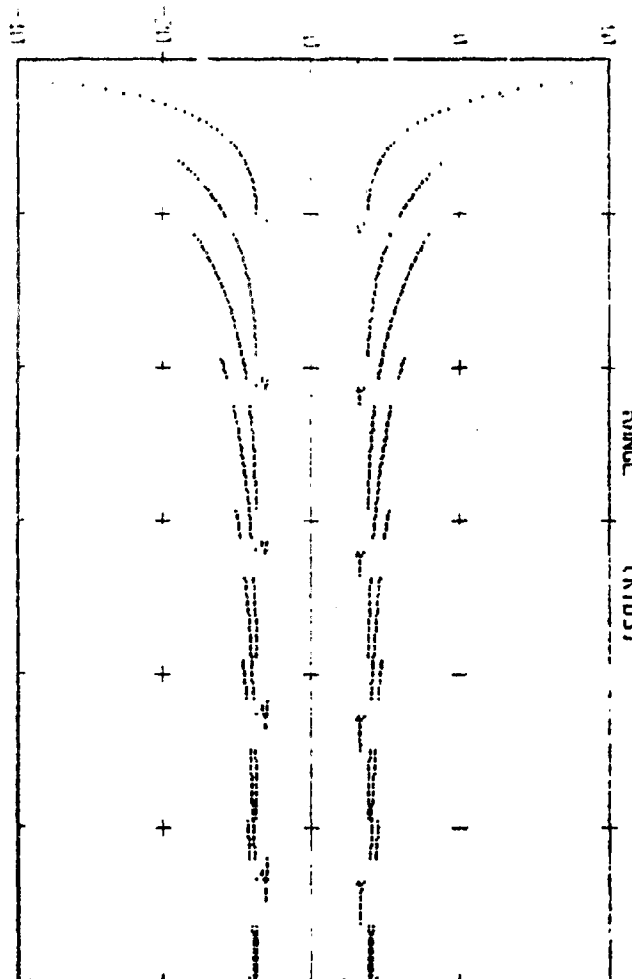
DEPTH IN METERS



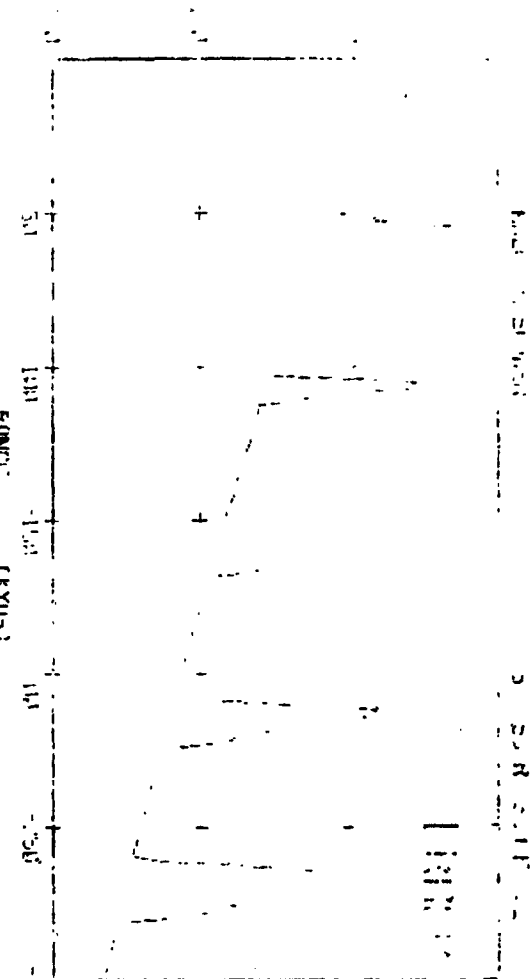
NOISE (DB)



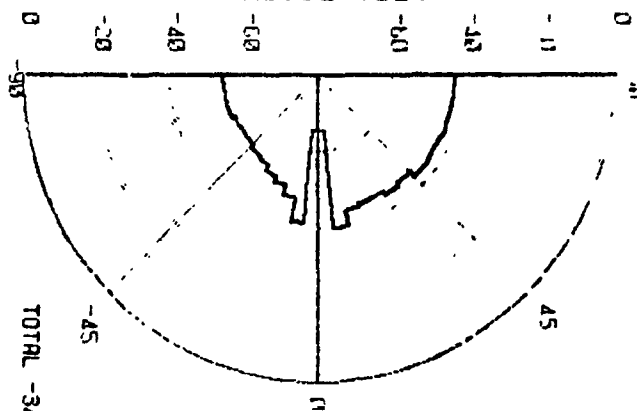
ARRIVAL ANGLE



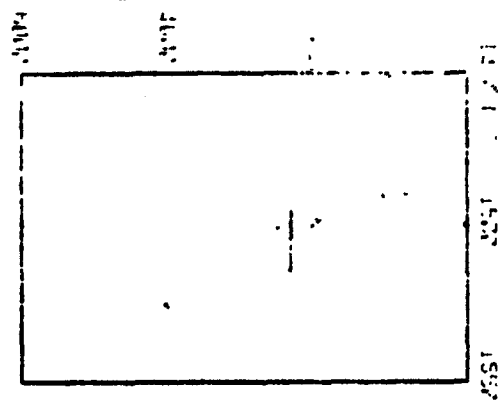
DB LOSS



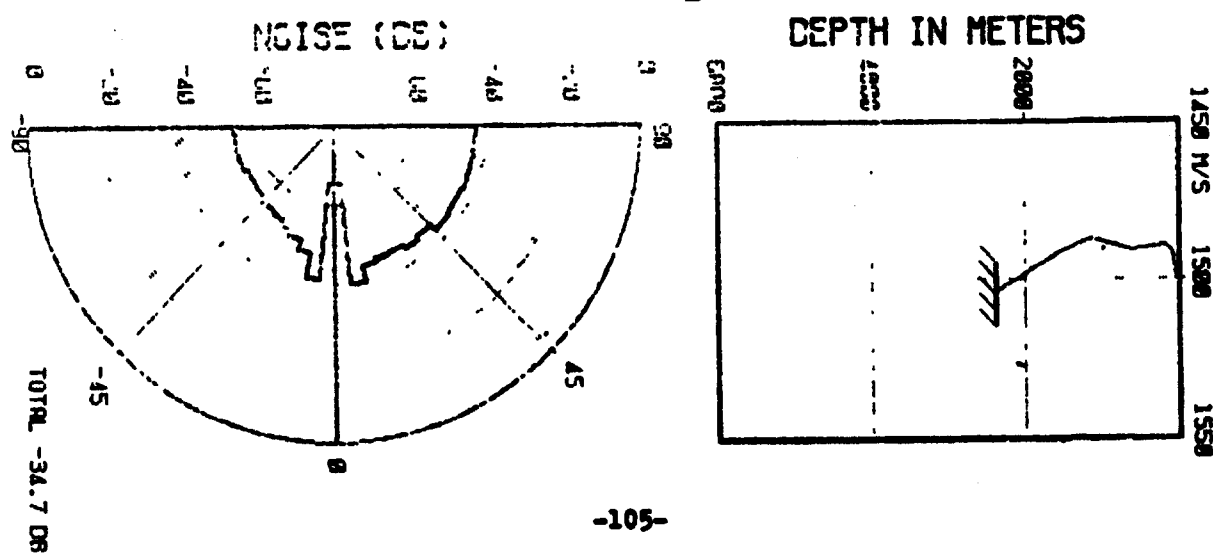
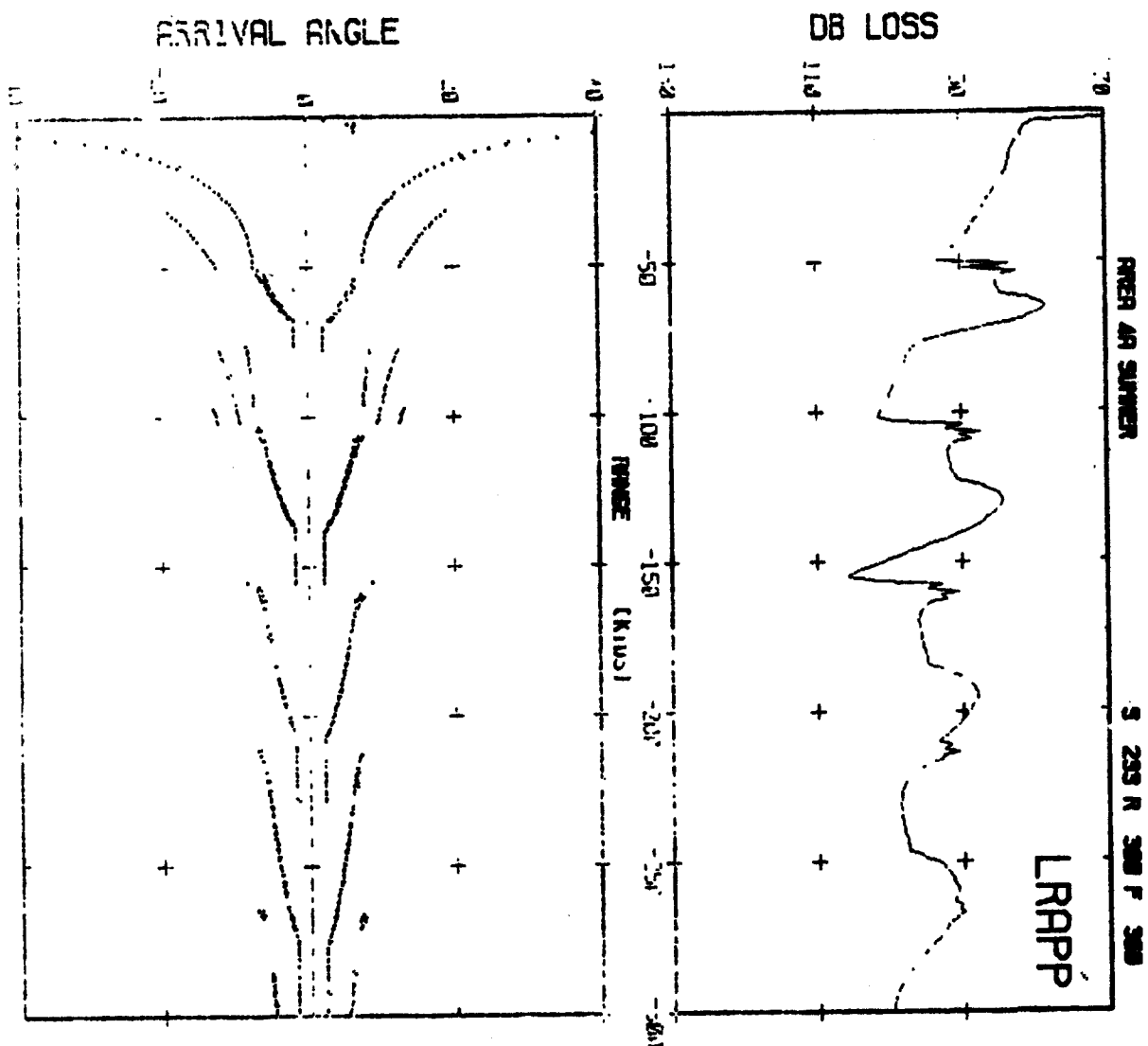
NOISE (DB)

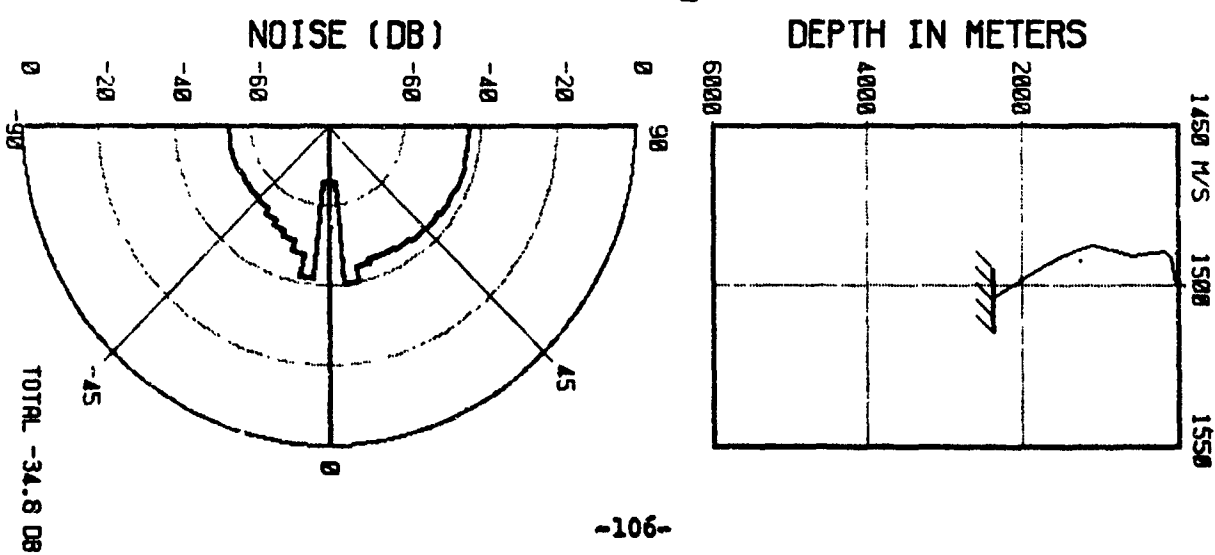
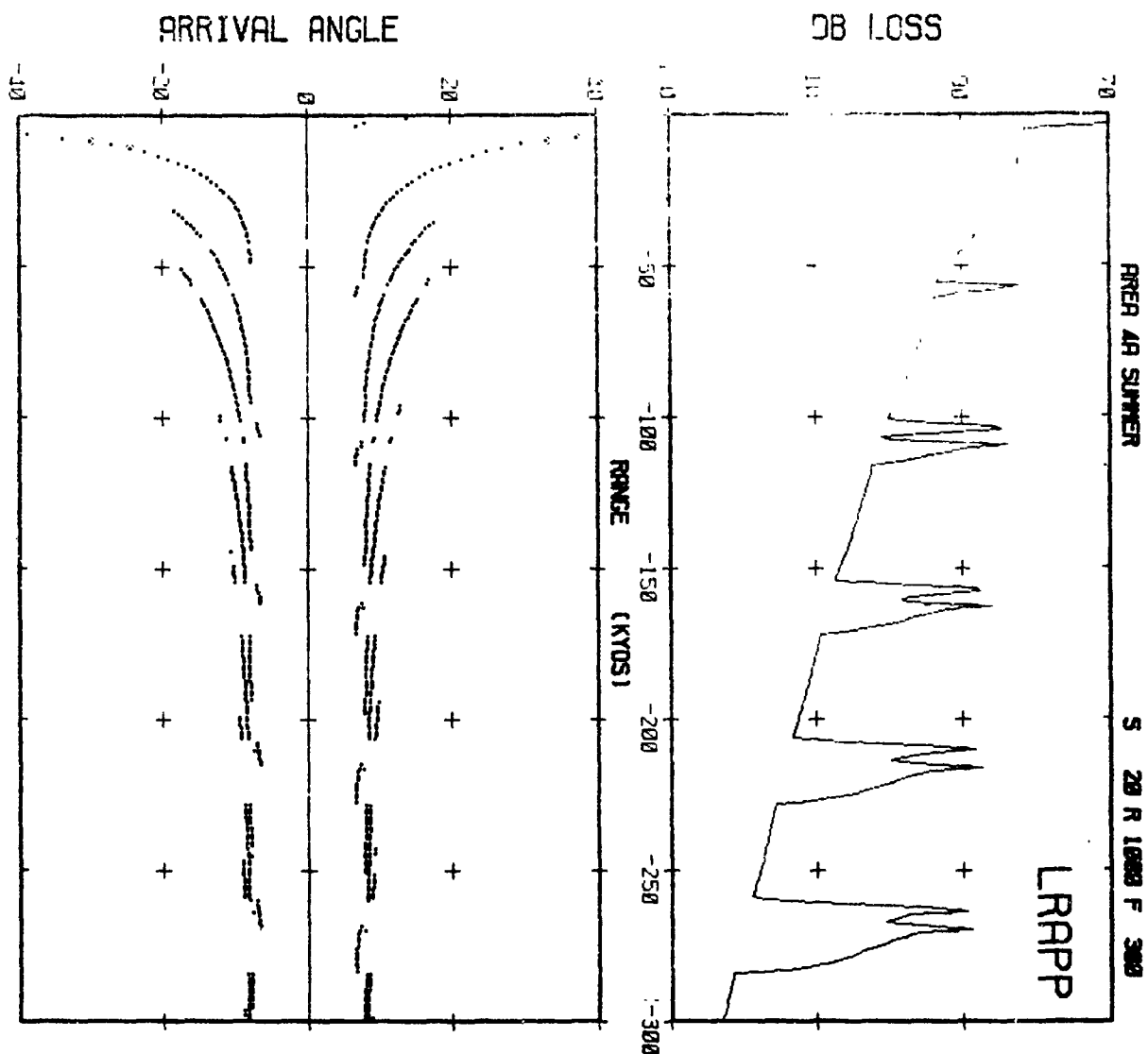


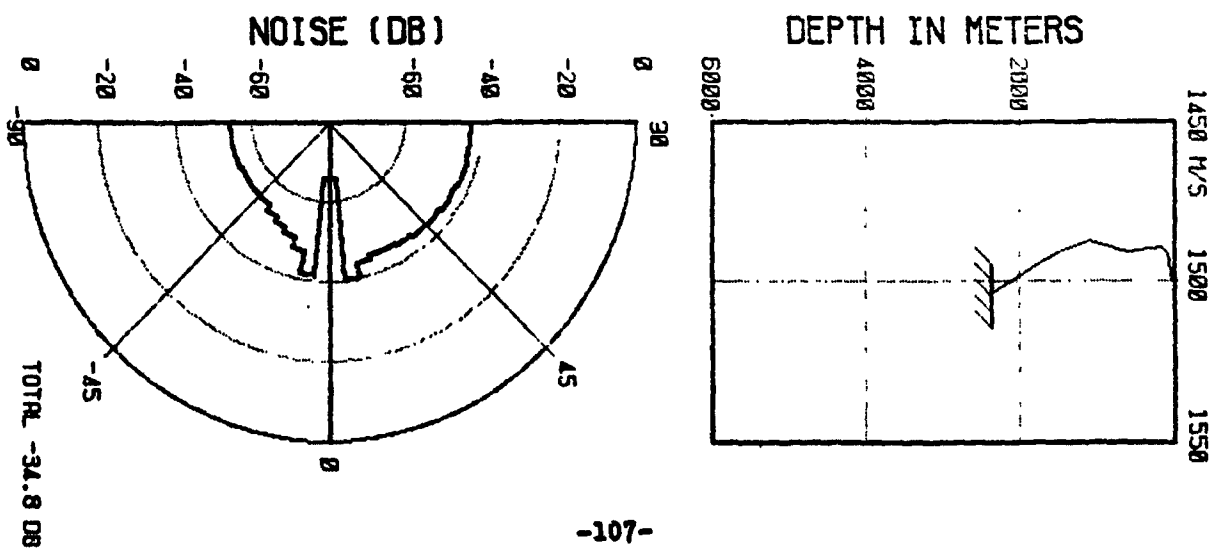
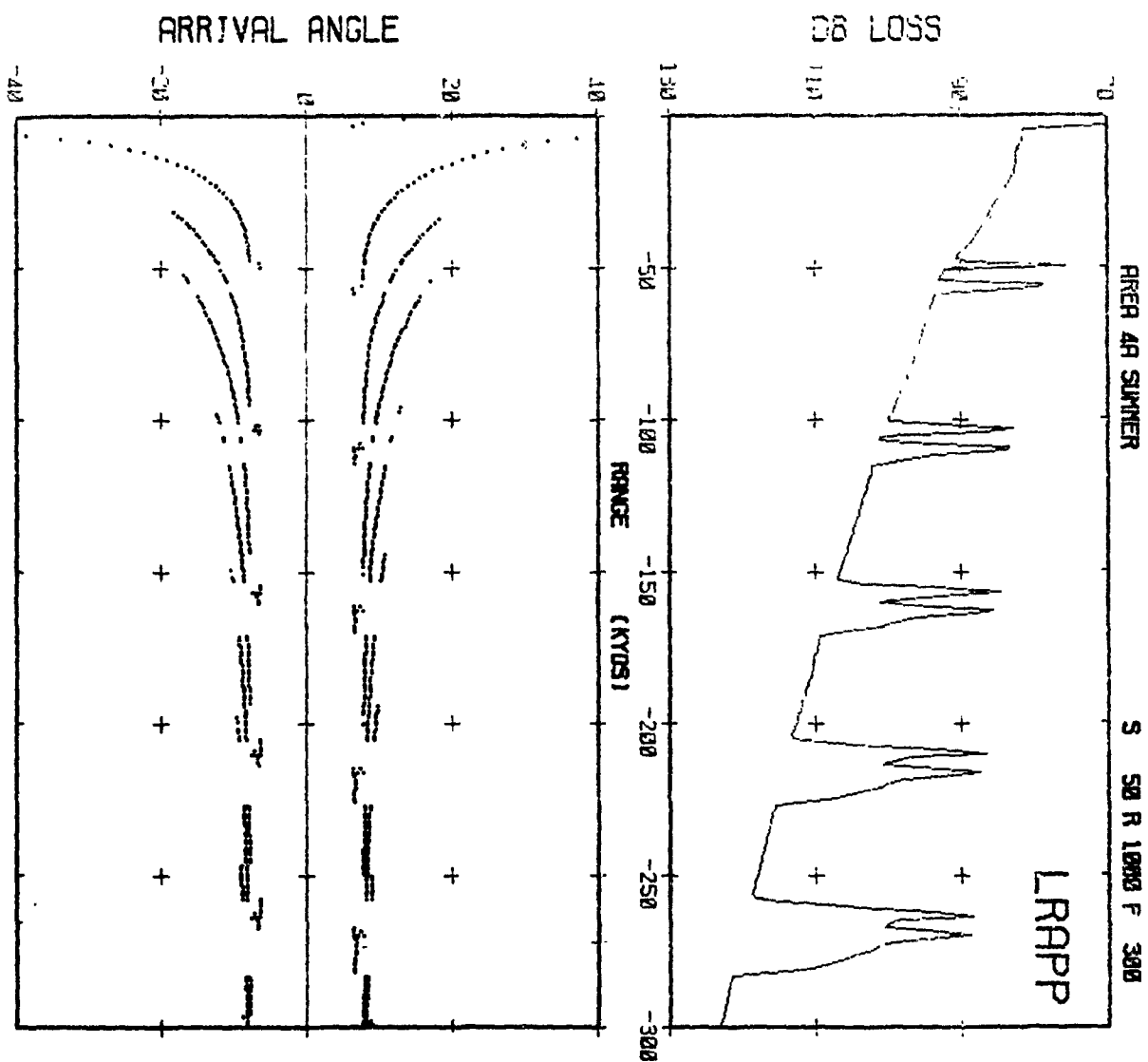
DEPTH IN METERS

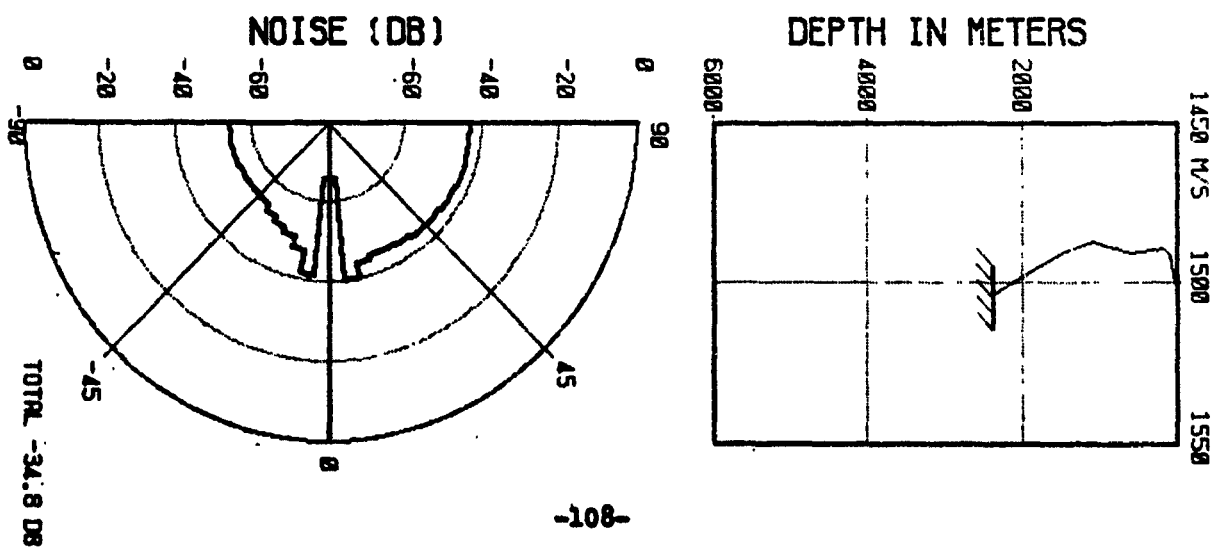
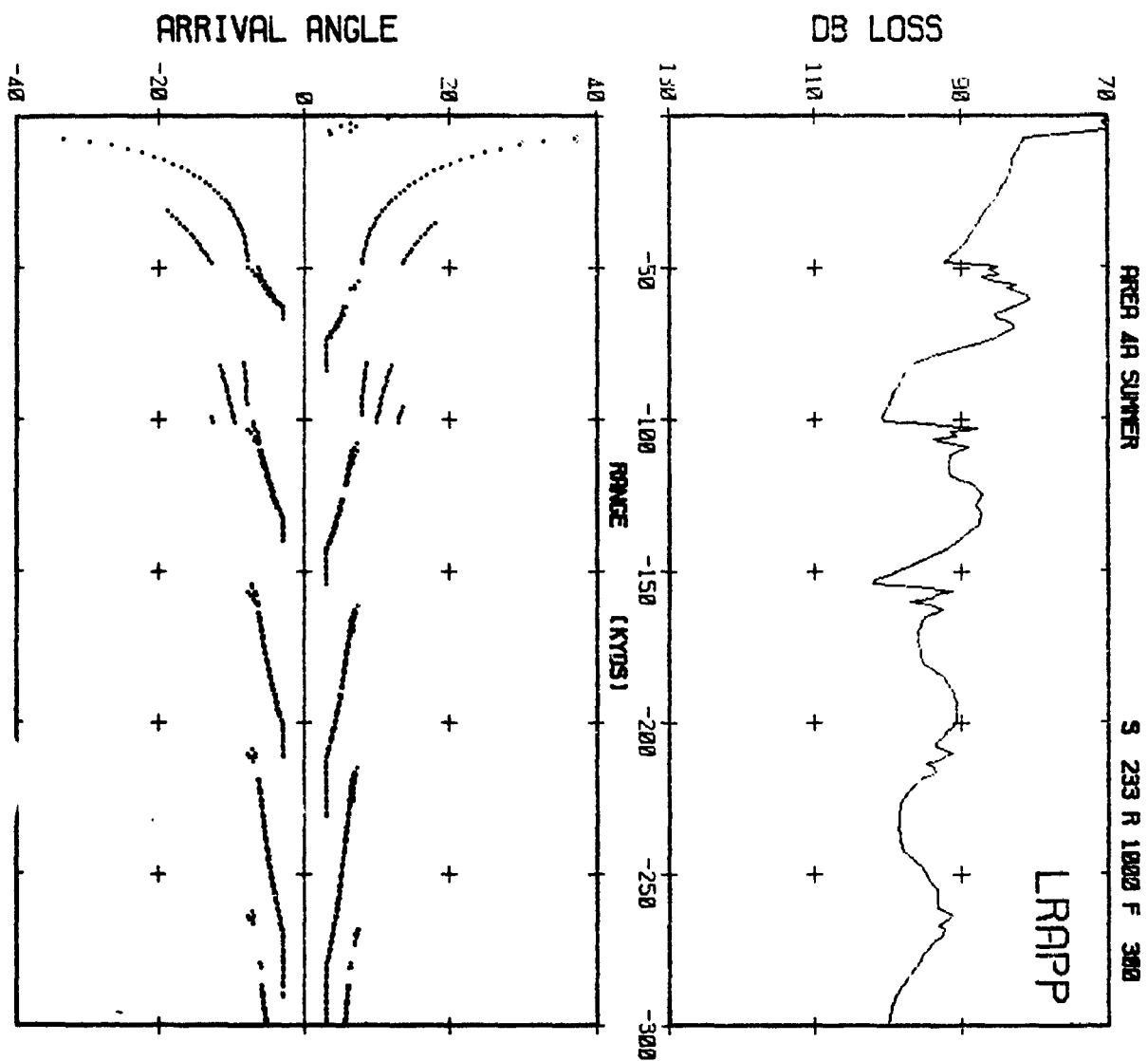


TOTAL -34.7 DB





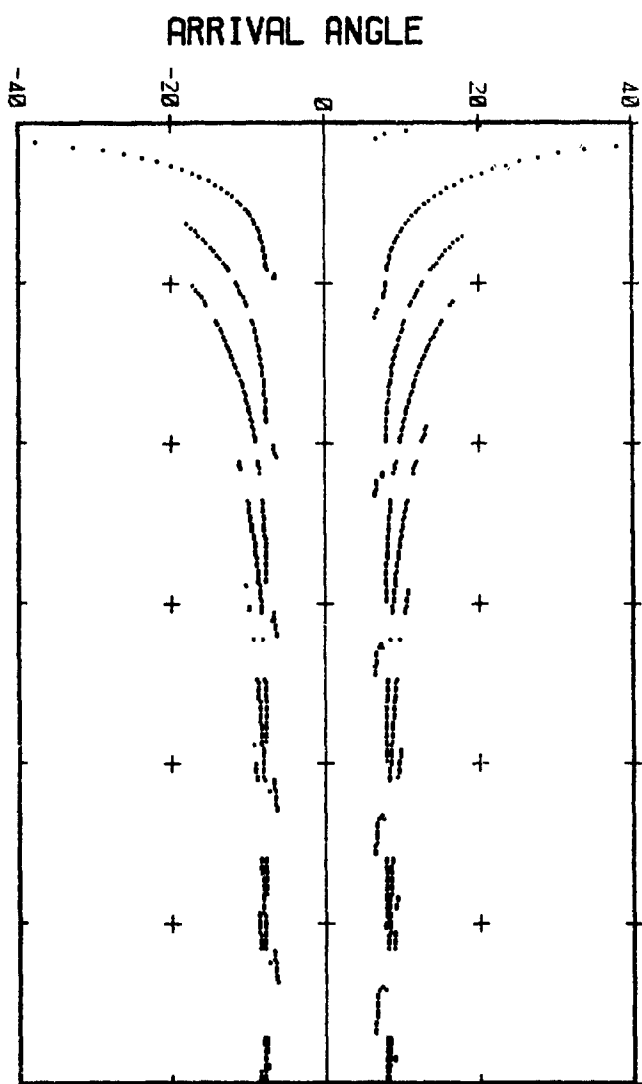
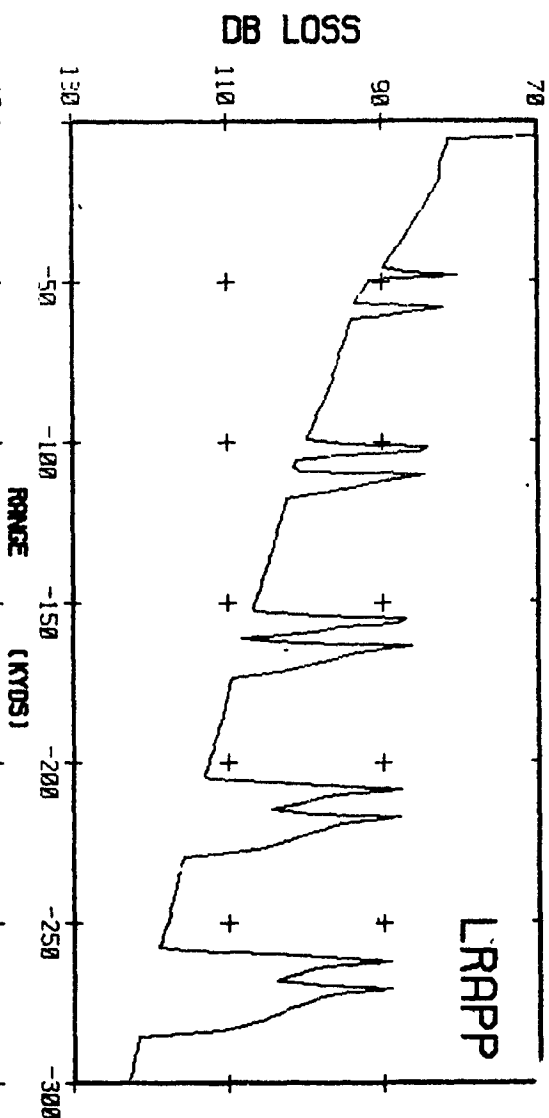




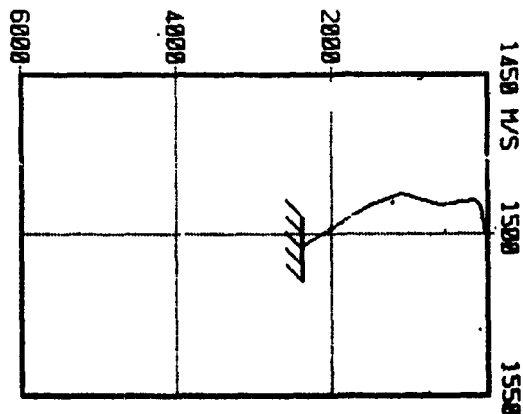
AREA 49 SUMMER

S 28 R 1500 F 300

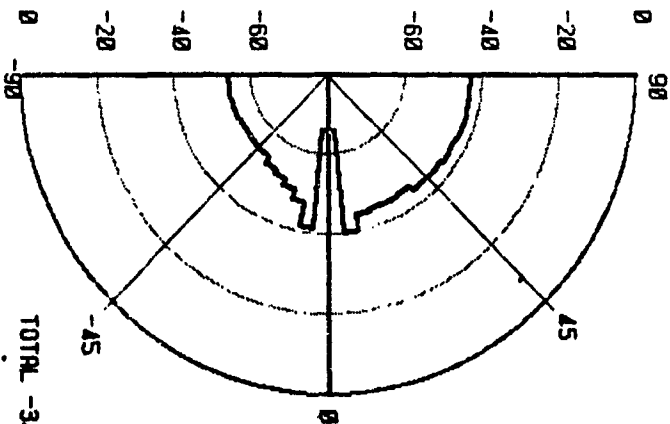
LRAPP



DEPTH IN METERS



NOISE (DB)



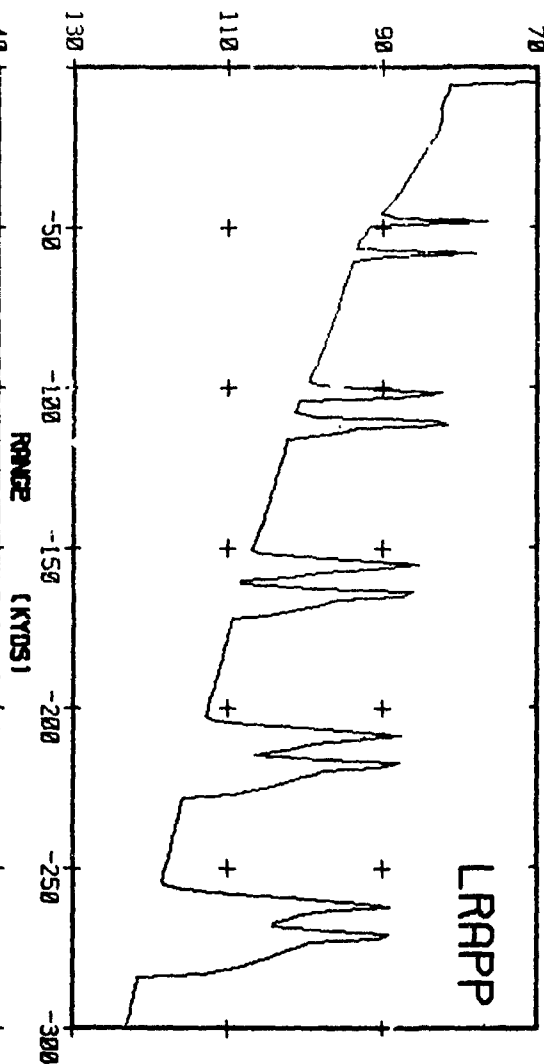
TOTAL -34.8 DB

AREA 4R SUMMER

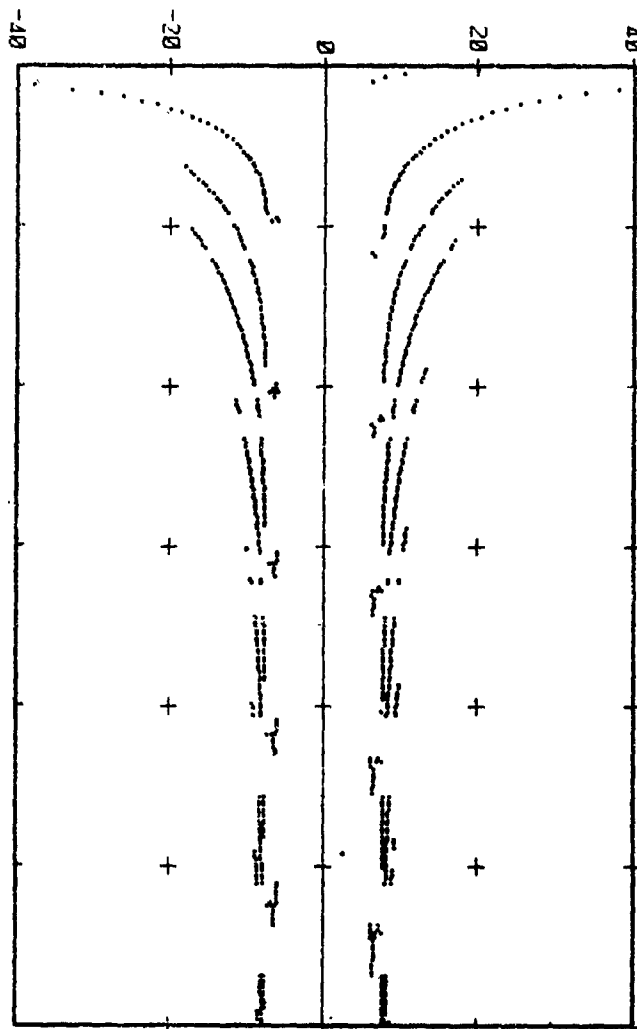
S 50 R 1500 F 300

1450 M/S 1500 1550

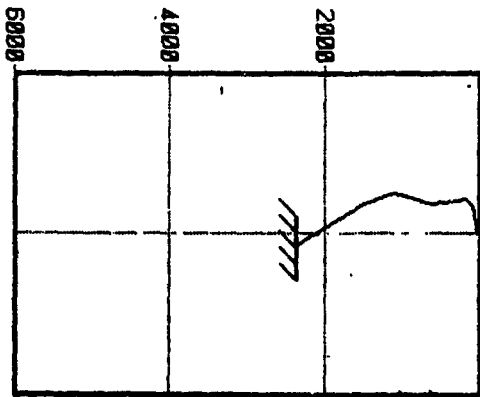
DB LOSS



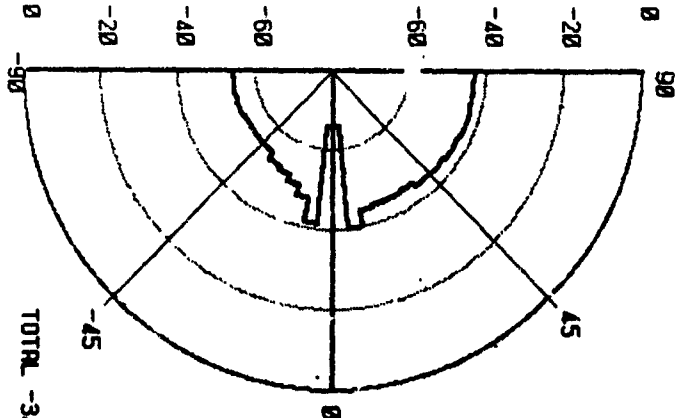
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



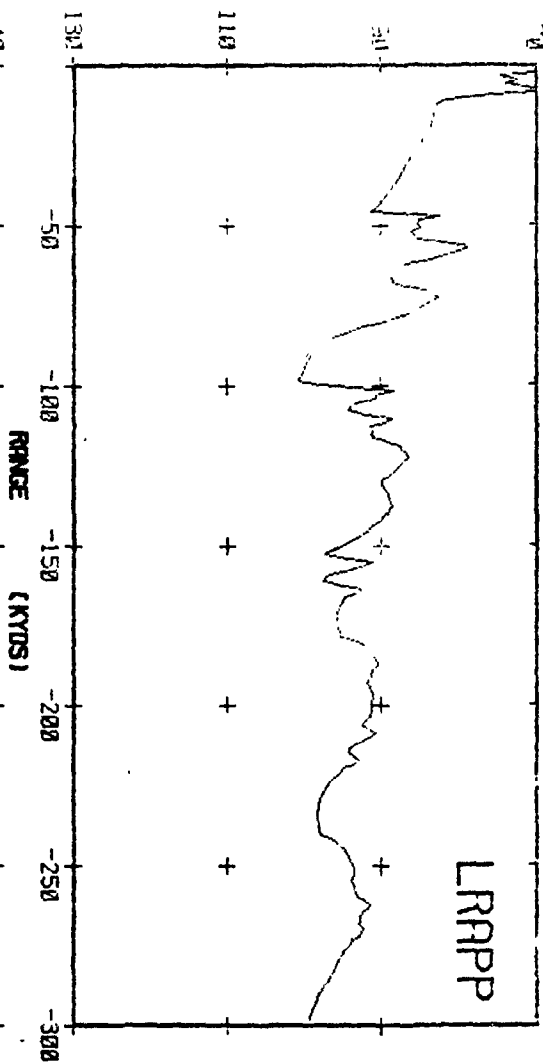
AREA 4R SUMNER

S 233 R 1500 F 360

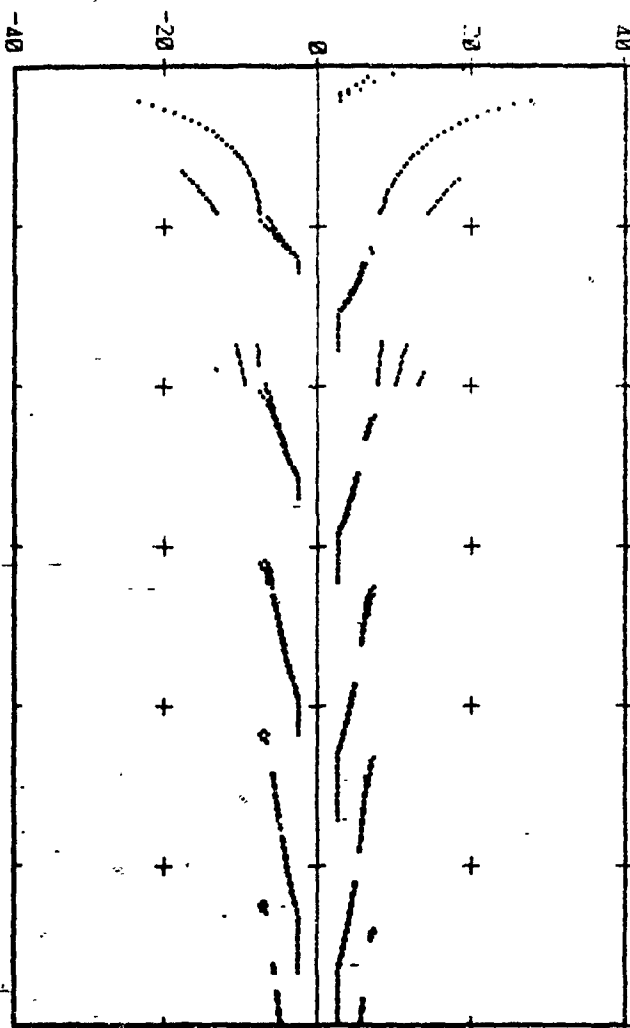
1450 M/S 1500

1550

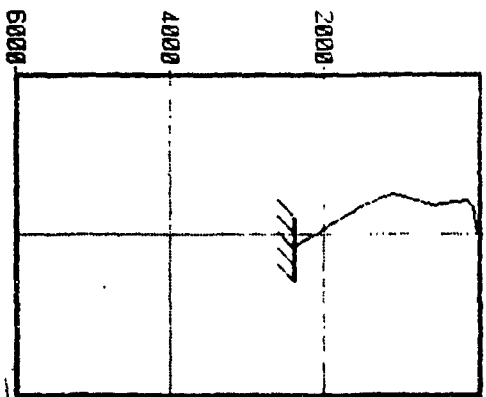
DB LOSS



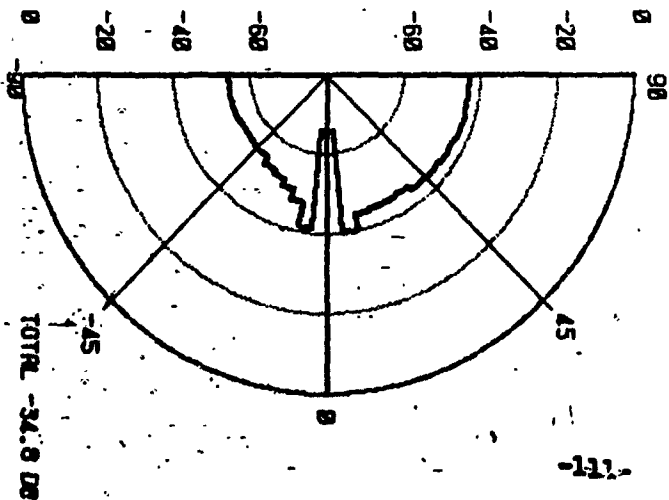
ARRIVAL ANGLE

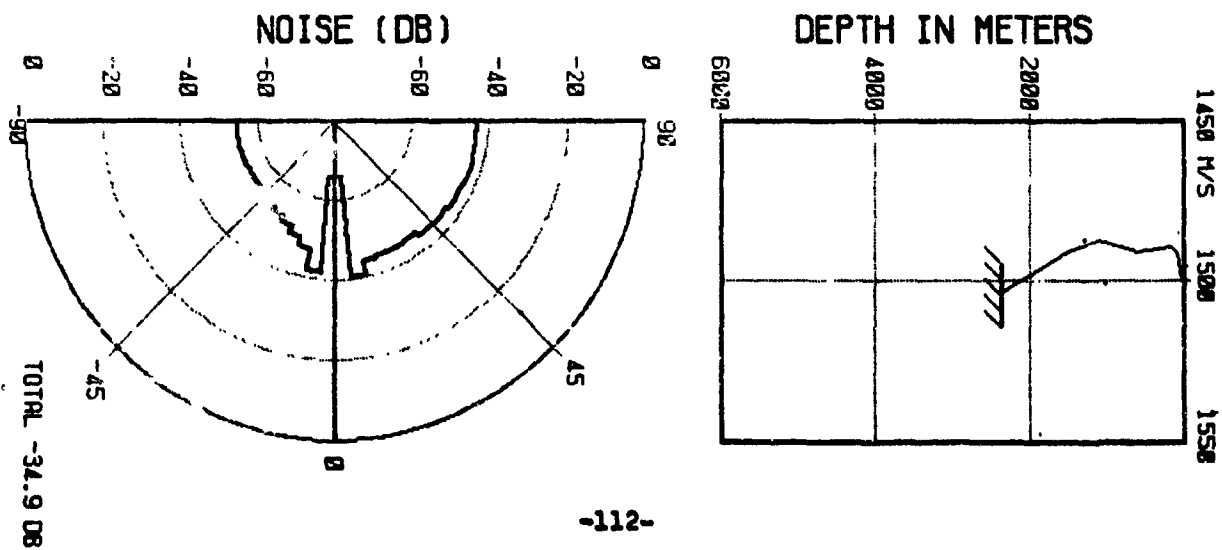
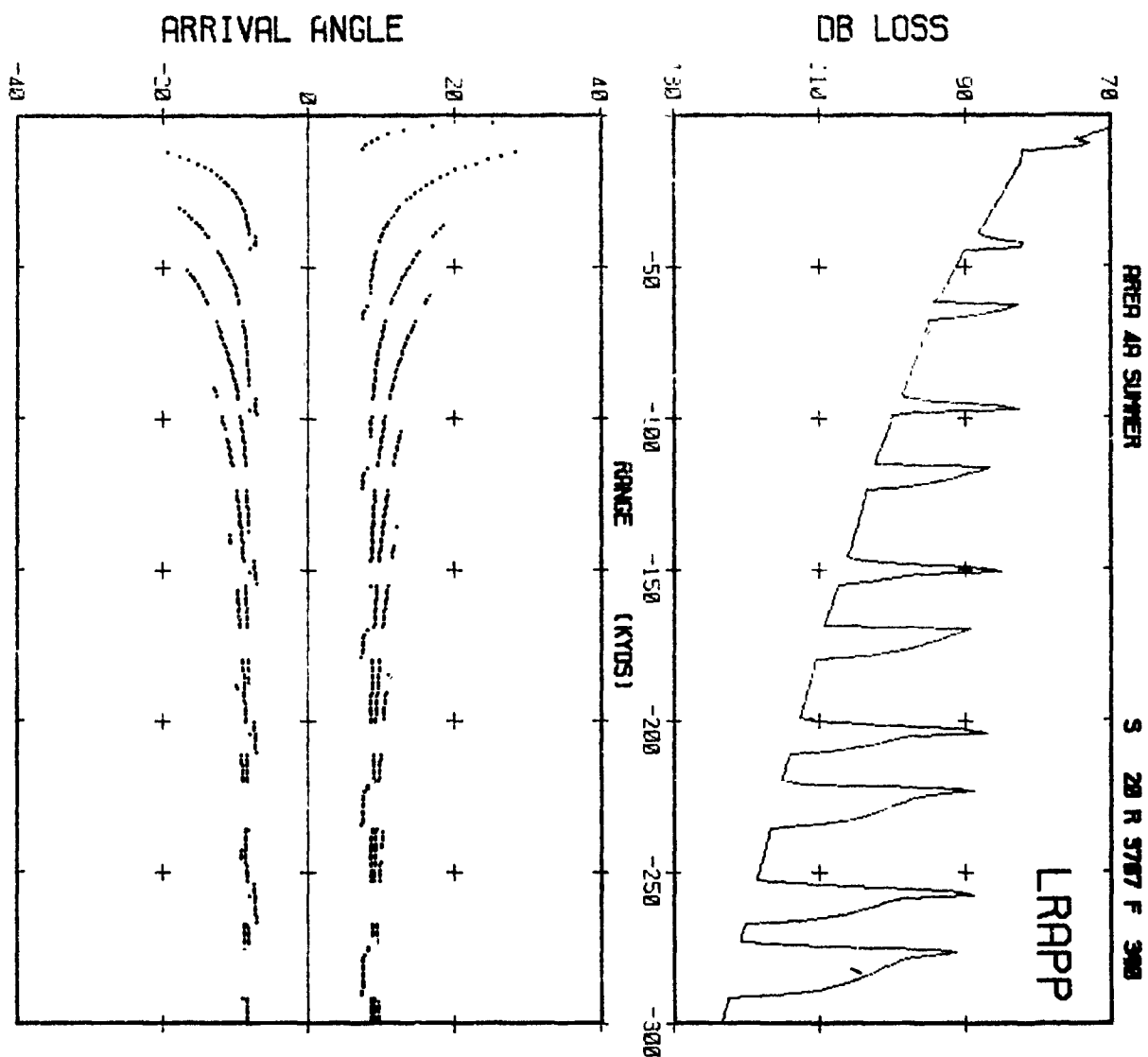


DEPTH IN METERS



NOISE (DB)

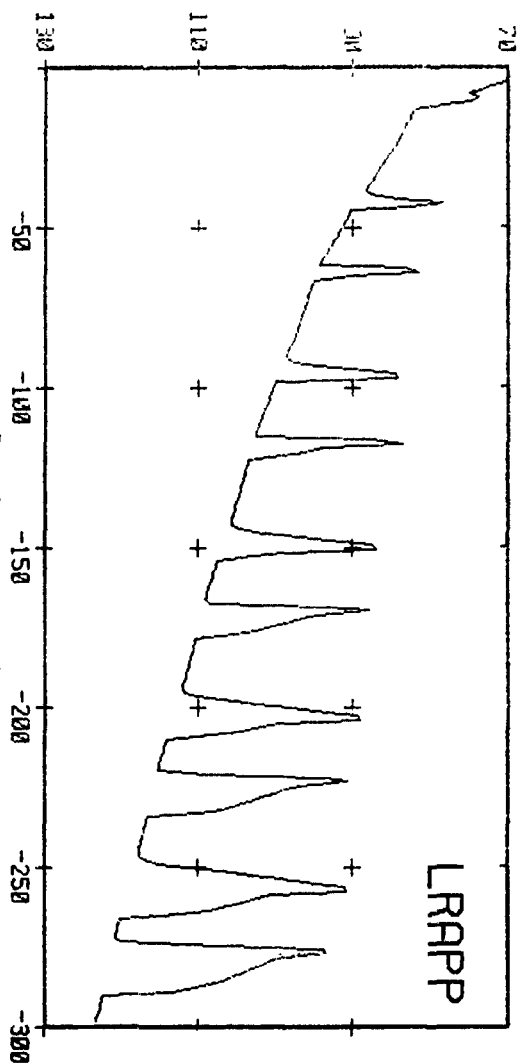




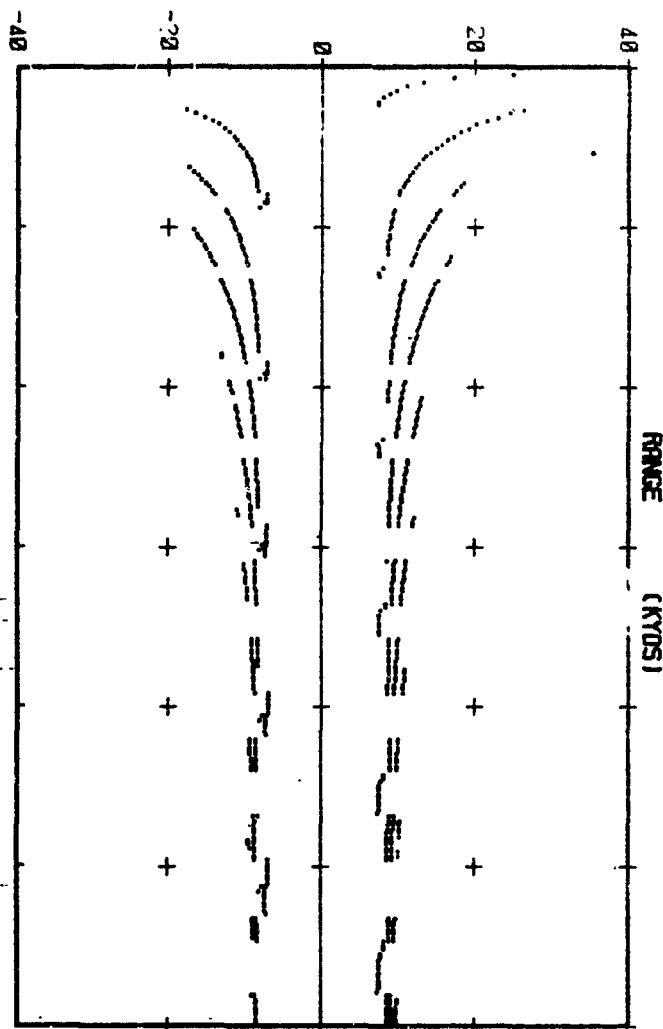
PRER 4R SUMMER

S 50 R 3787 F 300

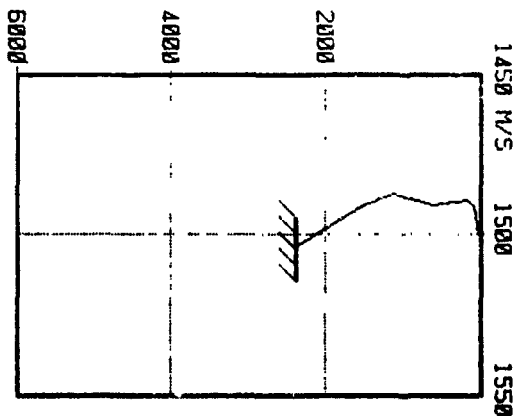
DB LOSS



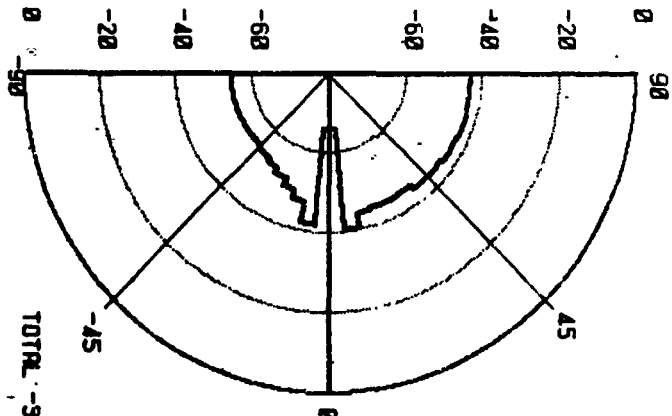
ARRIVAL ANGLE

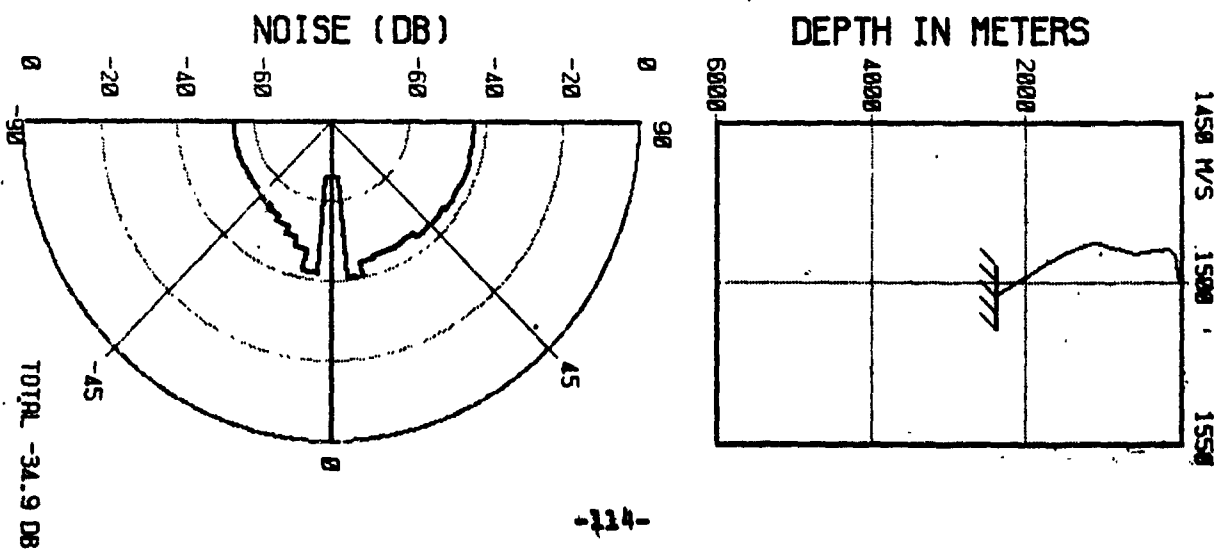
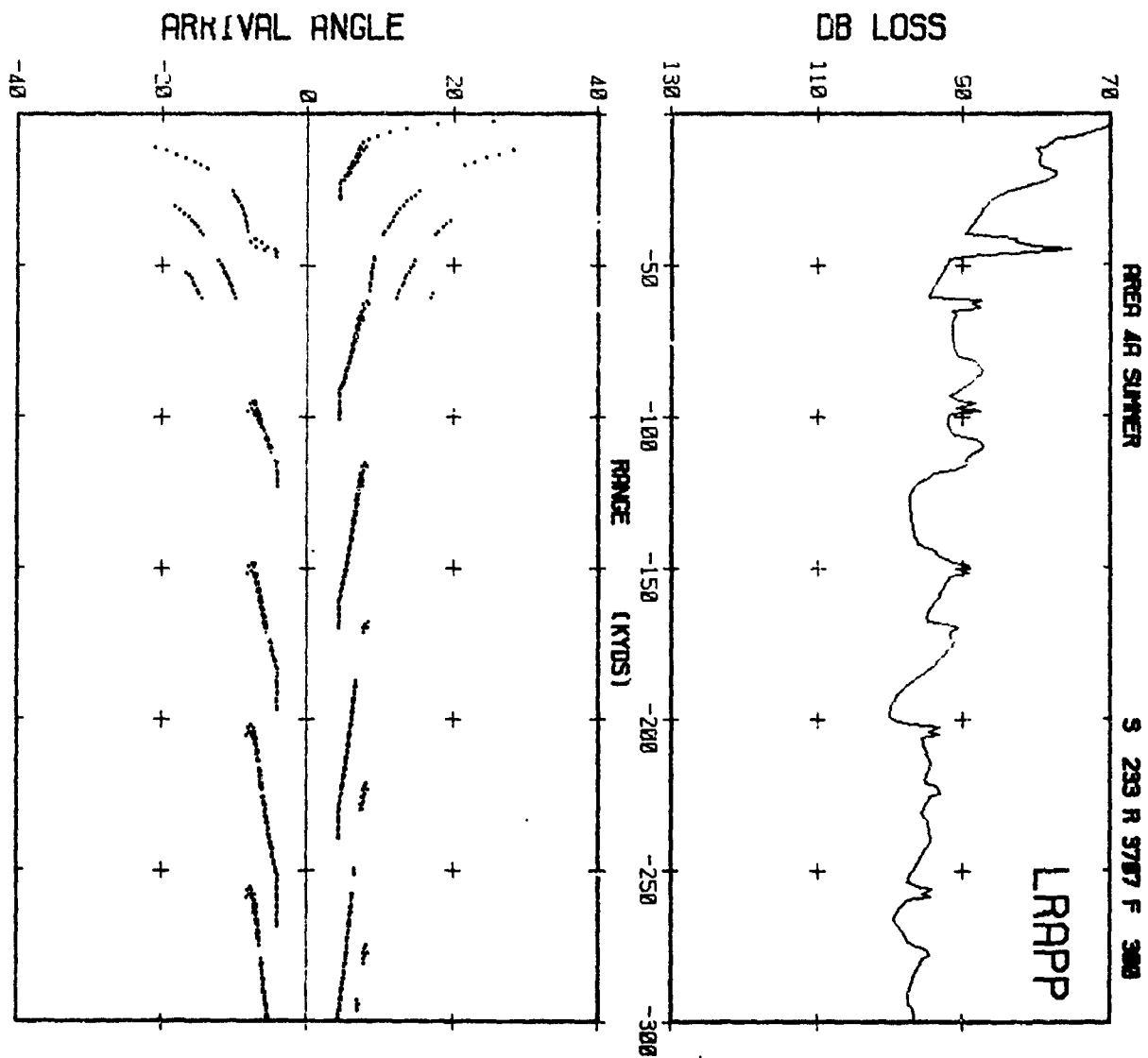


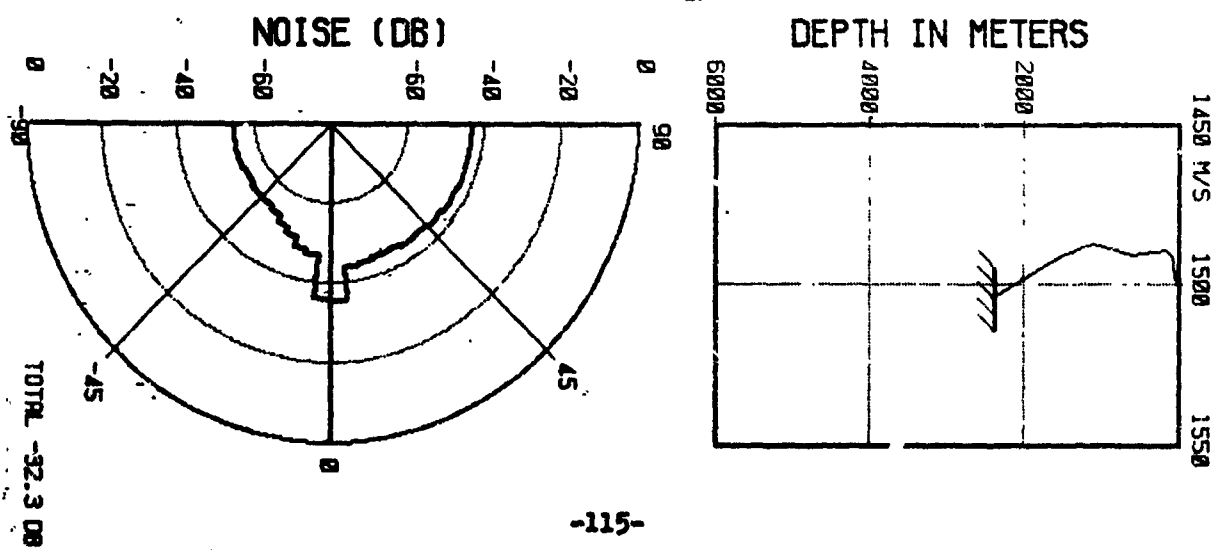
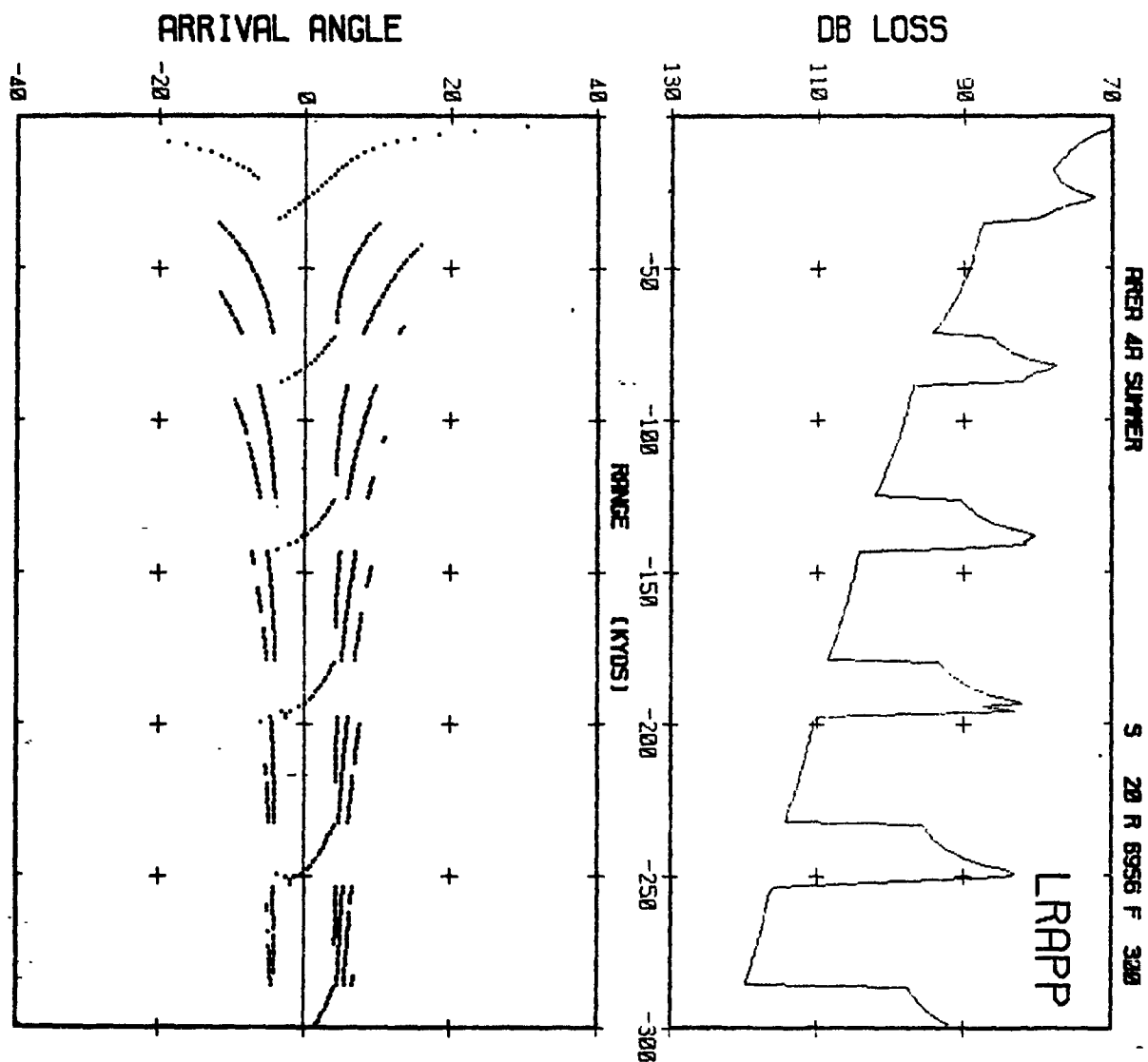
DEPTH IN METERS

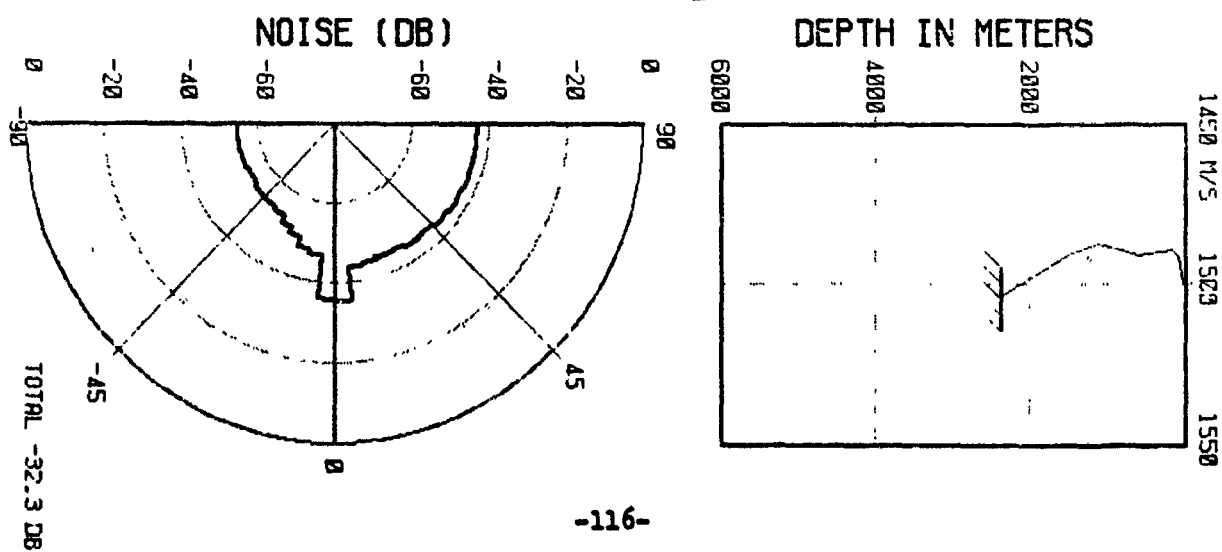
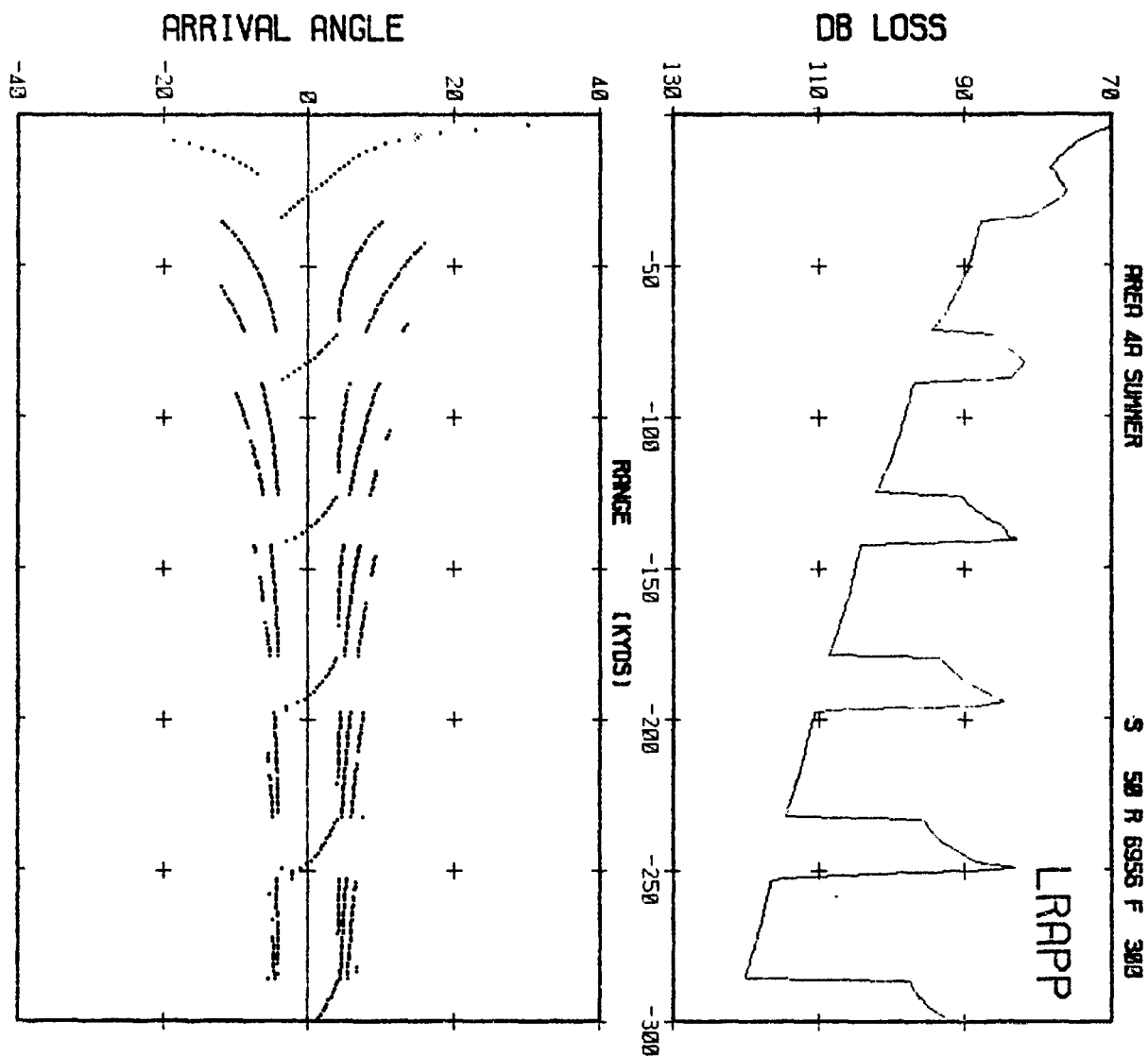


NOISE (DB)







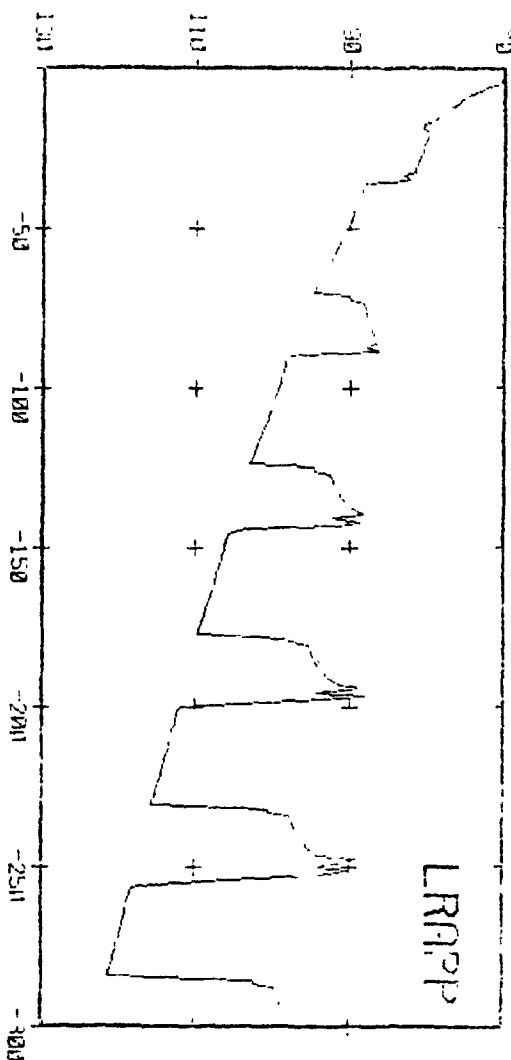


RIER AR SUMNER

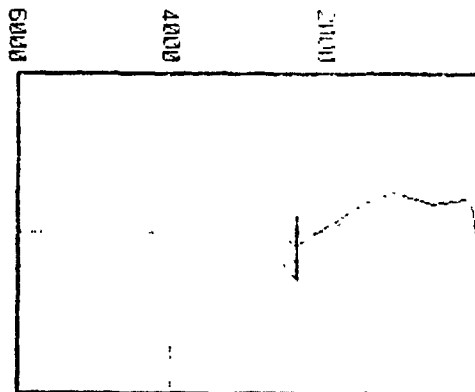
S 233 R 0306 F 304

14:00 H S 1500 1550

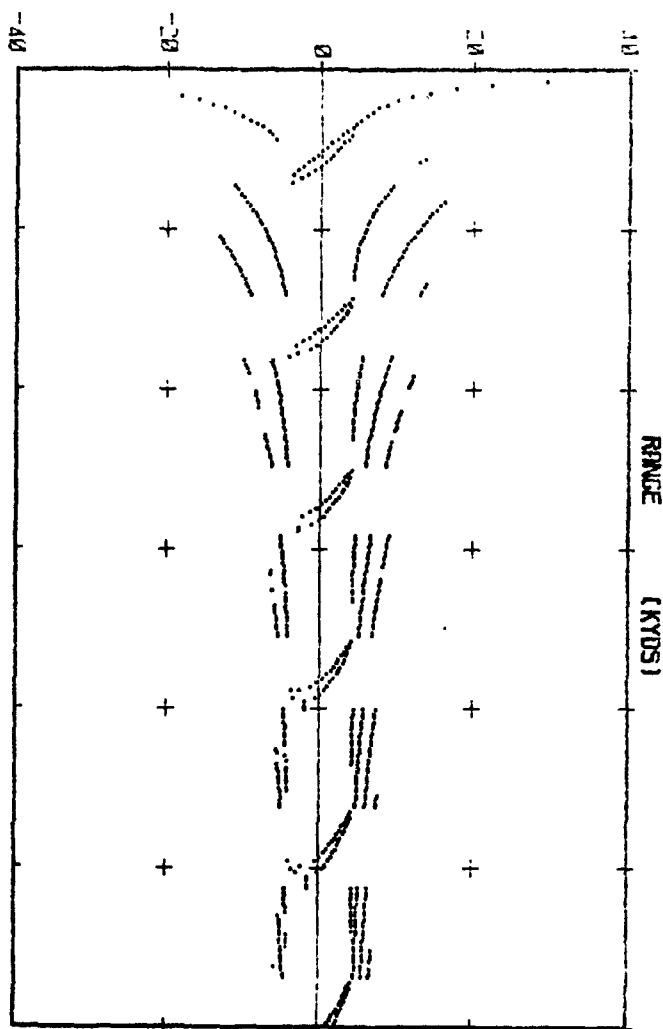
DB LOSS



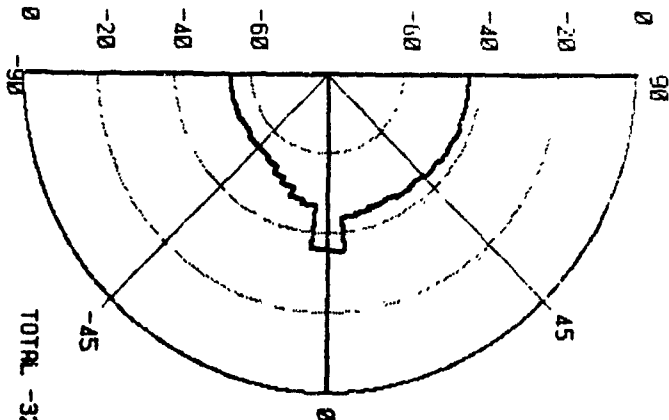
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

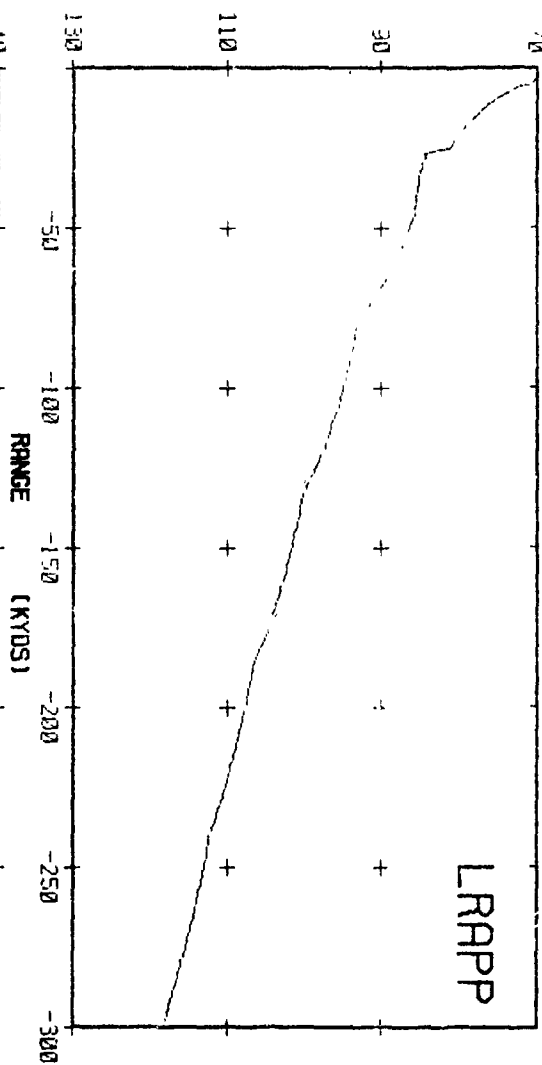


AREA 4A SUMMER

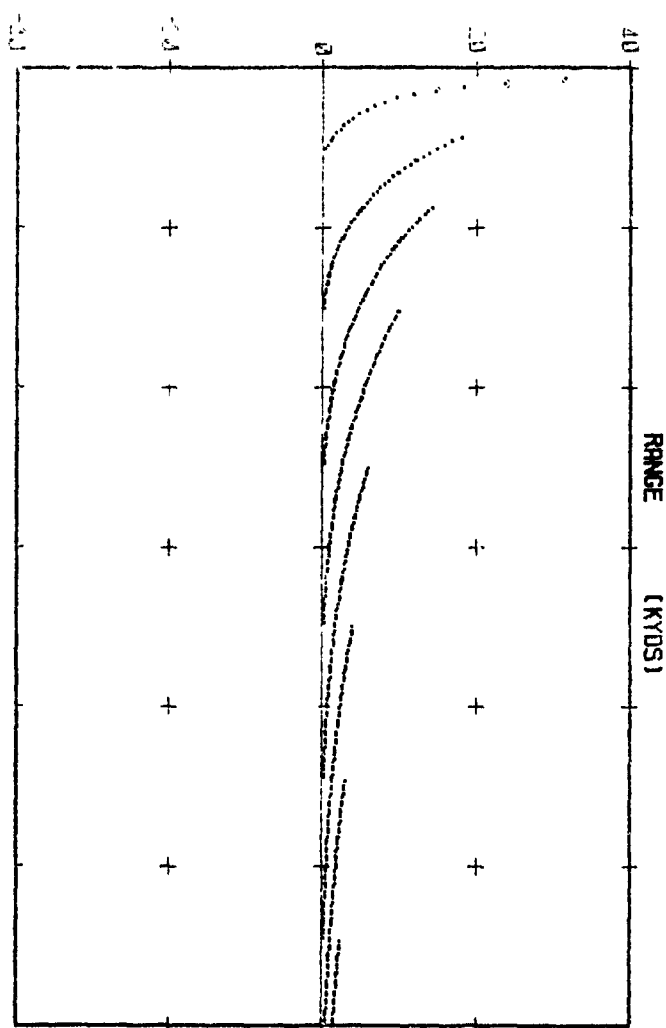
S 20 R 7798 F 300

1450 11/5 1500 1550

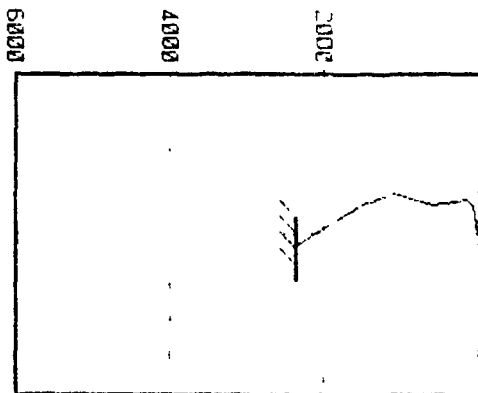
DB LOSS



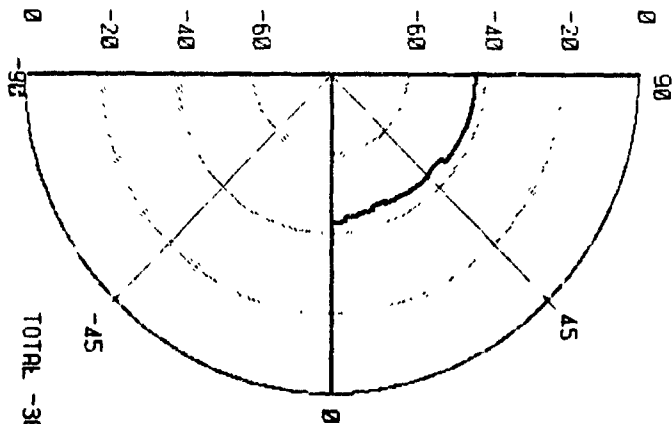
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

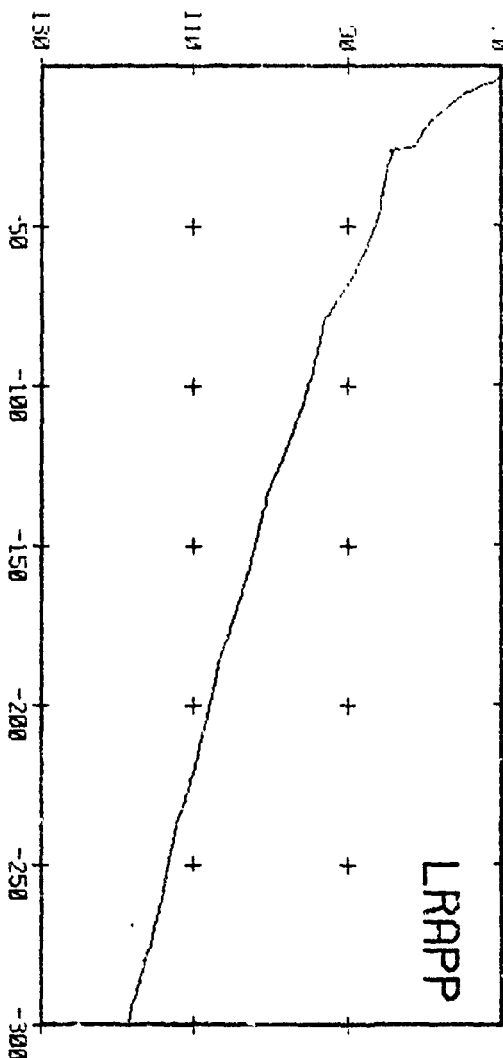


AREA AIR SUMMER

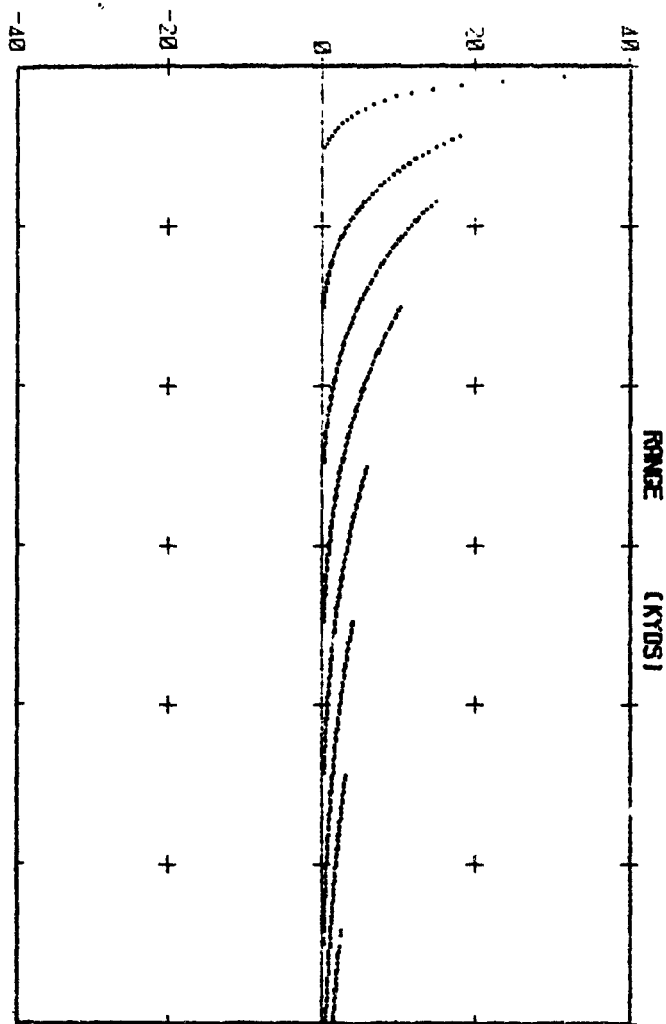
S 50 R 7798 F 300

1450 M/S 1500 1550

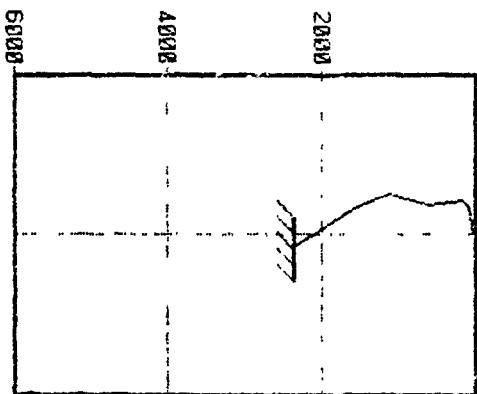
DB LOSS



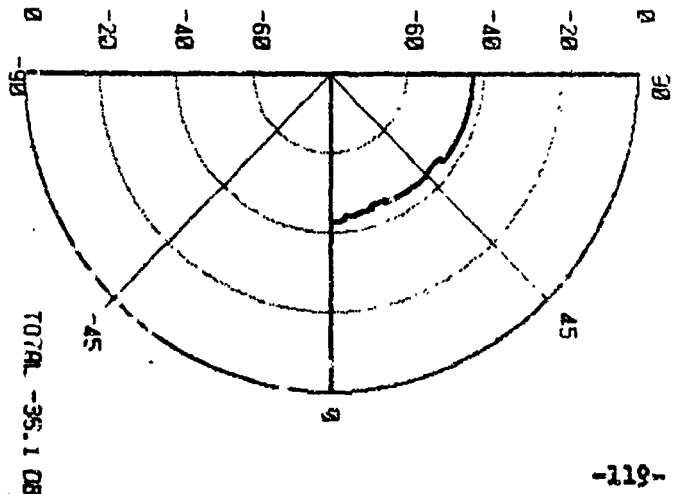
ARRIVAL ANGLE

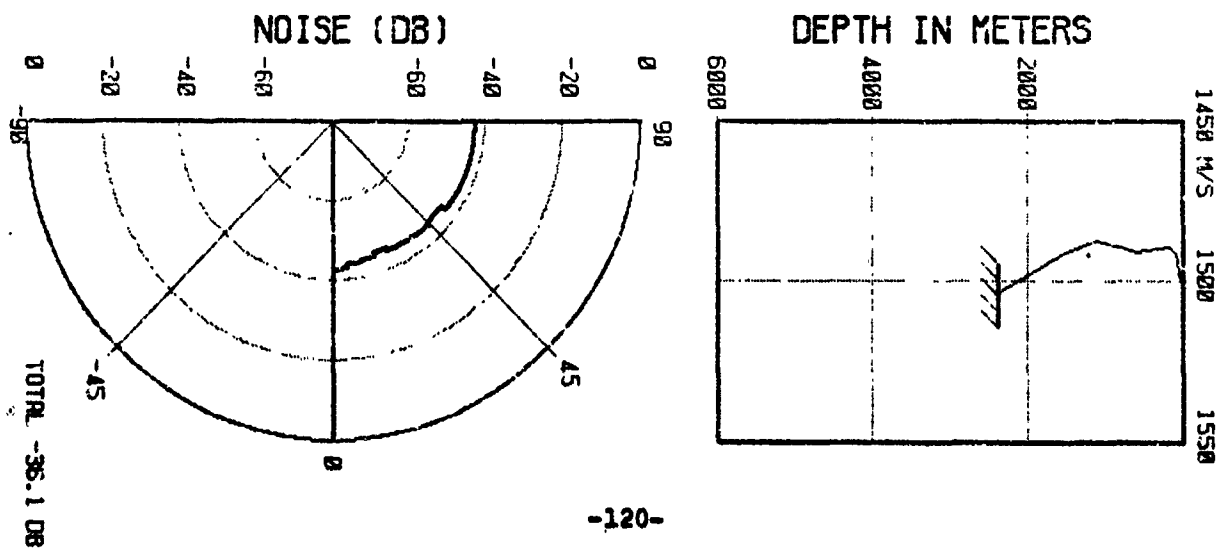
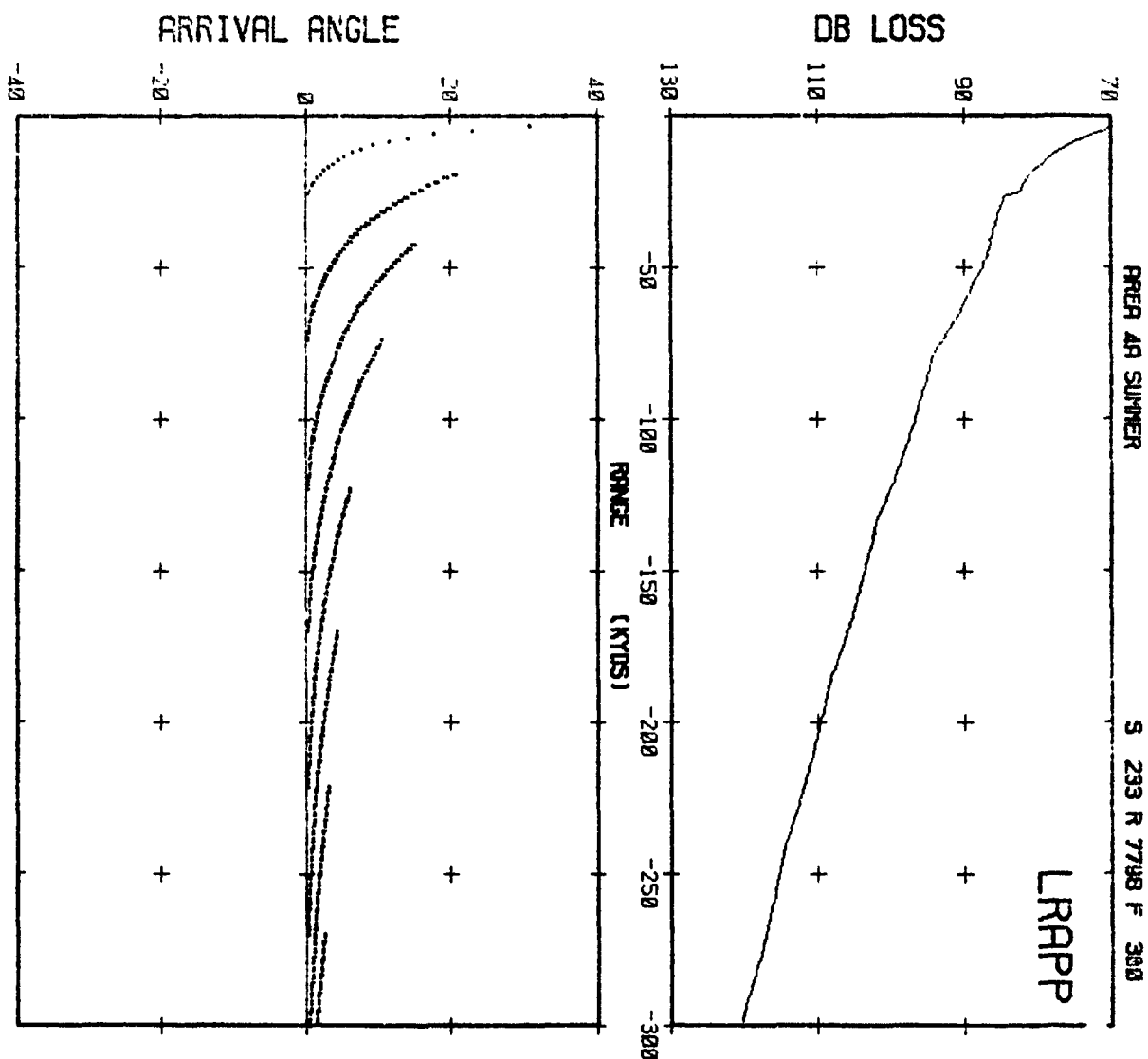


DEPTH IN METERS



NOISE (DB)

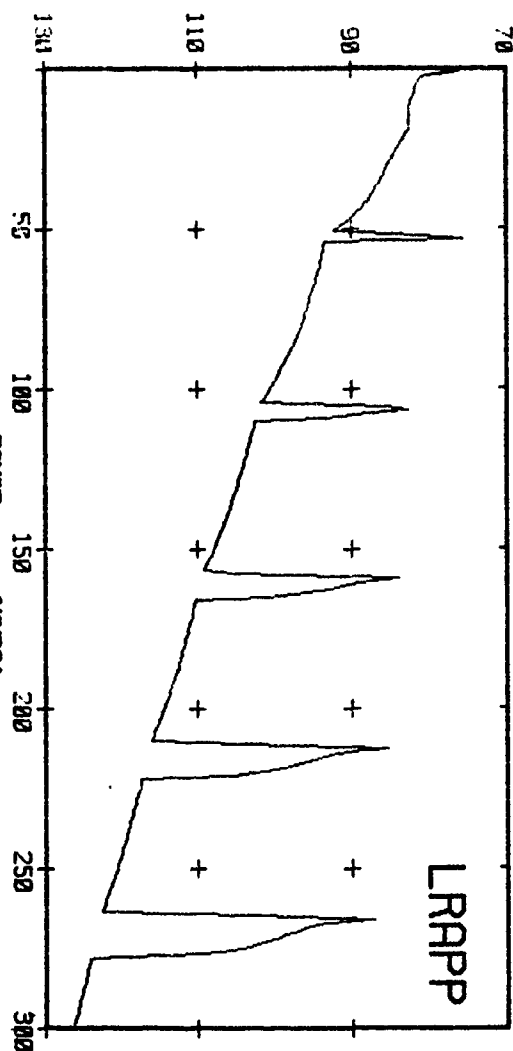




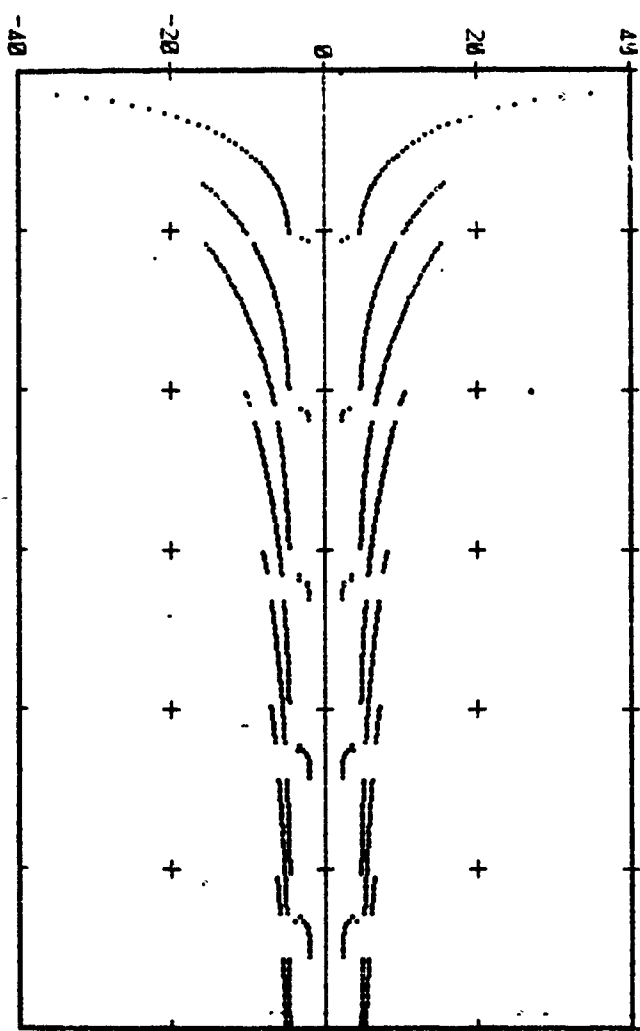
AREA 4A SUMMER

S 20 R 00 F 000

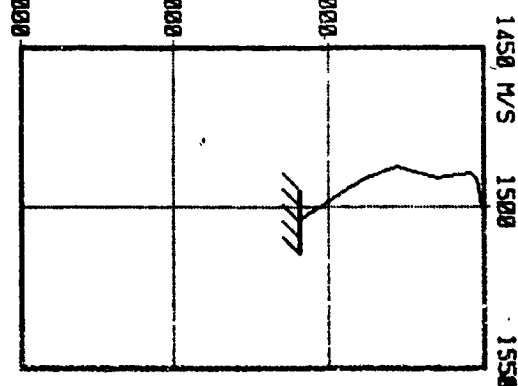
DB LOSS



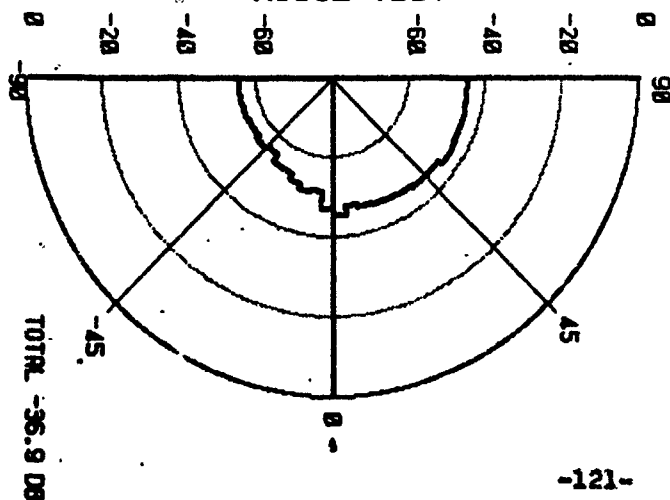
ARRIVAL ANGLE

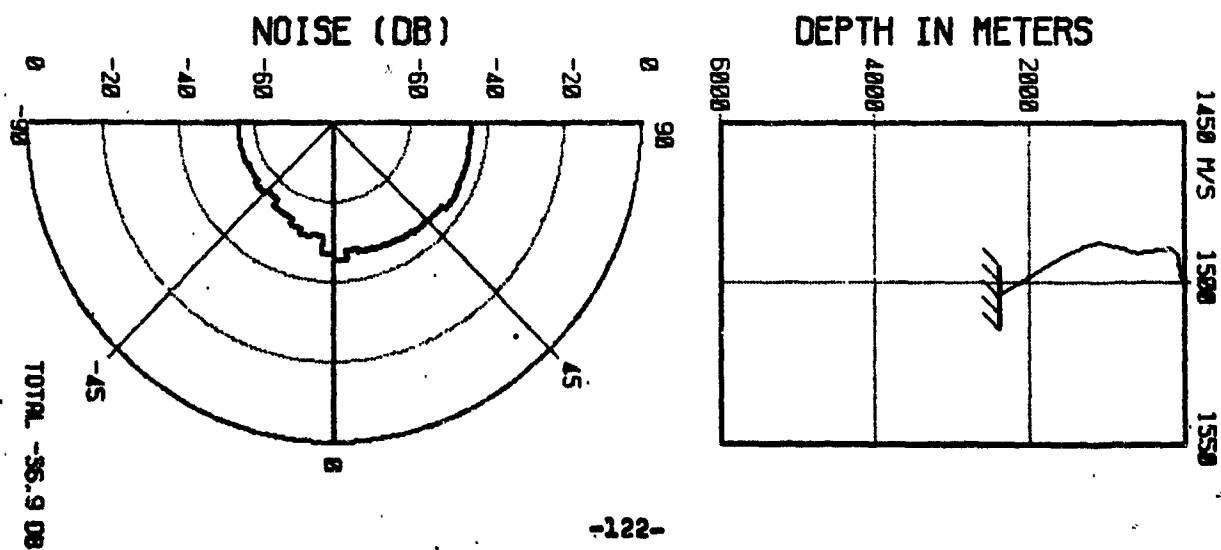
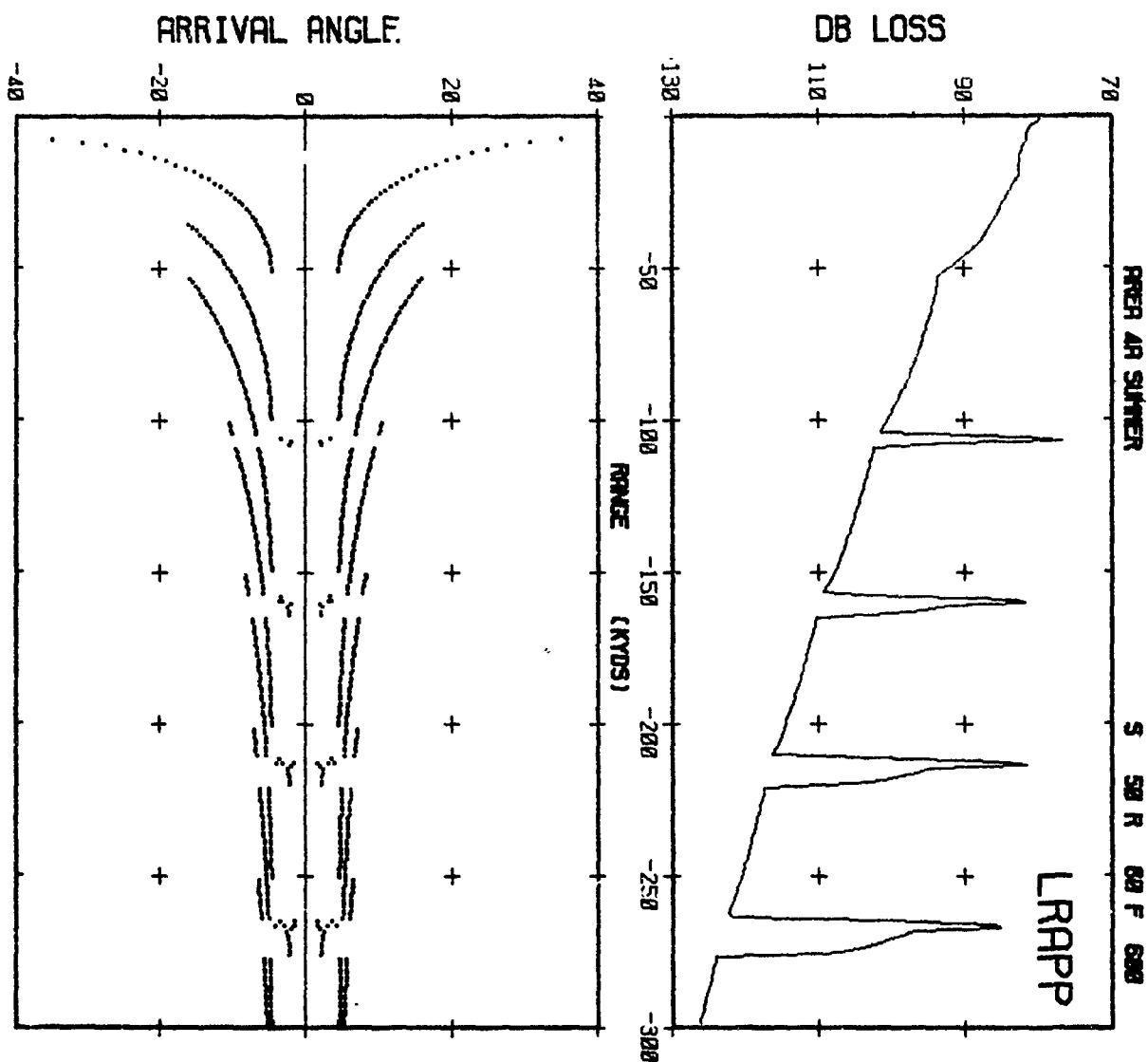


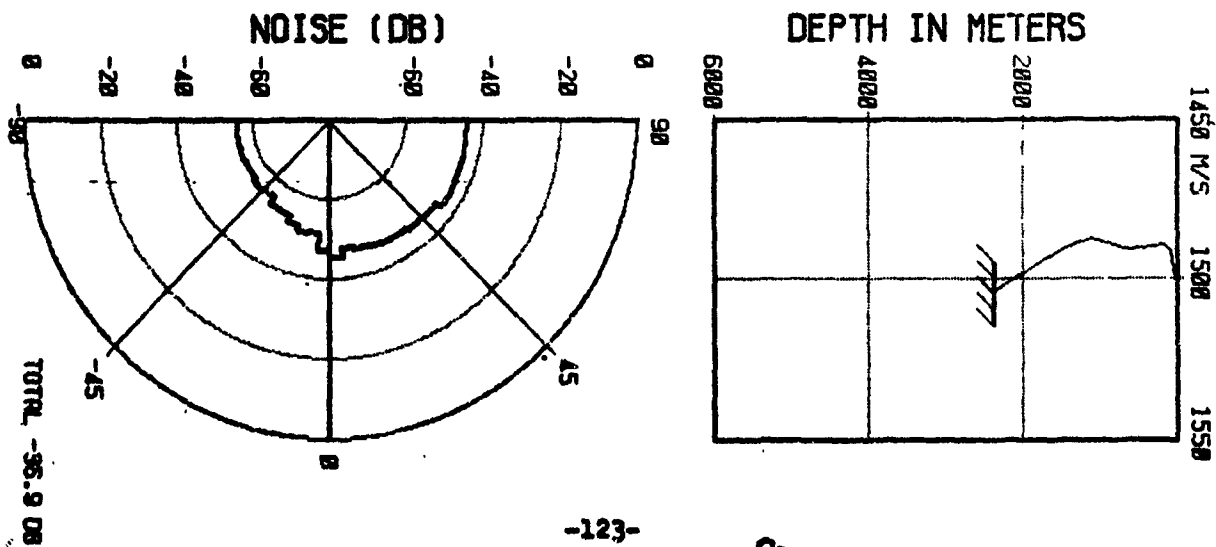
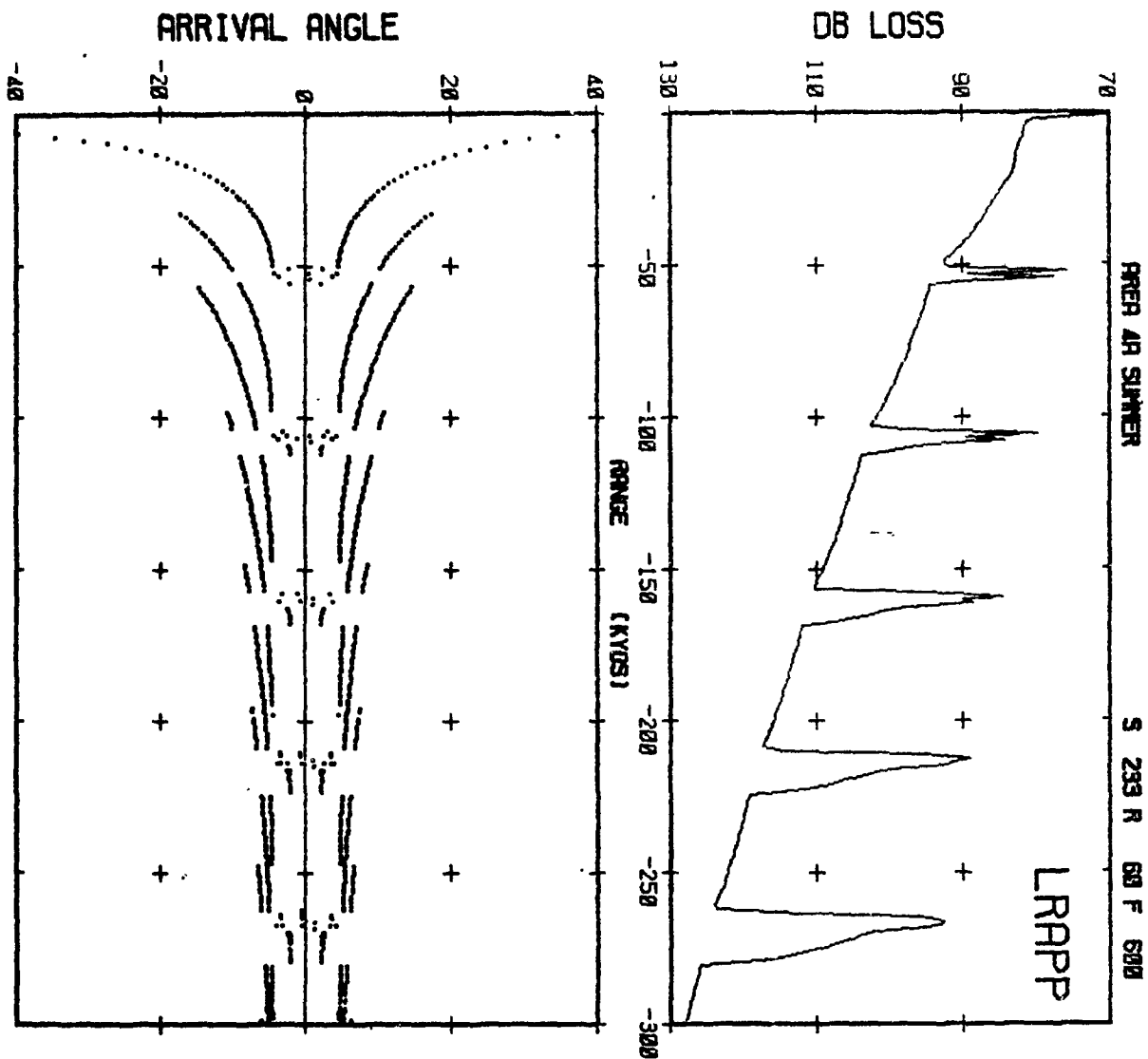
DEPTH IN METERS

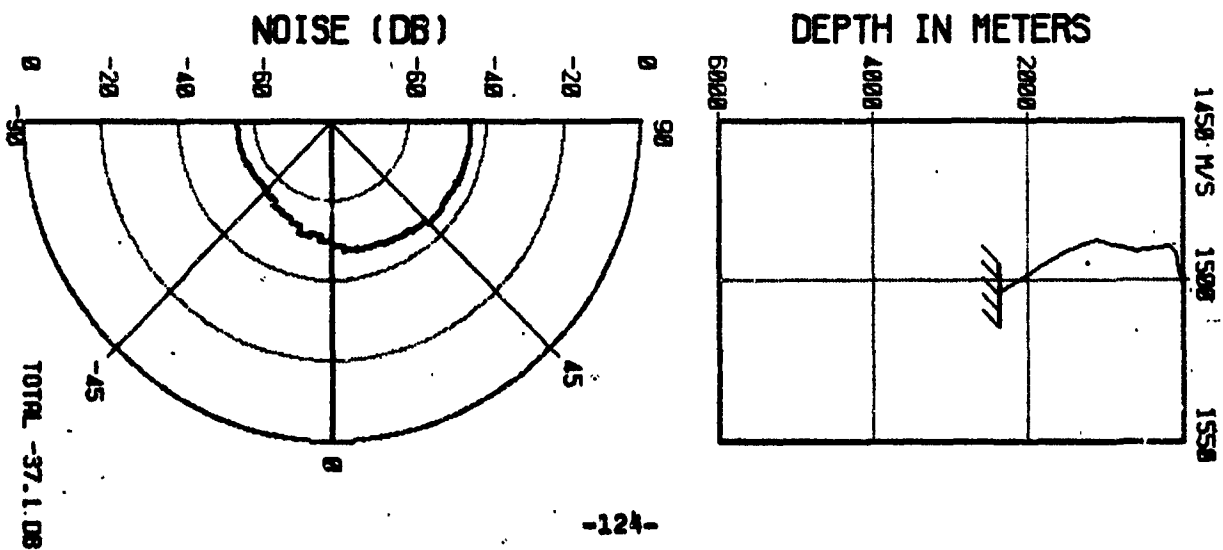
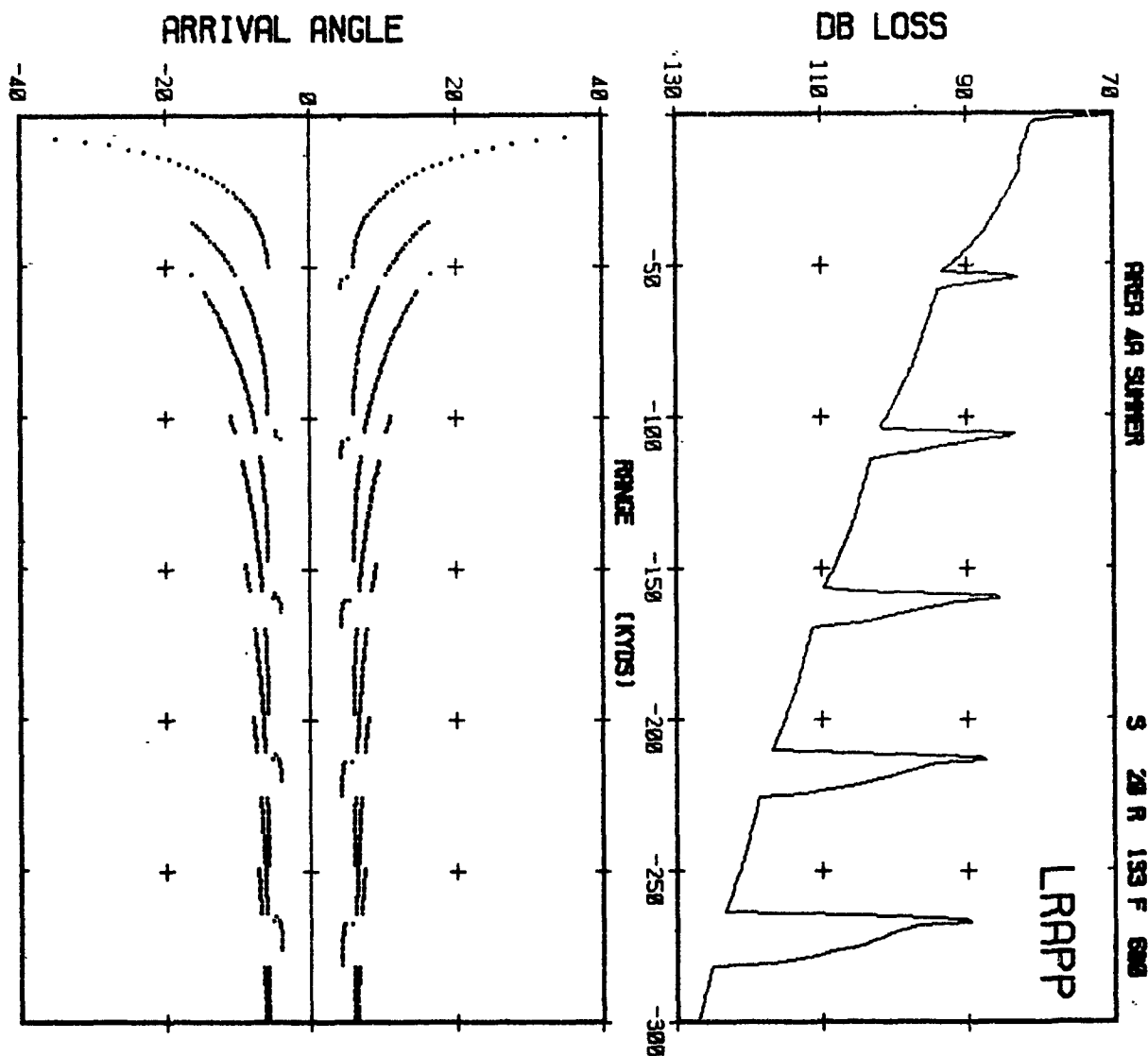


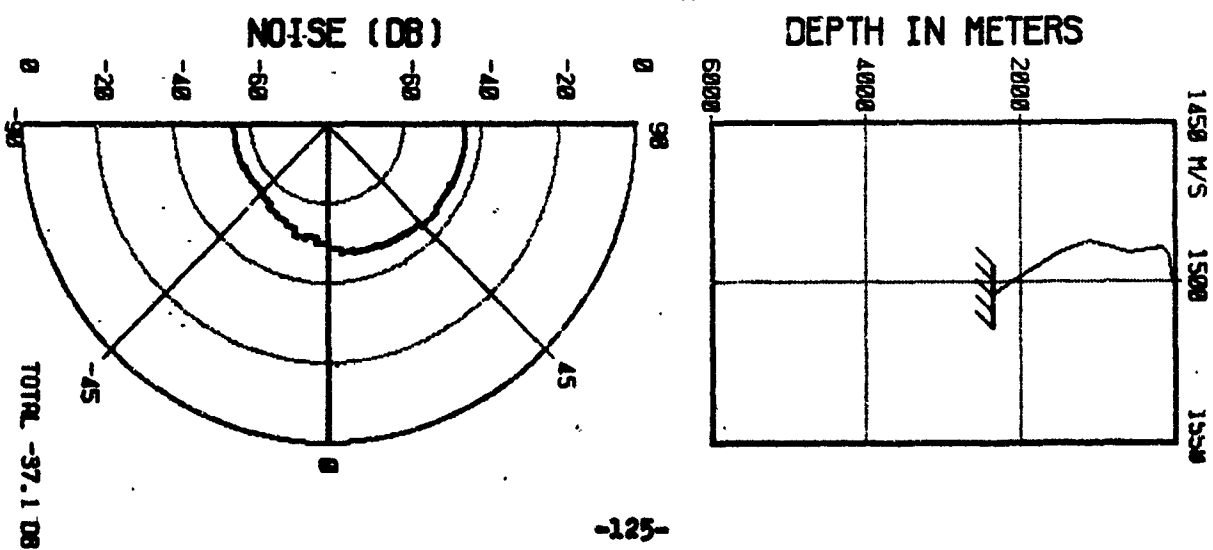
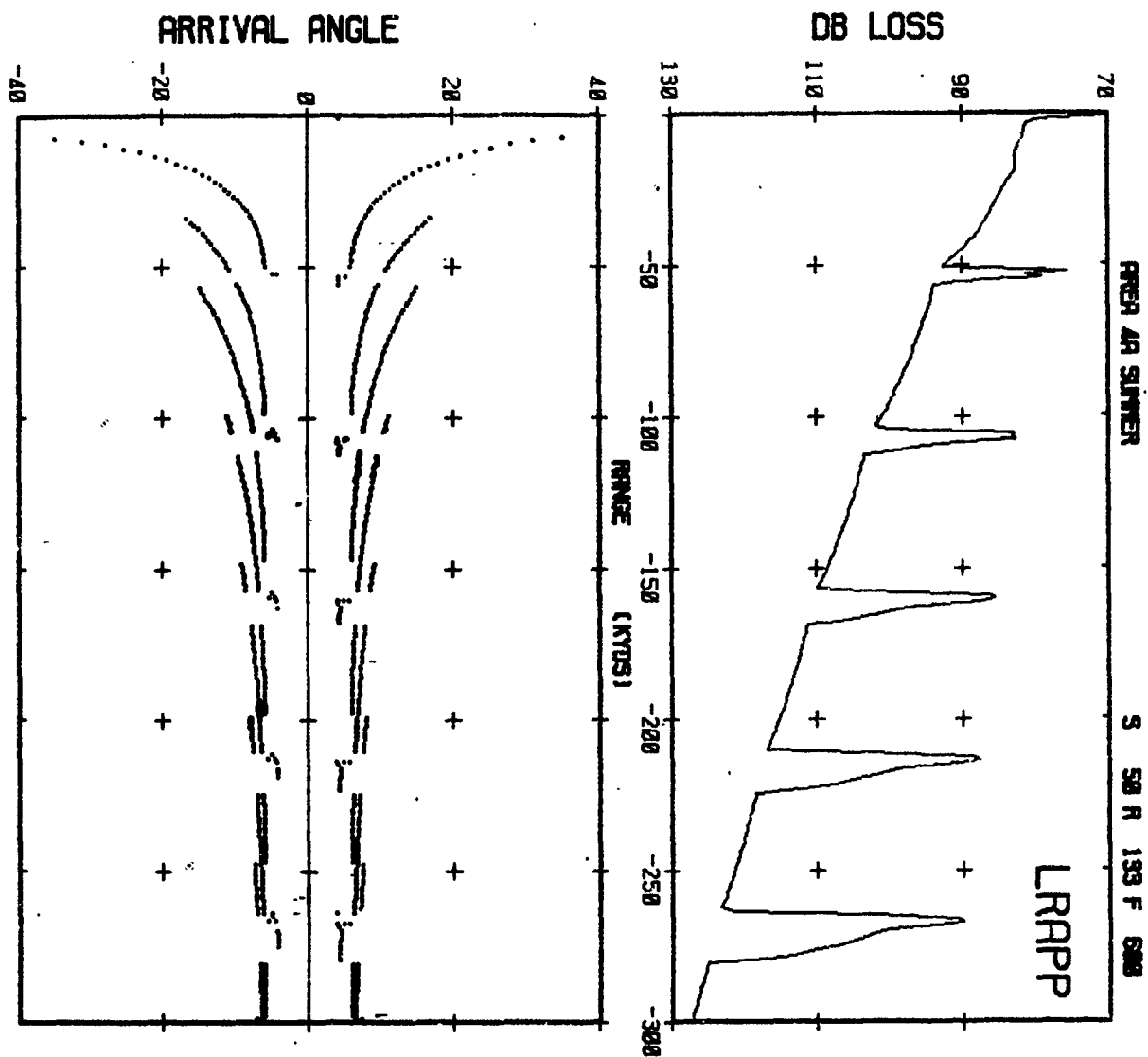
NOISE (DB)

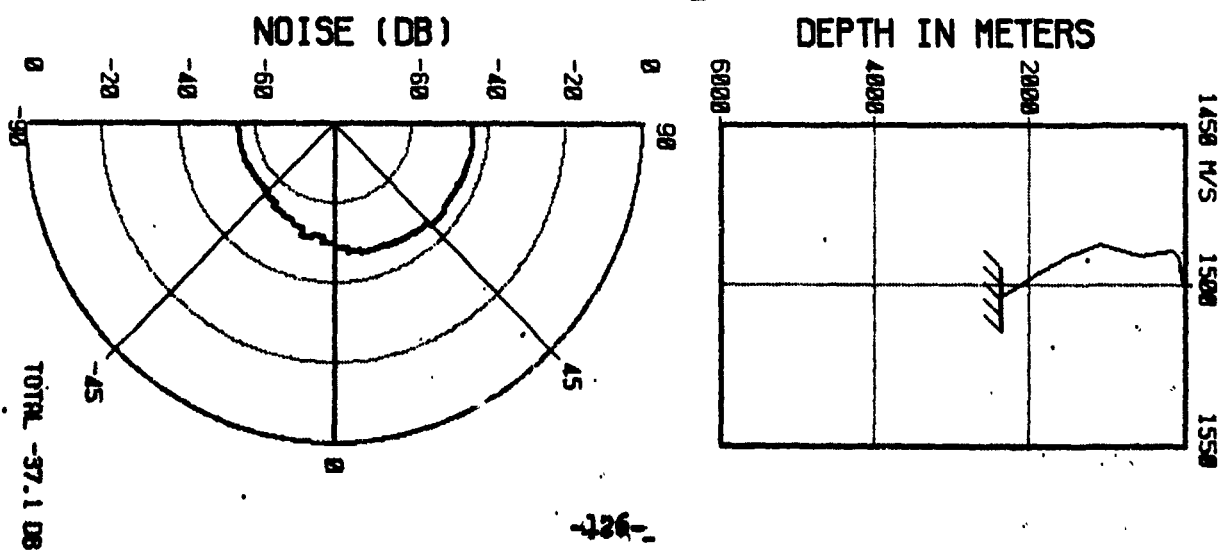
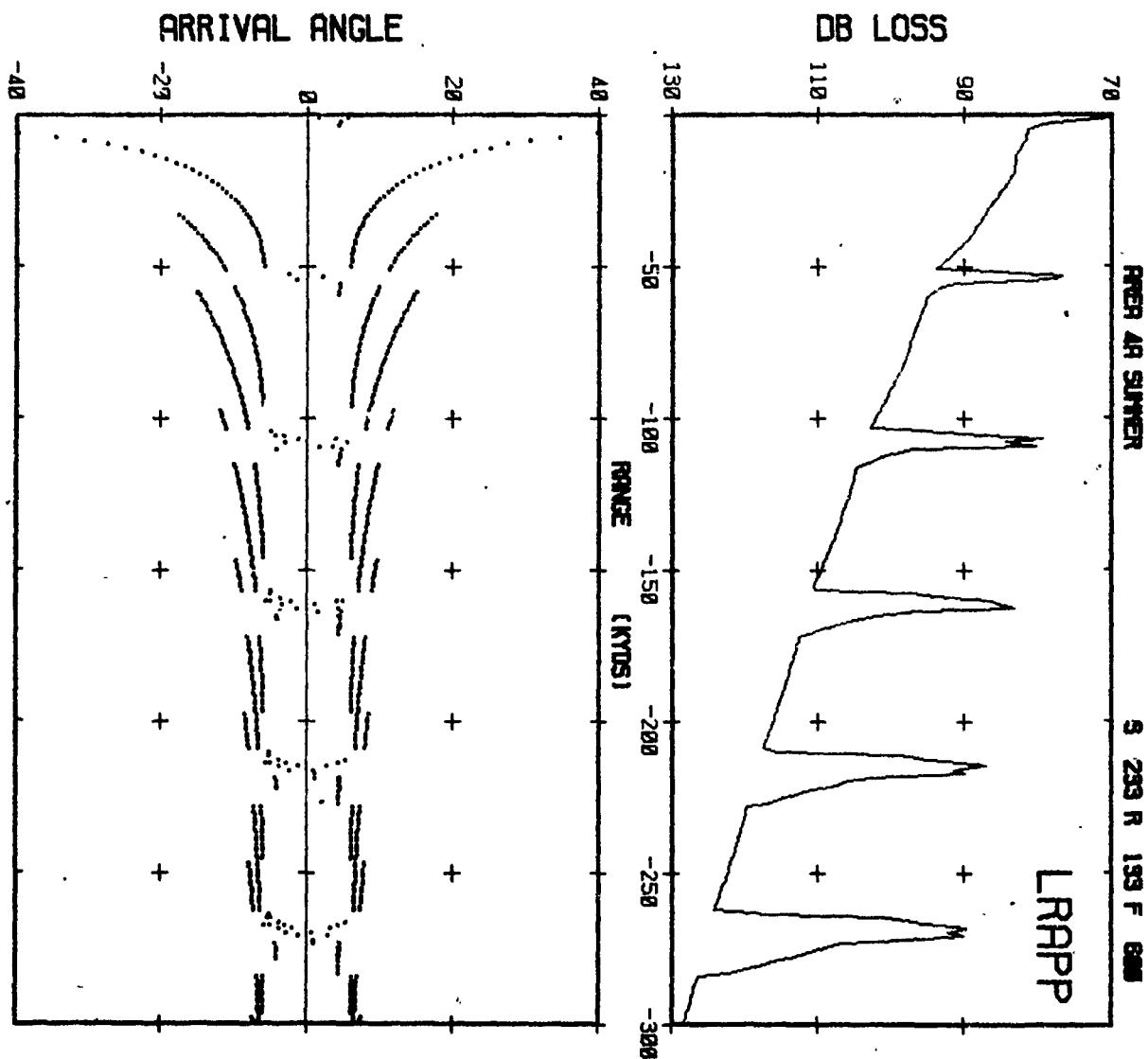










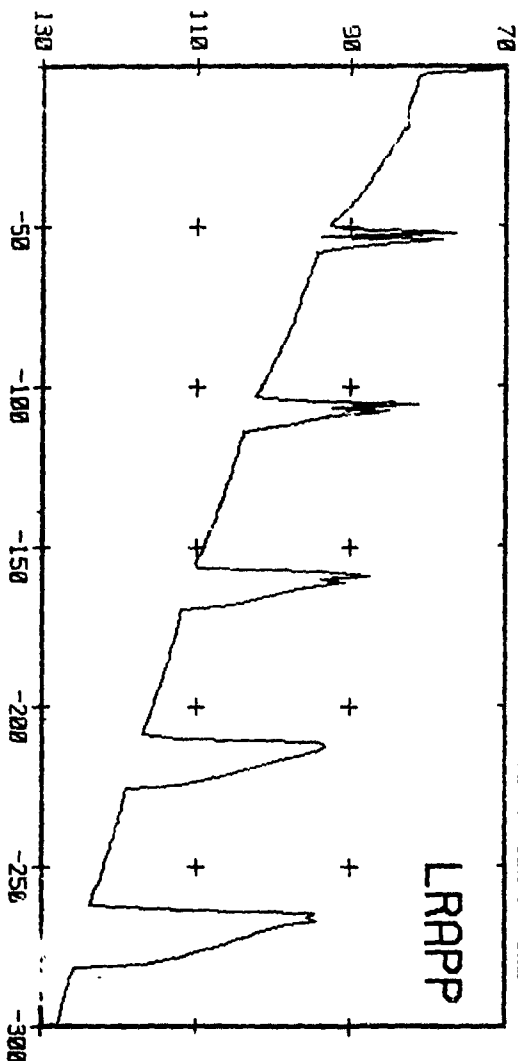


ORDER 4R SUMMER

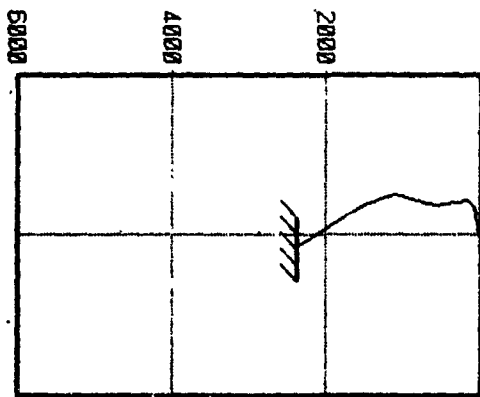
S 20 R 3000 F 6000

1450 H/S 1500 1550

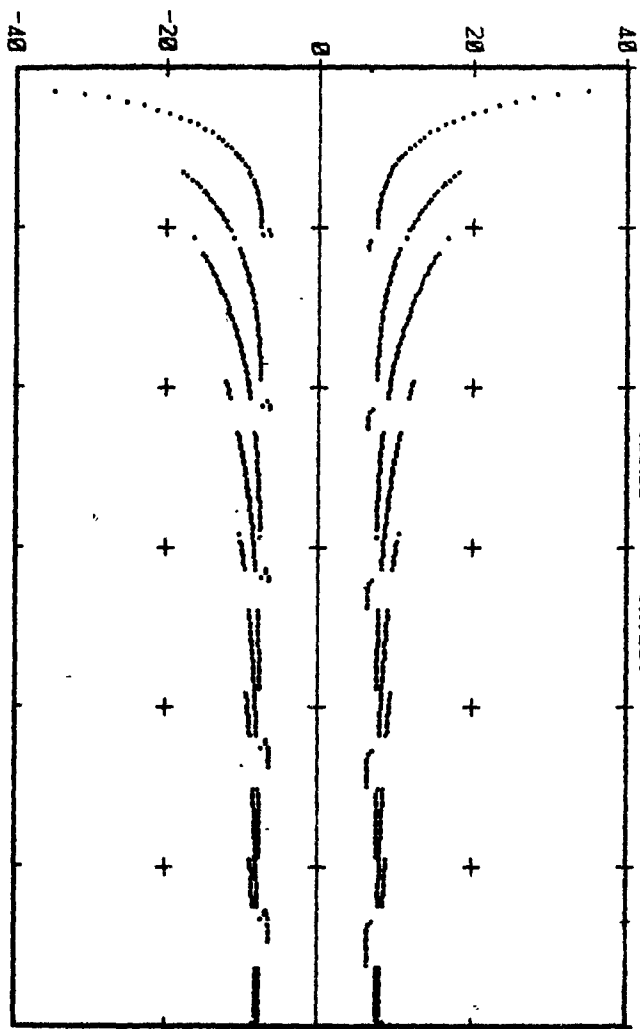
DB LOSS



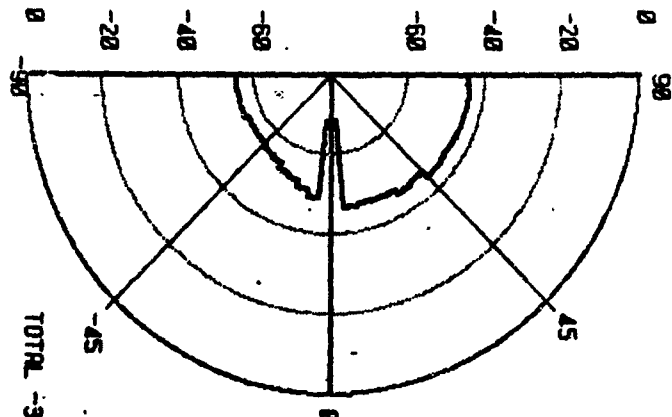
DEPTH IN METERS



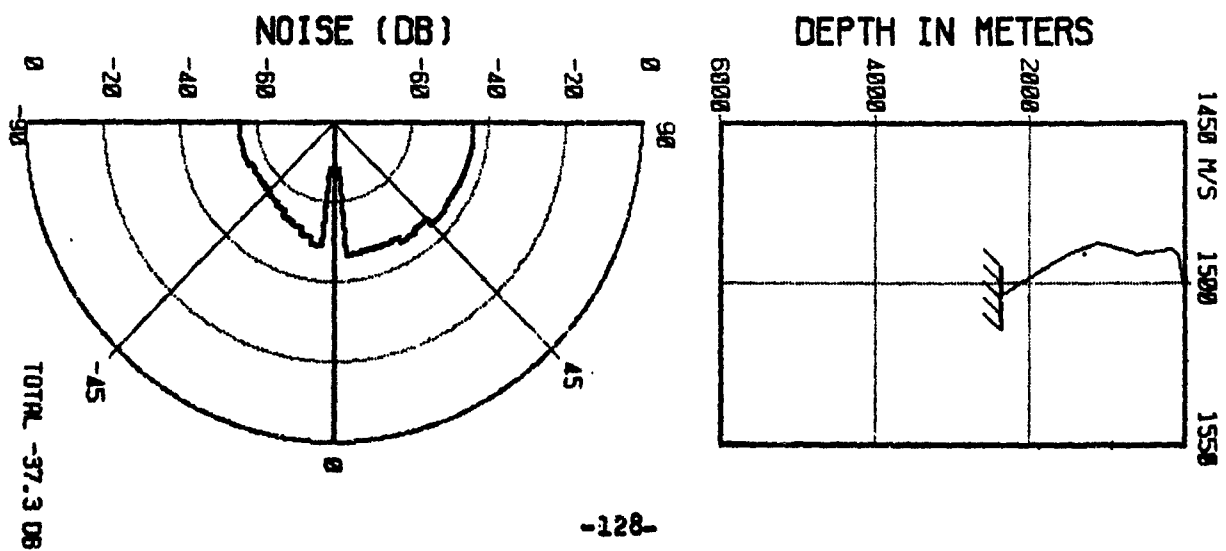
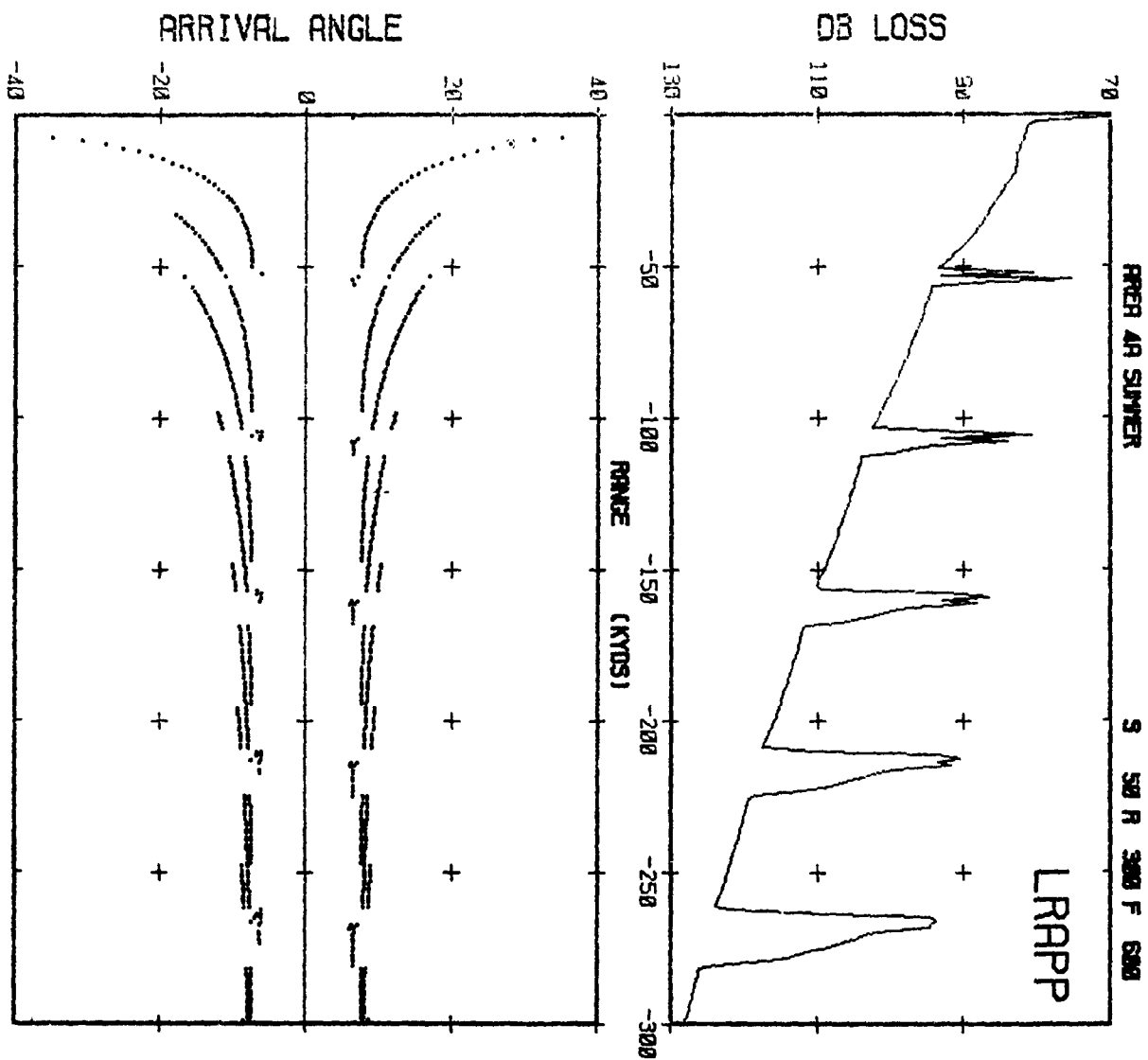
ARRIVAL ANGLE



NOISE (DB)



TOTAL -37.3 DB



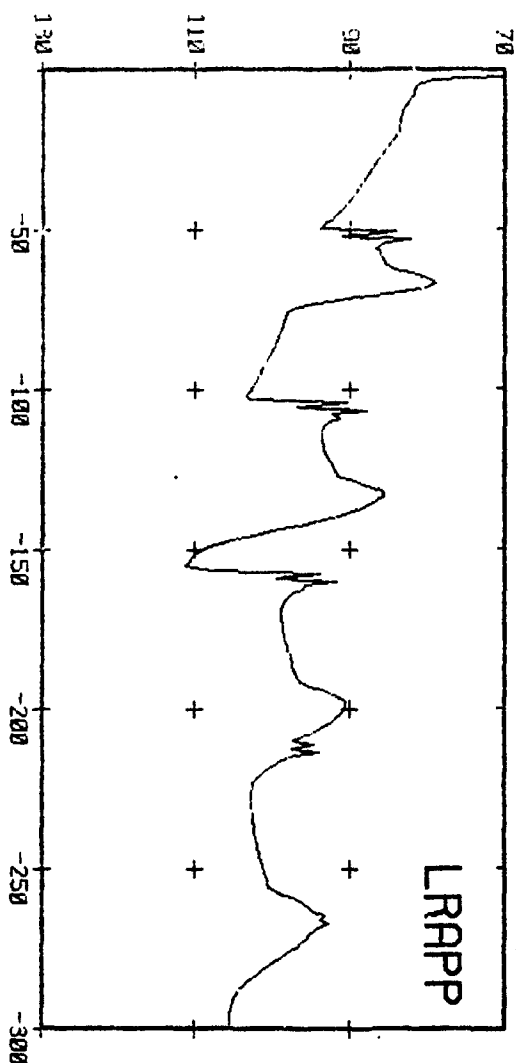
AREA 49 SUMMER

S 233 R 300 F 600

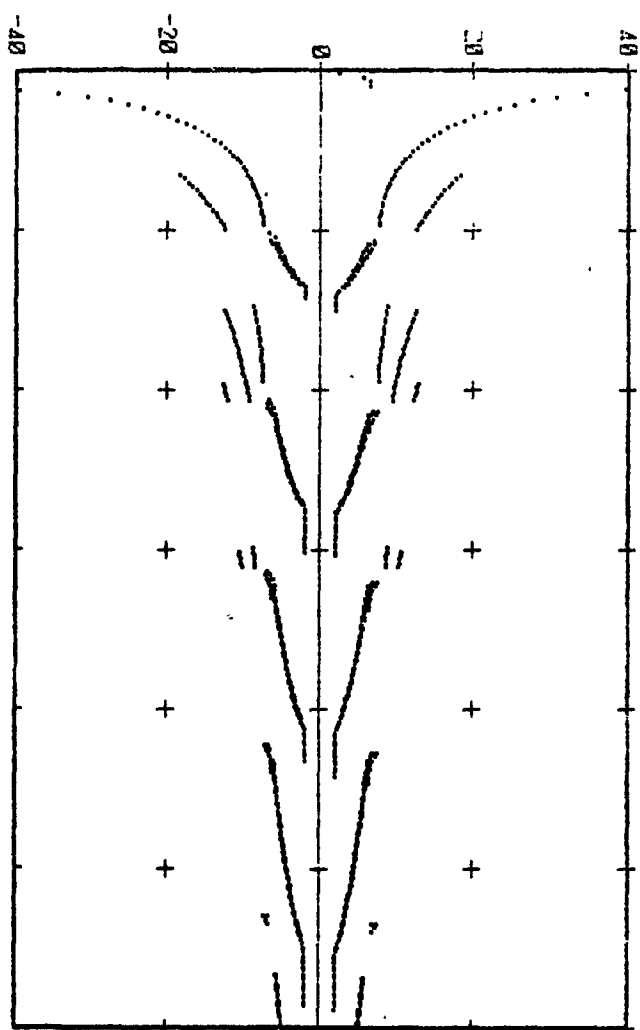
1450 M/S 1500

1550

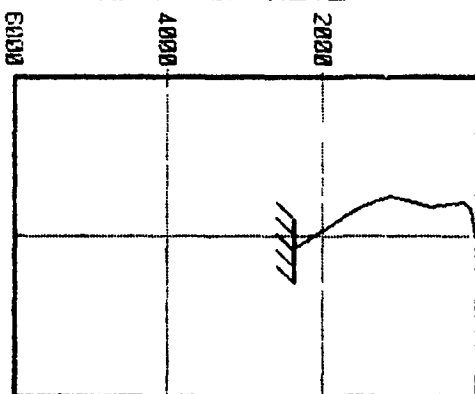
DB LOSS



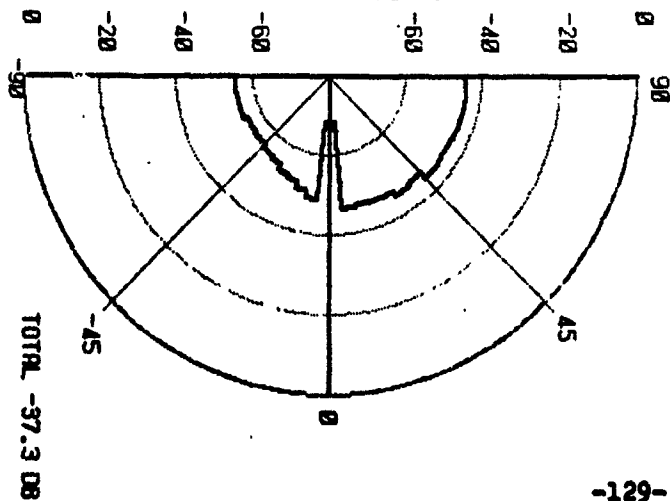
ARRIVAL ANGLE

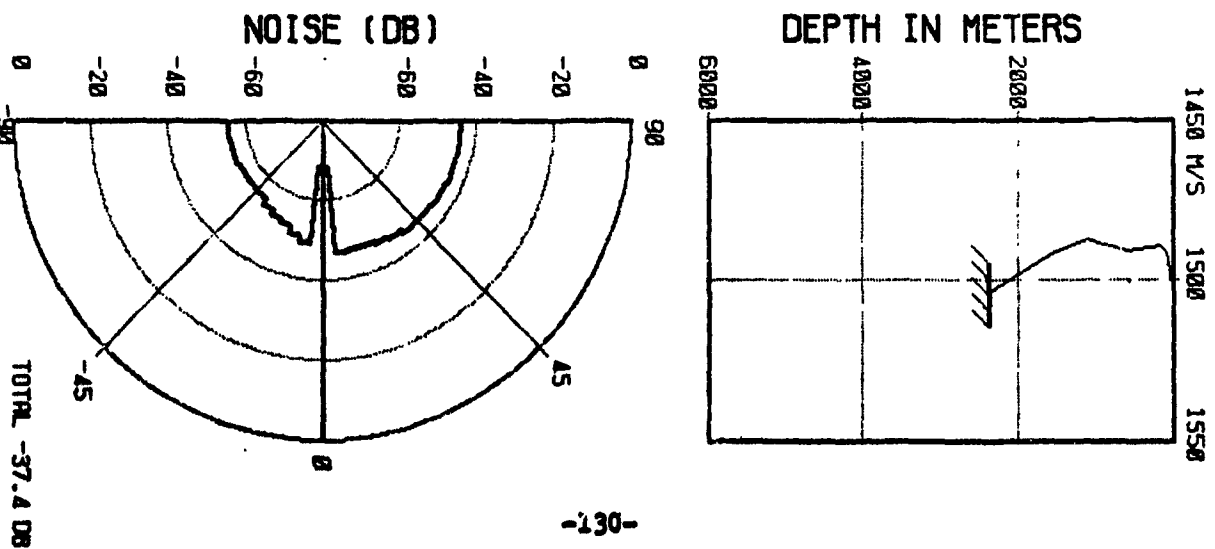
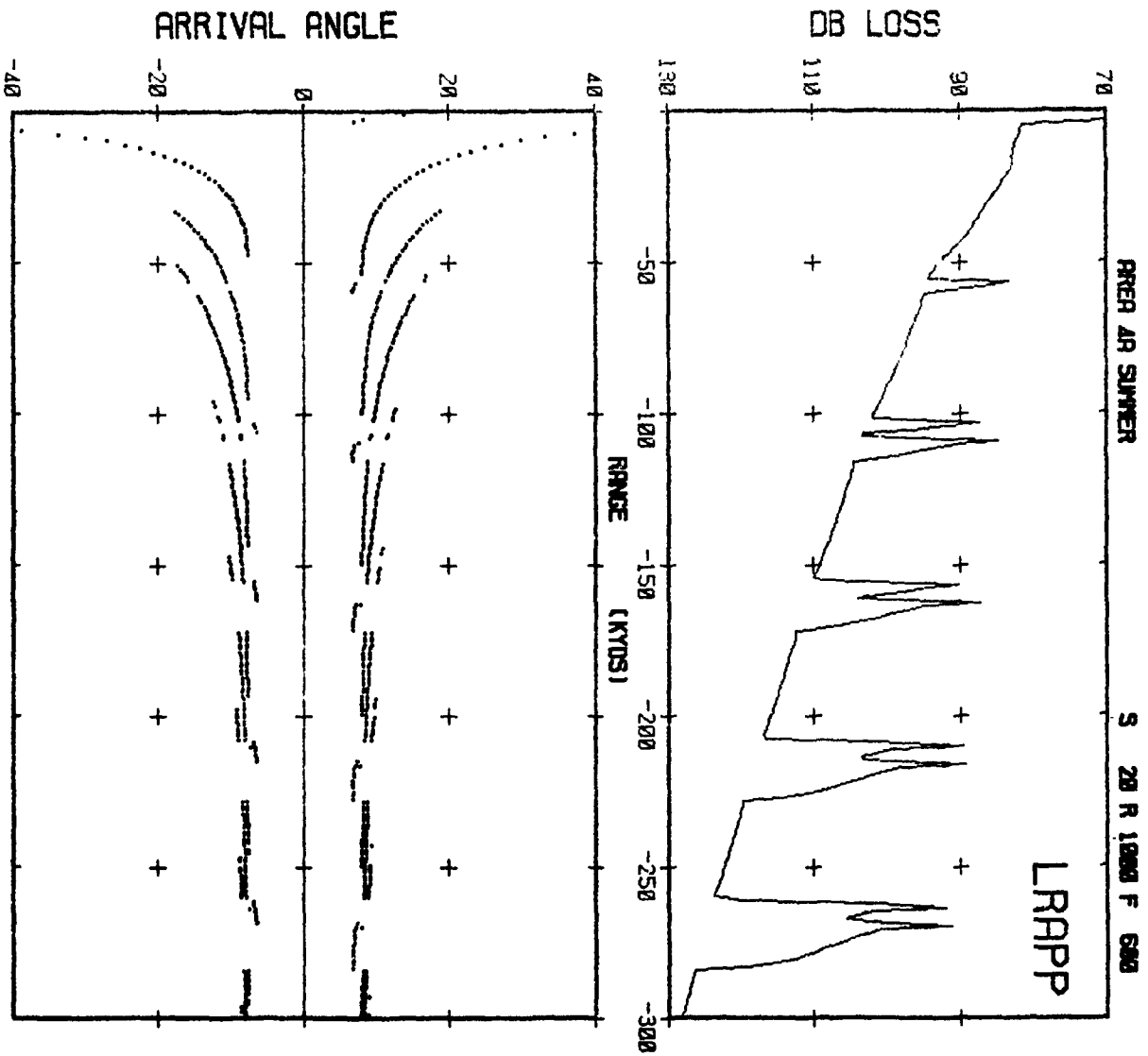


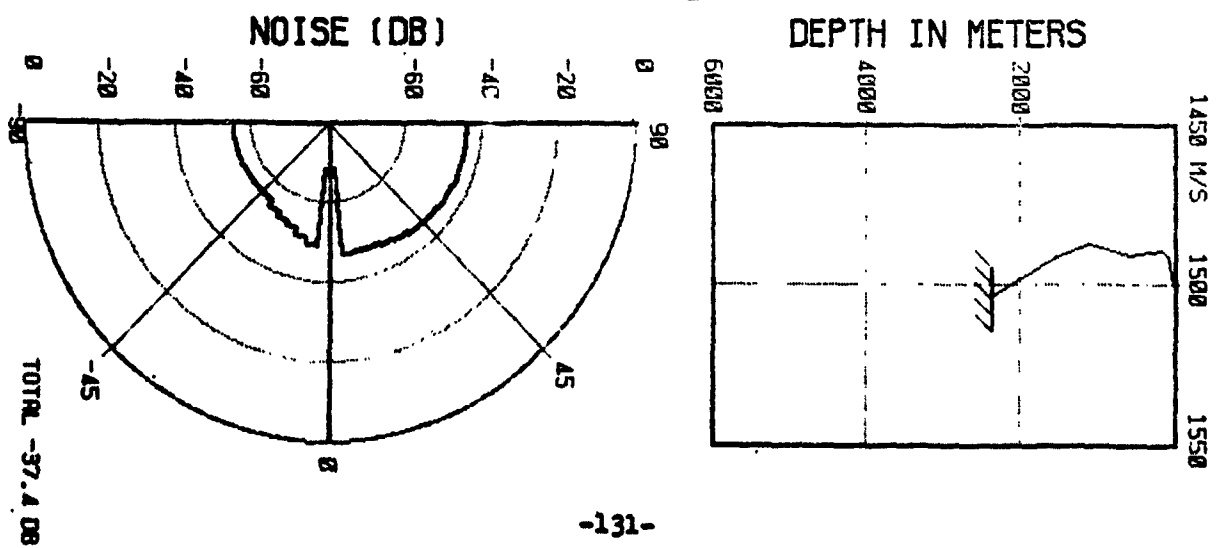
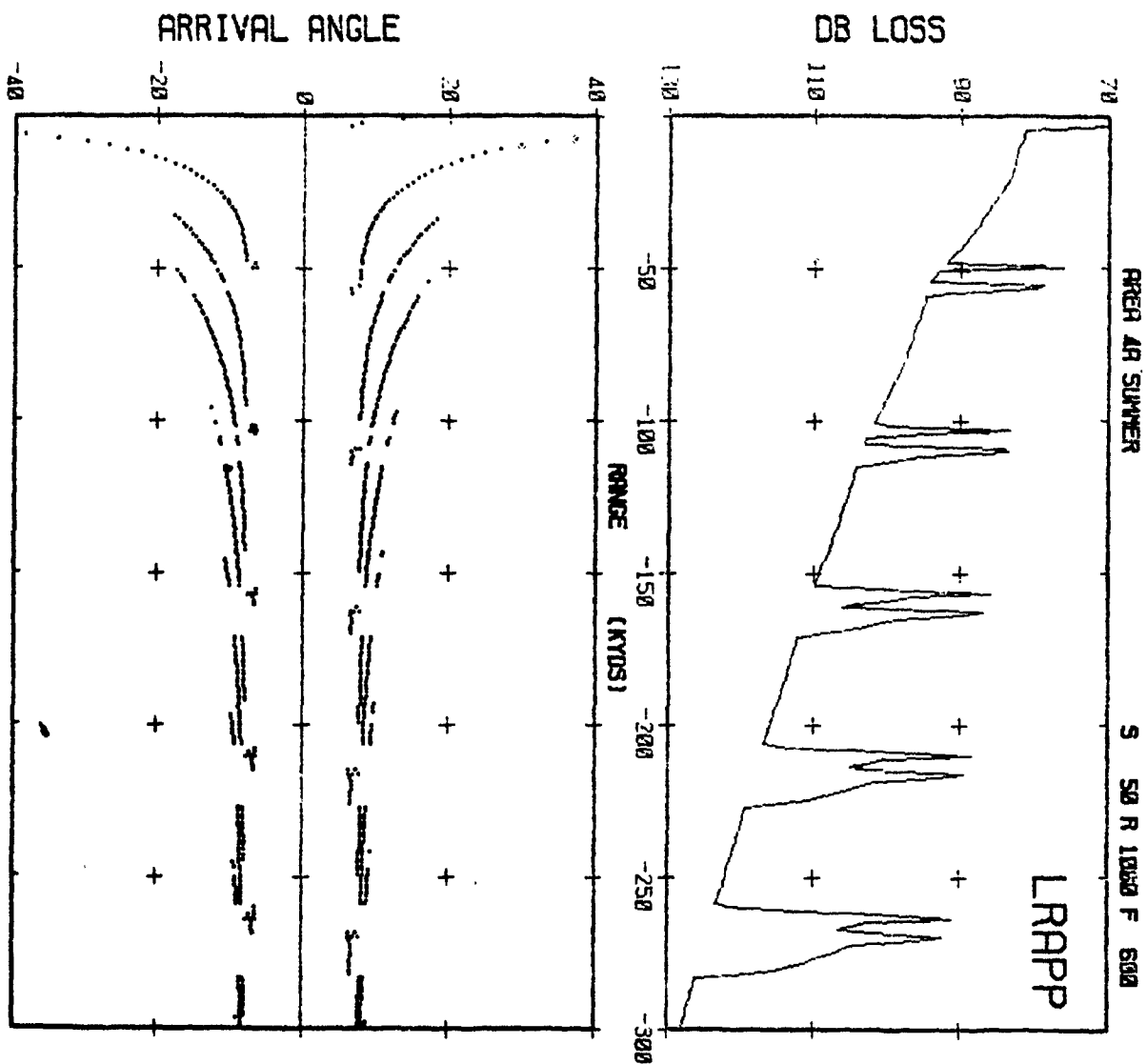
DEPTH IN METERS

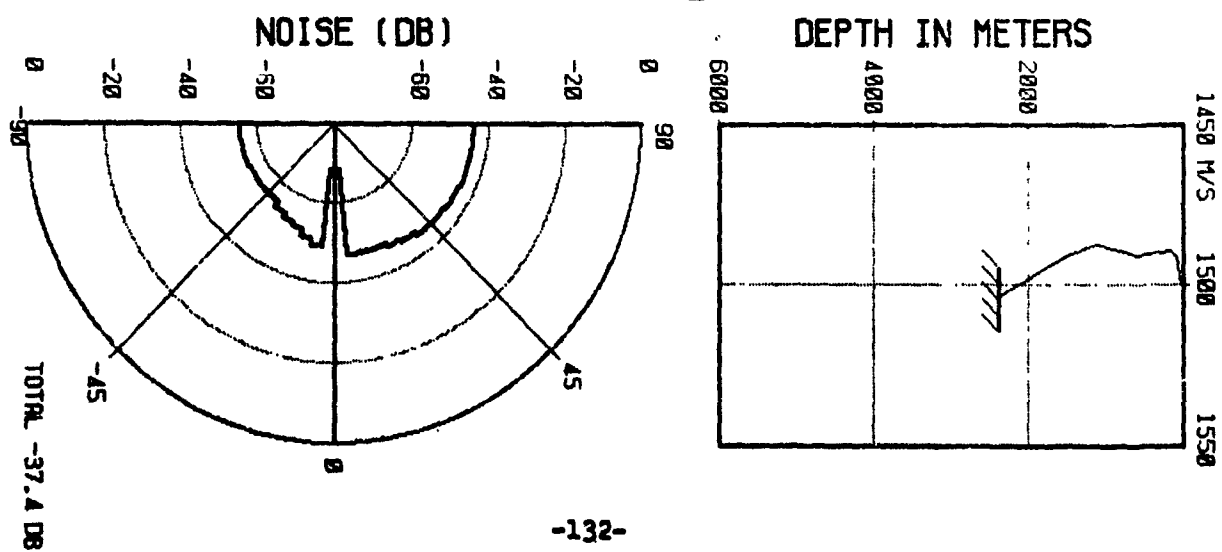
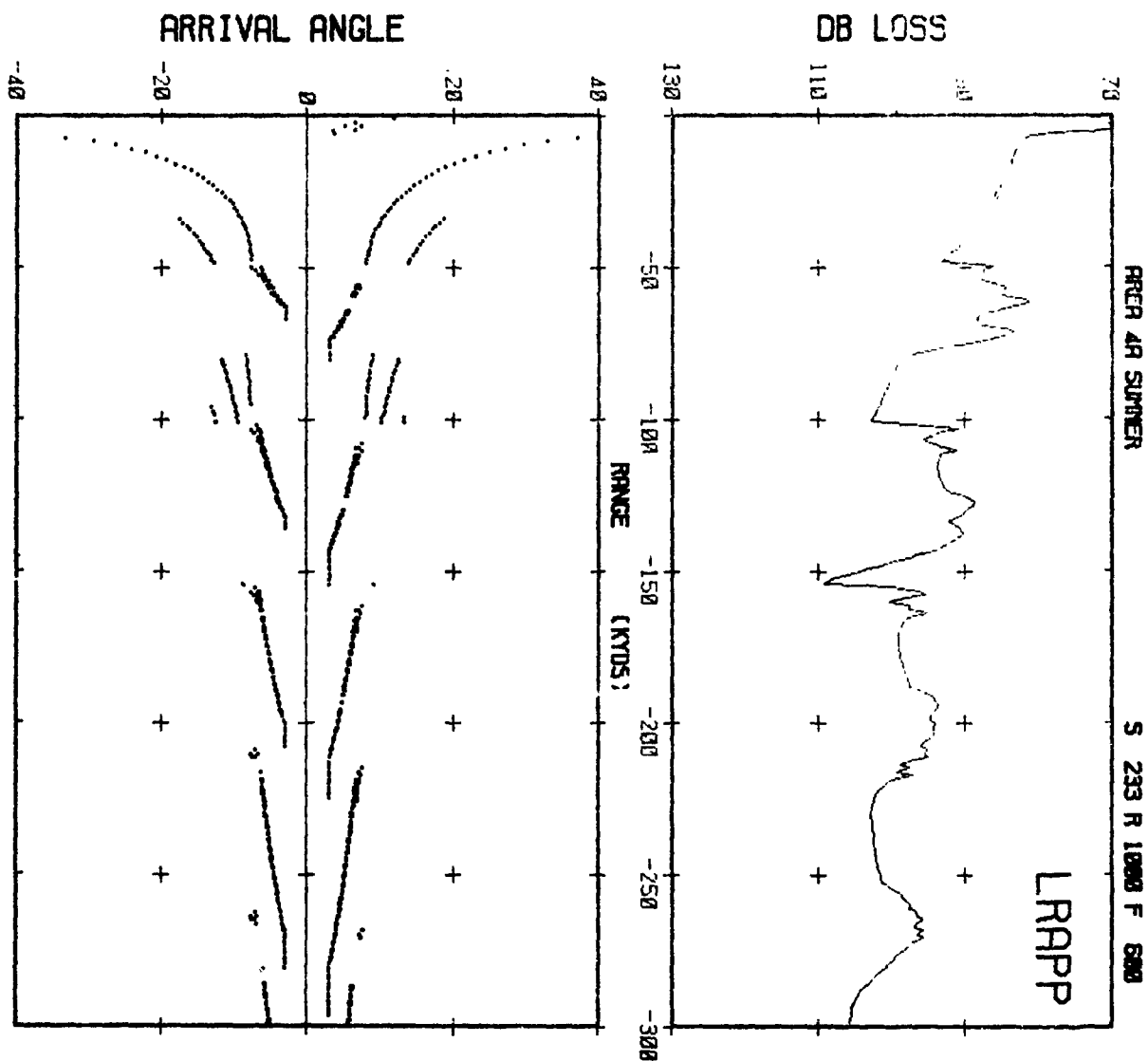


NOISE (DB)





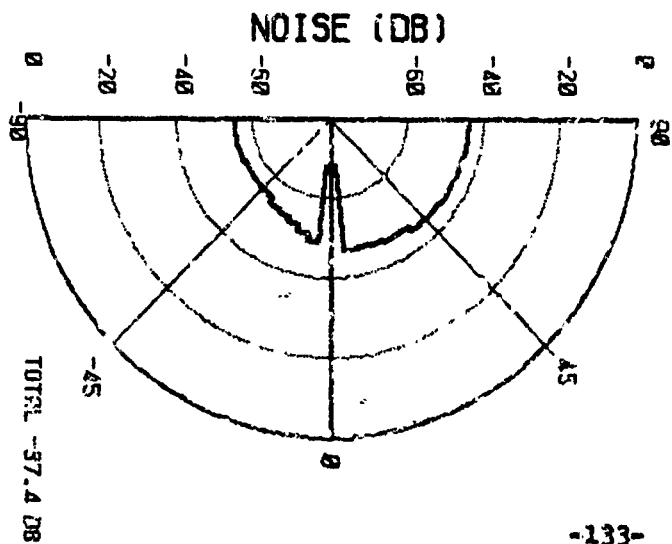
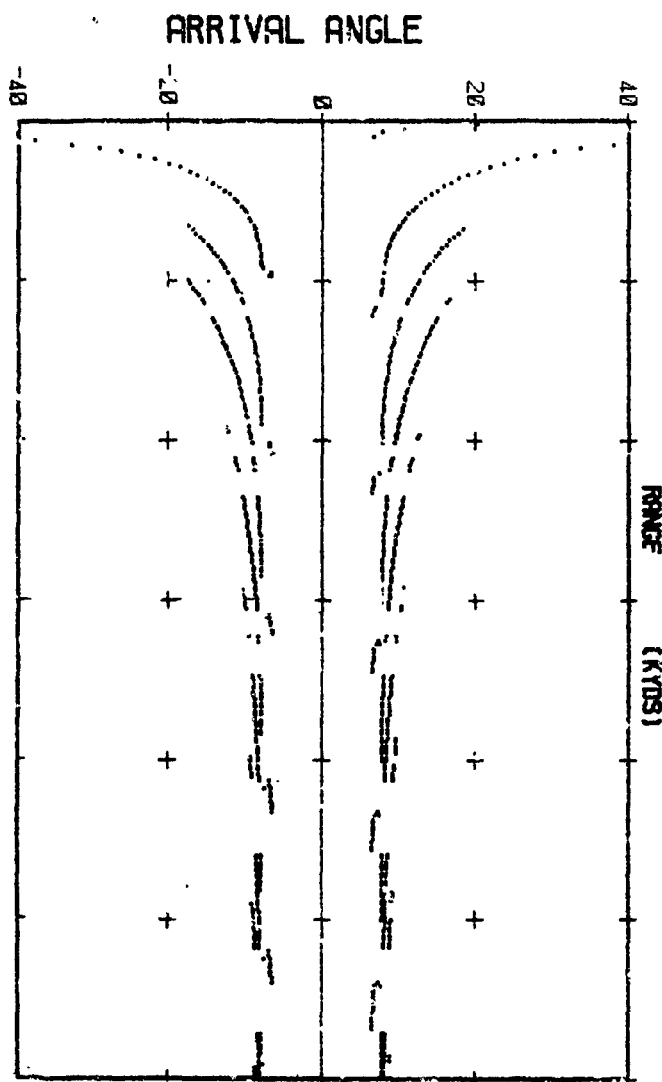
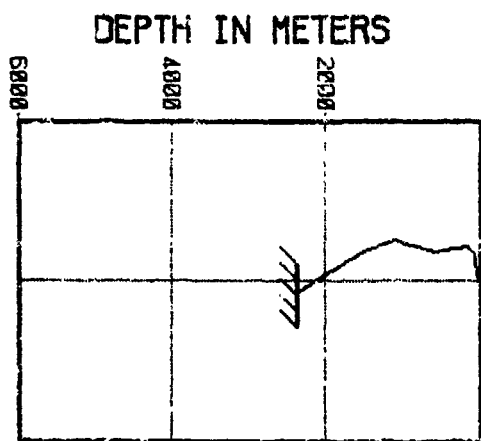
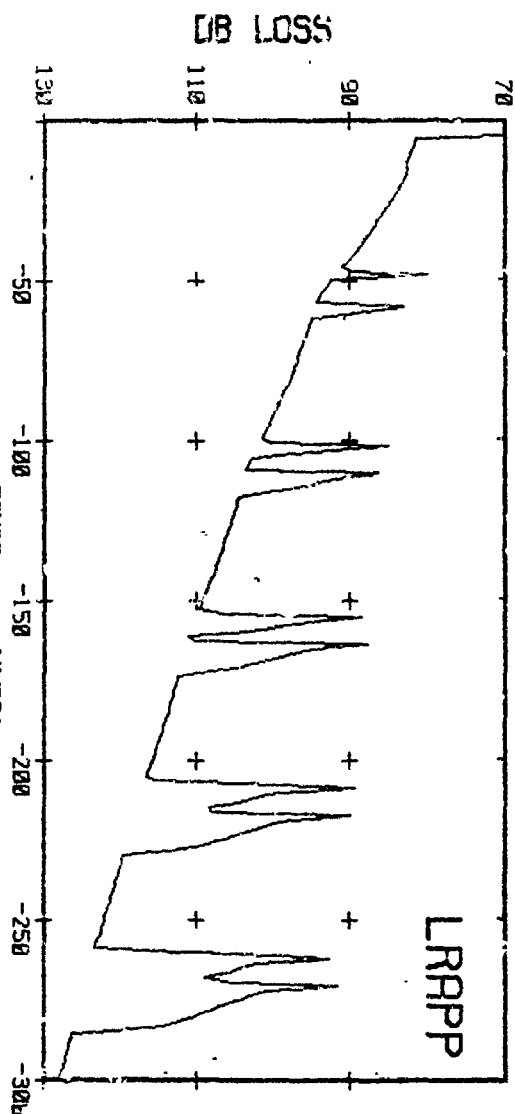


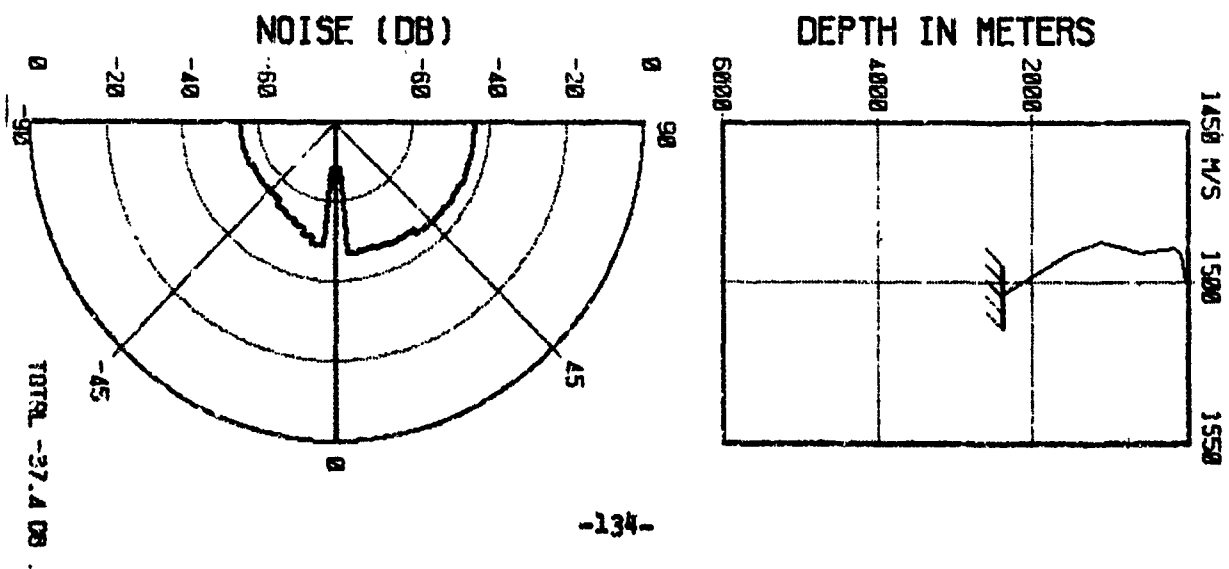
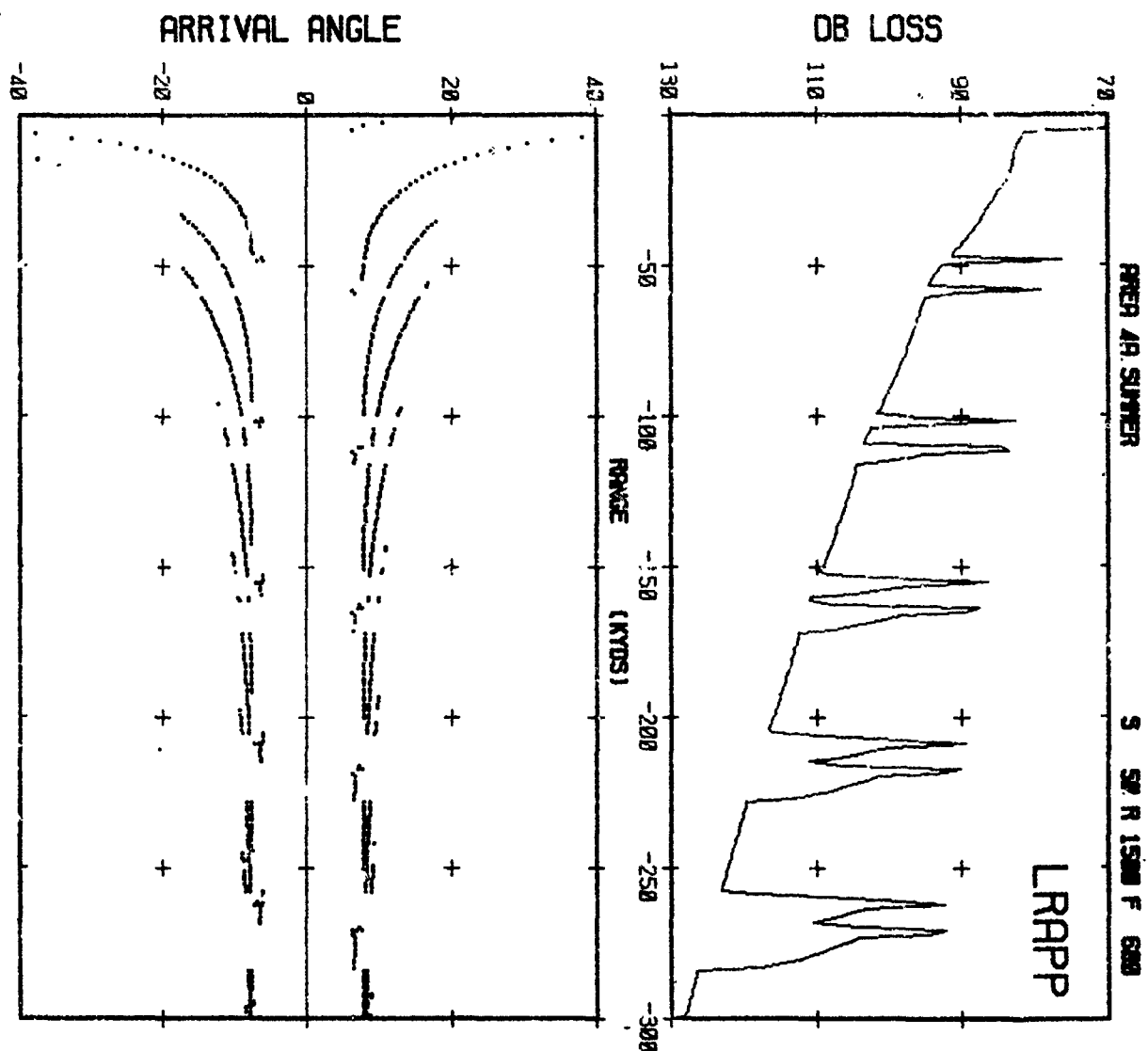


PRER AIR SWIMMER

S 20 R 1500 F 600

1450 M/S 1500 1550



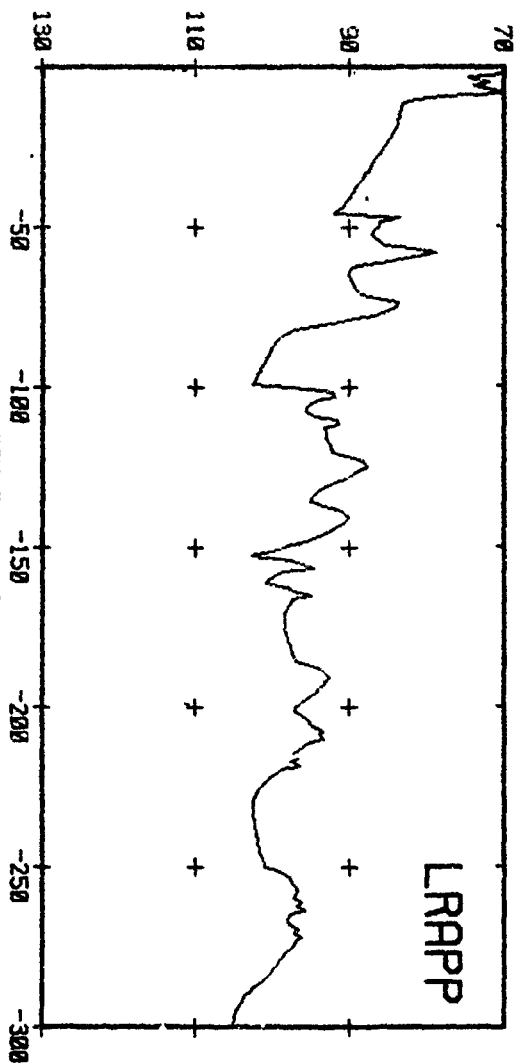


PIPER AIR SURVER

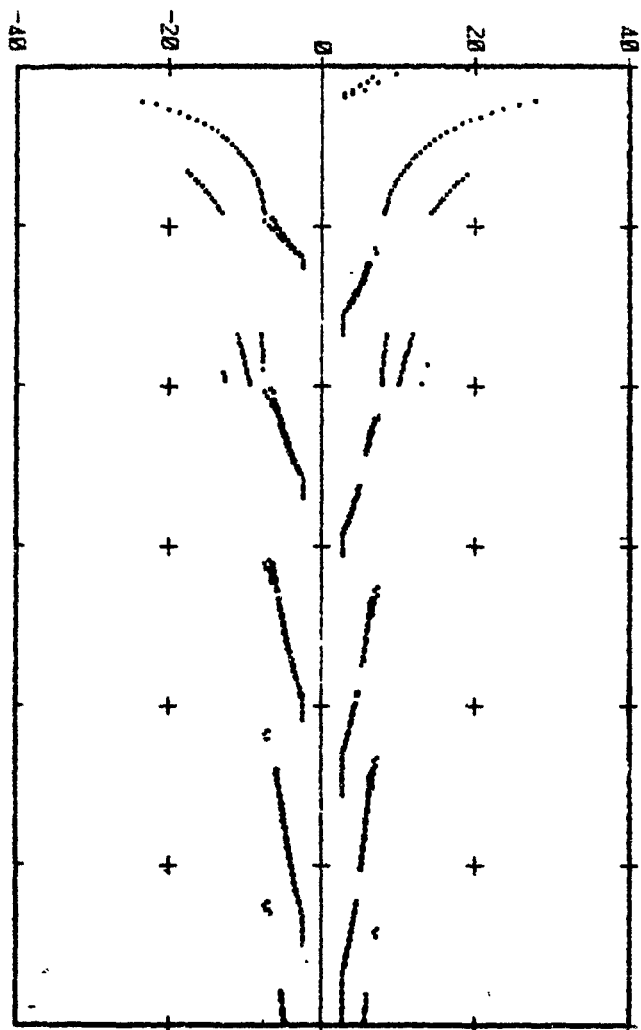
S 233 R 1500 F 000

LRAPP

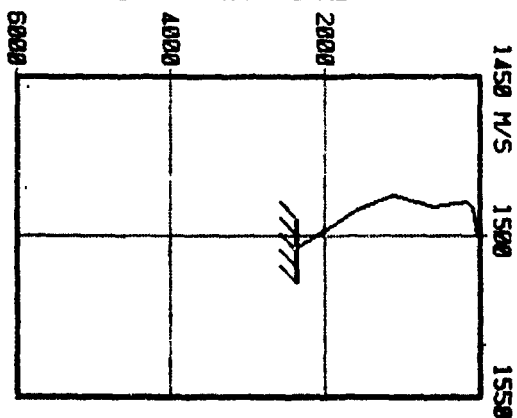
DB LOSS



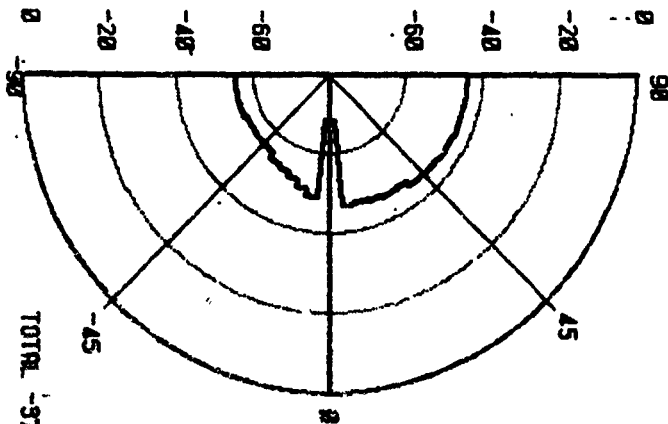
ARRIVAL ANGLE



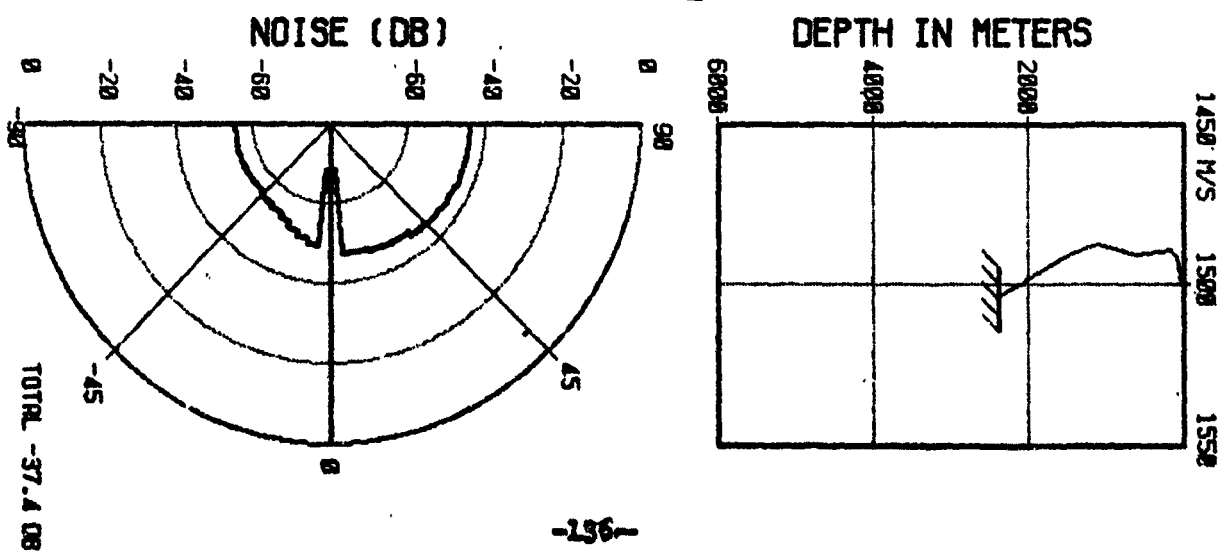
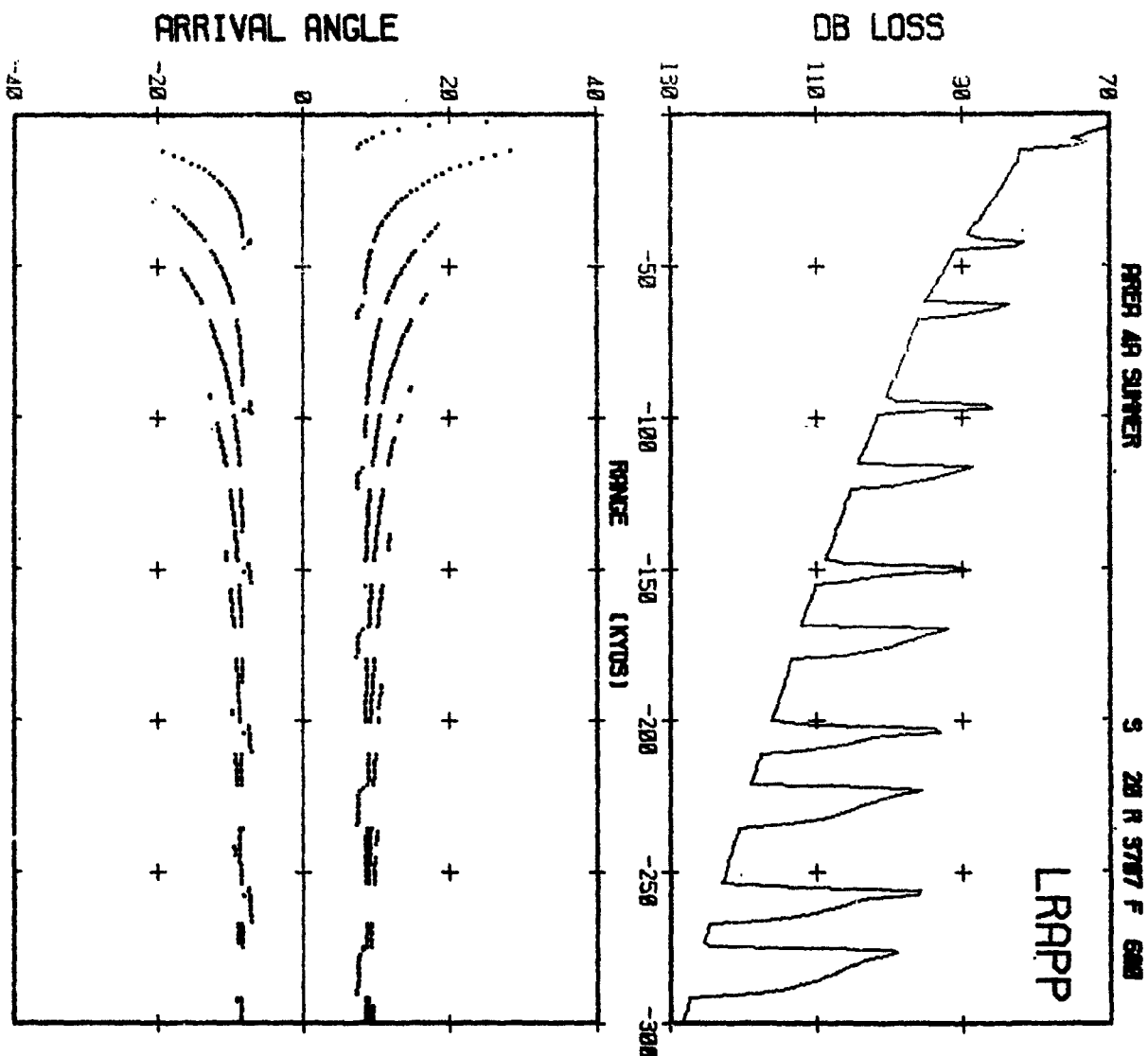
DEPTH IN METERS



NOISE (DB)



TOTRL -37.4 DB



RIVER AIR SURFER

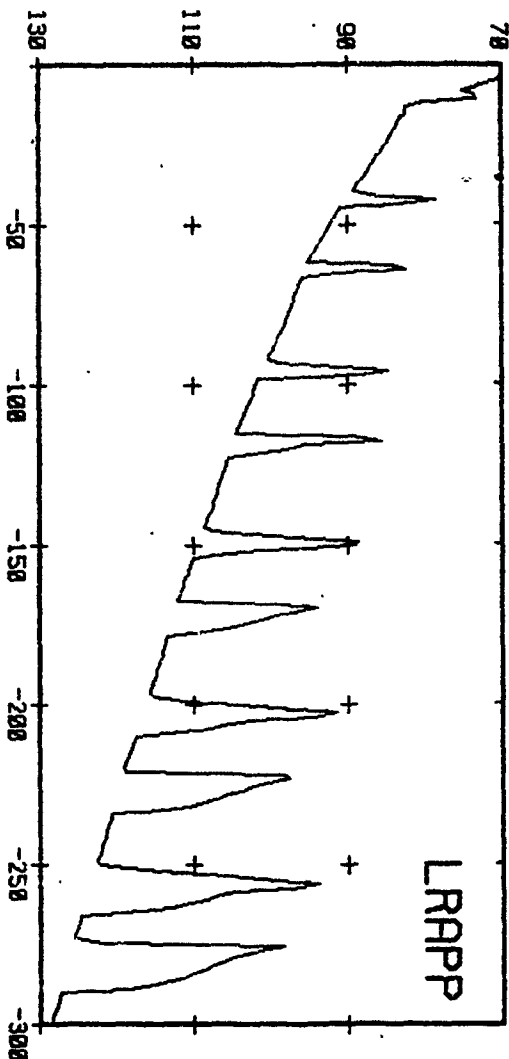
S 50 R 5707 F 000

1450 H/S

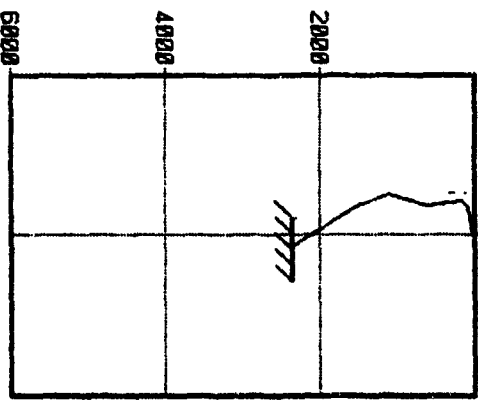
1500

1550

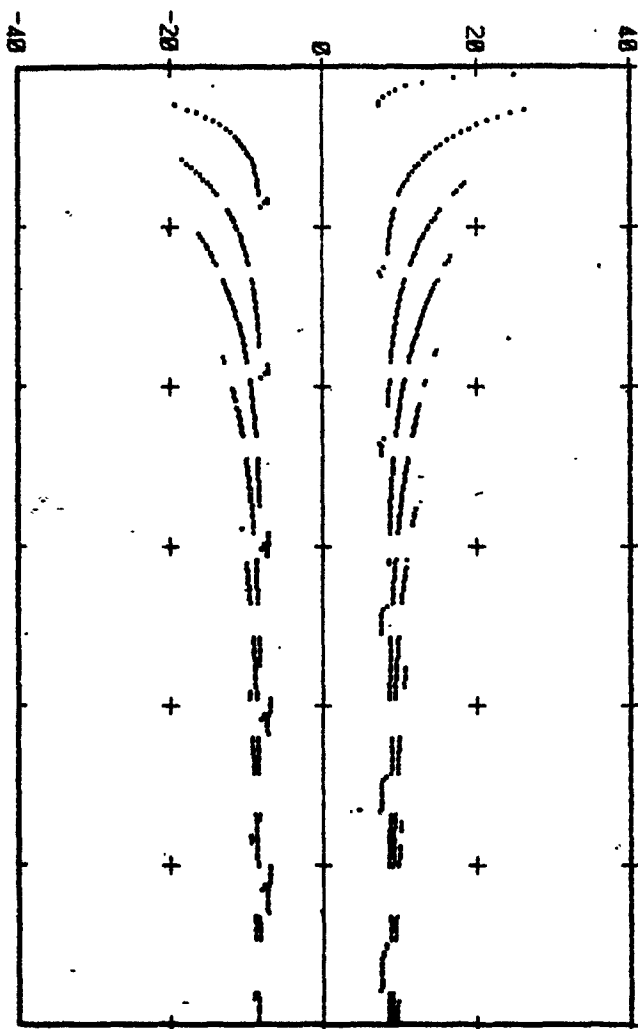
DB LOSS



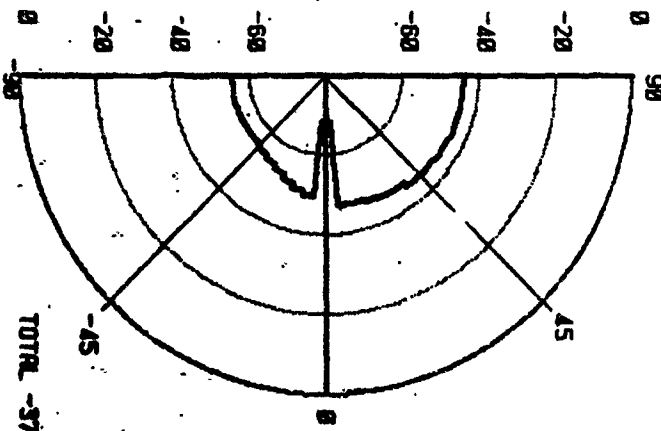
DEPTH IN METERS

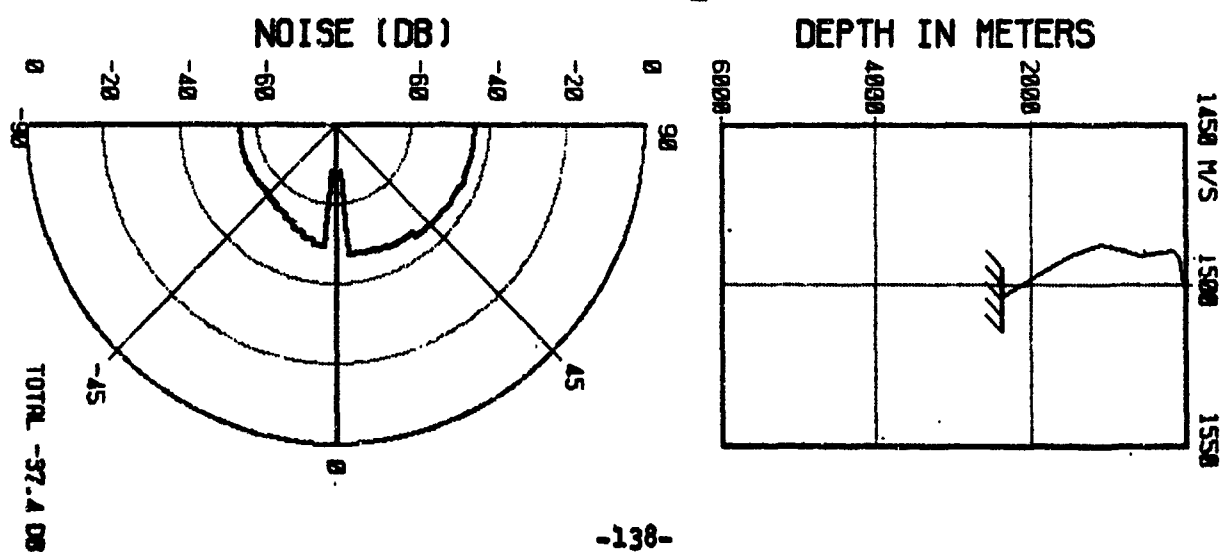
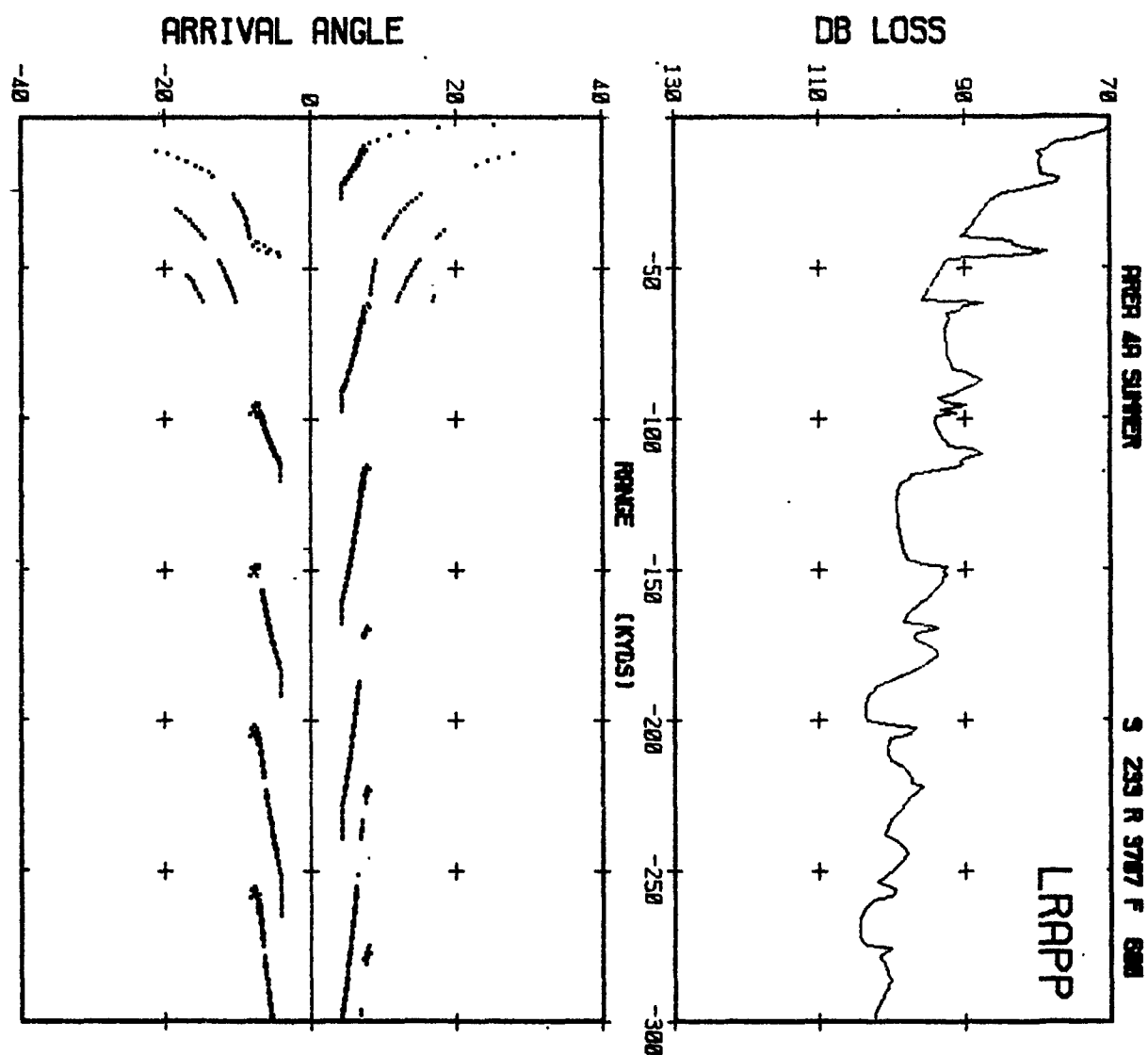


ARRIVAL ANGLE



NOISE (DB)



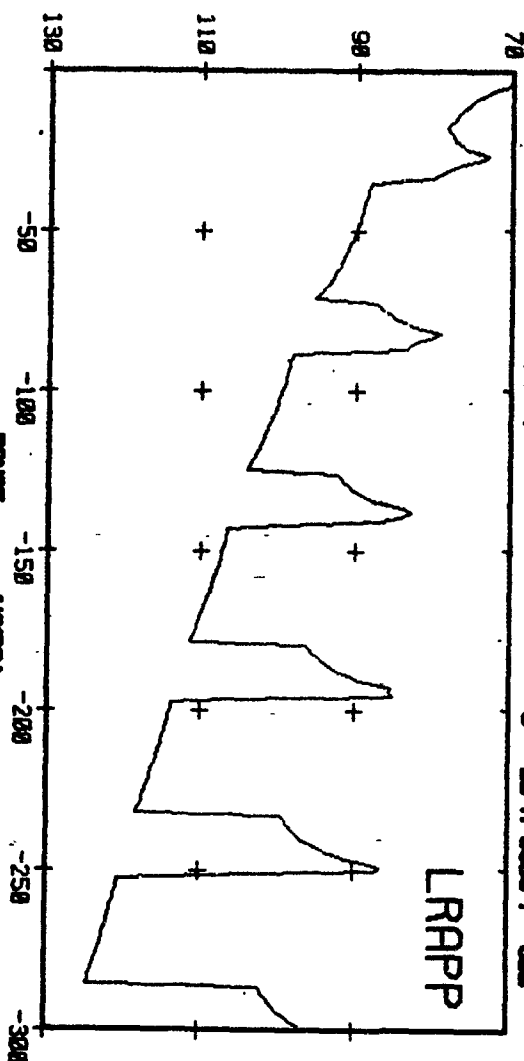


REER AN SUMMER

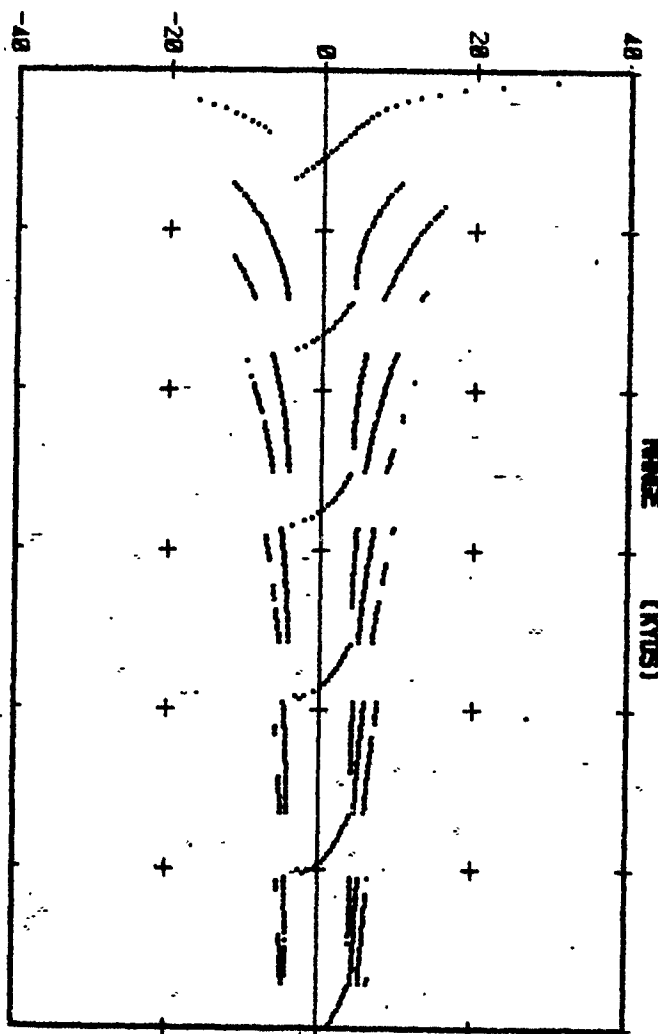
S 20 R 0028 F 600

1450 M/S 1500 1550

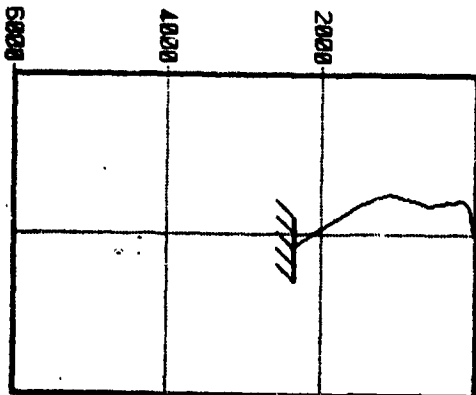
DB LOSS



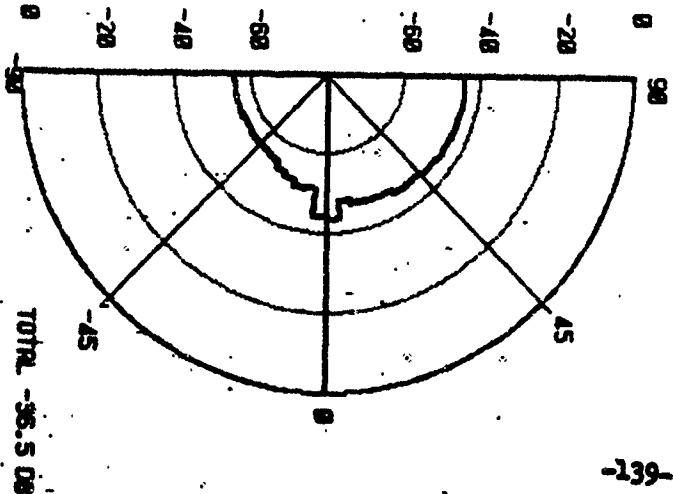
ARRIVAL ANGLE

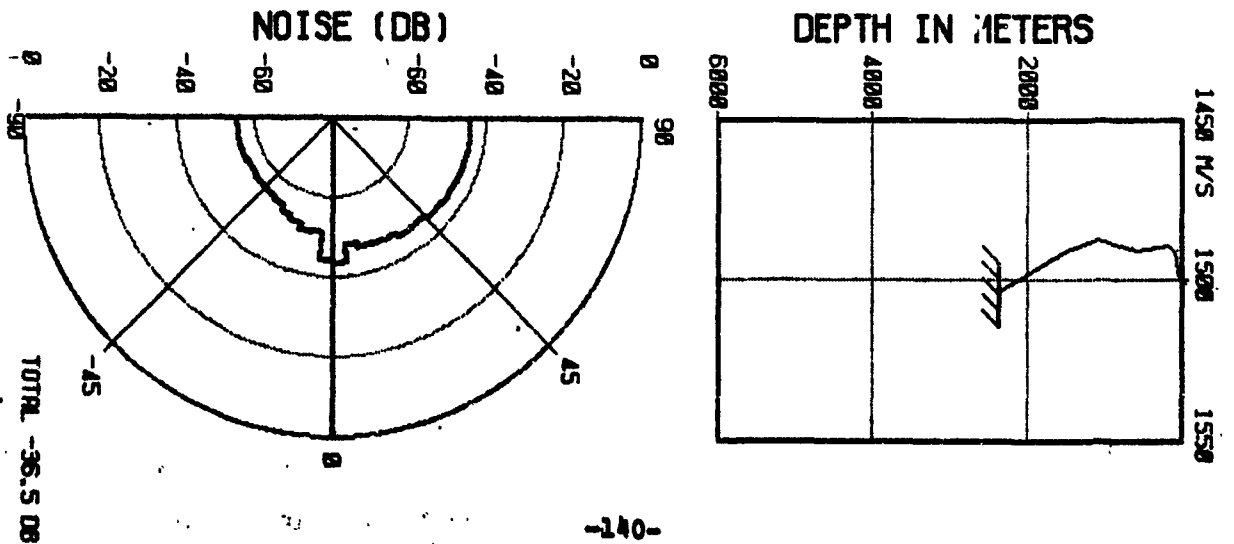
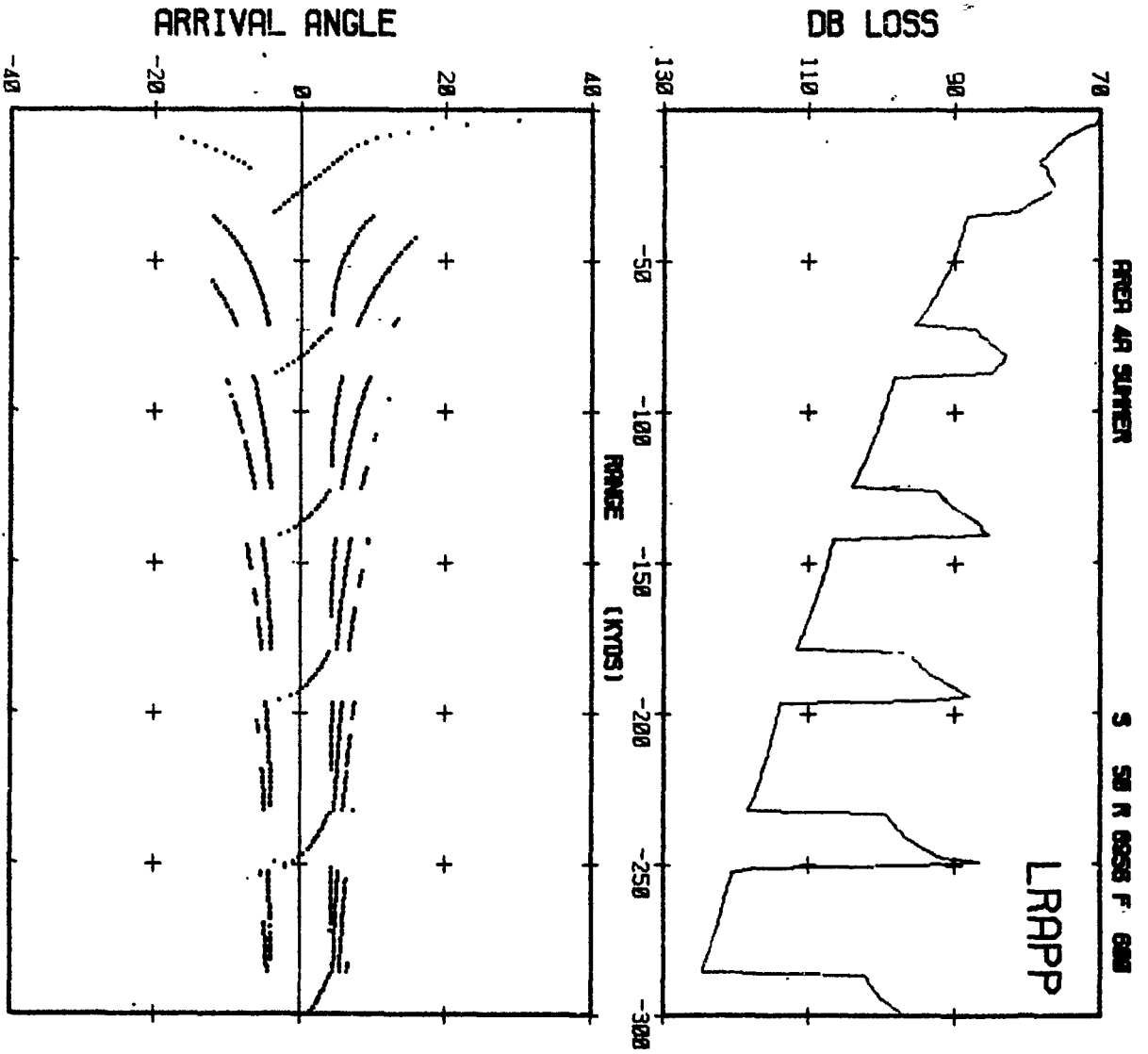


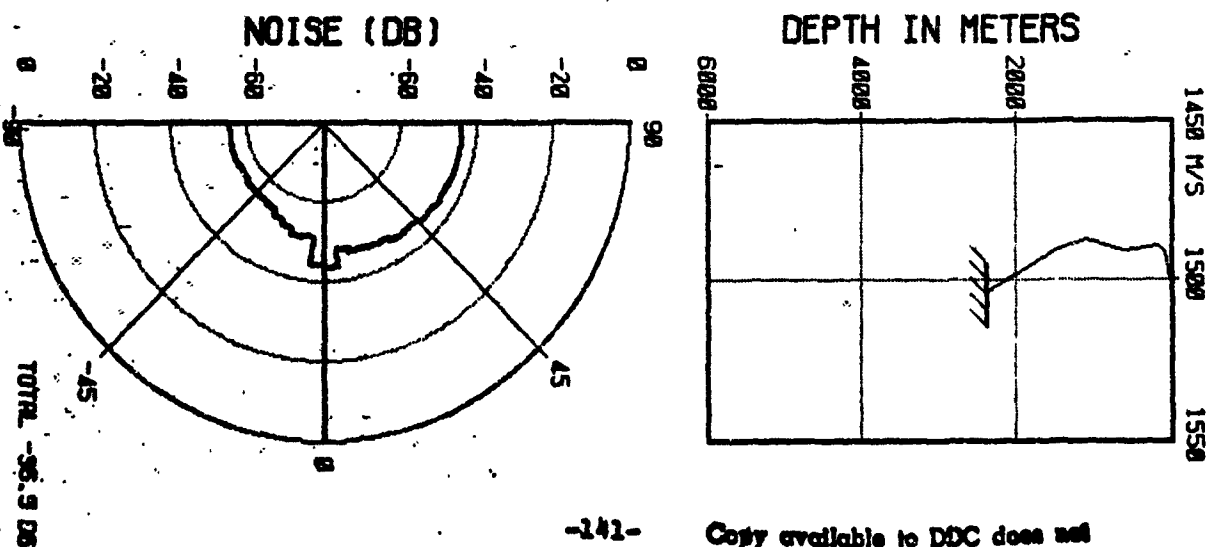
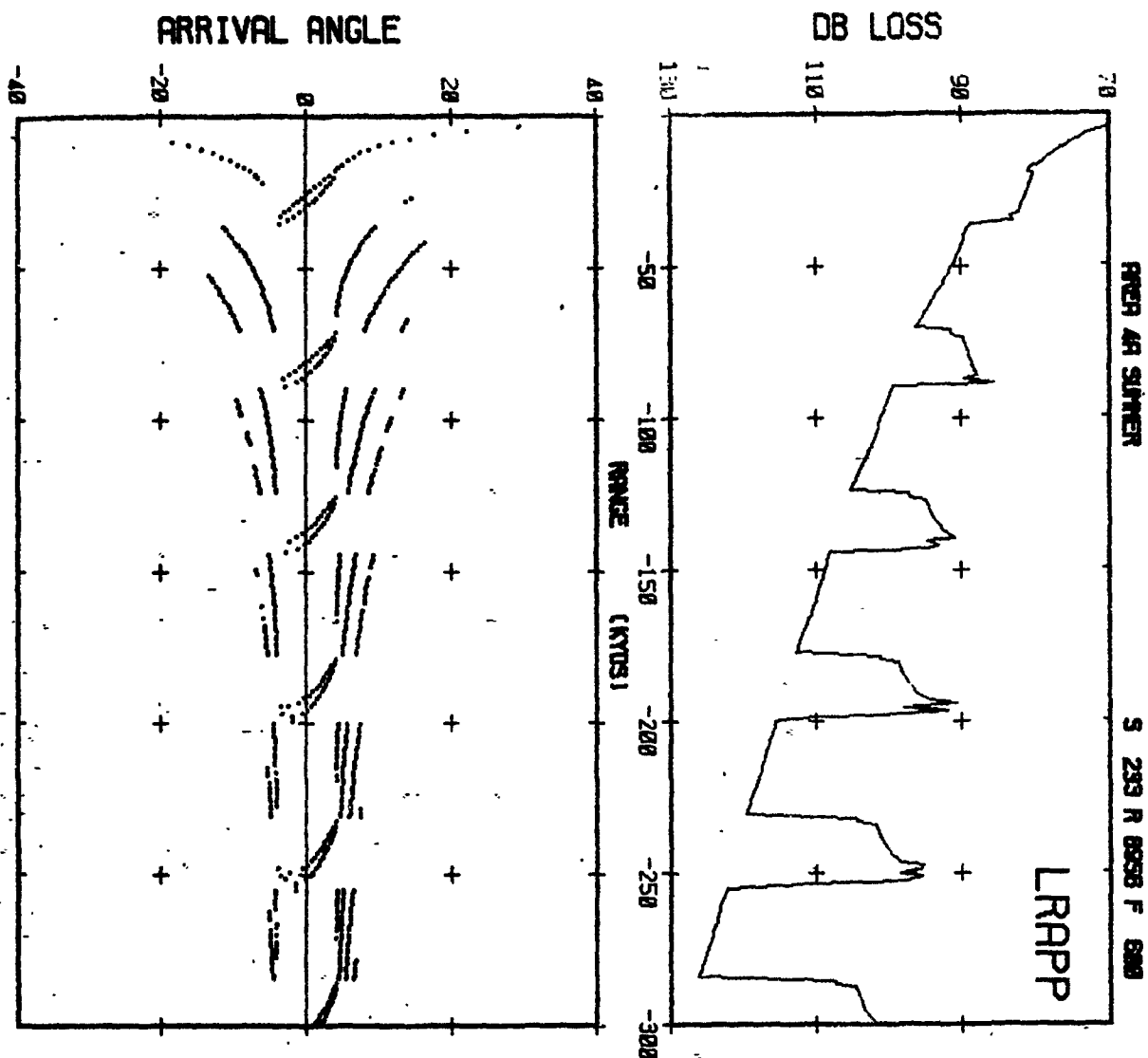
DEPTH IN METERS

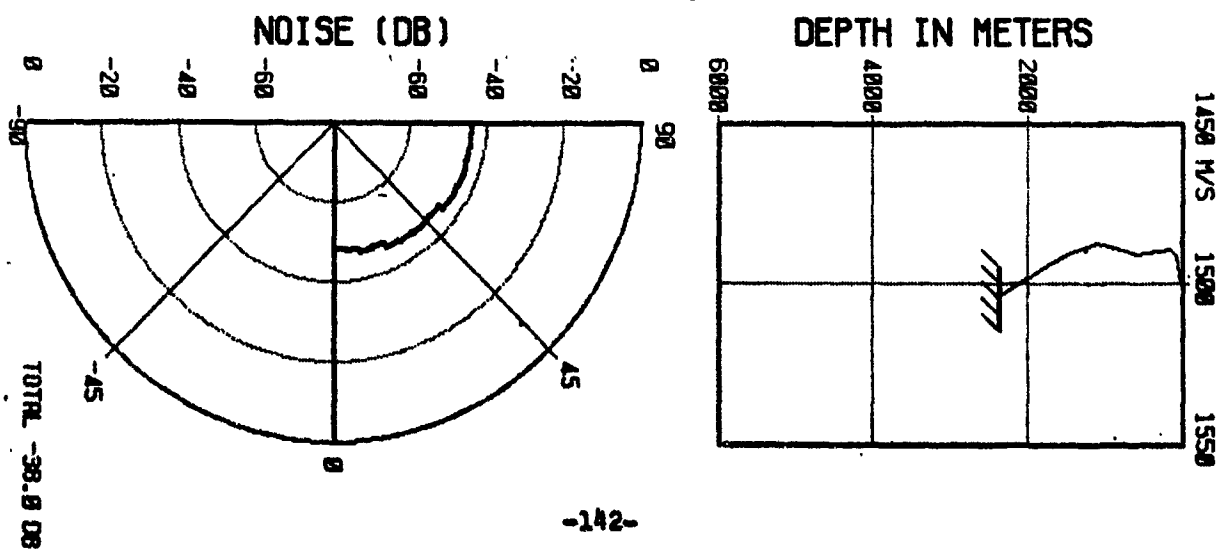
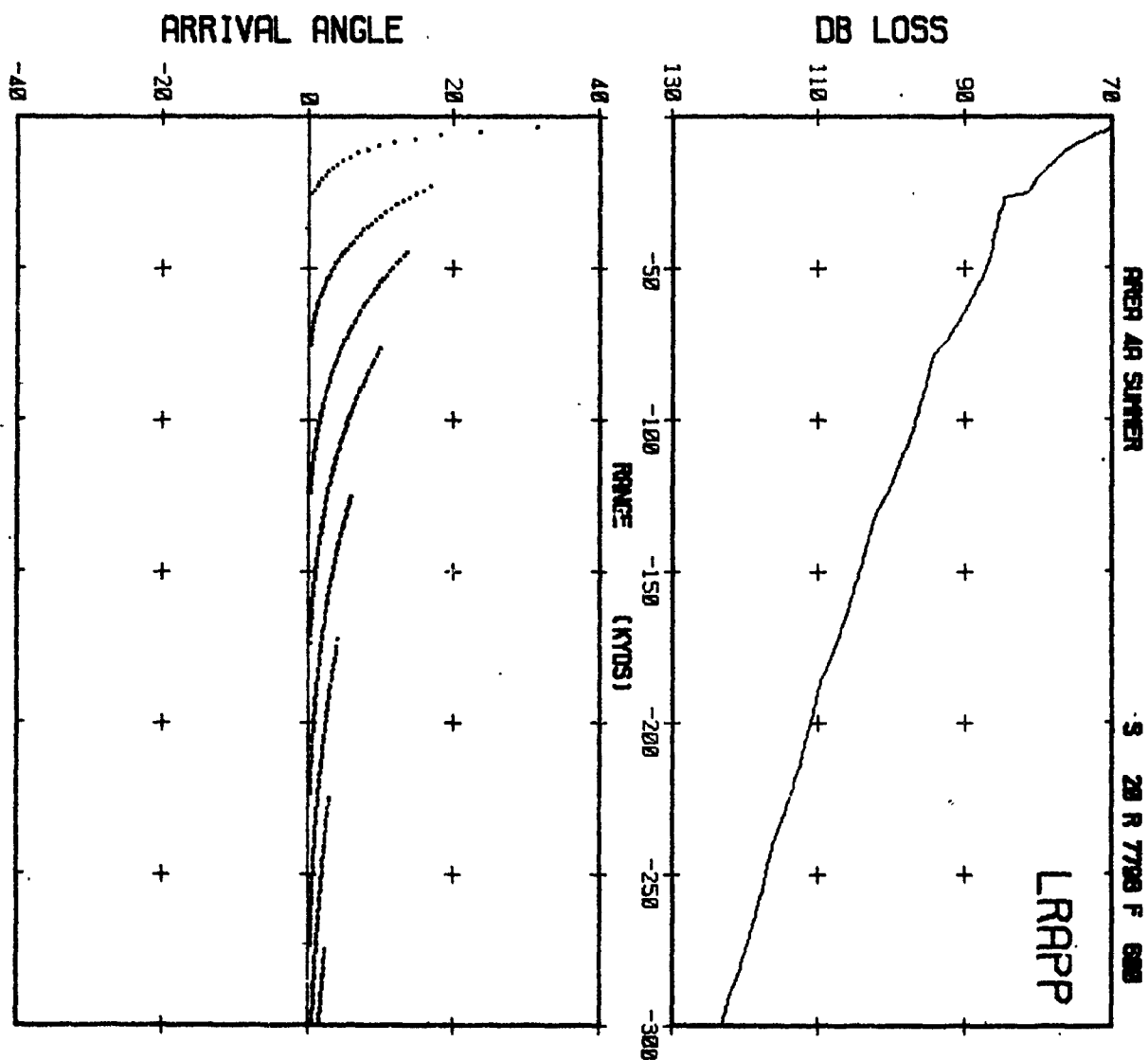


NOISE (DB)







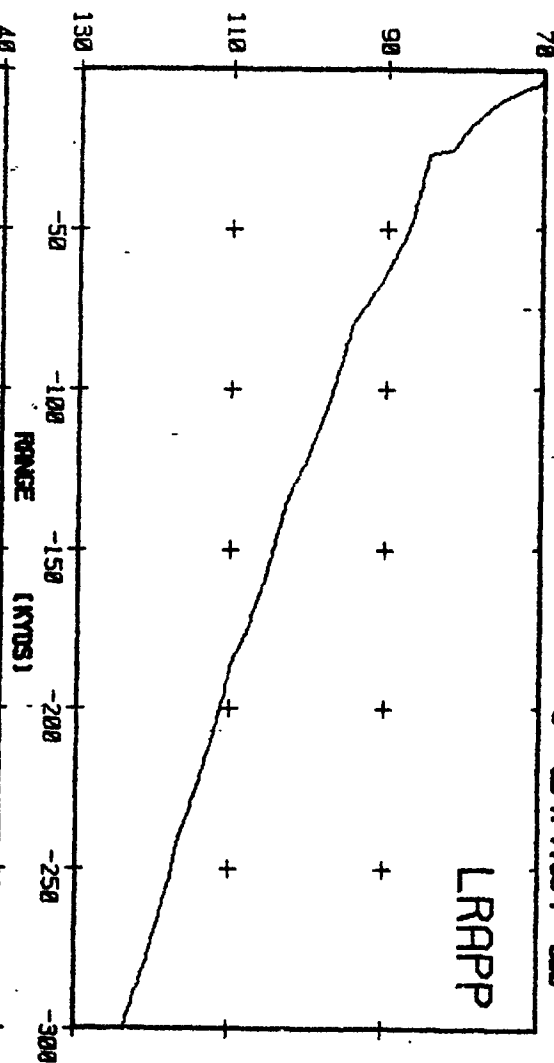


PRER 40 SUMMER

S 50 R 7700 F 600

1450 M/S 1500 1550

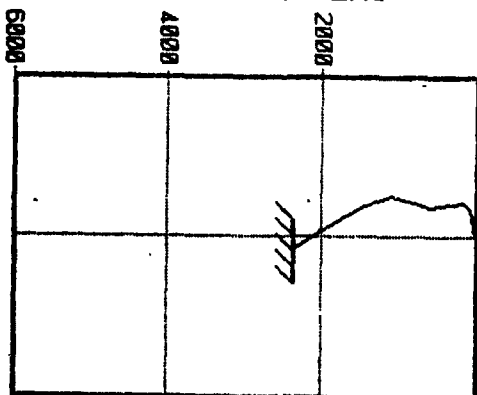
DB LOSS



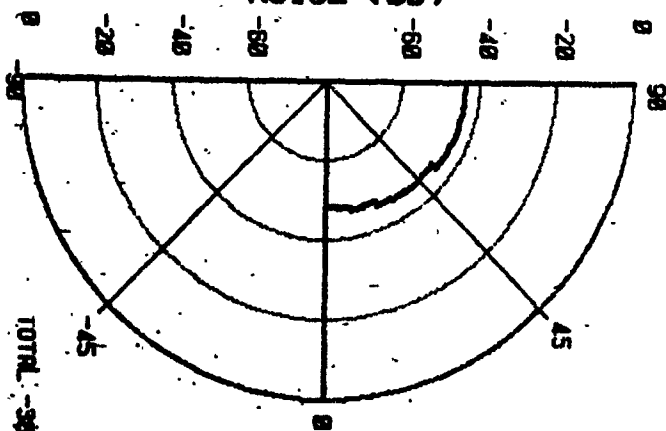
ARRIVAL ANGLE



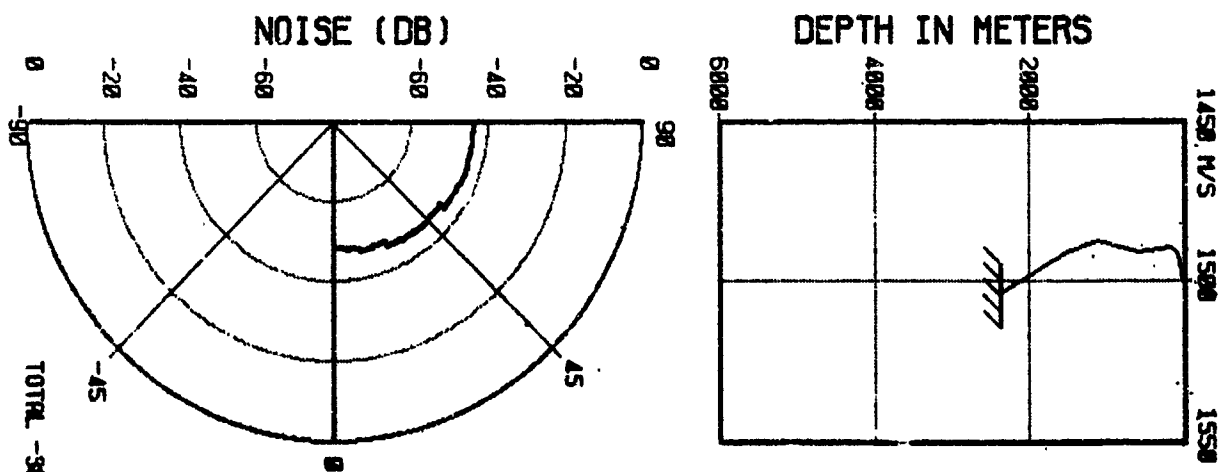
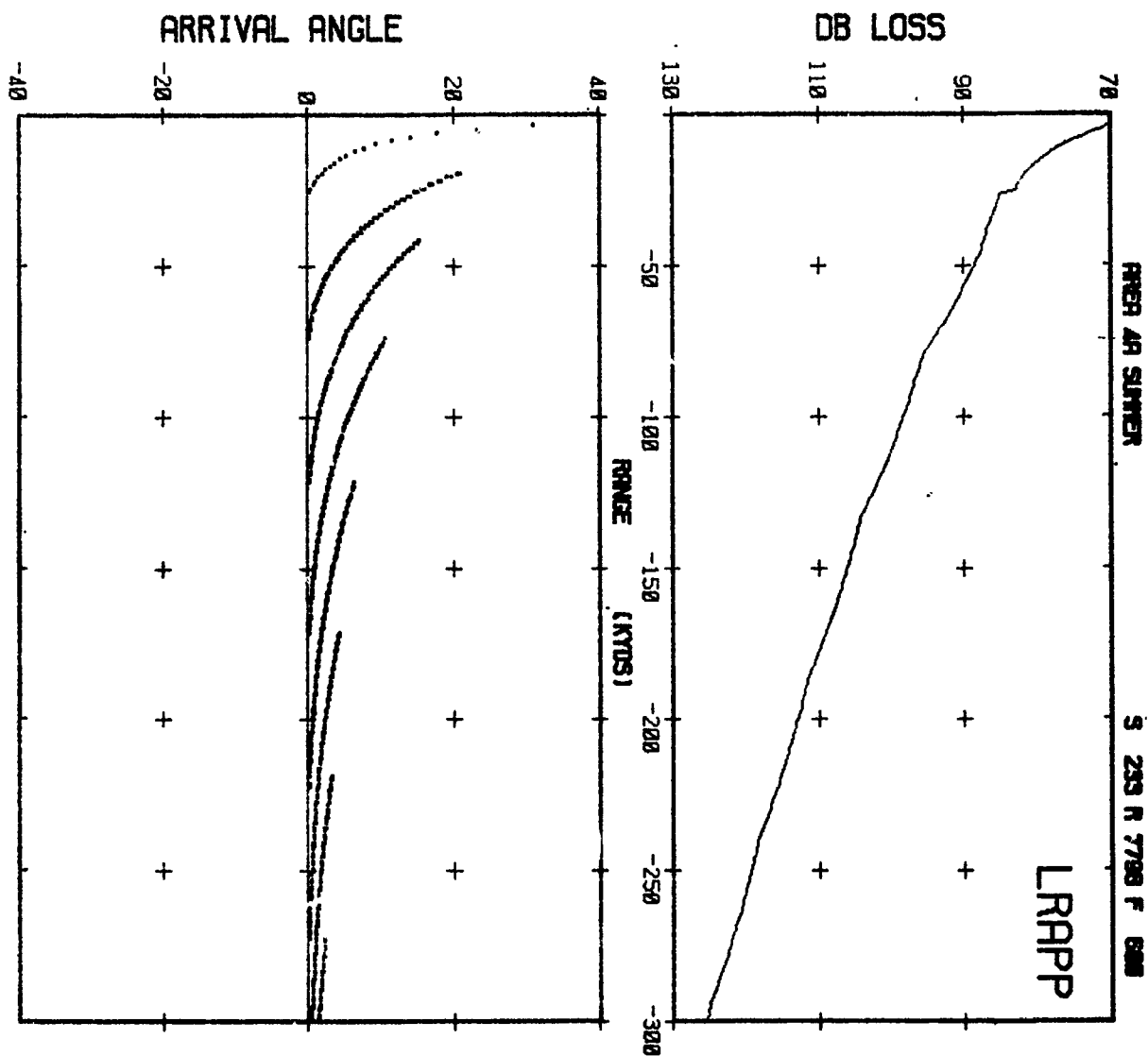
DEPTH IN METERS

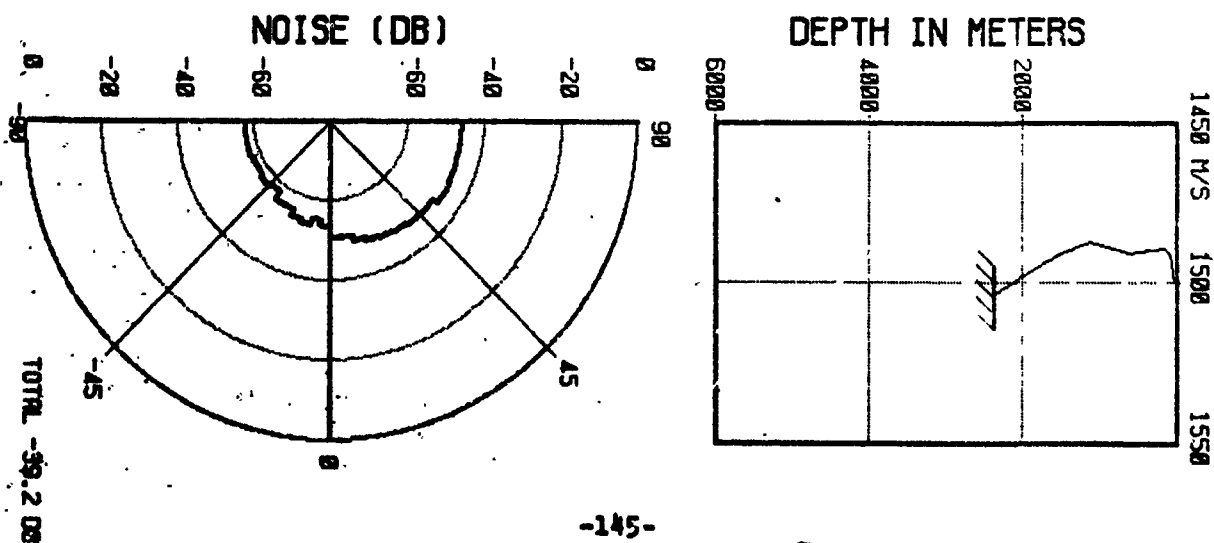
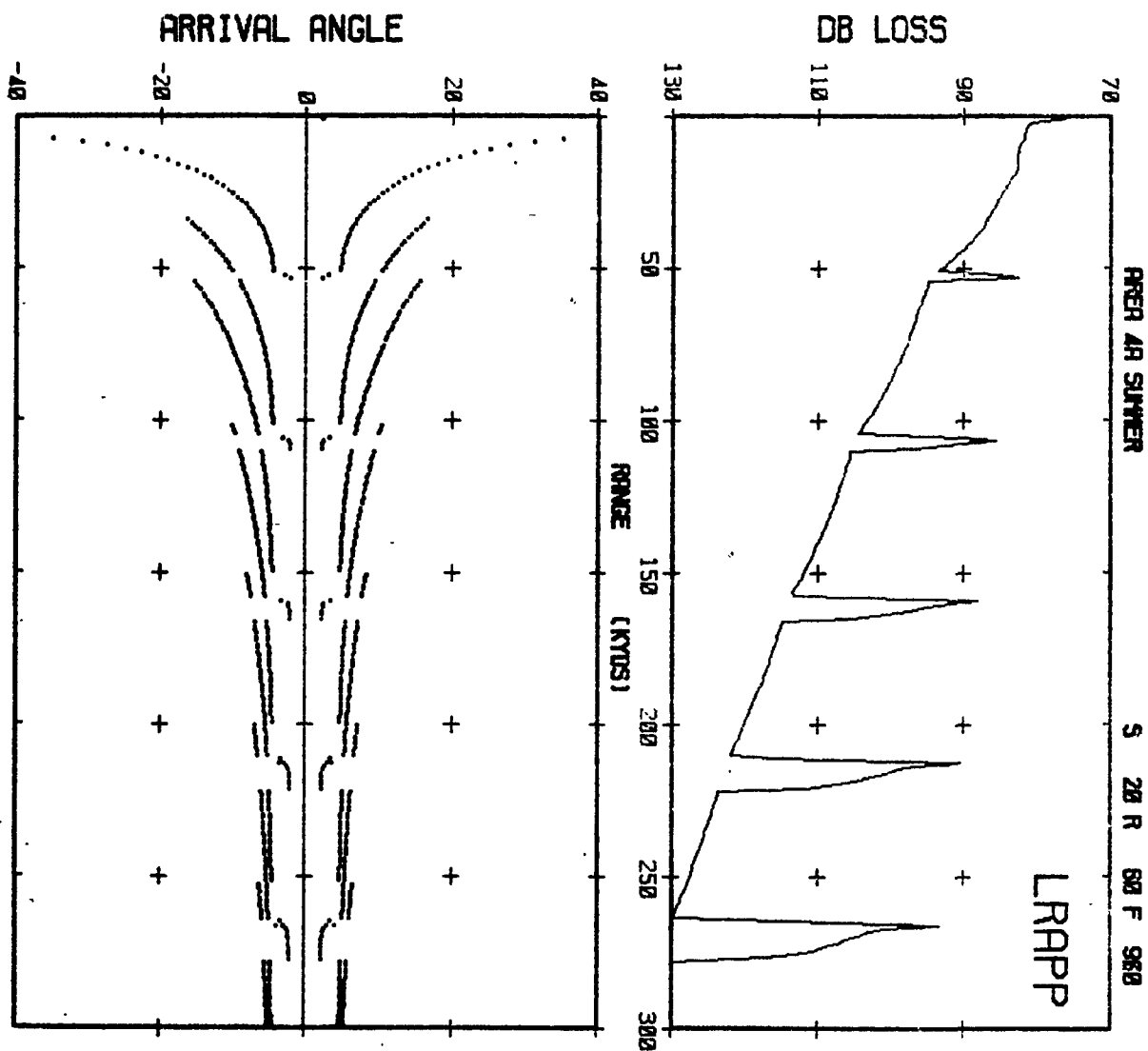


NOISE (DB)



TOTAL -30.0 DB



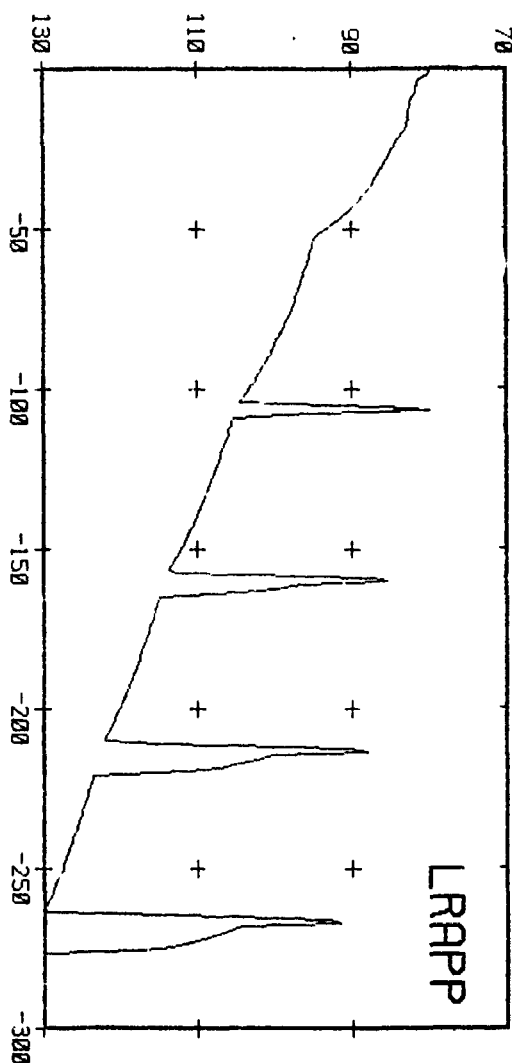


AREA AIR SURFER

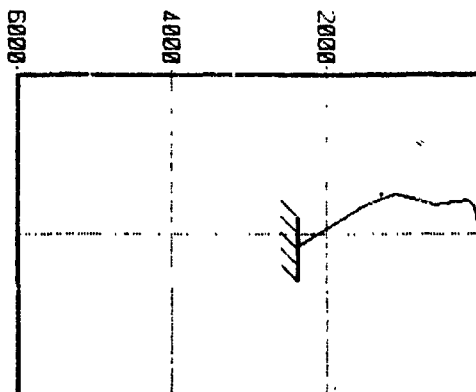
S 50 R 60 F 900

1450 M/S 1500 1550

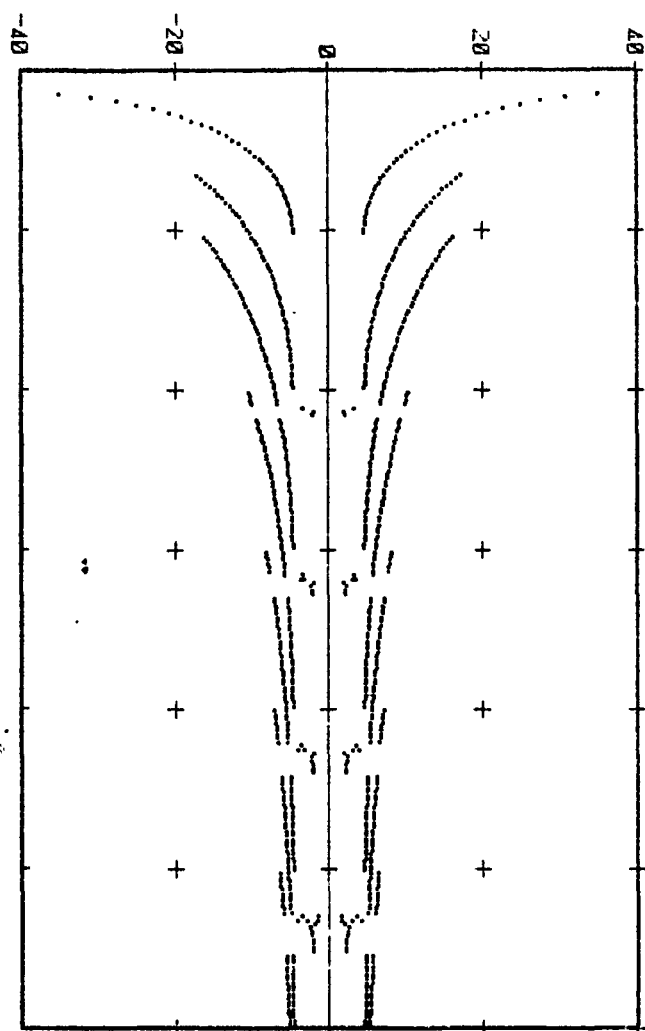
DB LOSS



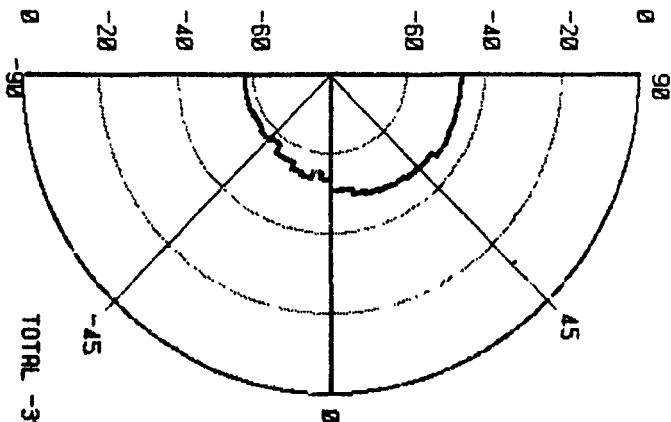
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



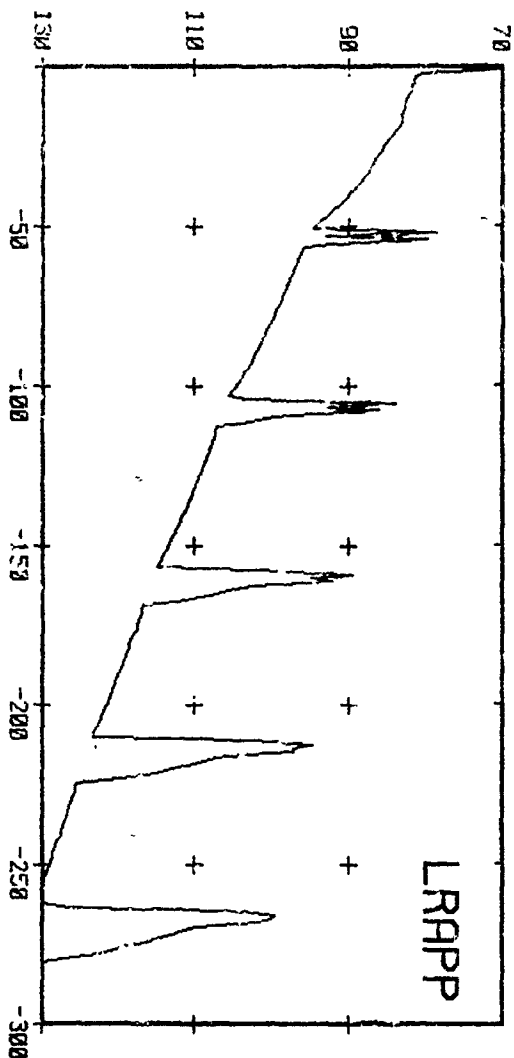
RCR 4A SUMMER

S 233 R 60 F 900

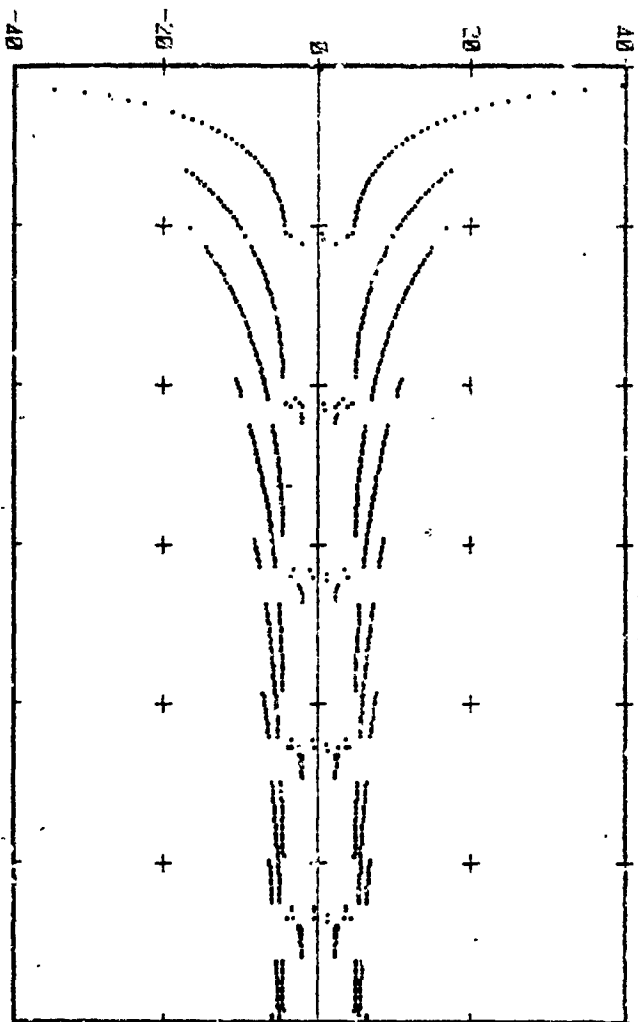
1450 H/S 1500

1550

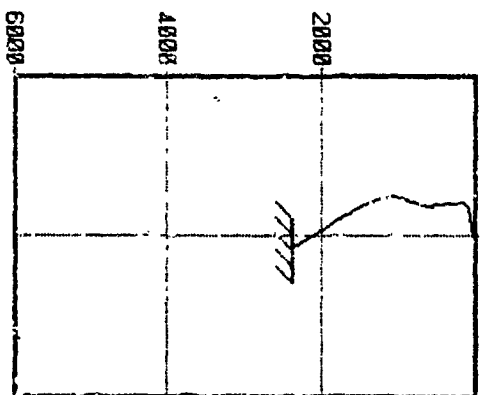
DB LOSS



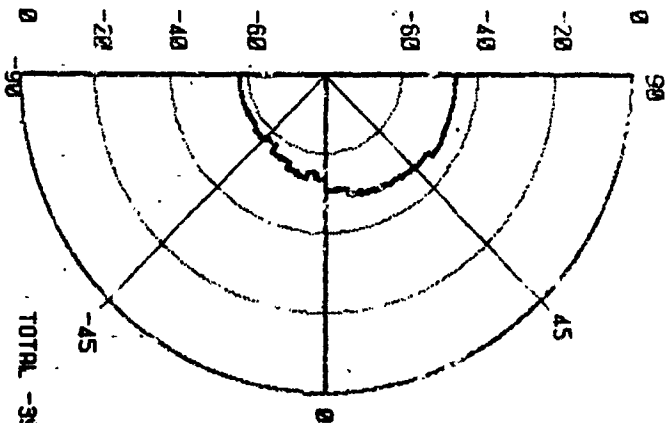
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

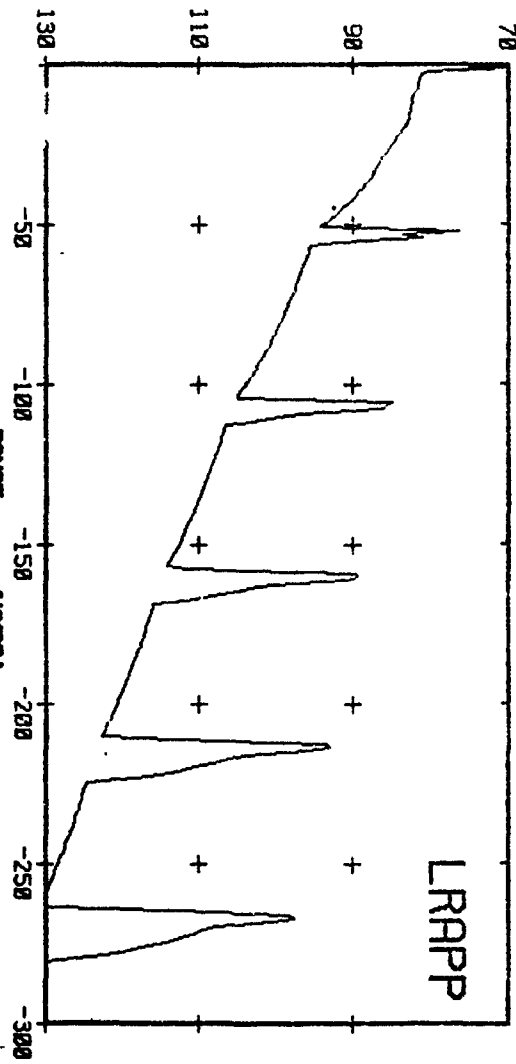


PRER AIR SUMMER

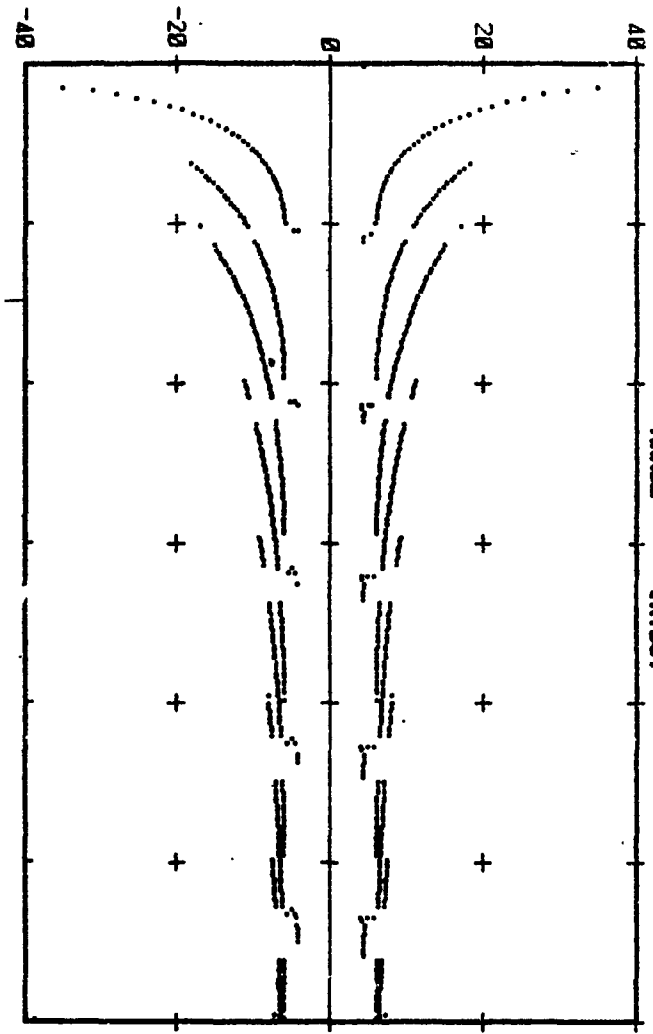
S 50 R 133 F 900

1450 M/S 1500 1550

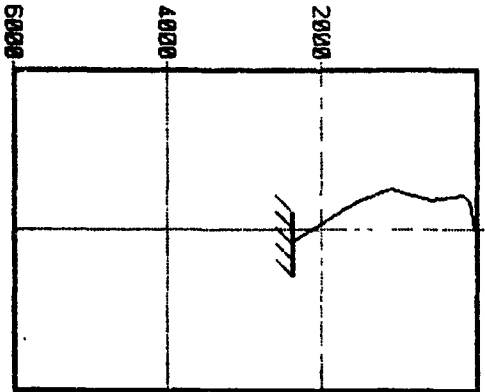
DB LOSS



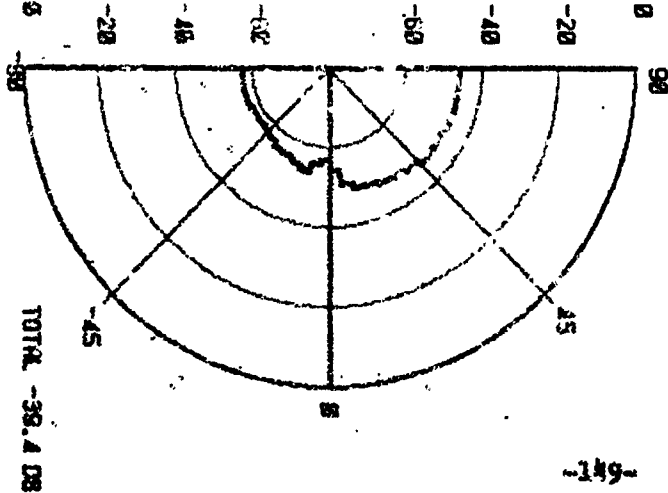
ARRIVAL ANGLE

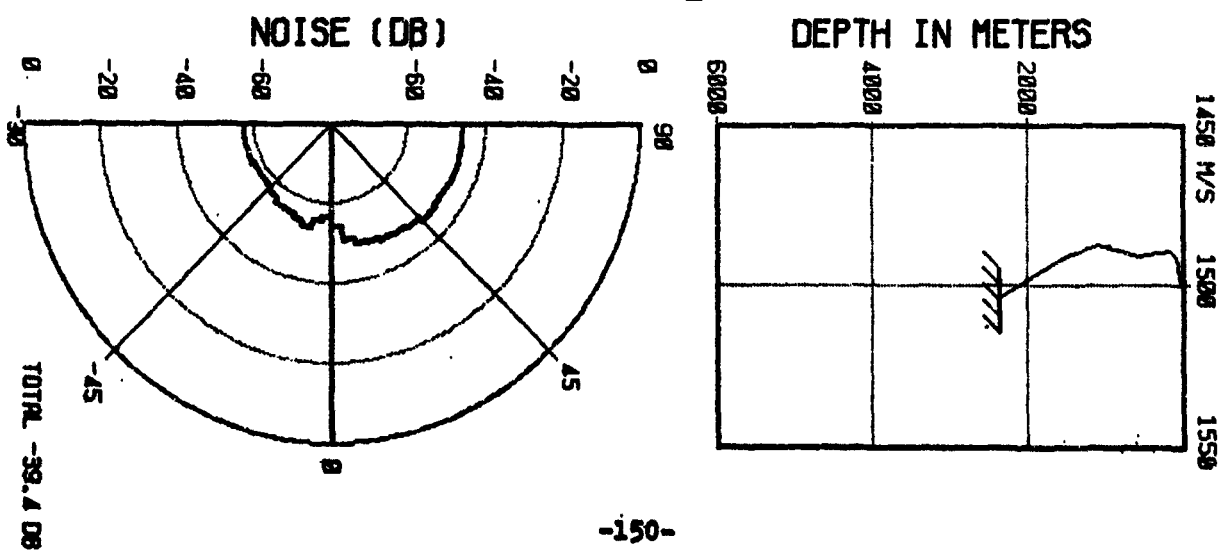
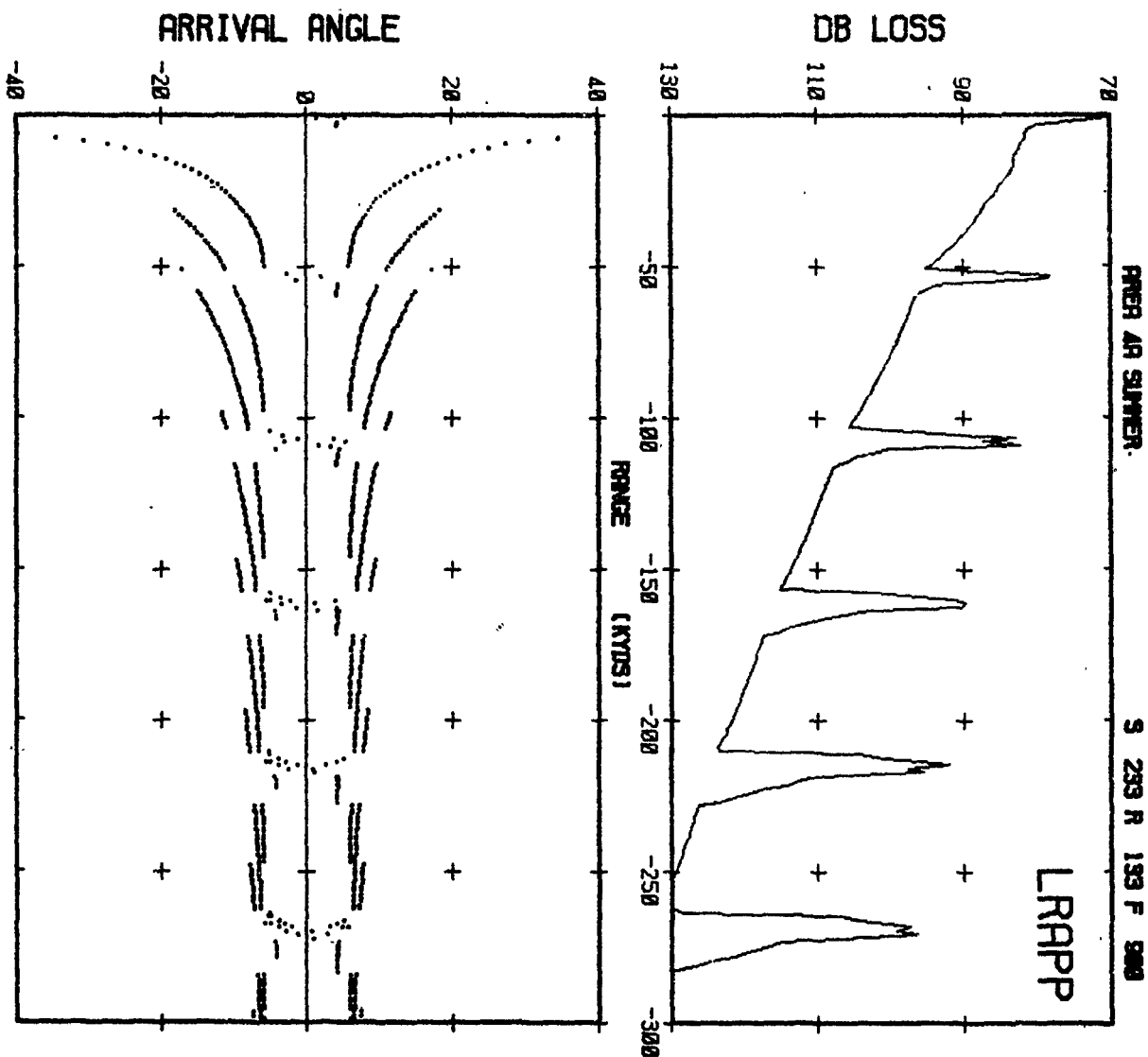


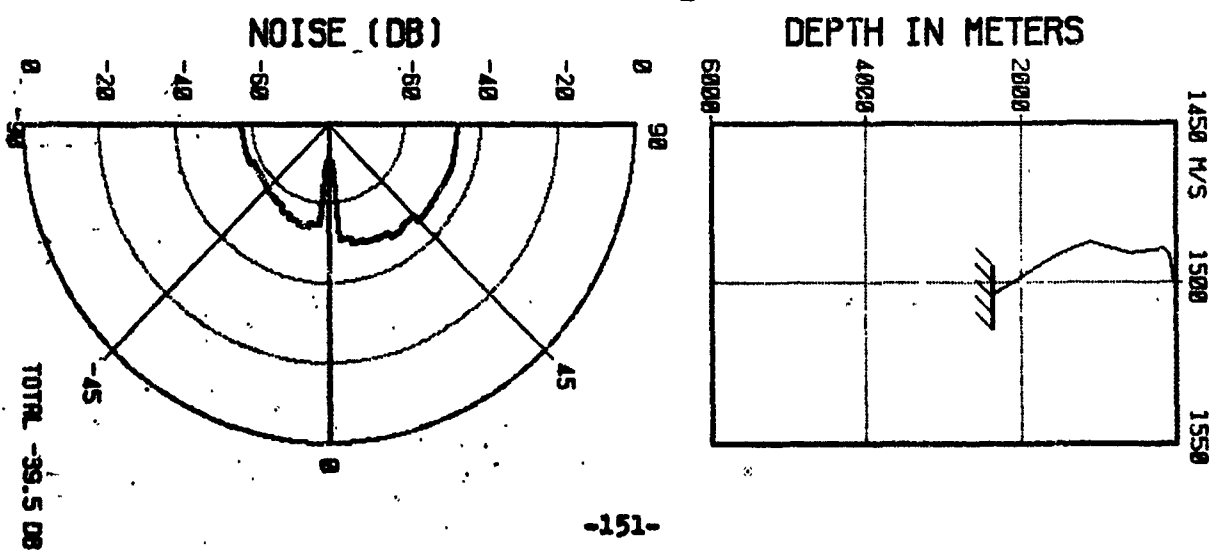
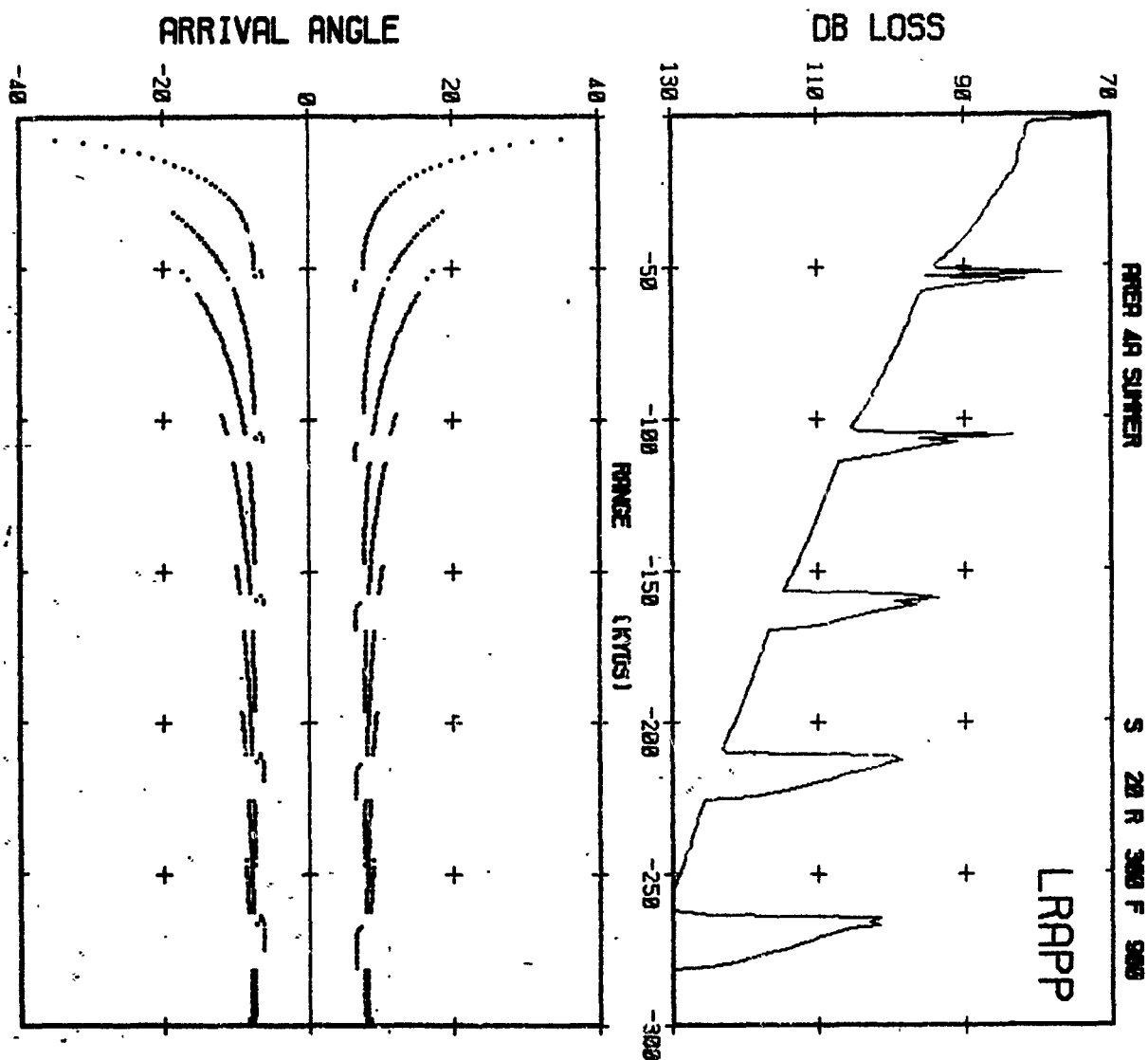
DEPTH IN METERS

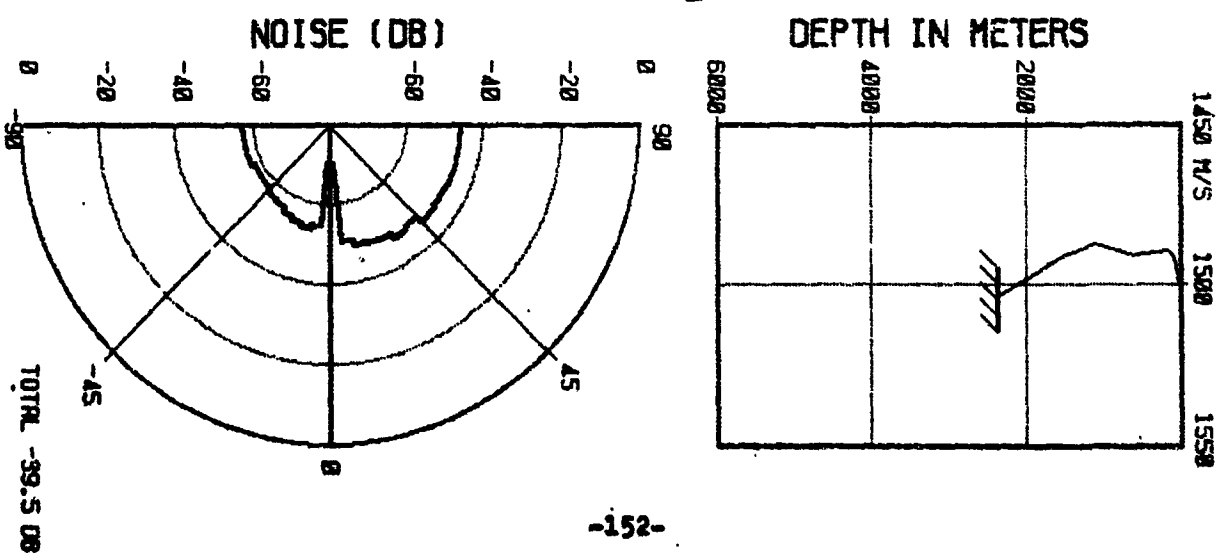
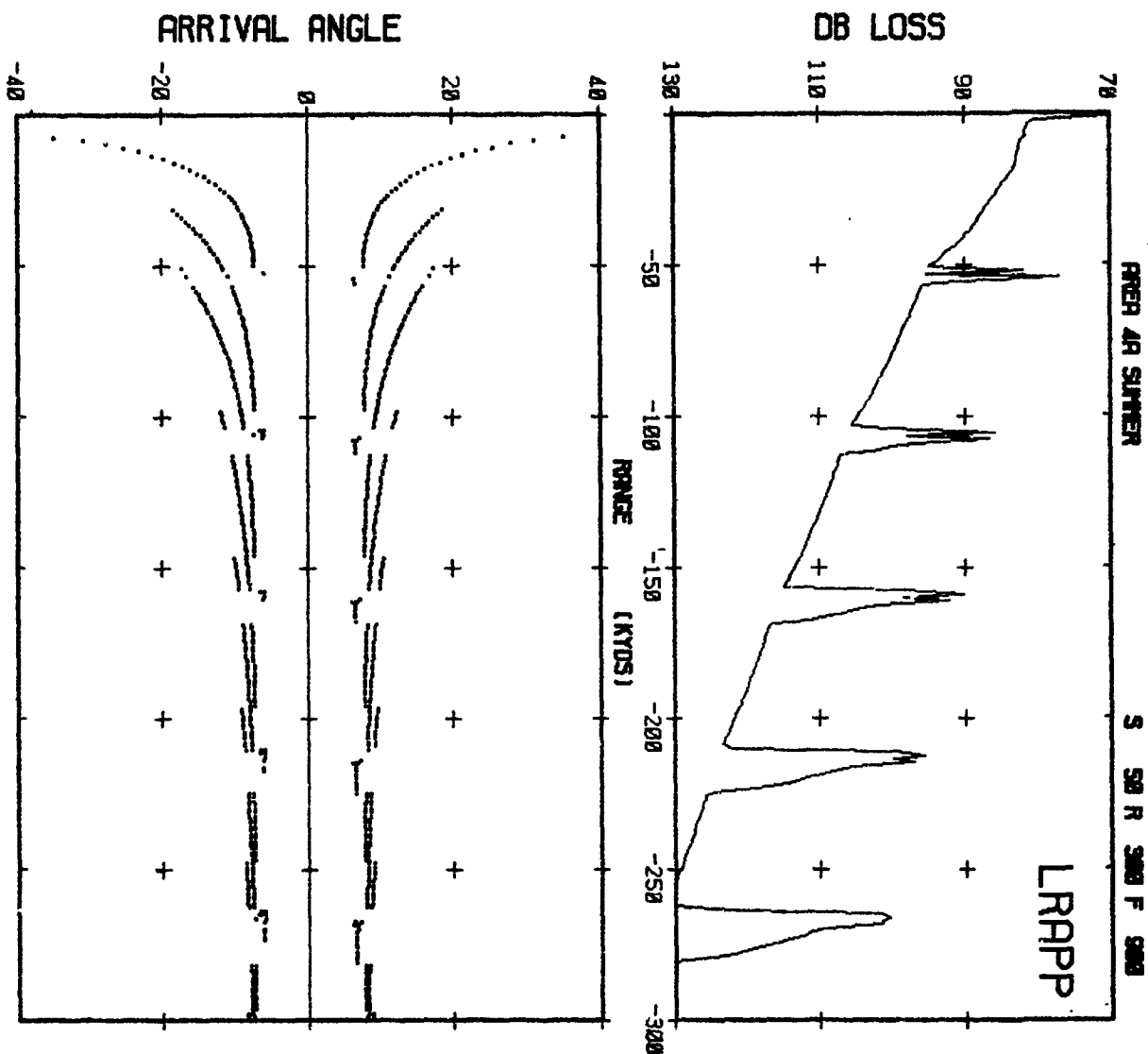


NOISE (DB)





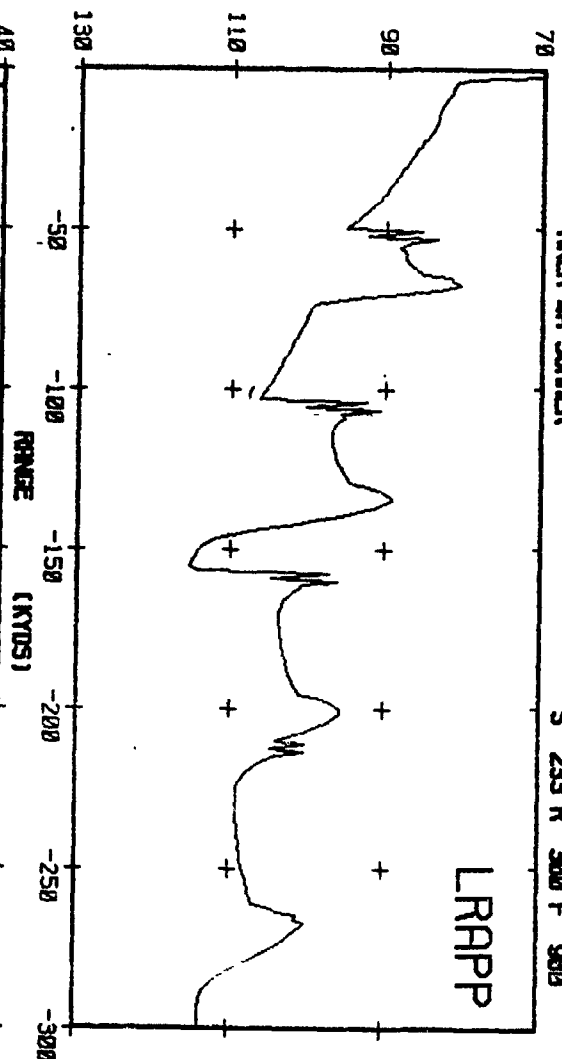




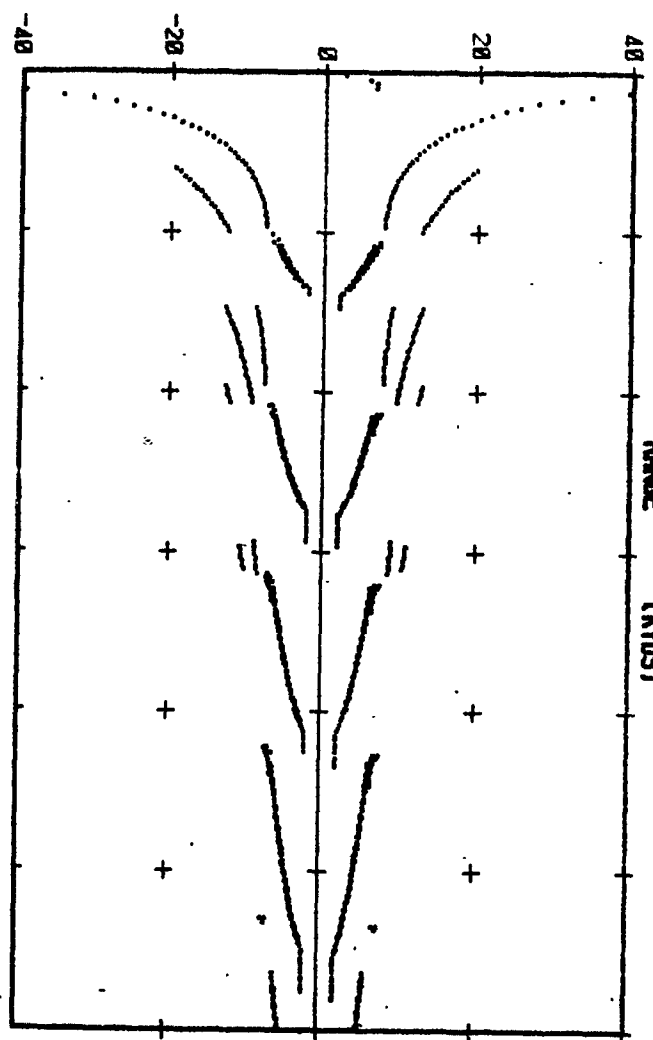
PRER AP SUMMER

S 293 R 300 F 903

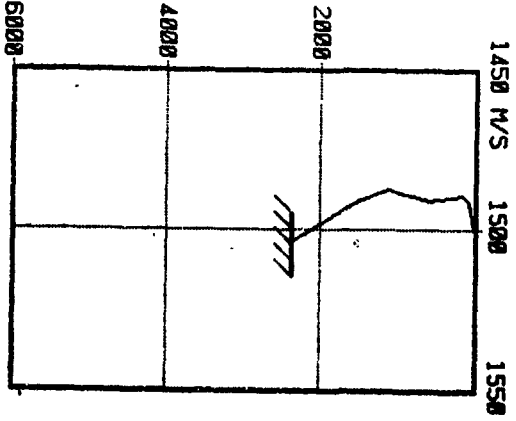
DB LOSS



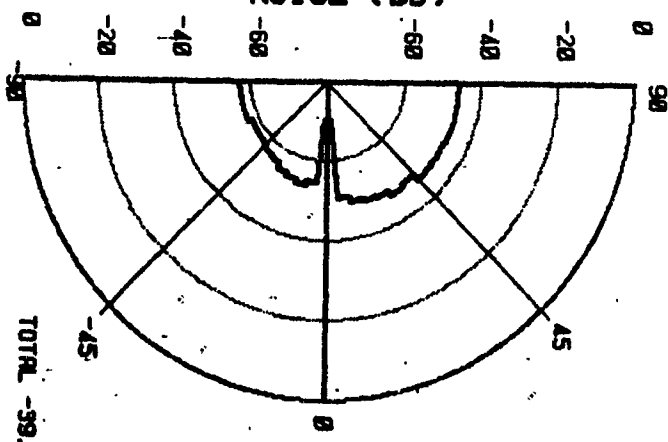
ARRIVAL ANGLE

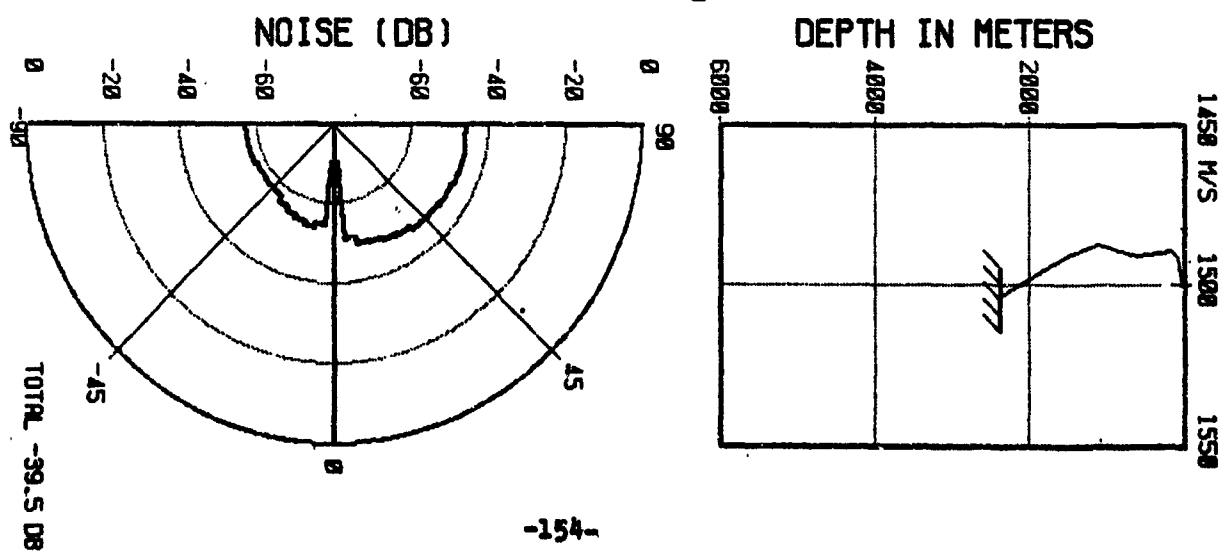
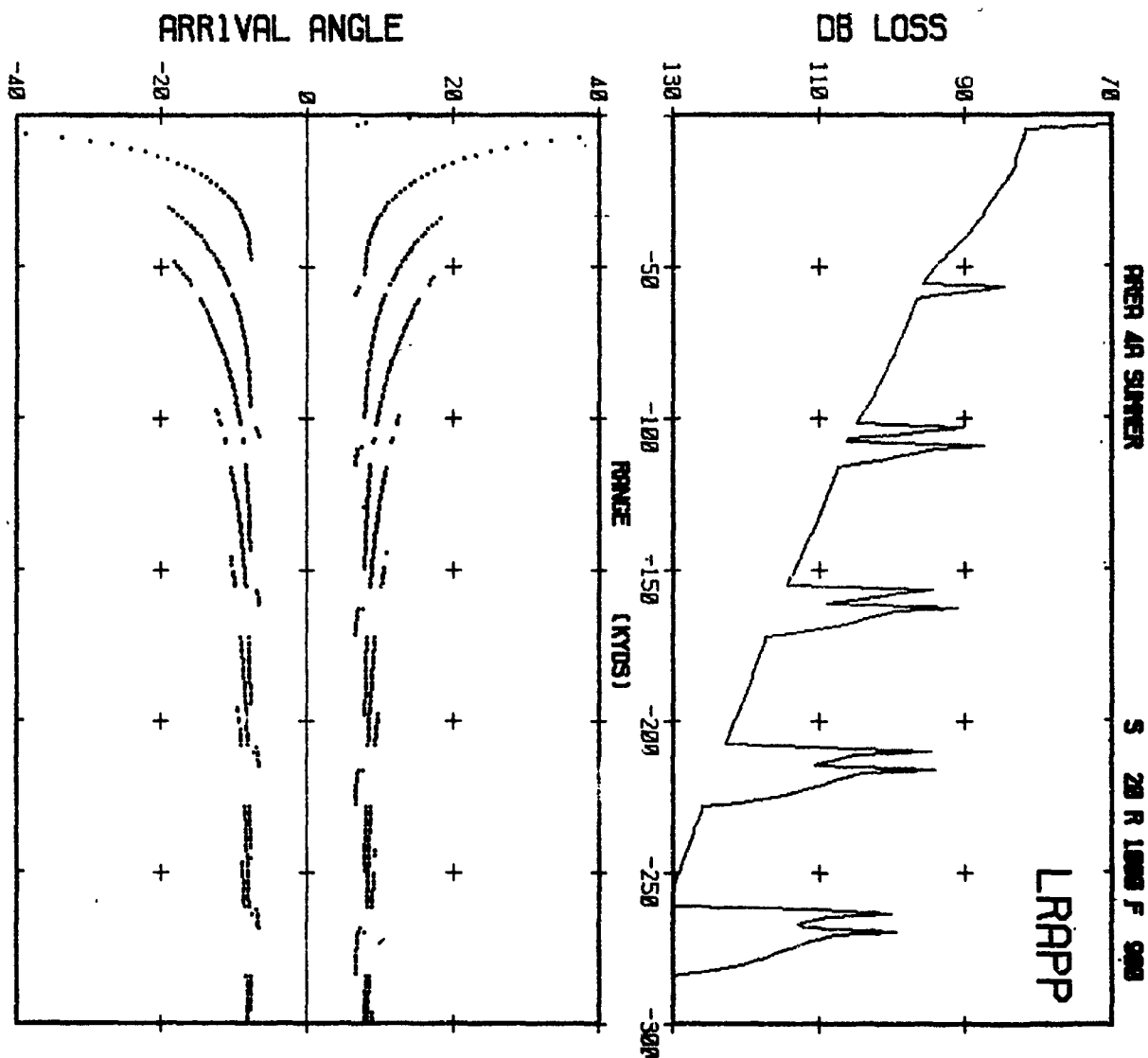


DEPTH IN METERS



NOISE (DB)



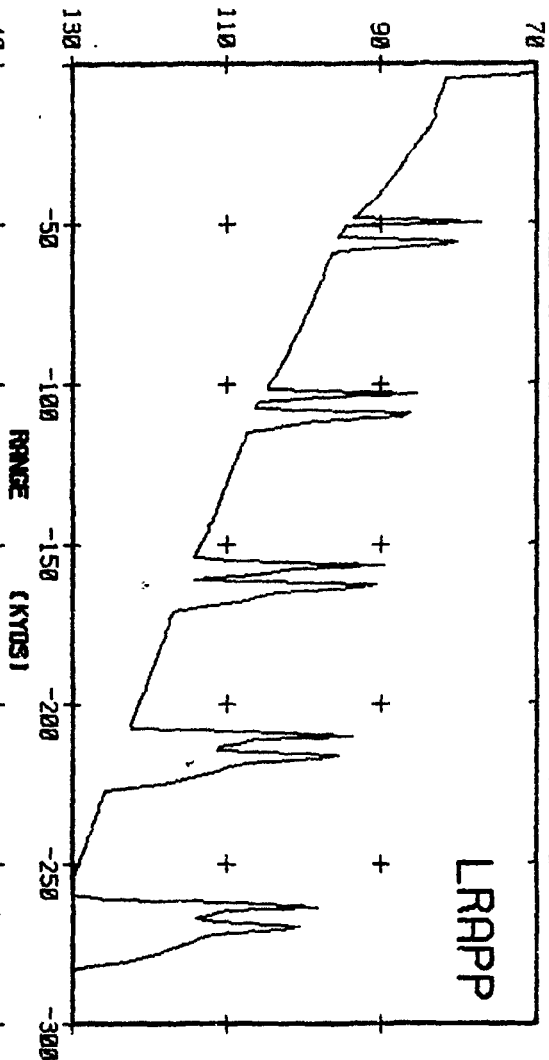


RRR AR SUMMER

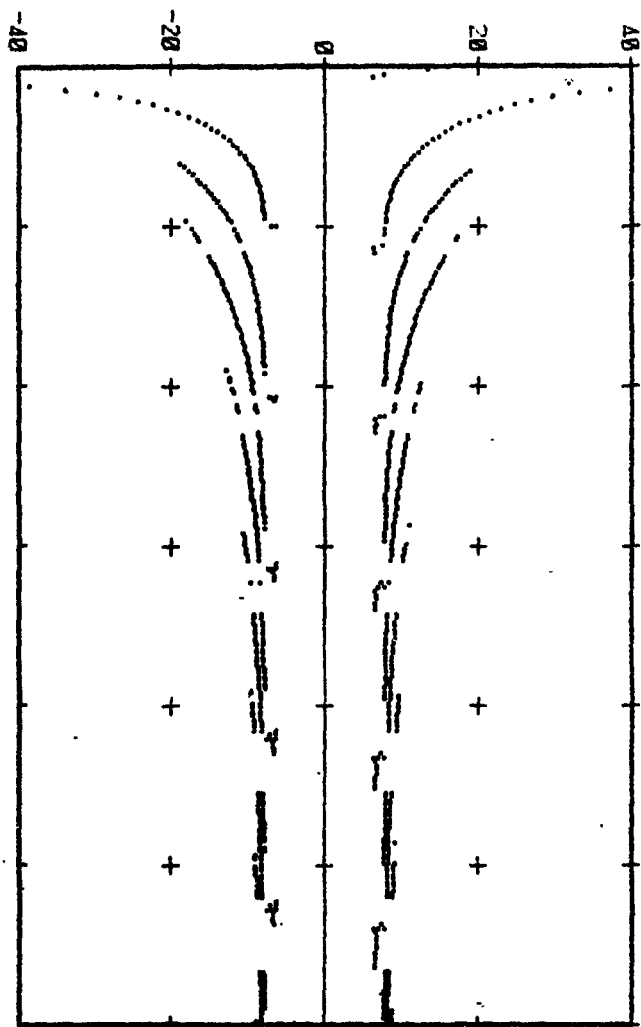
S 50 R 1000 F 900

1450 M/S 1500 1550

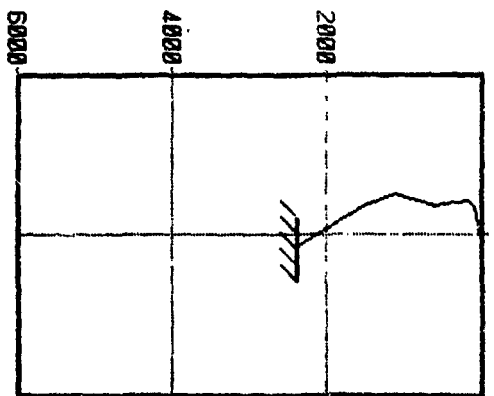
DB LOSS



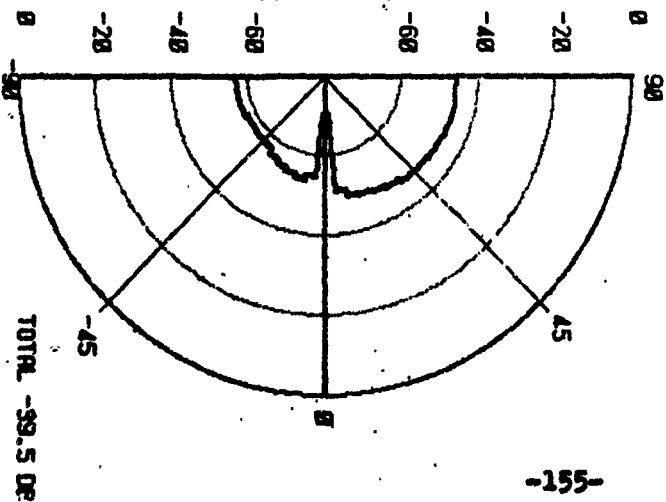
ARRIVAL ANGLE

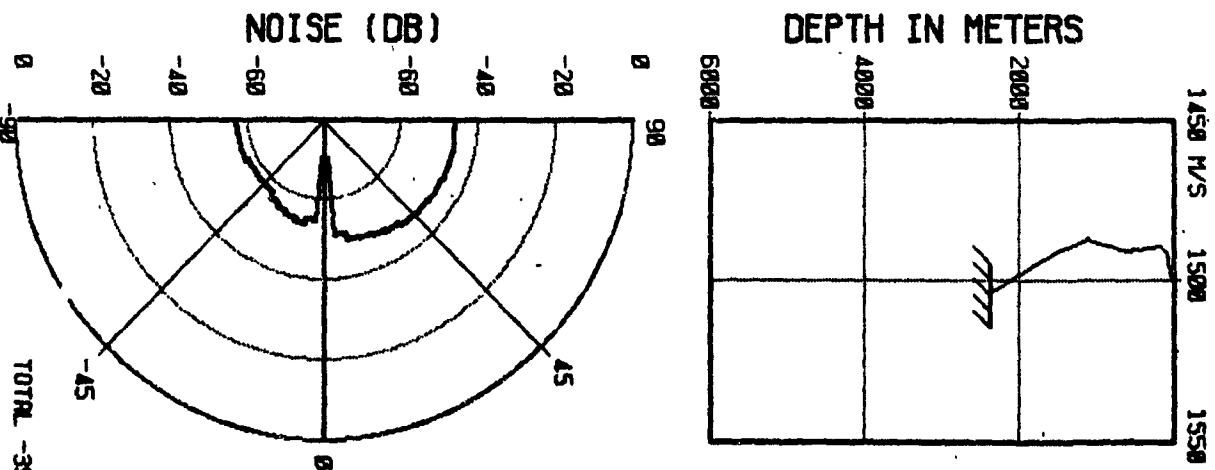
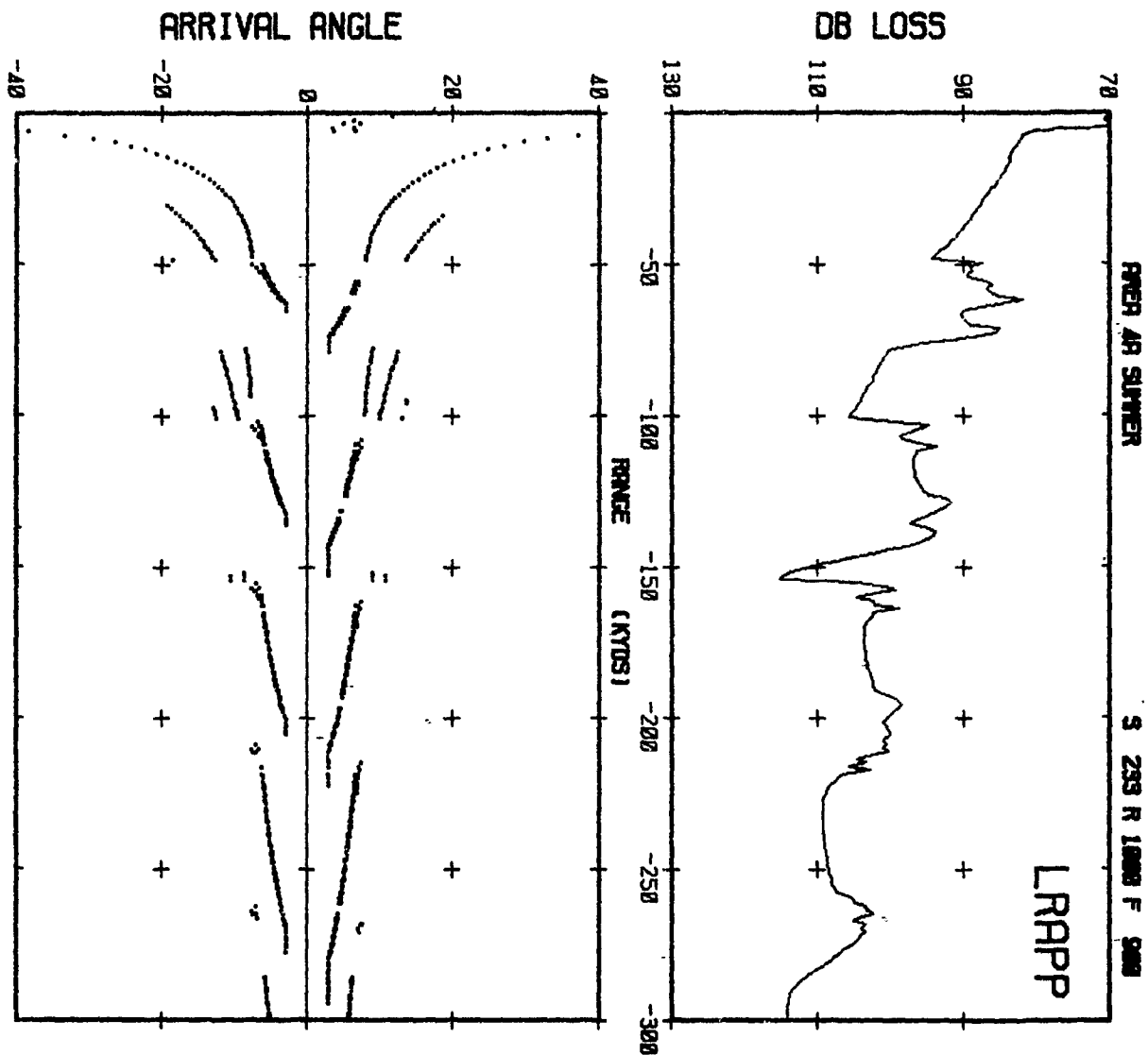


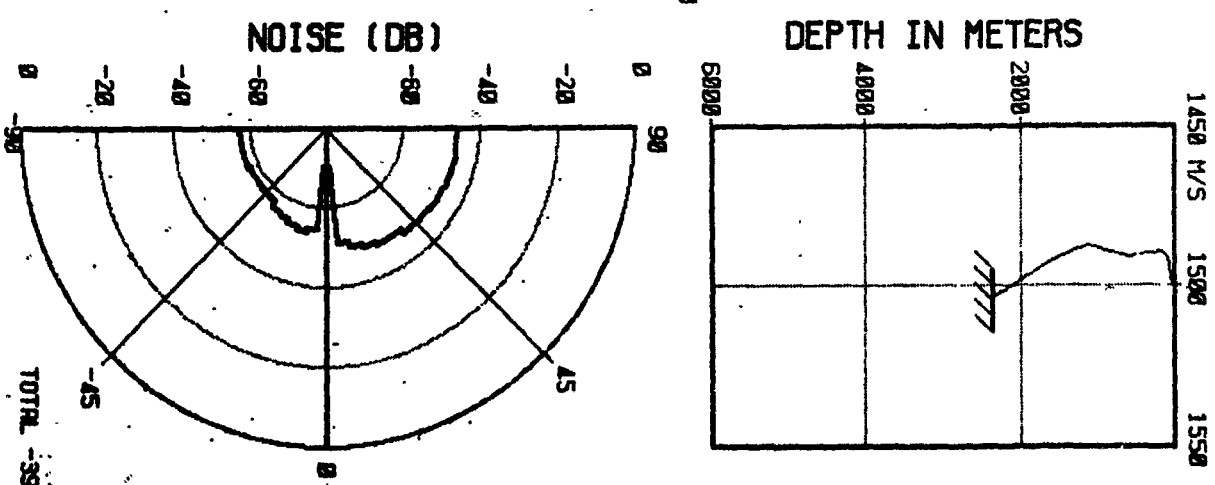
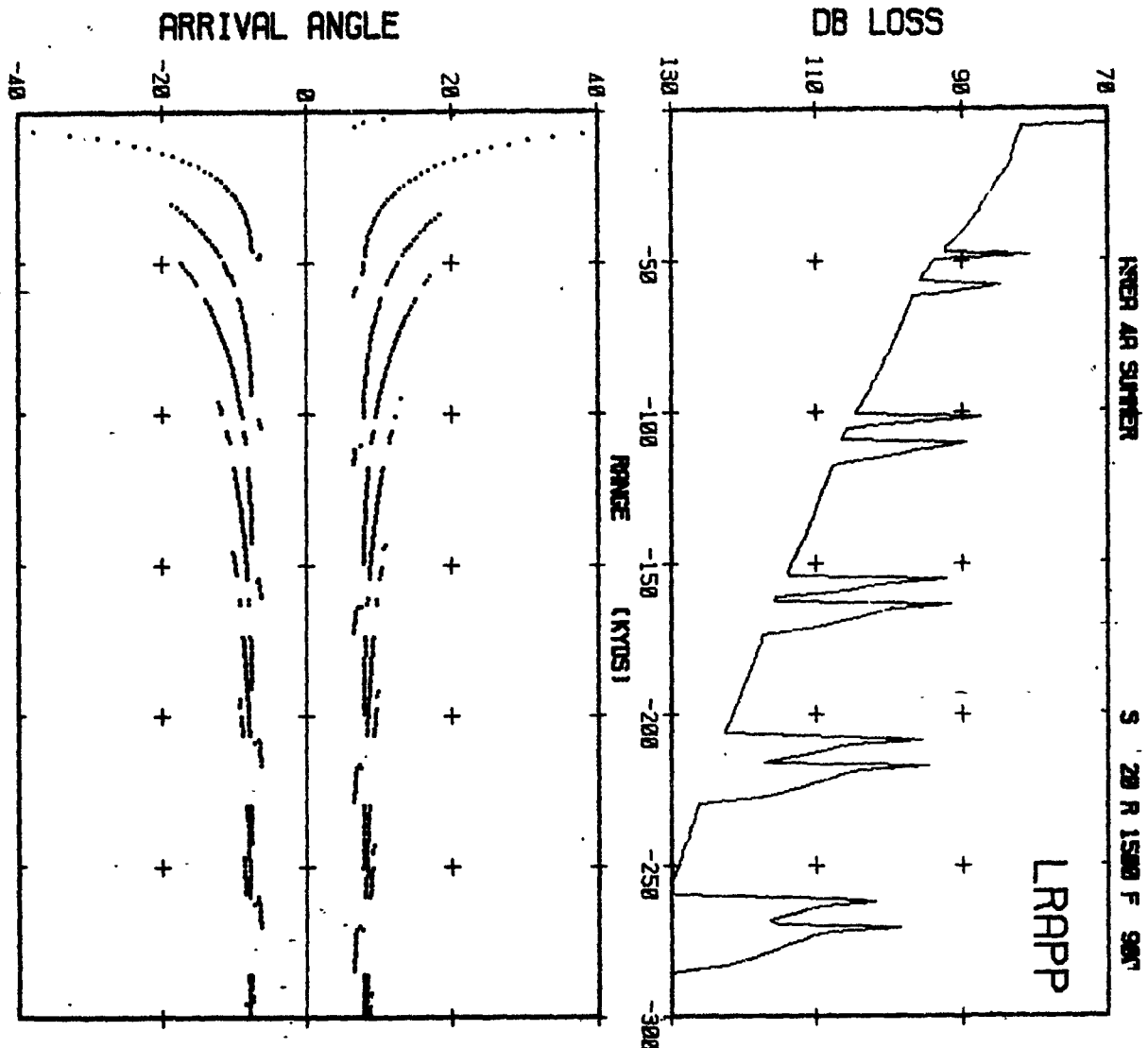
DEPTH IN METERS

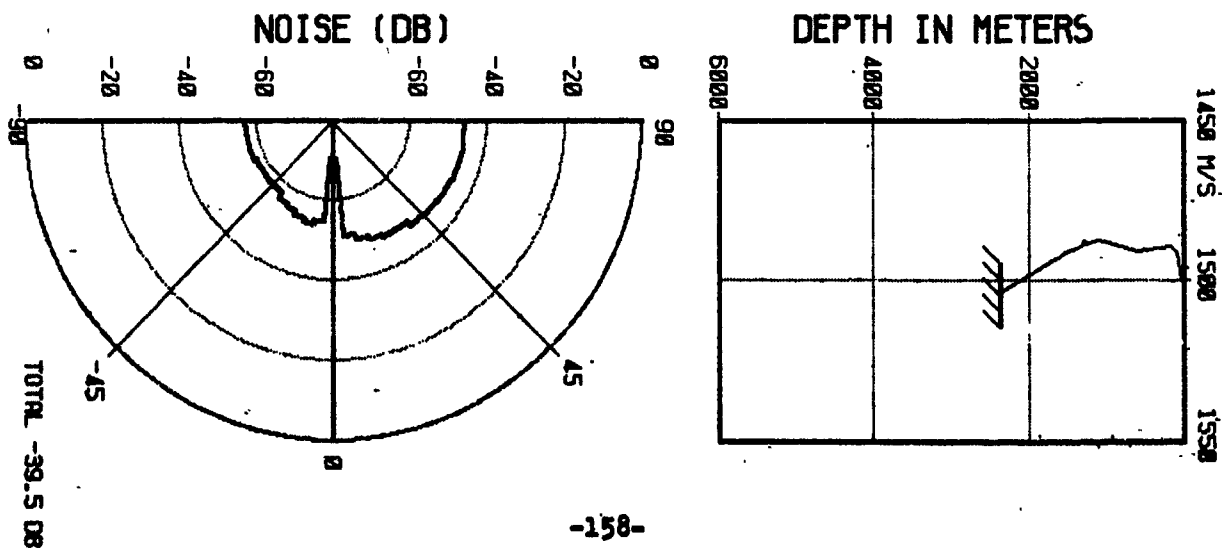
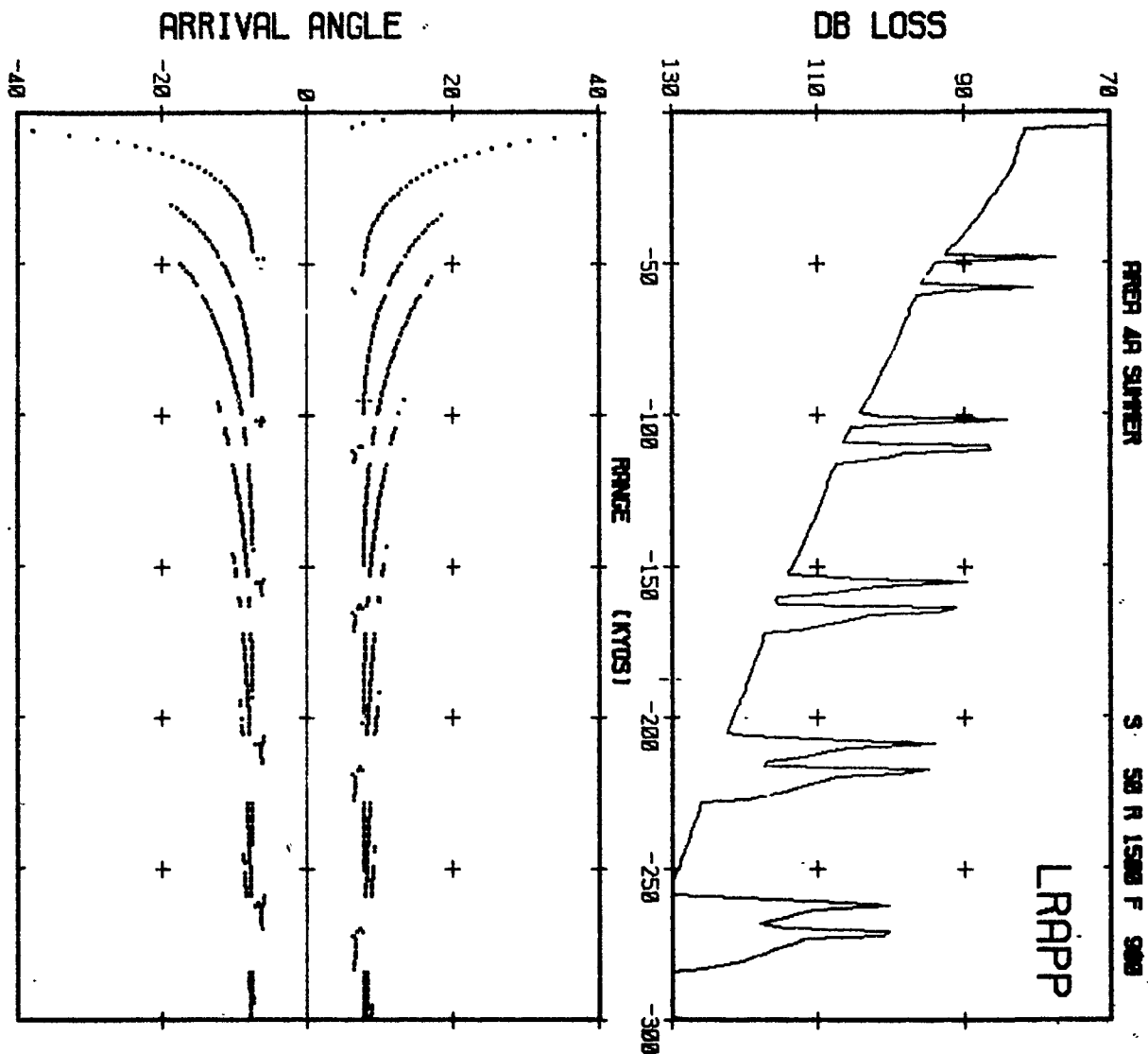


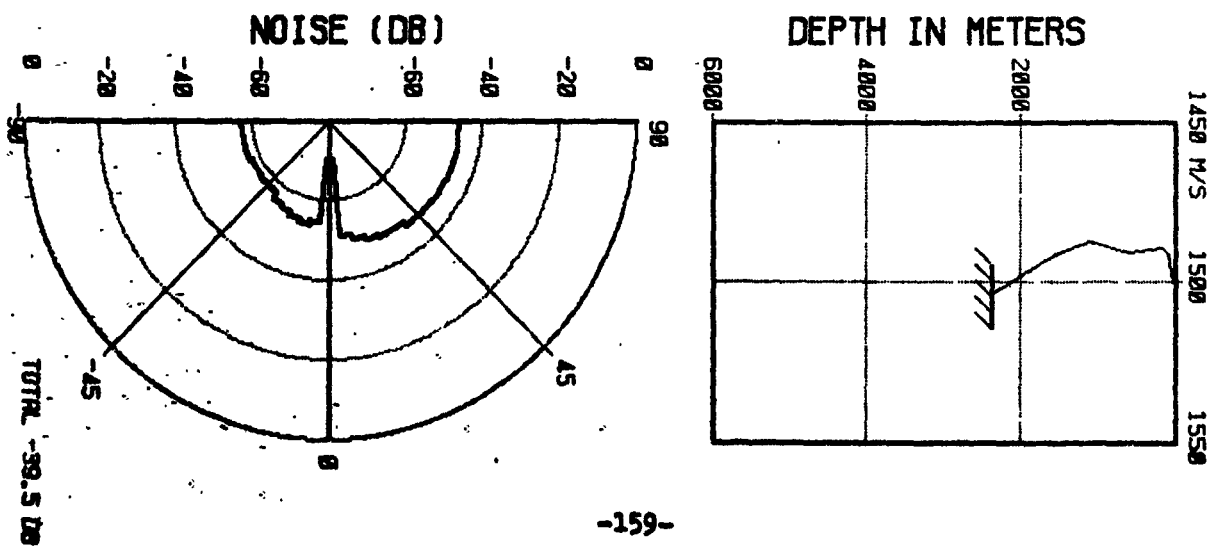
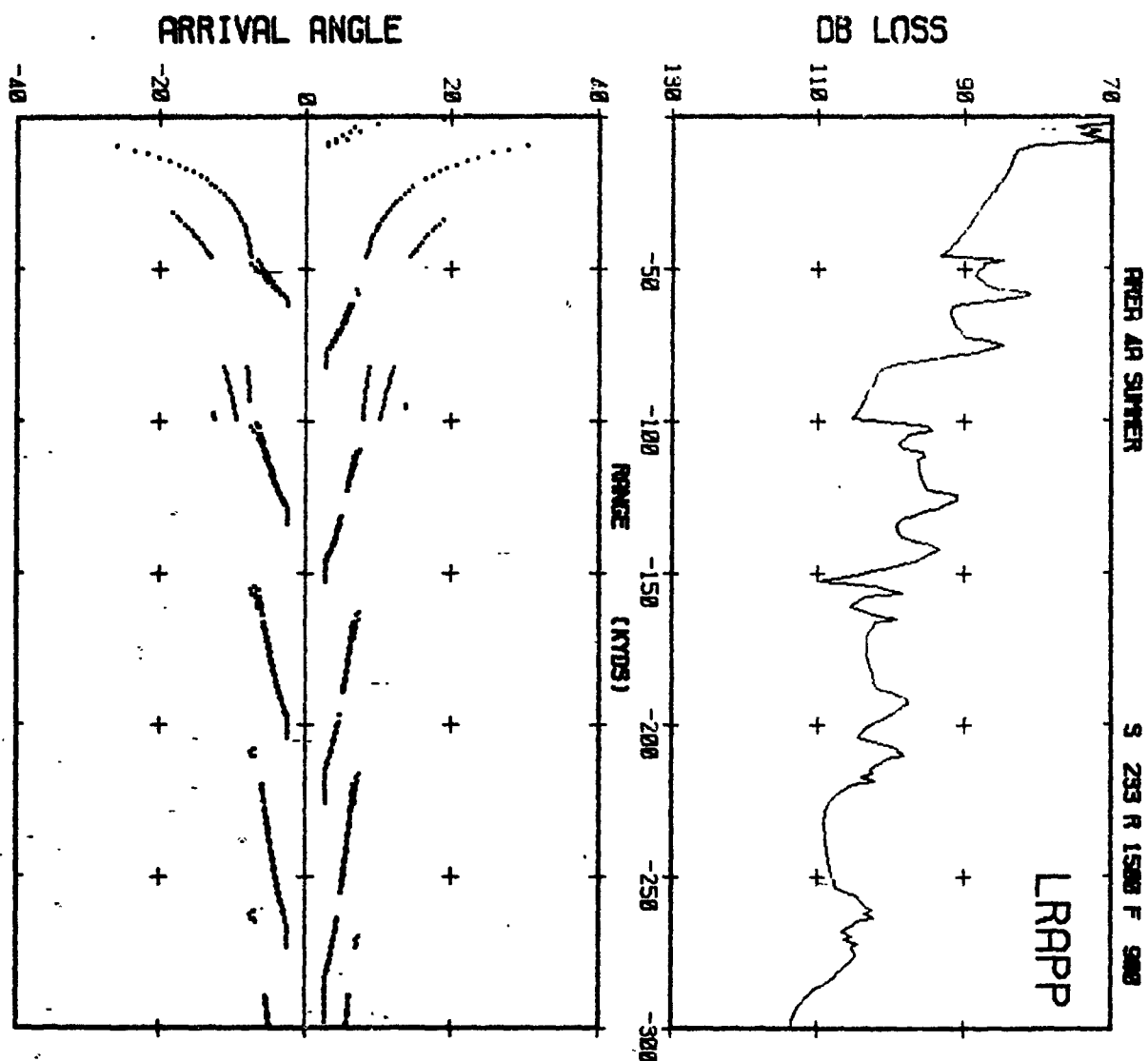
NOISE (DB)

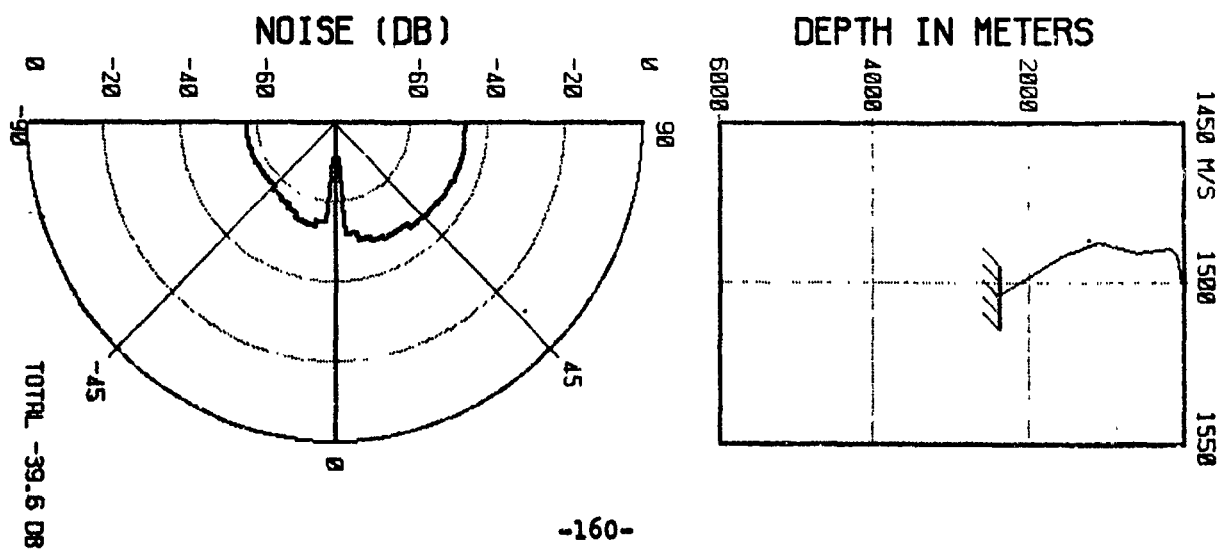
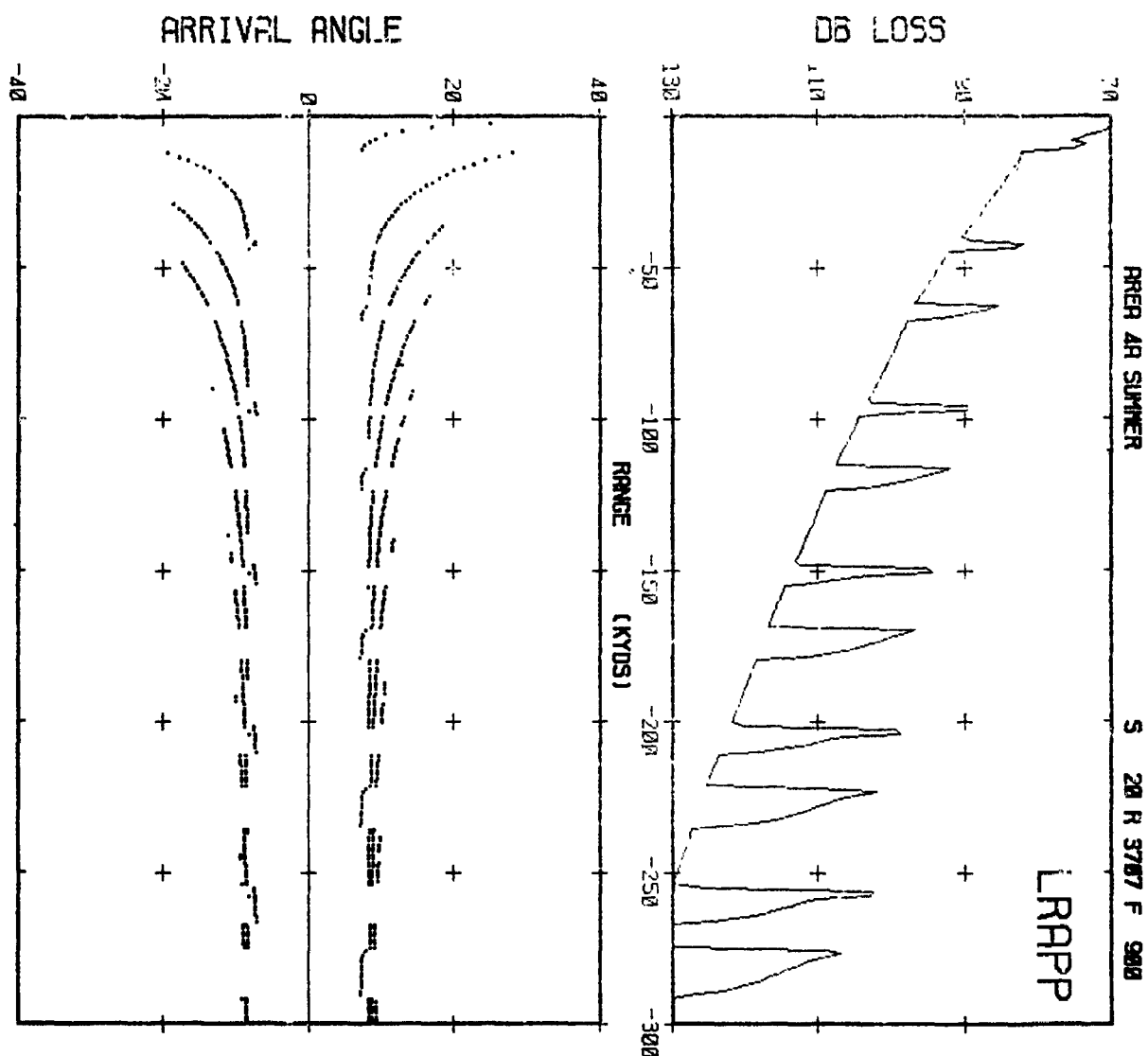










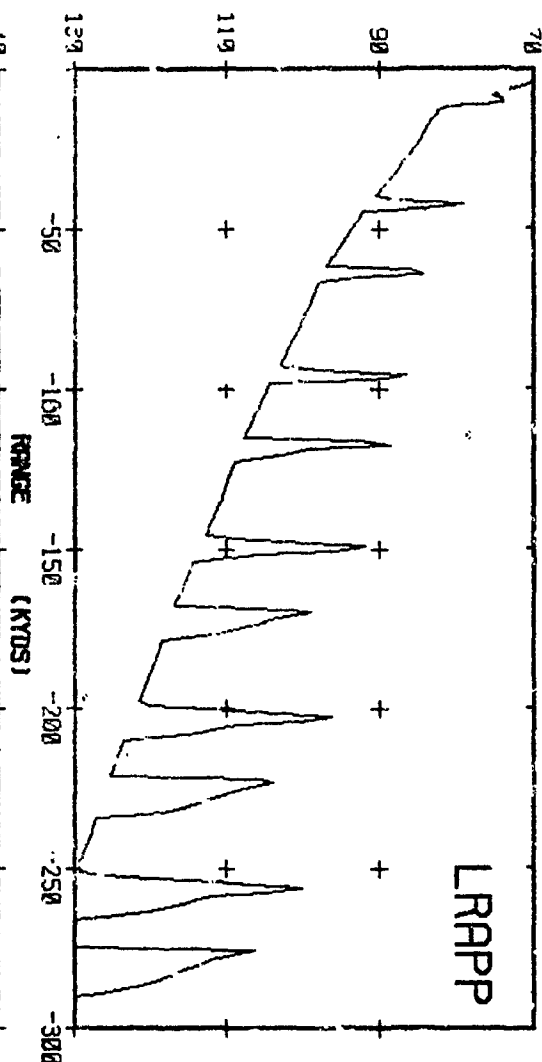


0509 4N SUMMER

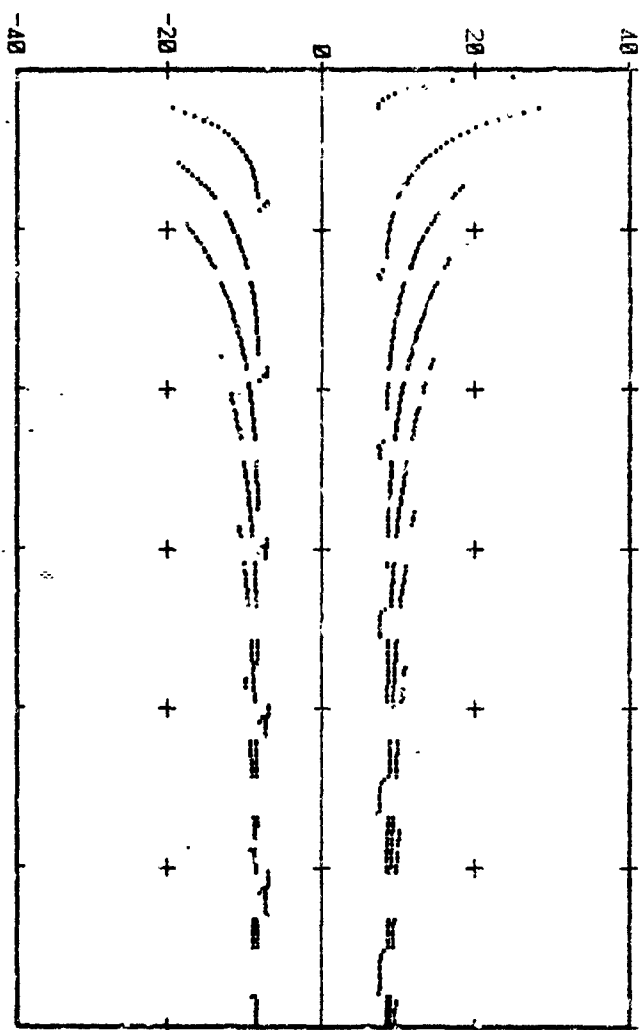
S 50 R 5707 F 900

1450 M/S 1500 1550

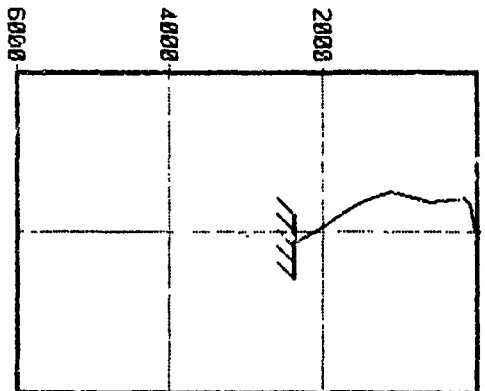
DB LOSS



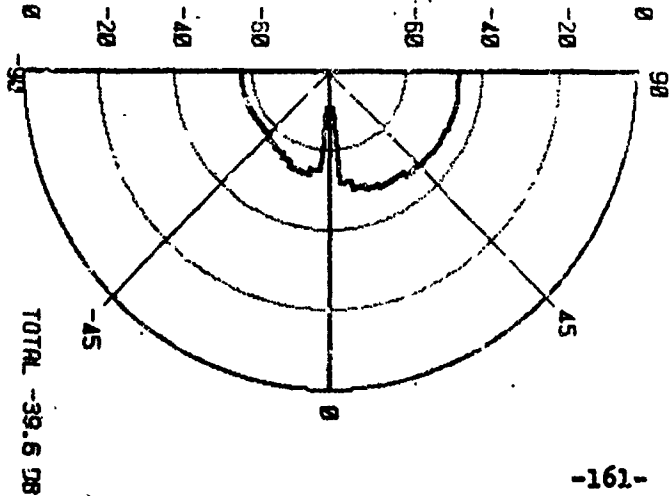
ARRIVAL ANGLE

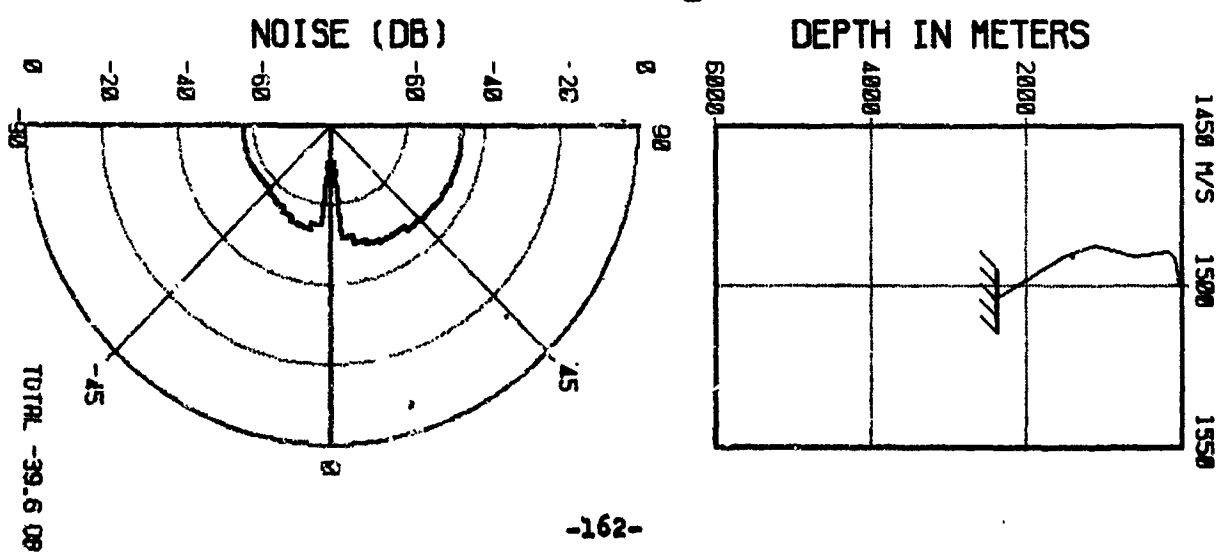
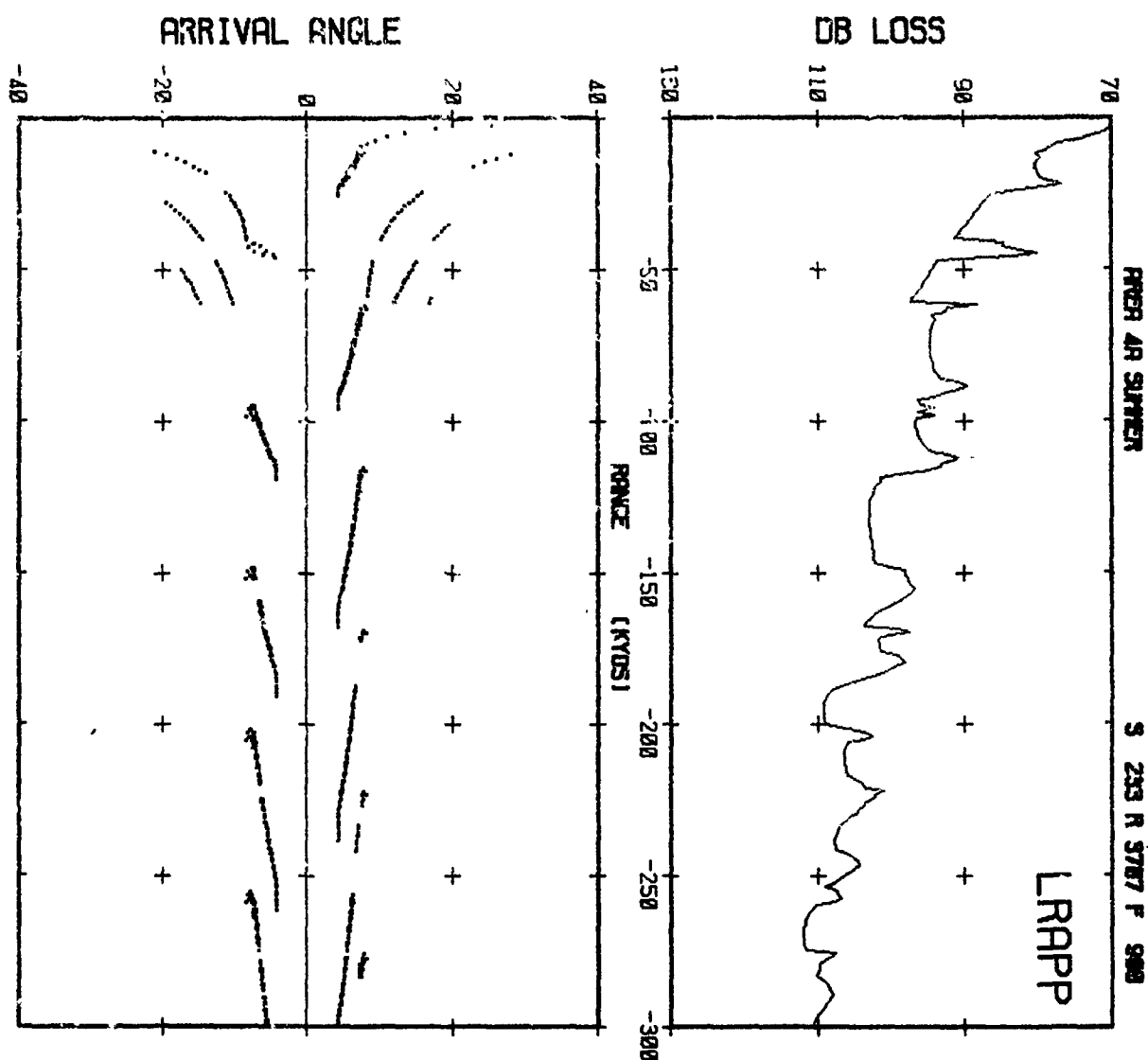


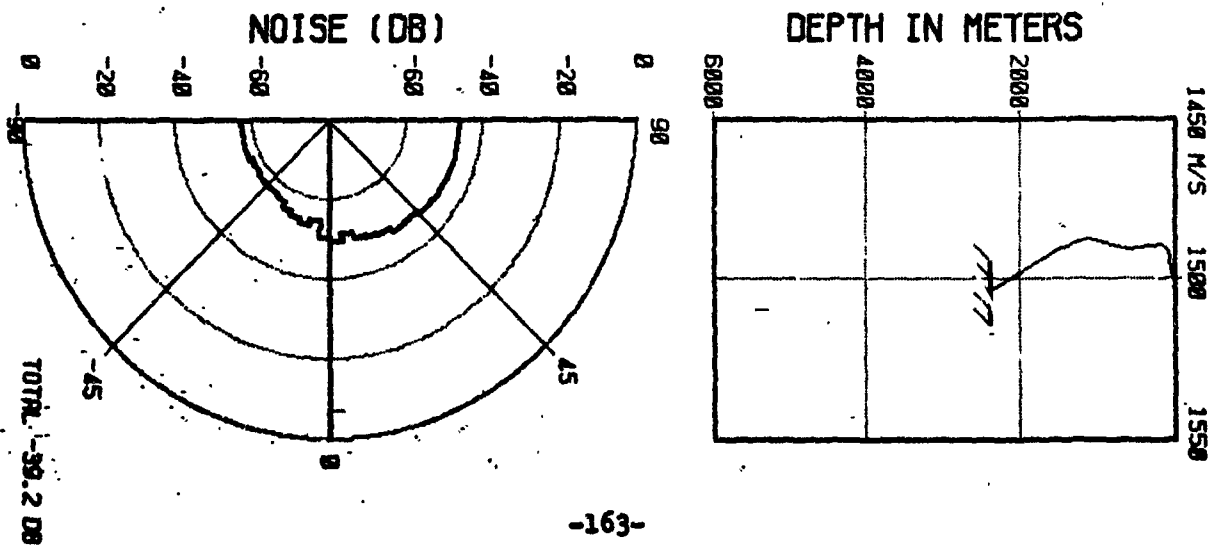
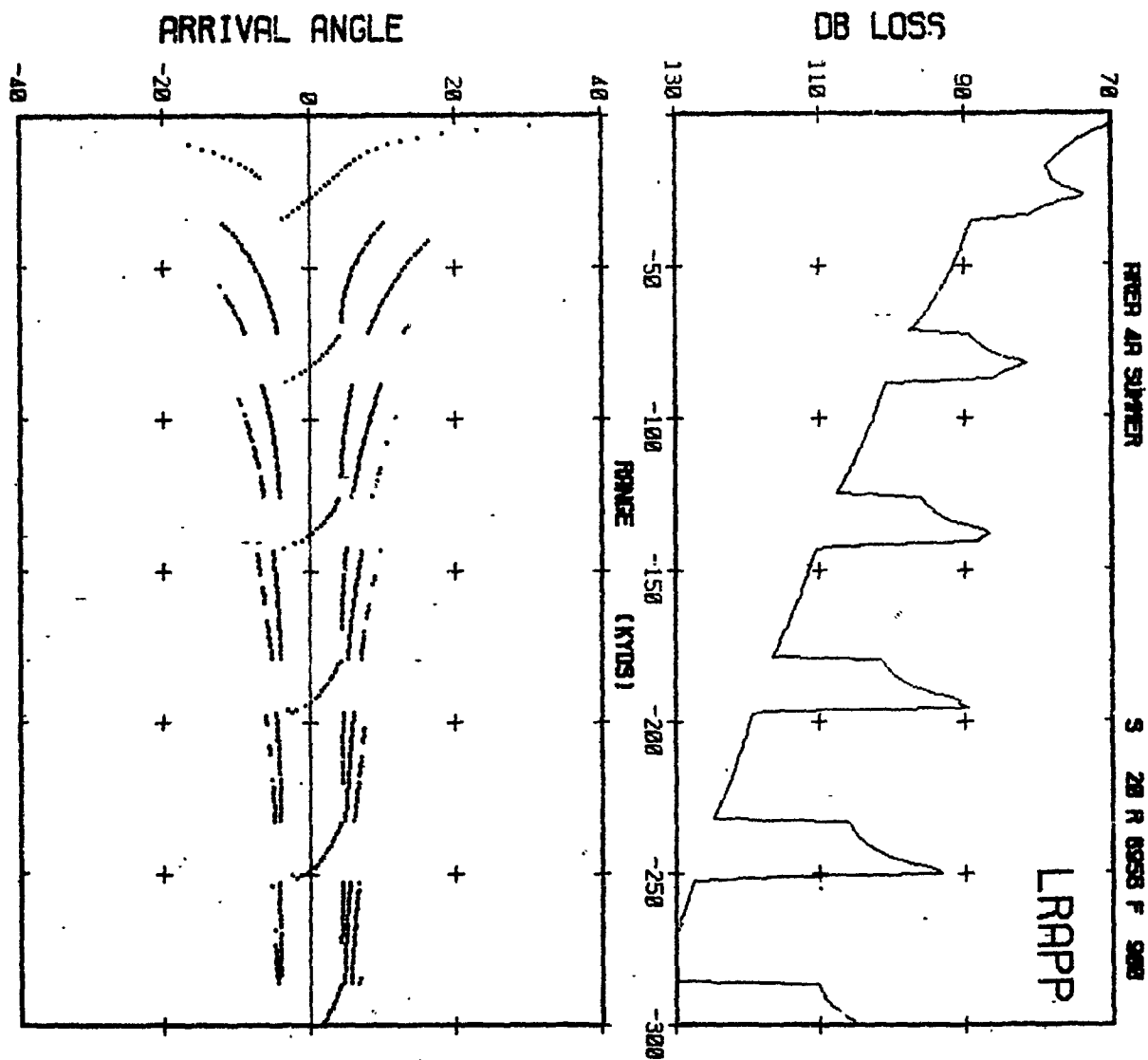
DEPTH IN METERS

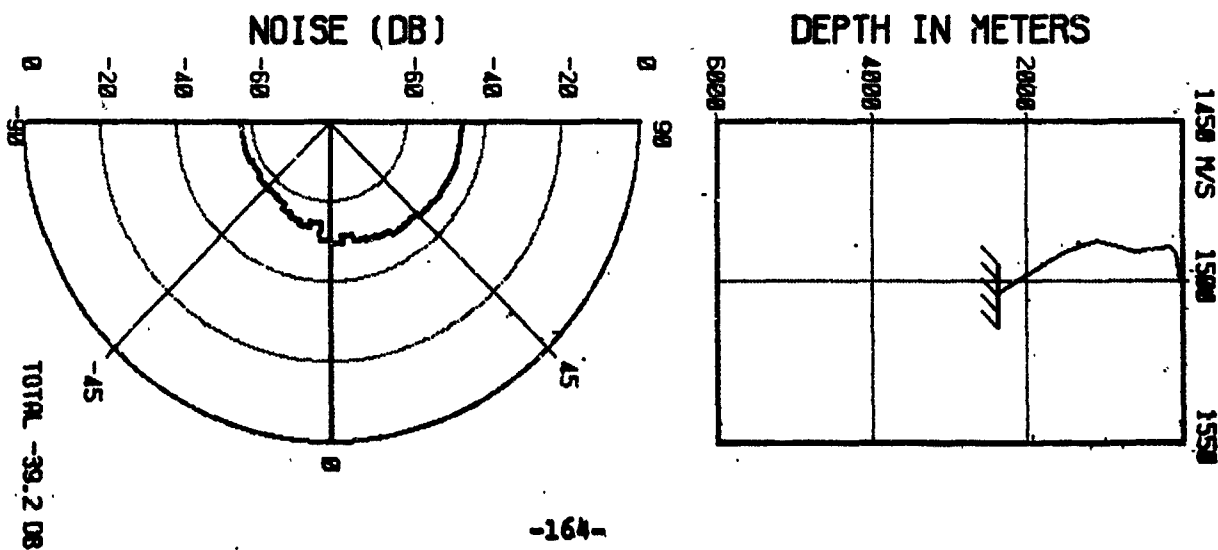
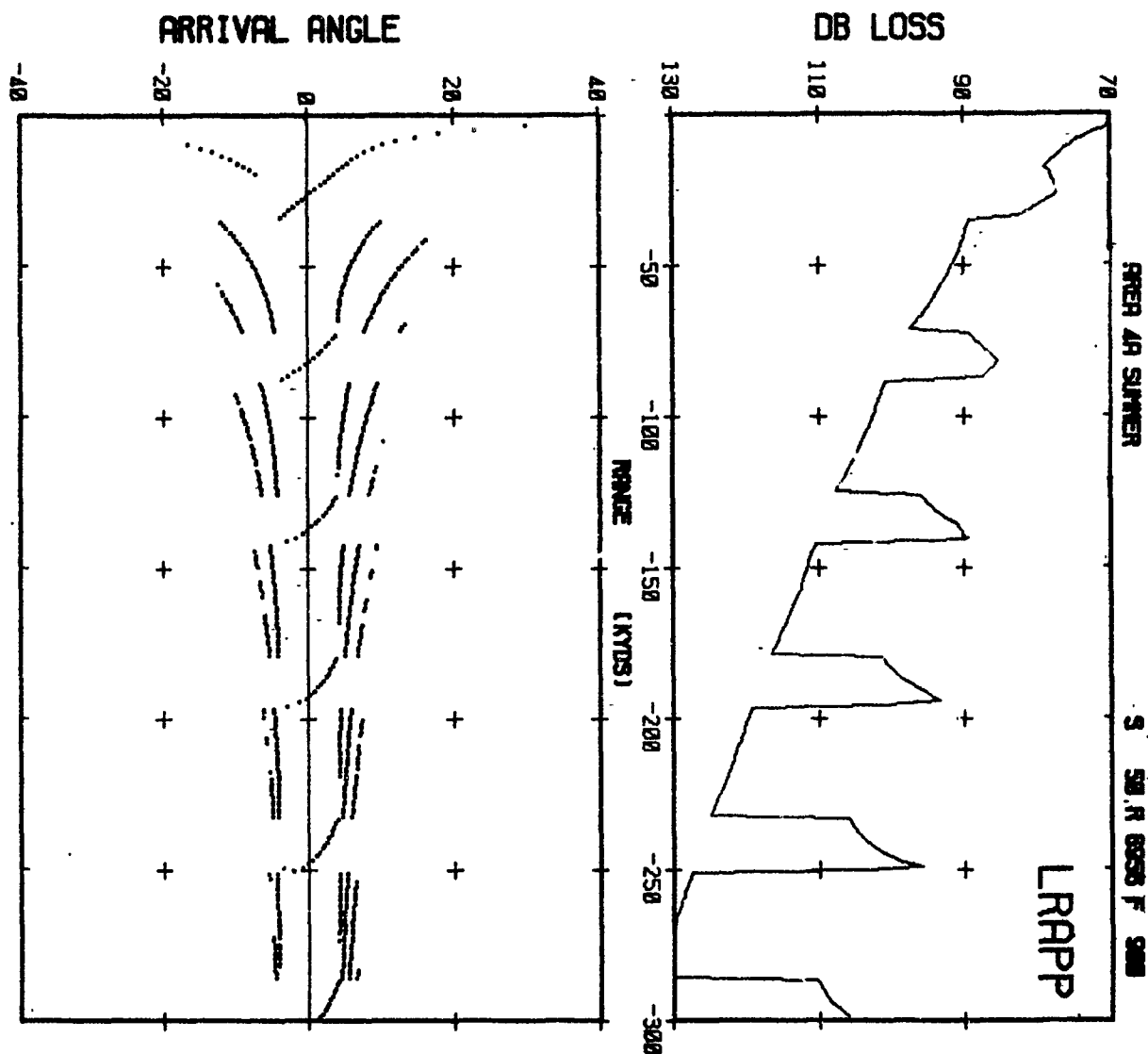


NOISE (DB)









RIVER AIR SUMMER

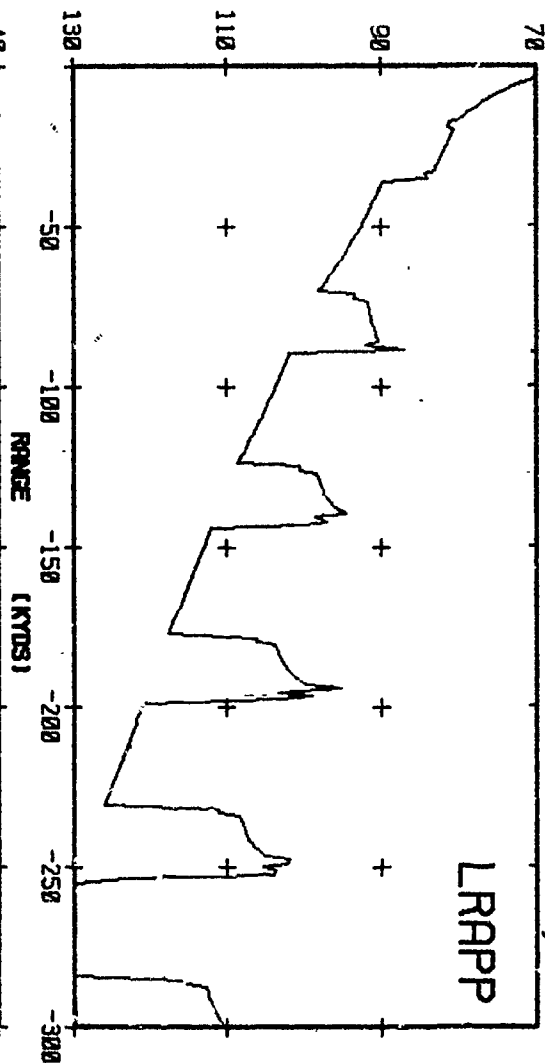
S 233 R 0953 F 900

1450 H/S

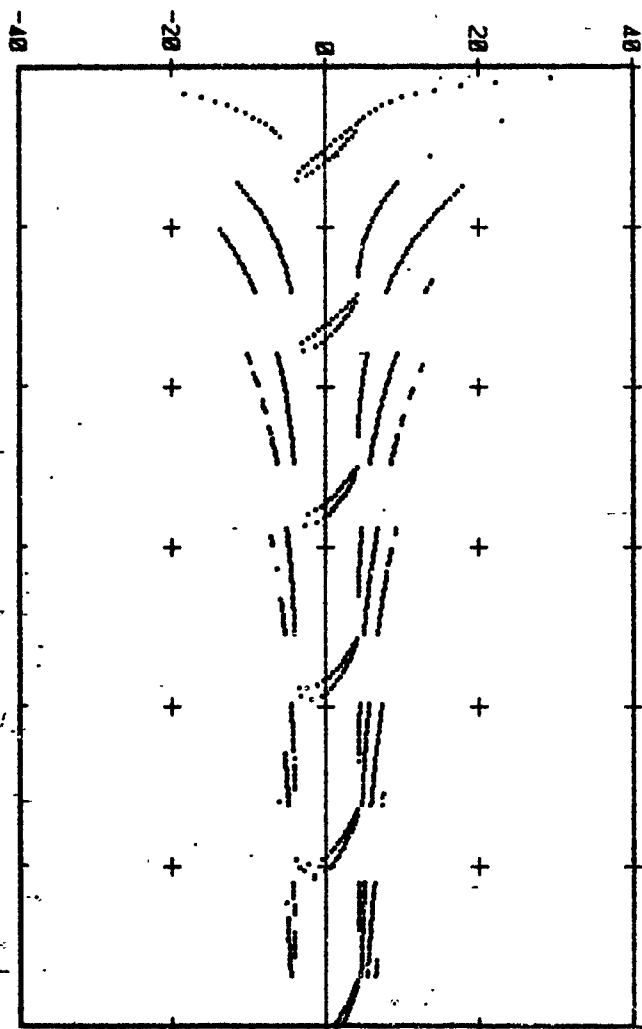
1500

1550

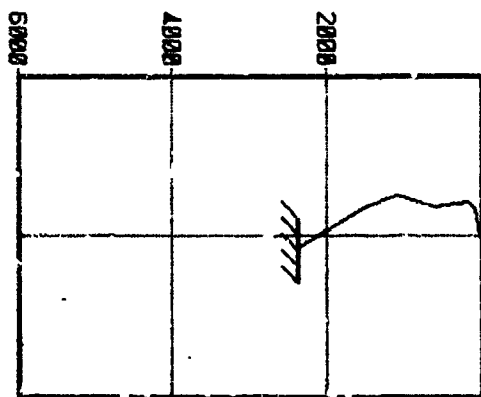
DB LOSS



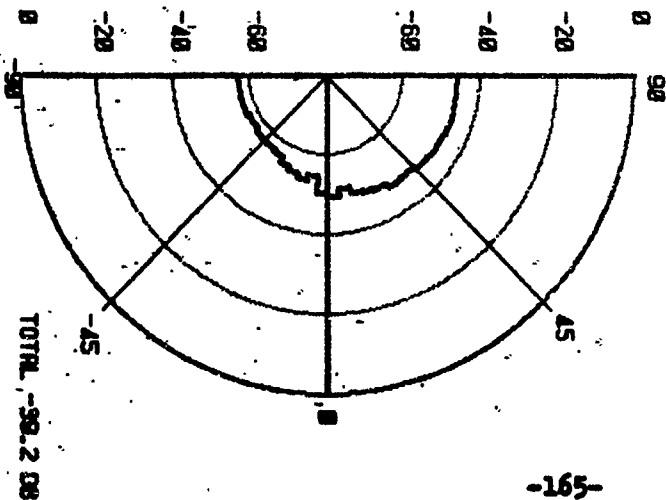
ARRIVAL ANGLE

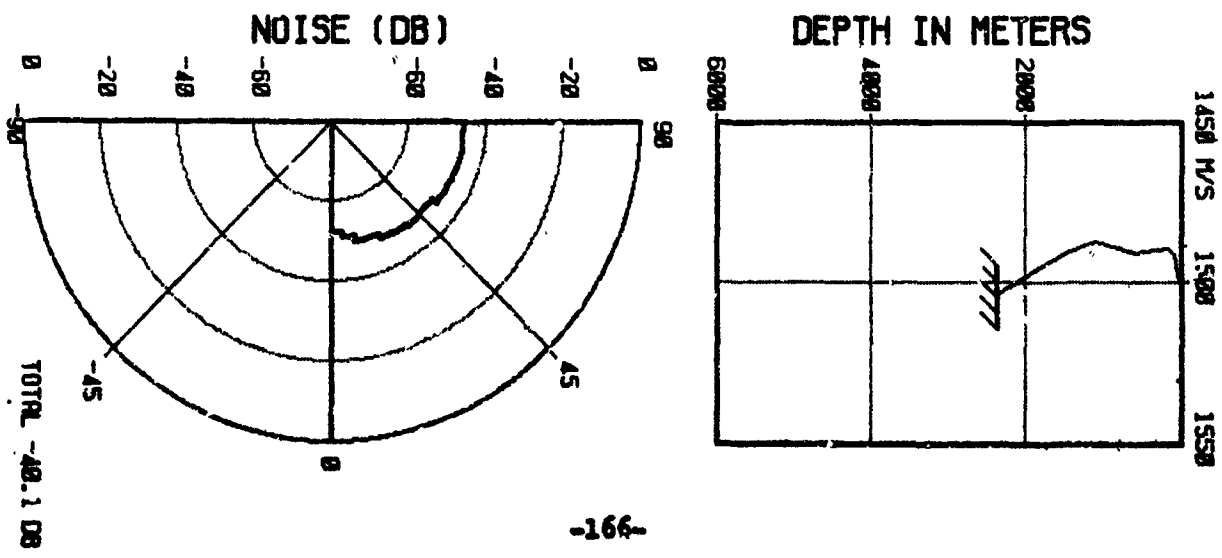
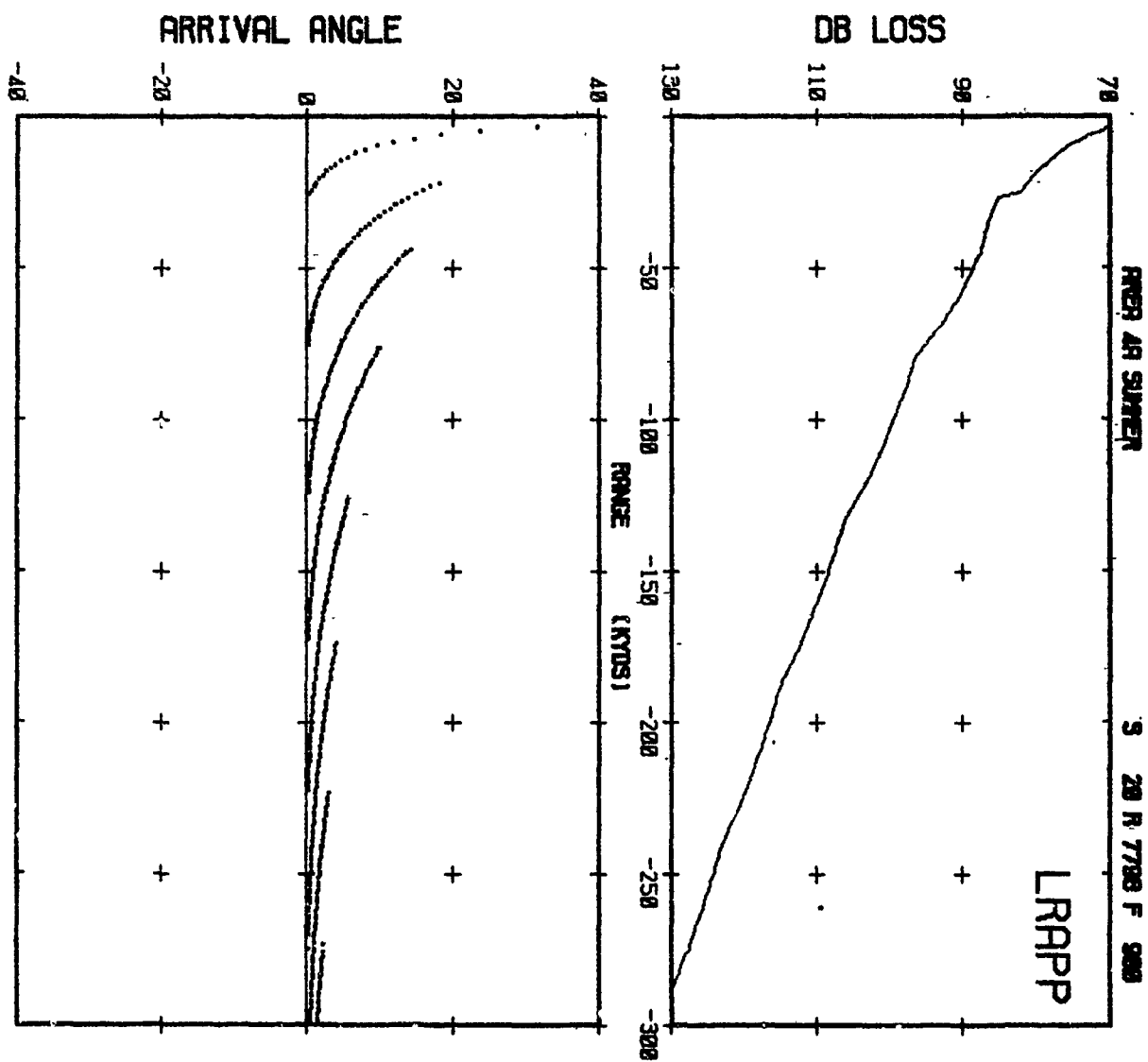


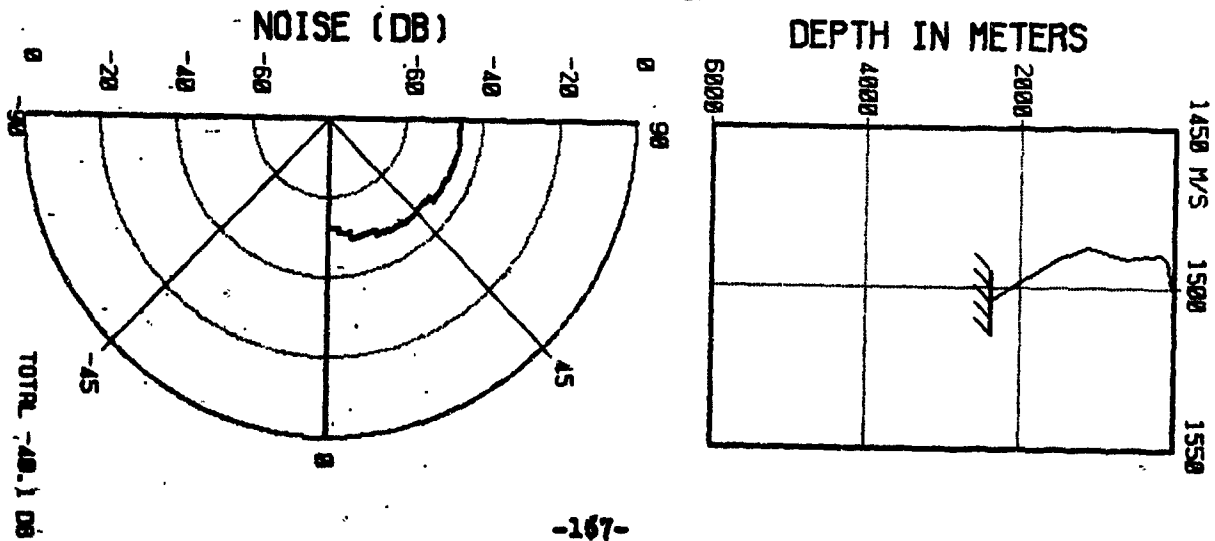
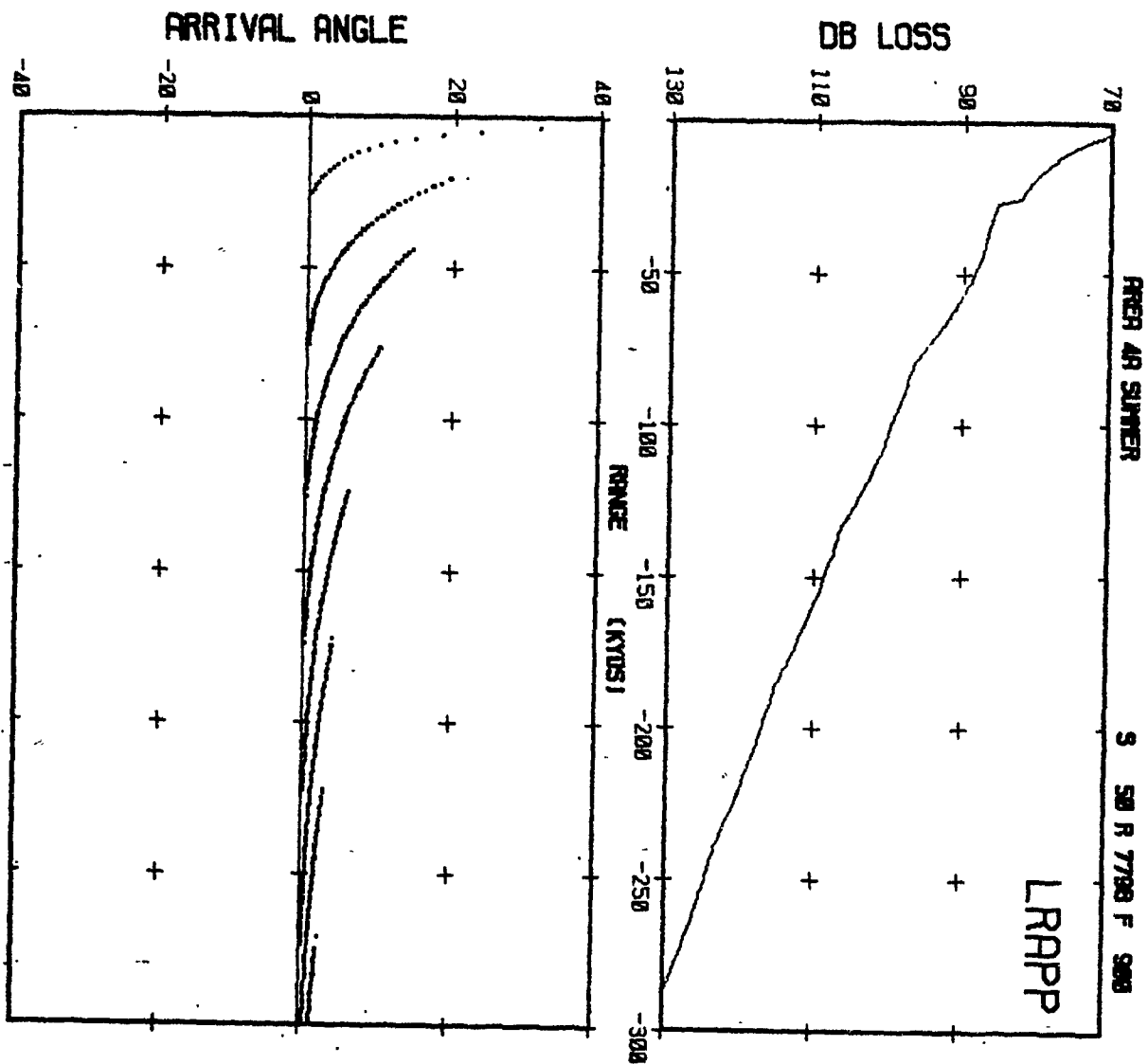
DEPTH IN METERS



NOISE (DB)





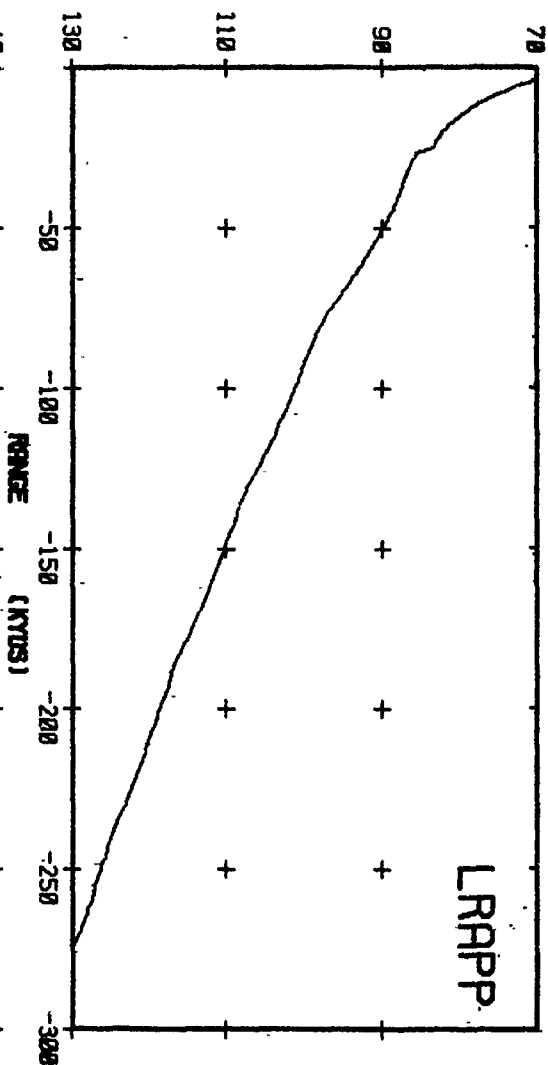


PREP AR SUMMER

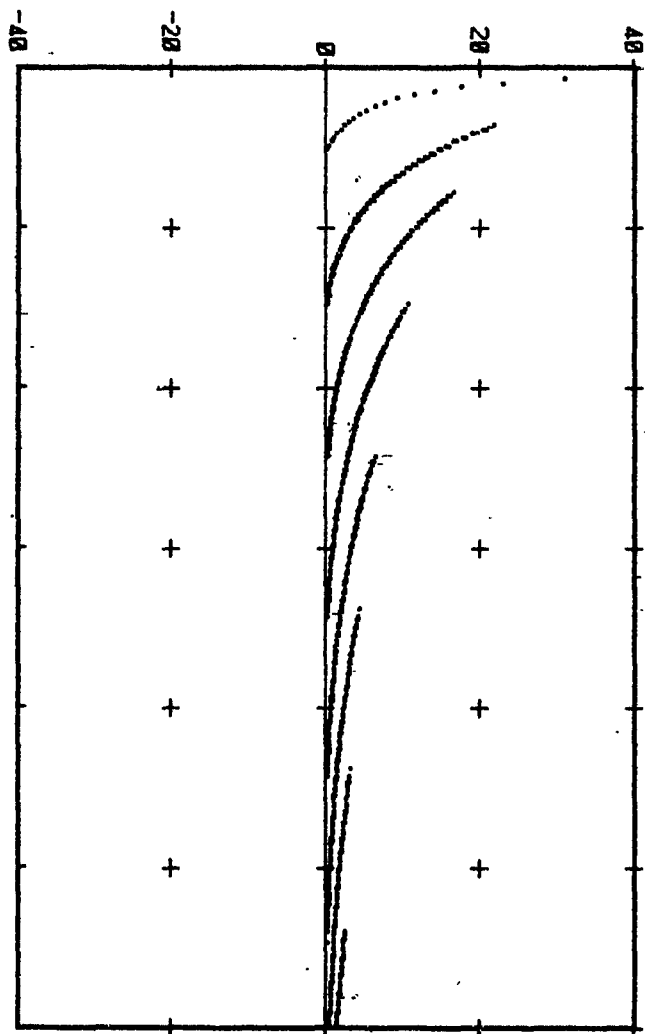
S 253 R 7700 F 900

LRAPP

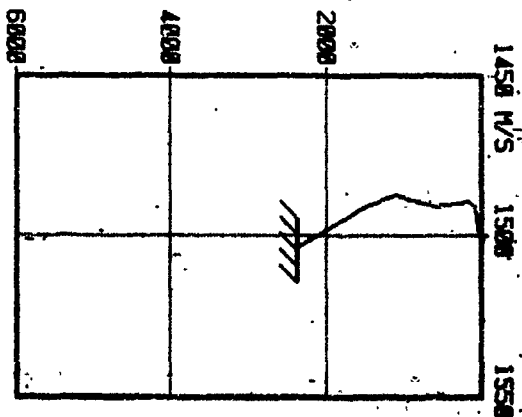
DB LOSS



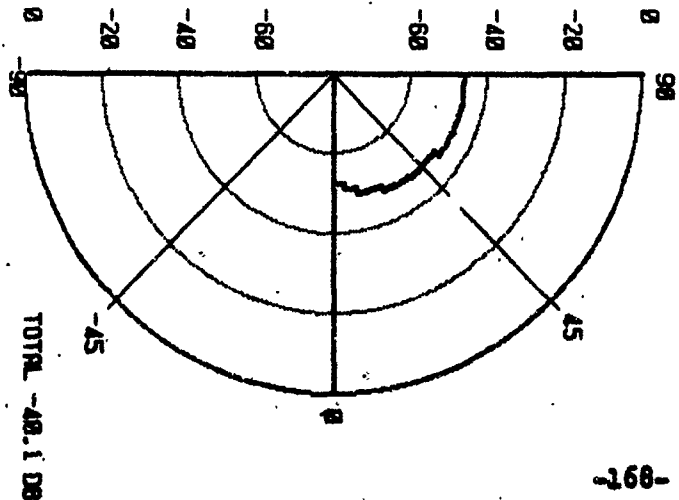
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



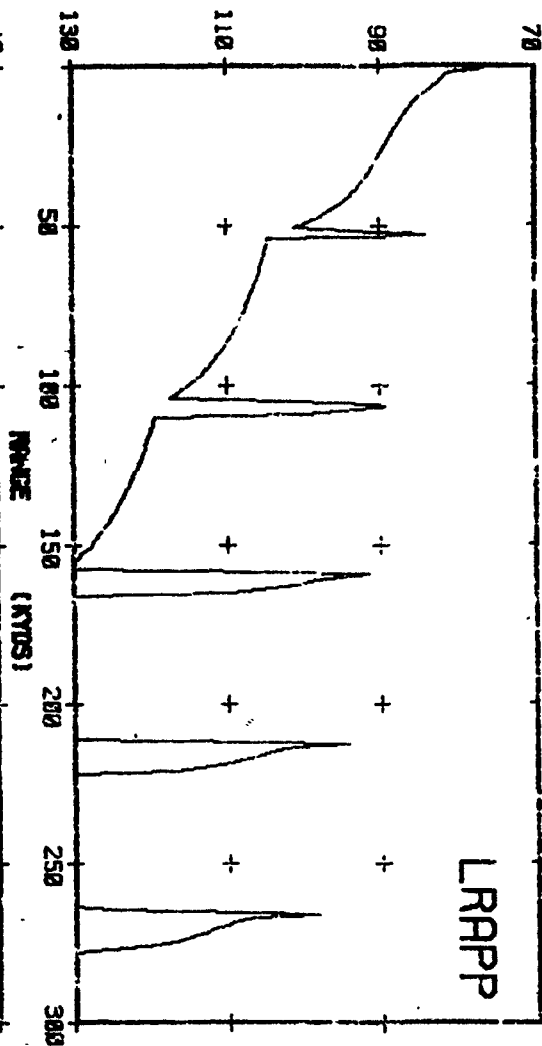
-168-

RIVER AIR SUMMER

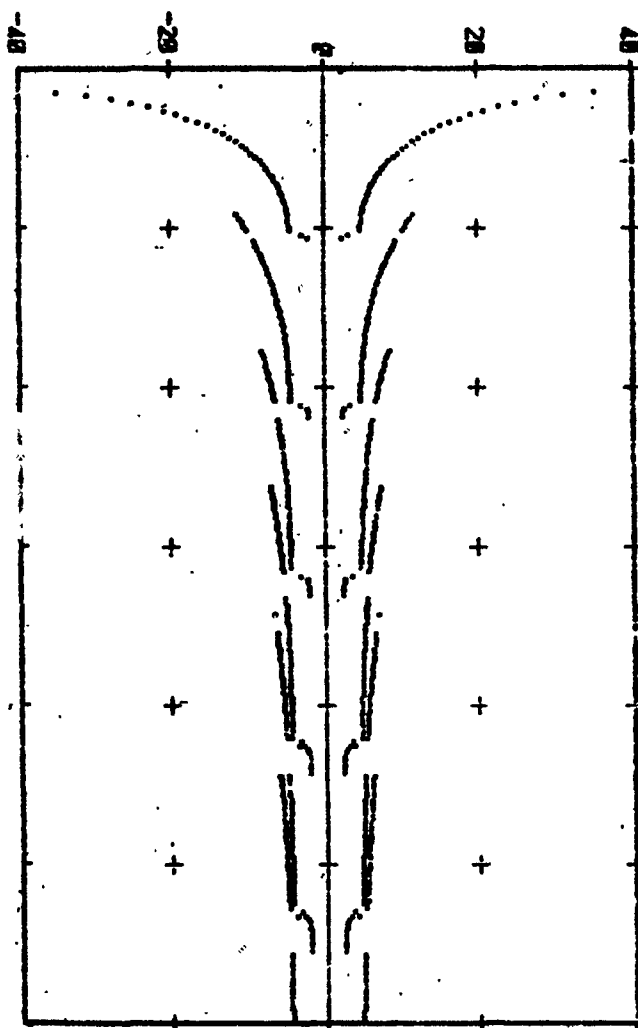
S 20 R 00 F 1200

1450 M/S 1500 1550

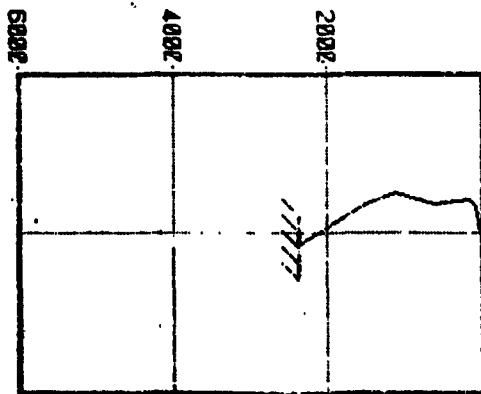
DB LOSS



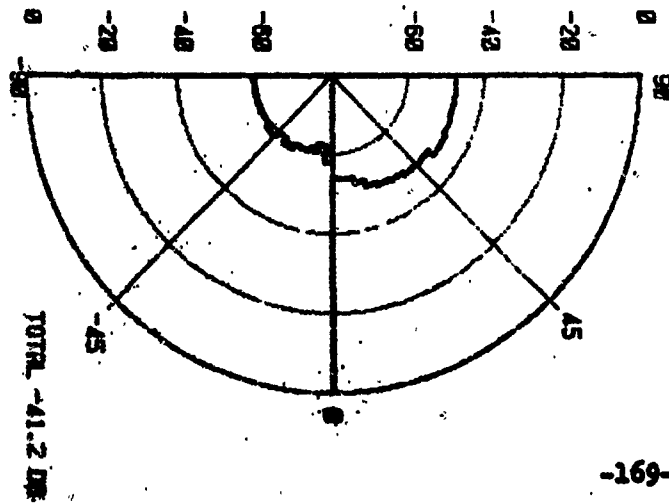
ARRIVAL ANGLE

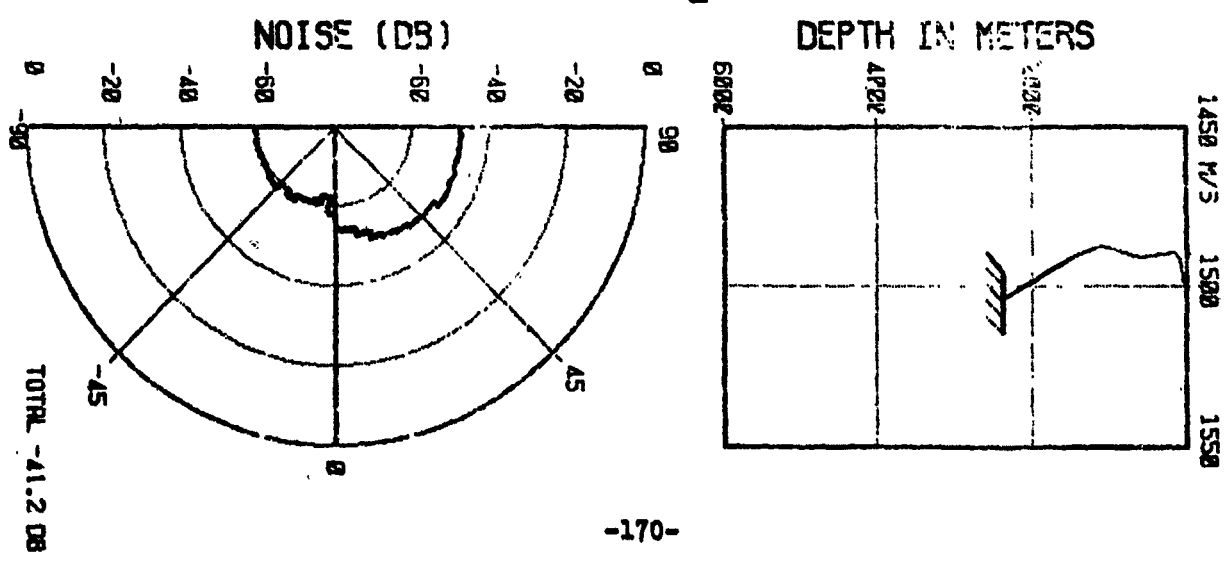
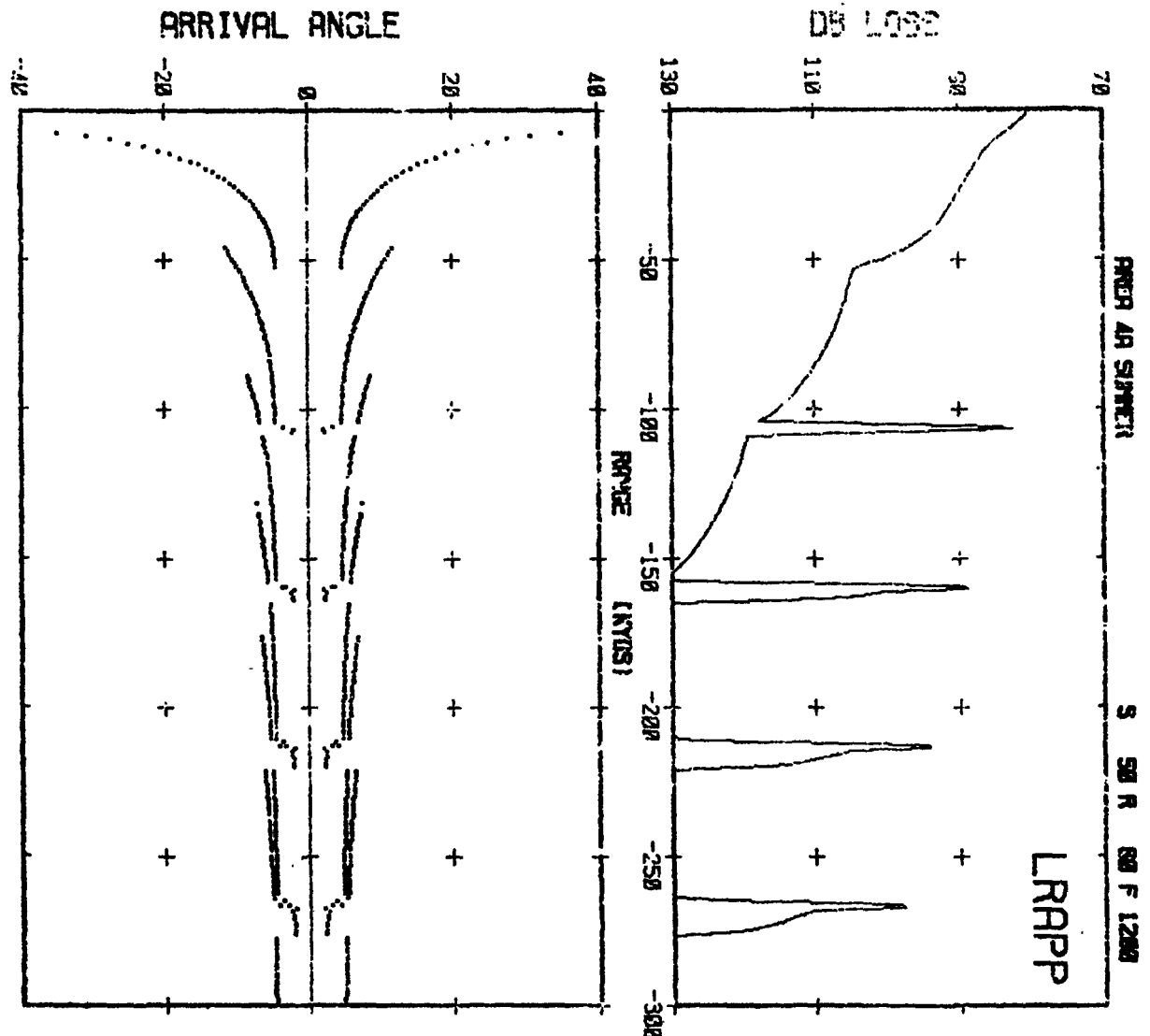


DEPTH IN METERS



NOISE (DB)

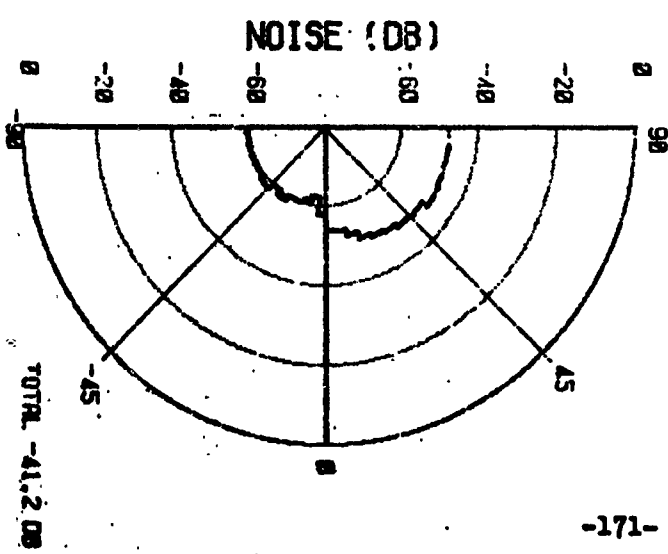
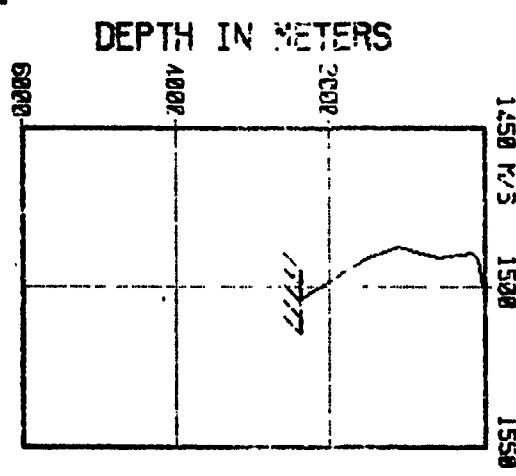
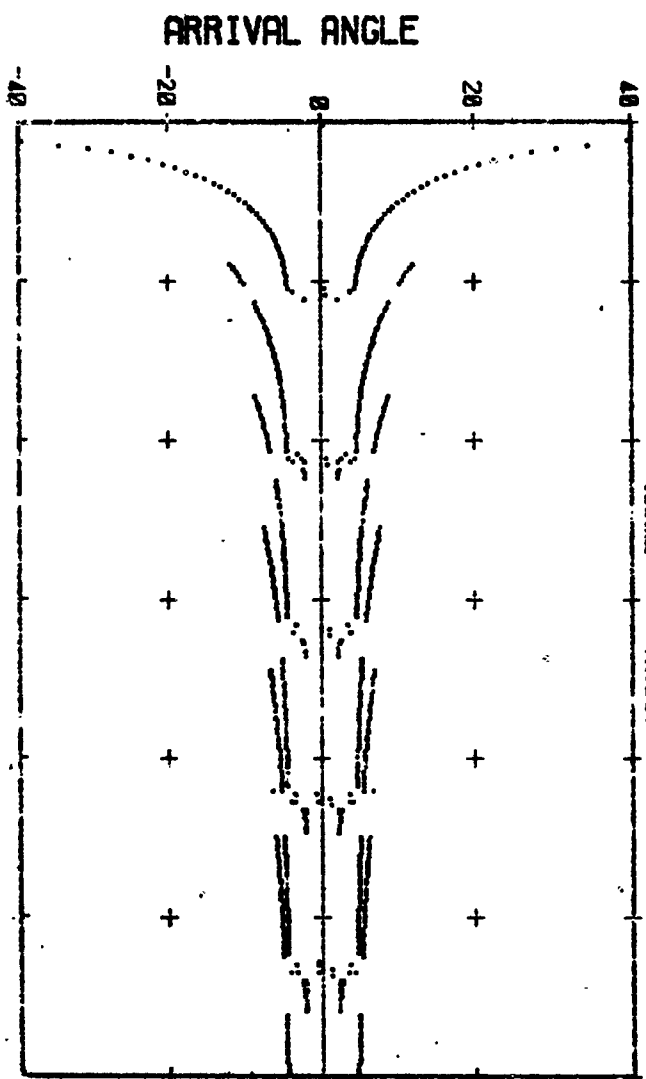
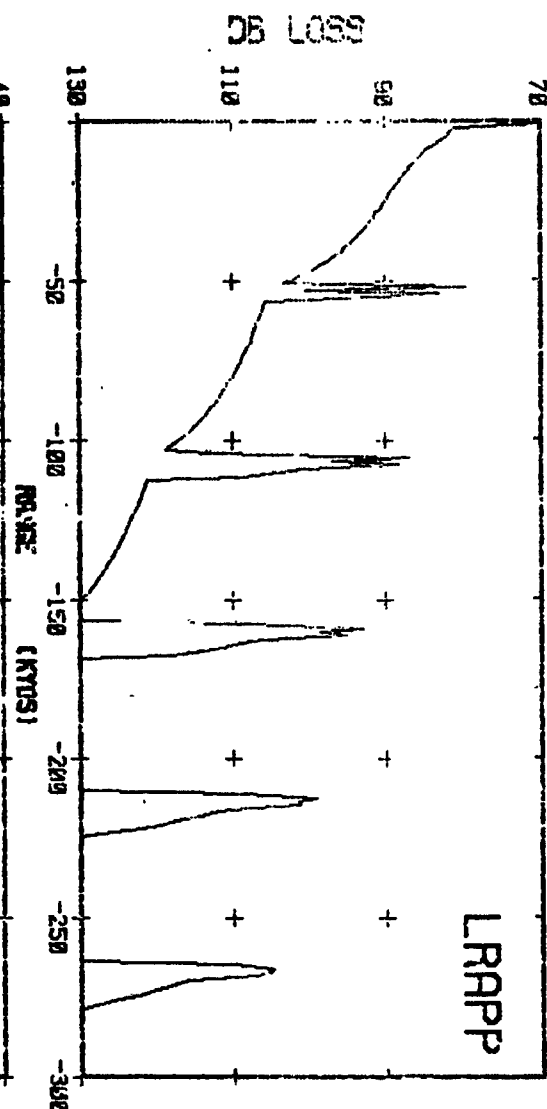




RRR AR SUMMER

S 283 R 60 F 1200

LRAPP



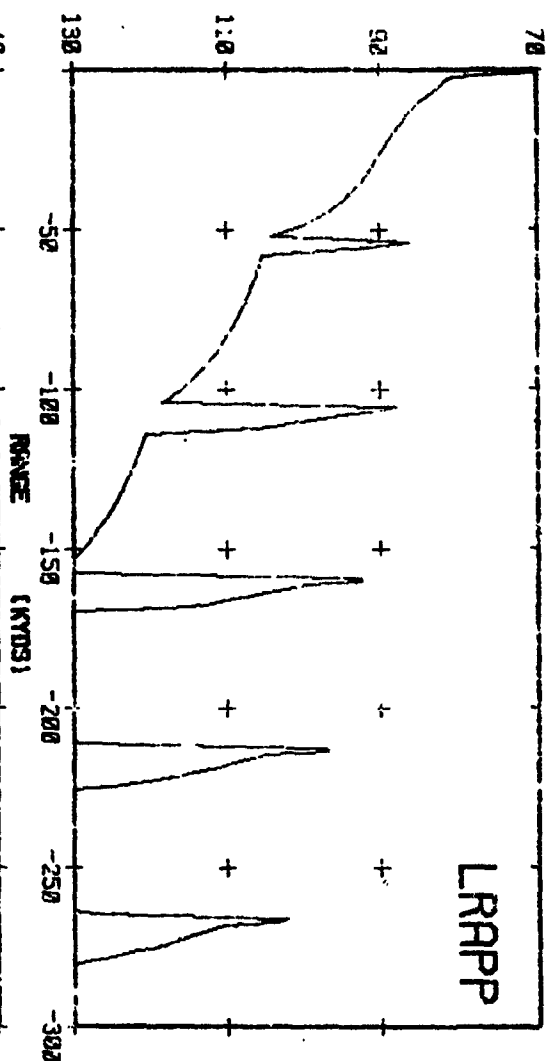
RRR AR SUMMER

S 20 R 153 F 1200

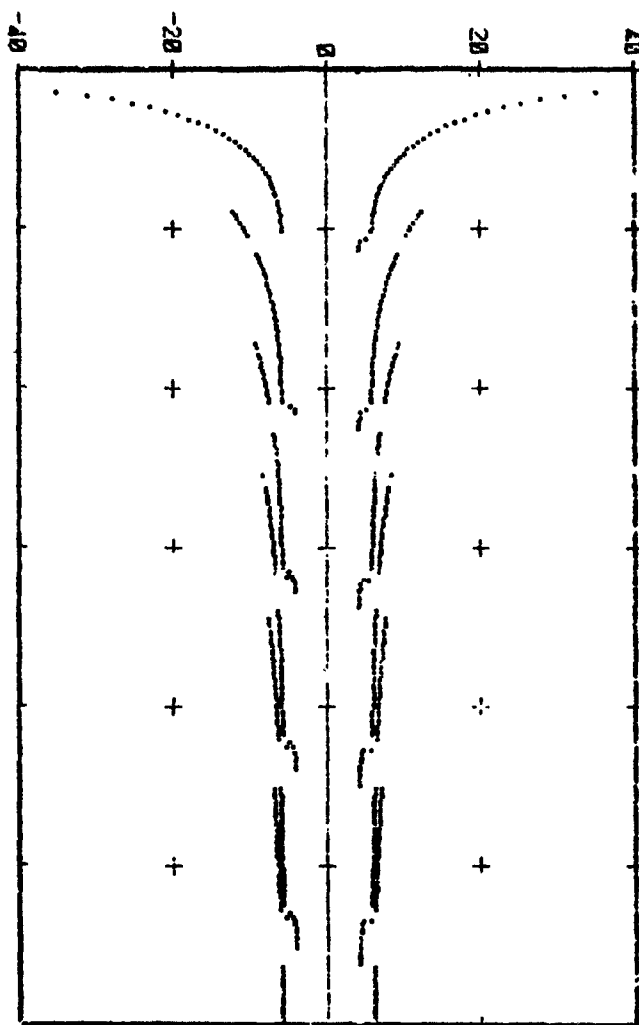
1450 H/5 1600

1550

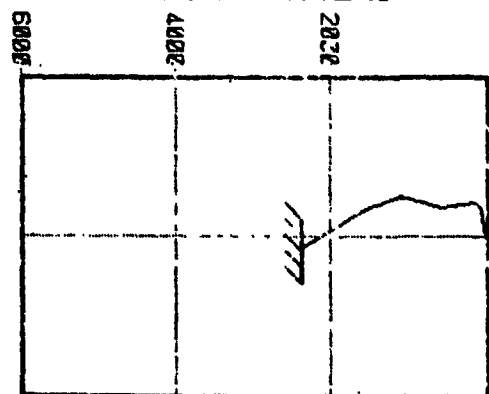
DB LOSS



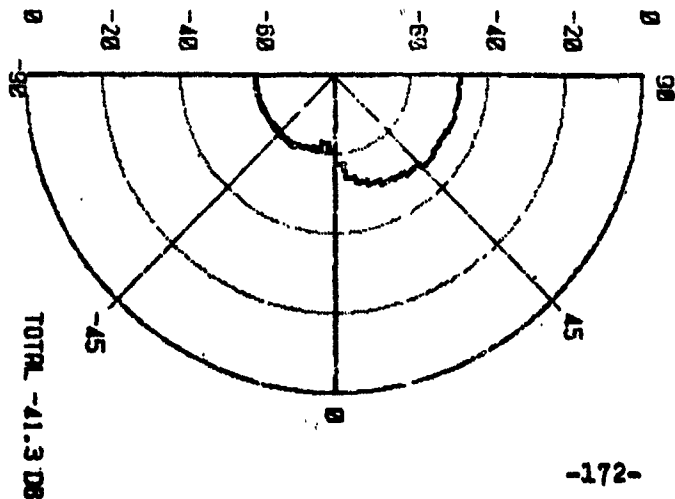
ARRIVAL ANGLE

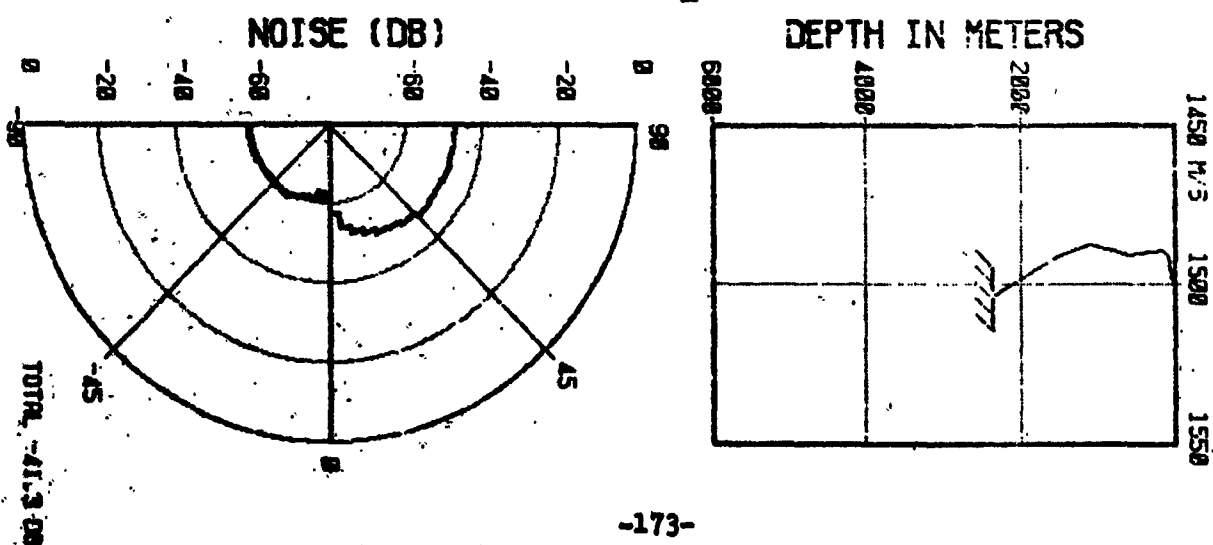
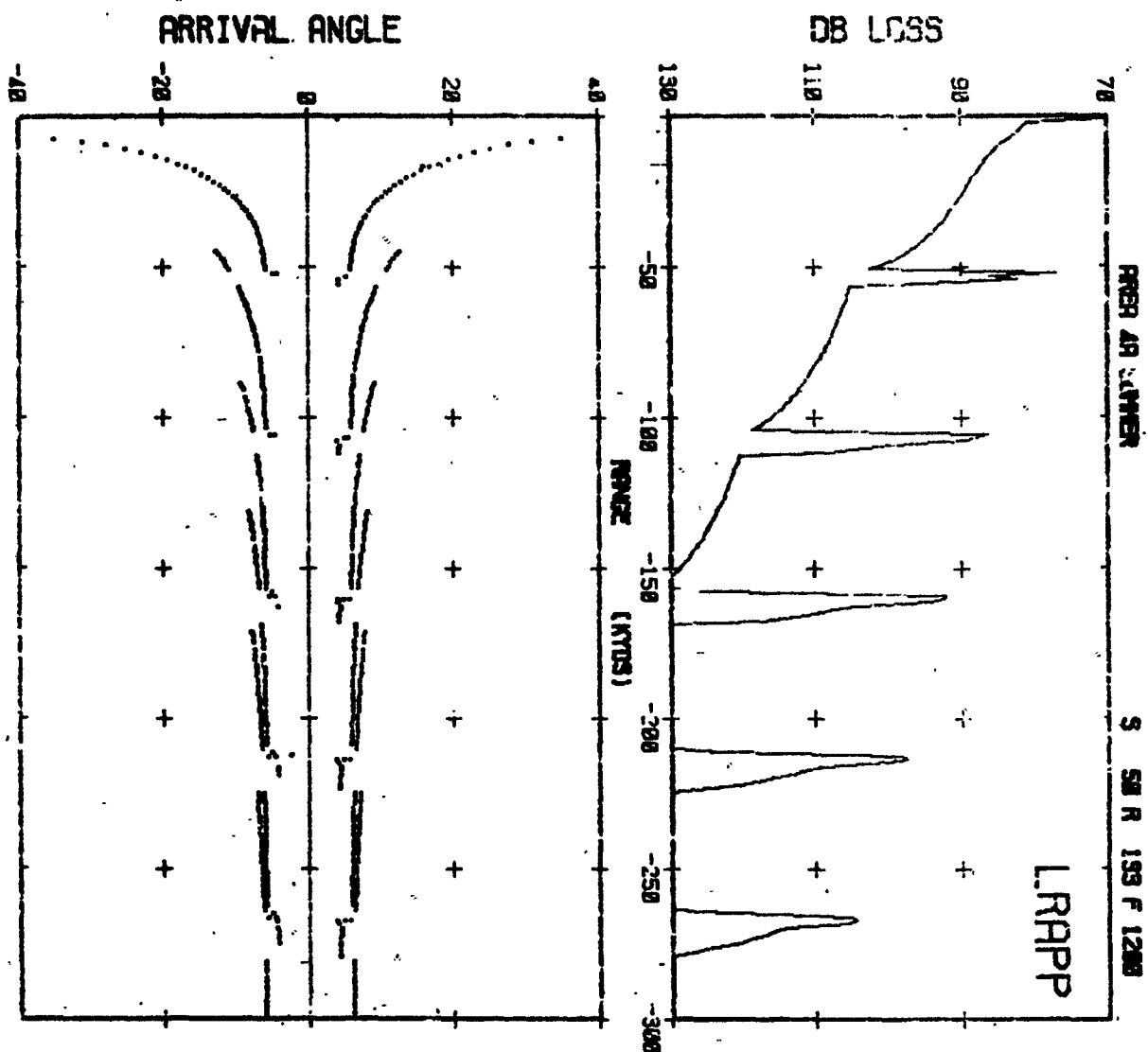


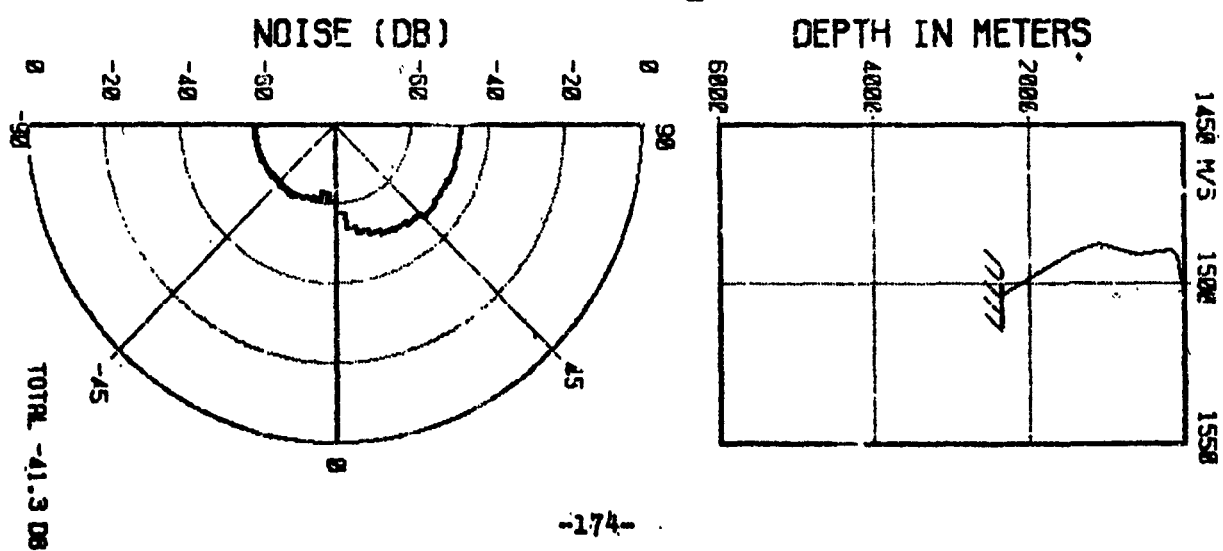
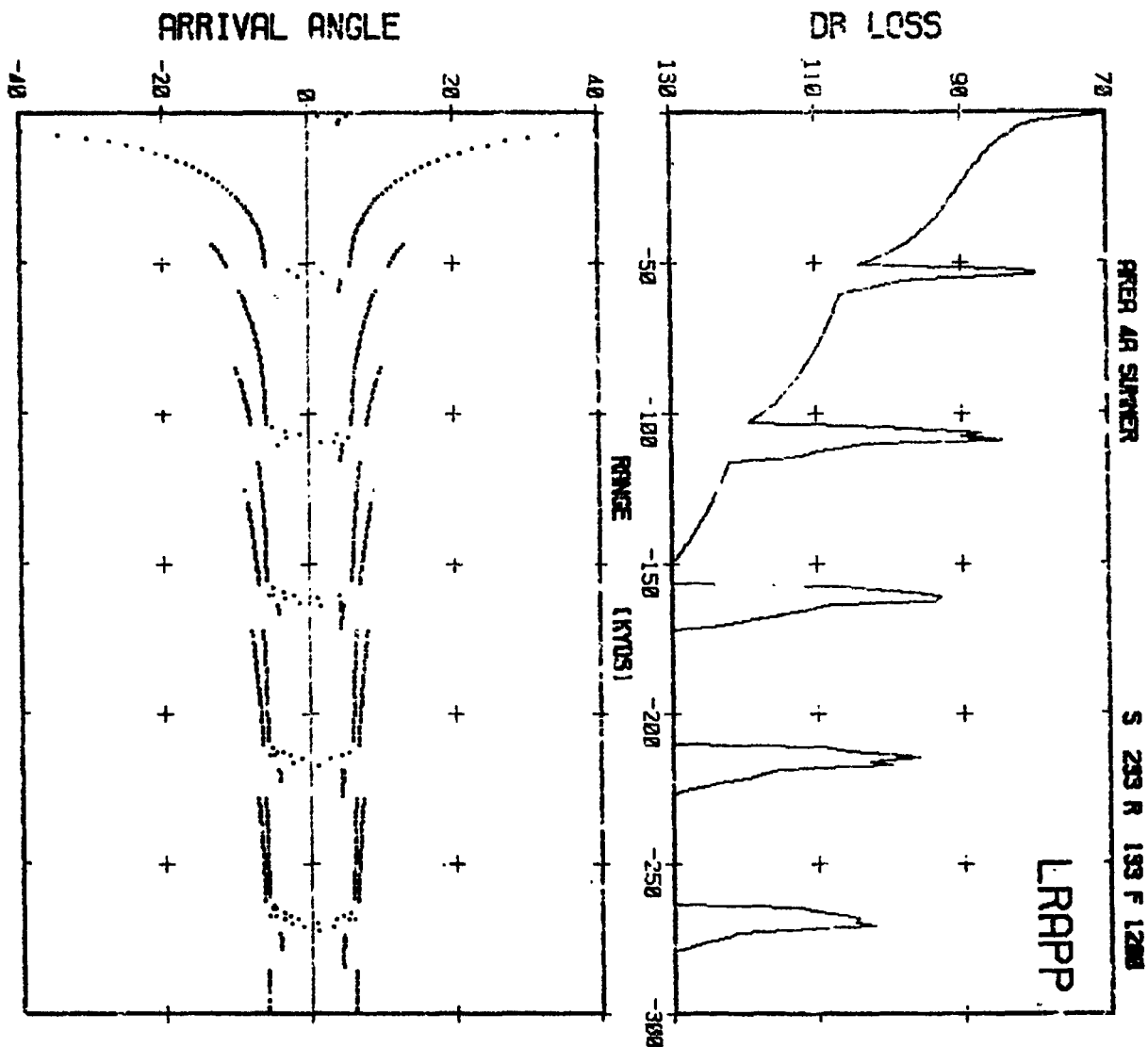
DEPTH IN METERS



NOISE (DB)





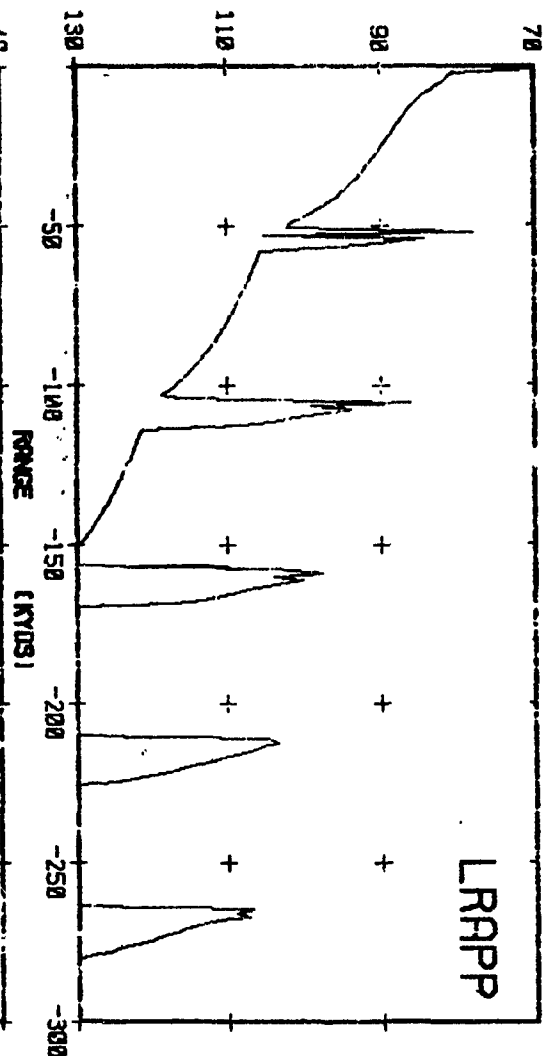


PERF AIR SUMMER

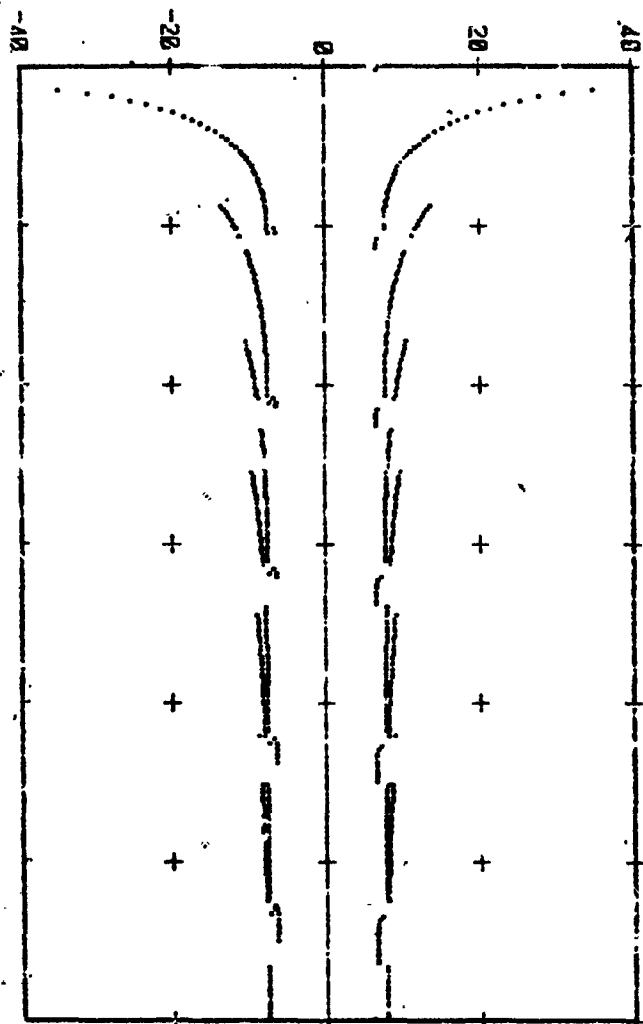
S 20 N 300 F 1200

1450 H/S 1500 1550

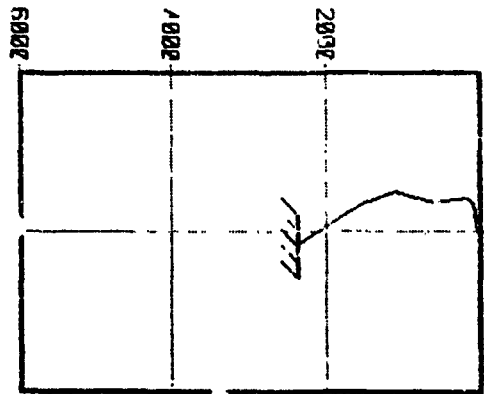
DB LOSS



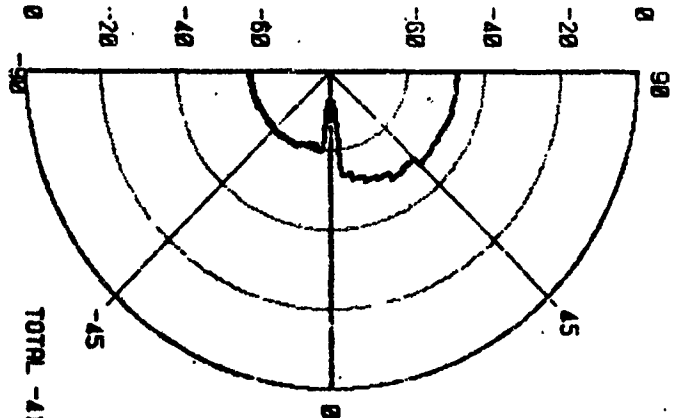
ARRIVAL ANGLE

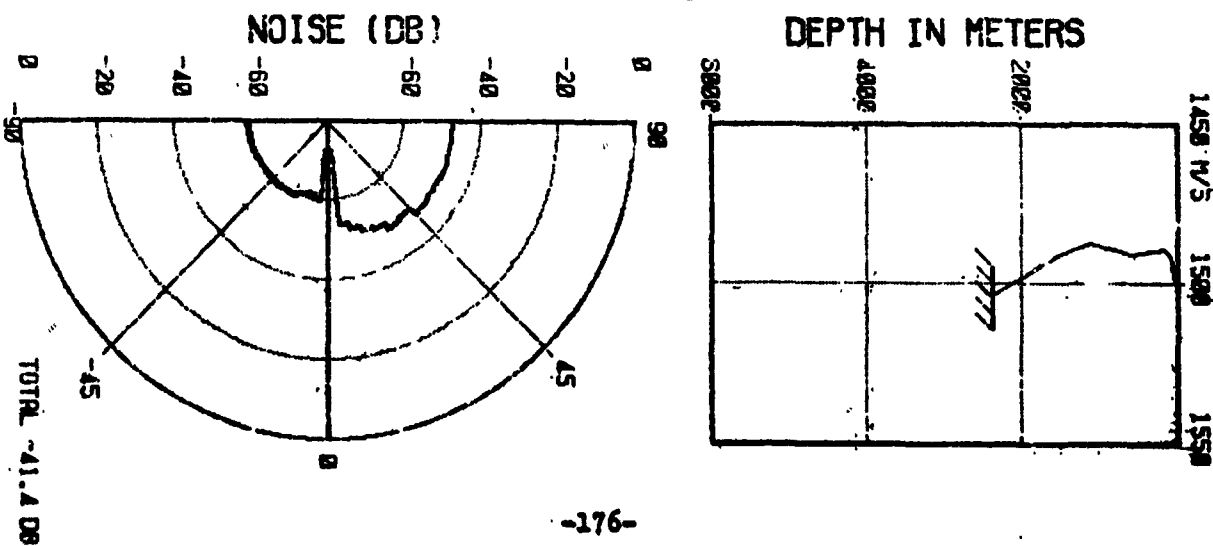
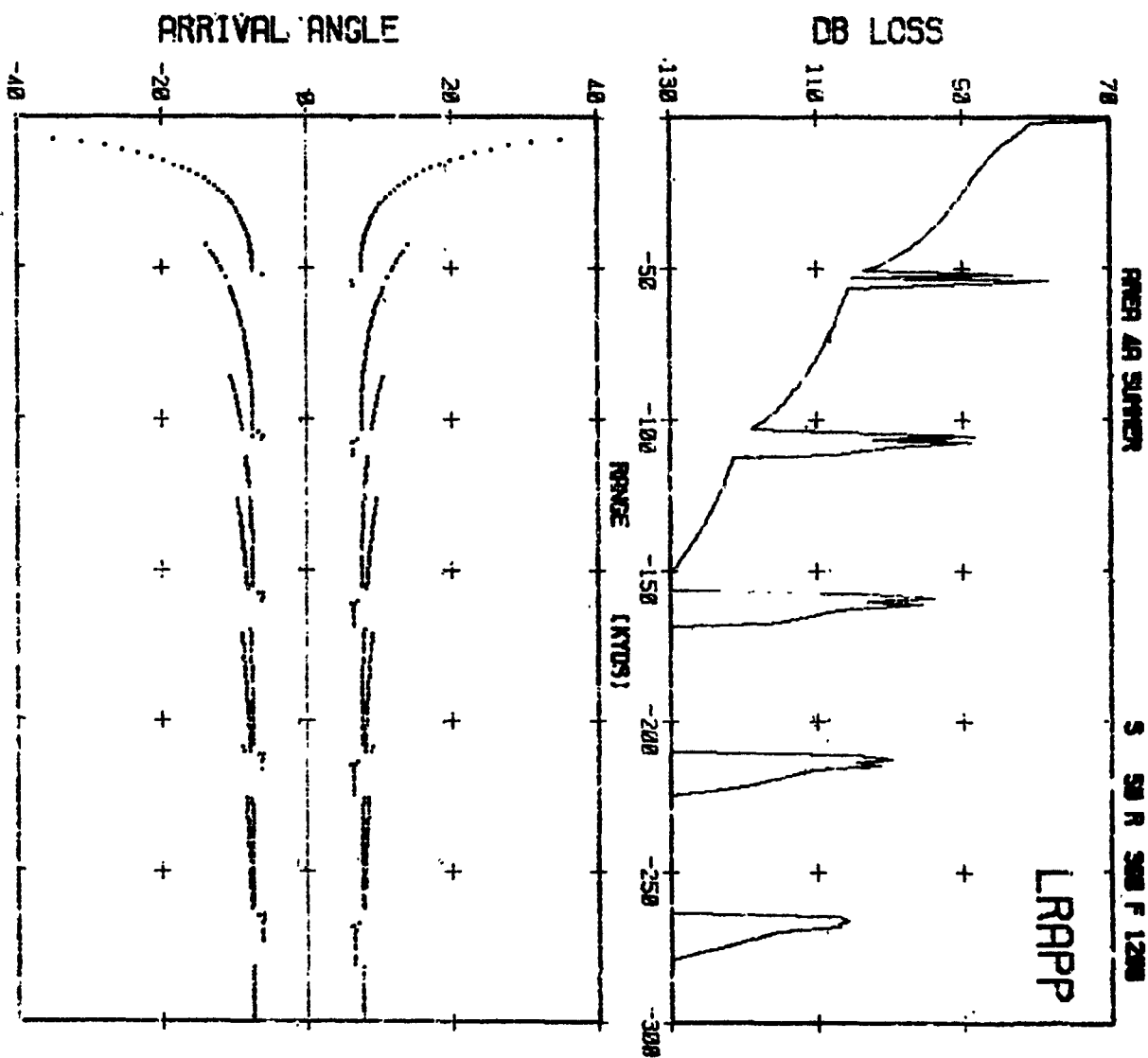


DEPTH IN METERS



NOISE (DB)





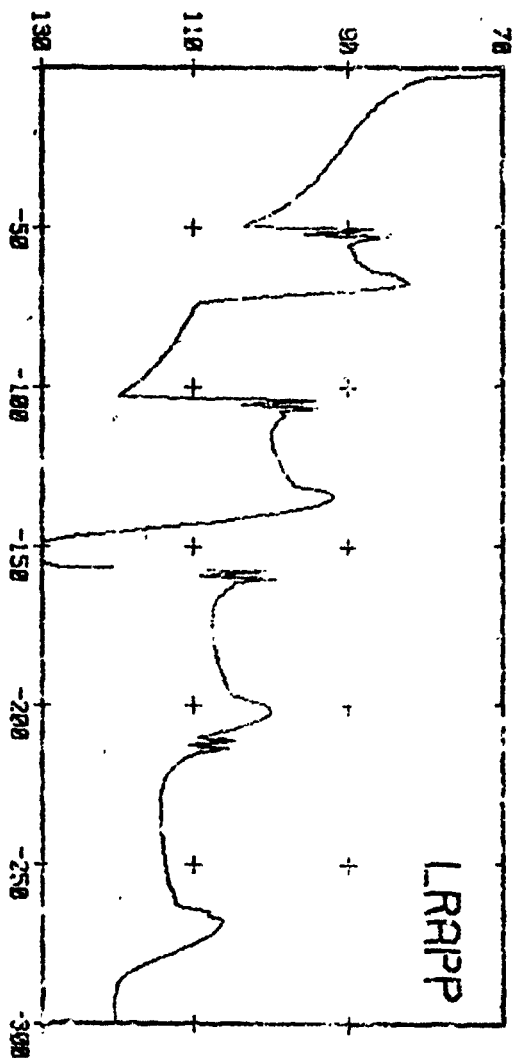
FROM AIR SURVEY

S 253 R 500 F 1200

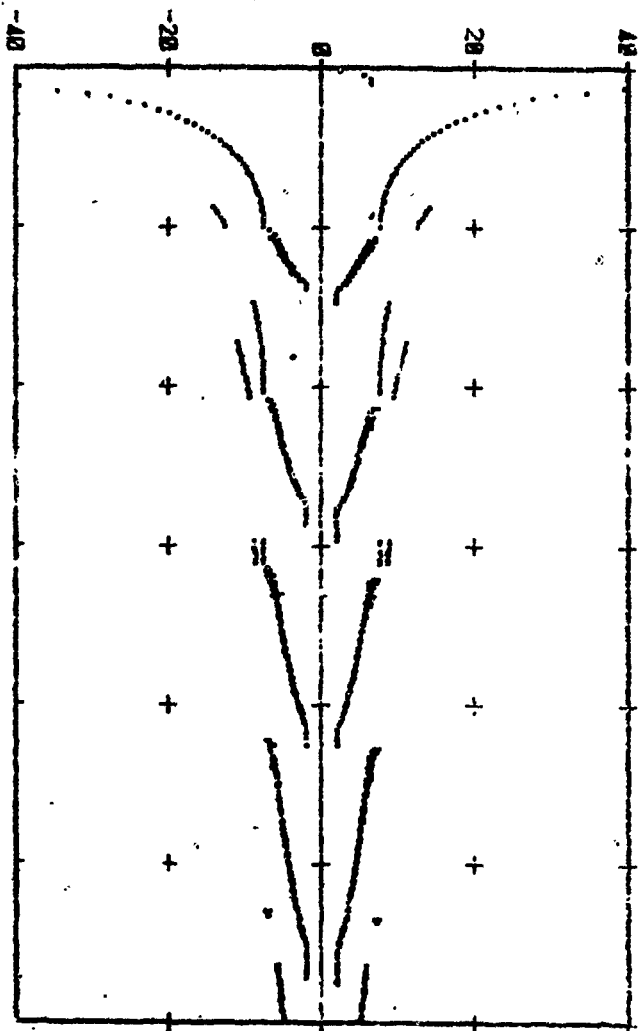
1450 M/S 1530

1550

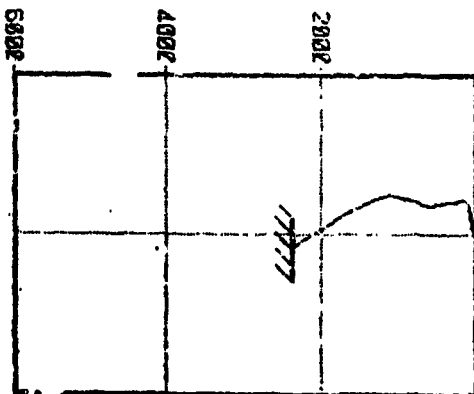
DB LOSS



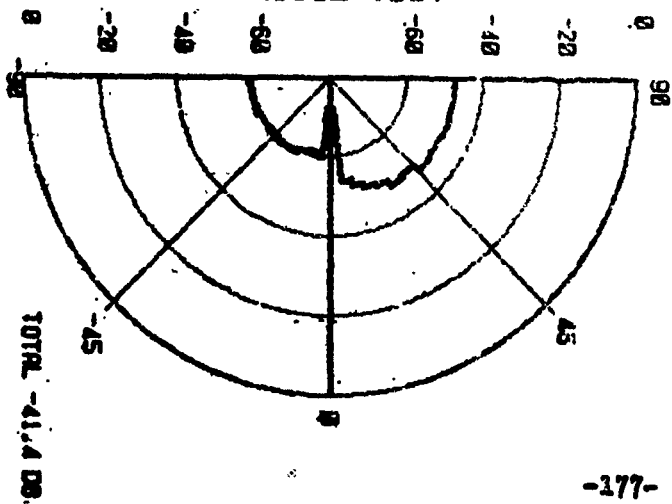
ARRIVAL ANGLE

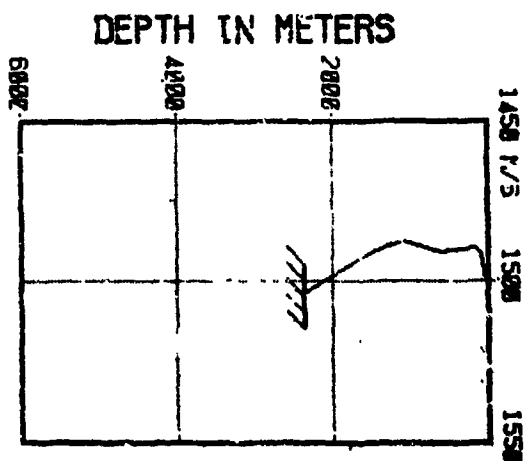
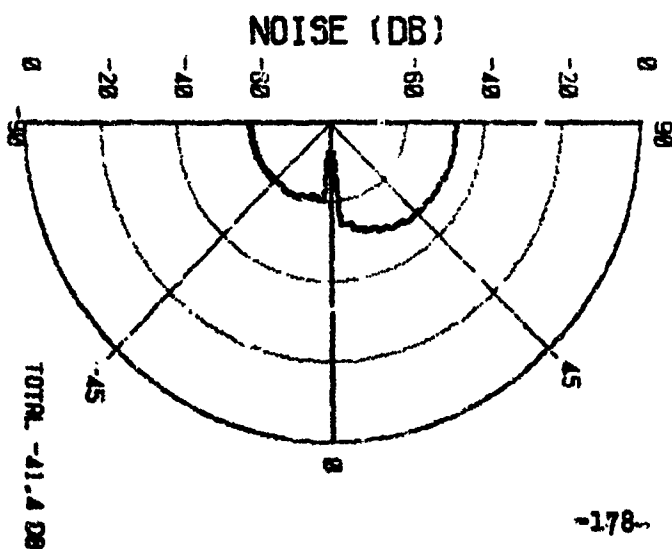
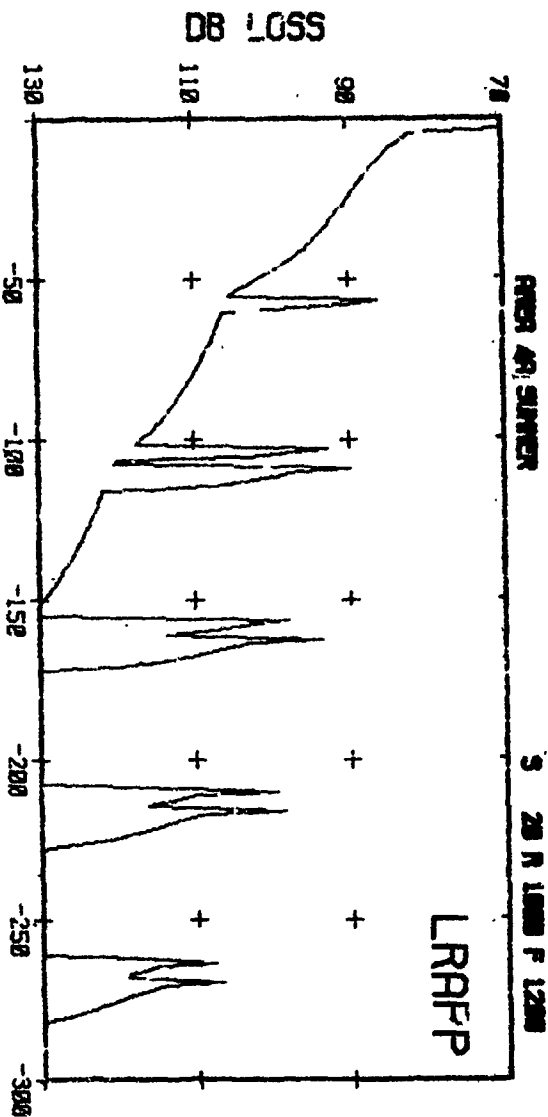
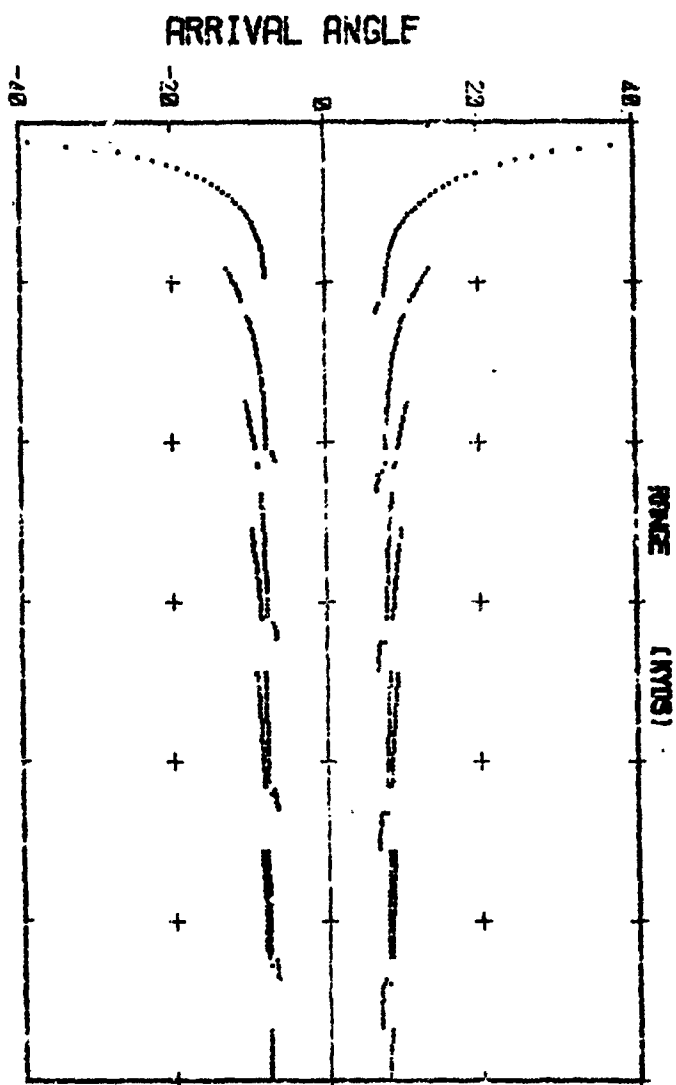


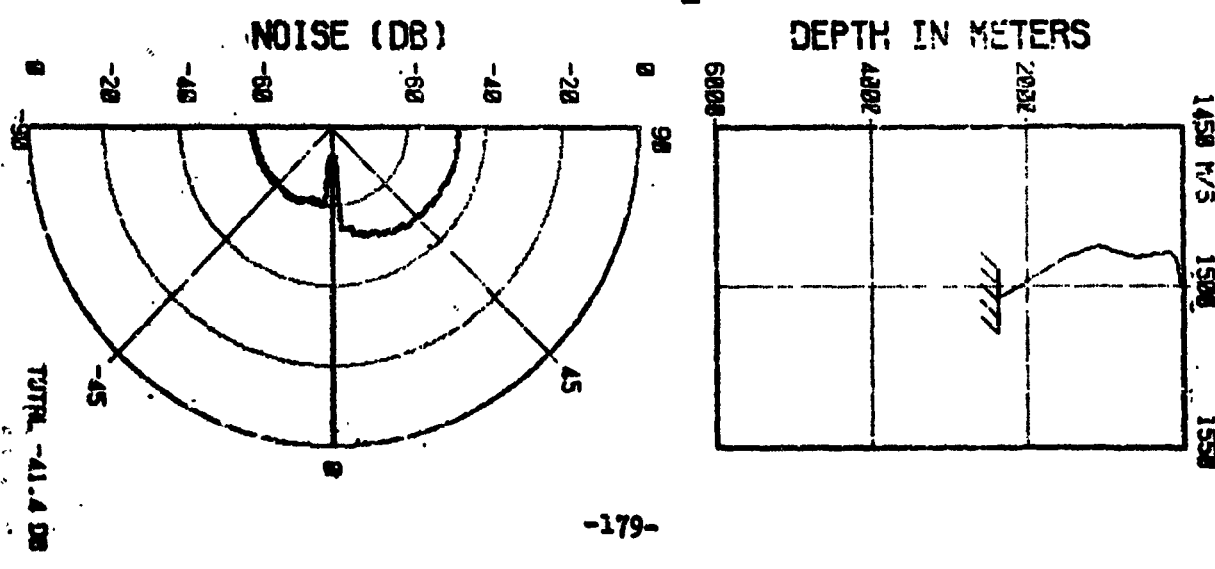
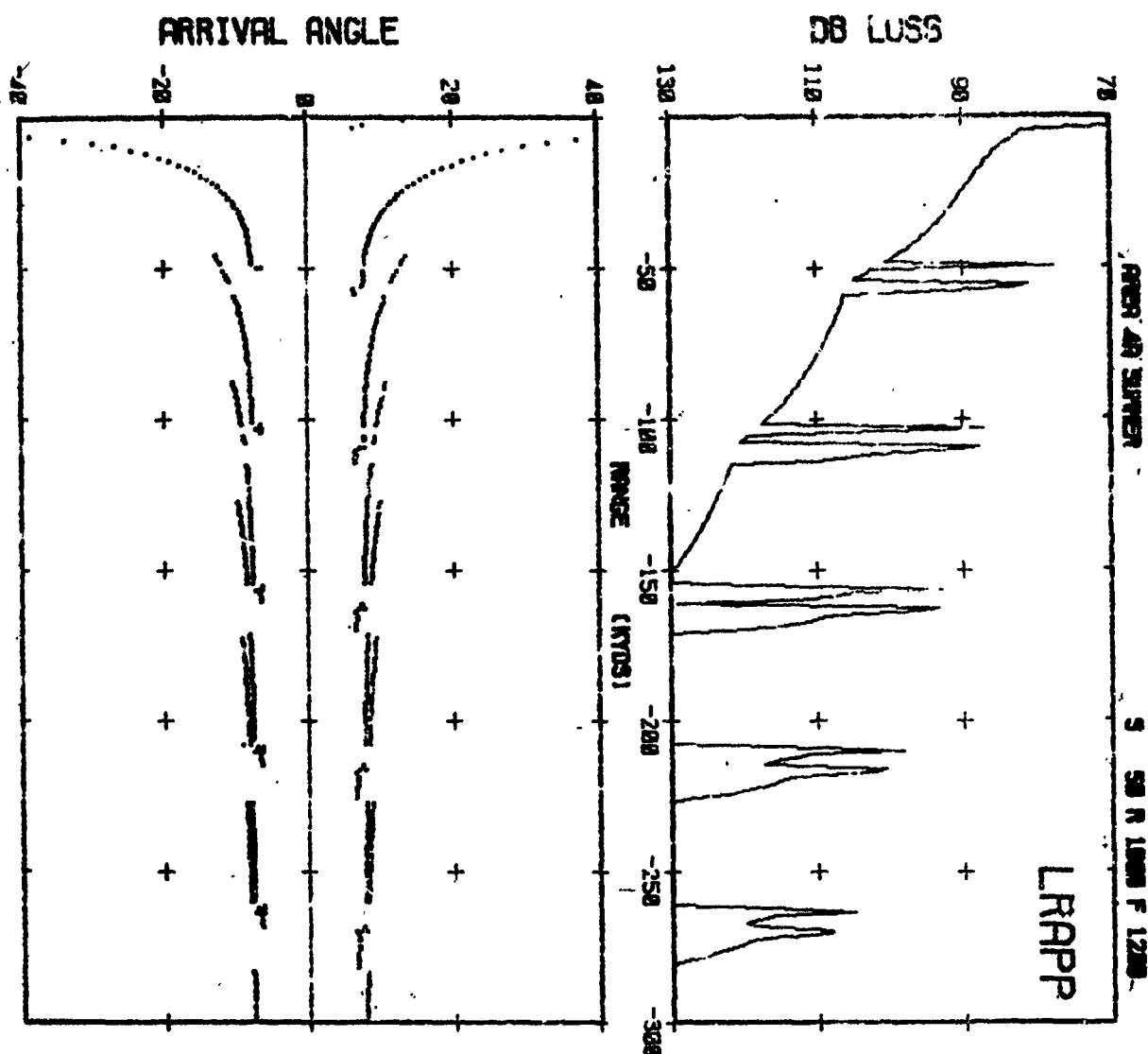
DEPTH IN METERS



NOISE (DB)



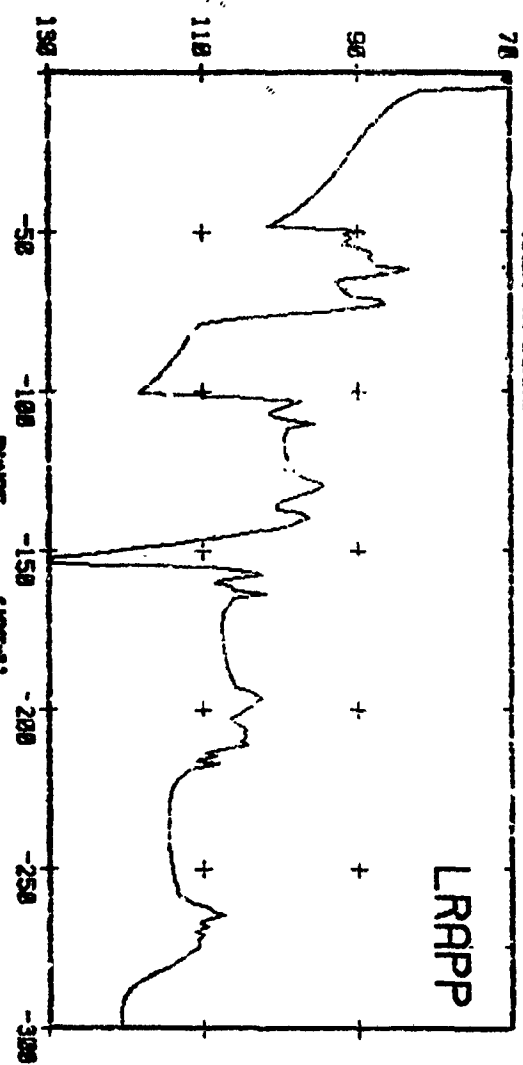




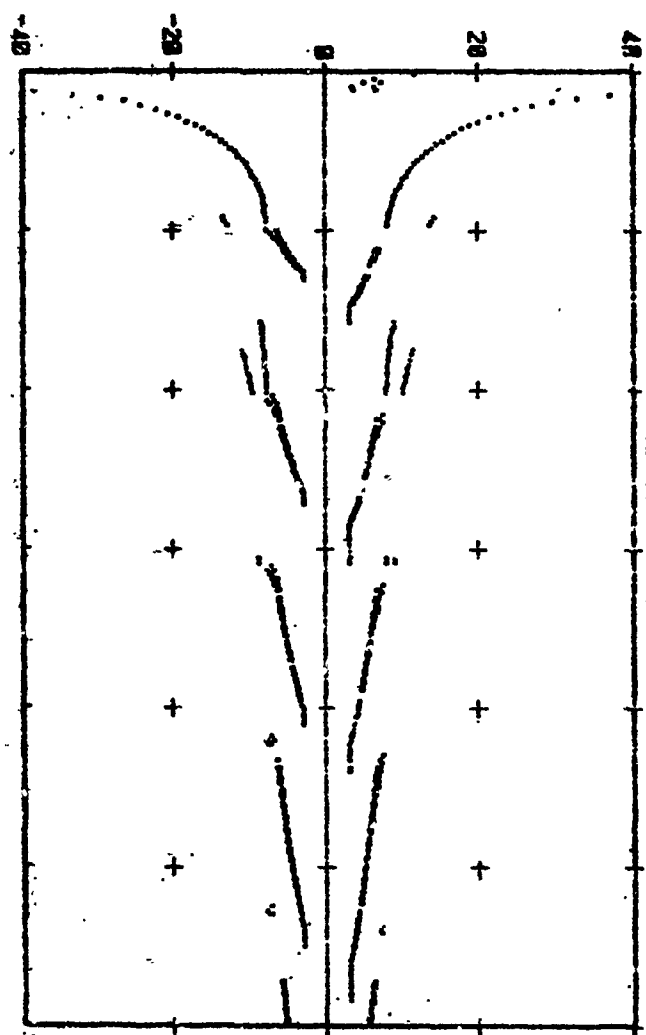
FINER AIR SURFER

S 239 R 1000 F 1200

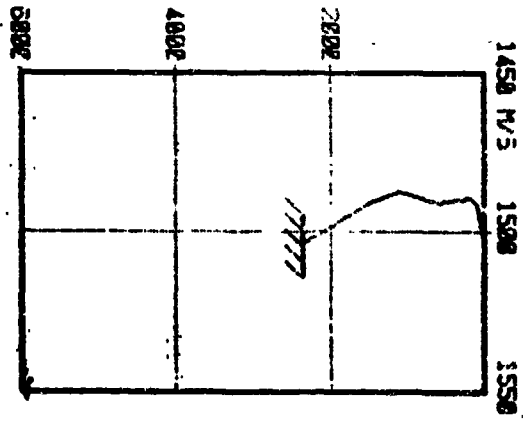
DB LOSS



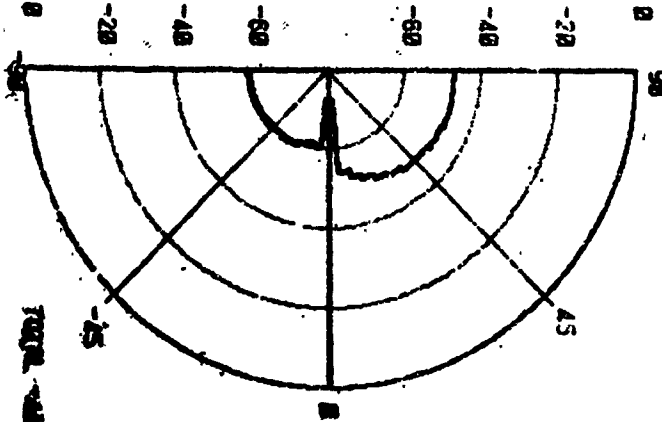
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

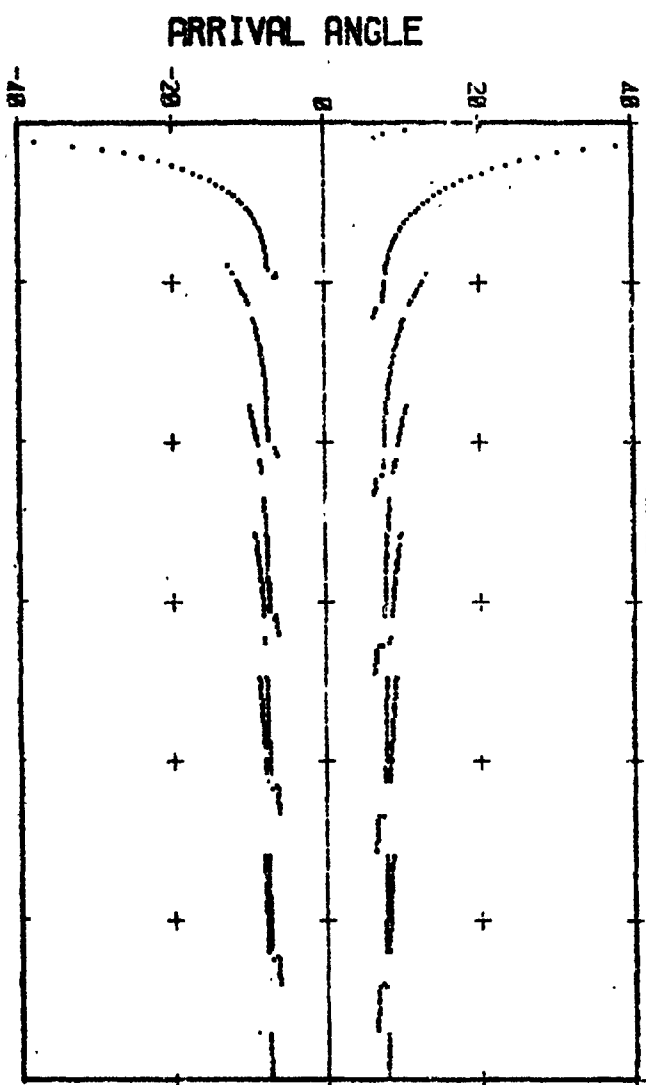
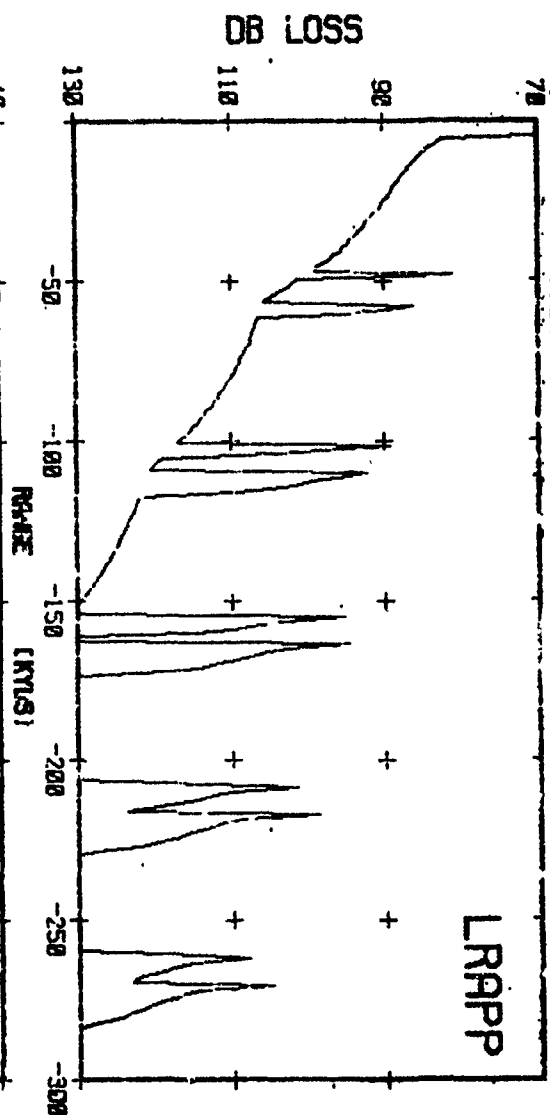


-100-

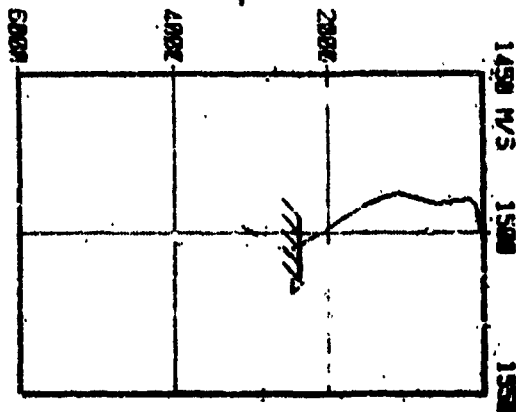
AREA 48 SURFER

S 20 N 1500 F 1200

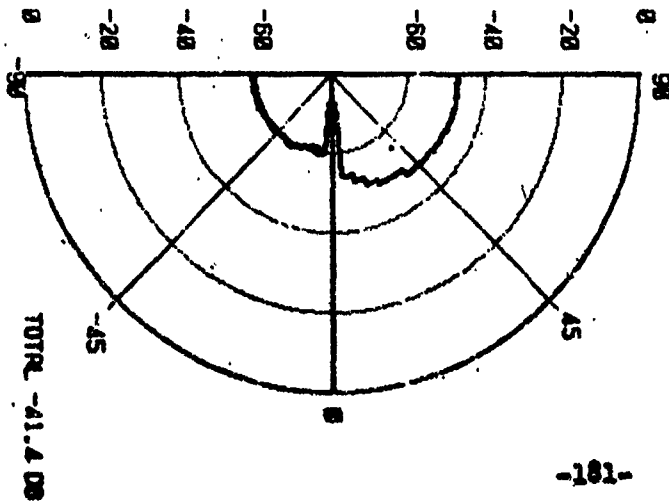
LRAPP



DEPTH IN METERS



NOISE (DB)

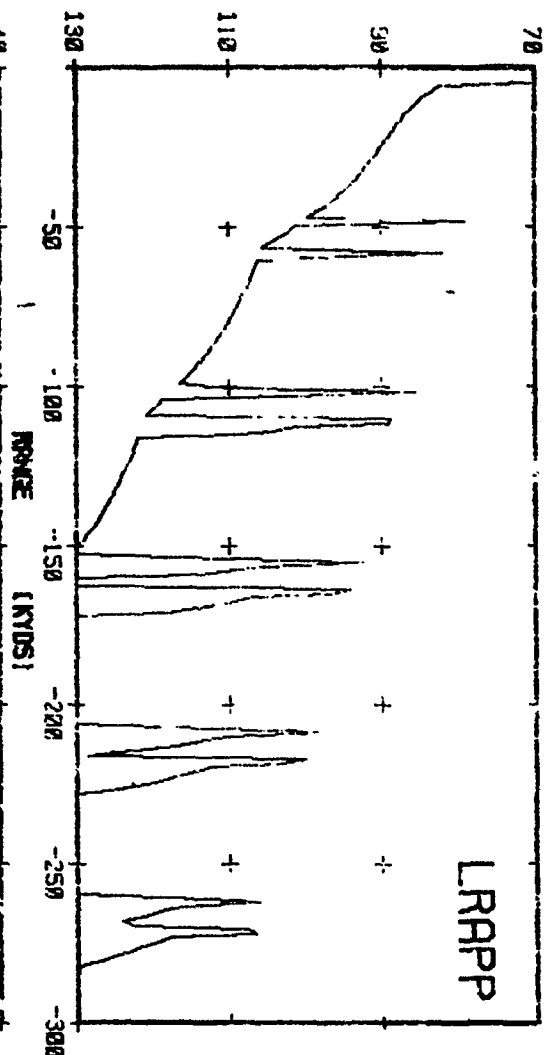


FREE AIR SWIMMER

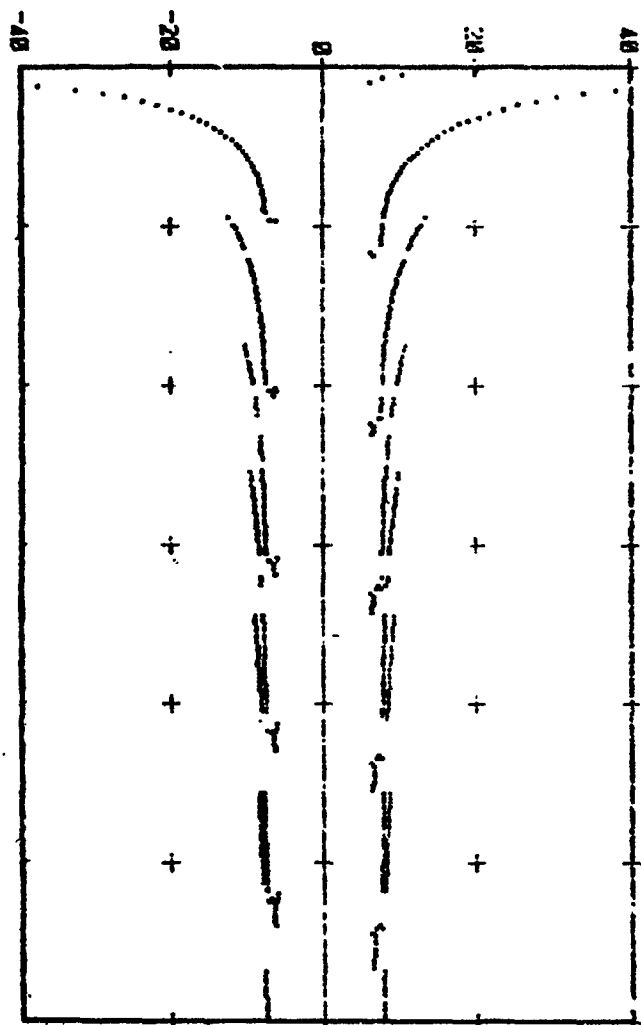
S 50 R 1500 F 1200

1450 M/S 1500 1550

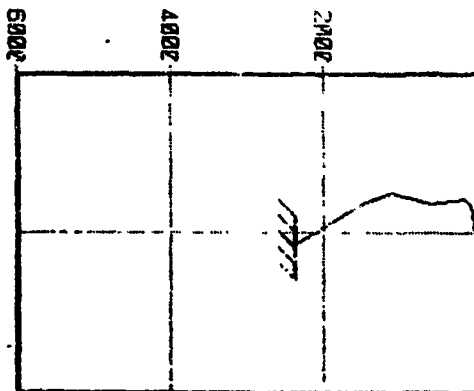
DB LOSS



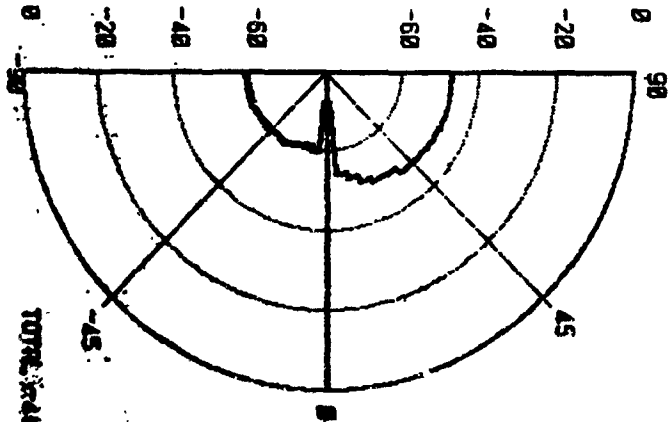
ARRIVAL ANGLE



DEPTH IN METERS



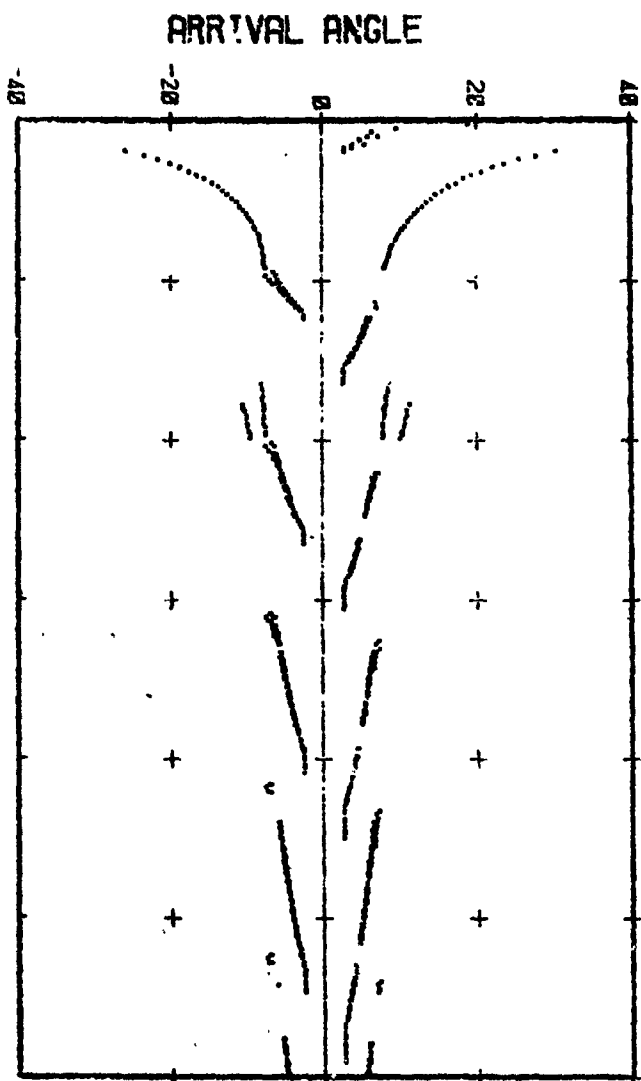
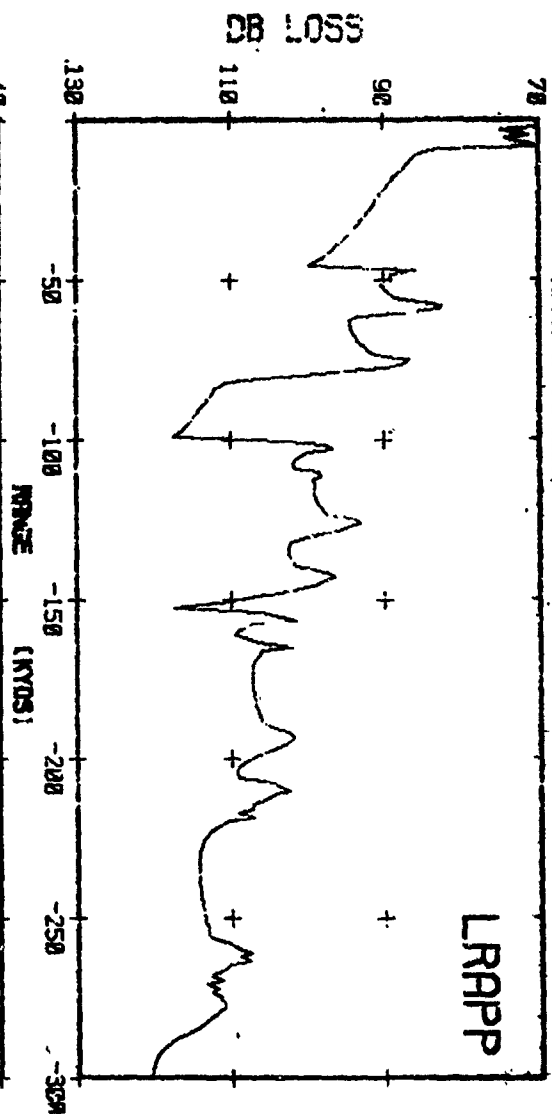
NOISE (DB)



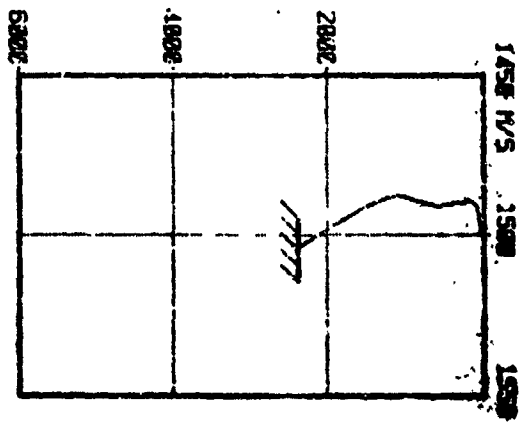
RIVER 40 SUMMER

S 203 N 1500 F 1200

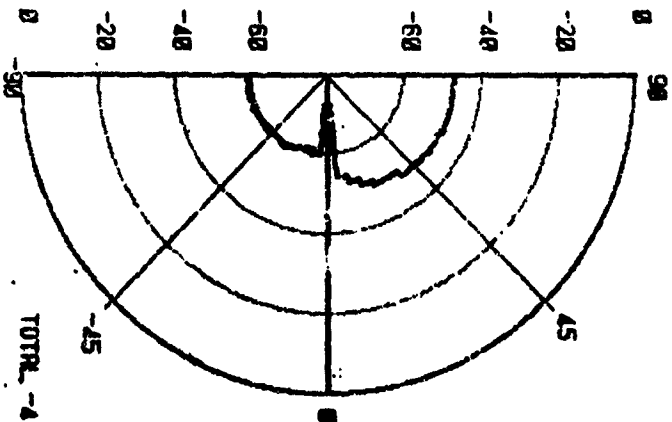
LRAPP



DEPTH IN METERS



NOISE (DB)

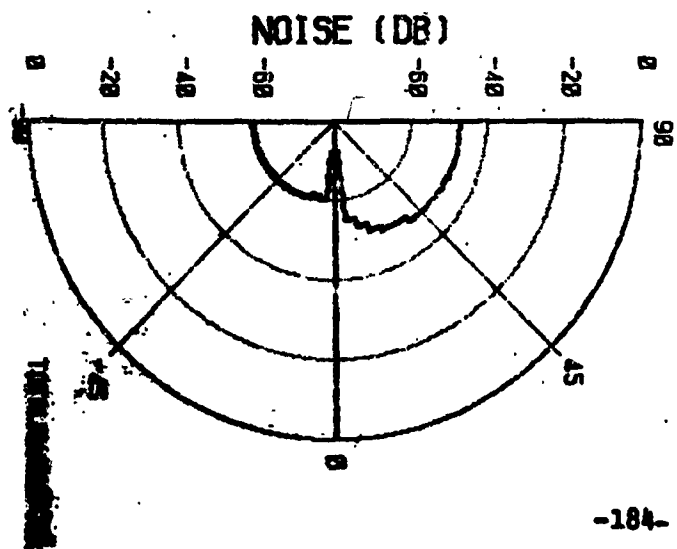
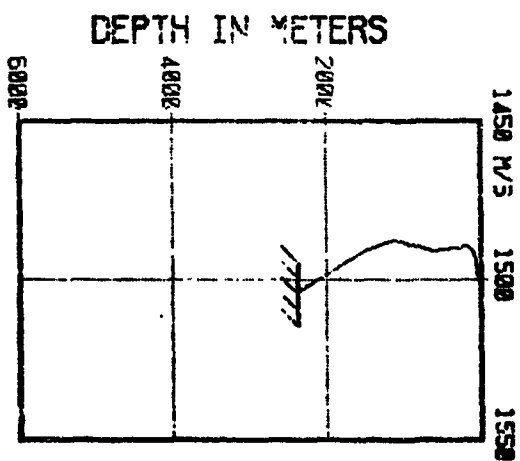
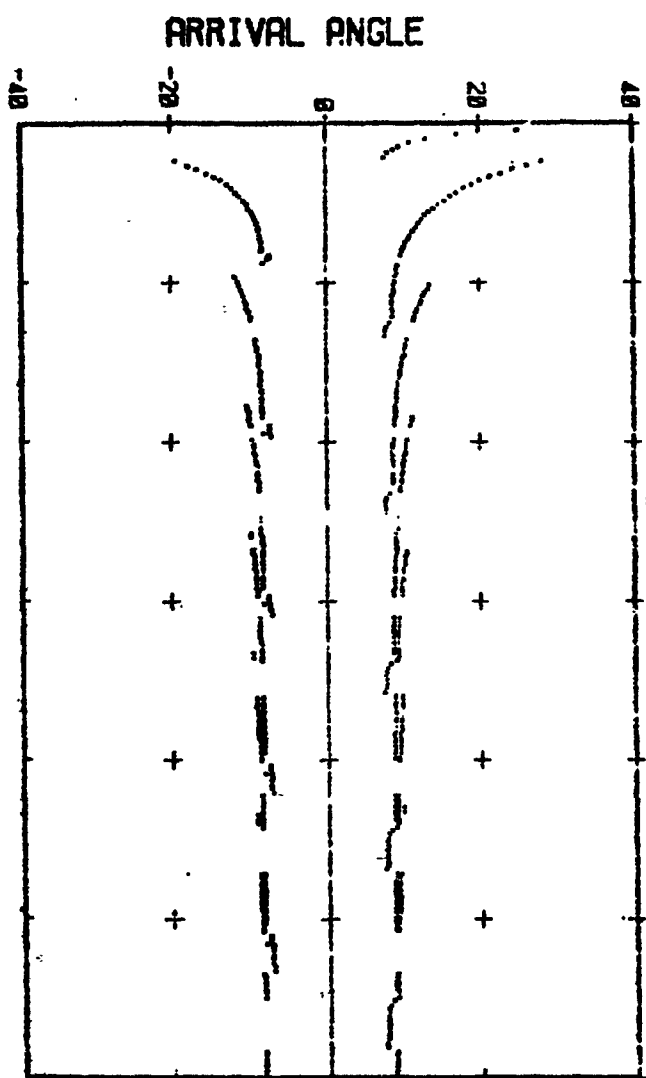
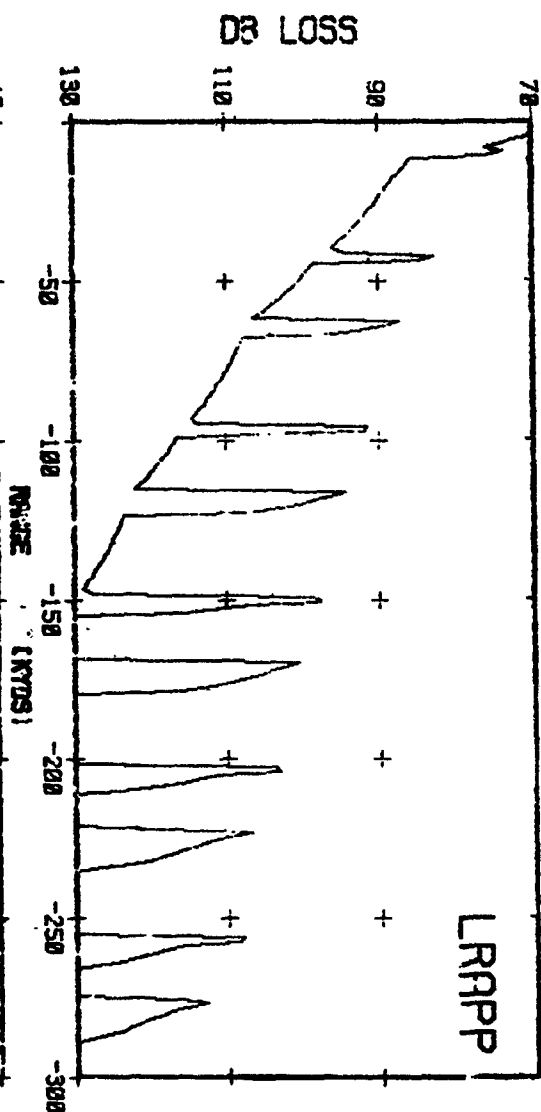


TOTL -41.4 DB

RIVER AIR SURFER

S 20 R 9707 F 1200

LRAPP

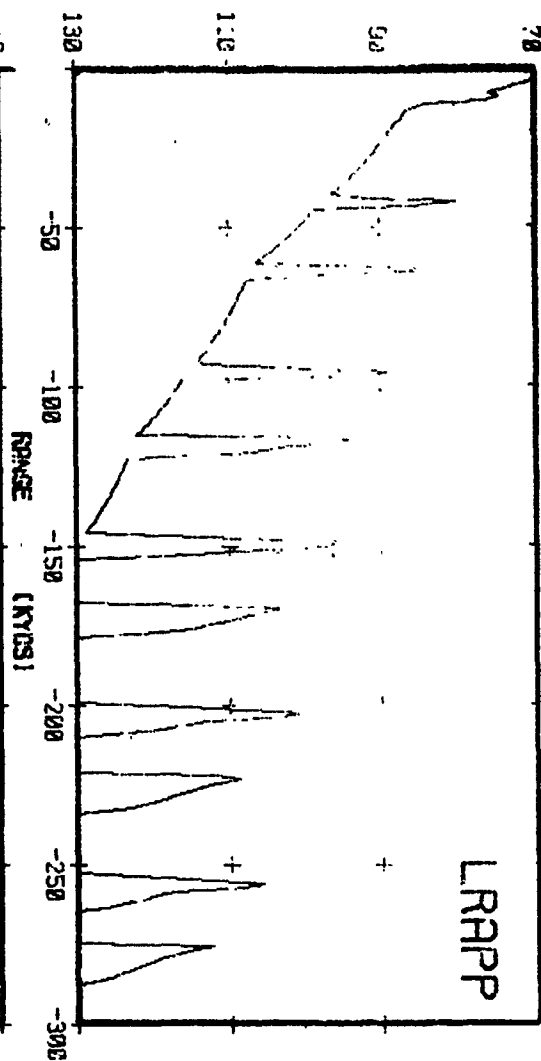


PROG AN SUMMER

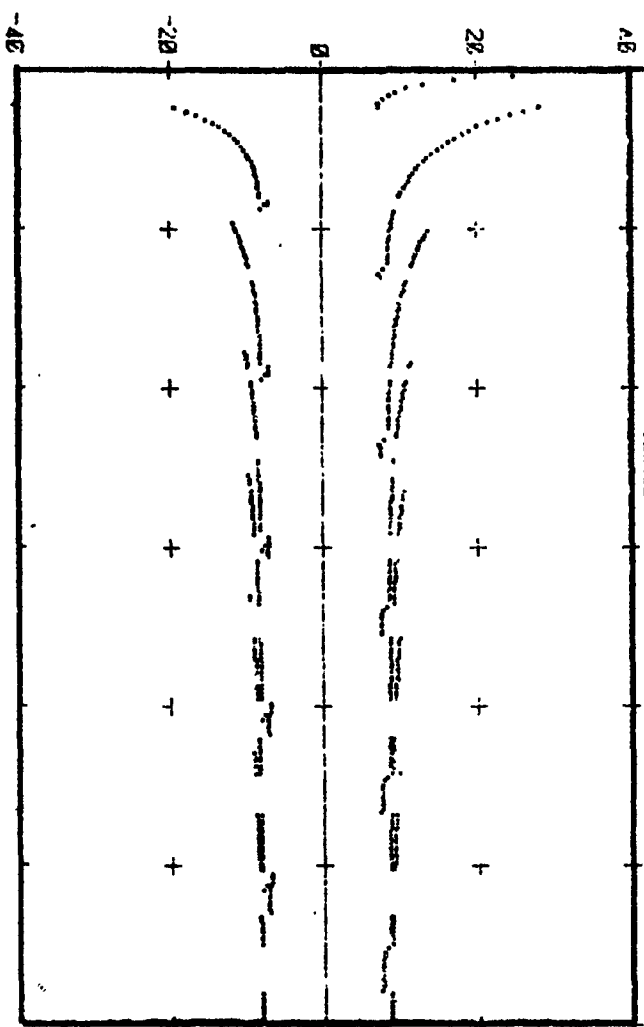
S 58 R 5707 F 1200

1450 H/3 1500 1550

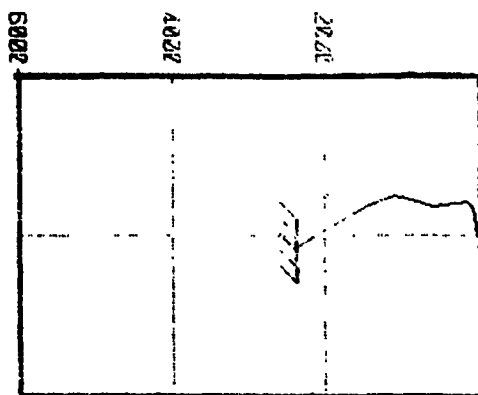
DB LOSS



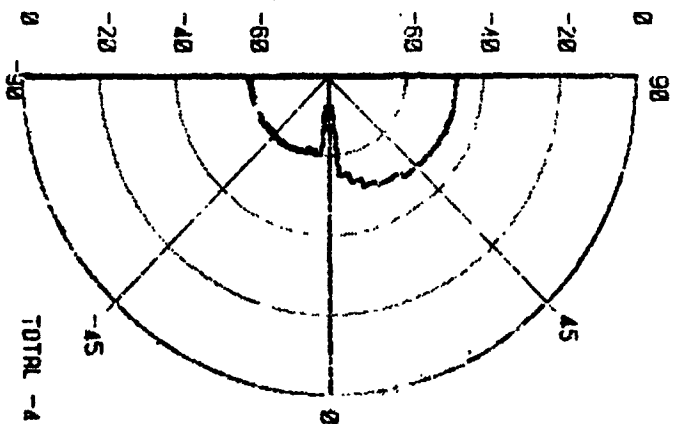
ARRIVAL ANGLE

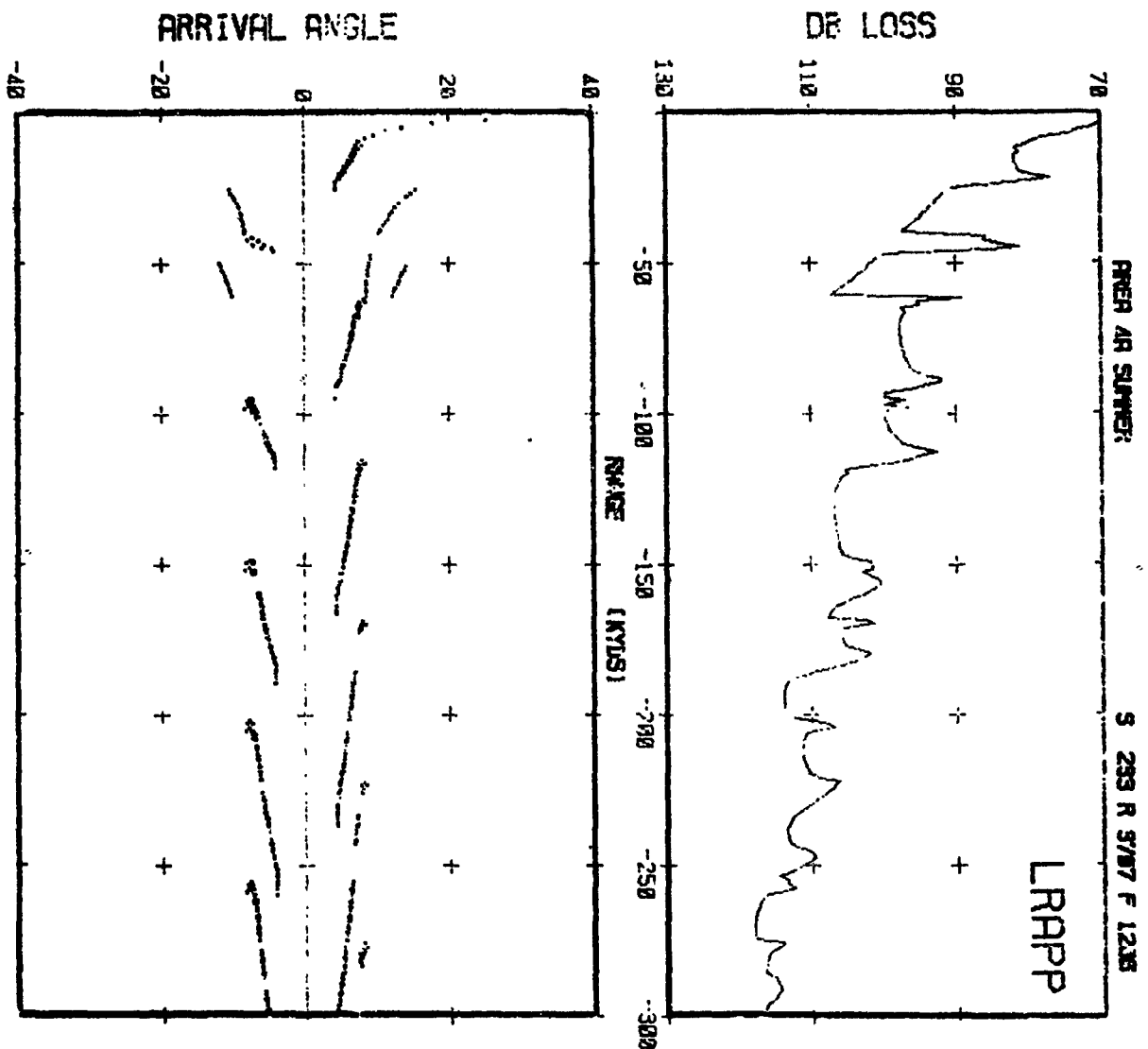


DEPTH IN METERS



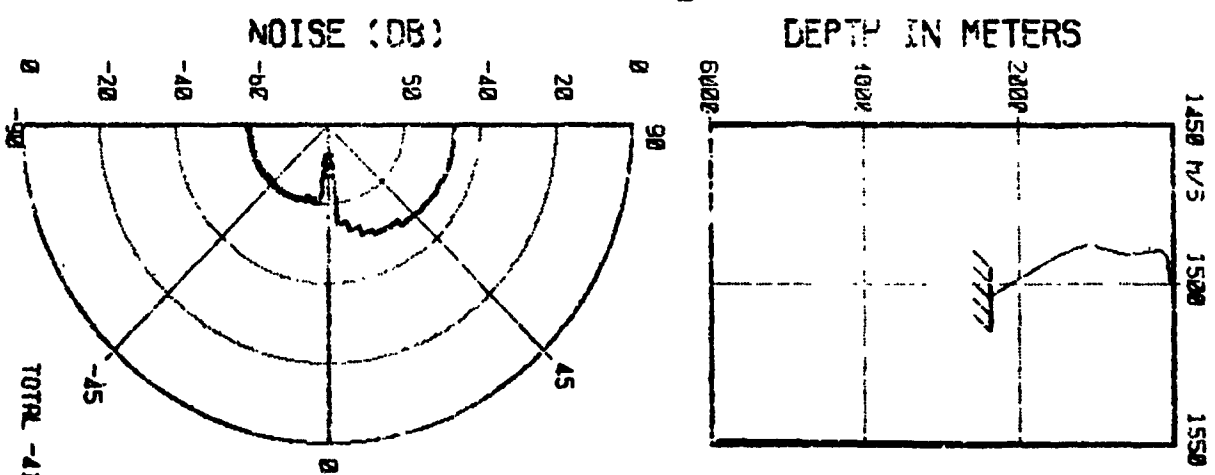
NOISE (DB)





AREA AIR SURVEY S 283 R 3/87 F 1218

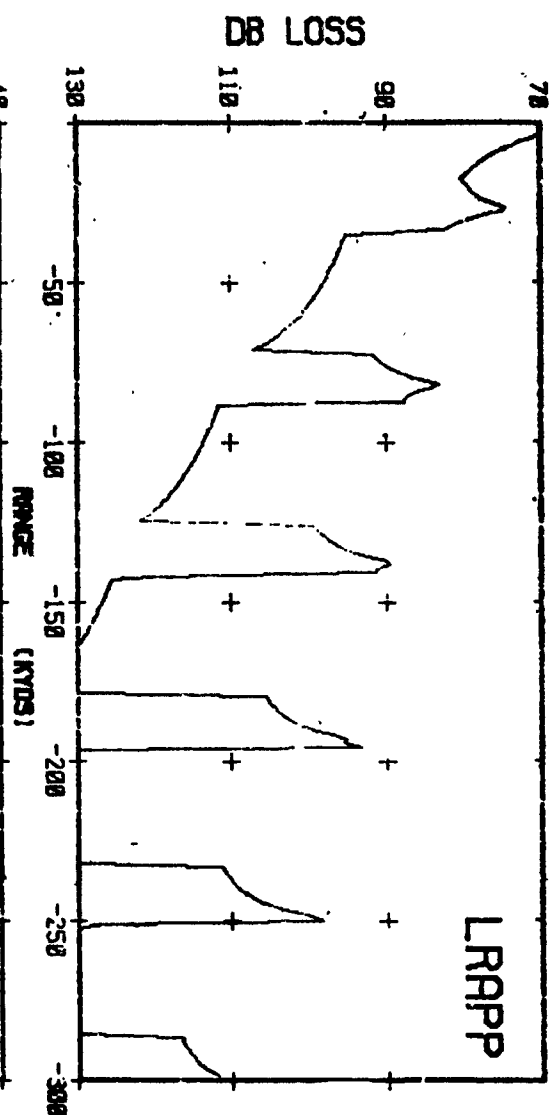
LRAPP



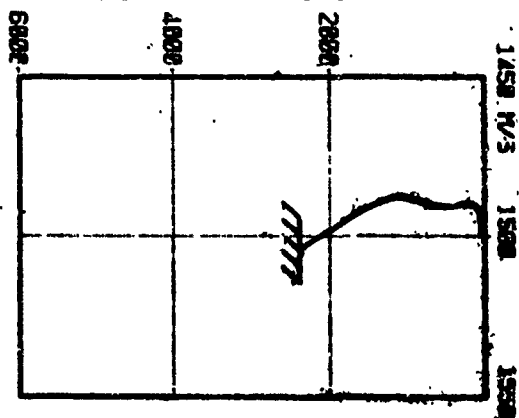
OVER AIR SURVEY

S 20 R 0000 F 1200

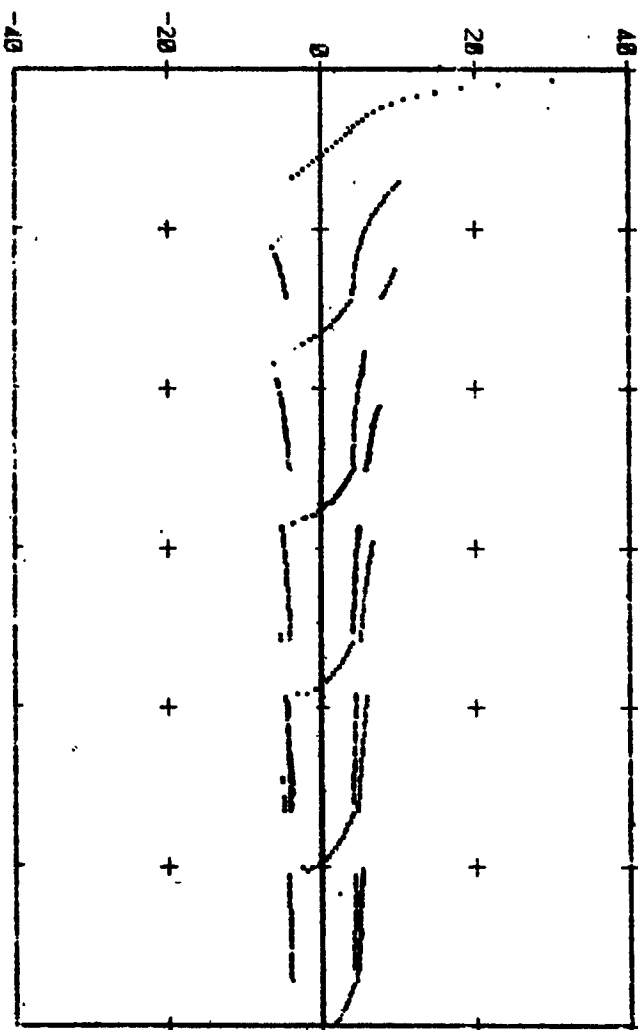
LRAPP



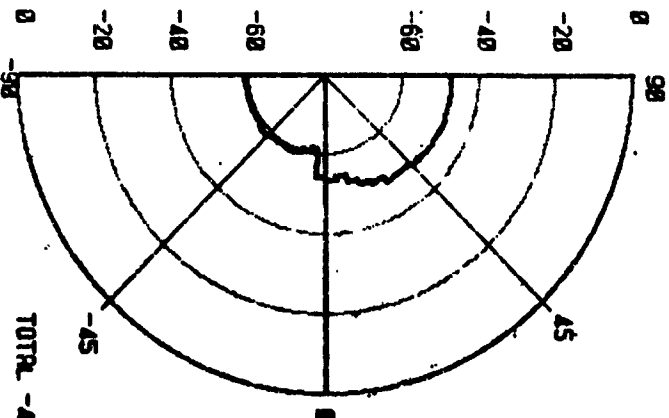
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

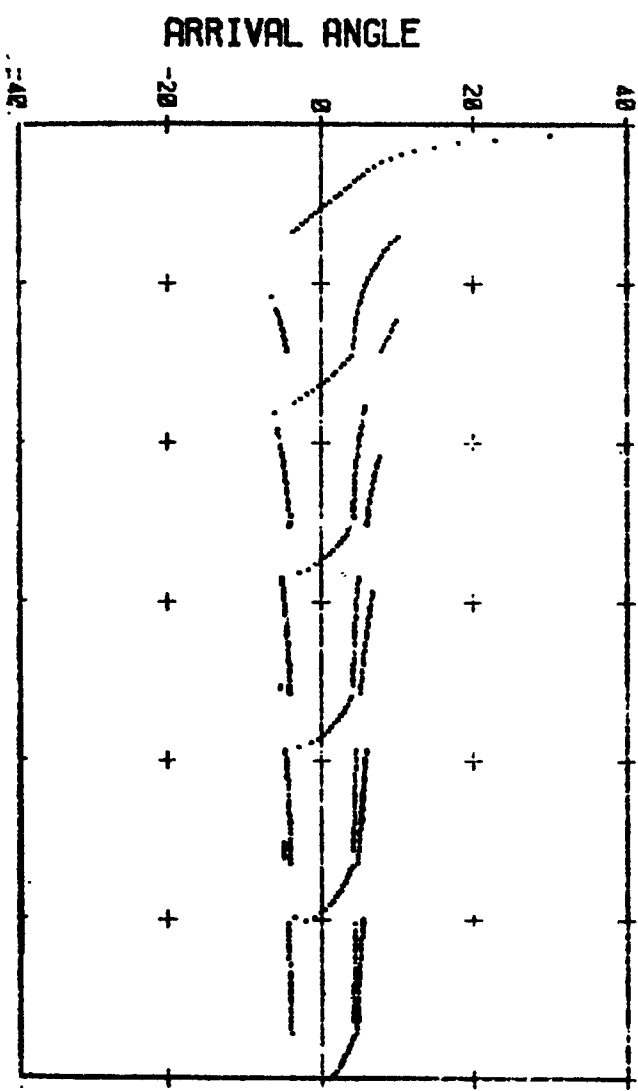
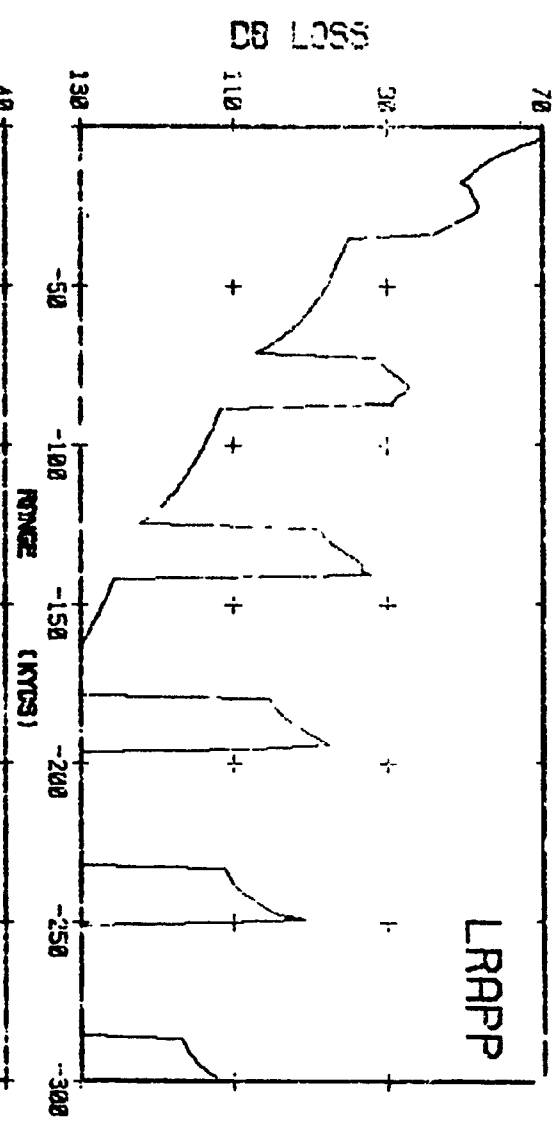


TOTL -41.3 DB

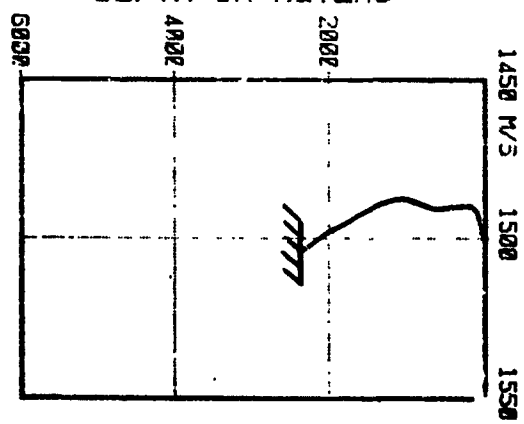
REER 49 SUMER

S 50 R 0303 F 1200

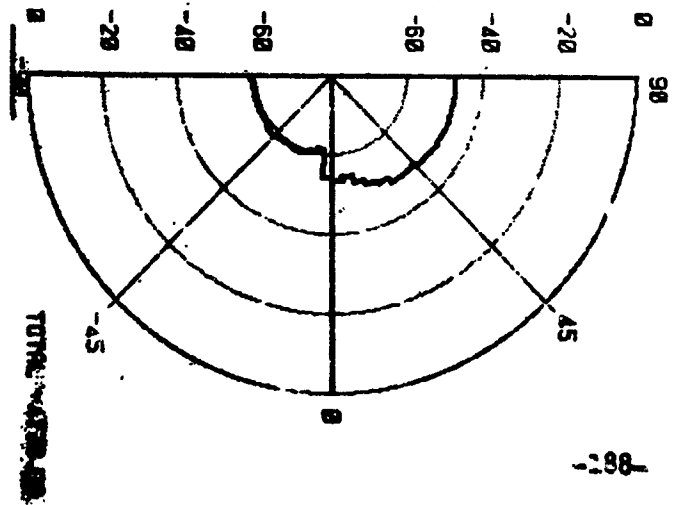
LRAPP

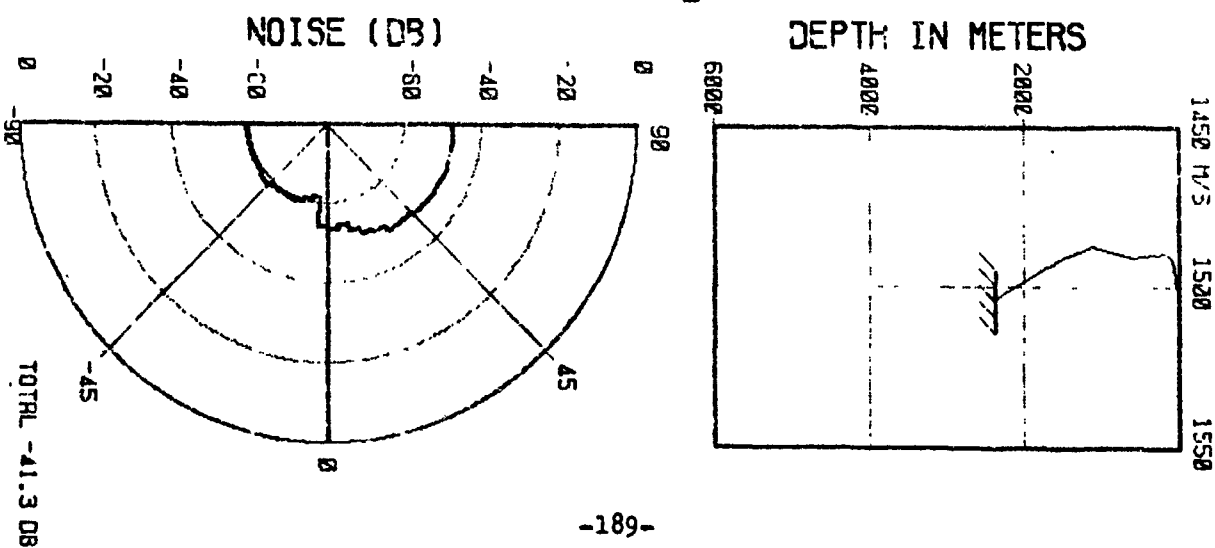
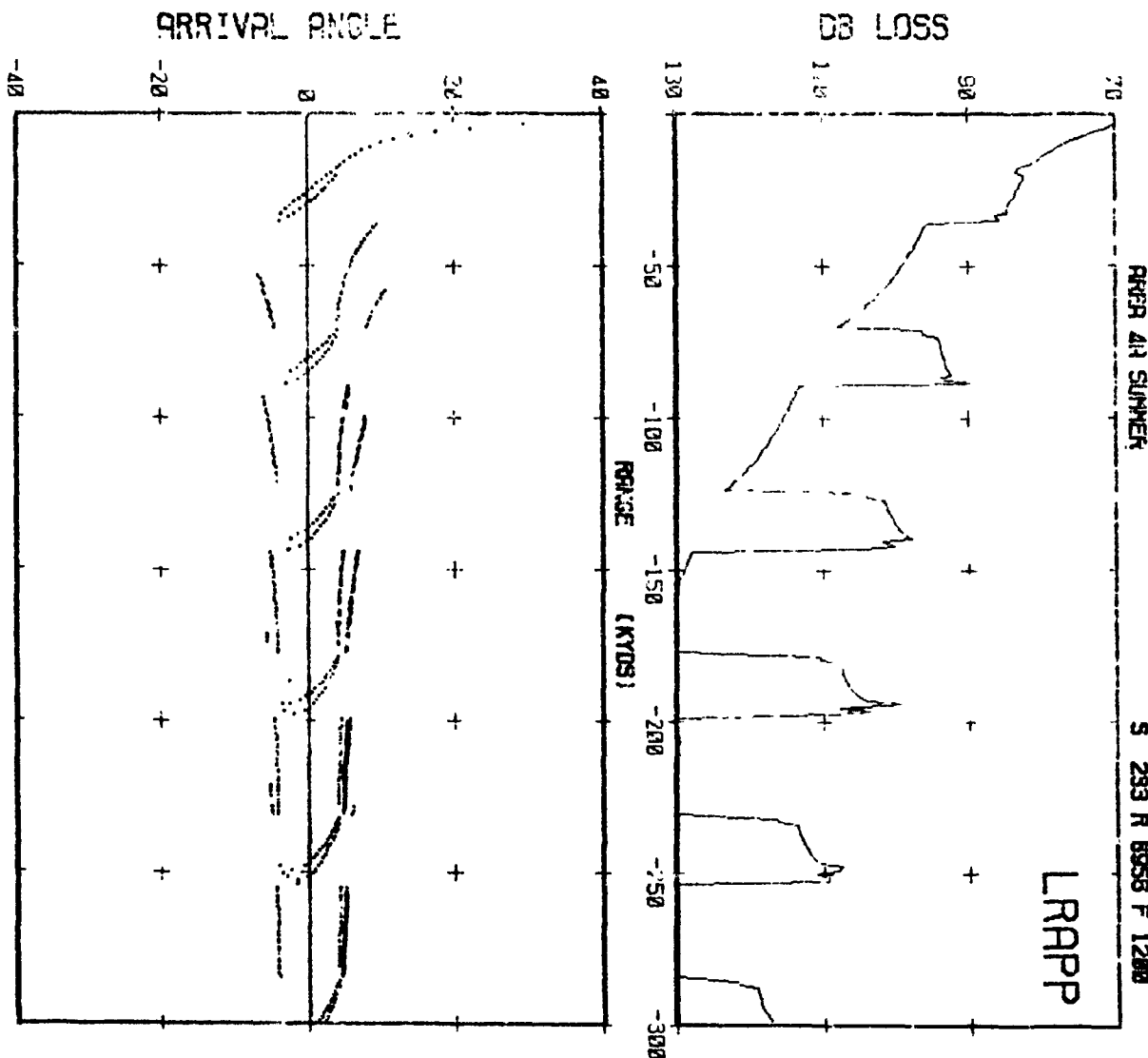


DEPTH IN METERS



NOISE (DB)



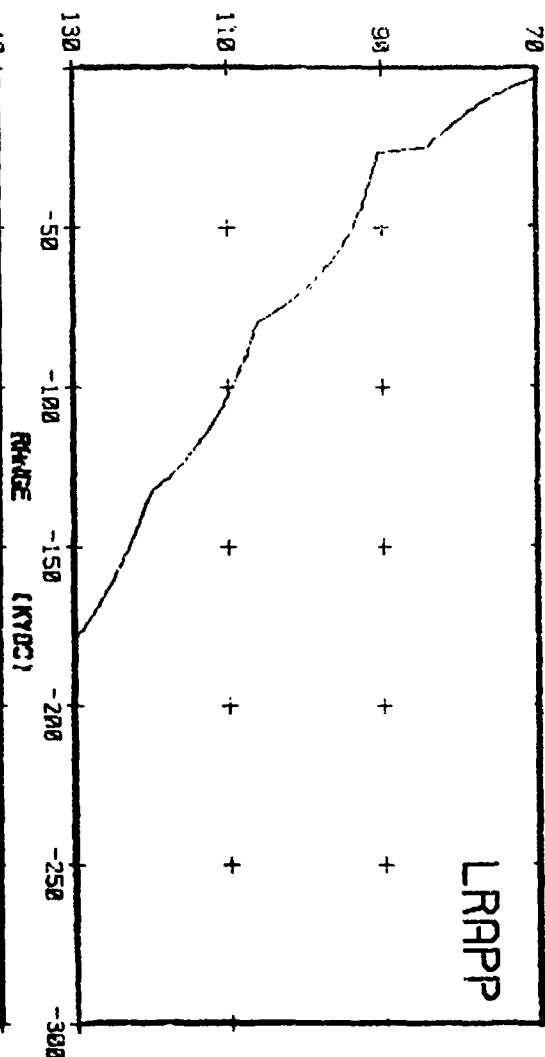


RRR AR SINKER

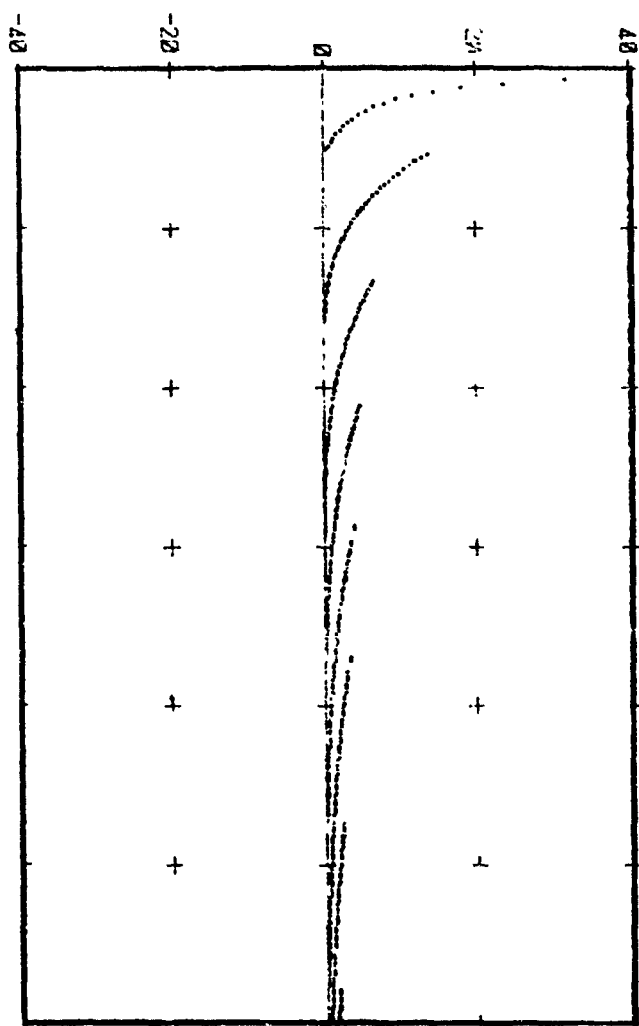
S 28 R 7788 F 1200

1450 M/S 1500 1550

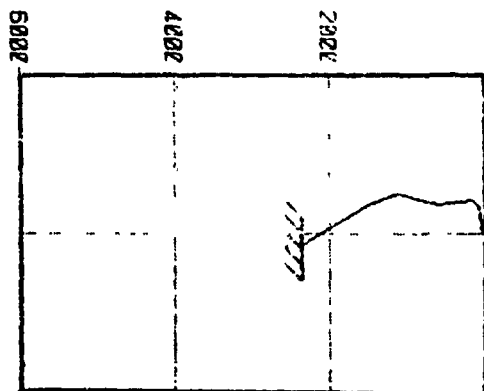
DB LOSS



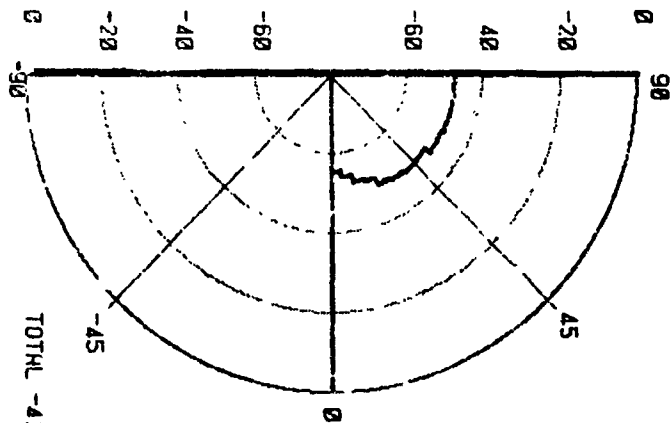
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

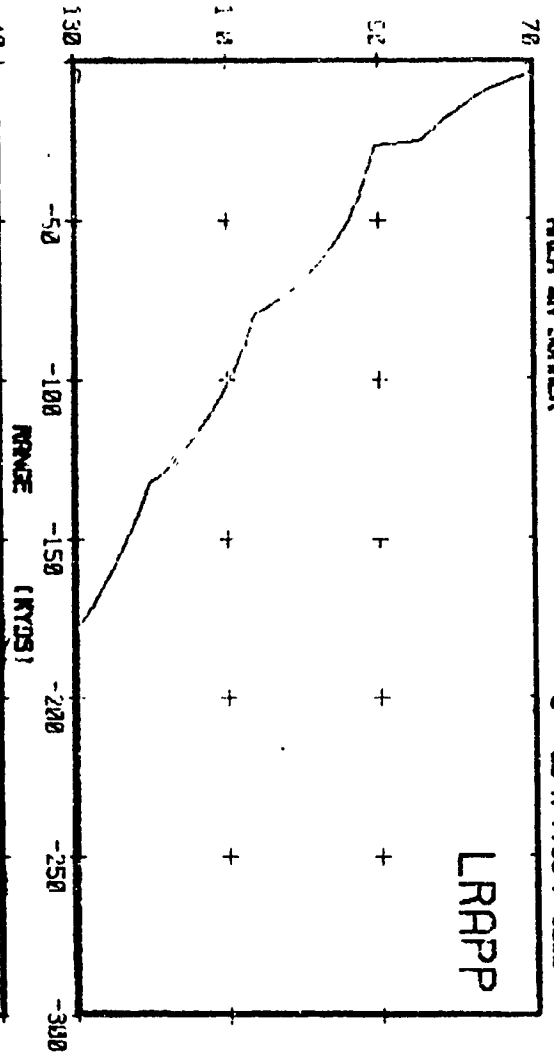


DB 1088

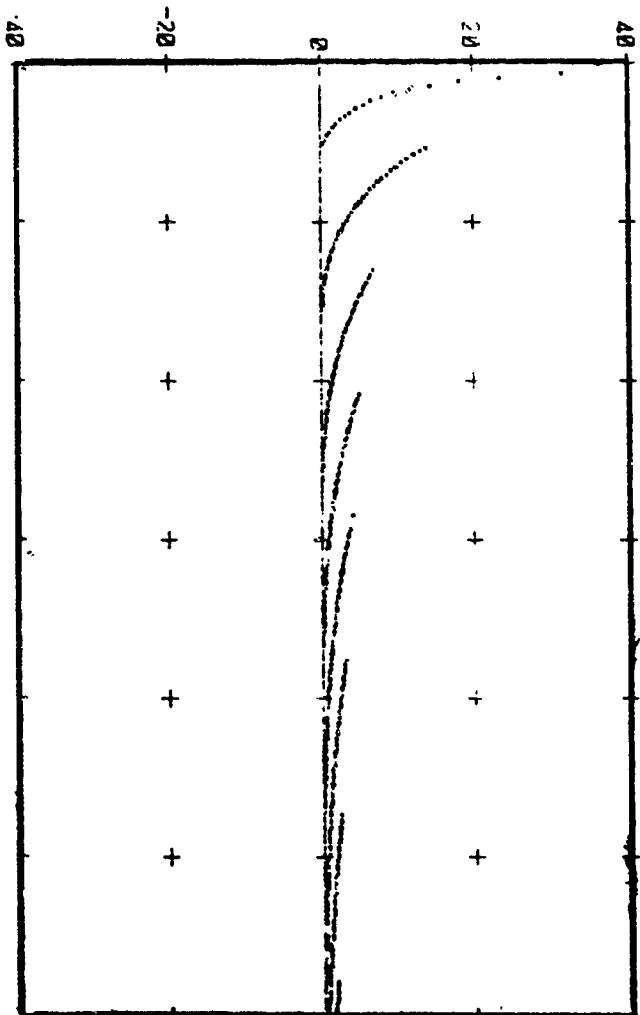
RRR AR SUMMER

S 50 R 7789 F 1200

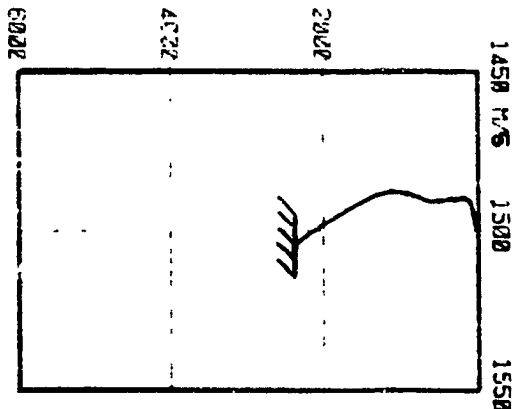
LRAPP



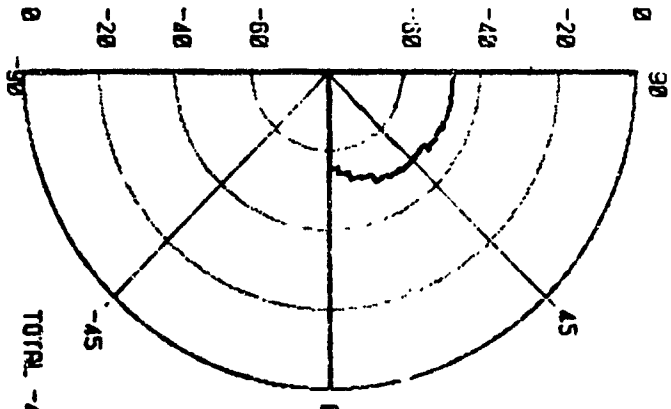
ARRIVAL ANGLE



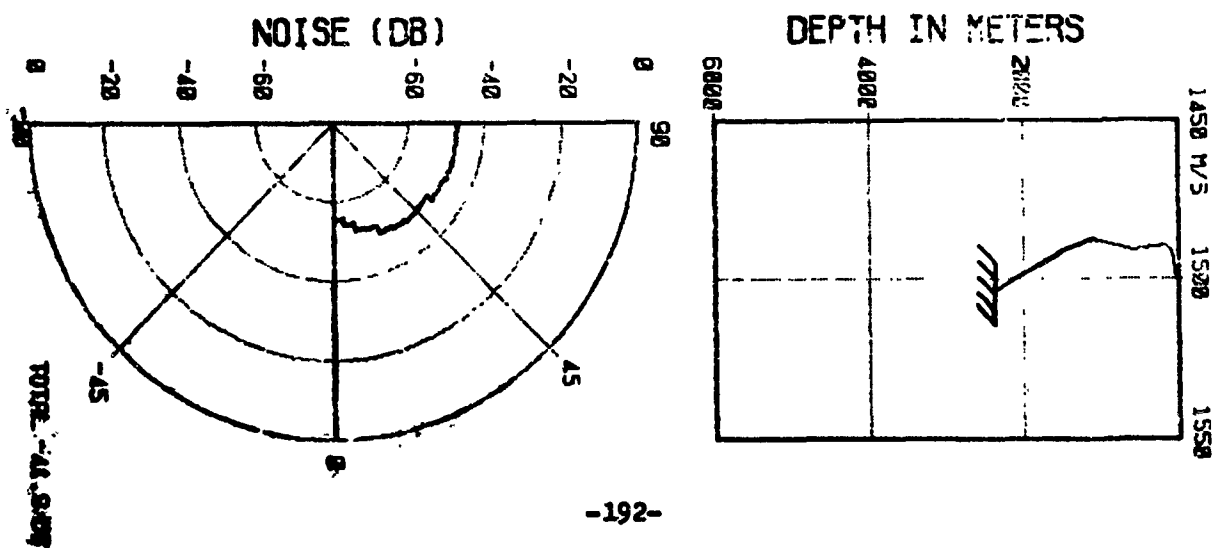
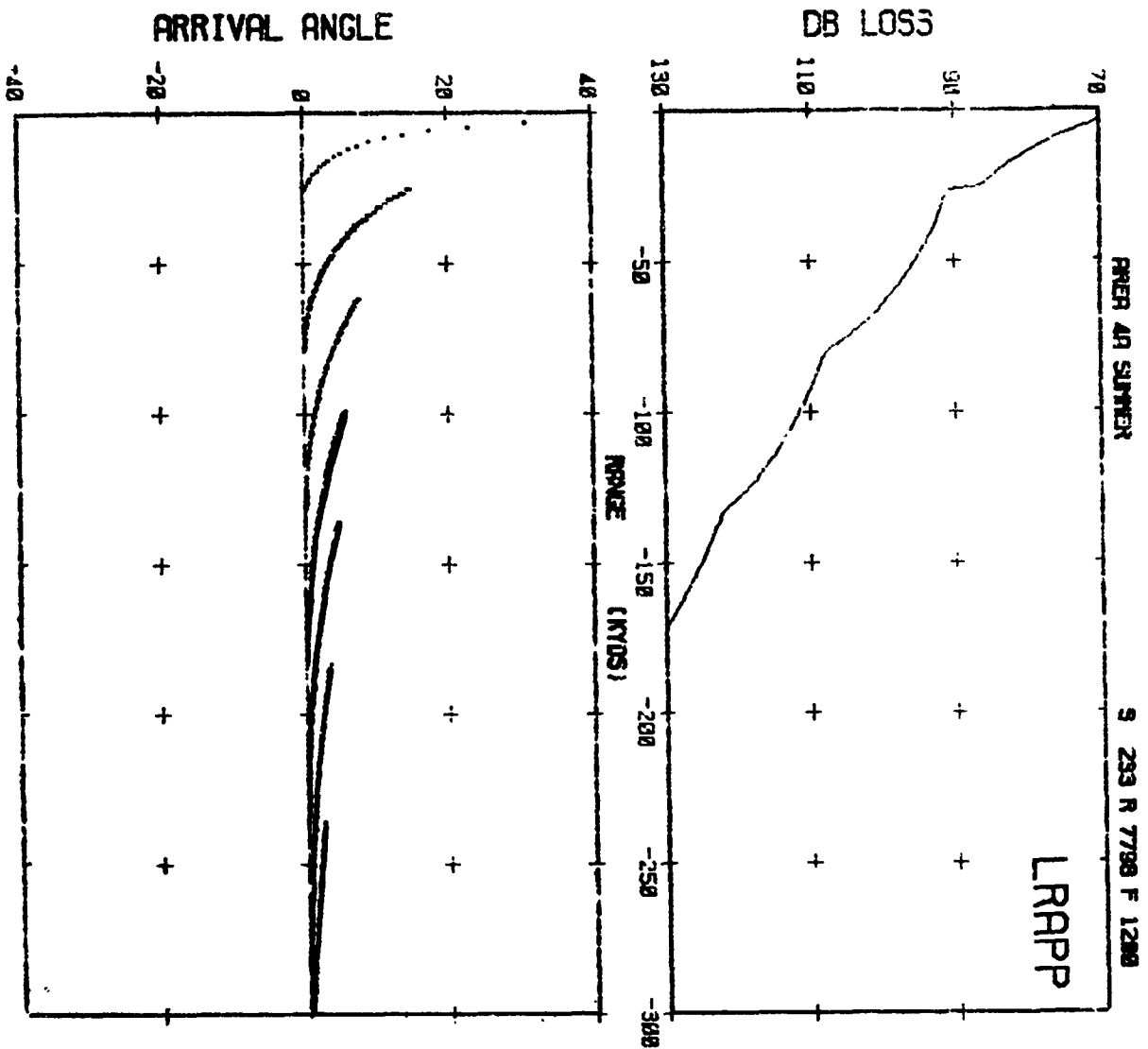
DEPTH IN METERS

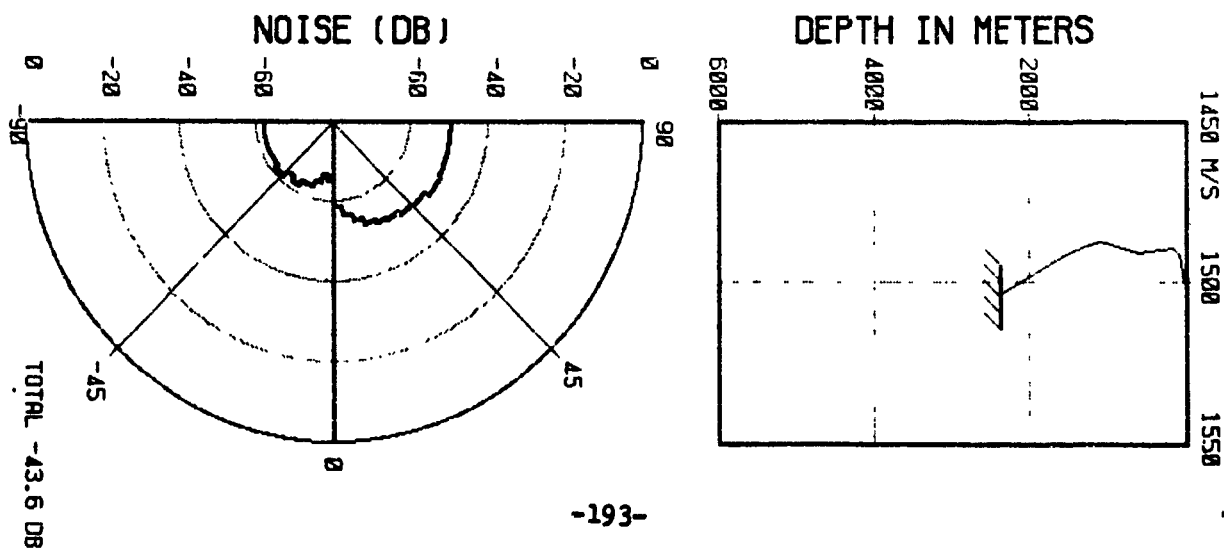
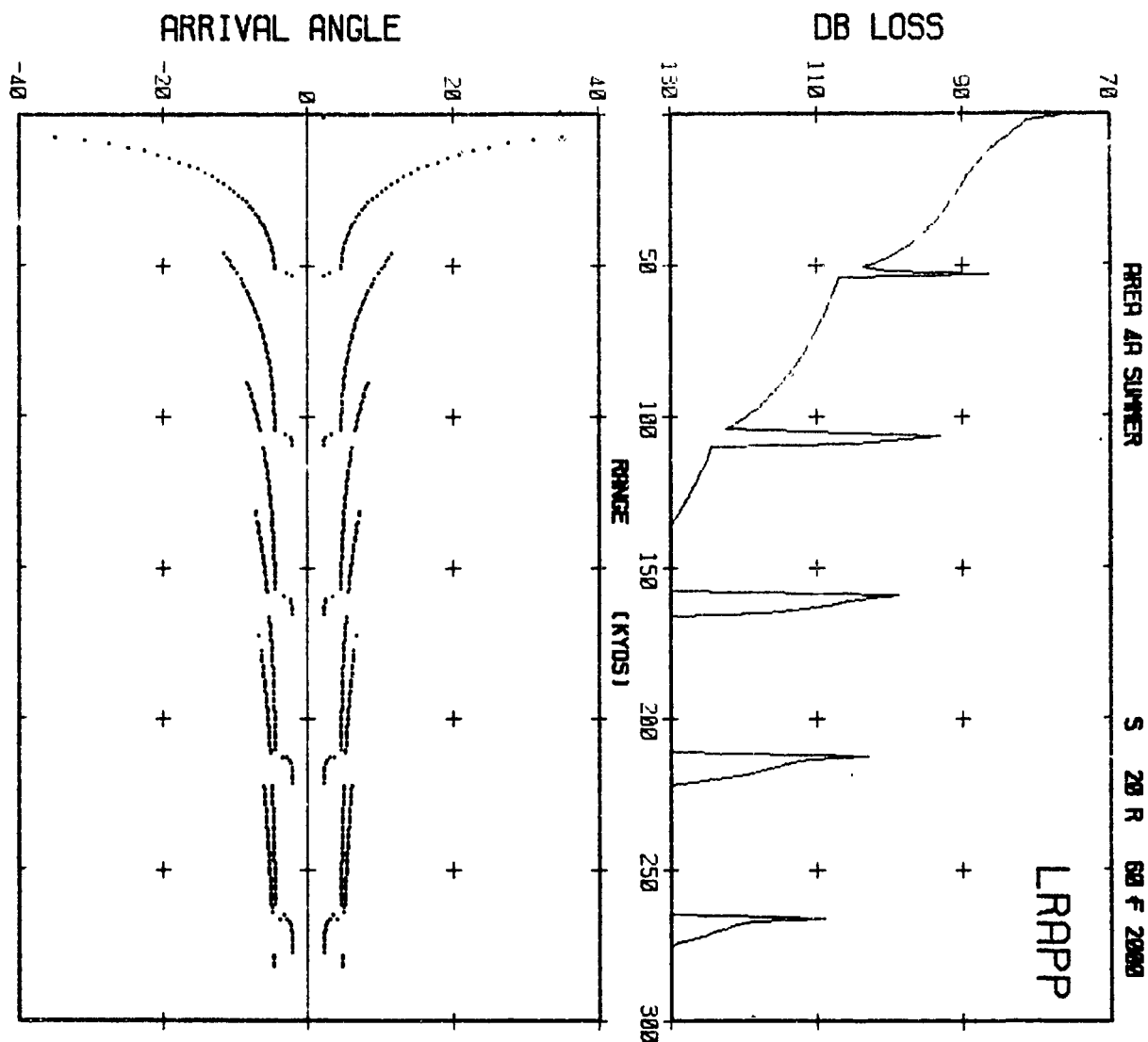


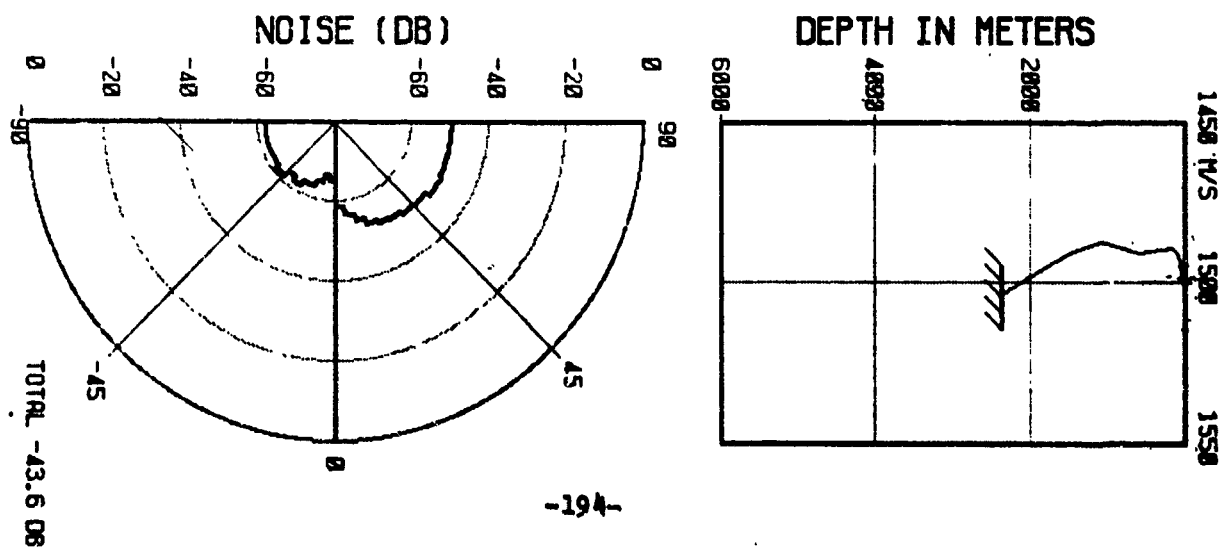
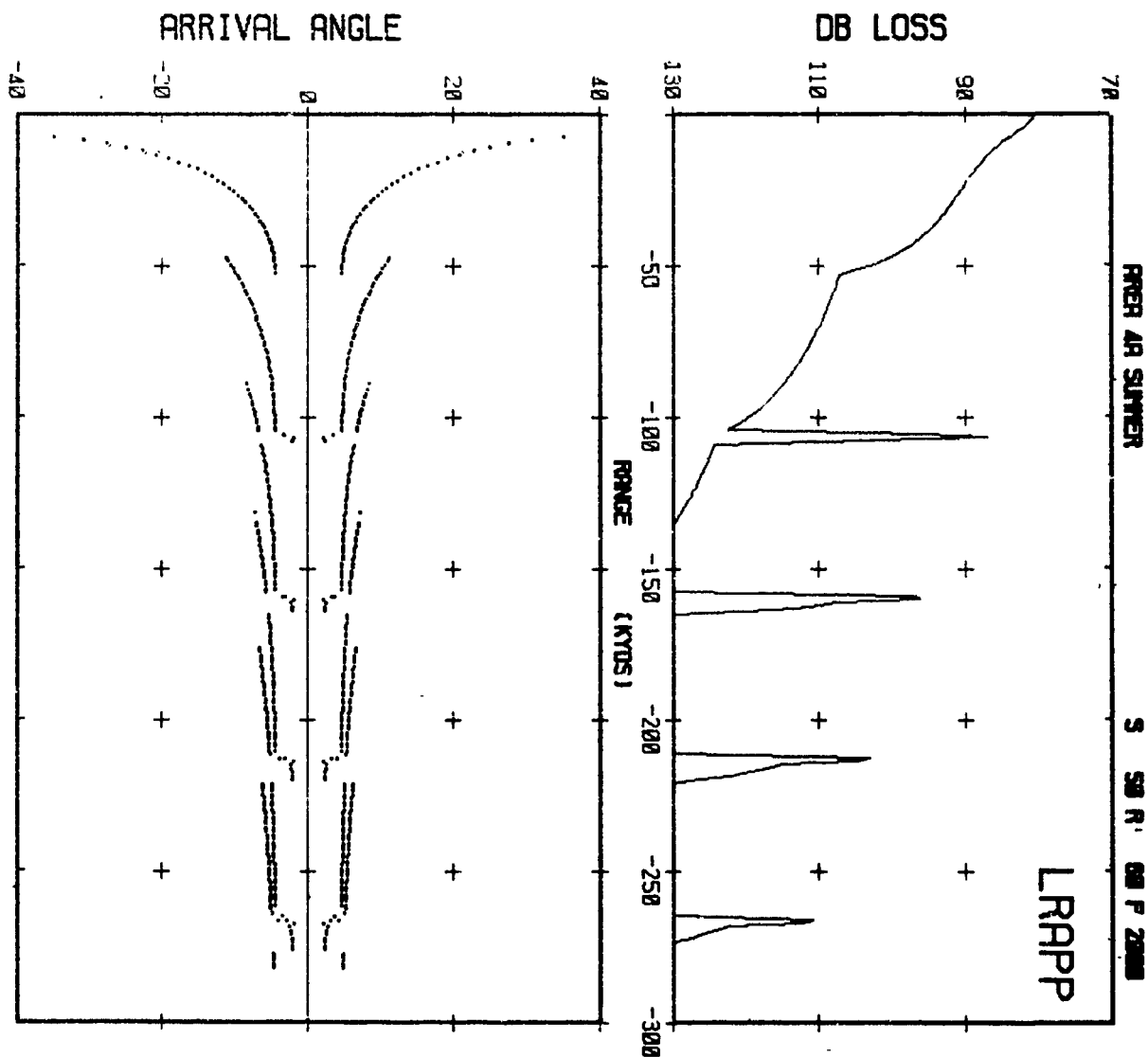
NOISE (DB)



TOTAL -41.9 DB





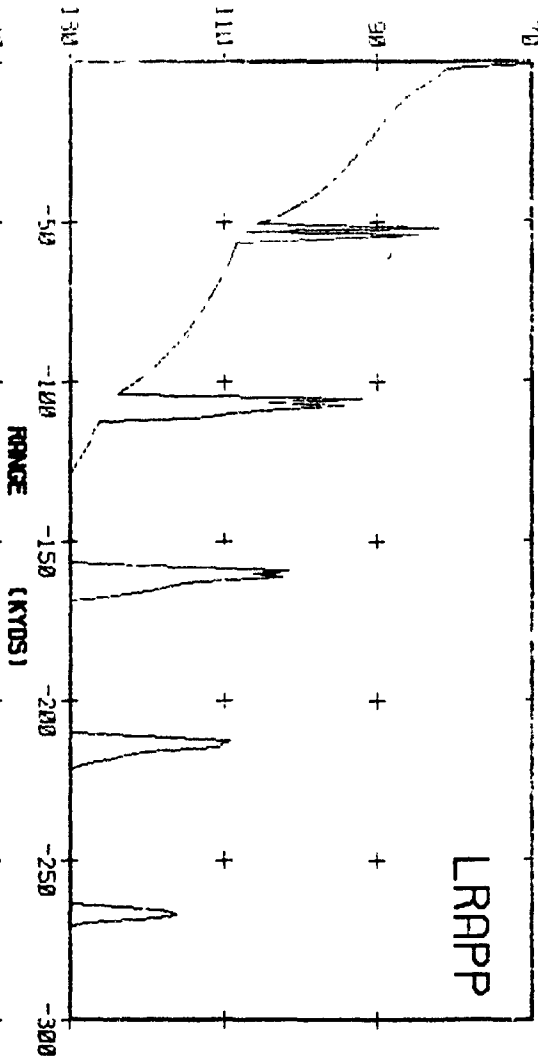


RIRER AR SUMMER

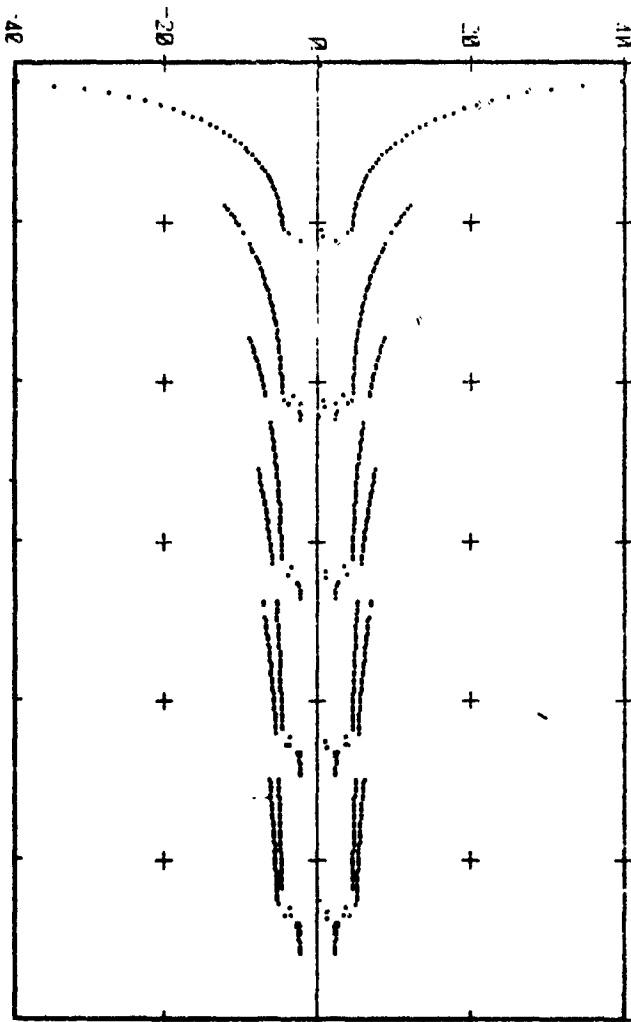
C 233 R Sd F 2000

1450 M/S 1500 1550

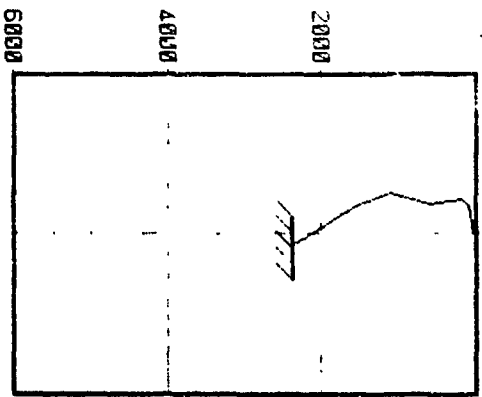
DB LOSS



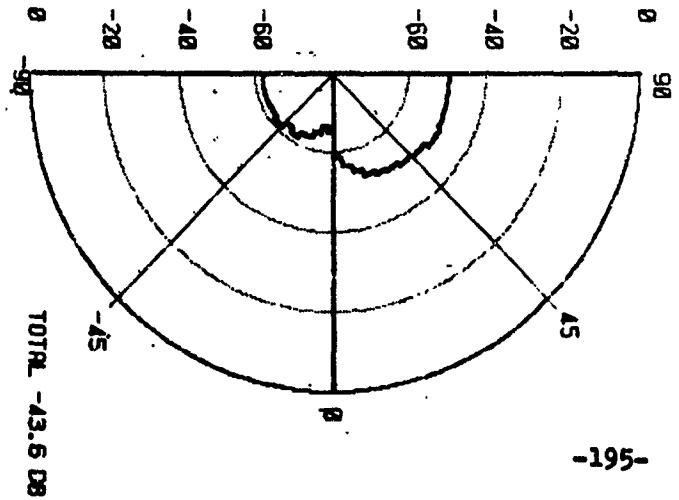
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



FREE AIR SUMMER

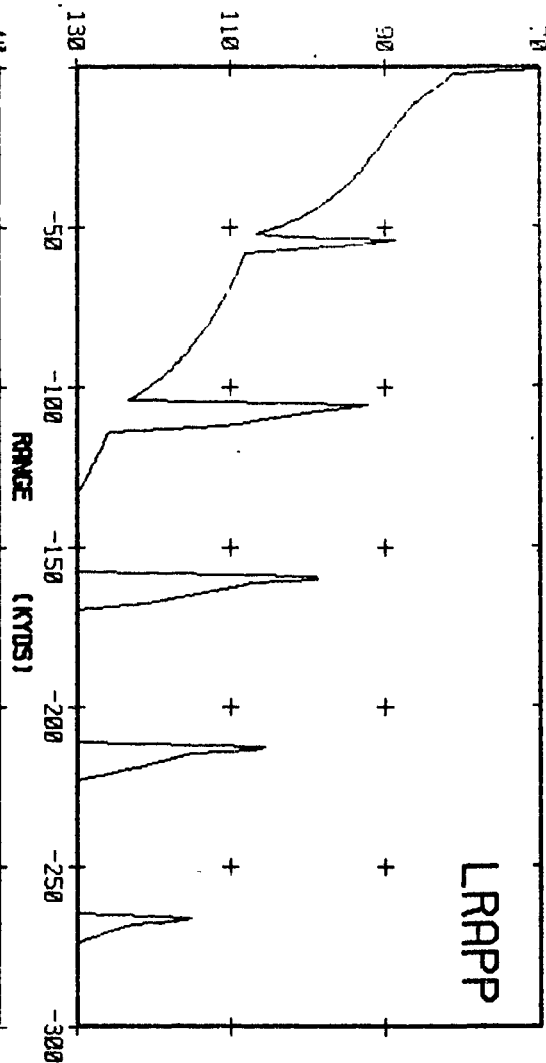
S 20 R 133 F 2000

1450 M/S

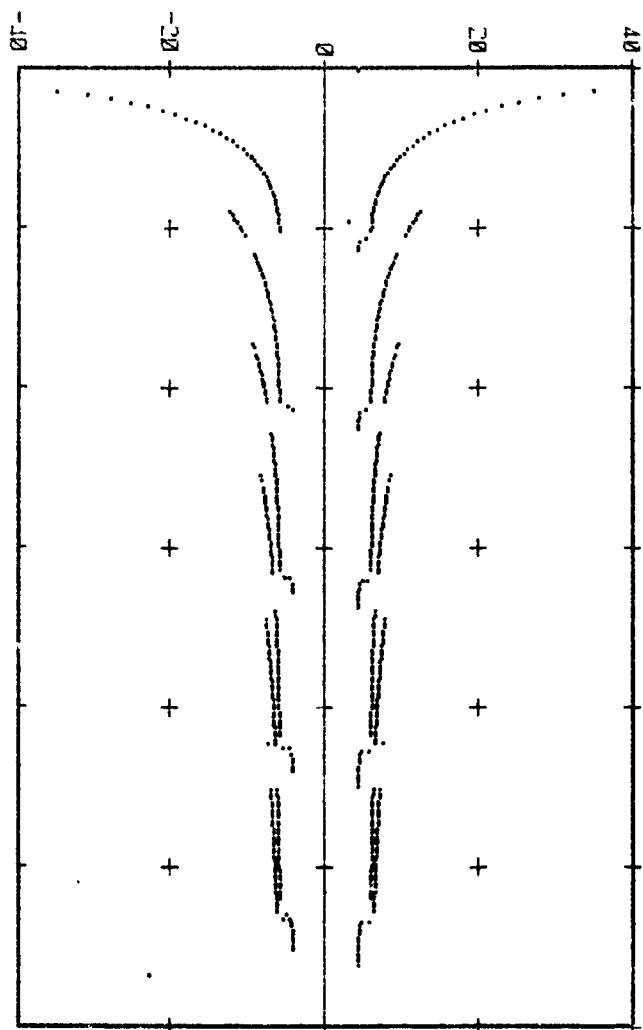
1500

1550

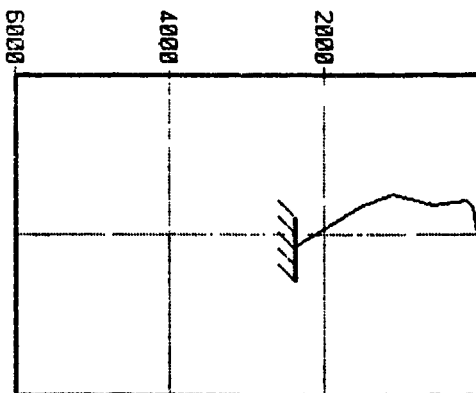
DB LOSS



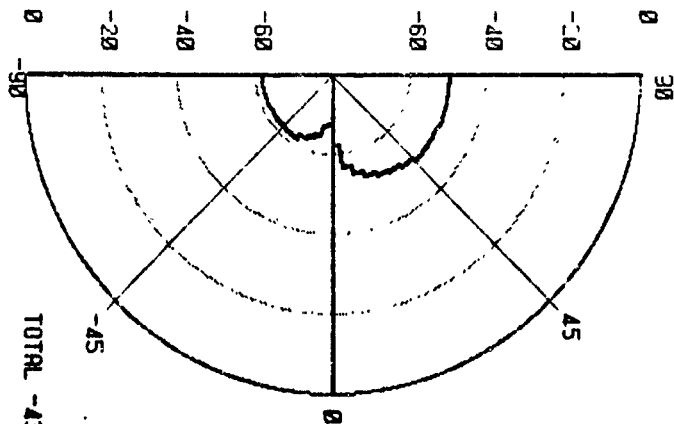
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



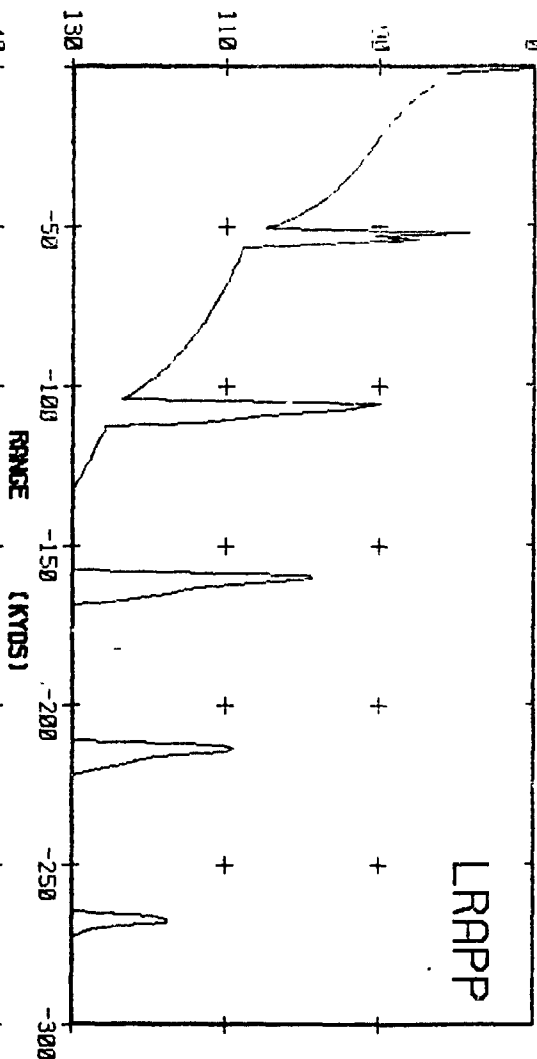
TOTAL -43.7 DB

RRR 4R SUMMER

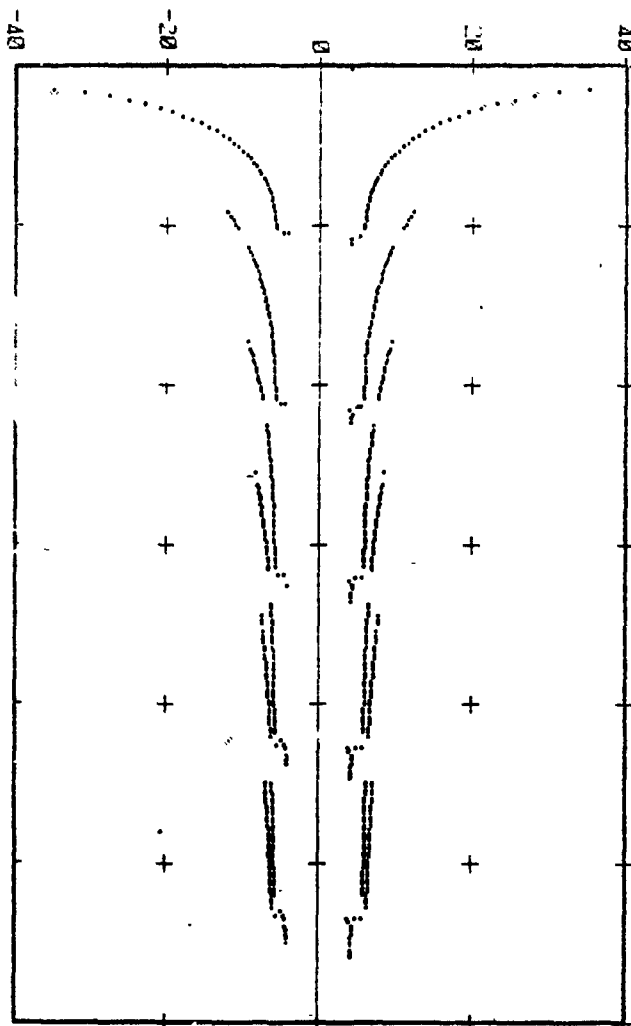
S 50 R 133 F 2000

1450 M/S 1500 1550

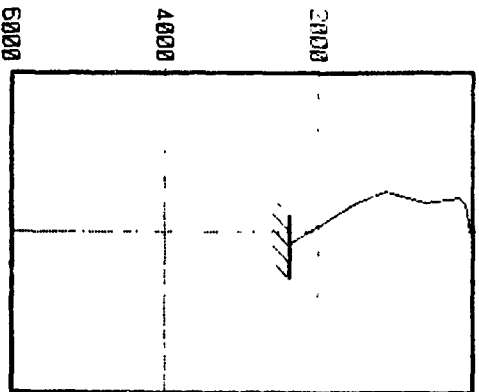
DB LOSS



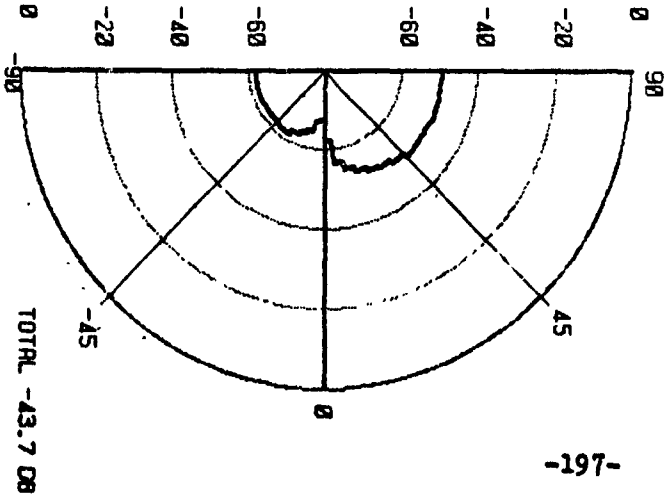
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

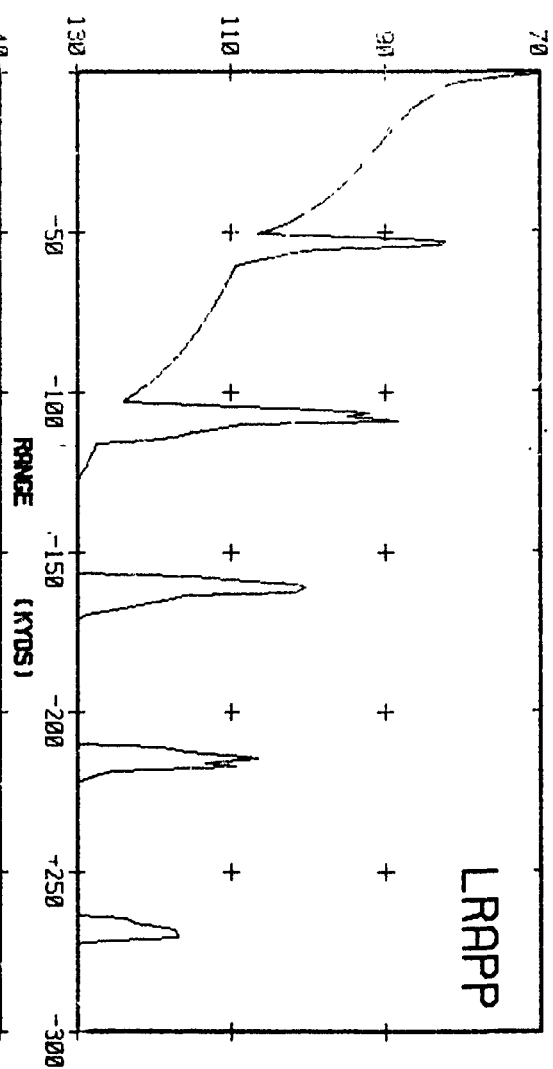


RRR AR SUMMER

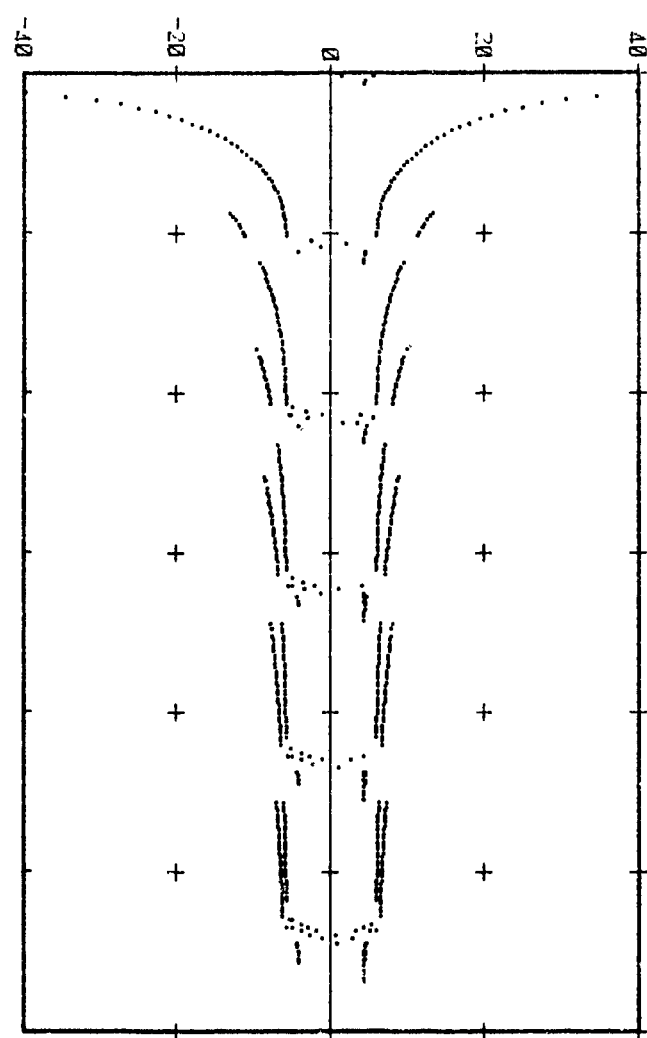
S 233 R 133 F 2800

LRAPP

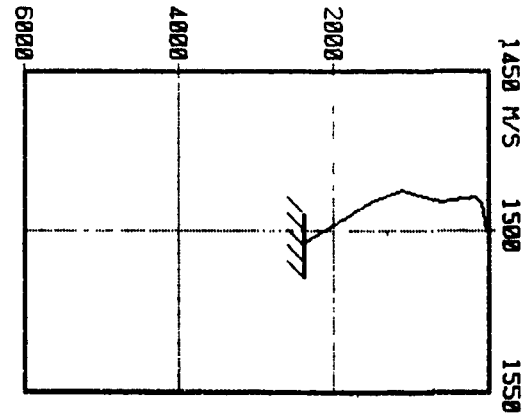
DB LOSS



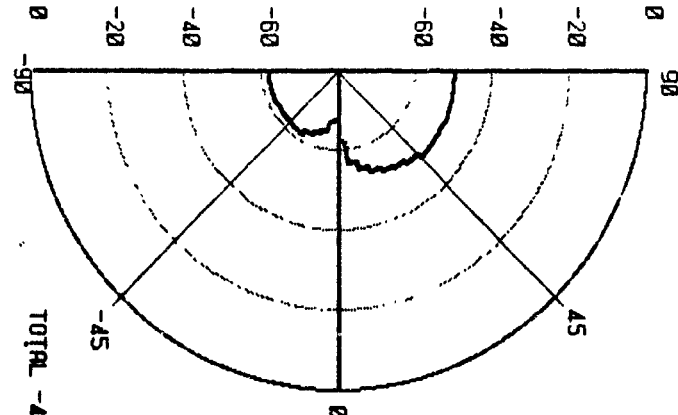
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

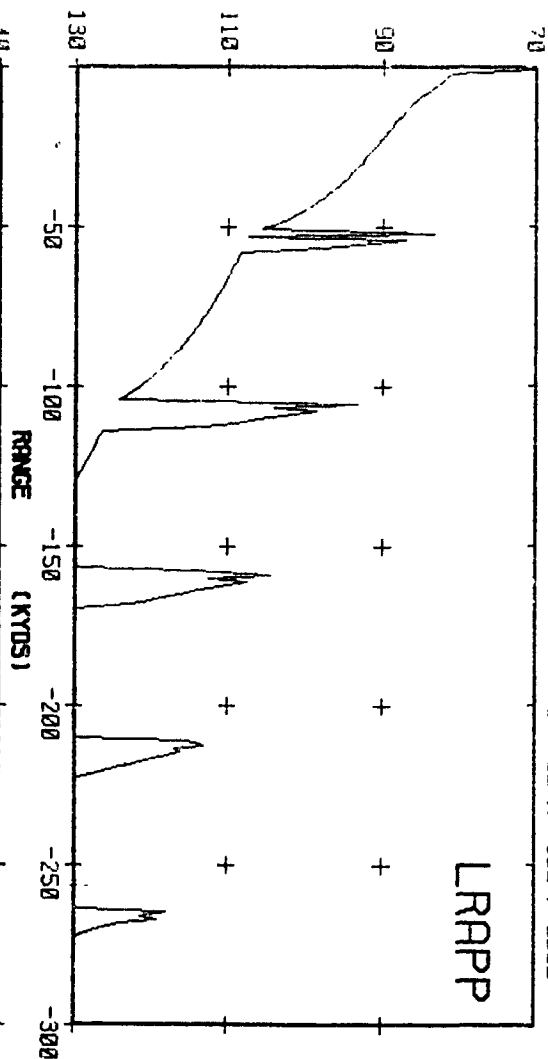


AREA 4A SUMMER

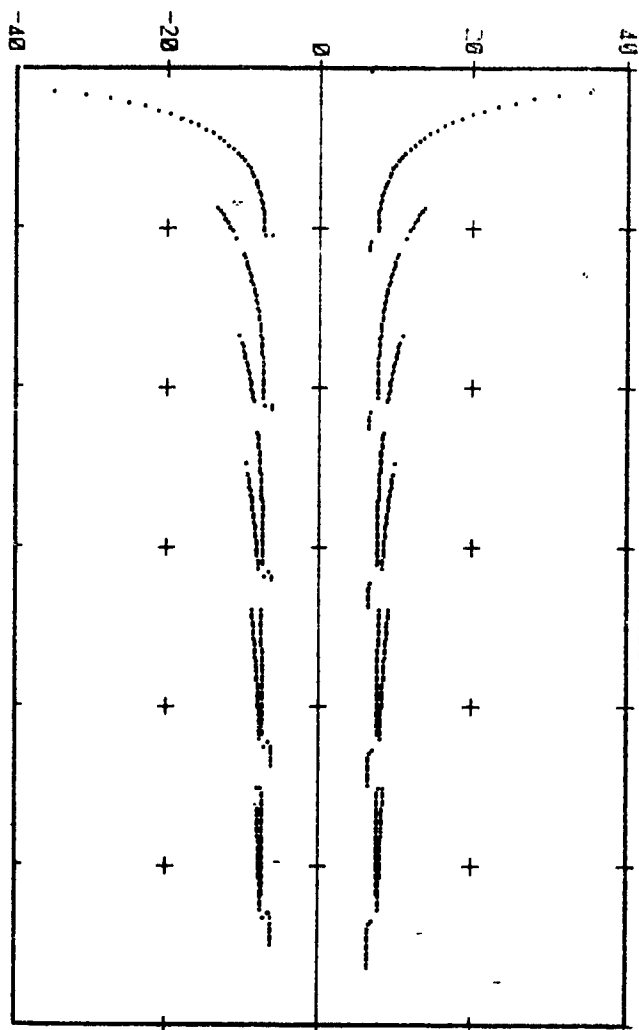
S 20 R 300 F 2000

1450 M/S 1500 1550

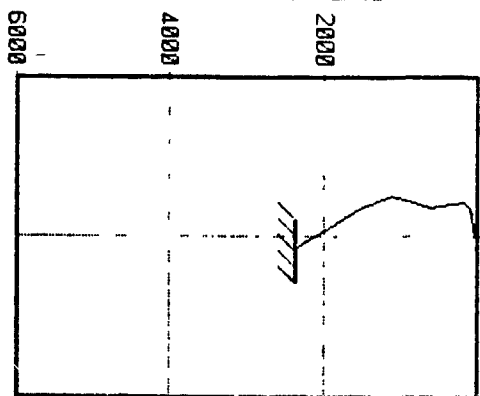
DB LOSS



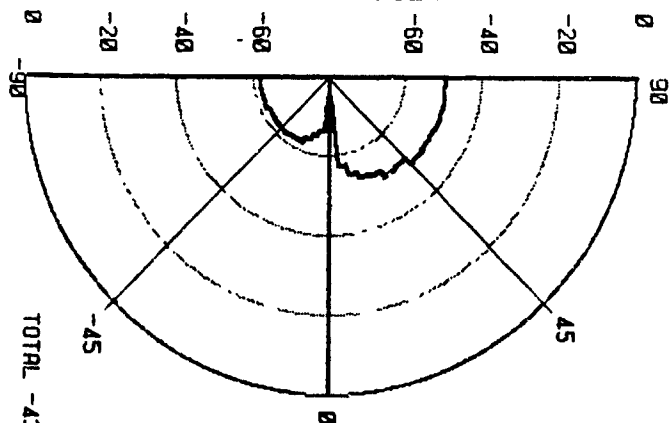
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



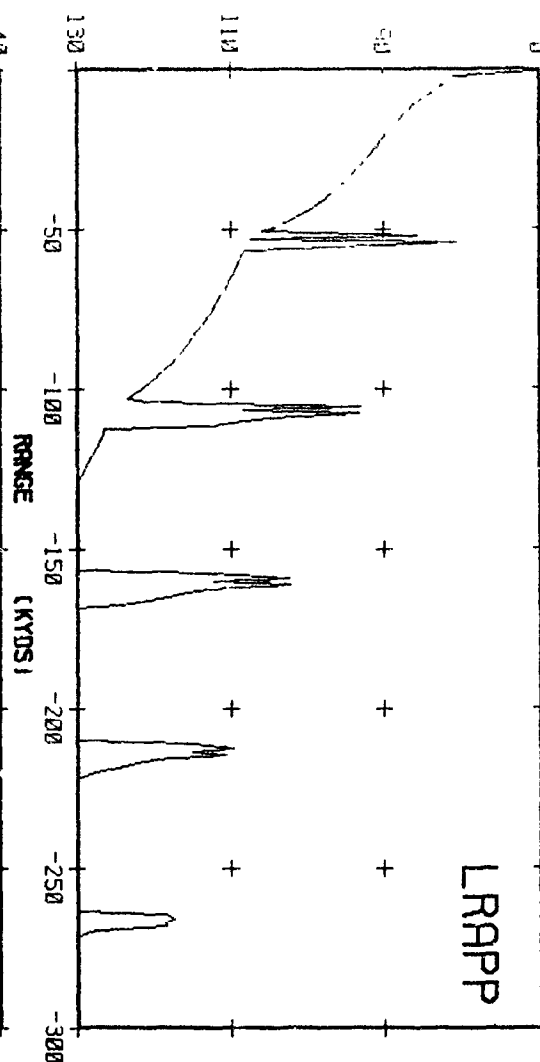
ARRR AR SUMMER

S 50 R 300 F 2000

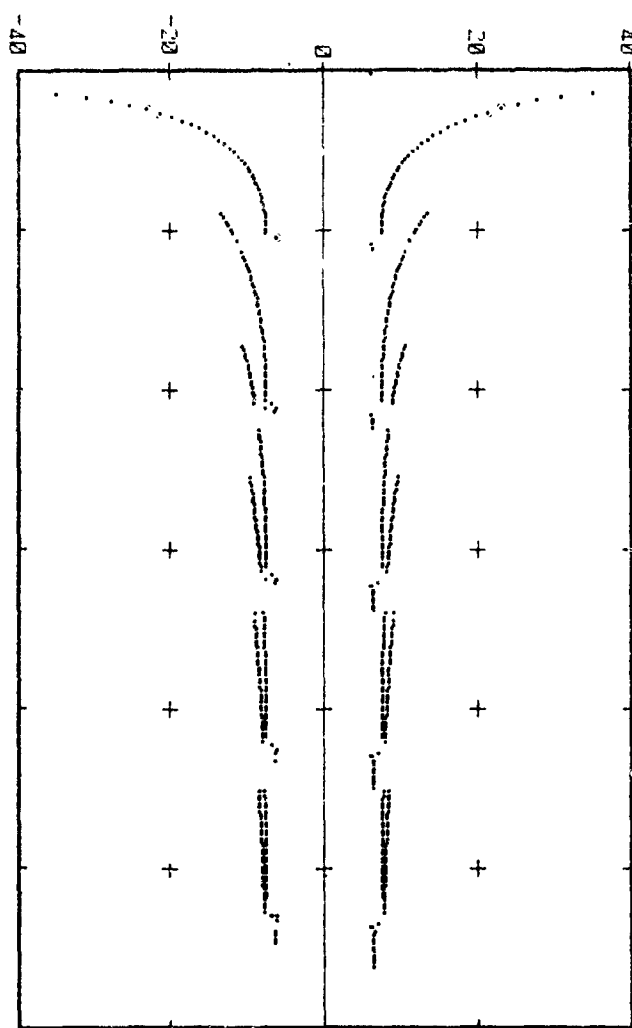
1450 M/S

1550

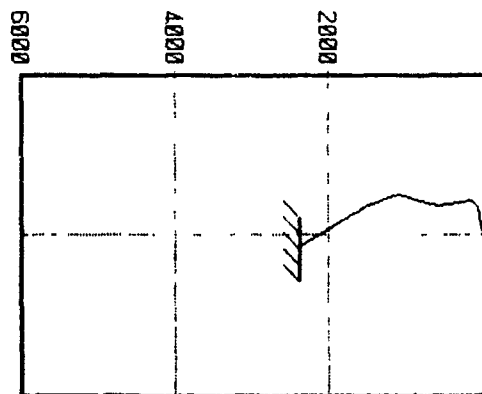
DB LOSS



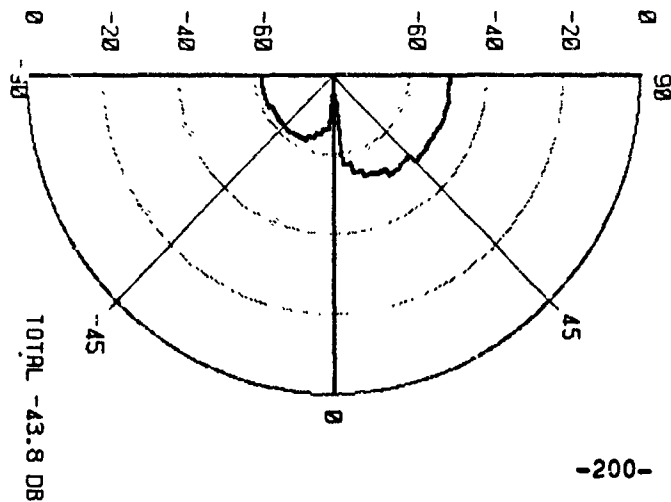
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

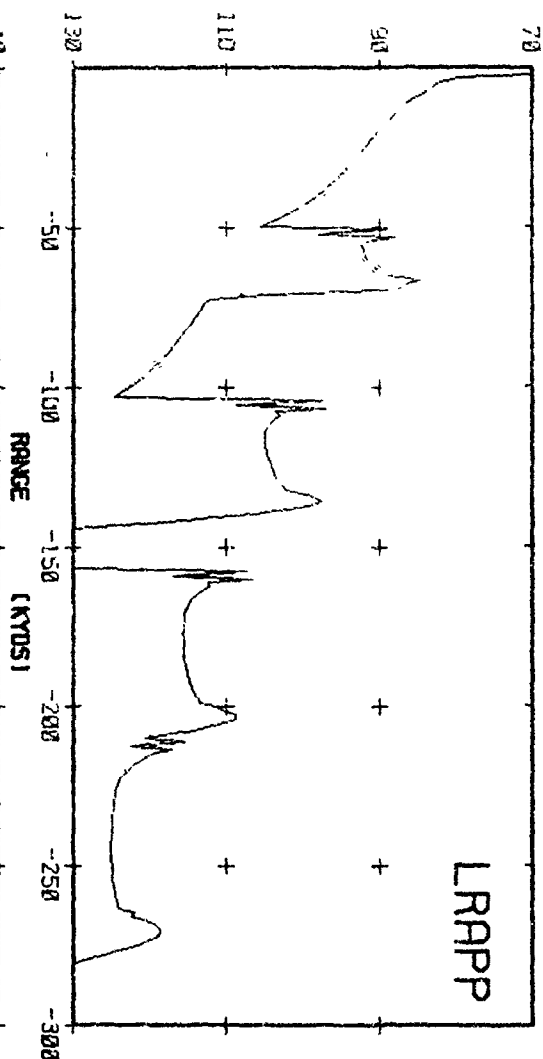


RPER AR SUMMER

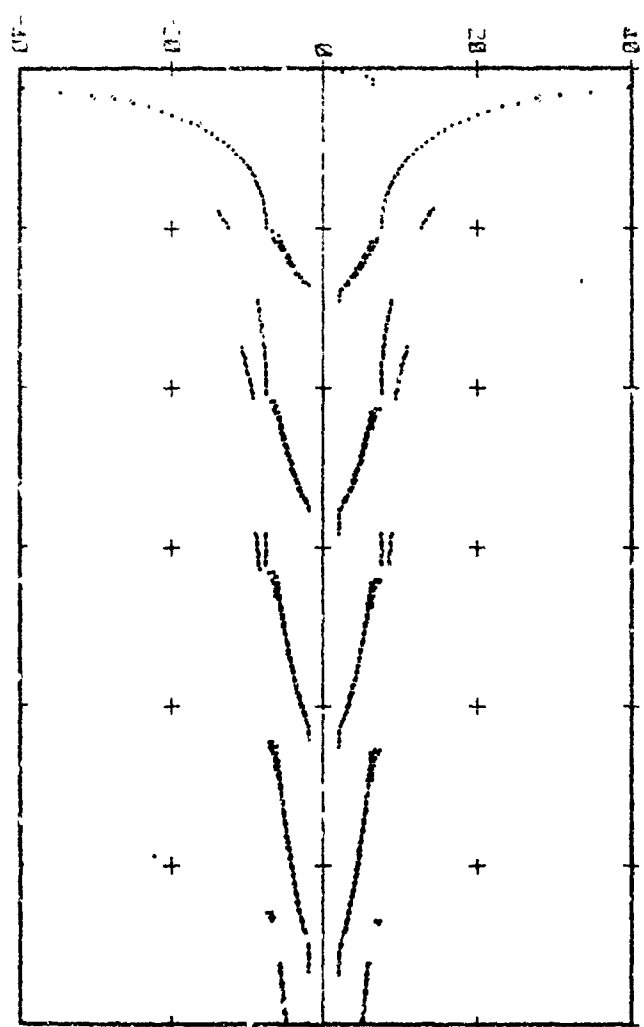
S 233 R 300 F 2000

1450 M/S 1500 1550

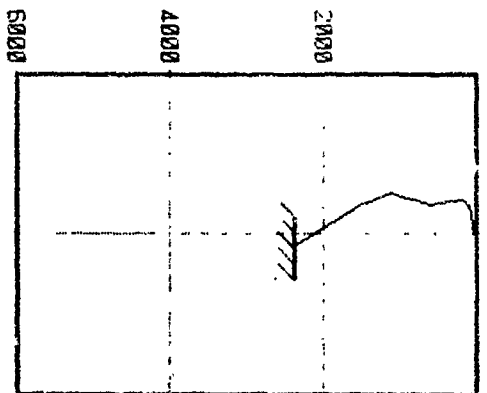
DB LOSS



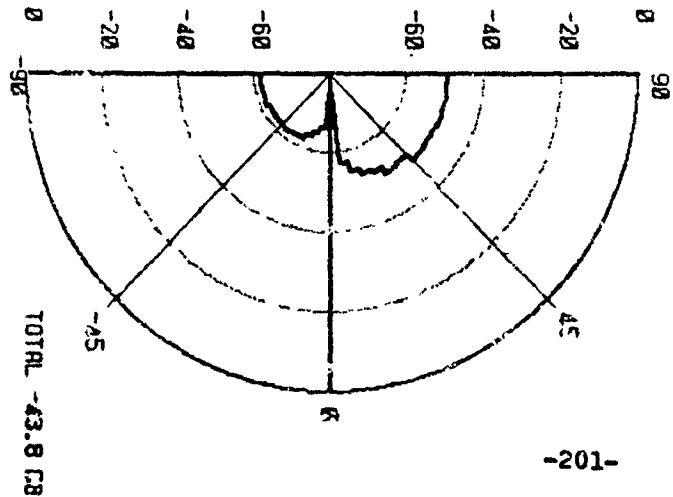
ARRIVAL ANGLE



DEPTH IN METERS



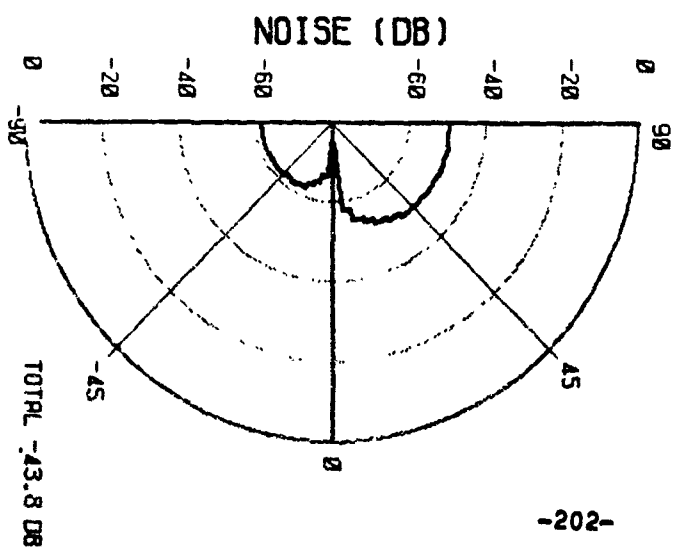
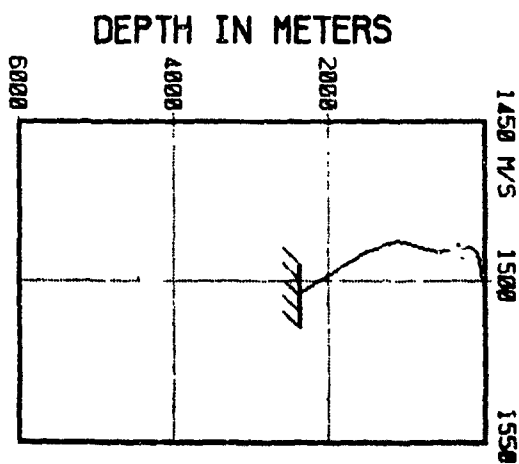
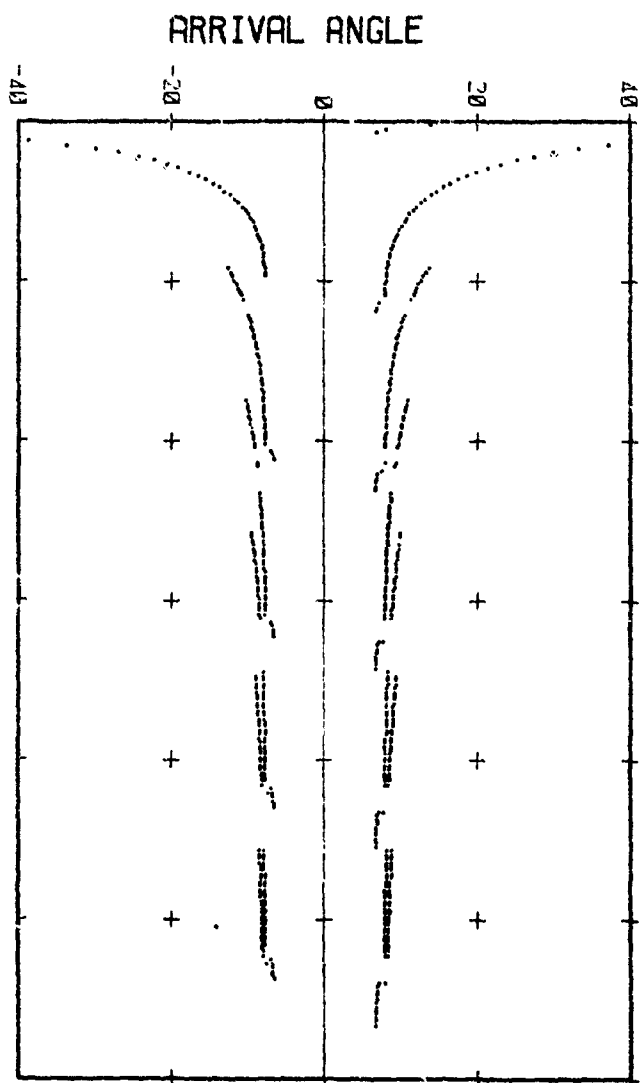
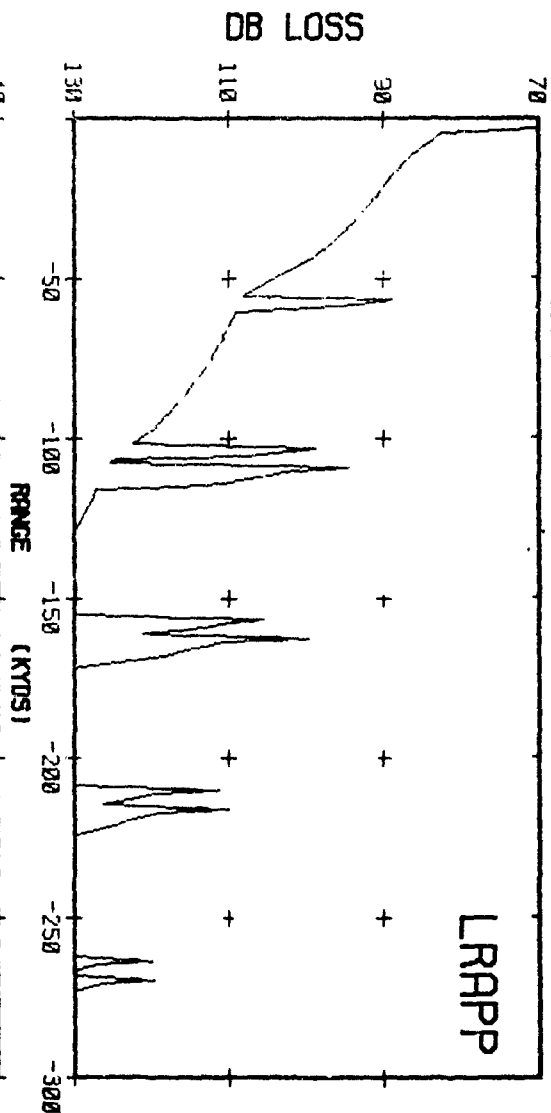
NOISE (DB)



RRR AR SUMMER

S 28 R 1000 F 2000

LRAPP

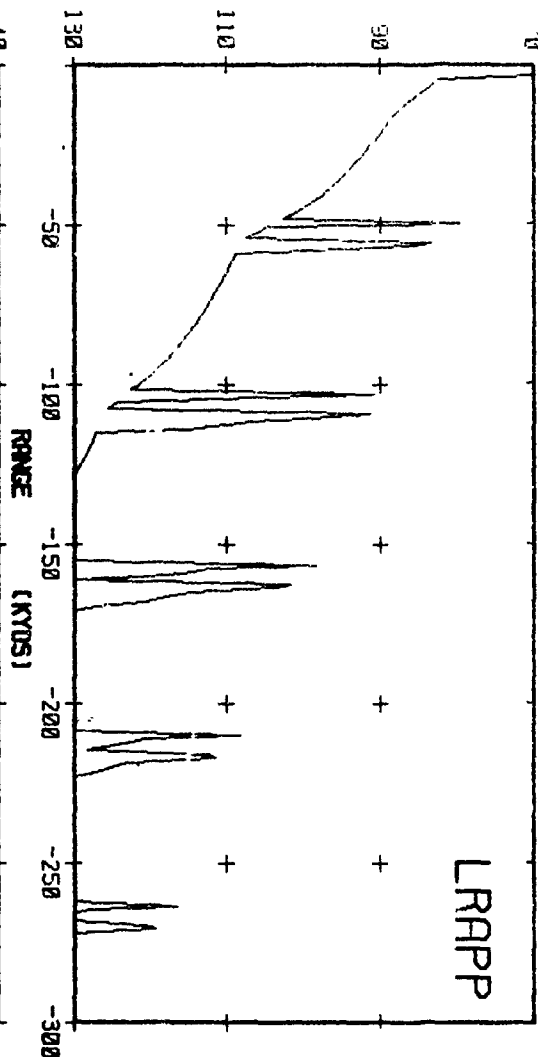


RIVER AR SUMMER

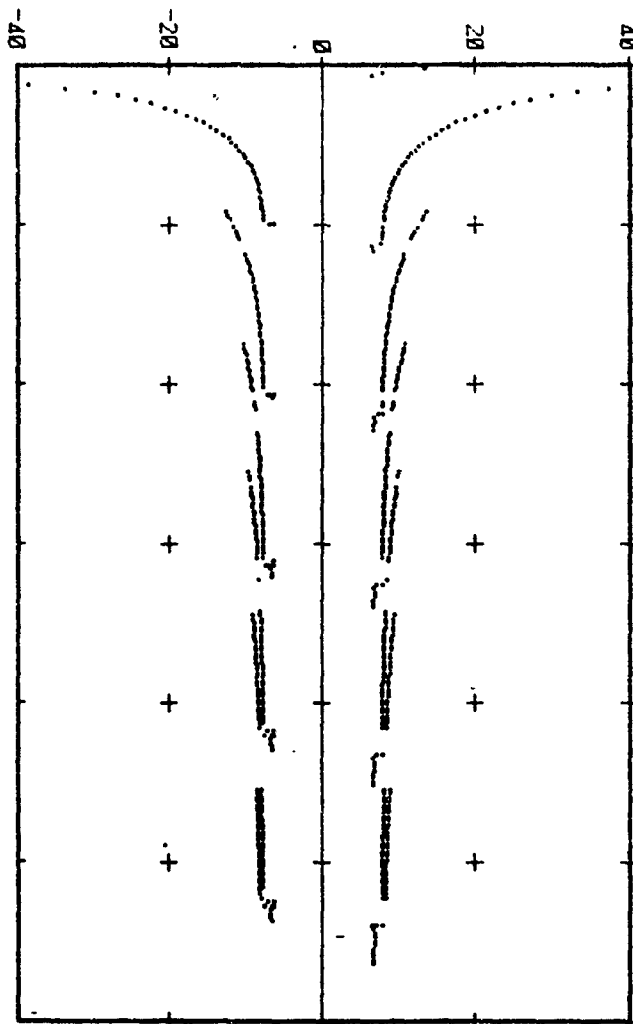
S 50 R 1000 F 2000

1450 M/S 1500 1550

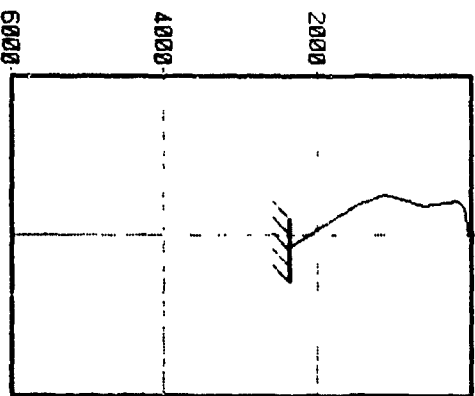
DB LOSS



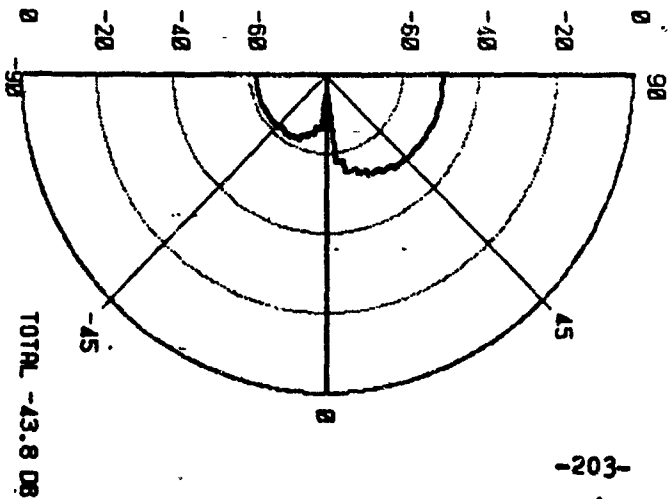
ARRIVAL ANGLE



DEPTH IN METERS



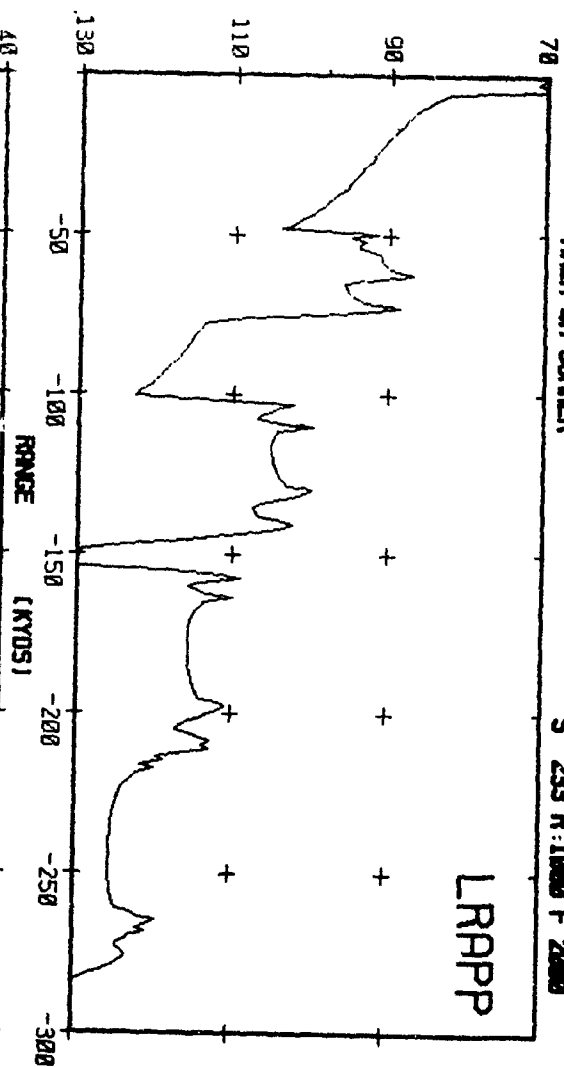
NOISE (DB)



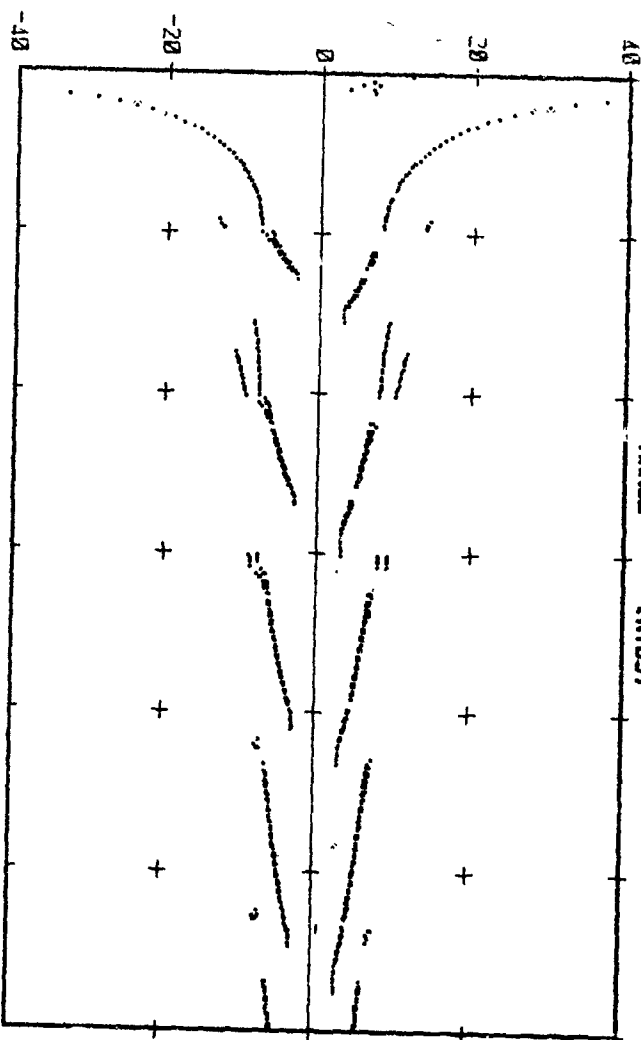
FREE AIR SURFER

S 293 R:1000 F 2000

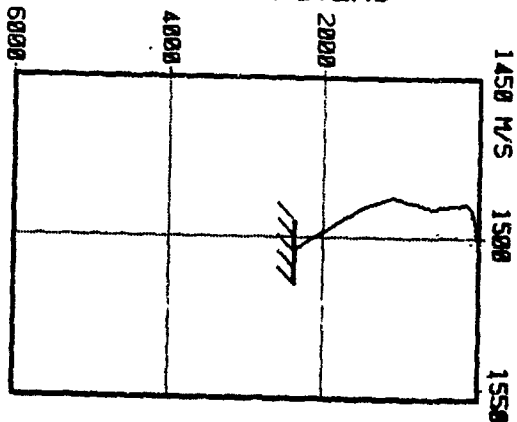
DB LOSS



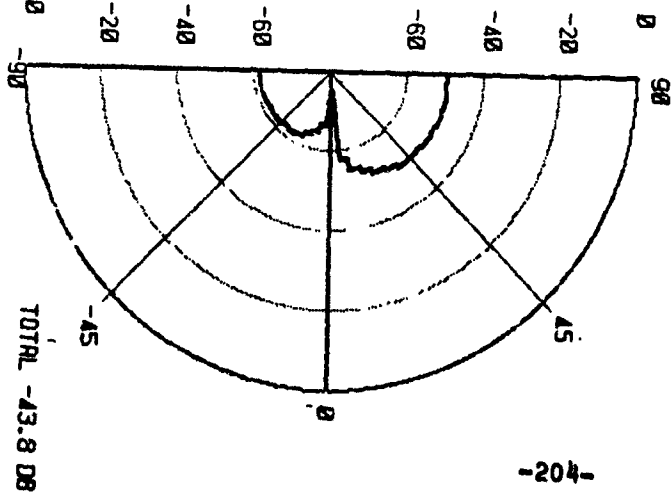
ARRIVAL ANGLE



DEPTH IN METERS



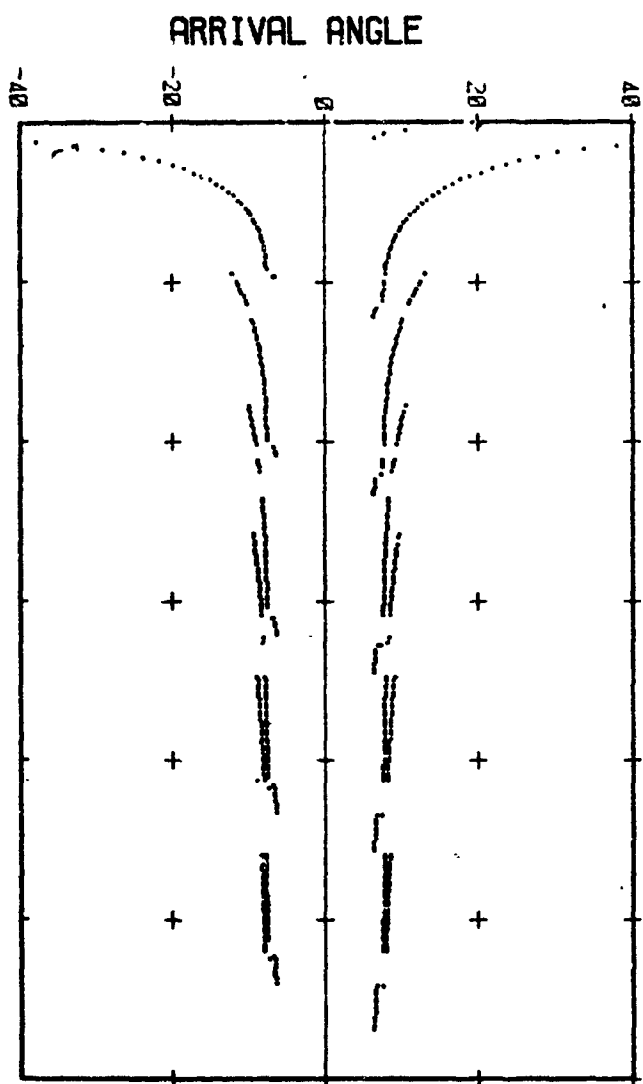
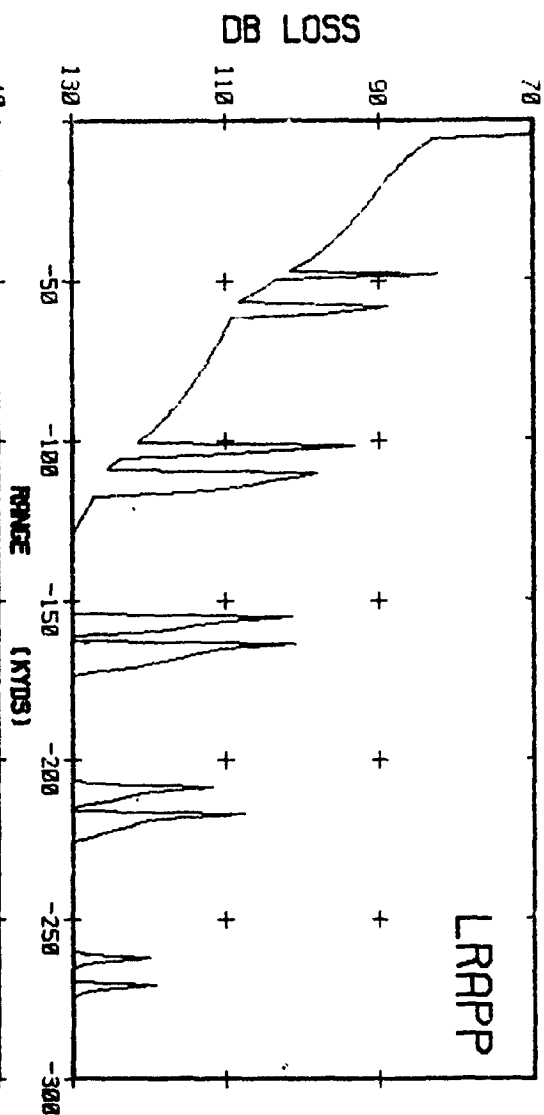
NOISE (DB)



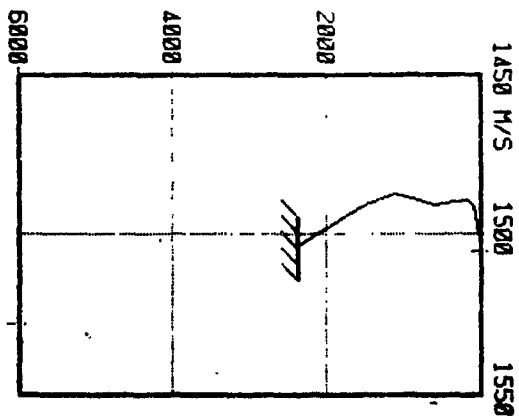
RRR 4R SUMMER

S 20 R 1500 F 2000

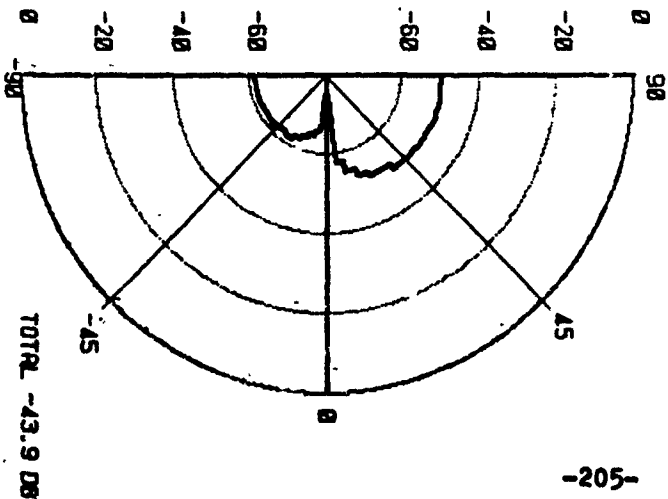
LRAPP



DEPTH IN METERS



NOISE (DB)

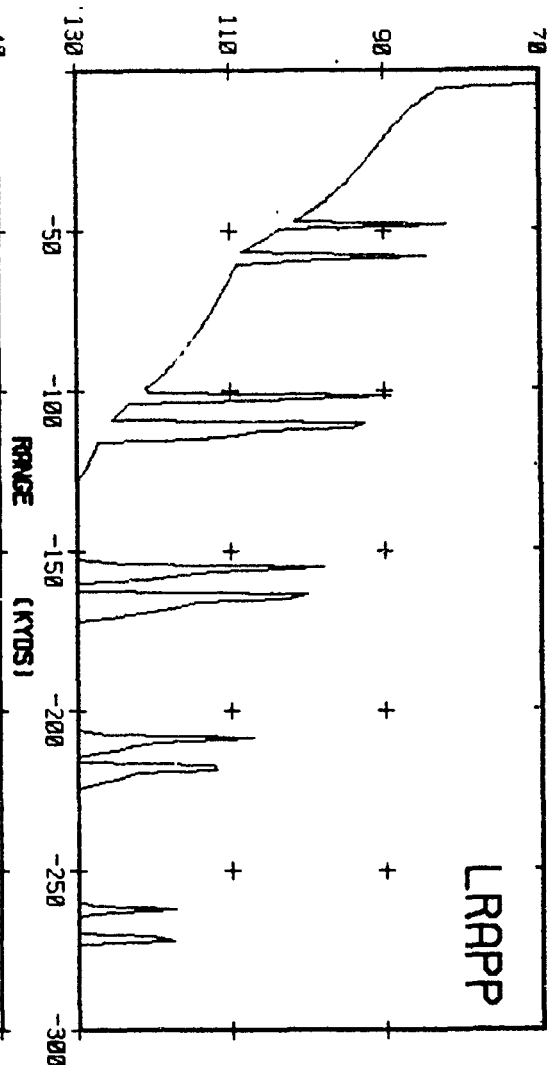


FRER AR SUMMER

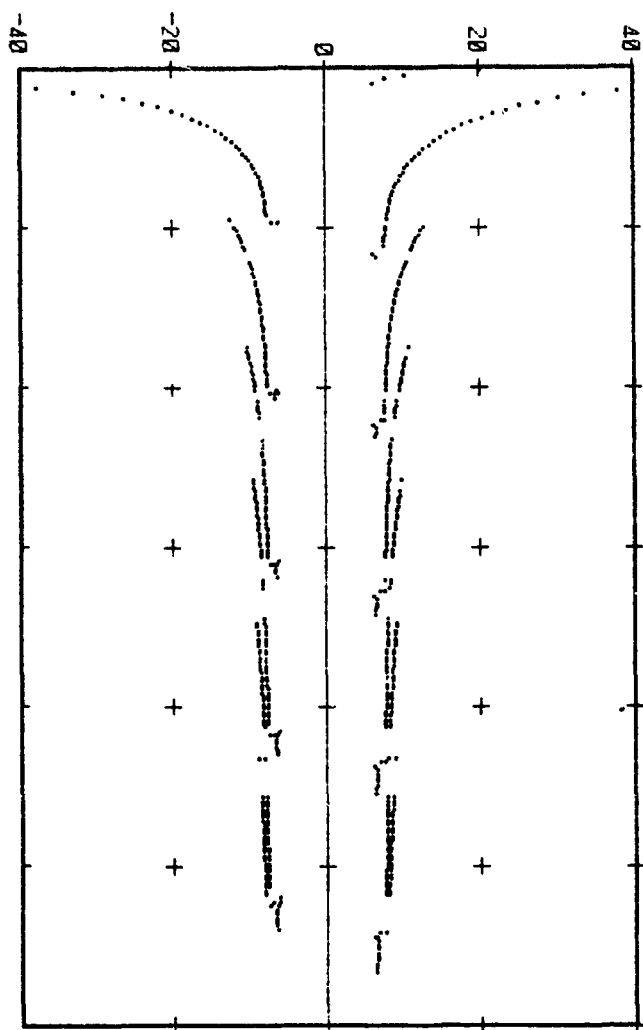
3 50 R 1500 F 2000

LRAPP

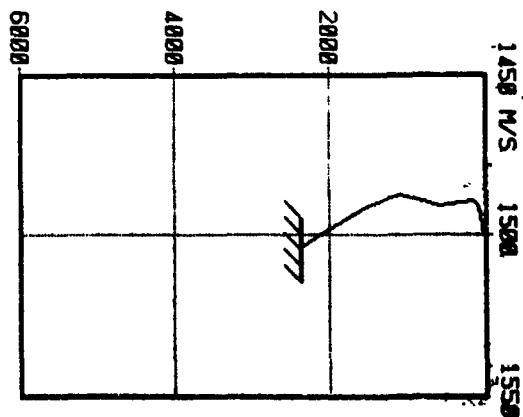
DB LOSS



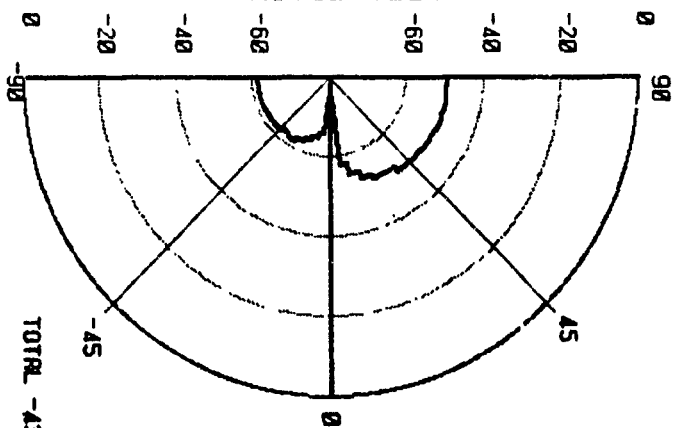
ARRIVAL ANGLE



DEPTH IN METERS



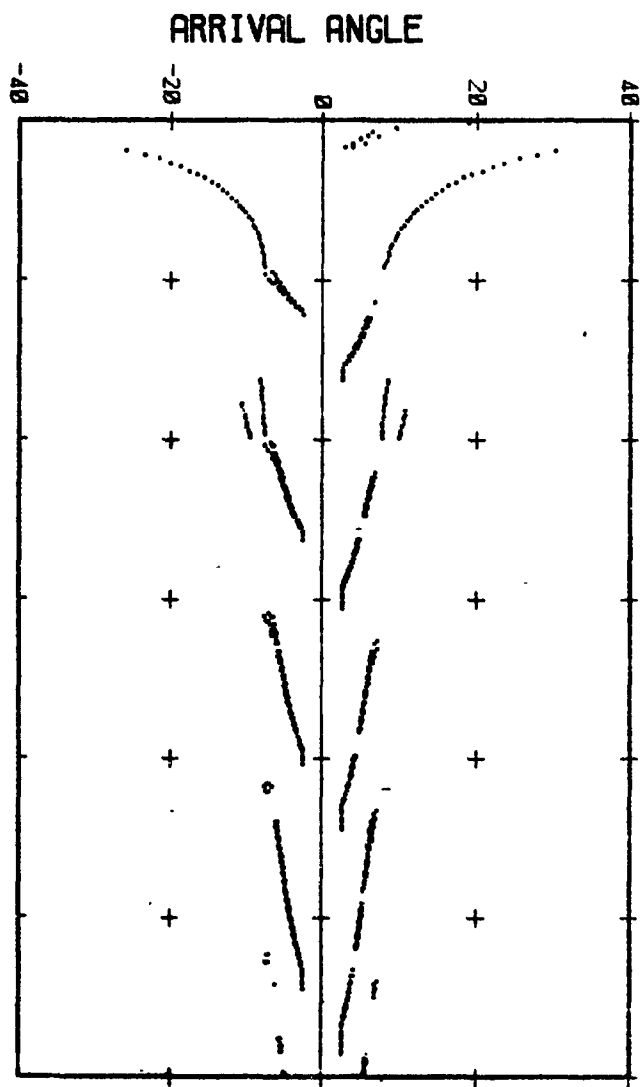
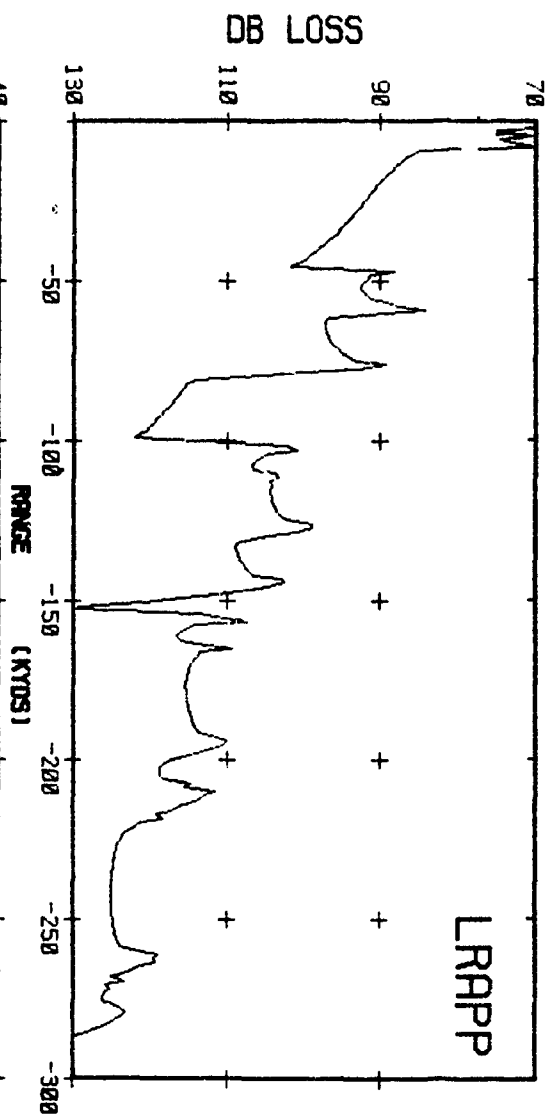
NOISE (DB)



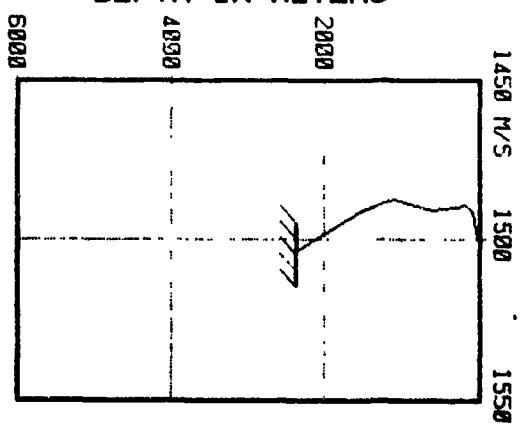
PRER 4R SUMMER

S 233 R 1500 F 2000

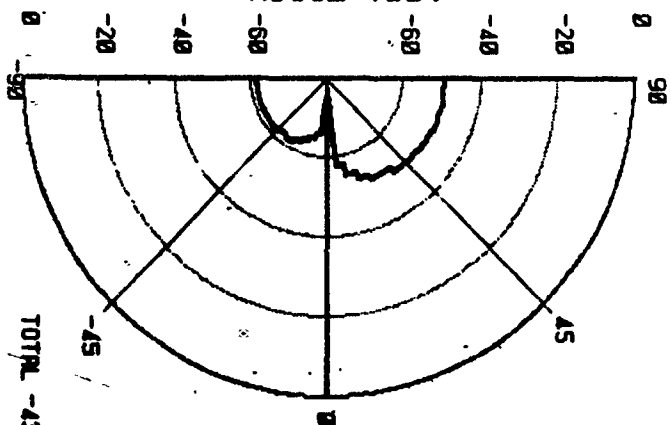
LRAPP

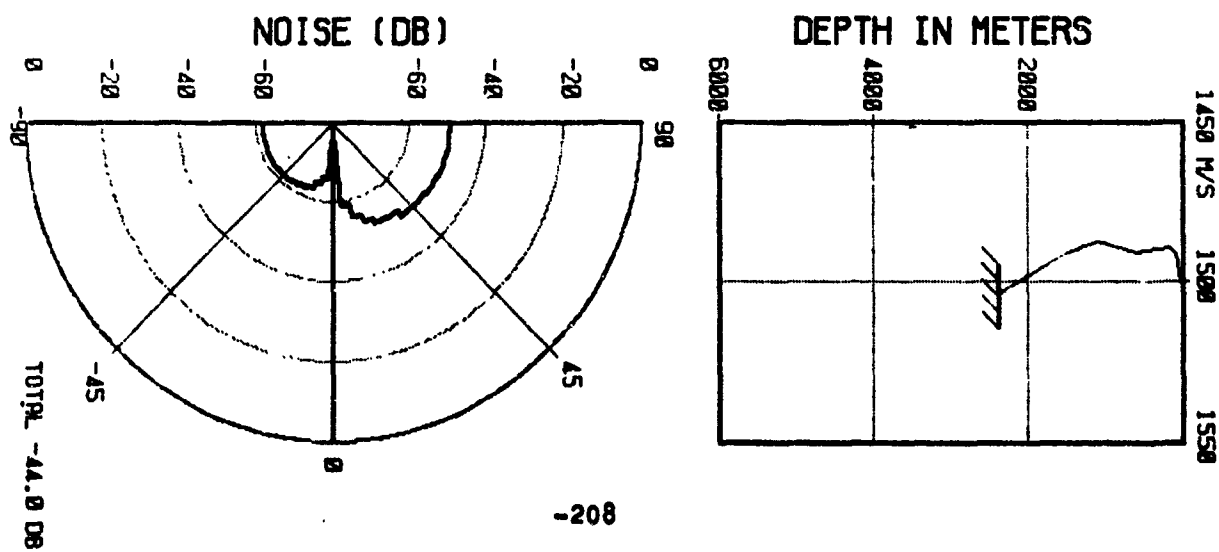
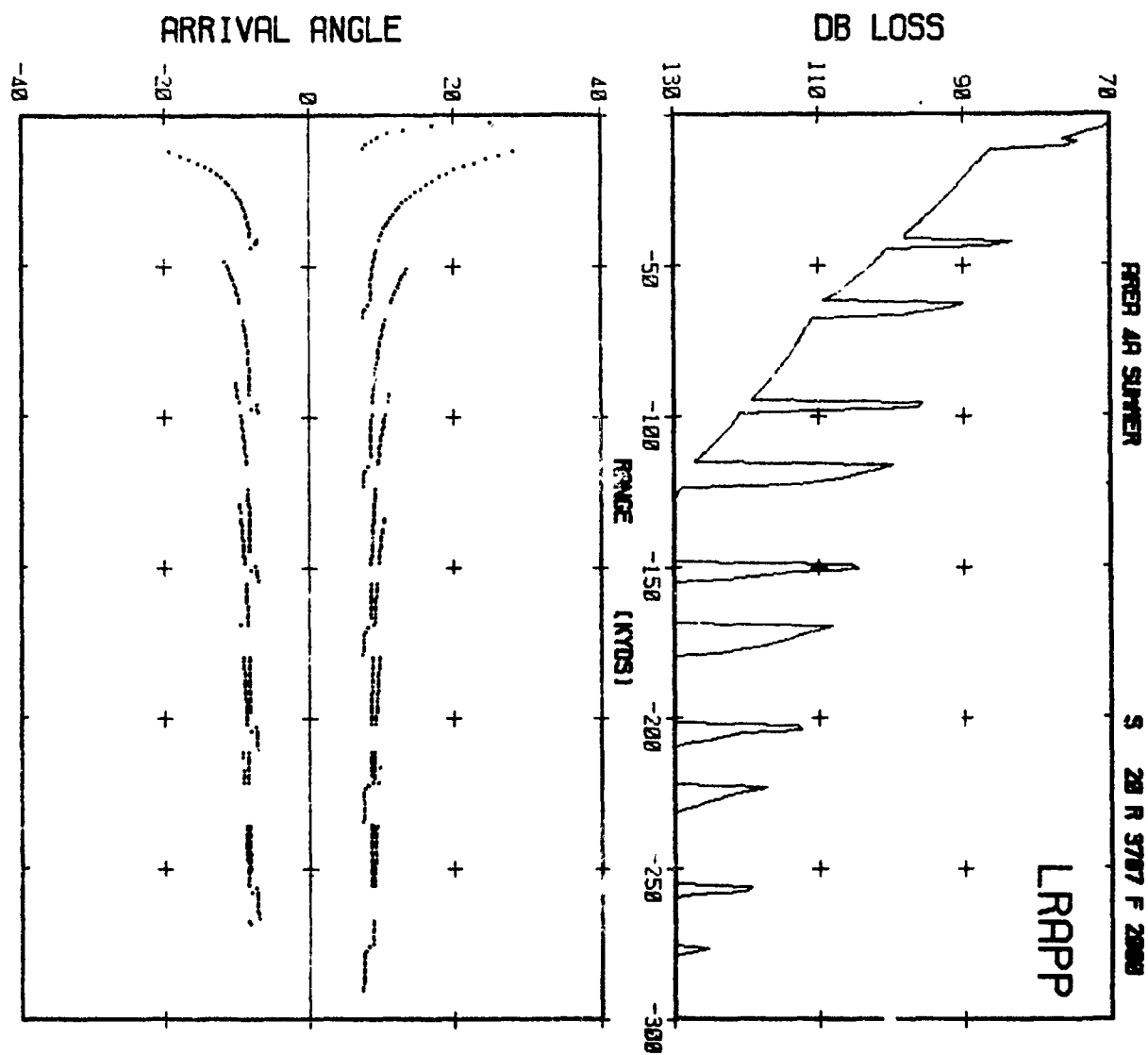


DEPTH IN METERS



NOISE (DB)



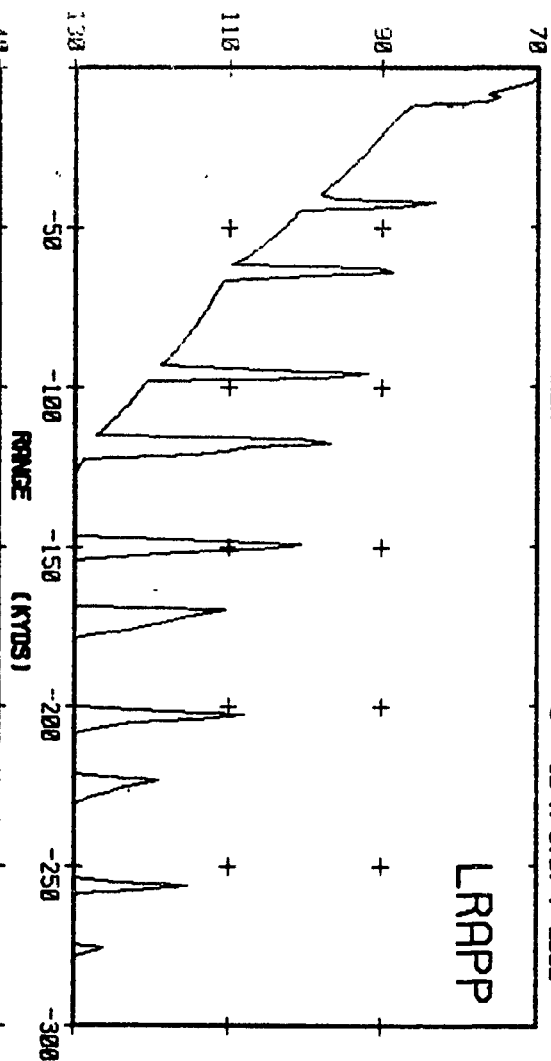


RRR AR SUMMER

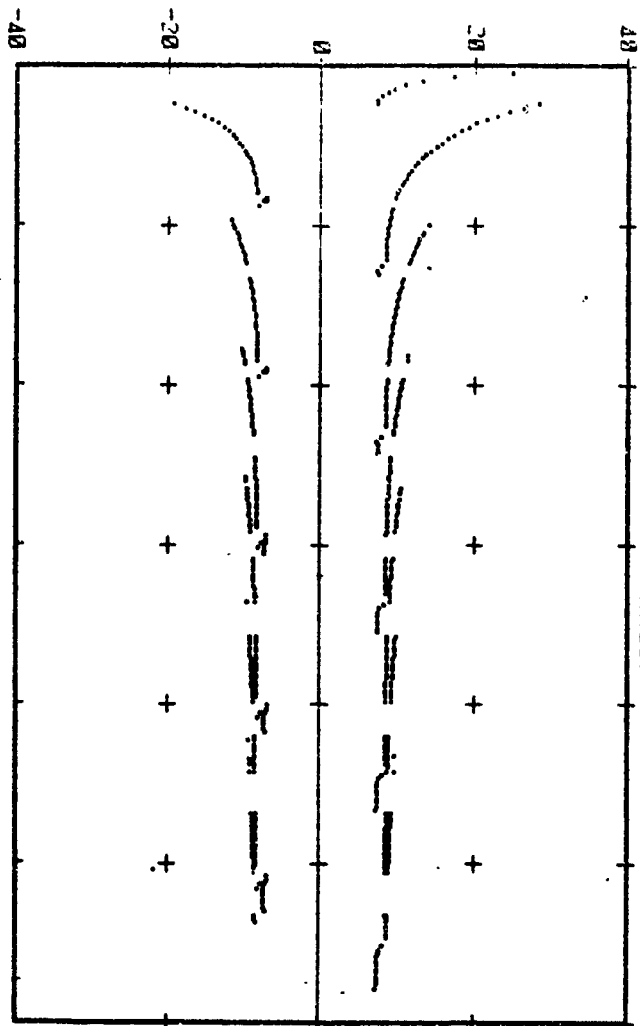
S 50 R 3707 F 2000

LRAPP

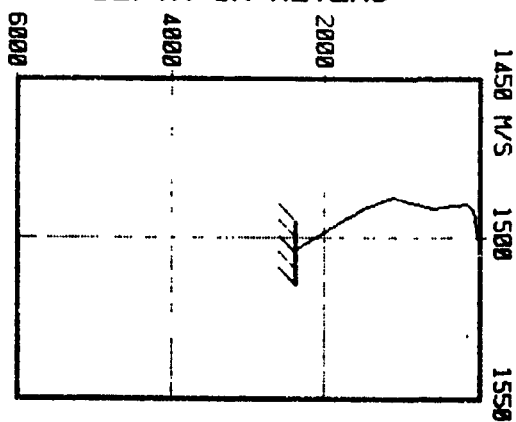
DB LOSS



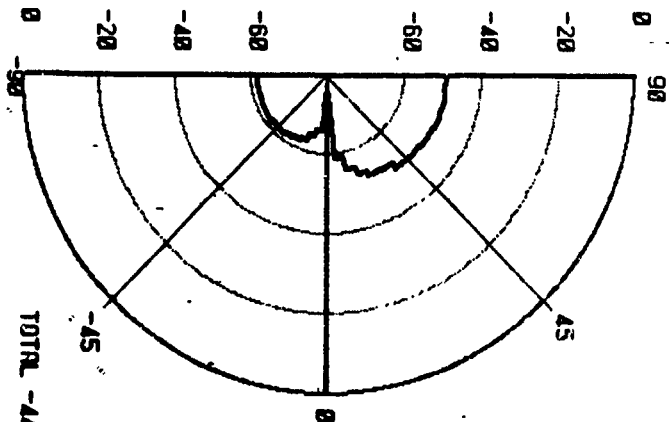
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



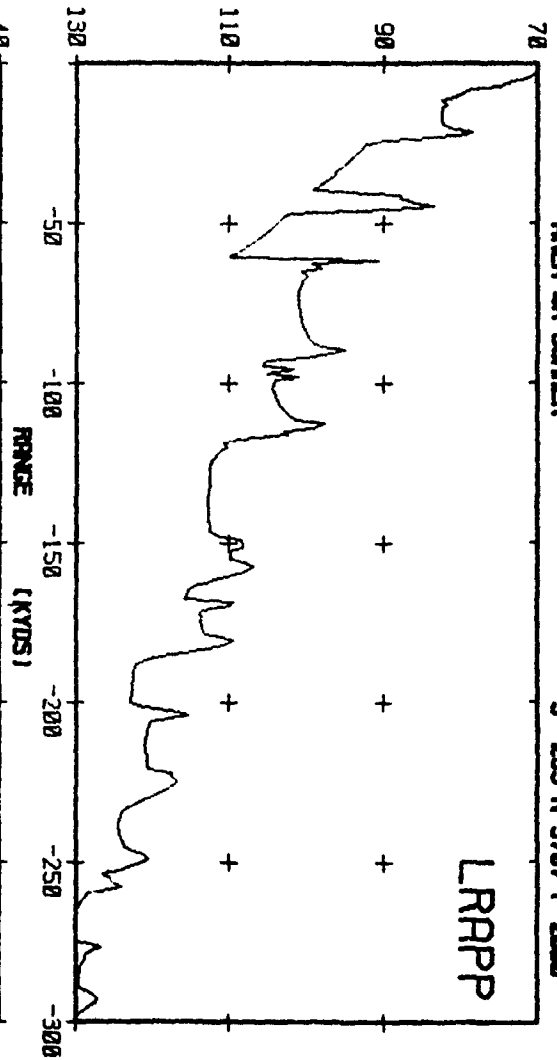
TOTAL -44.8 DB

PRER AIR SUMMER

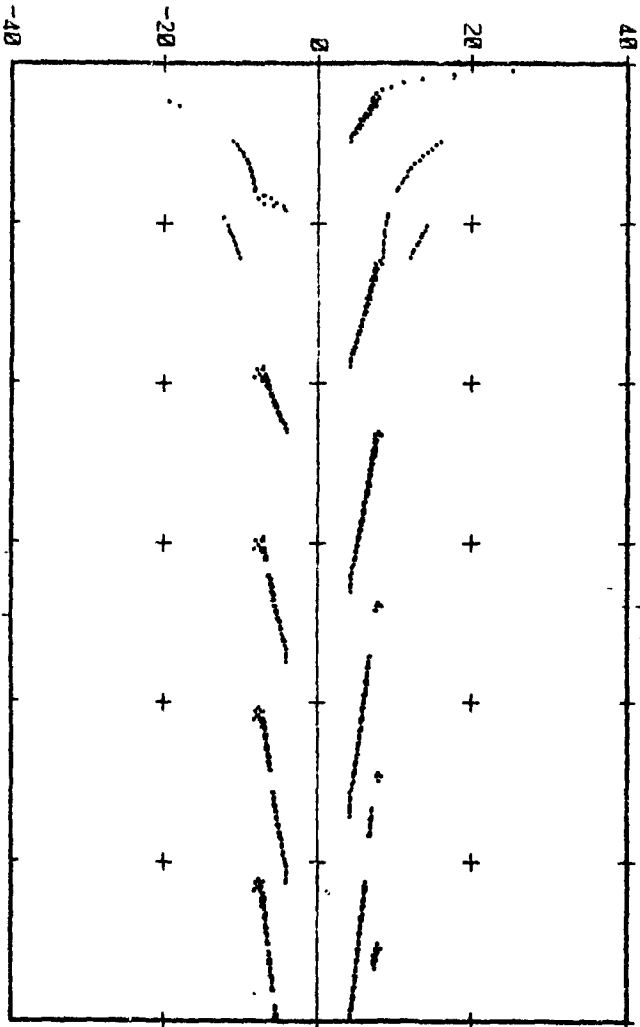
S 233 R 3707 F 2000

LRAPP

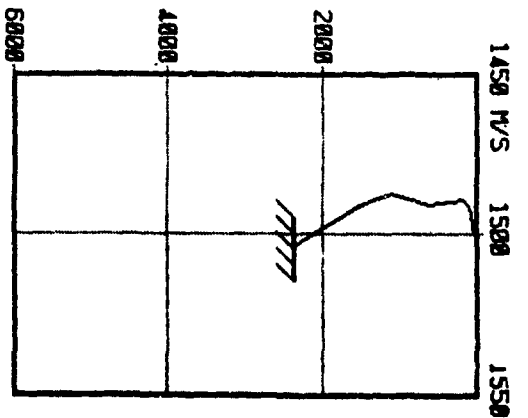
DB LOSS



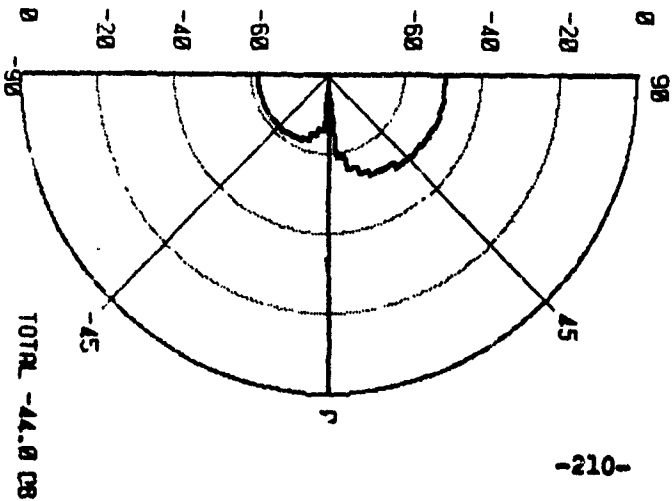
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

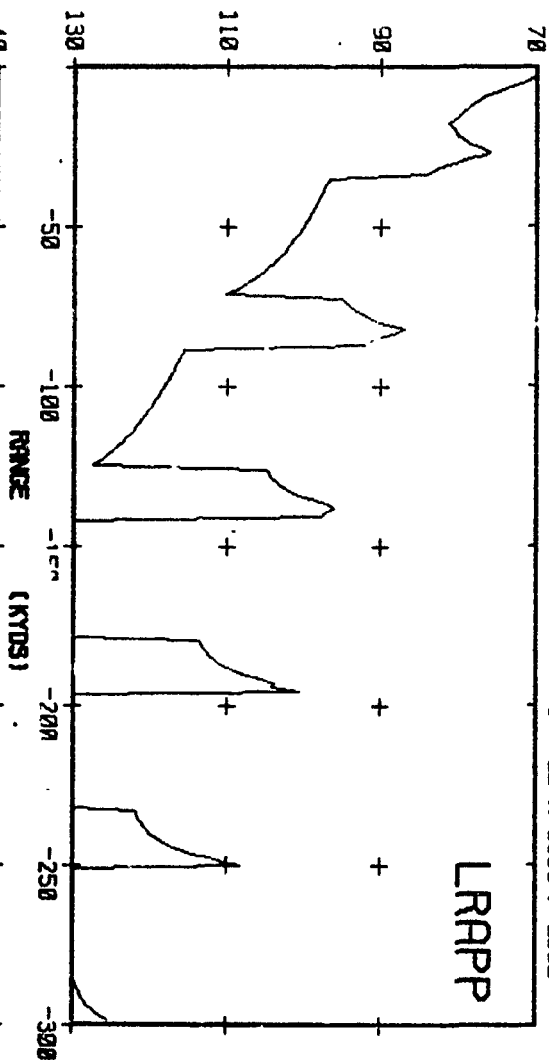


PRER 4R SUMMER

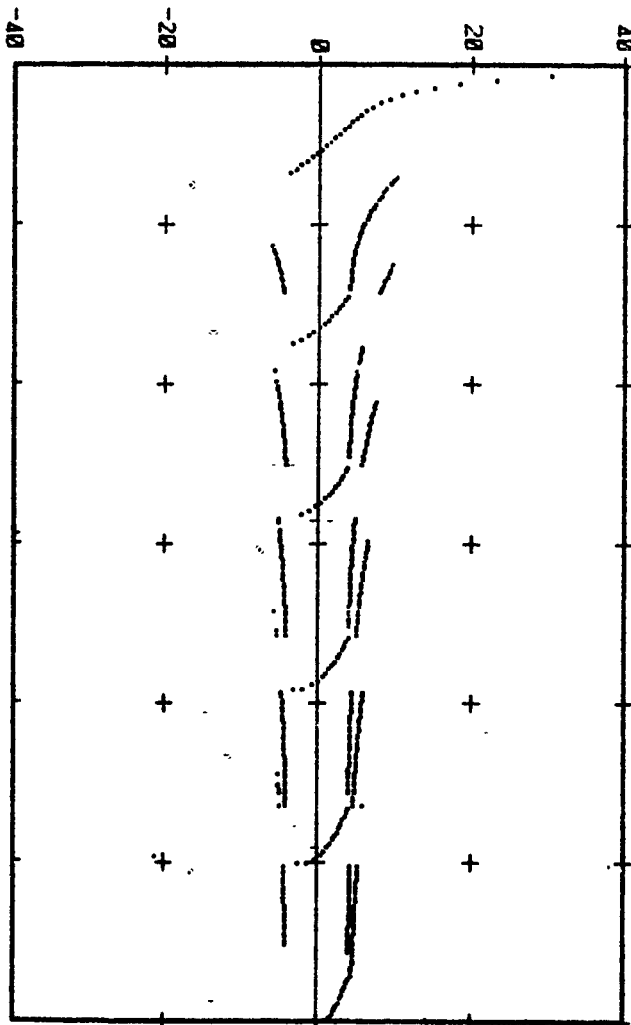
20 R 0956 F 2080

LRAPP

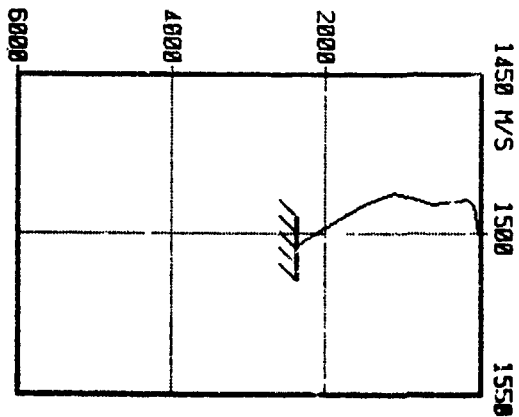
DB LOSS



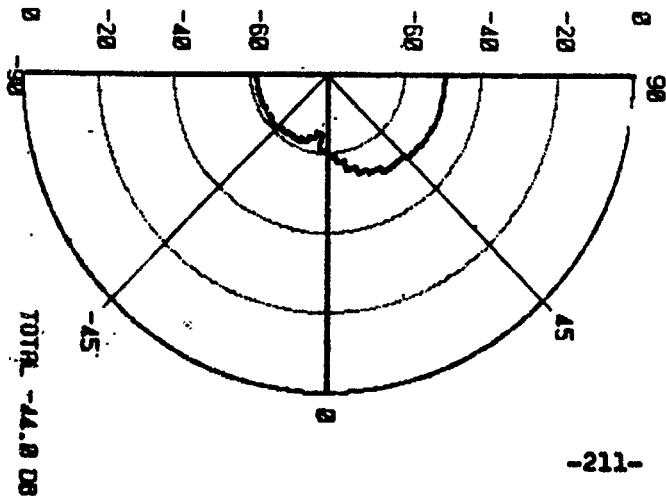
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

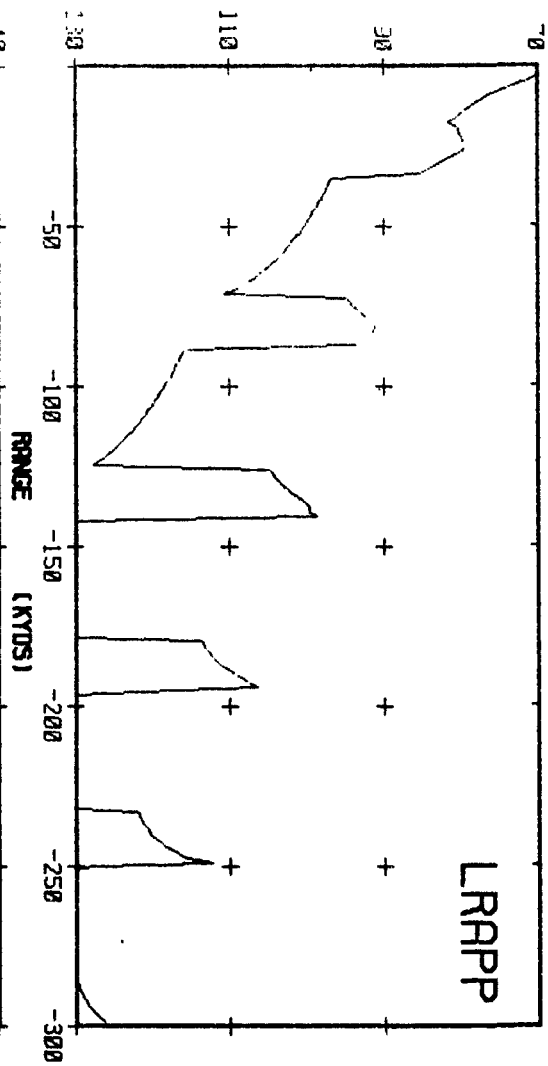


RRER 40 SUMMER

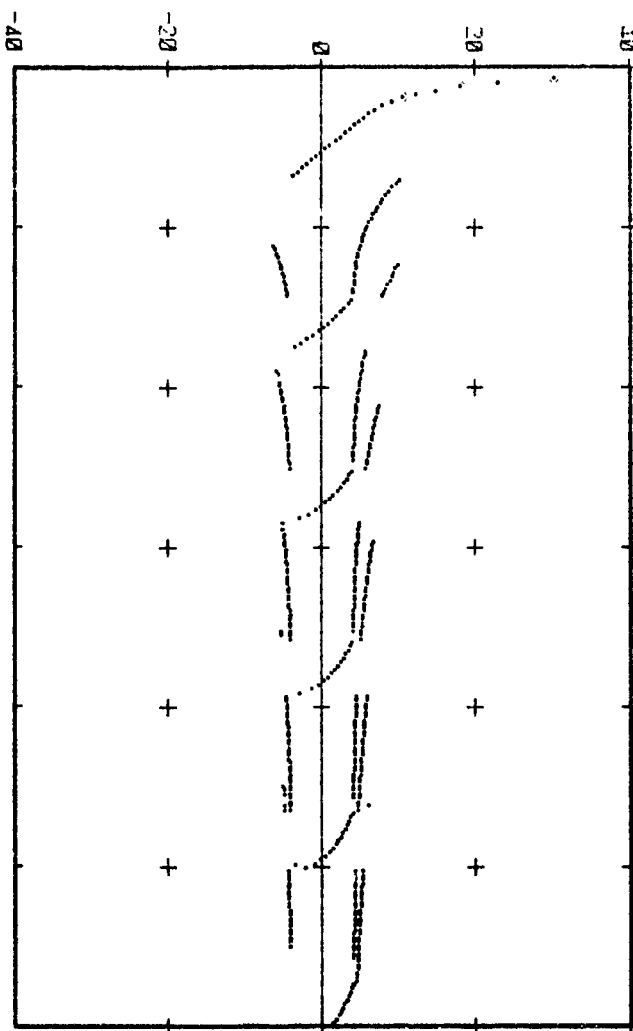
S 50 R 0928 F 2000

1450 M/S 1500 1550

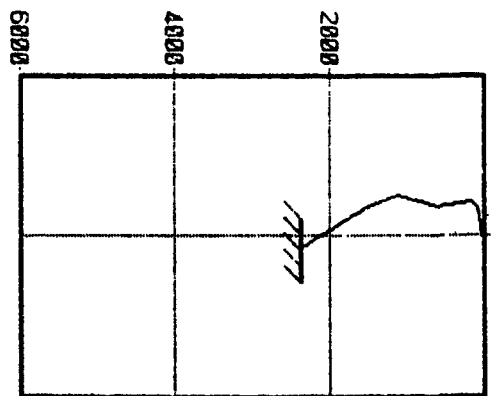
DB LOSS



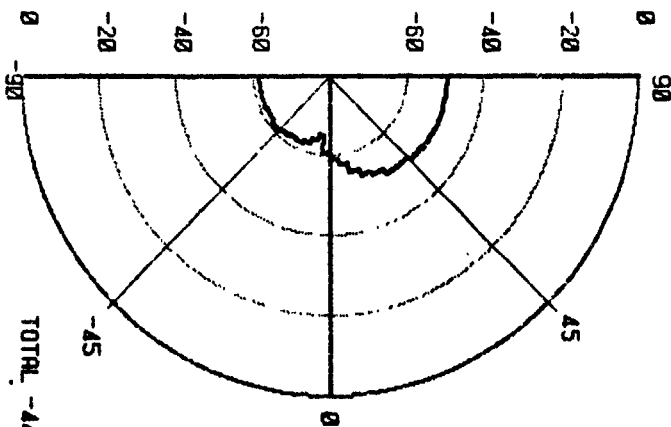
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

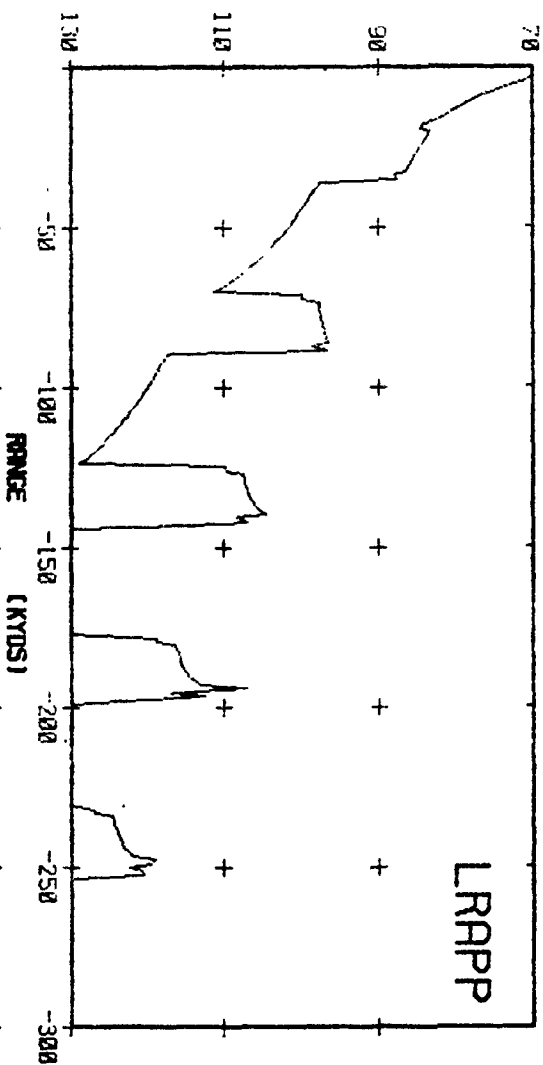


PRER AIR SUMMER

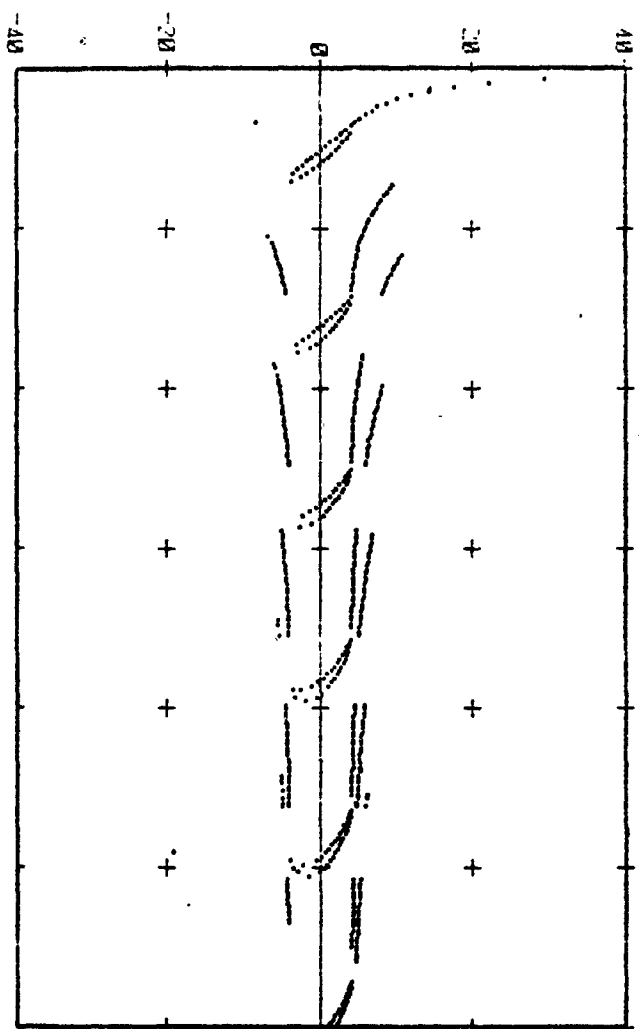
S 253 R 6958 F 20000

1450 M/S 1500 1550

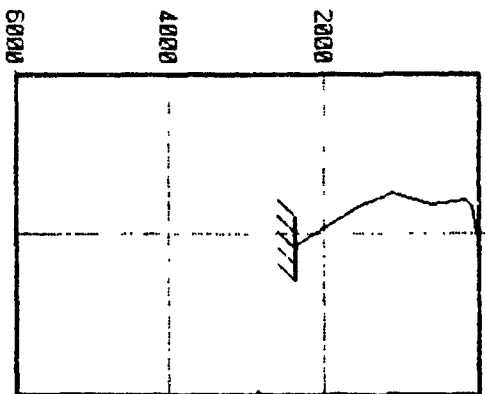
DB LOSS



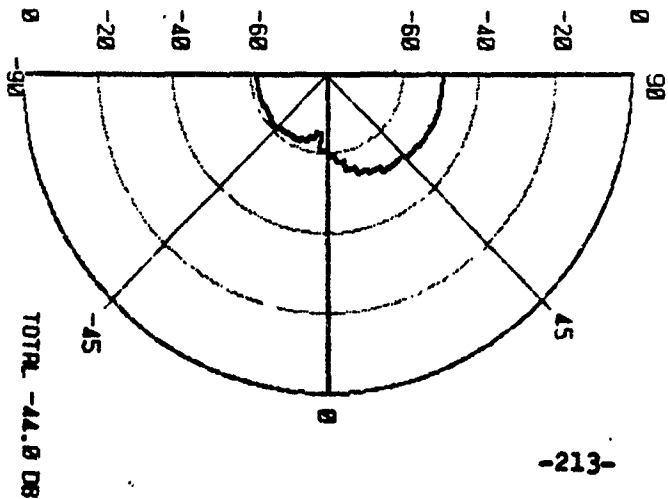
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

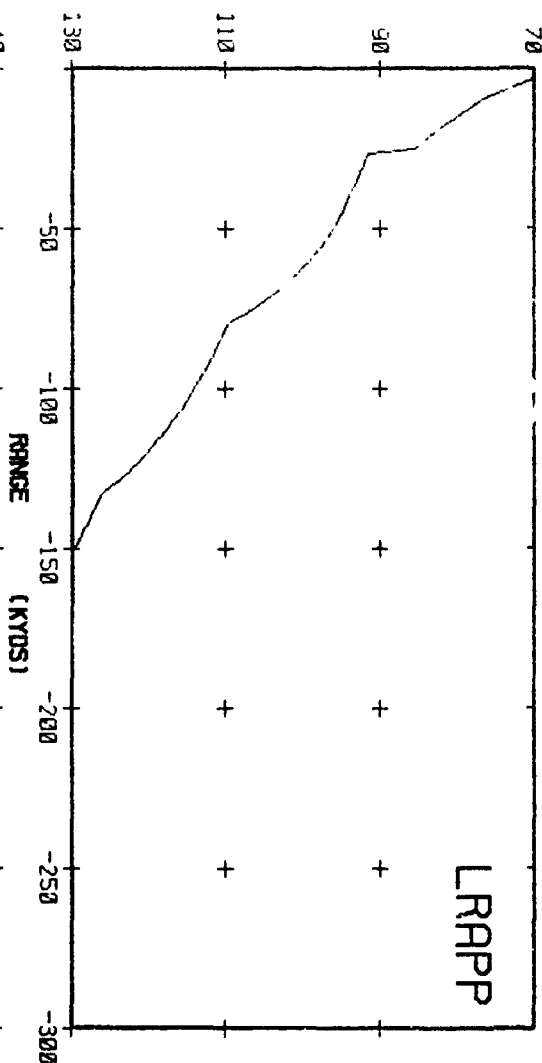


PRER APR SUMMER

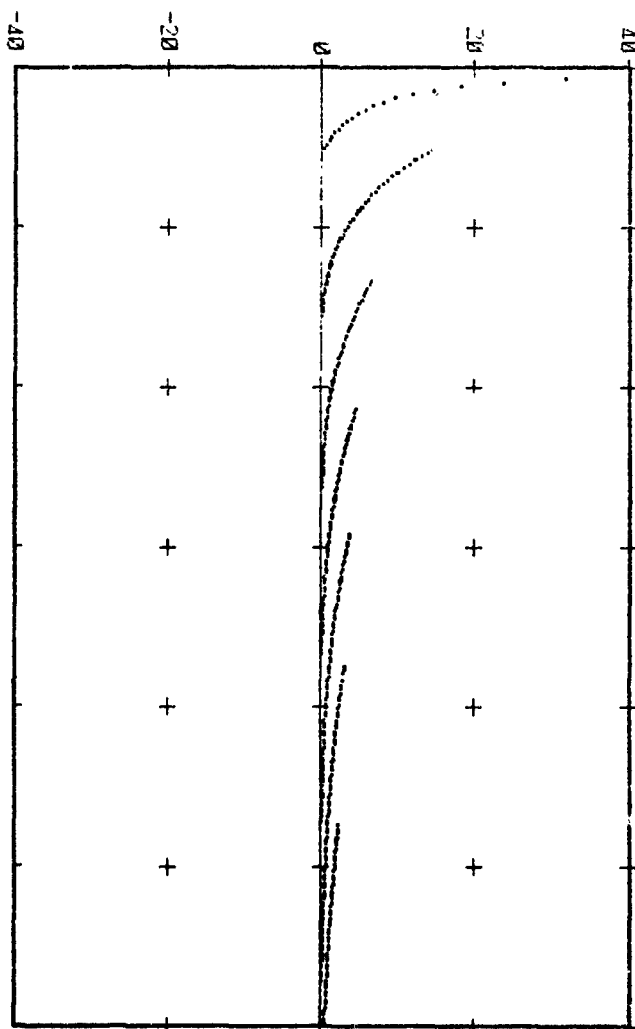
S 20 R 7798 F 2000

1450 M/S 1500 1550

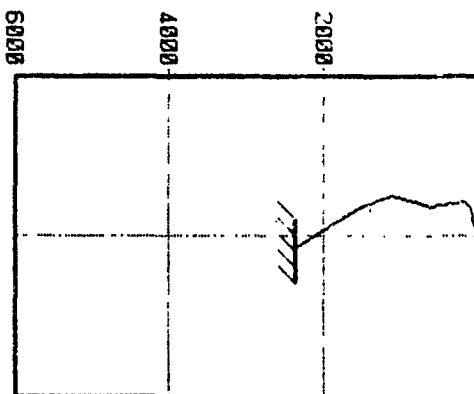
DB LOSS



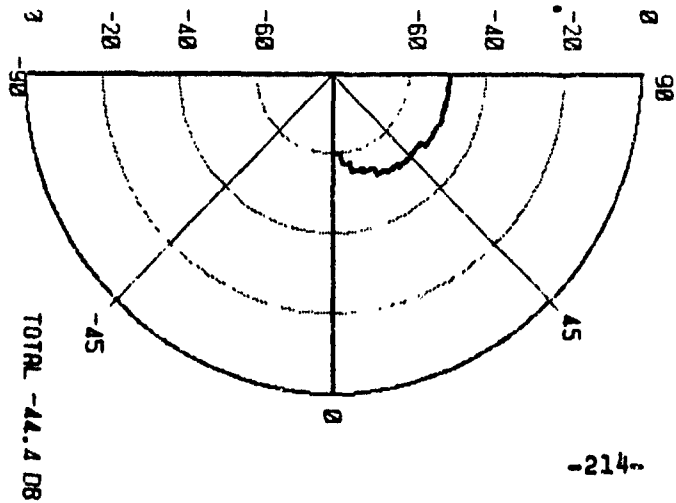
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

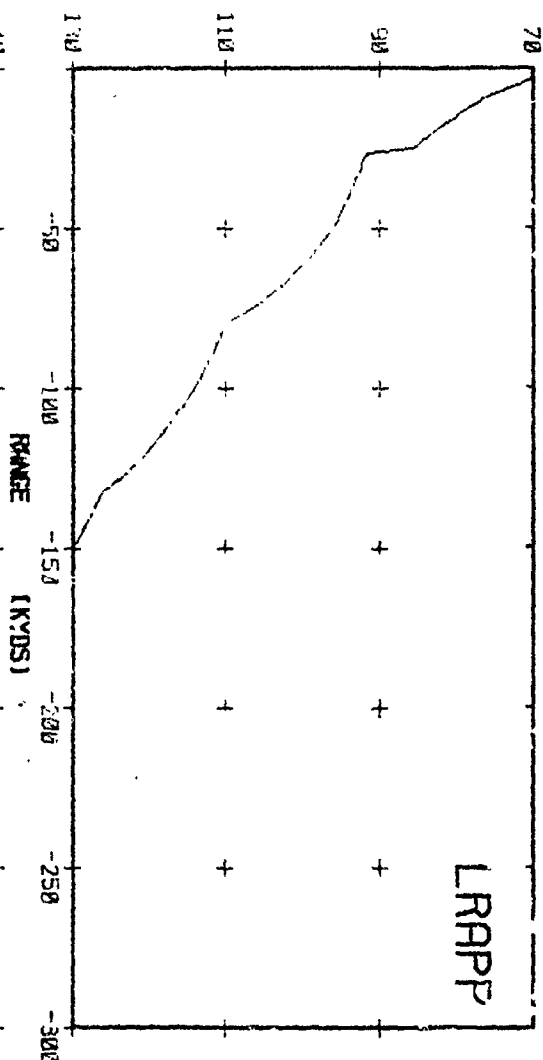


AREA 4A SUMMER

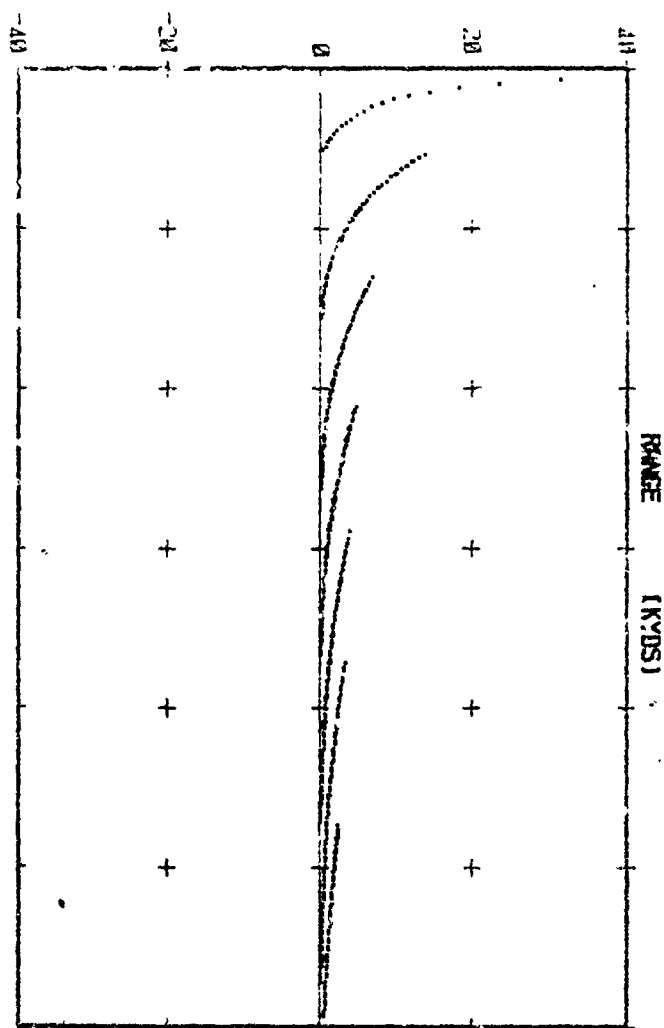
S 50 R 7708 F 2000

1454 M/S 1500 1558

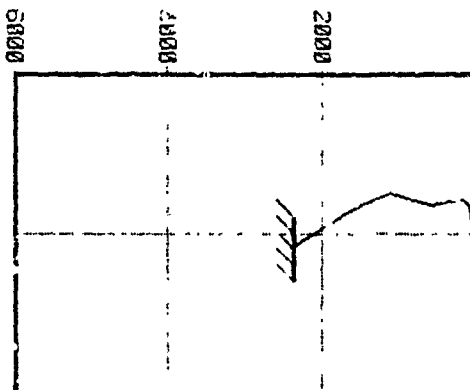
DB LOSS



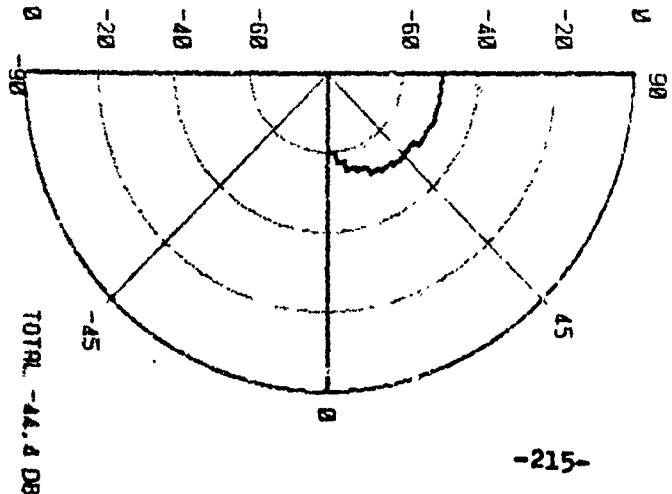
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

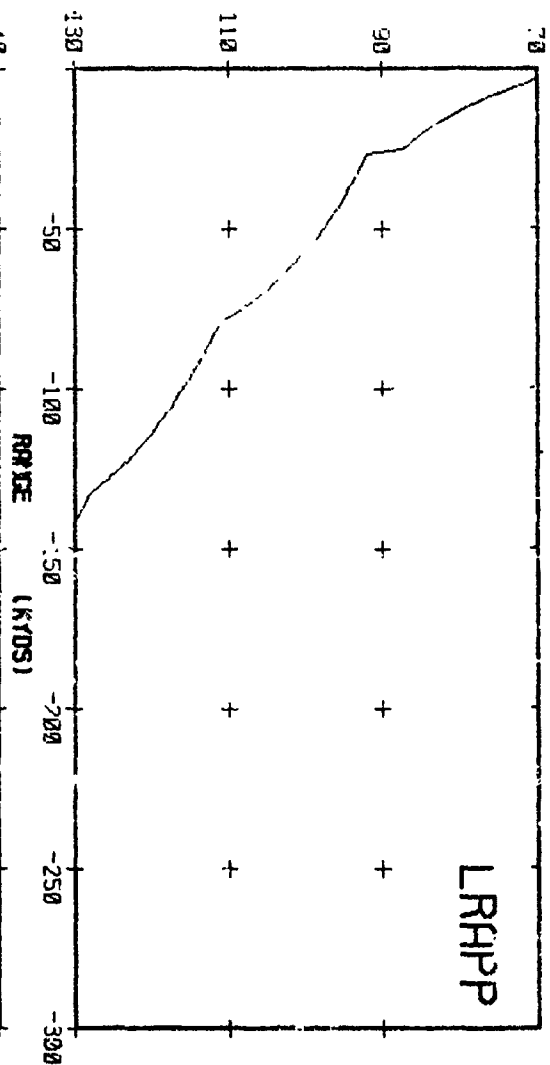


AREA AIR SUMMER

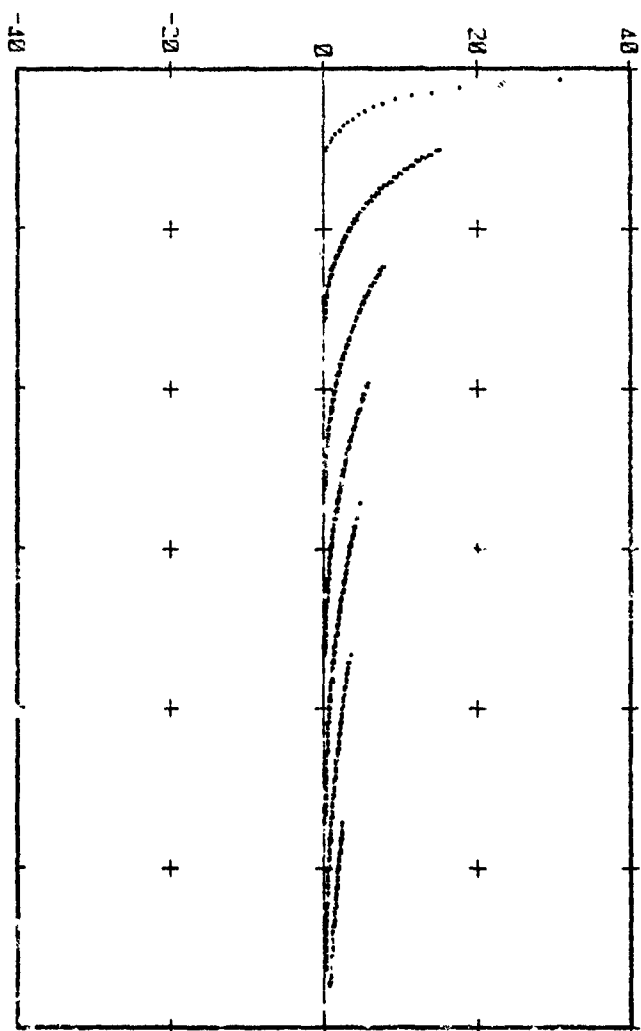
S 233 K 7798 F 2000

LRHPP

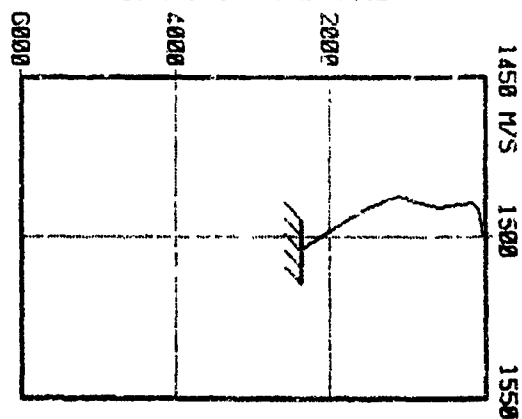
DB LOSS



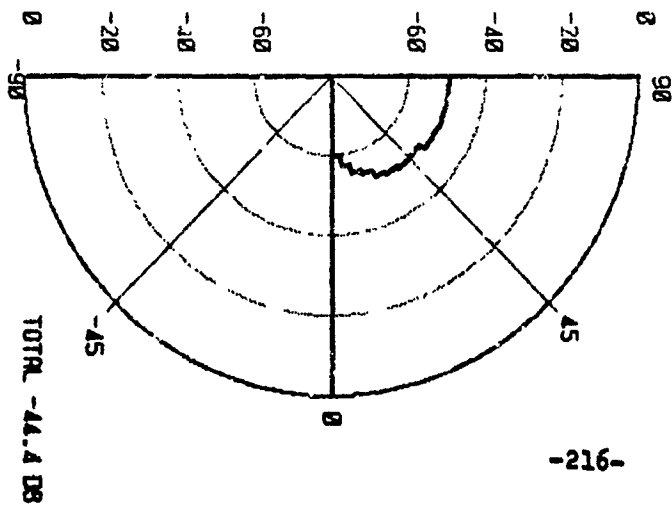
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

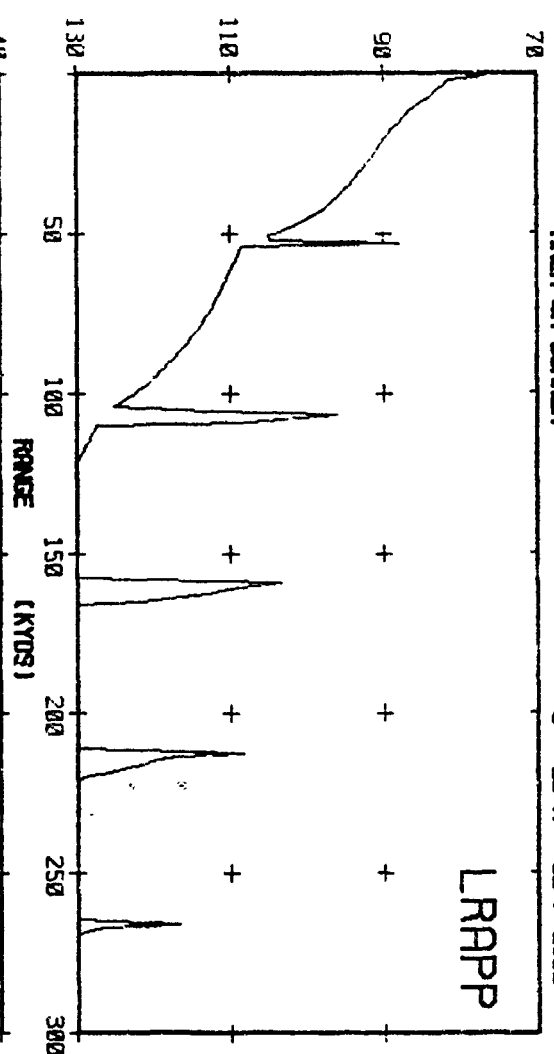


AREA 40 SUMMER

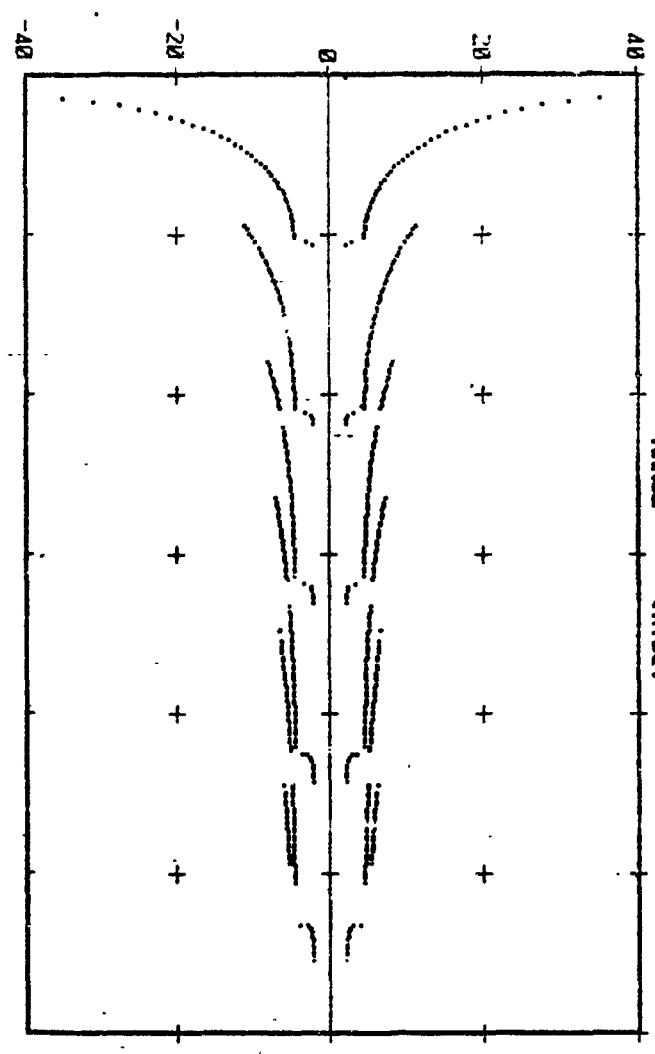
S 20 R 60 F 2500

1450 M/S 1500 1550

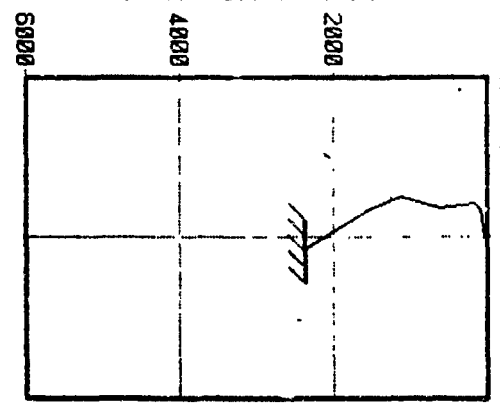
DB LOSS



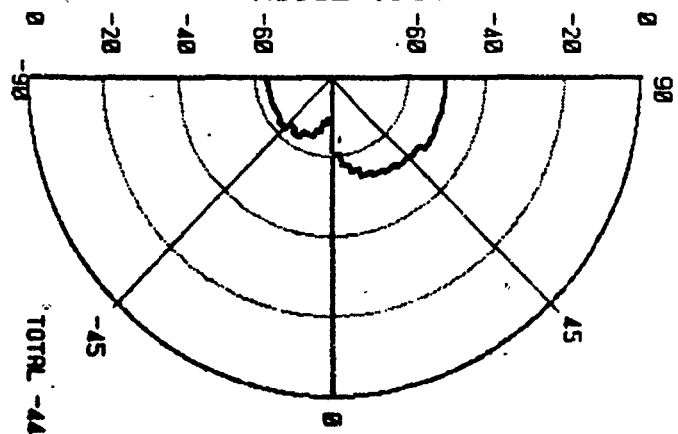
ARRIVAL ANGLE



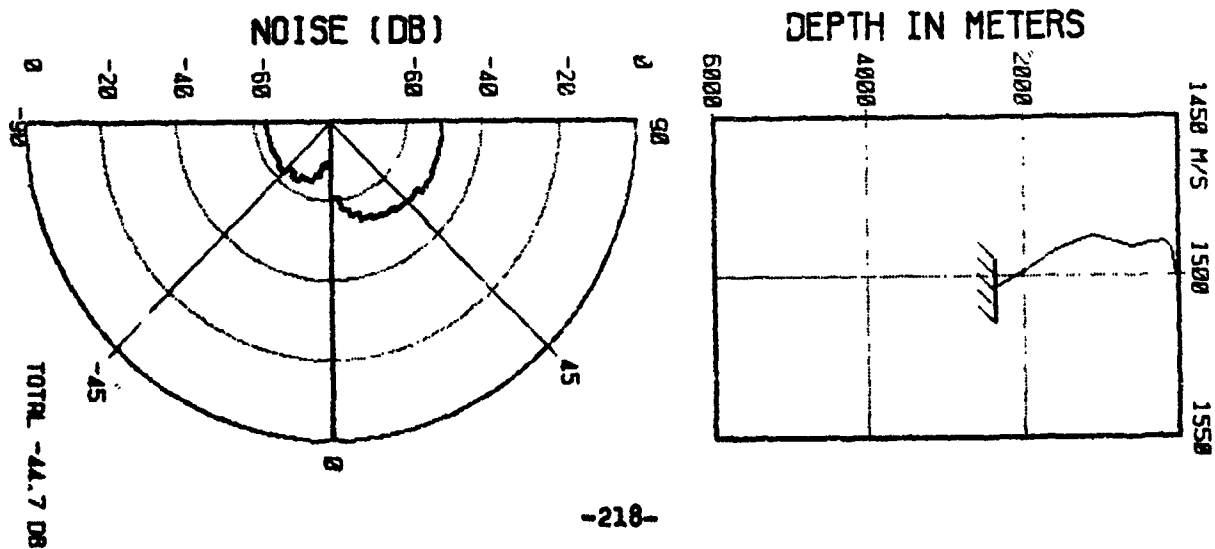
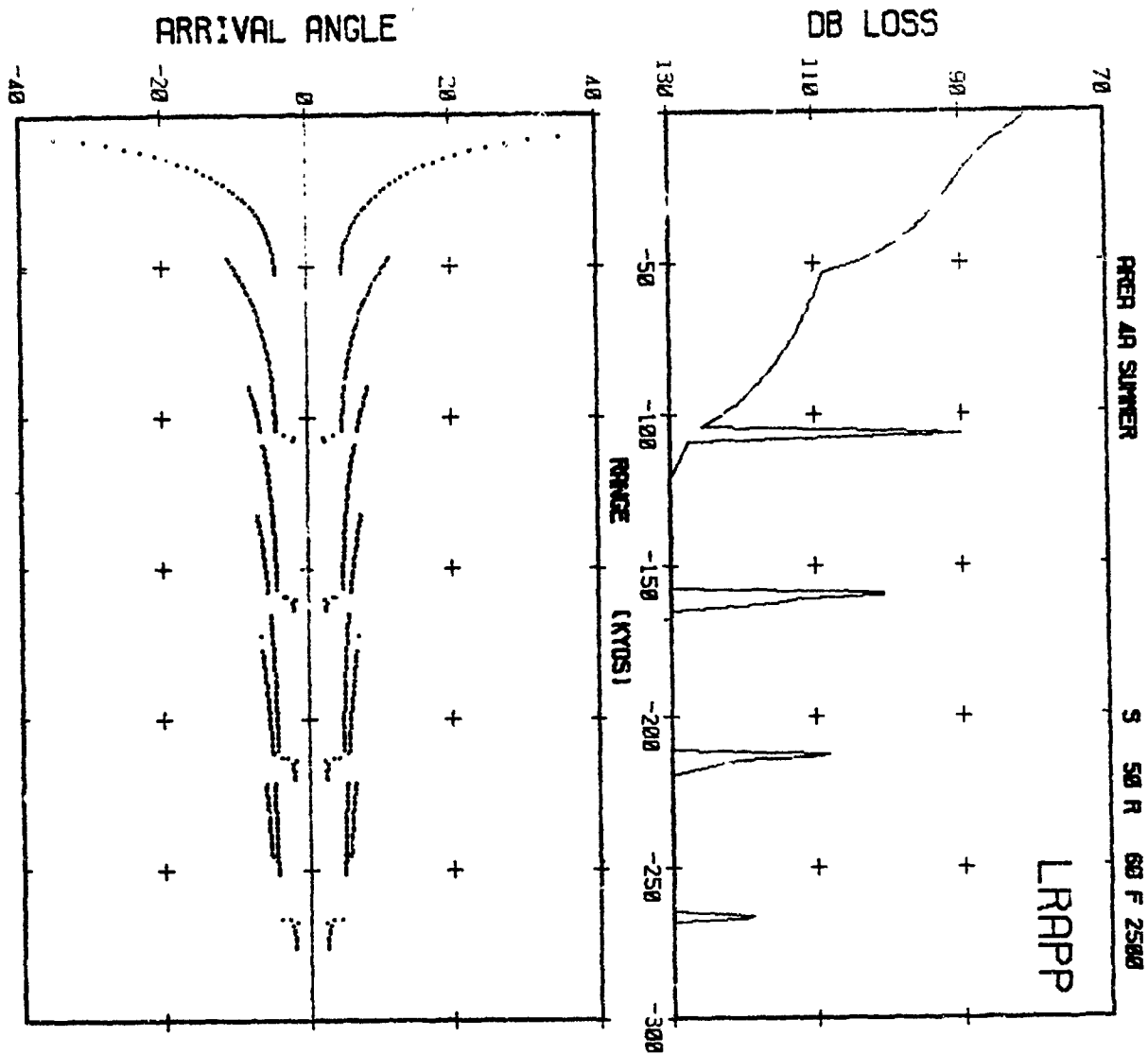
DEPTH IN METERS



NOISE (DB)



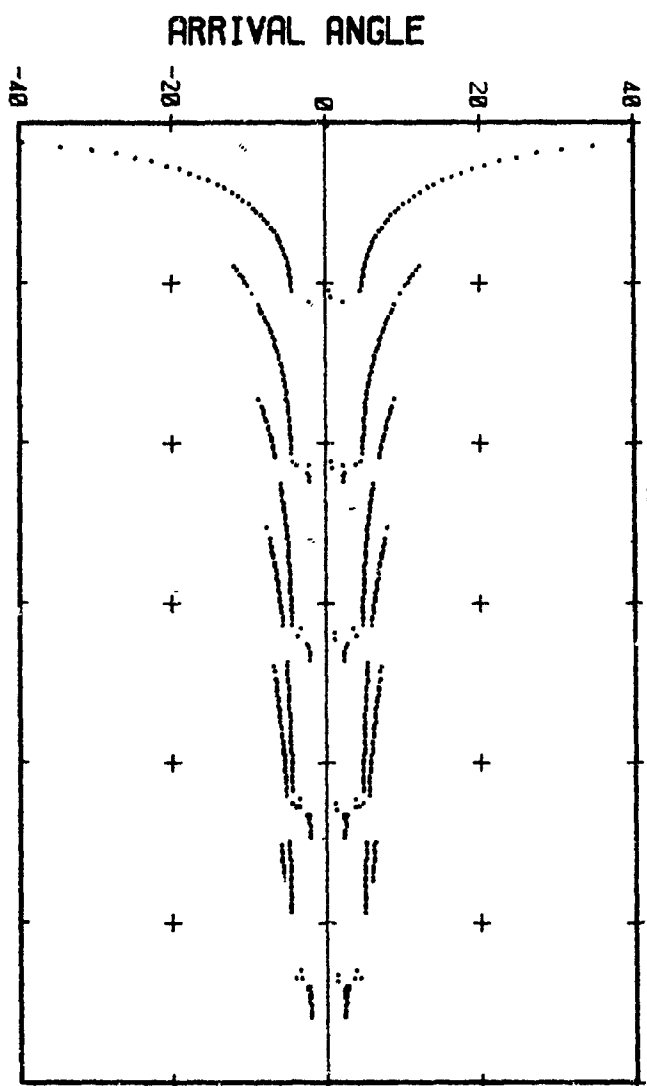
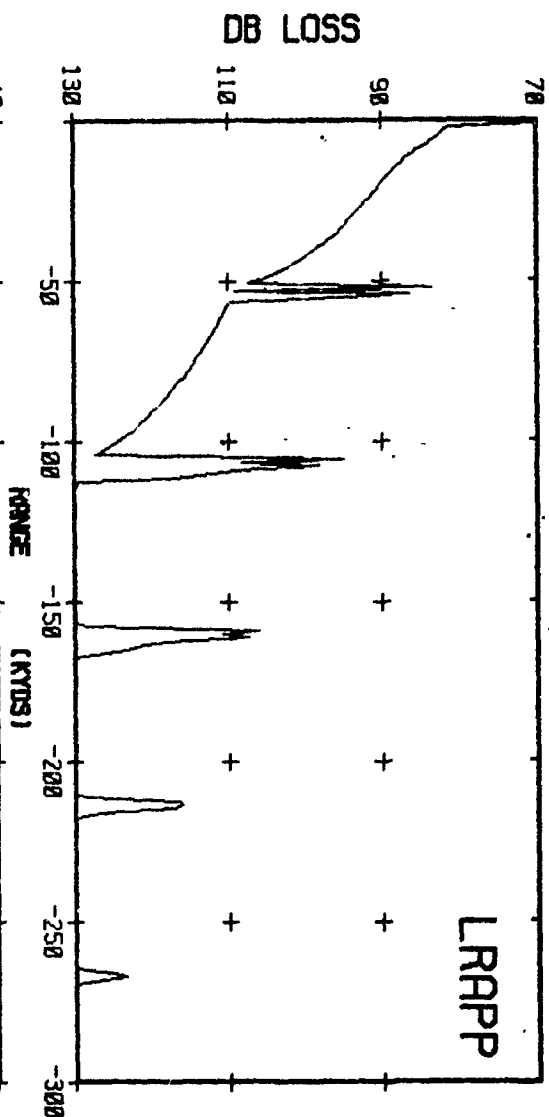
TOTRL -44.7 08



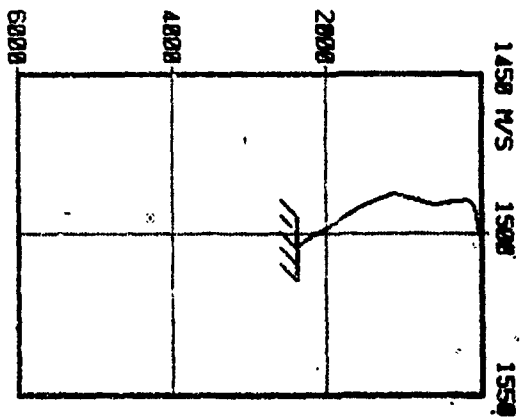
AREA 4A SUMMER

S 233 R 00 F 2500

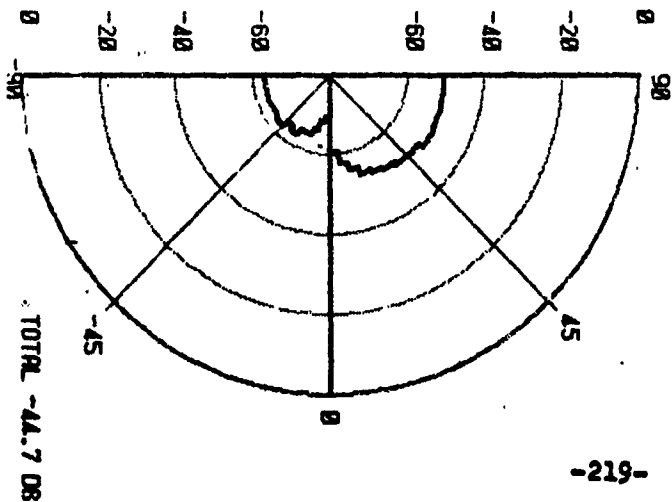
LRAPP

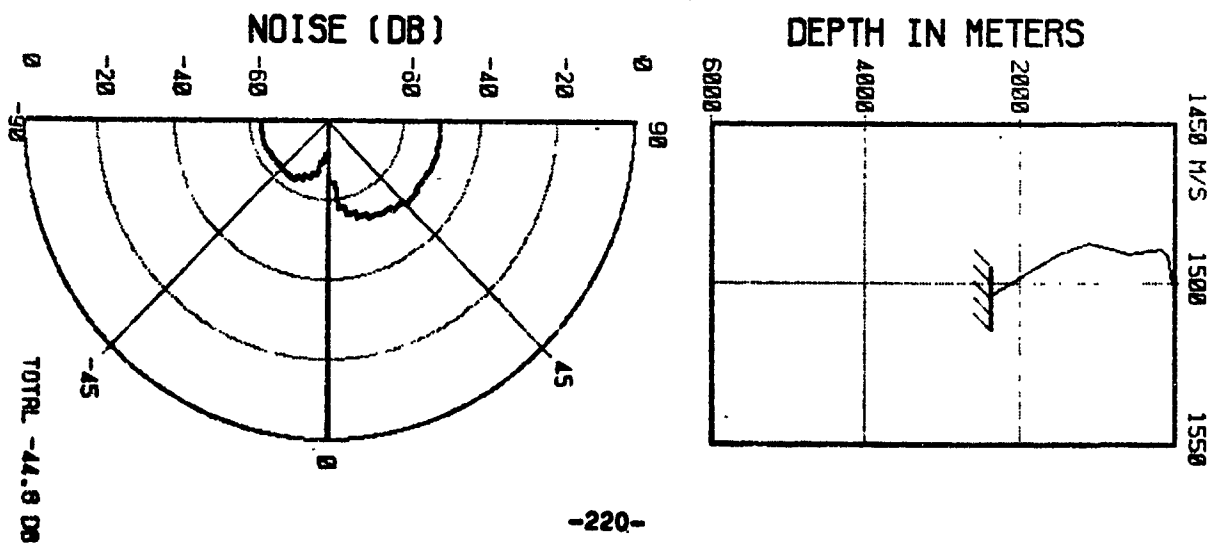
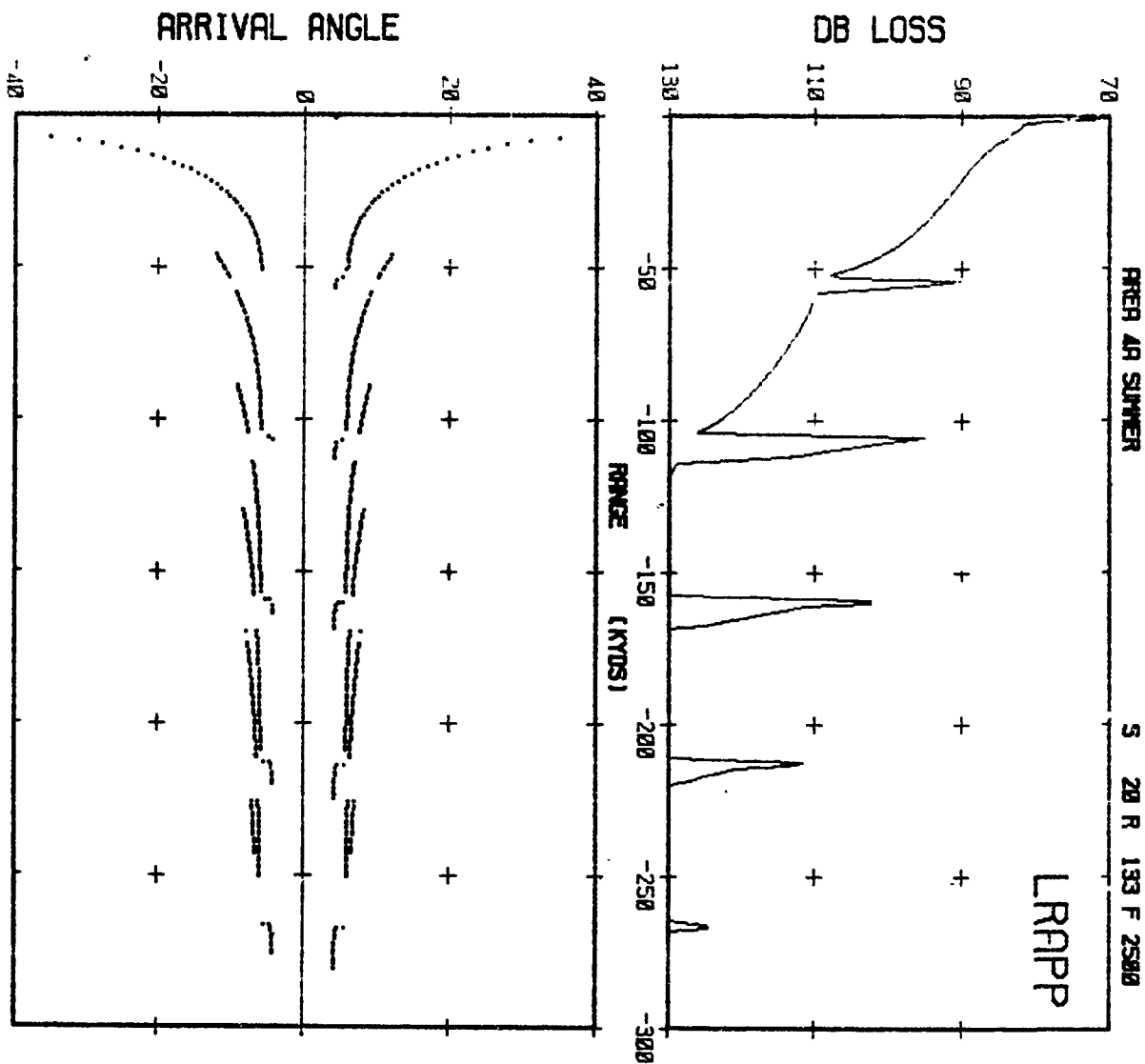


DEPTH IN METERS



NOISE (DB)



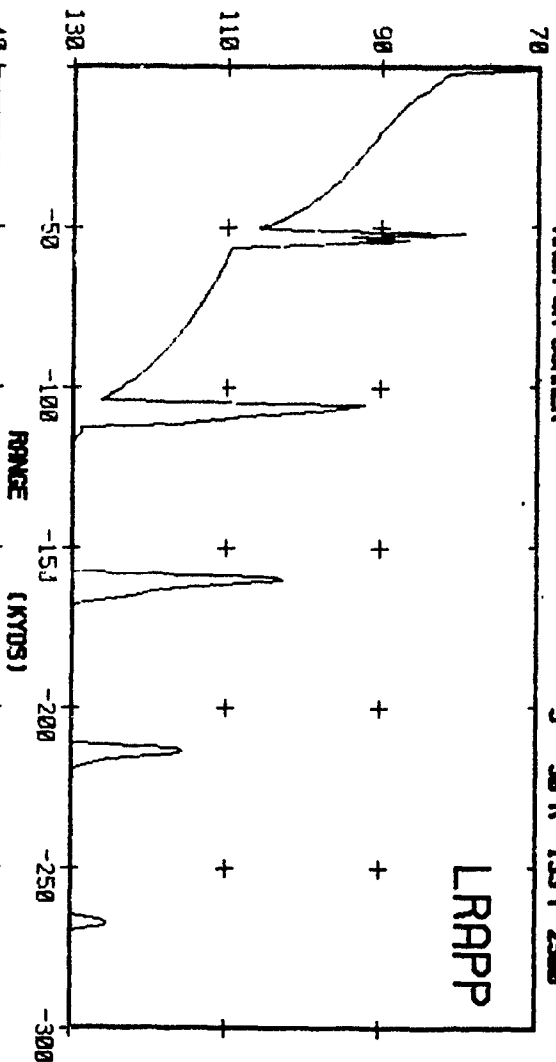


RRER 4R SUMMER

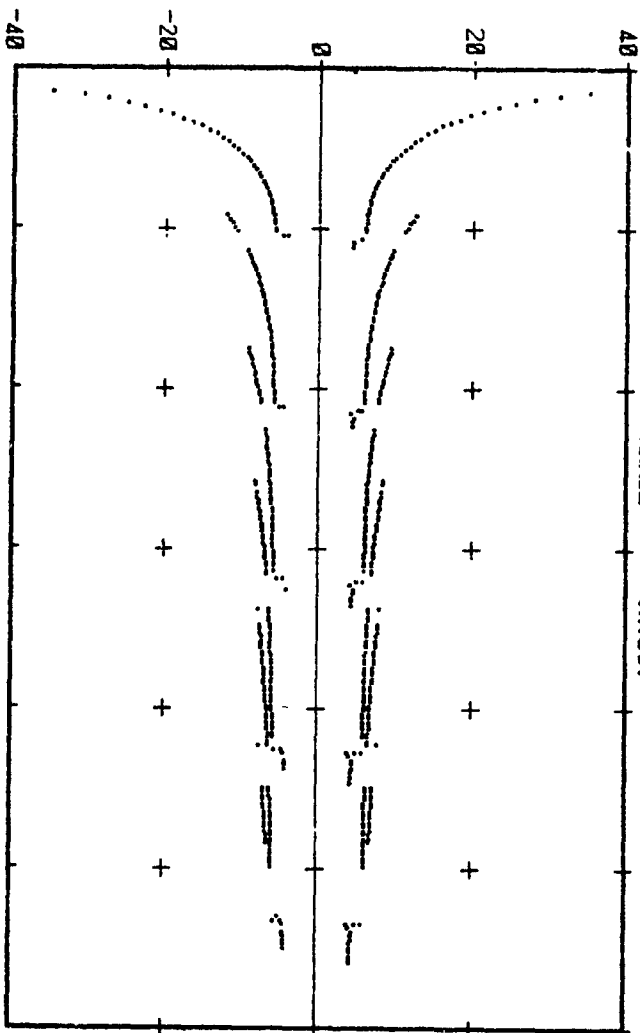
S 50 R 193 F 2500

1456 H/S 1500 1550

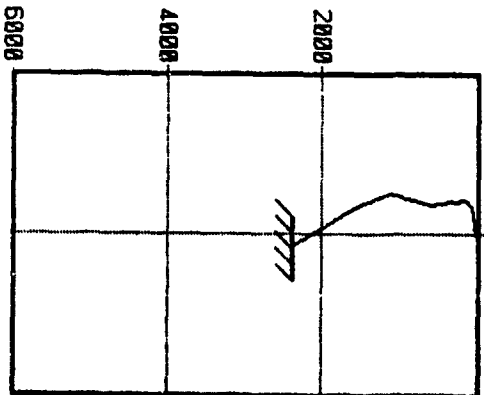
DB LOSS



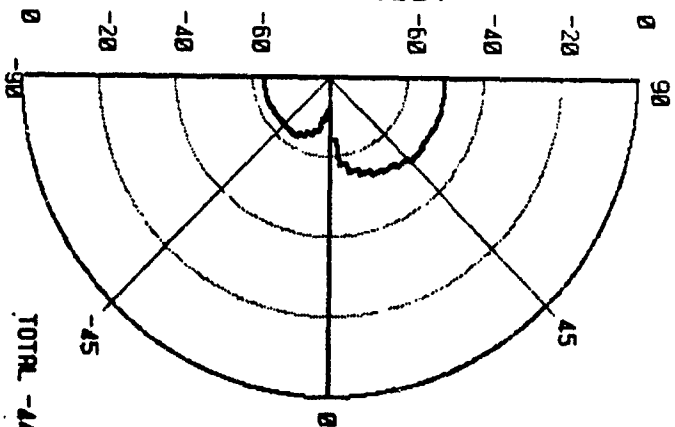
ARRIVAL ANGLE



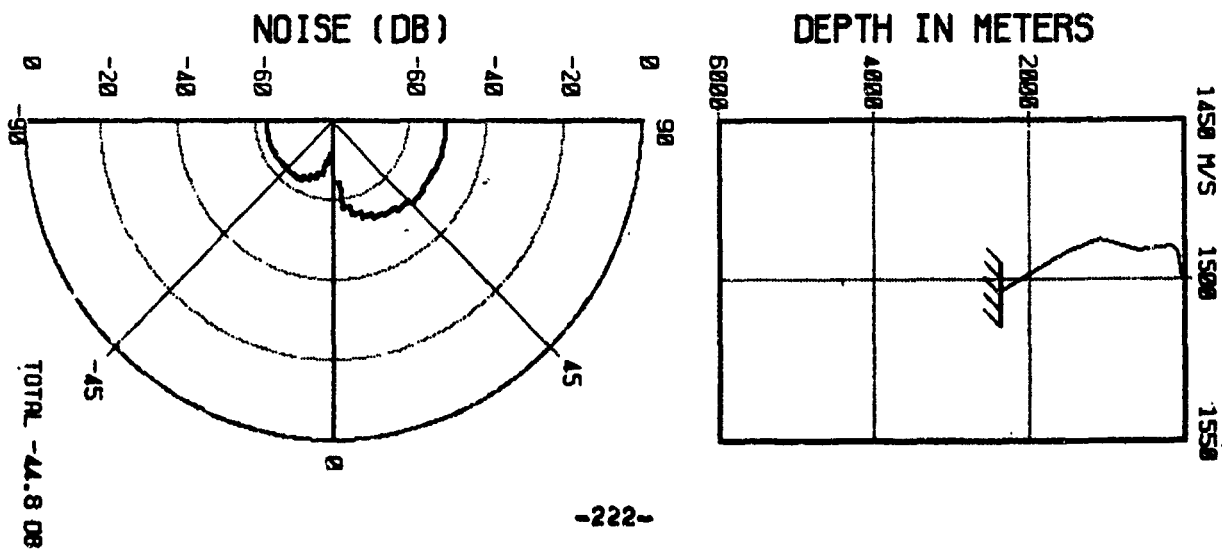
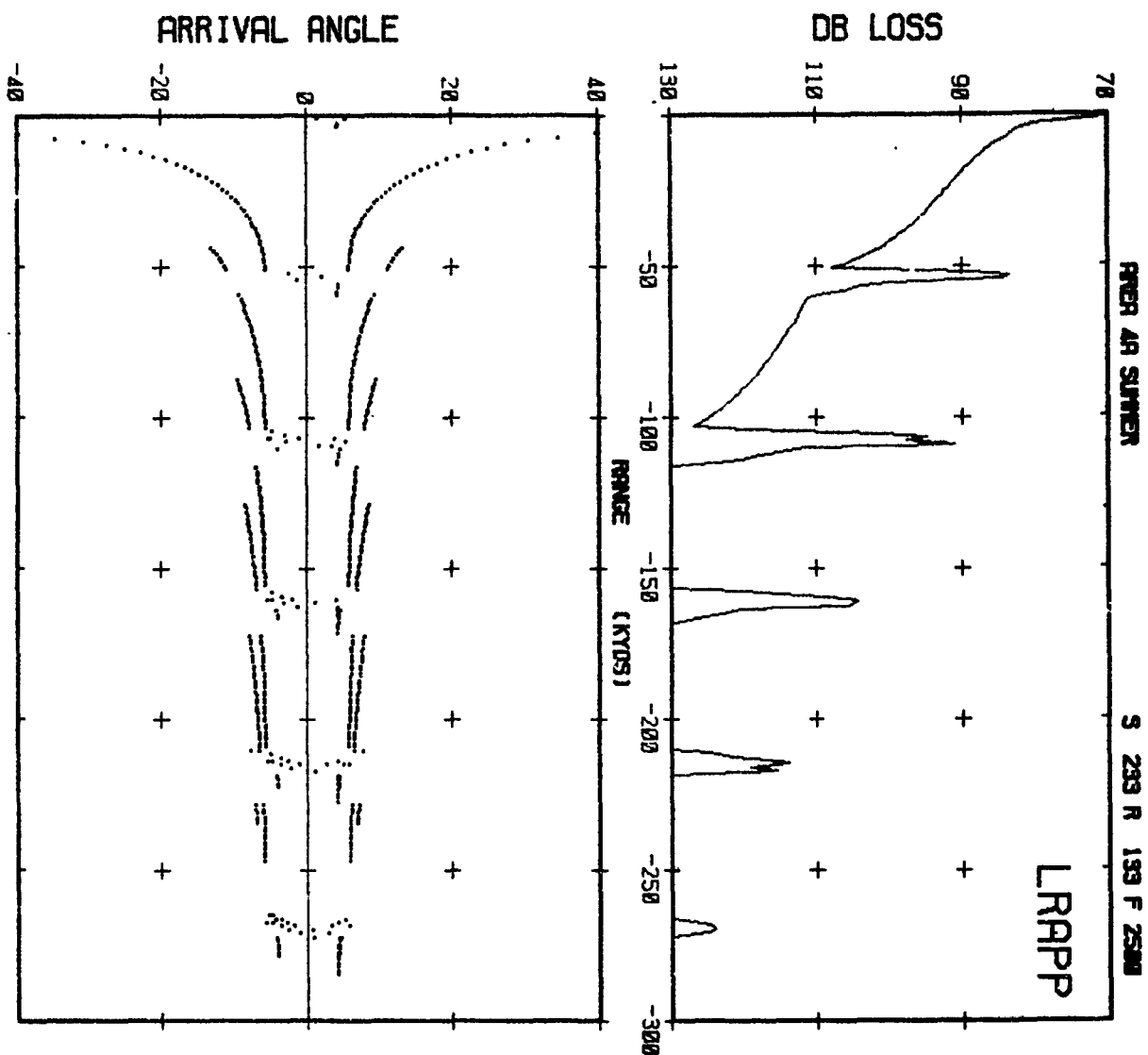
DEPTH IN METERS

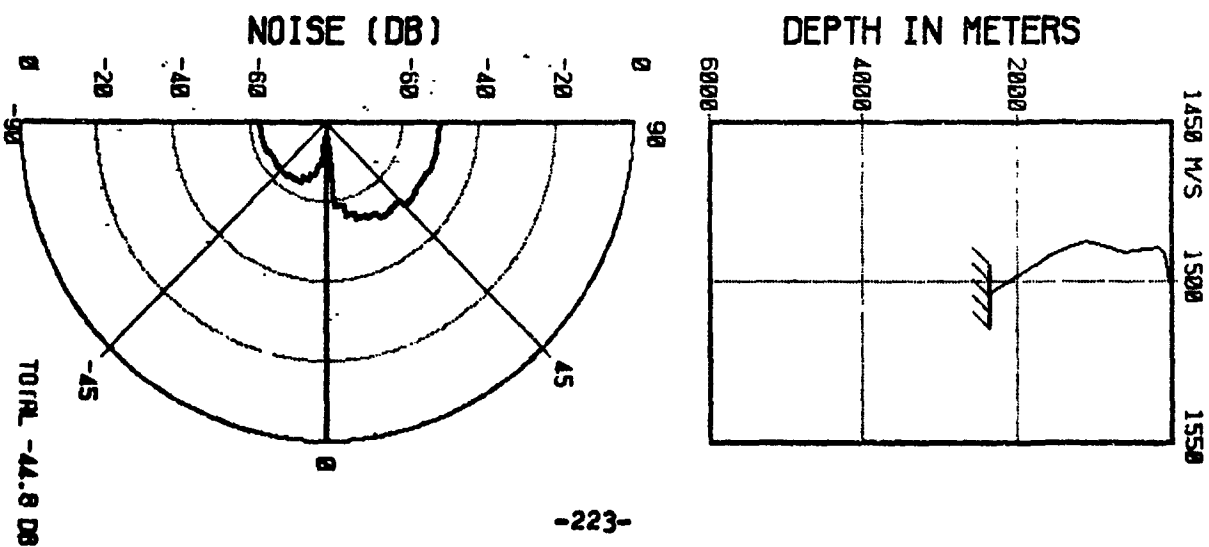
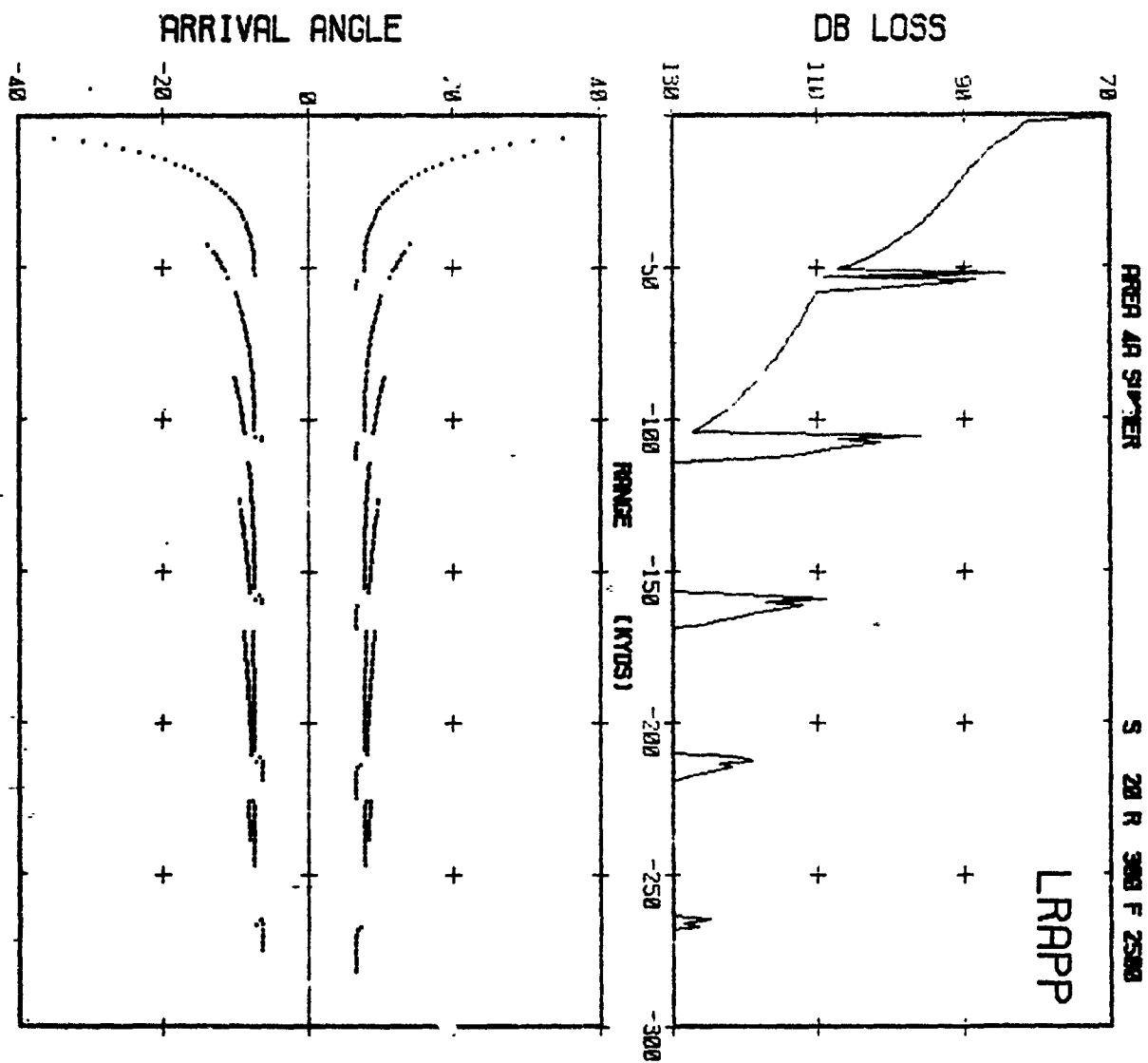


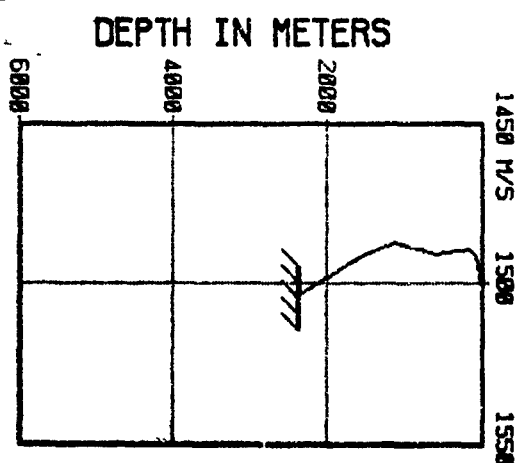
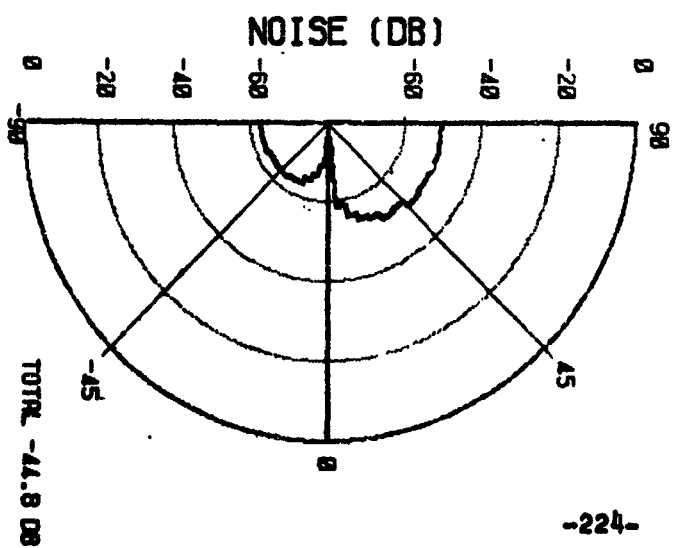
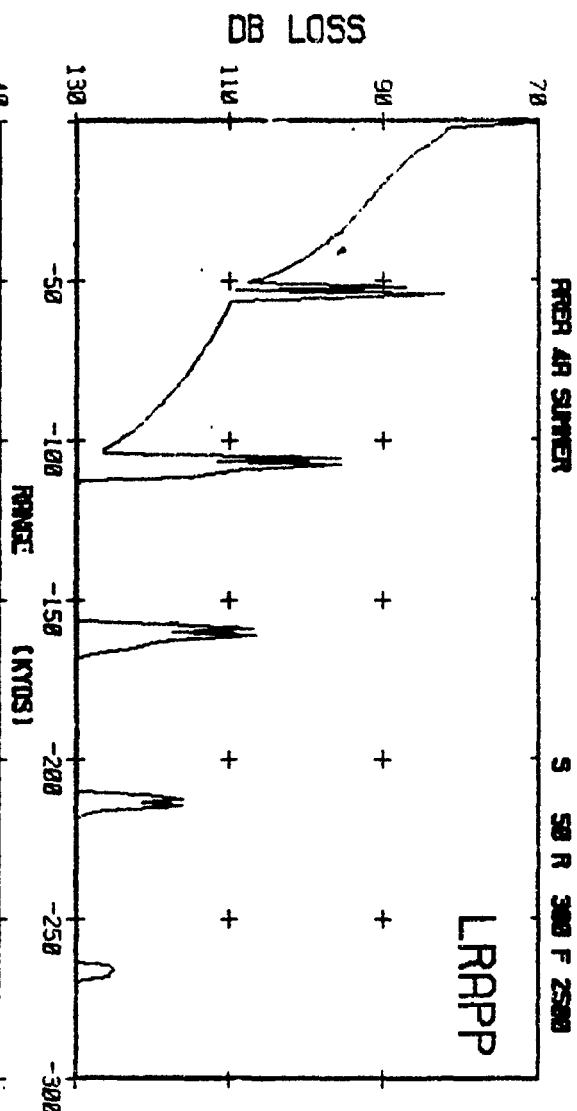
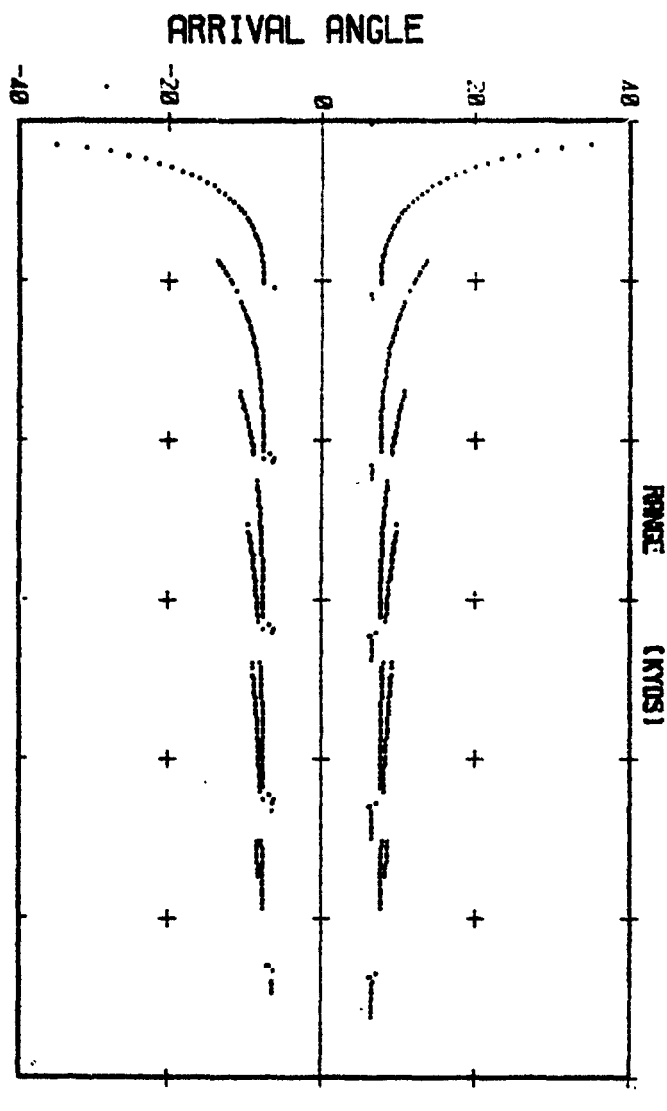
NOISE (DB)



TOTAL -44.8 DB





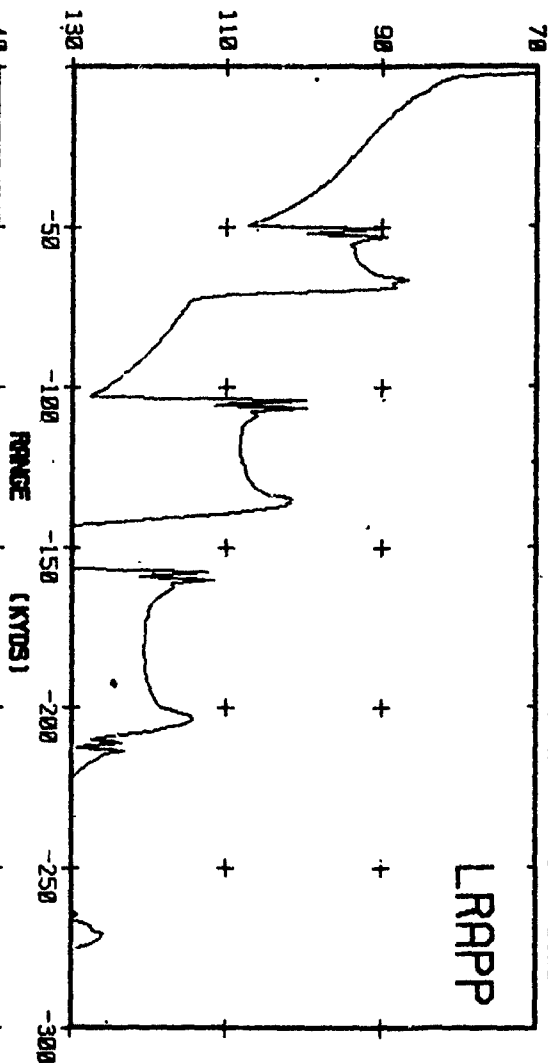


FRIGER AIR SURFER

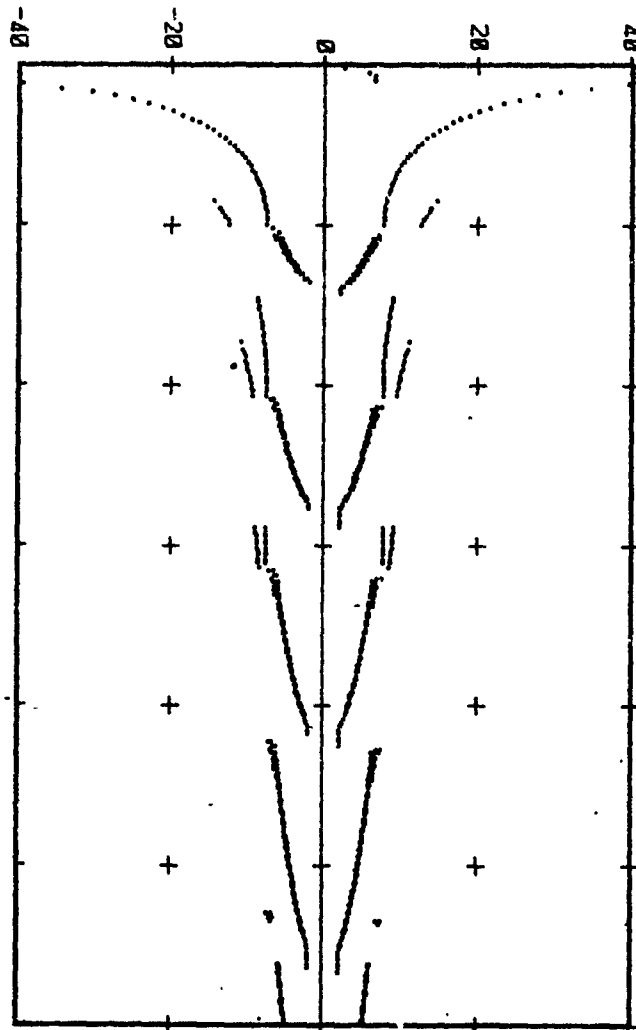
S 233 R 300 F 2500

1450 H/S 1500 1550

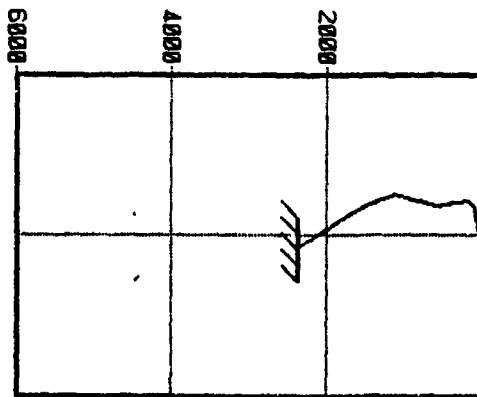
DB LOSS



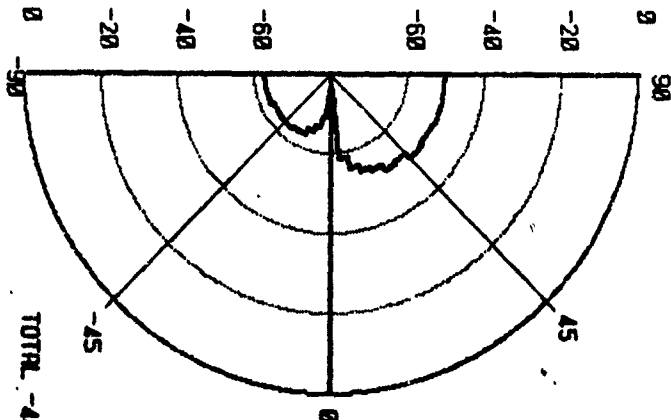
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

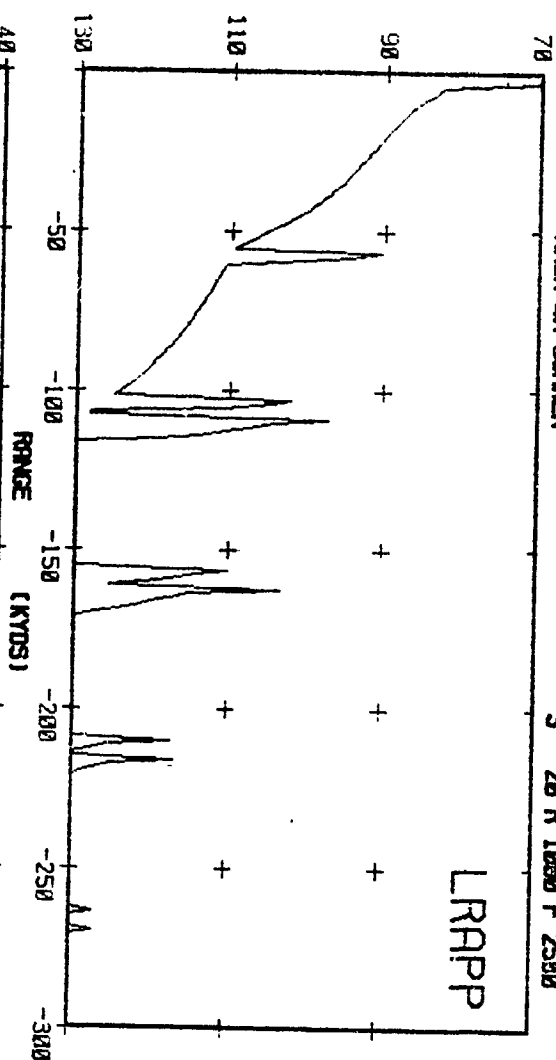


PRER AR SUMMER

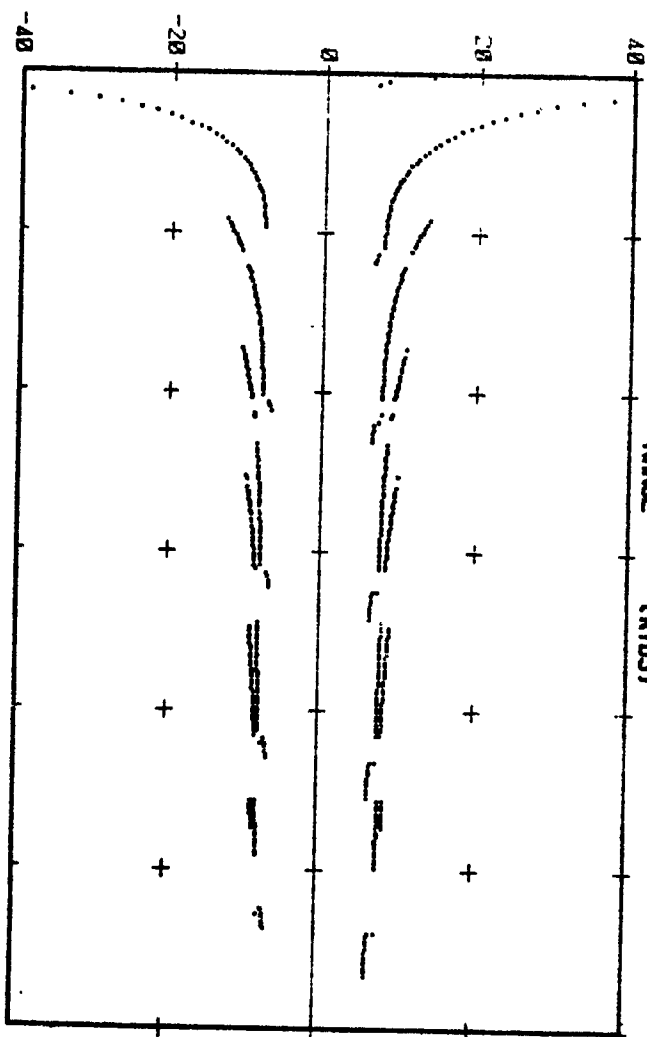
S 20 R 1000 F 2500

LRAPP

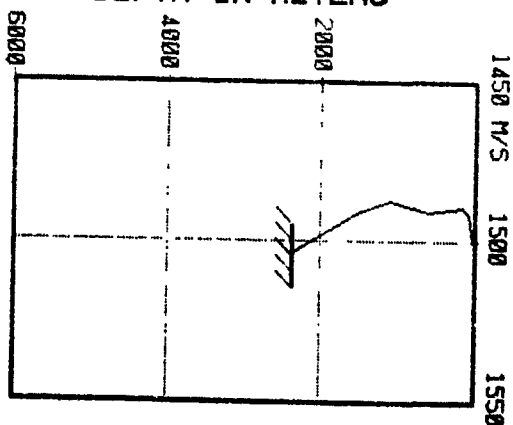
DB LOSS



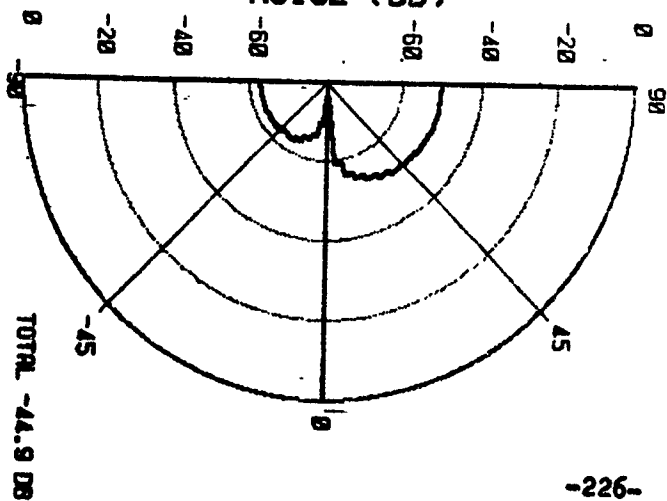
ARRIVAL ANGLE

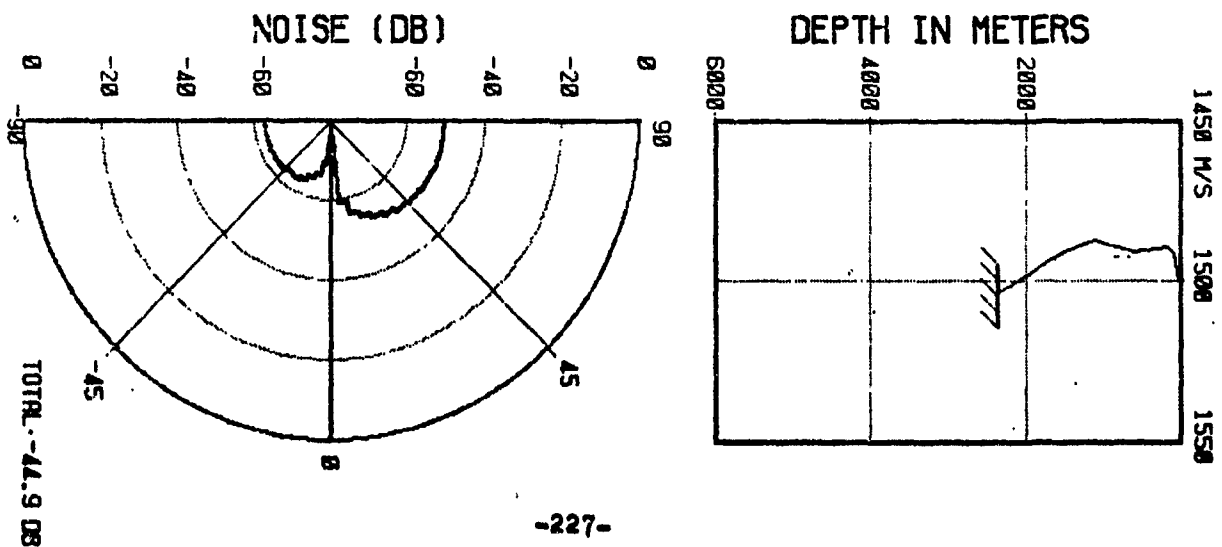
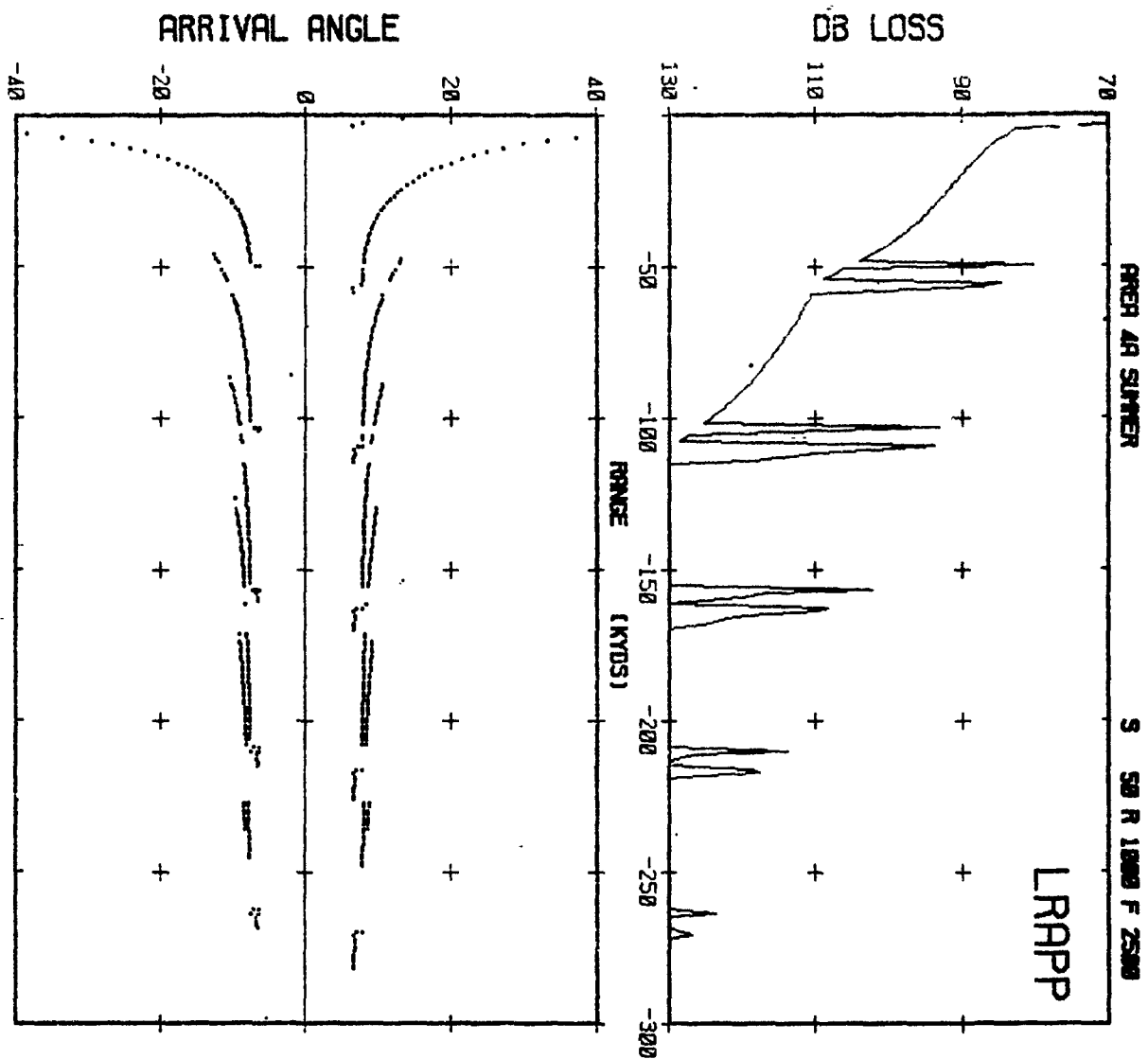


DEPTH IN METERS



NOISE (DB)



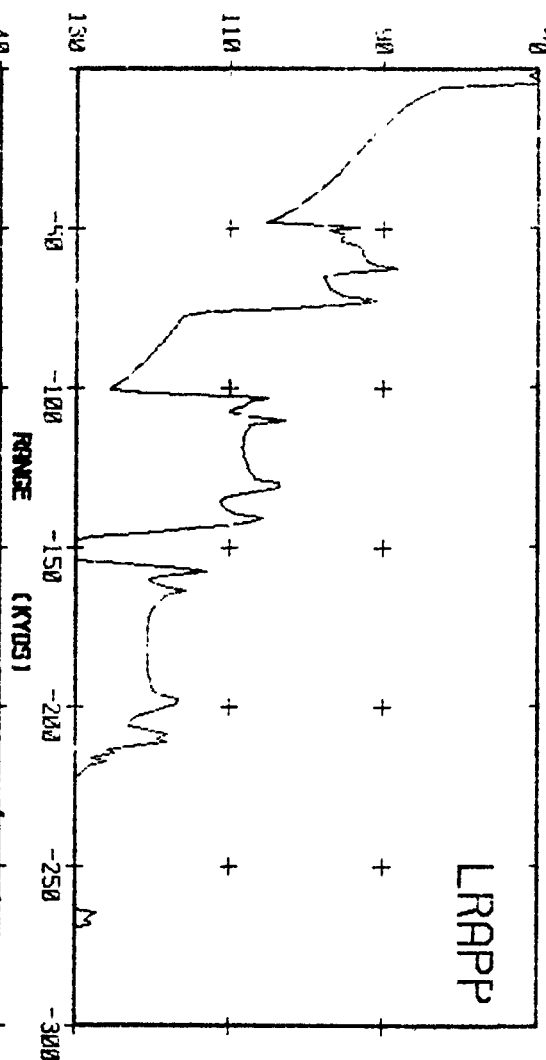


AREA AN SURFER

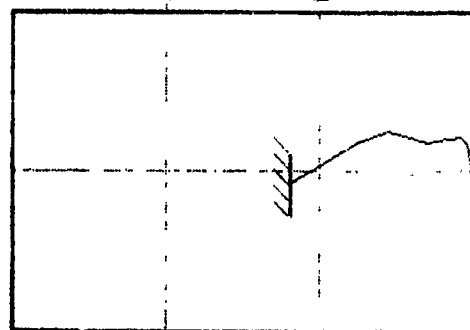
S 233 R 1000 F 2500

1450 M/S 1500 1550

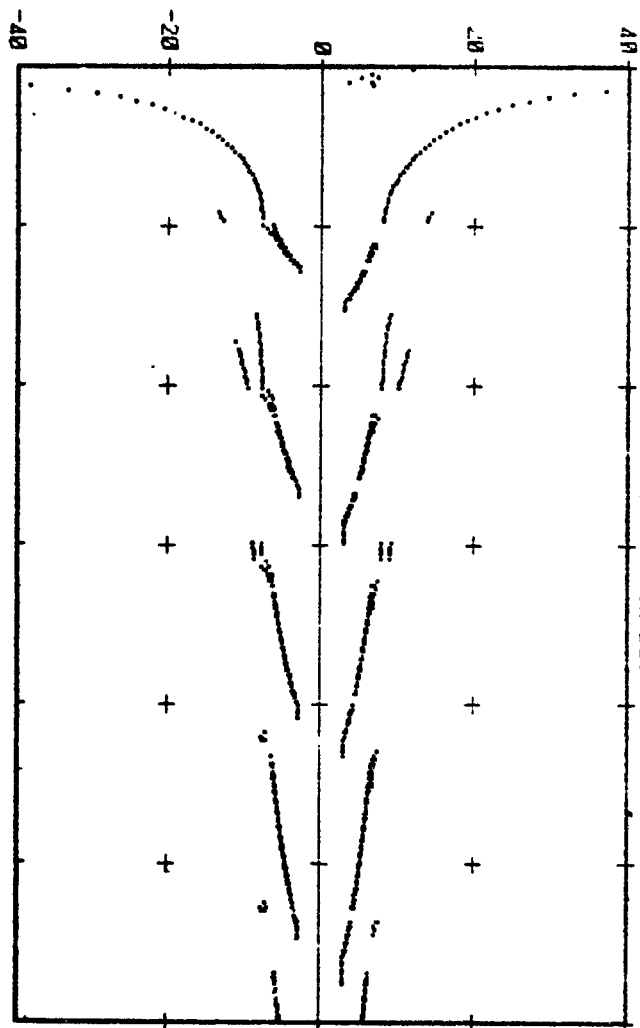
DB LOSS



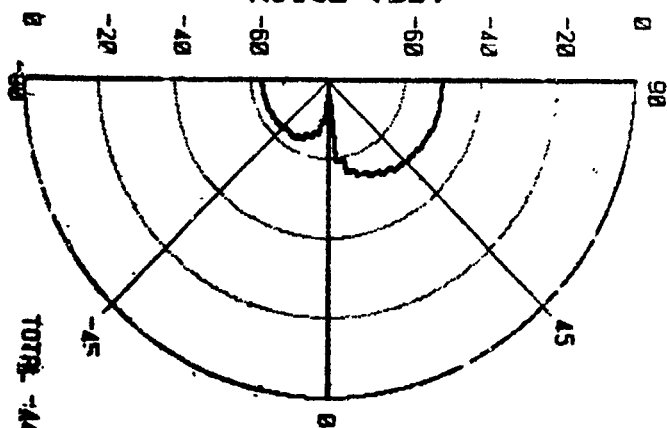
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

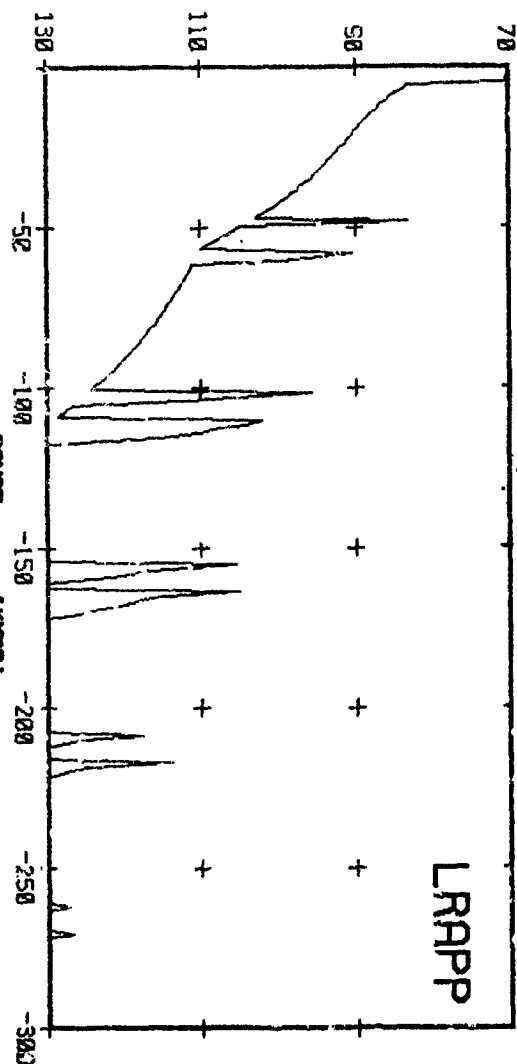


GREEN AIR SUMMER

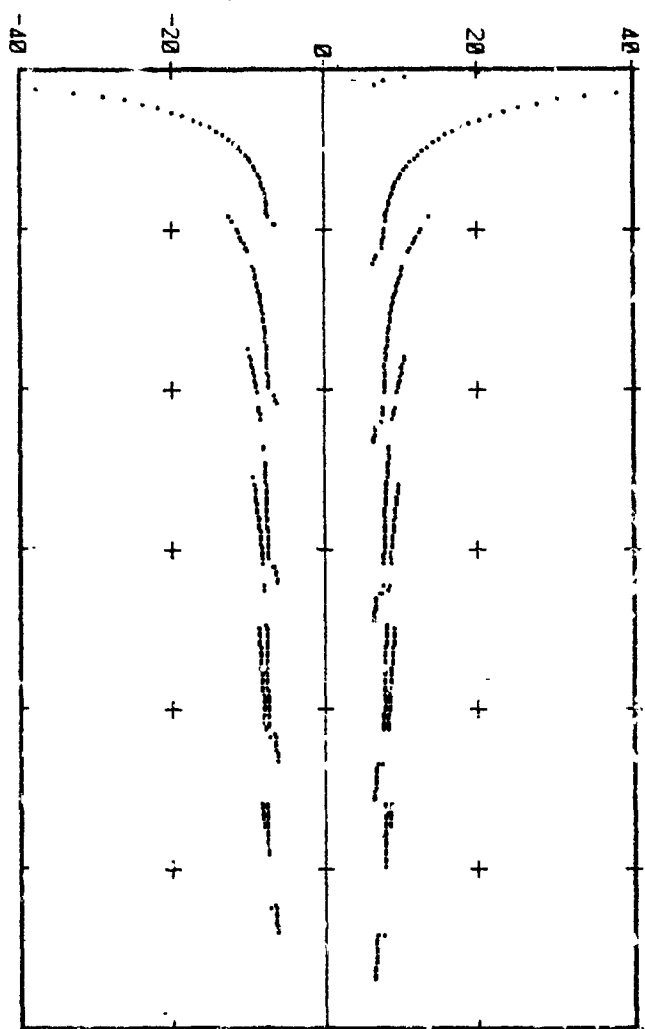
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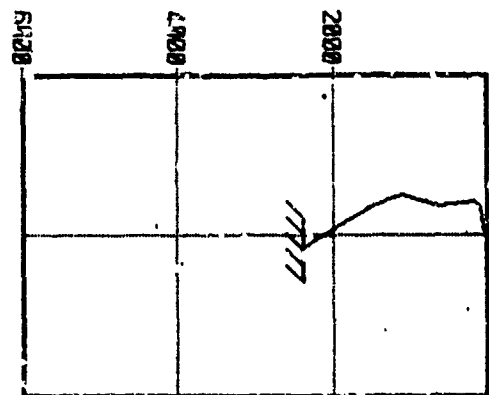
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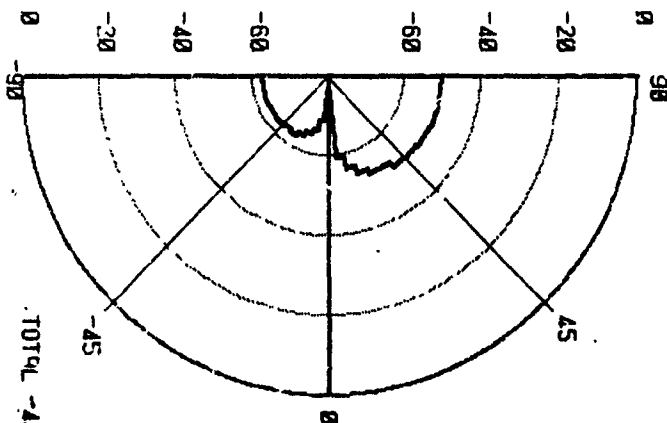
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

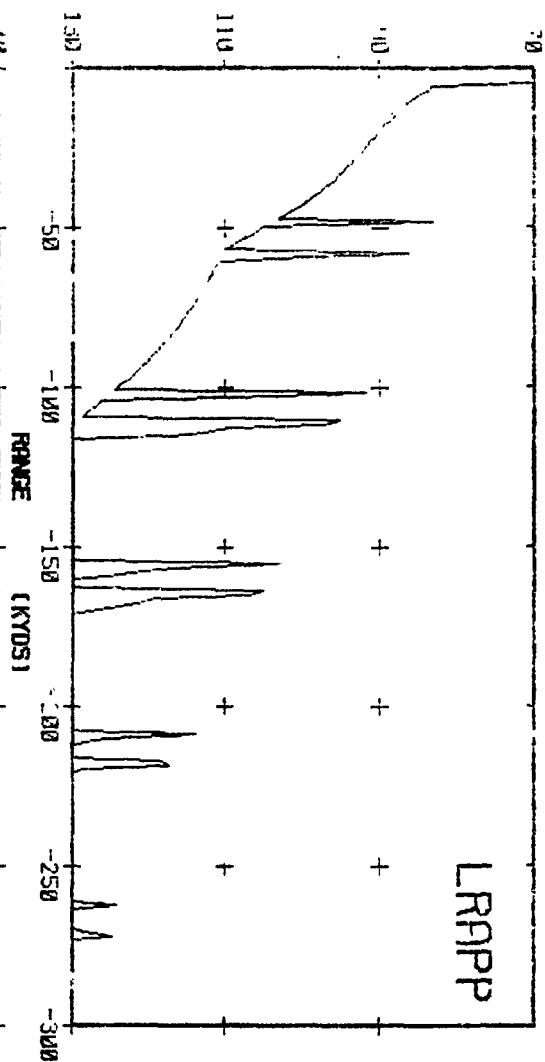


AREA 4R SUMMER

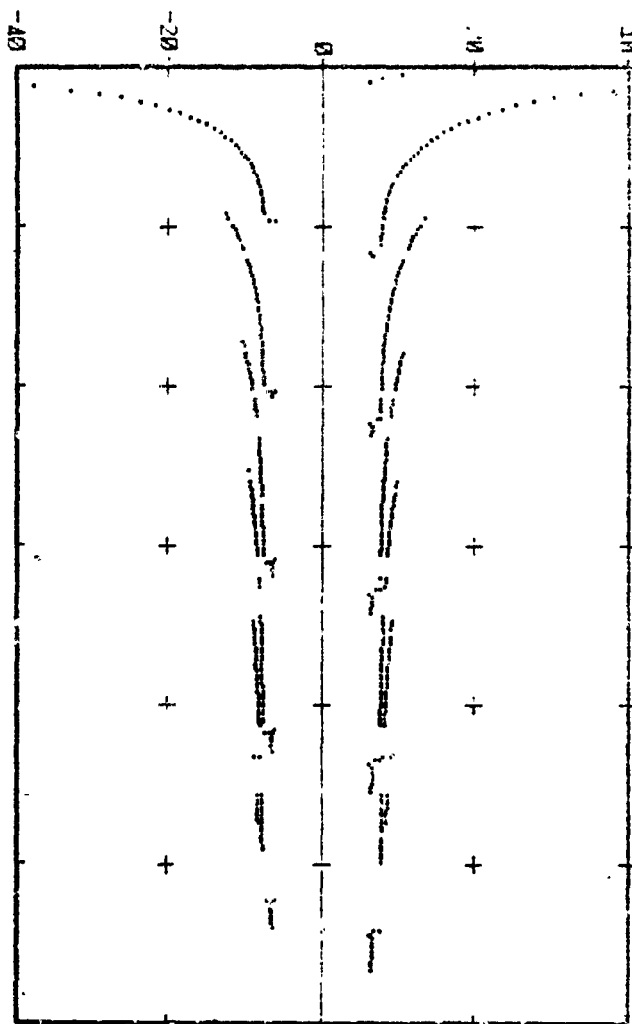
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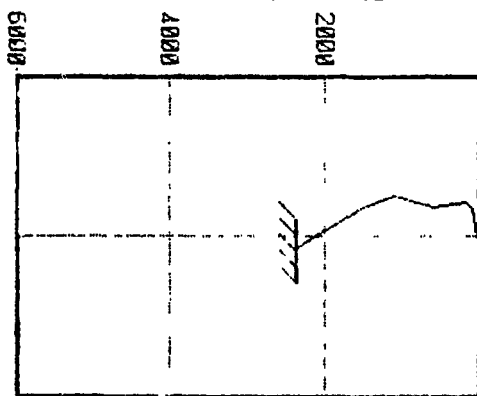
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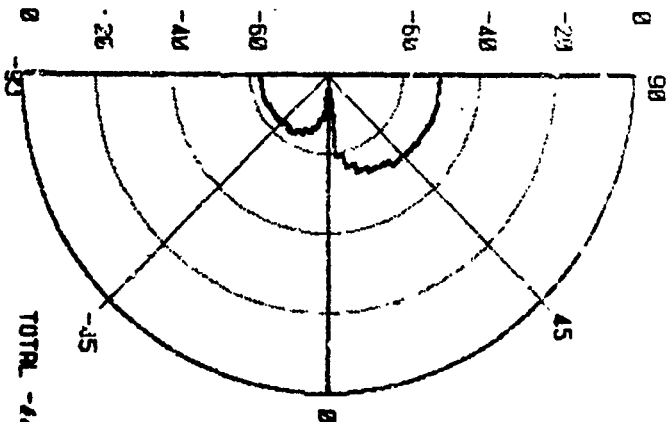
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



RRR 4R S' WER

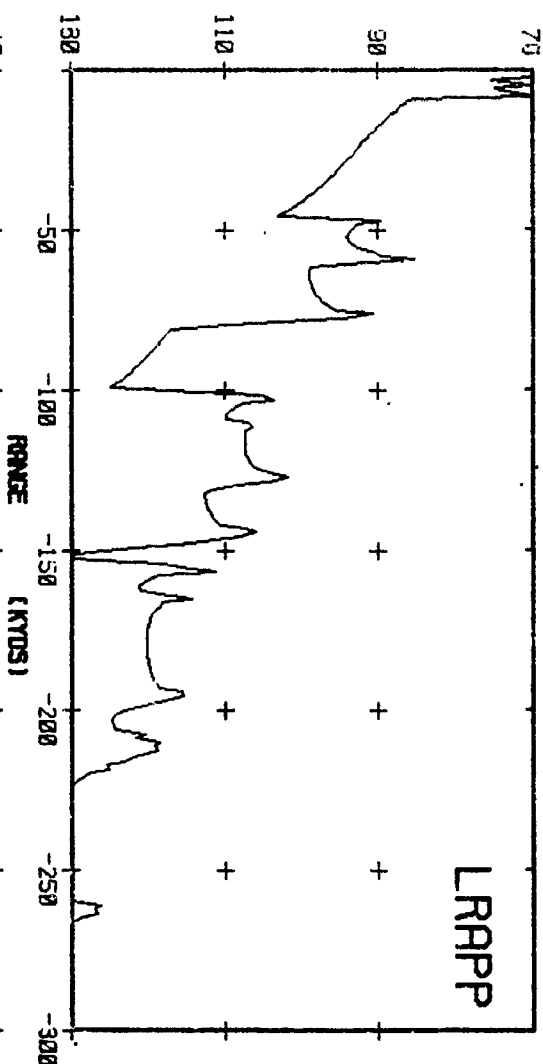
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1450 H/S 1500

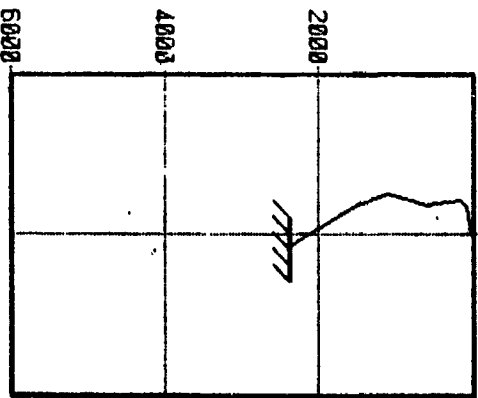
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LRAPP

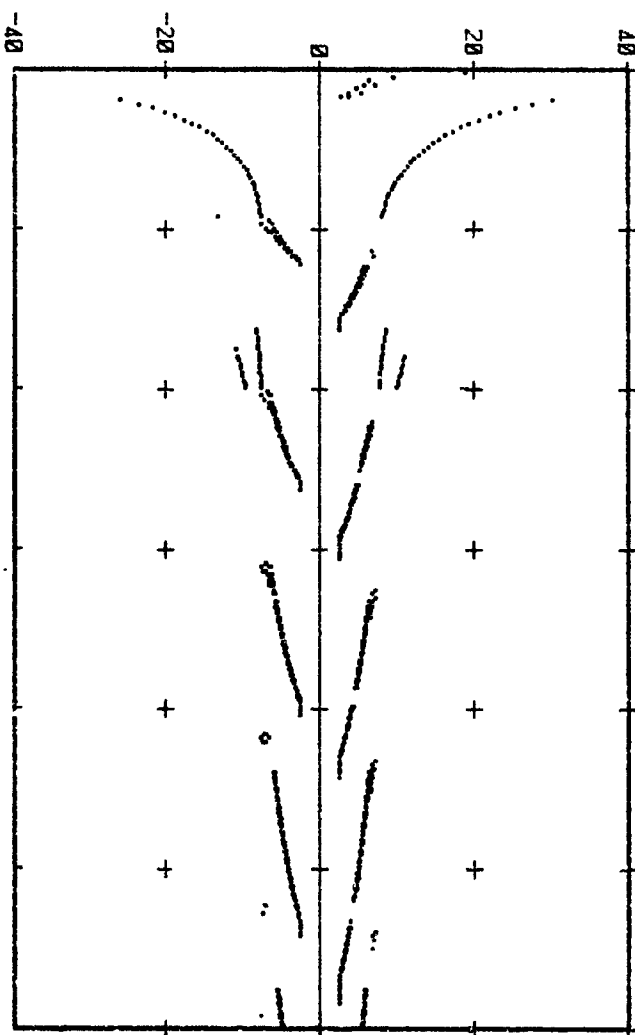
DB LOSS



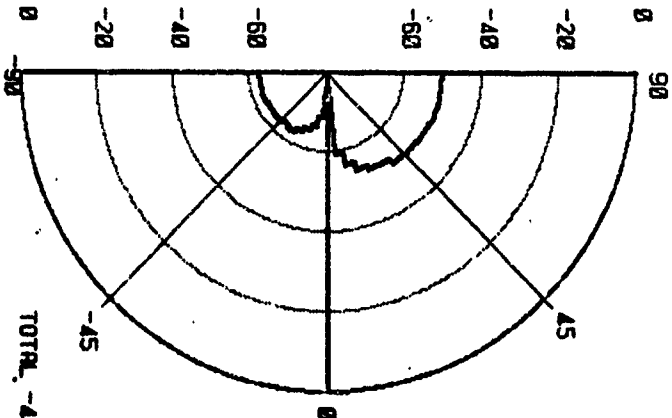
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



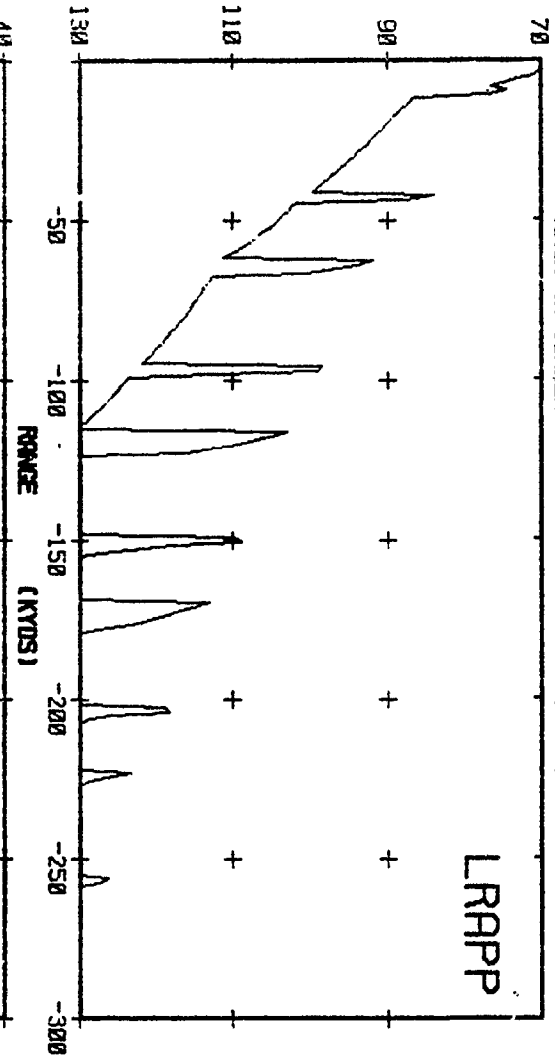
TOTAL -44.9 DB

AREA 4A SUMMER

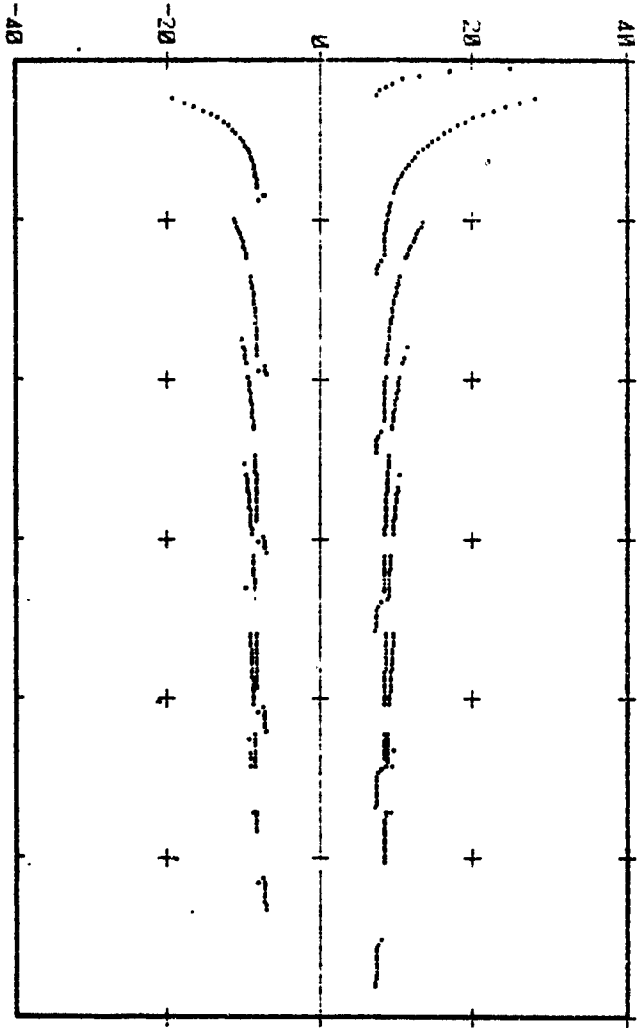
S 20 R 3707 F 2500

LRAPP

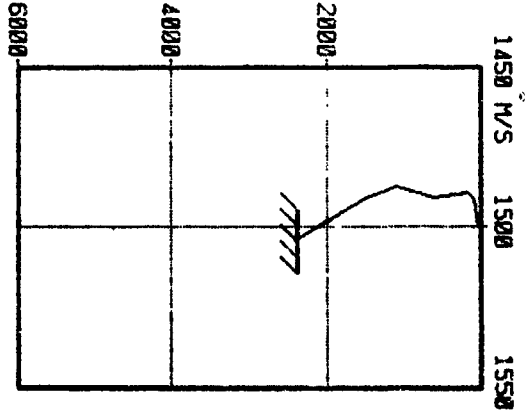
DB LOSS



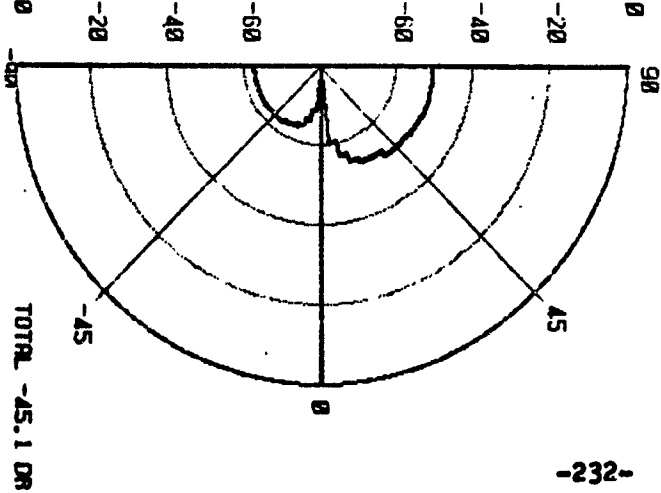
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

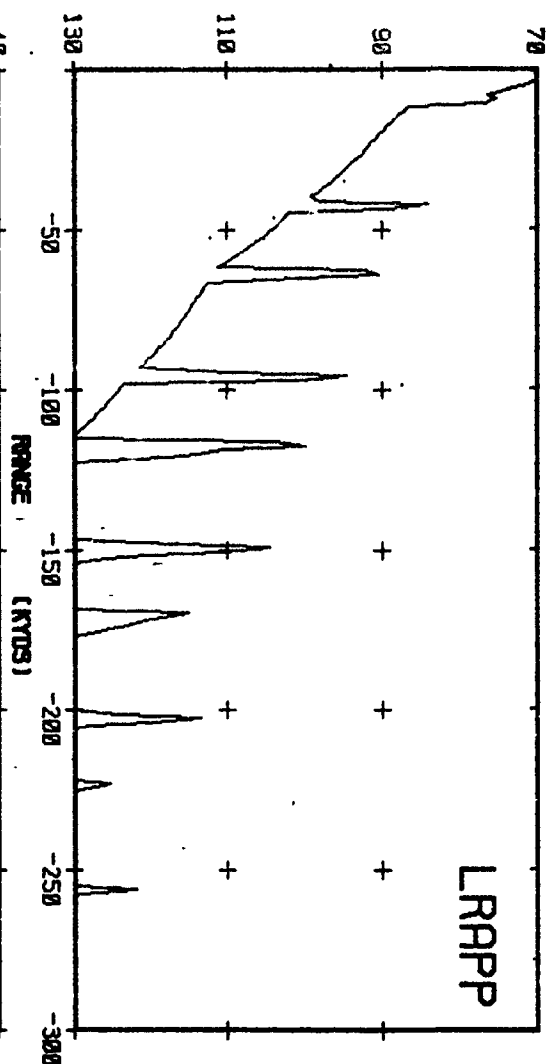


RIVER AR SUMMER

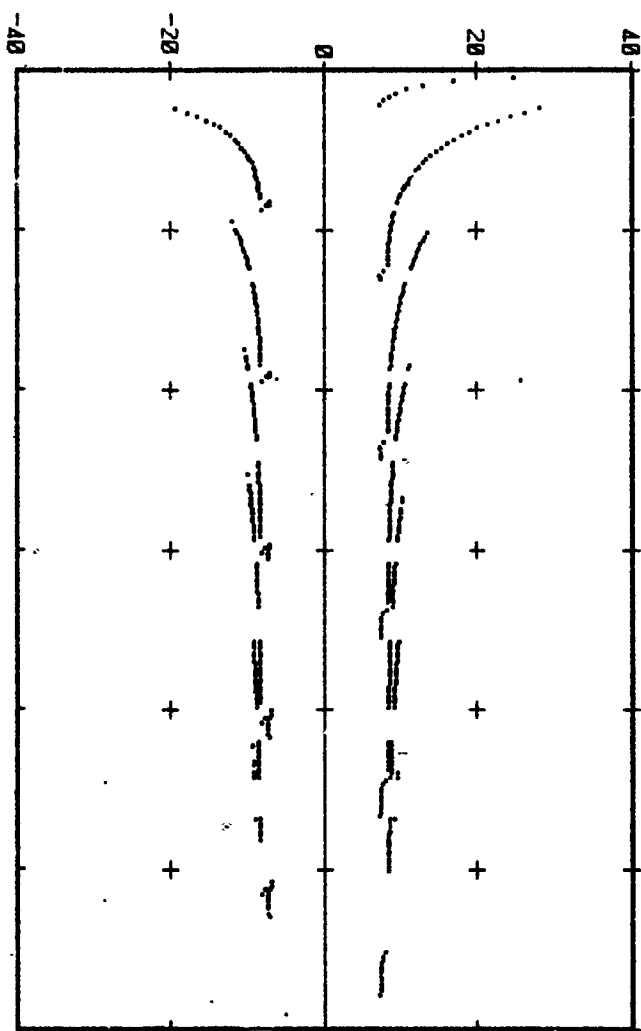
3 SB R 9707 F 2500

1450 H/S 1500 1550

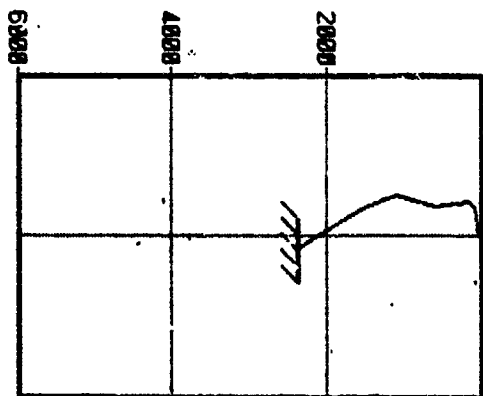
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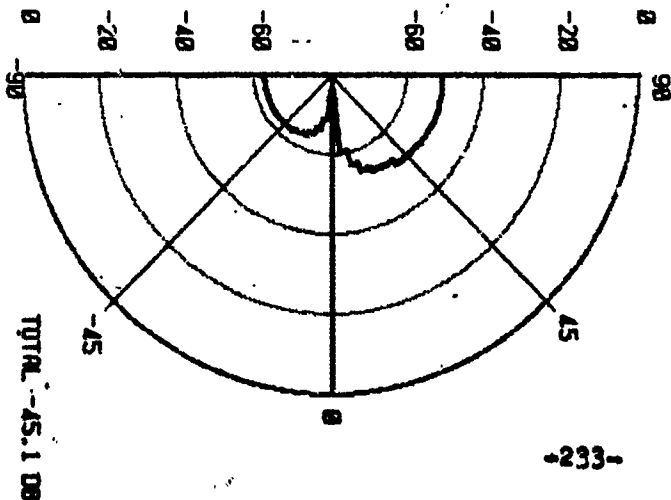
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

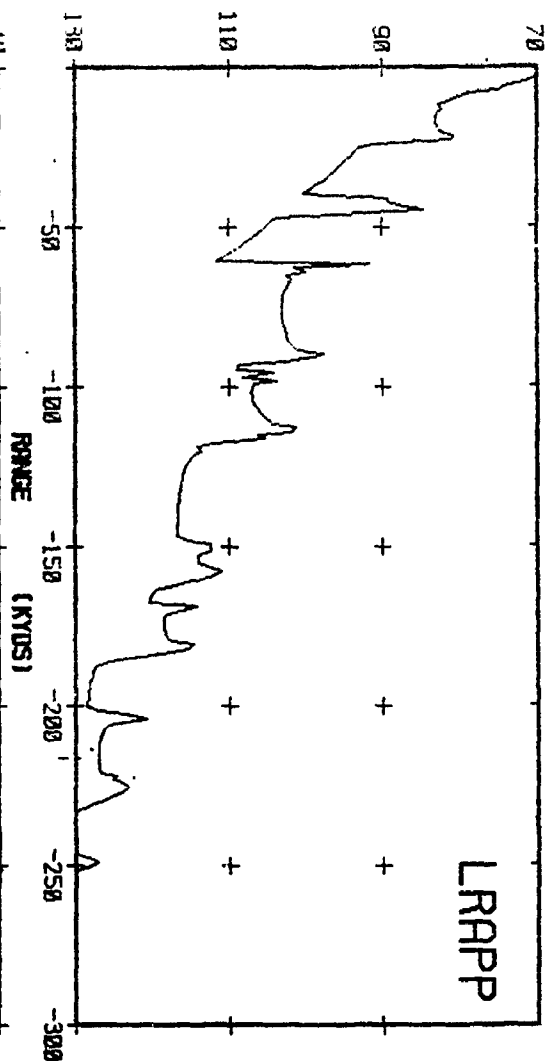


RRR AR SUMMER

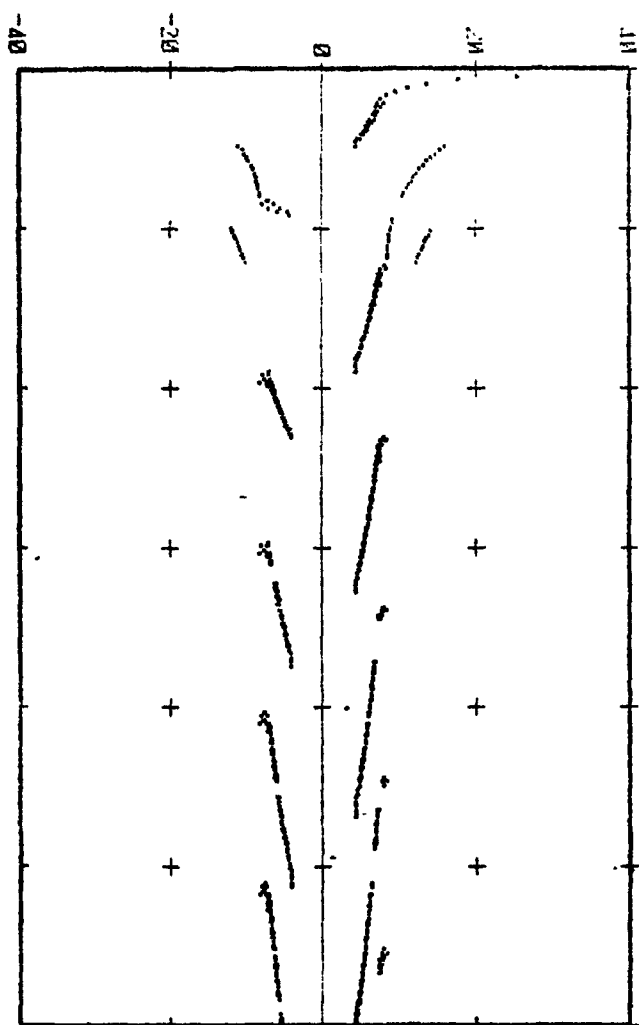
S 233 R 5707 F 2500

LRAPP

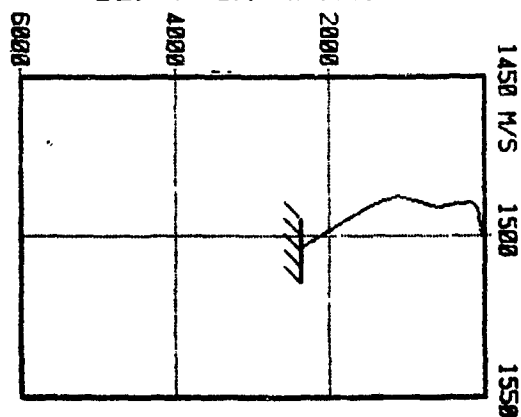
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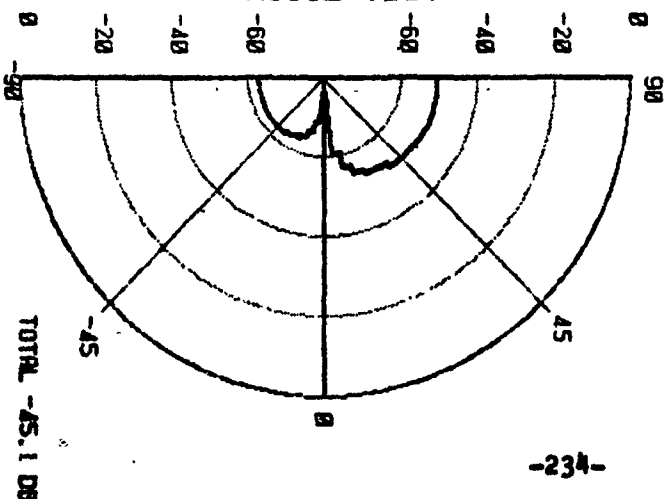
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

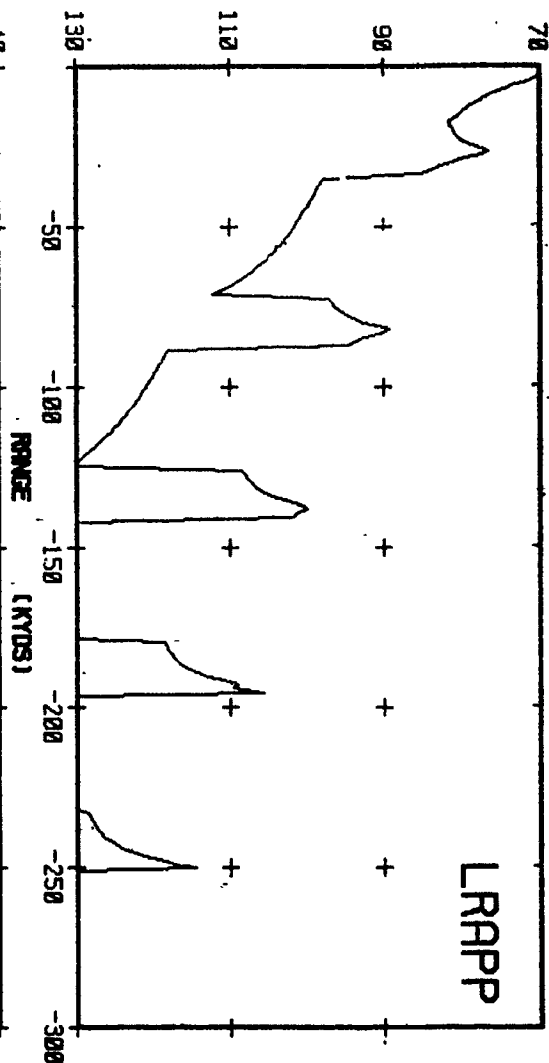


RIVER AIR SURFER

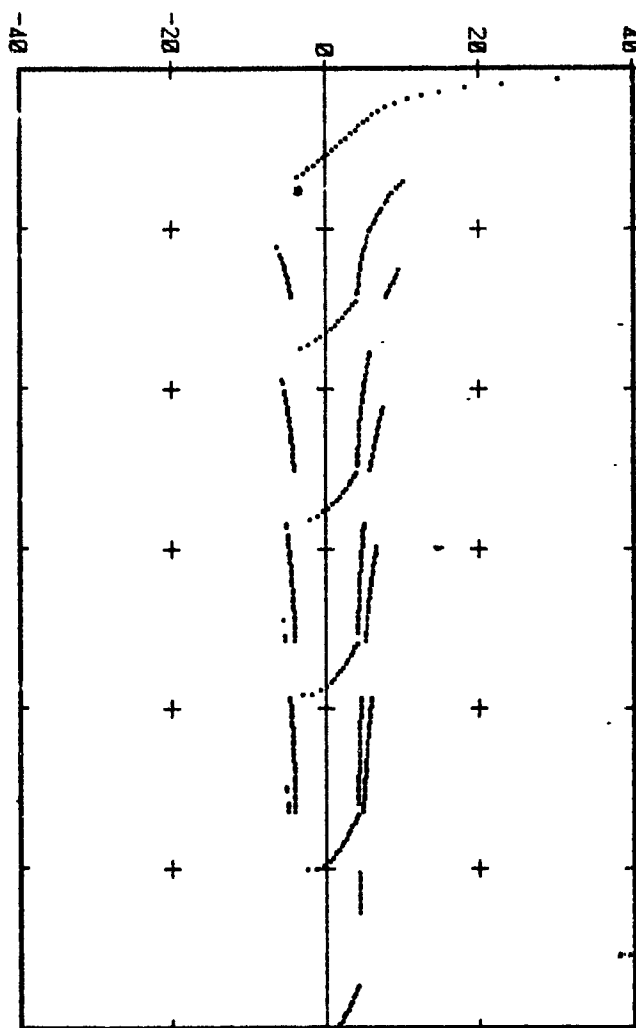
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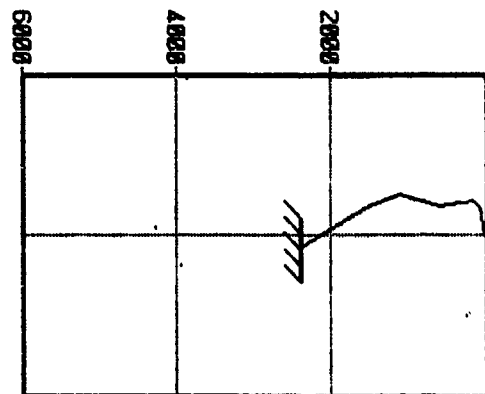
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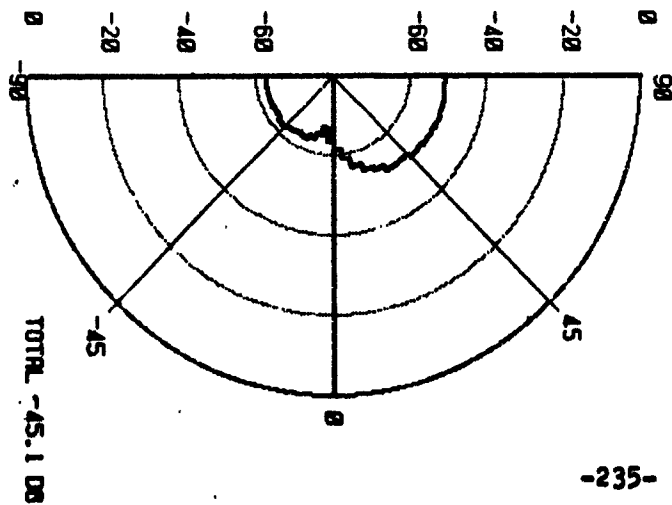
ARRIVAL ANGLE

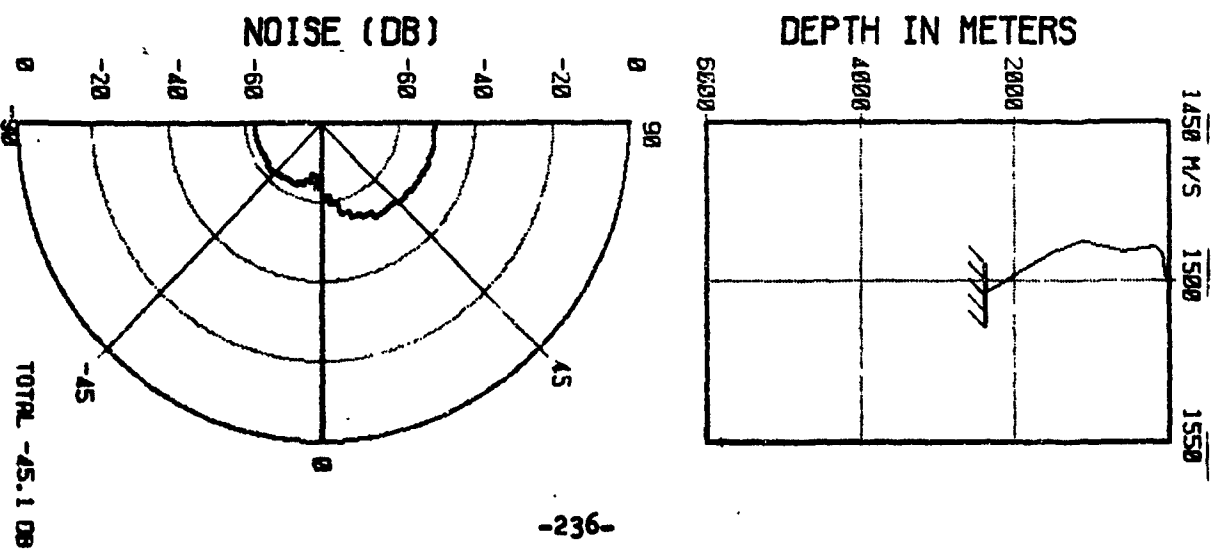
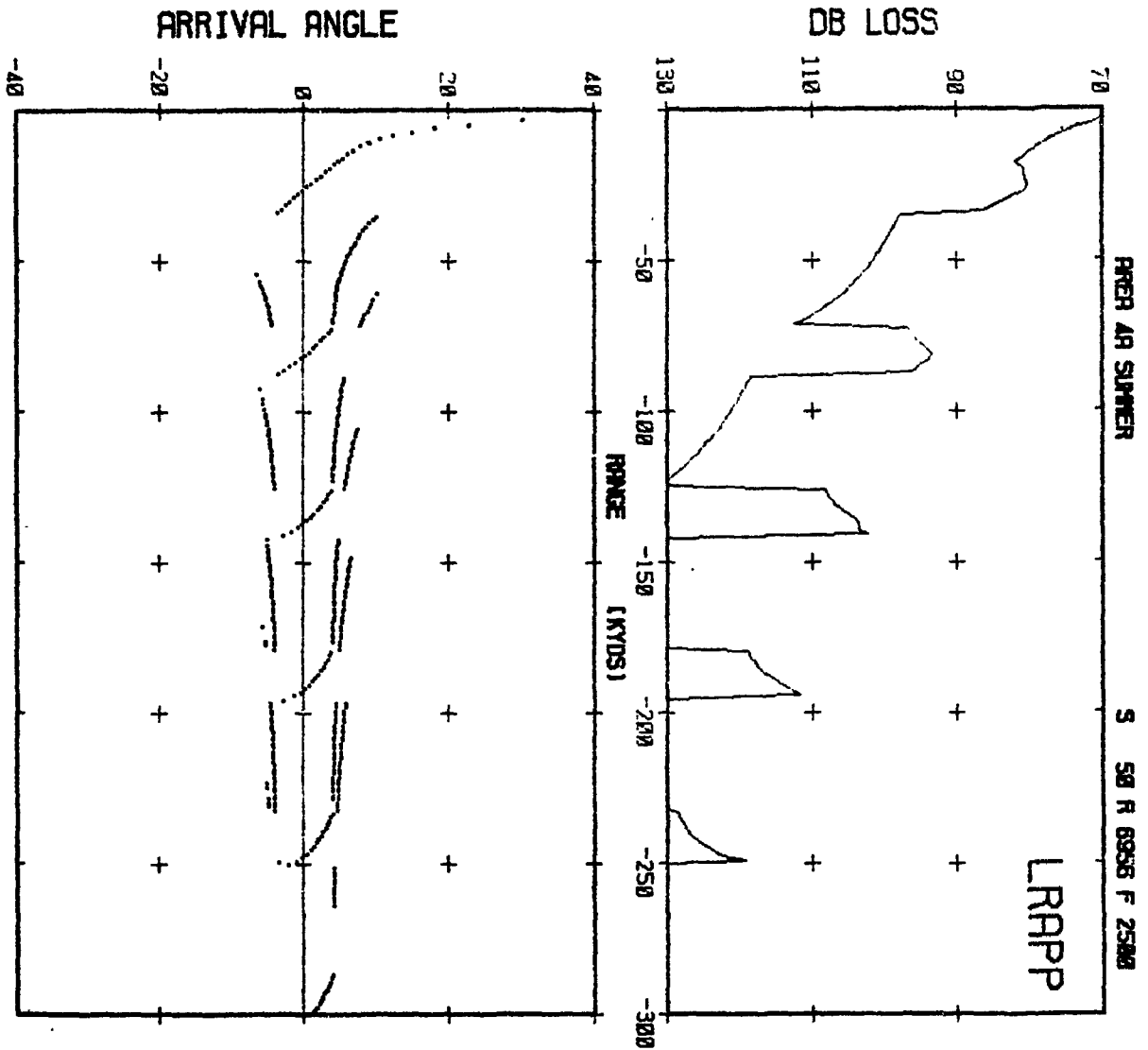


DEPTH IN METERS



NOISE (DB)



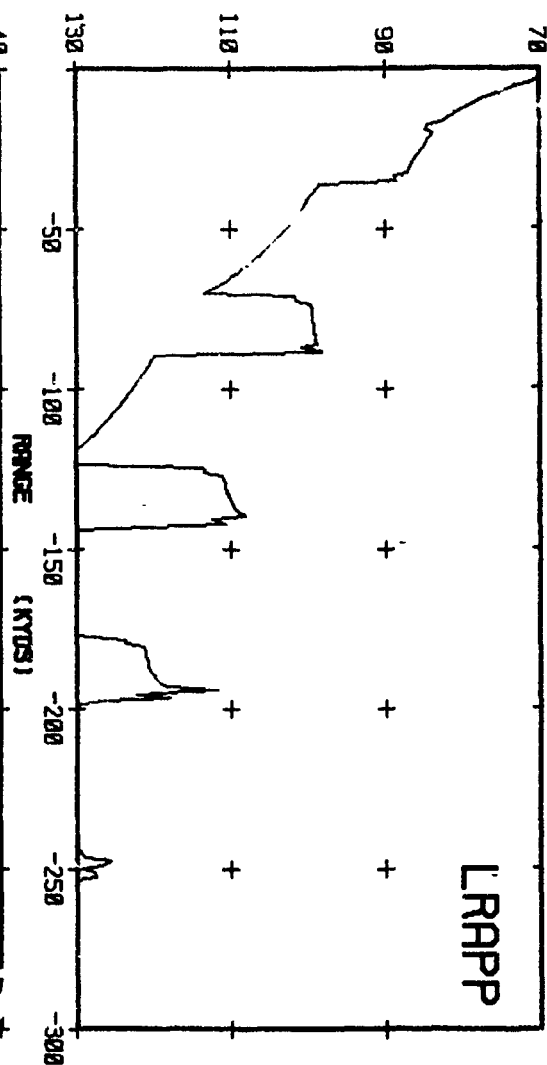


AREA 4A SUMMER

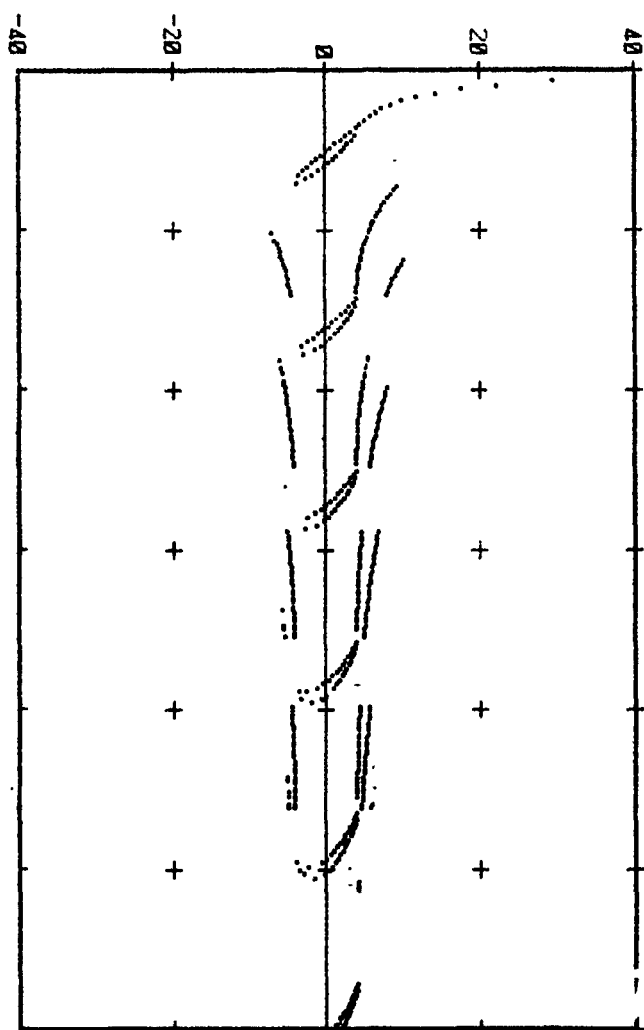
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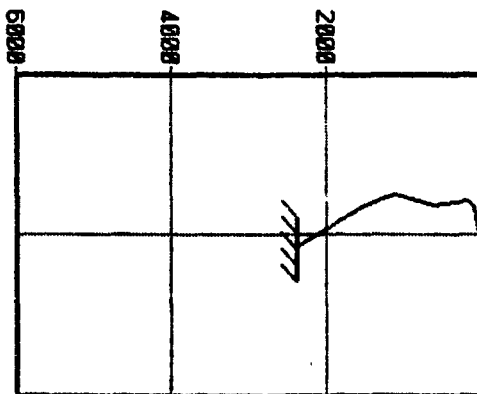
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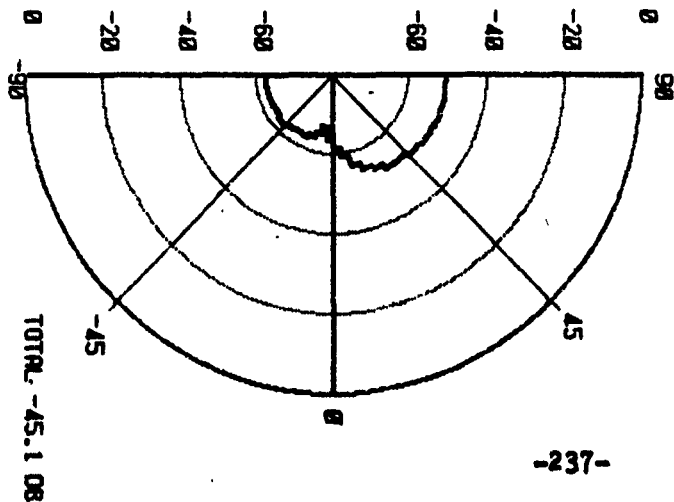
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

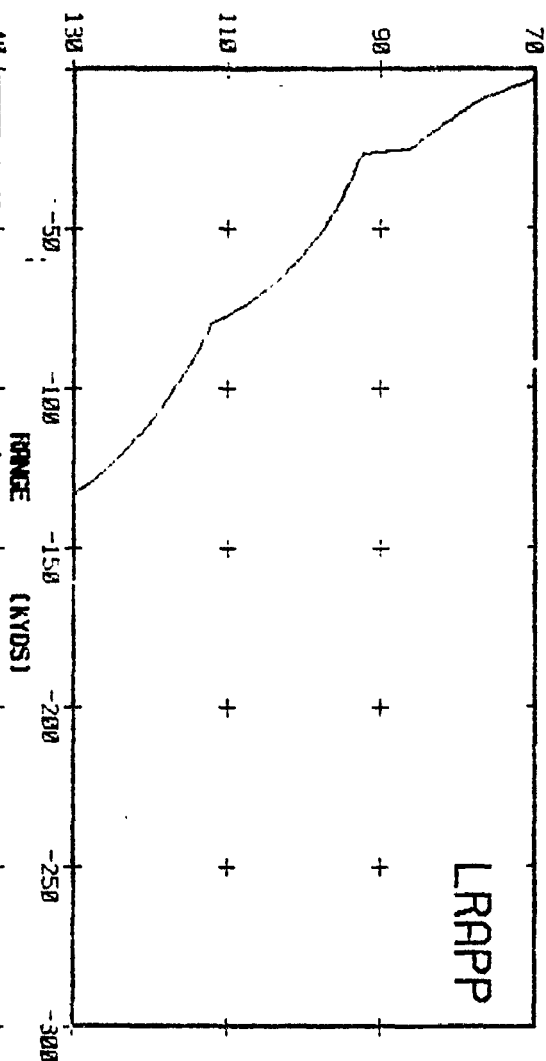


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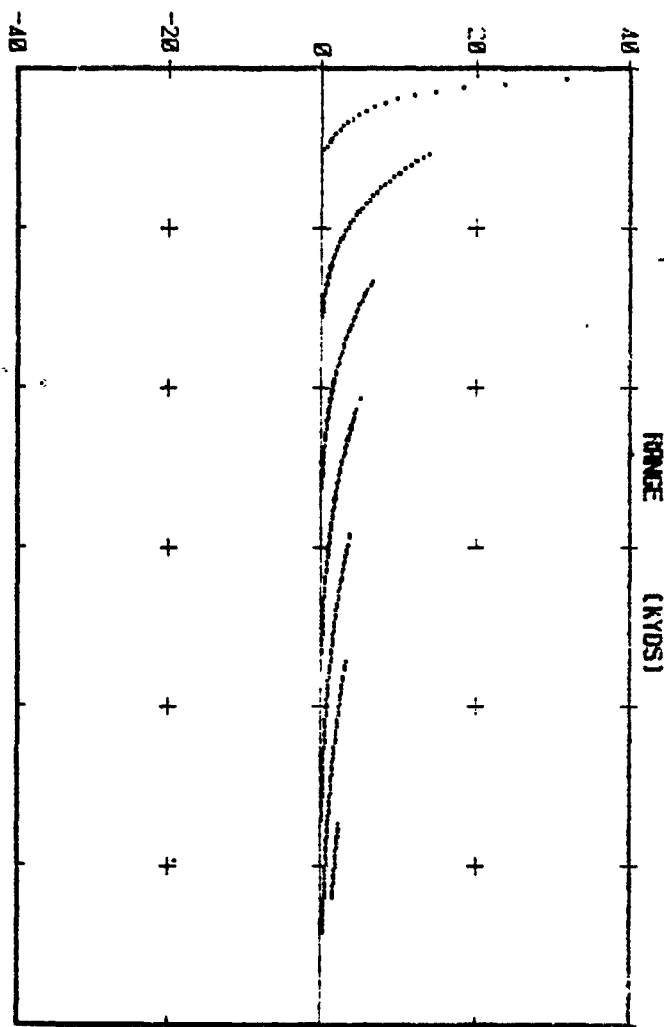
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LRAPP

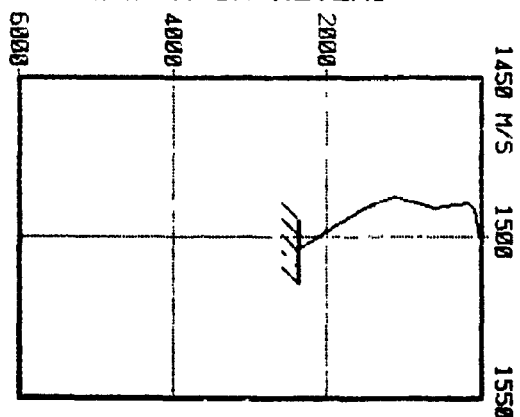
DB LOSS



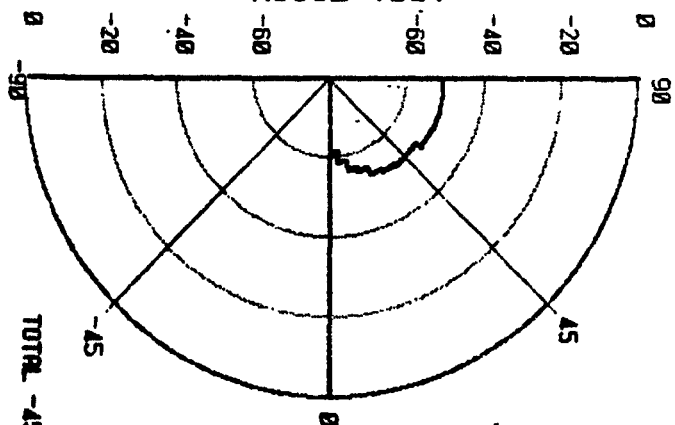
ARRIVAL ANGLE



DEPTH IN METERS



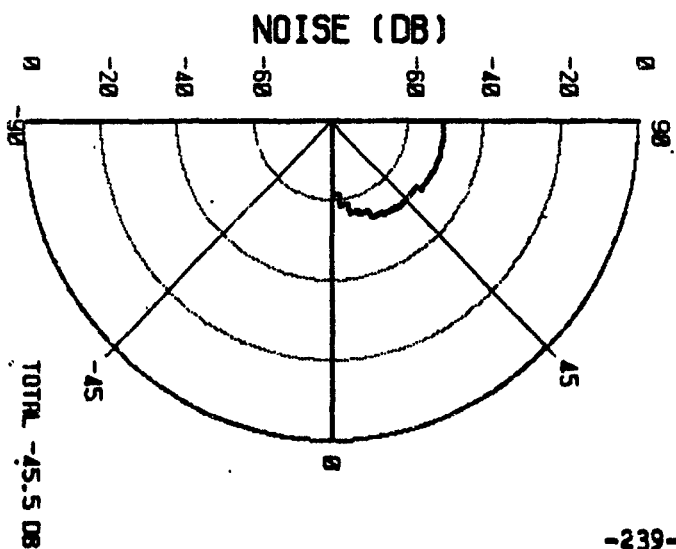
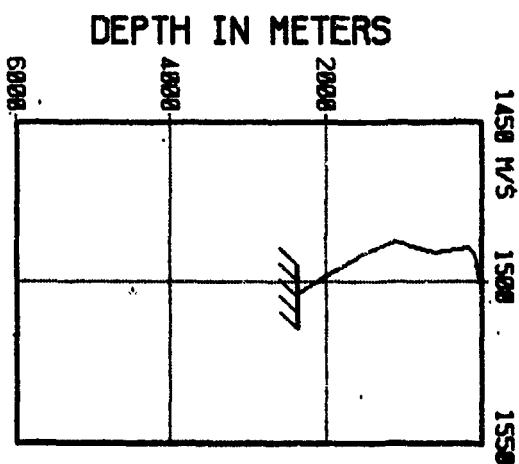
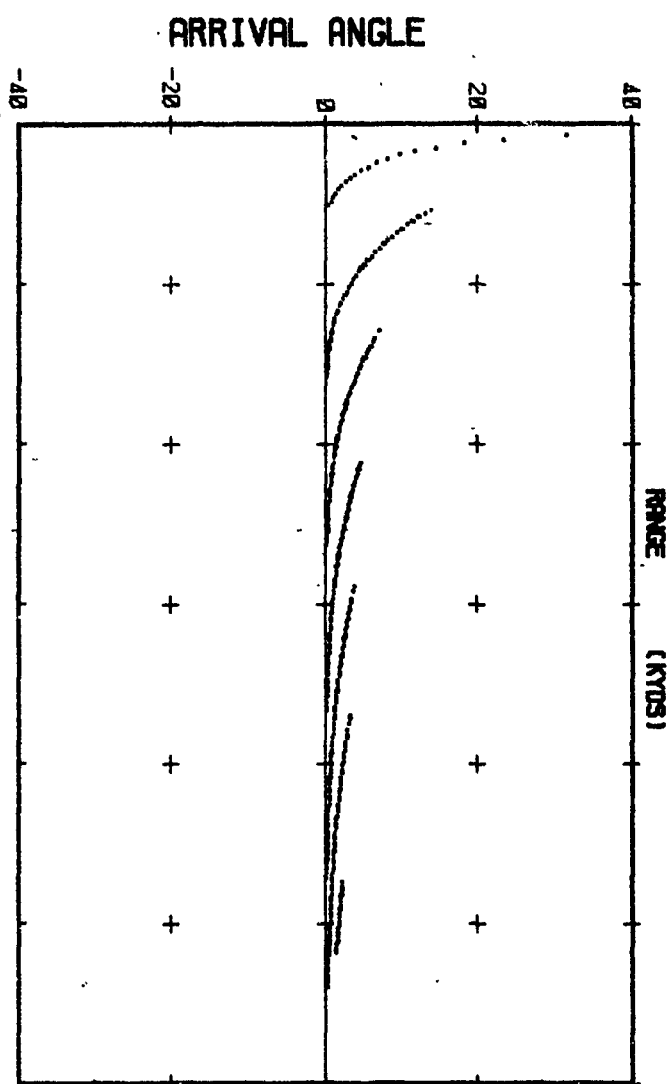
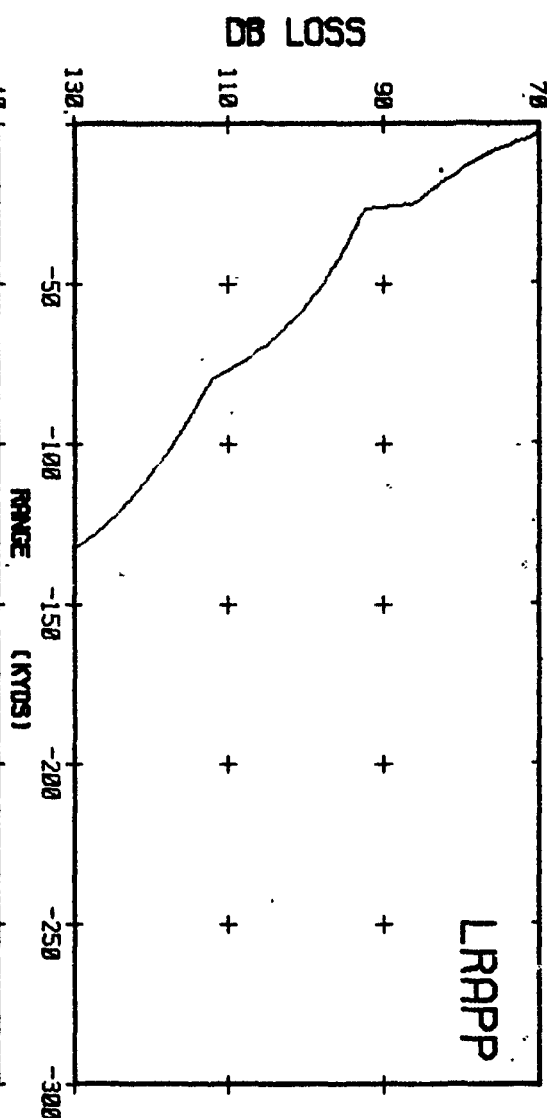
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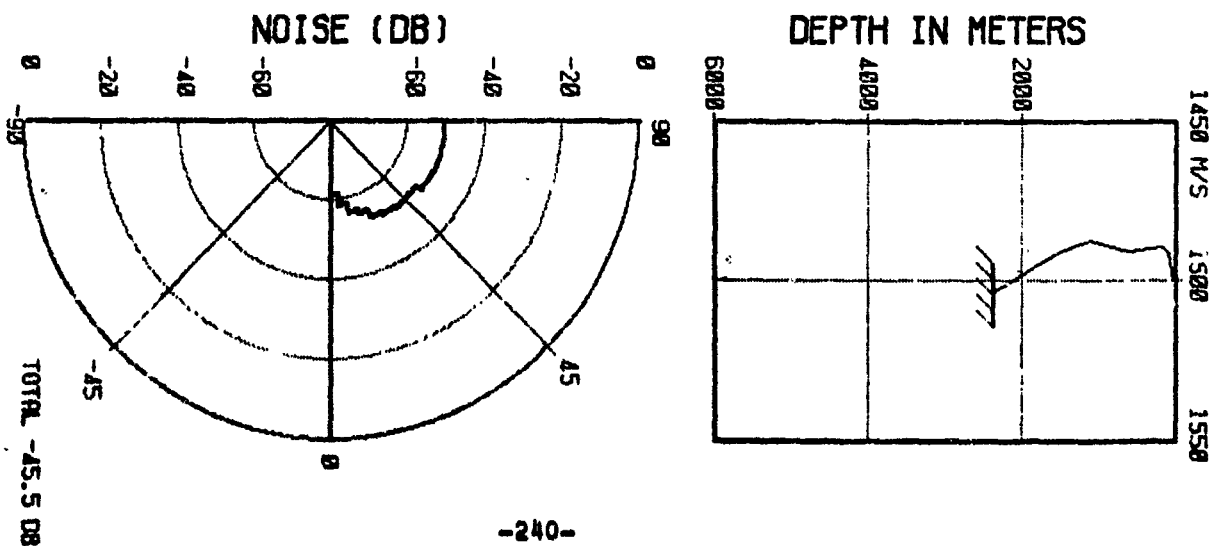
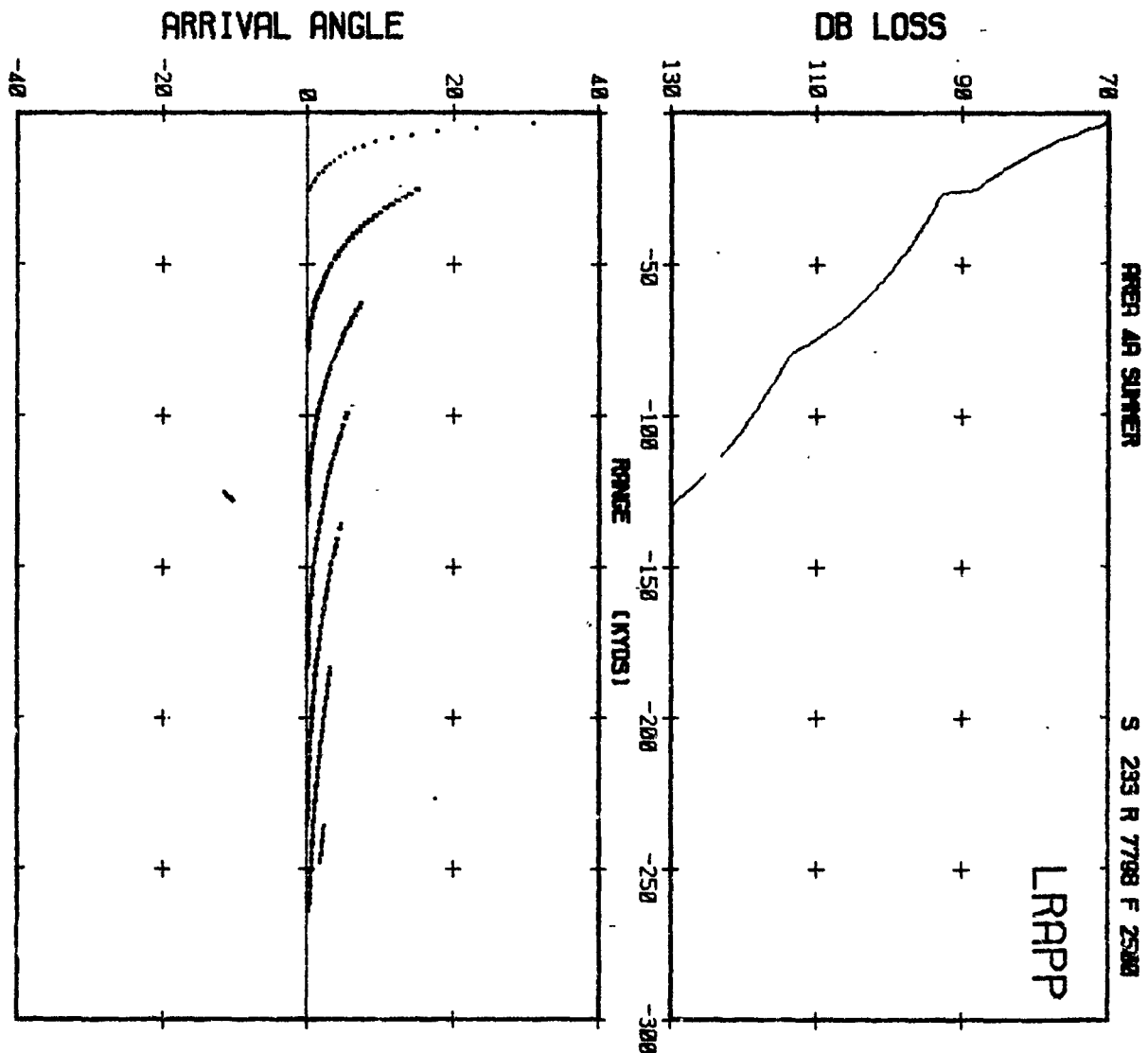


AREA 4R SUMMER

S 50 R 7700 F 2500

LRAPP







DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON VA 22203-1995

IN REPLY REFER TO:

5510/1
Ser 321OA/011/06
31 Jan 06

MEMORANDUM FOR DISTRIBUTION LIST

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.
2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is unlimited.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

A handwritten signature in black ink, appearing to read "B. F. Link", is positioned above the typed name.

BRIAN LINK
By direction

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT
(LRAPP) DOCUMENTS

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Declassified LRAPP Documents

Report Number	Personal Author	Title	Publication Source (Originator)	Pub. Date	Current Availability	Class.
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VII. AREA 3A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910342	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VIII. AREA 3B WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910343	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME IX. AREA 3B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910344	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME V. AREA 2 SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0911224	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XI. AREA 4A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0912560	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME X. AREA 4A WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916556	U
MC-011 VOL. 14	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIV. AREA 5 WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916557; ND	U
MC-011 VOL. 13	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIII. AREA 4B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916610; ND	U
MCR008	Goodman, R. R., et al.	THE NEAT 1 EXPERIMENT (U)	Maury Center for Ocean Science	721001	NS; ND	U
Unavailable	Cherry, W. R.	LRAPP BEAMFORMER	Scripps Institution of Oceanography Marine Physical Laboratory	721015	ADA081876	U
ONR ACR-186	Gregory, J. B.	PROJECT LRAPP TEST BED- TECHNOLOGY USED IN THE DEVELOPMENT OF A DEEP-OCEAN STABLE PLATFORM (U)	Office of Naval Research	721024	AD 052-3370 ~~AD083370~~ ; ND	U
MC-010	Unavailable	CHURCH GABBRO EXERCISE PLAN- LRAPP (U)	Maury Center for Ocean Science	721026	ND	U
WHOI-72-87	Daubin, S. C., et al.	THE ACODAC SYSTEM	Woods Hole Oceanographic Institution	721101	AD0756628; ND	U
NRLR7516	Fleming, H. S., et al.	PROJECT NEAT 1 ENVIRONMENTAL DATA REPORT (U) (USNS J.W. GIBBS)	Naval Research Laboratory	721129	NS; ND ~~AD 52-3746~~	U