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MC REPORT 011

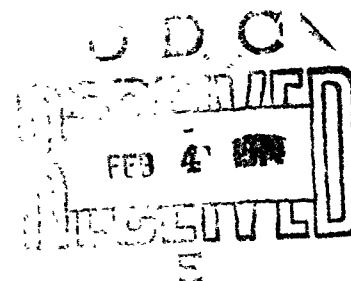
Volume 10

**ACOUSTIC ENVIRONMENTAL SCENARIOS
AND
PREDICTIONS FOR ASW**

**VOLUME 10
AREA 4A, WINTER
PREDICTIONS FOR PASSIVE SONAR**

October 1972

LONG RANGE ACOUSTIC PROPAGATION PROJECT



**OCEAN SCIENCE PROGRAM
MAURY CENTER FOR OCEAN SCIENCE
Department of the Navy
Washington, D.C.**

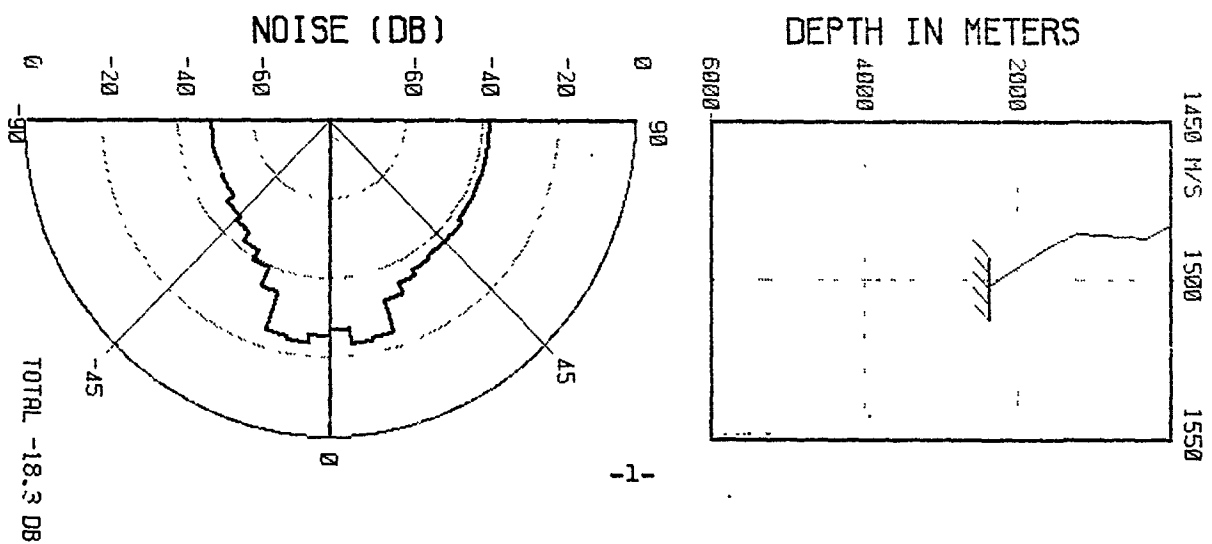
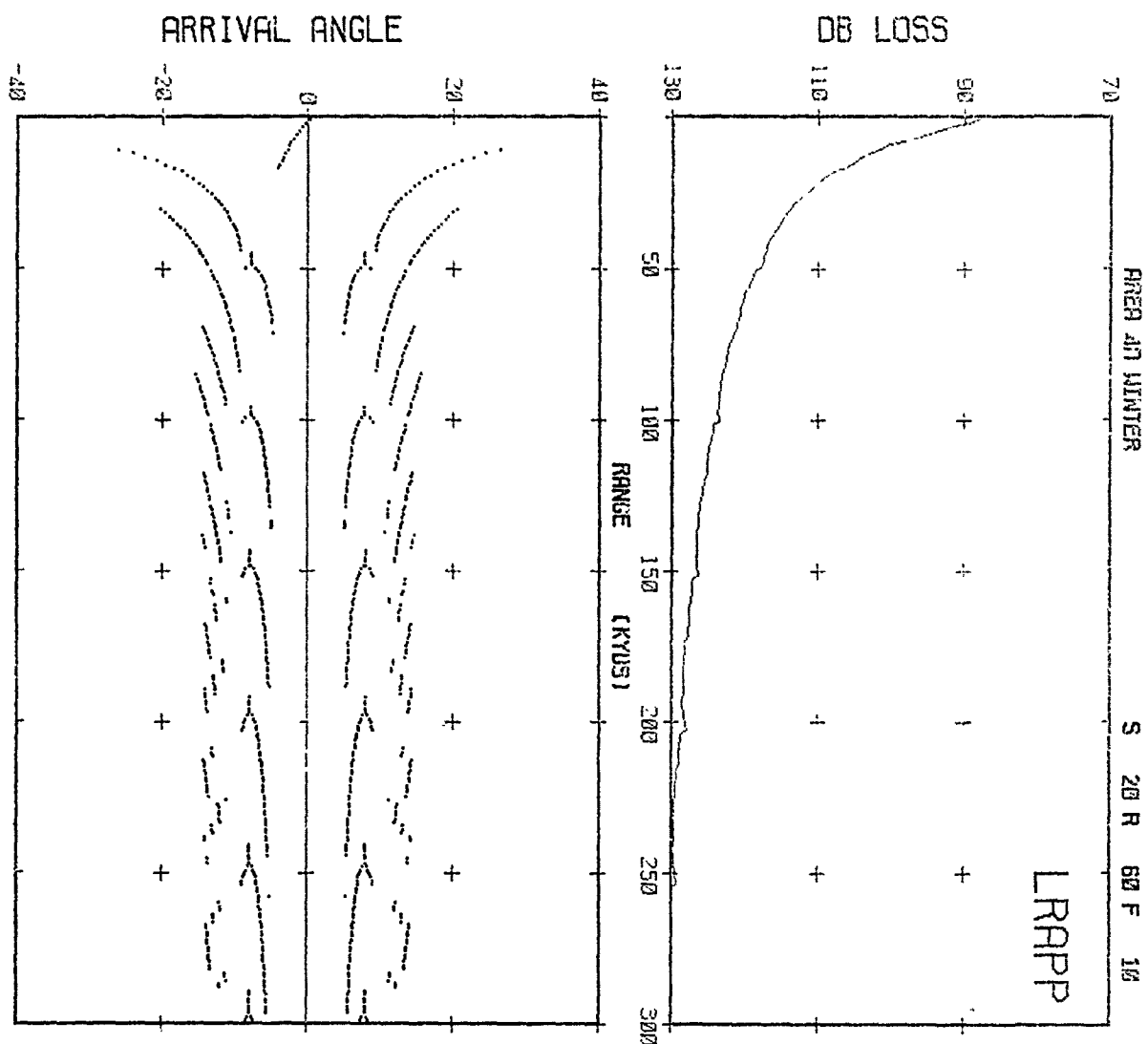
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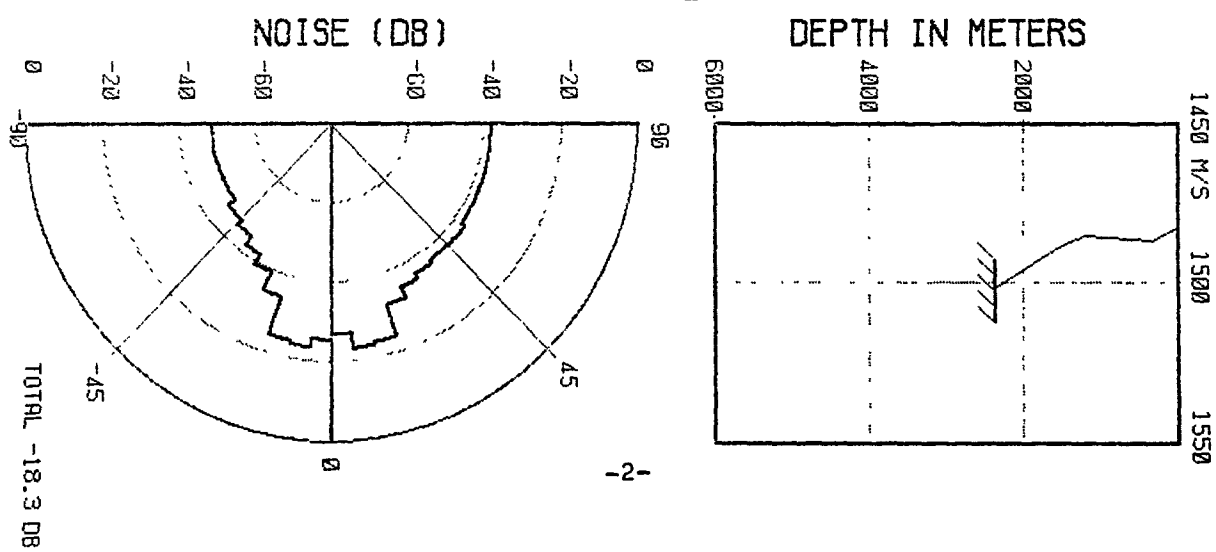
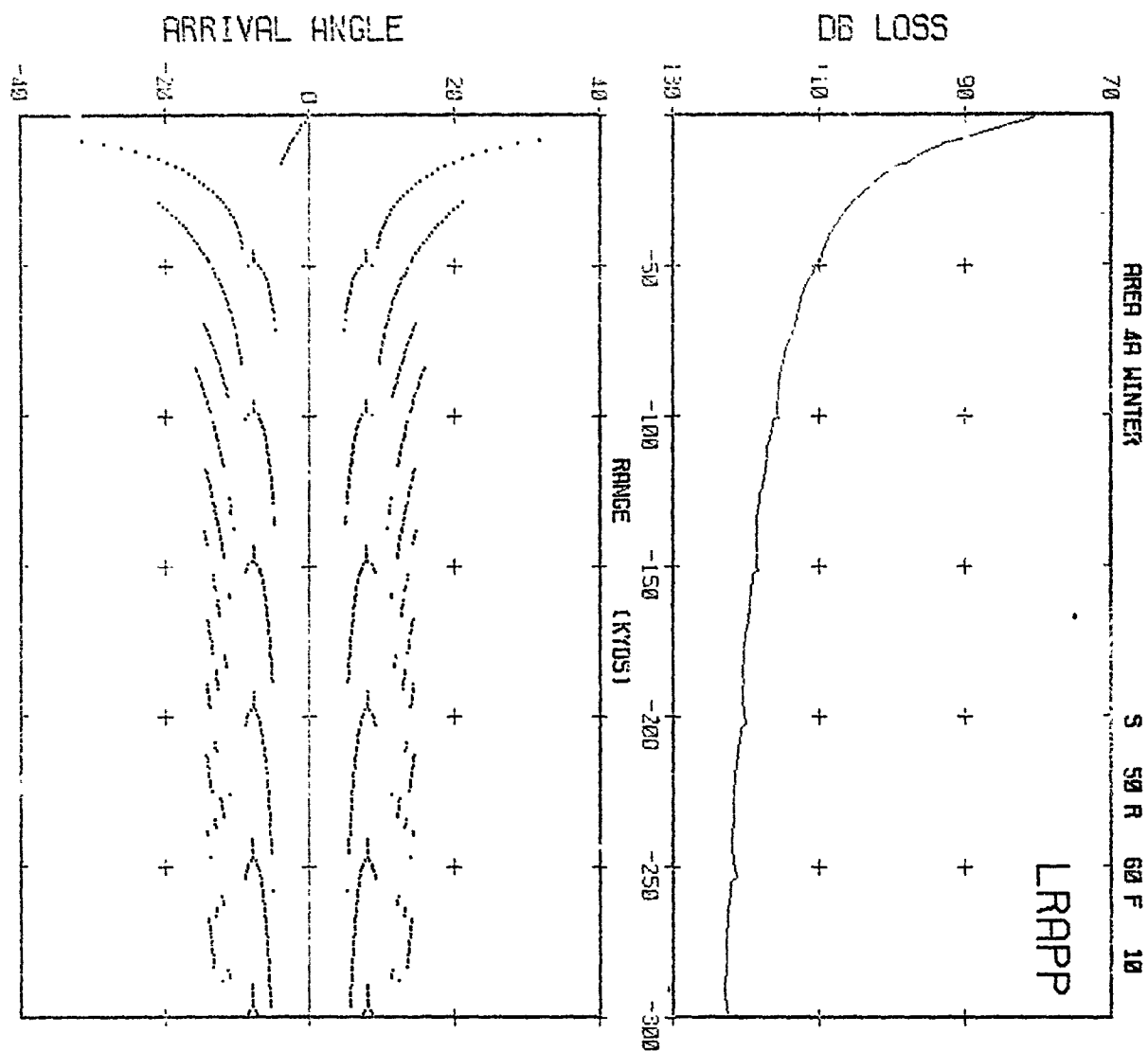
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Director, Long Range Acoustic Propagation Project (ONR Code 102-OS)

ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

VOLUME X: AREA 4A WINTER
PREDICTIONS FOR PASSIVE SONAR

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





AREA 4R WINTER

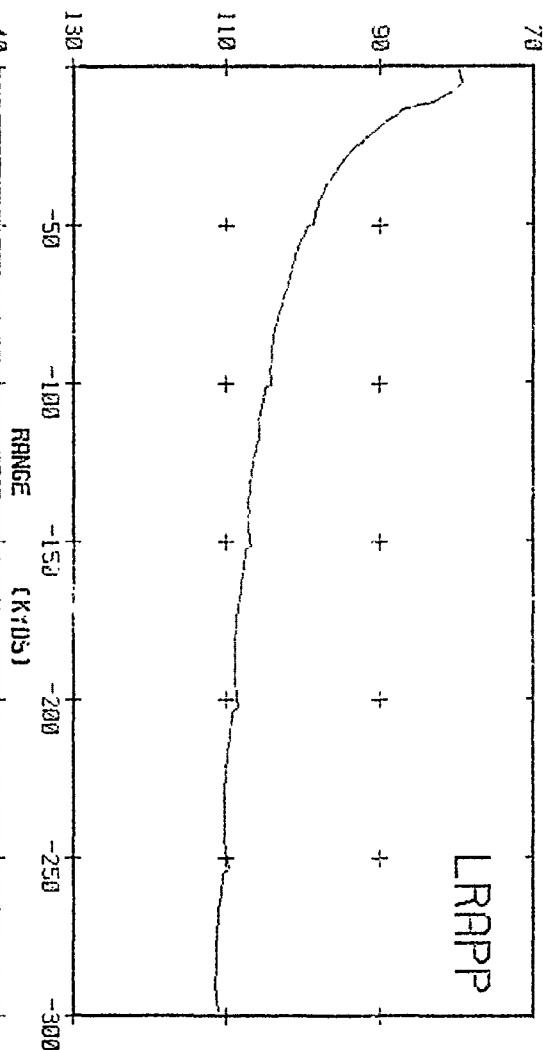
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1450 M/S

1500

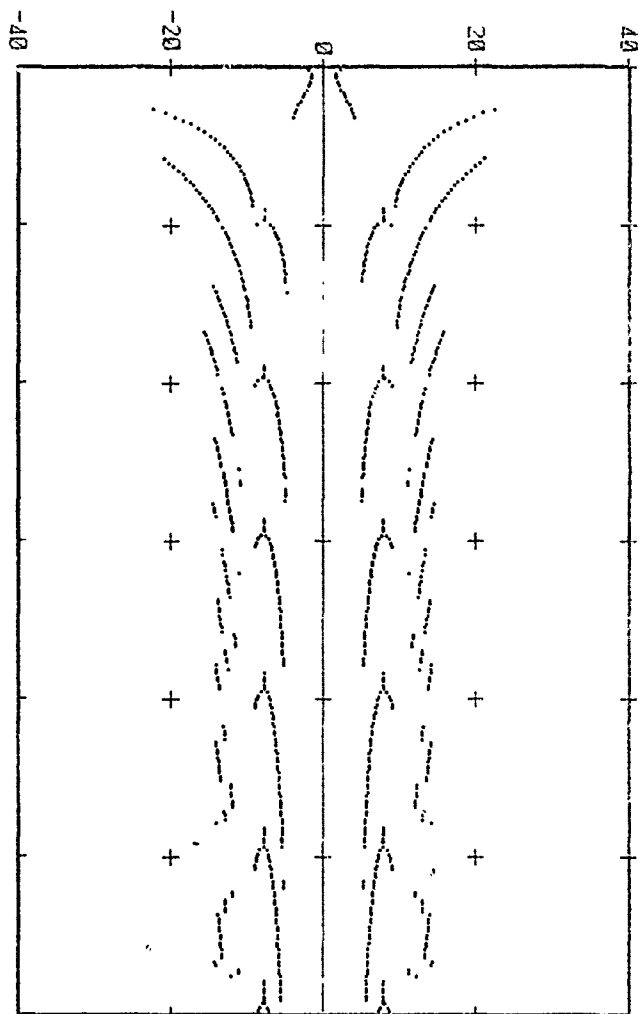
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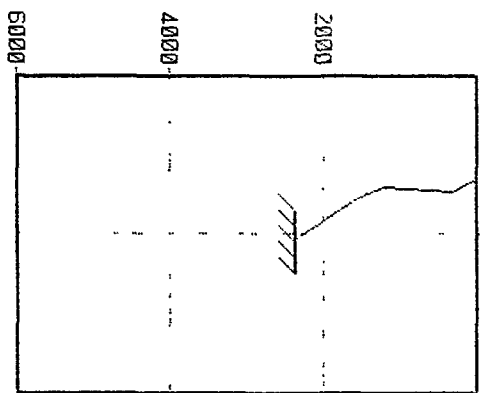


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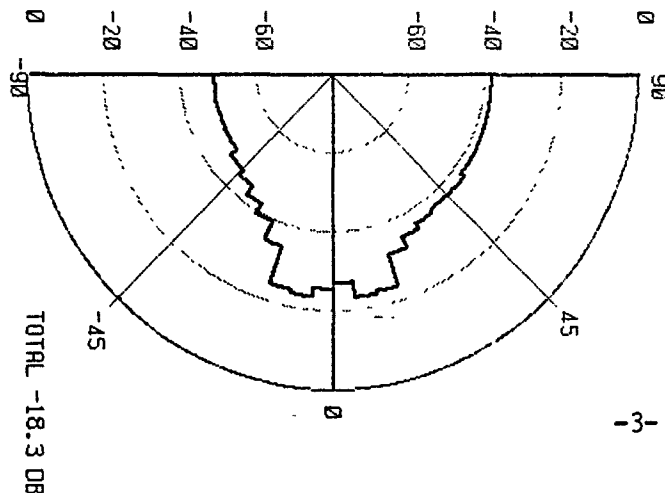
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



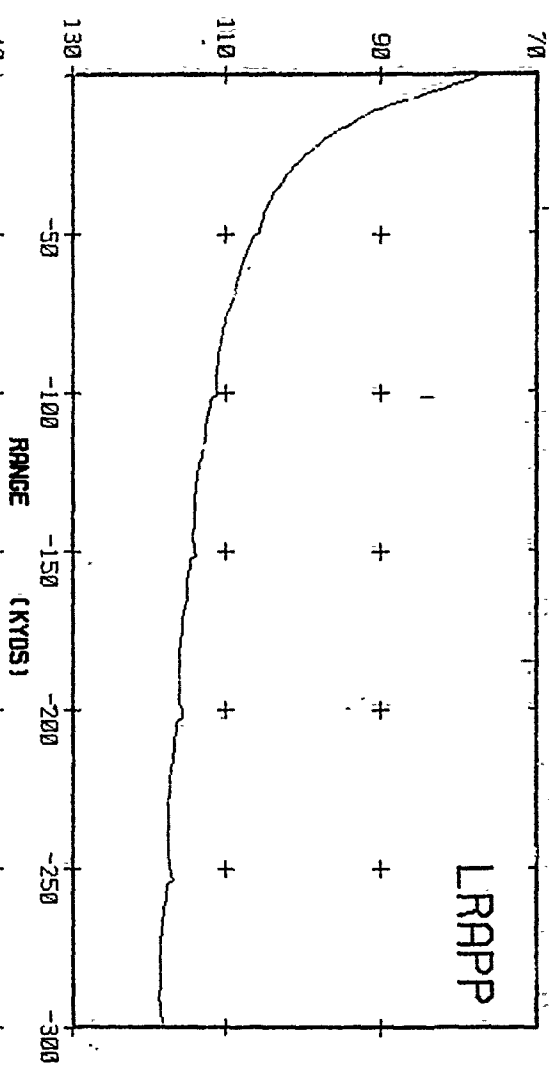
TOTAL -18.3 DB

GREEN 4R WINTER

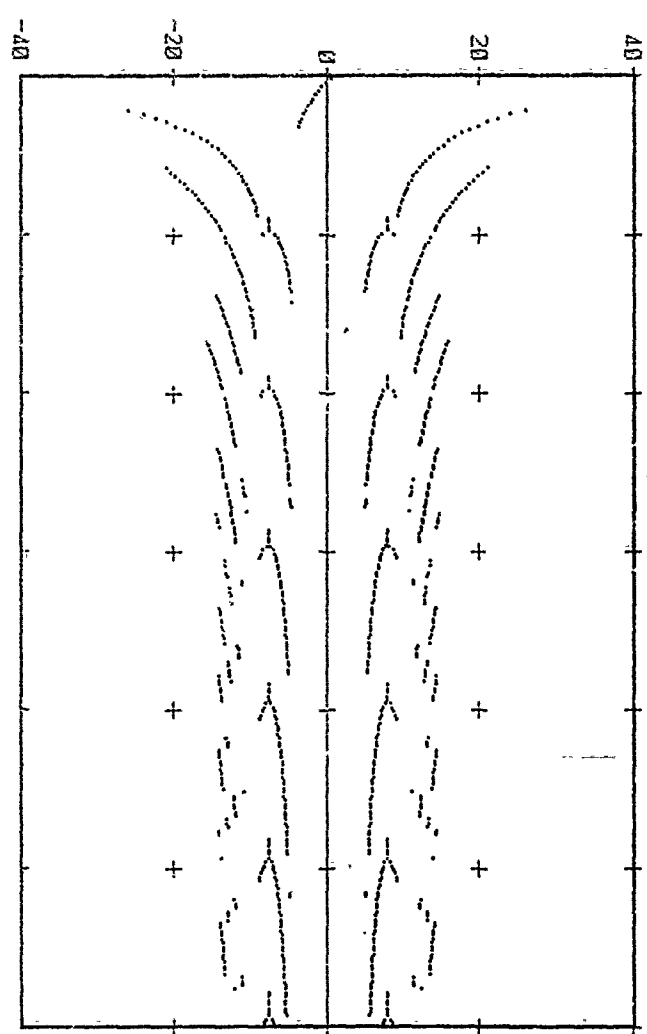
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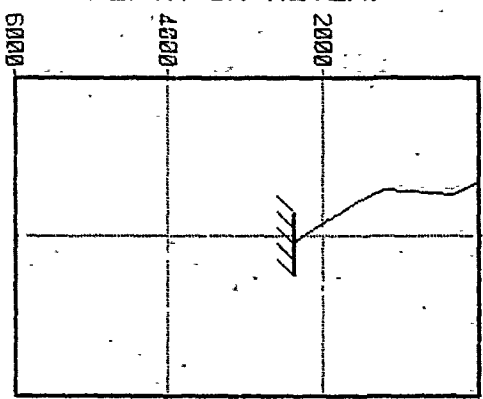
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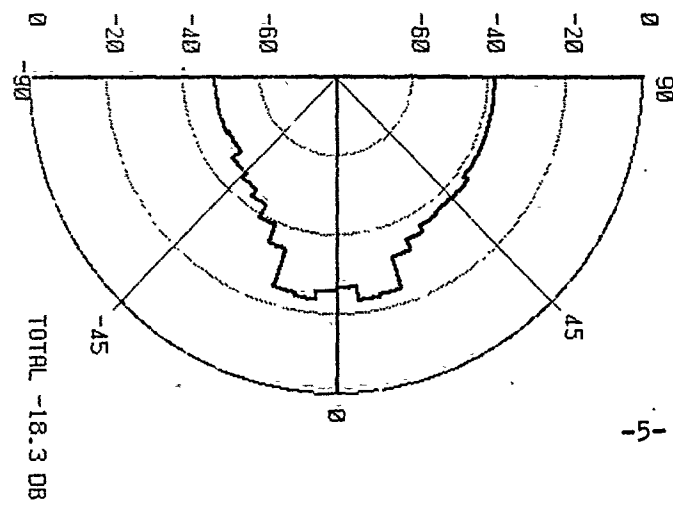
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

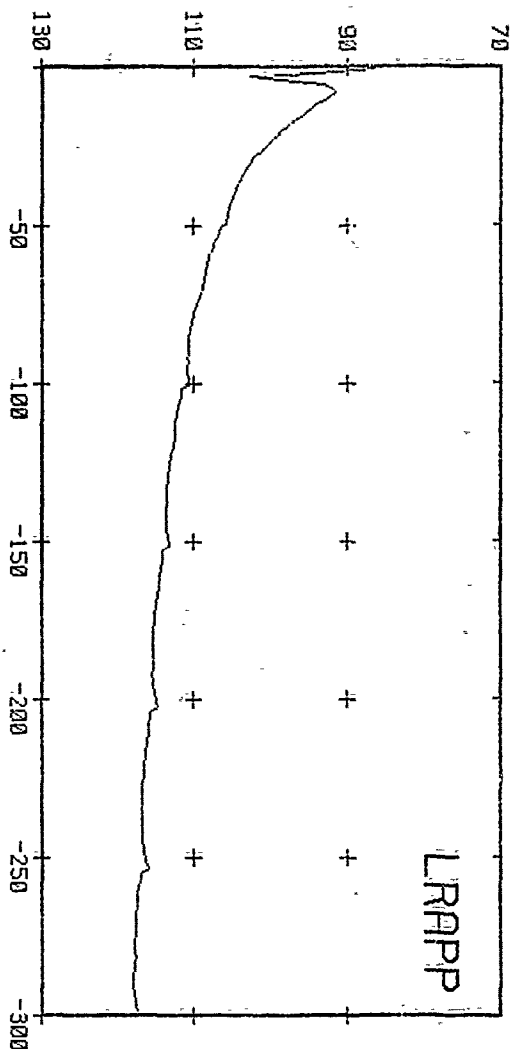


AREA 4A WINTER

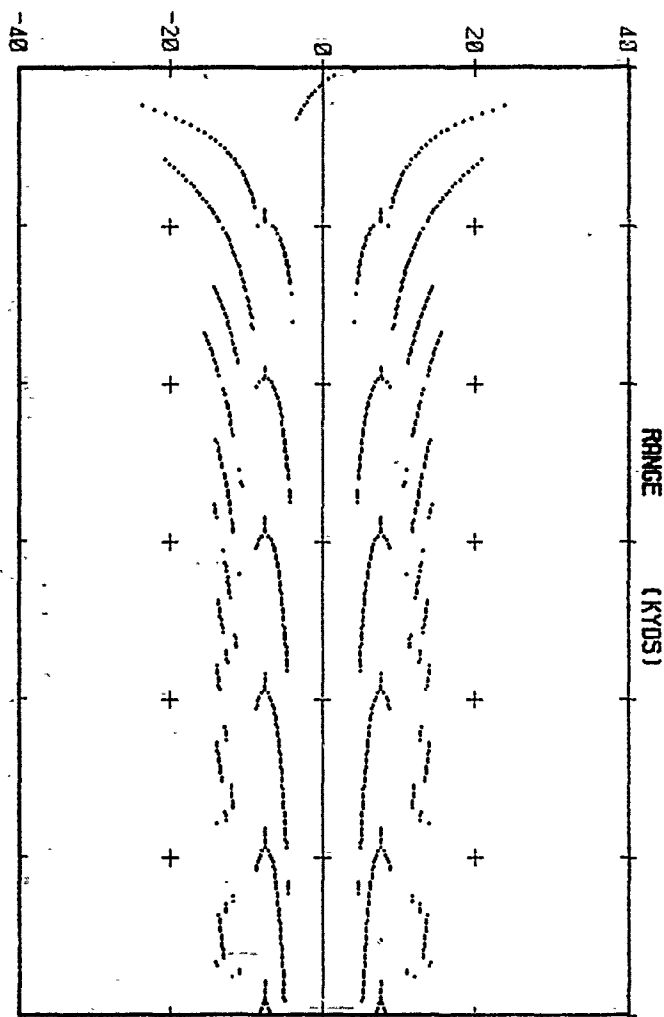
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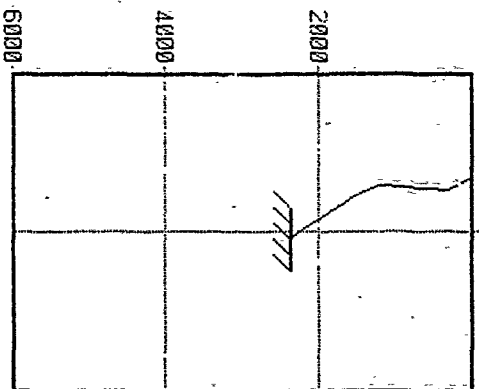
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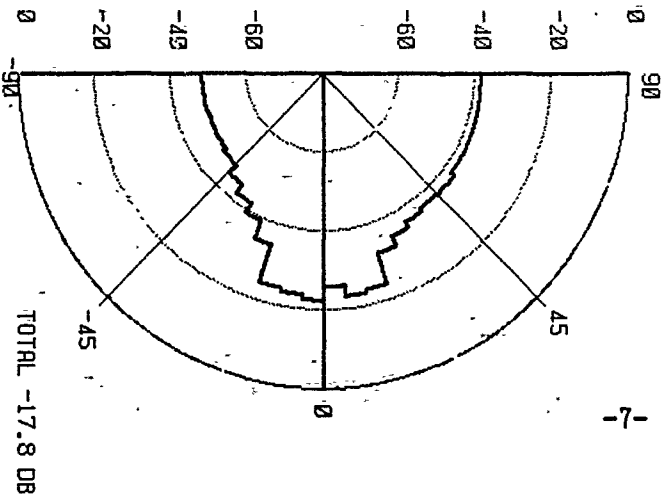
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



RRR 4R WINTER

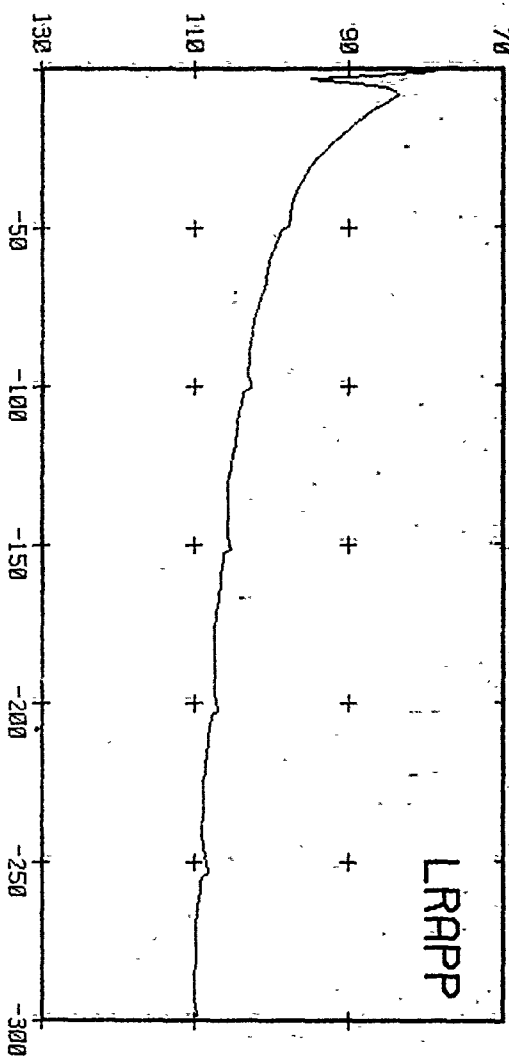
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1450 N/S

1500

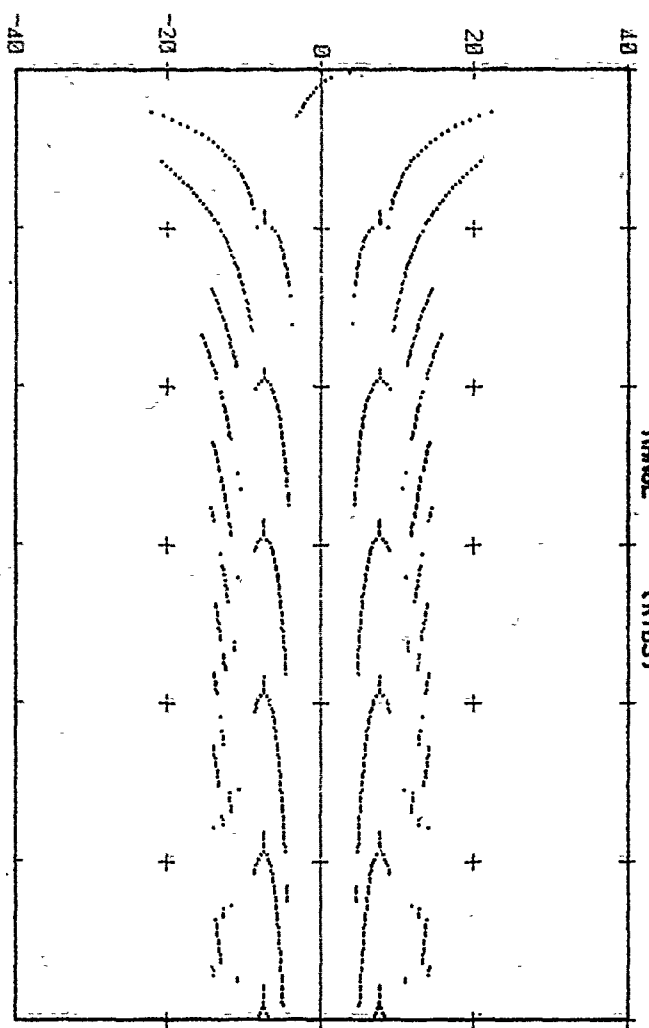
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DB LOSS

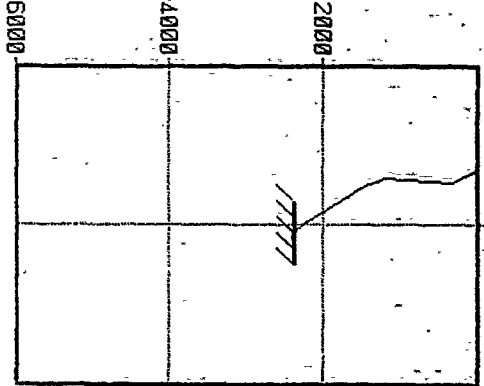


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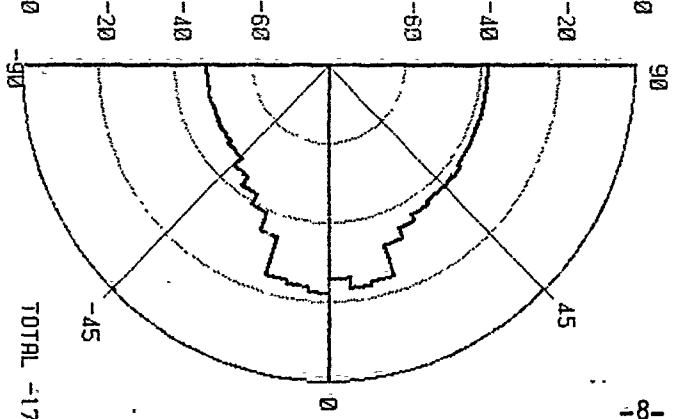
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



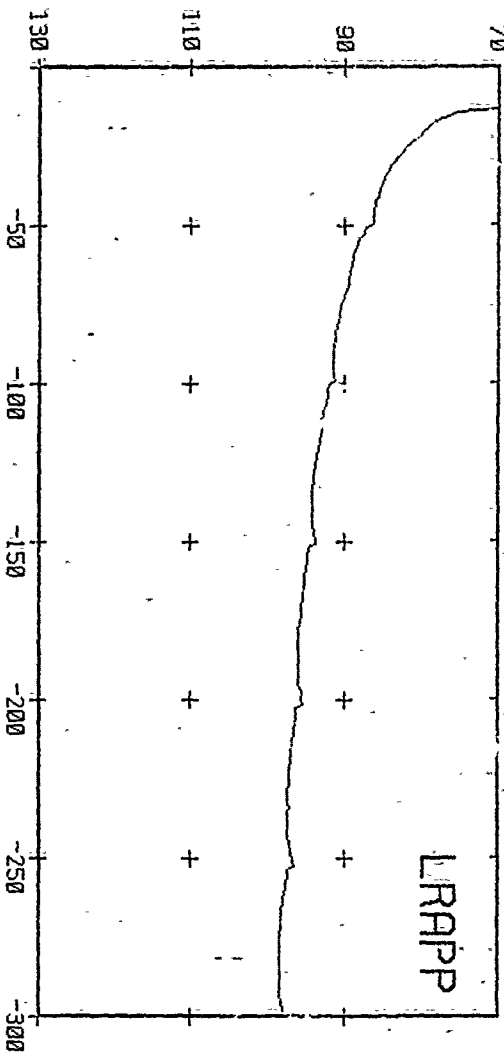
TOTAL -17.8 DB

AREA 4R WINTER

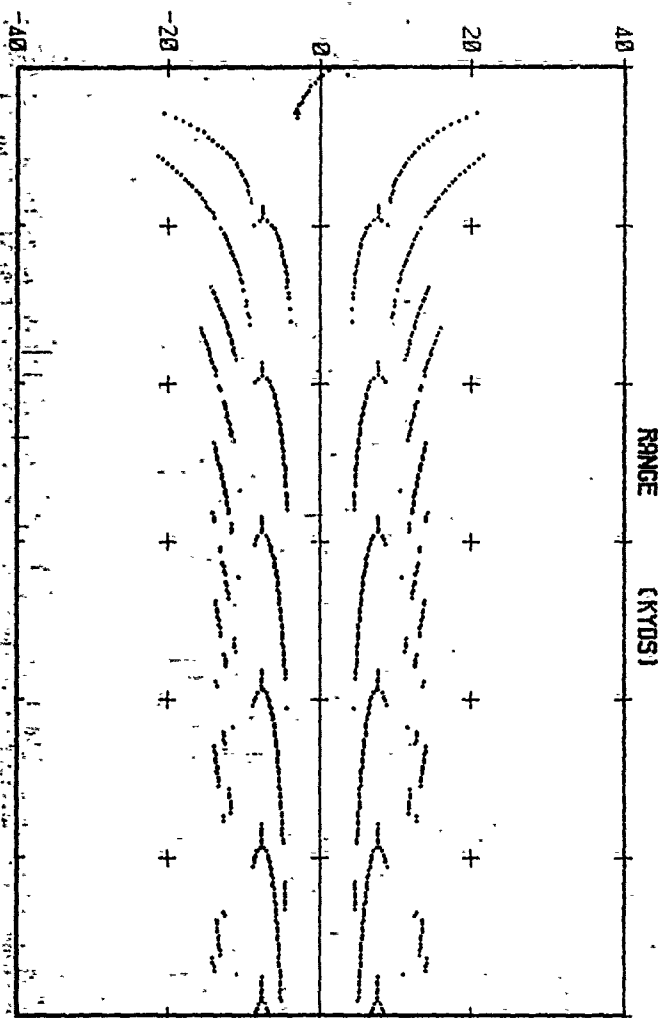
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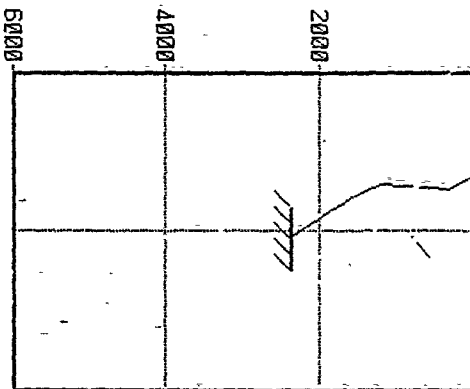
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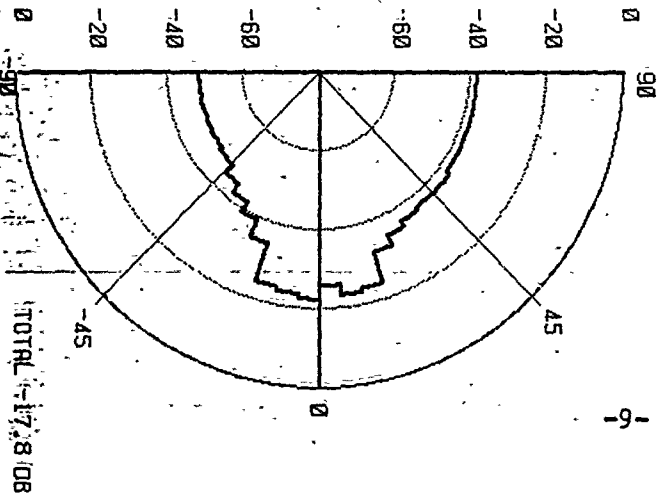
ARRIVAL ANGLE



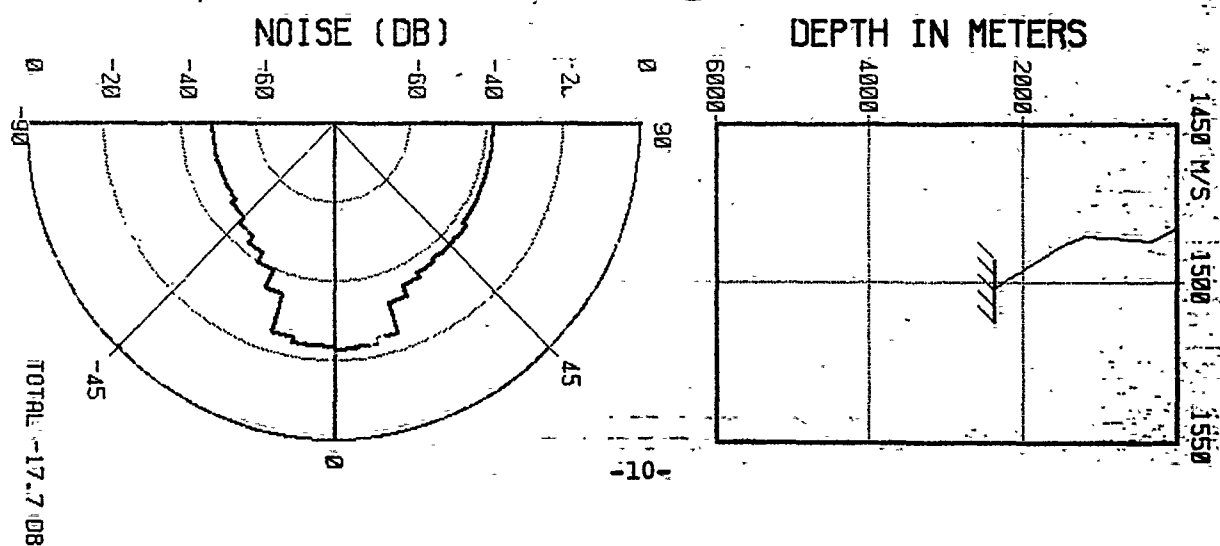
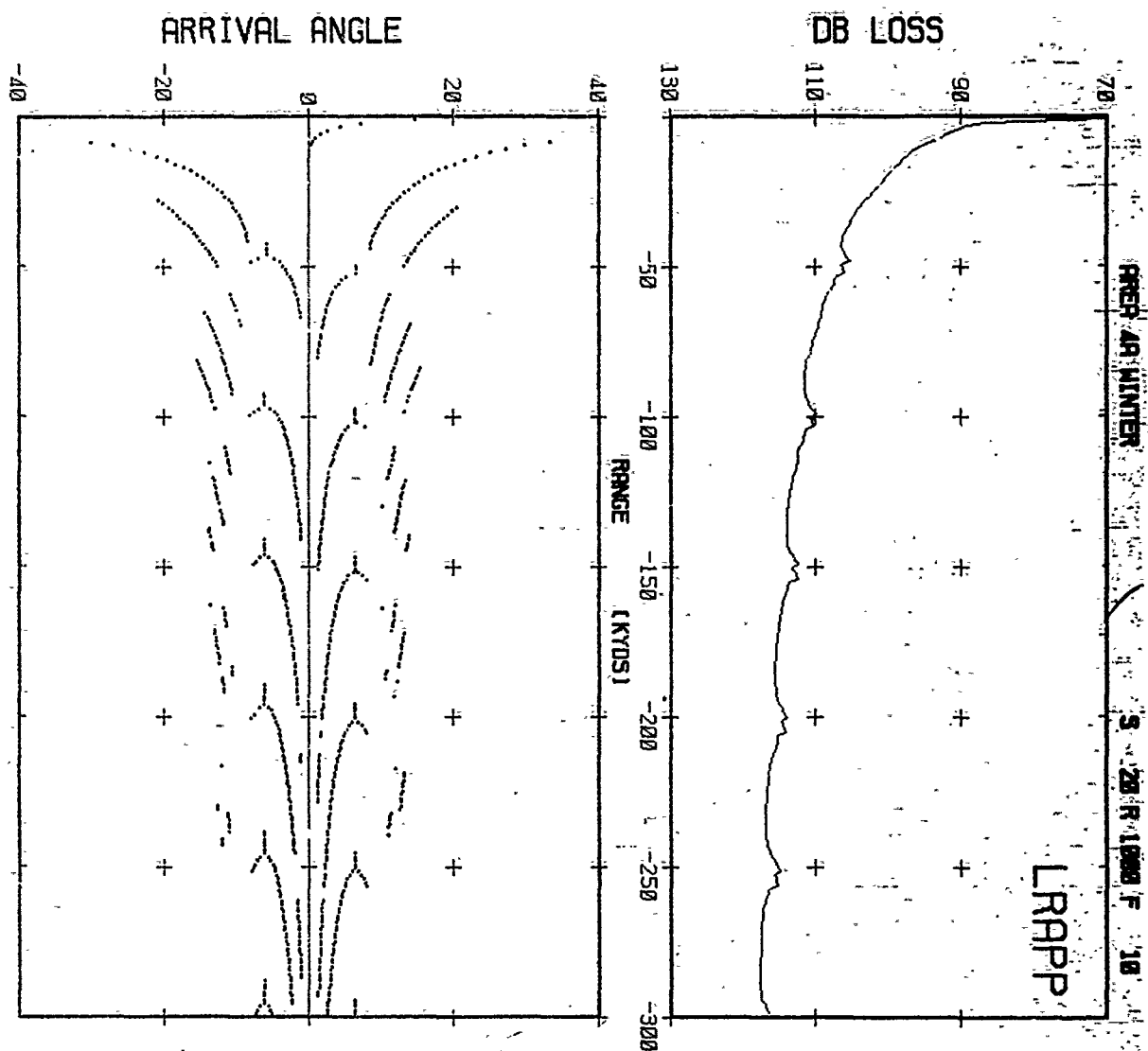
DEPTH IN METERS



NOISE (DB)



TOTAL -17.8 DB

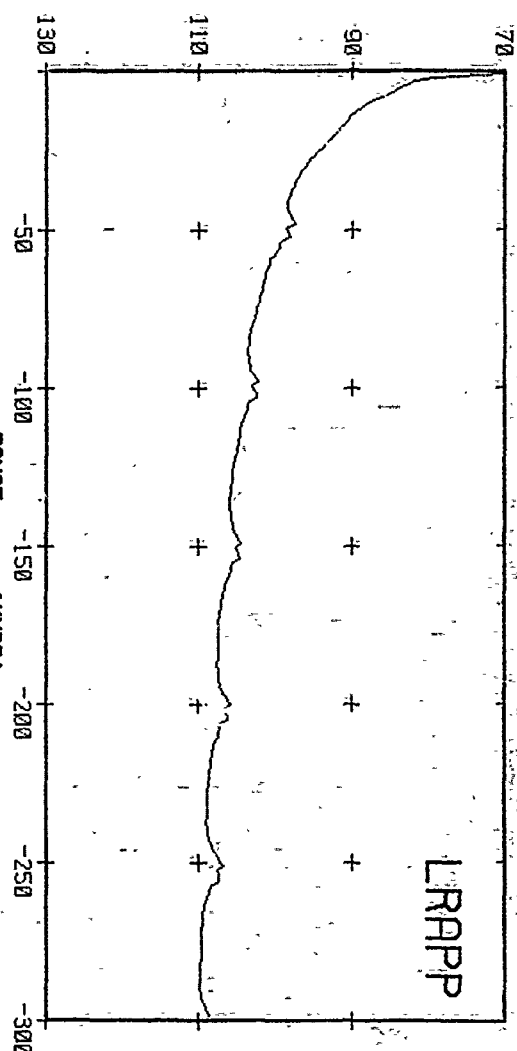


AREA 4A WINTER

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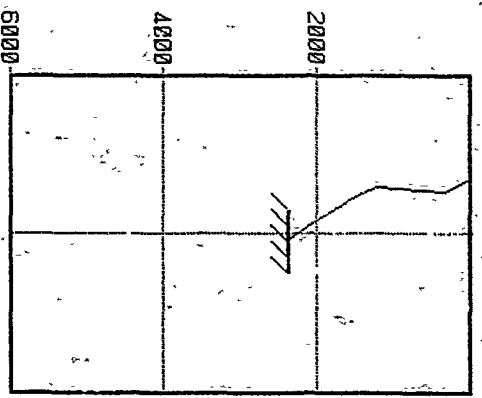
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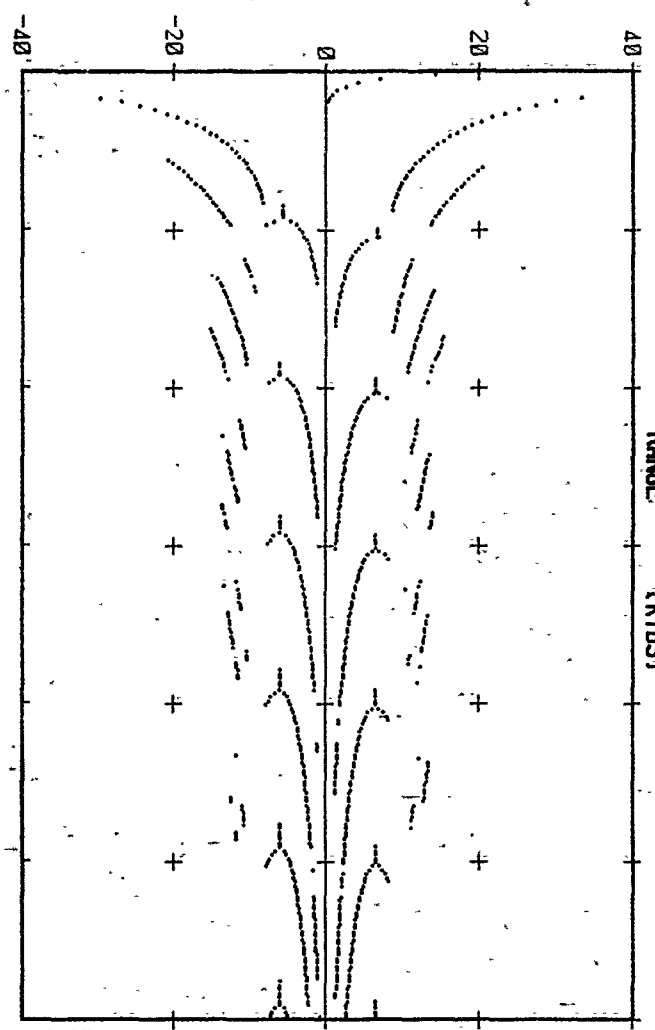


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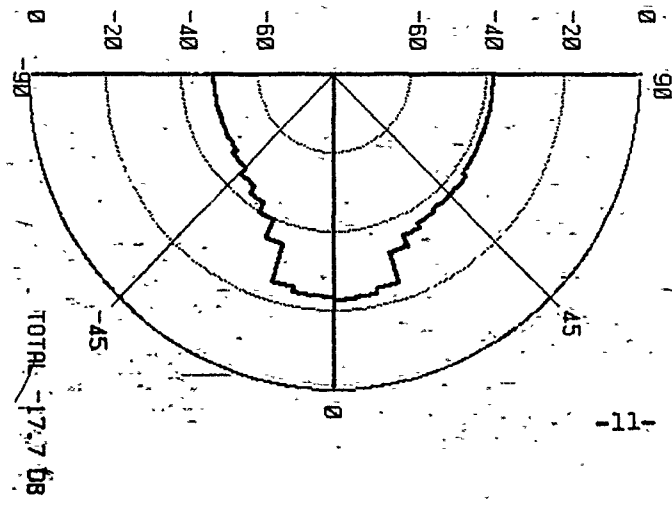
DEPTH IN METERS



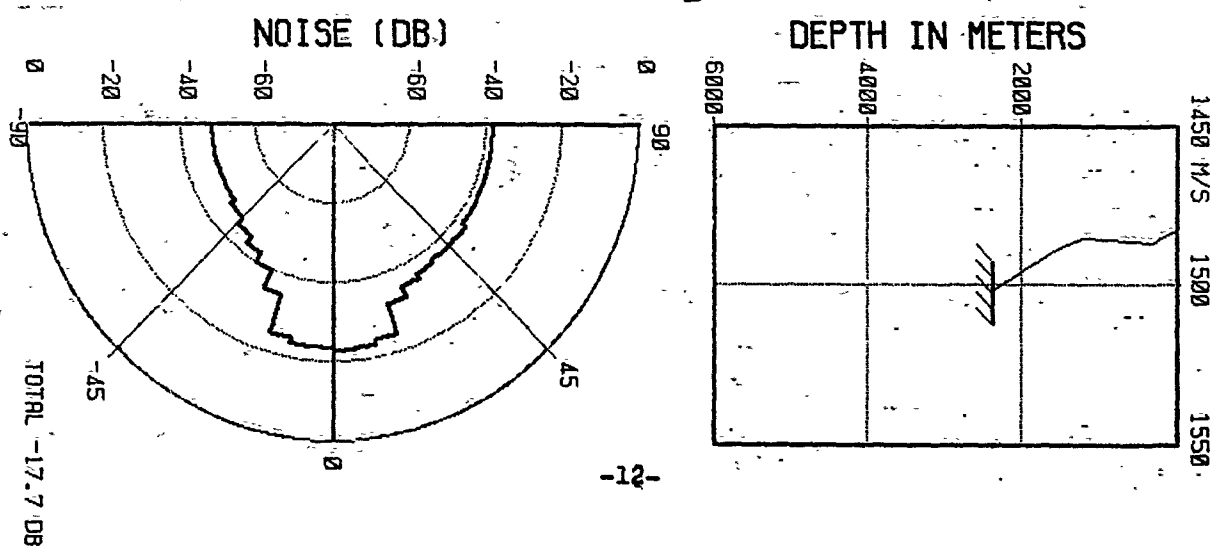
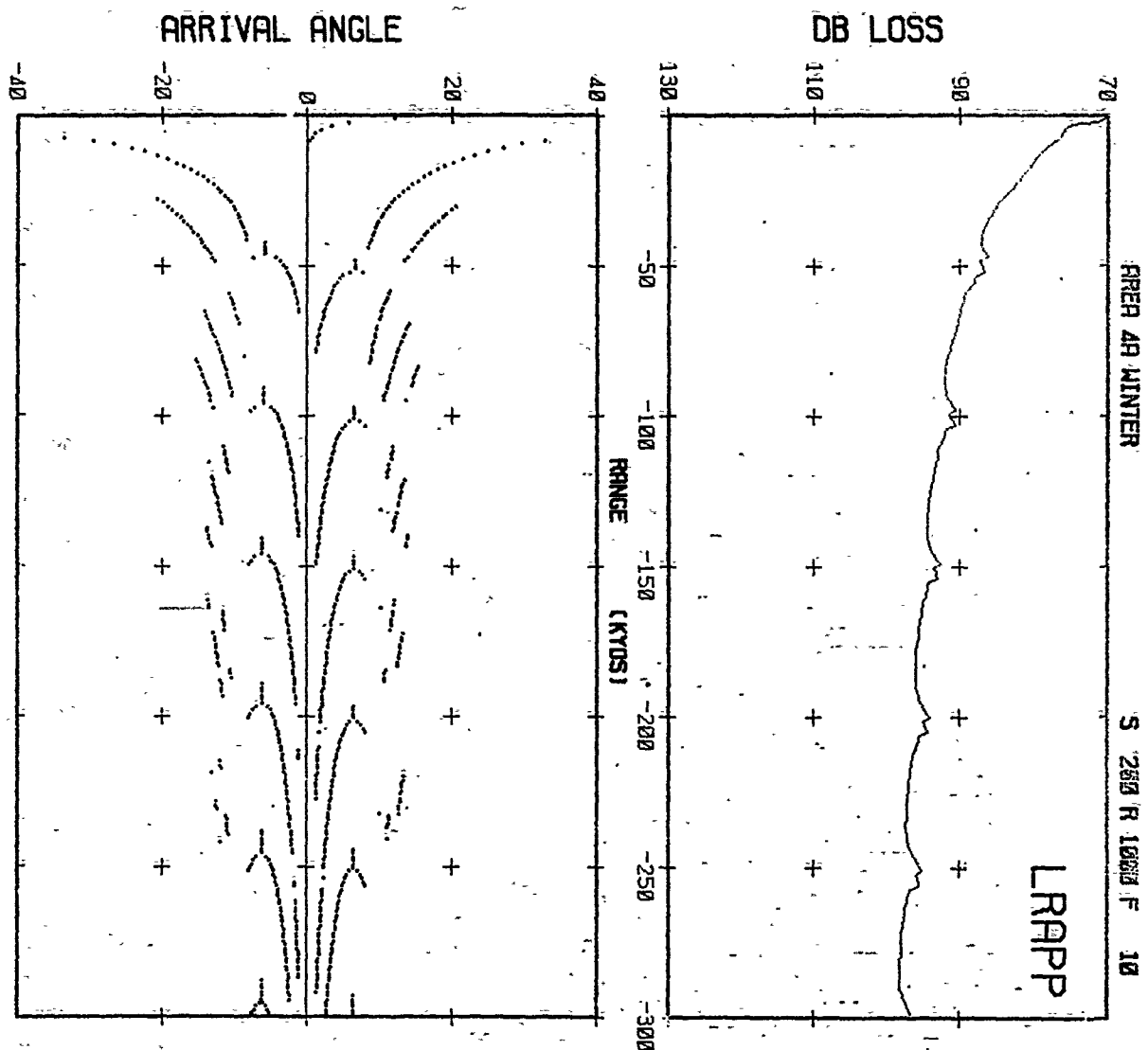
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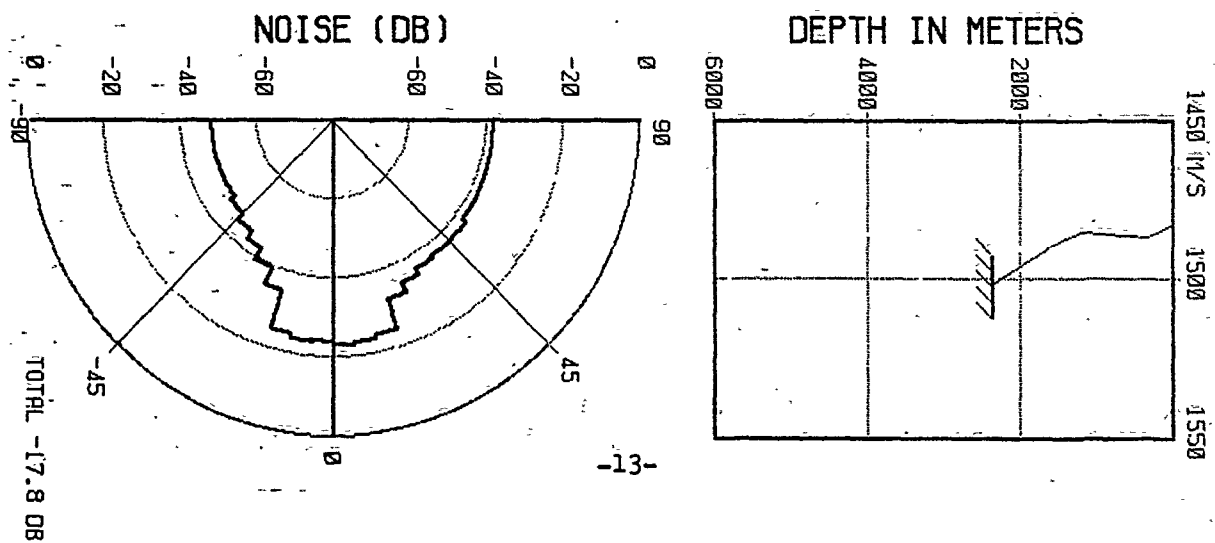
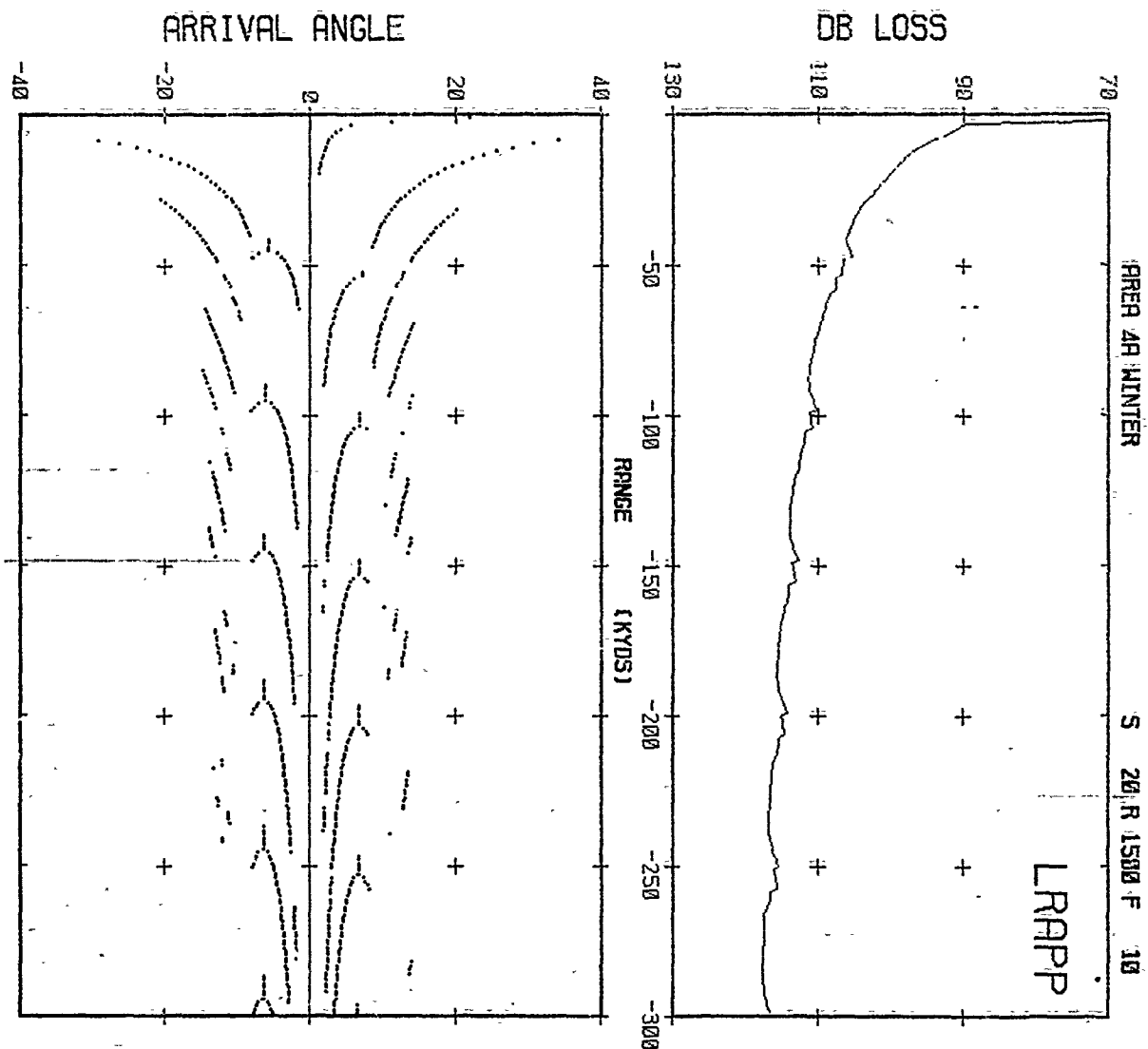


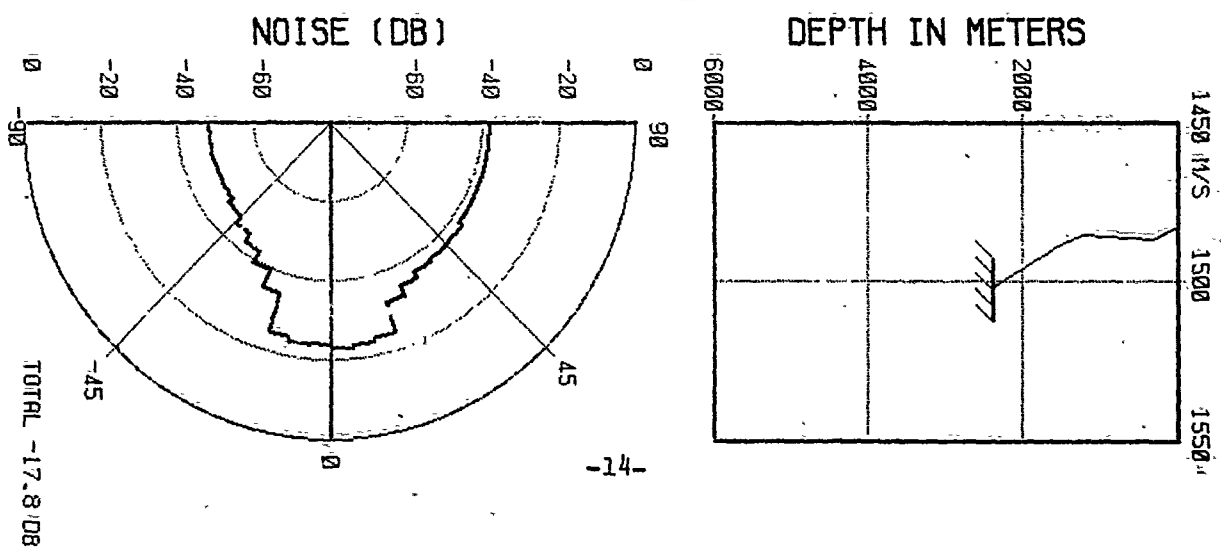
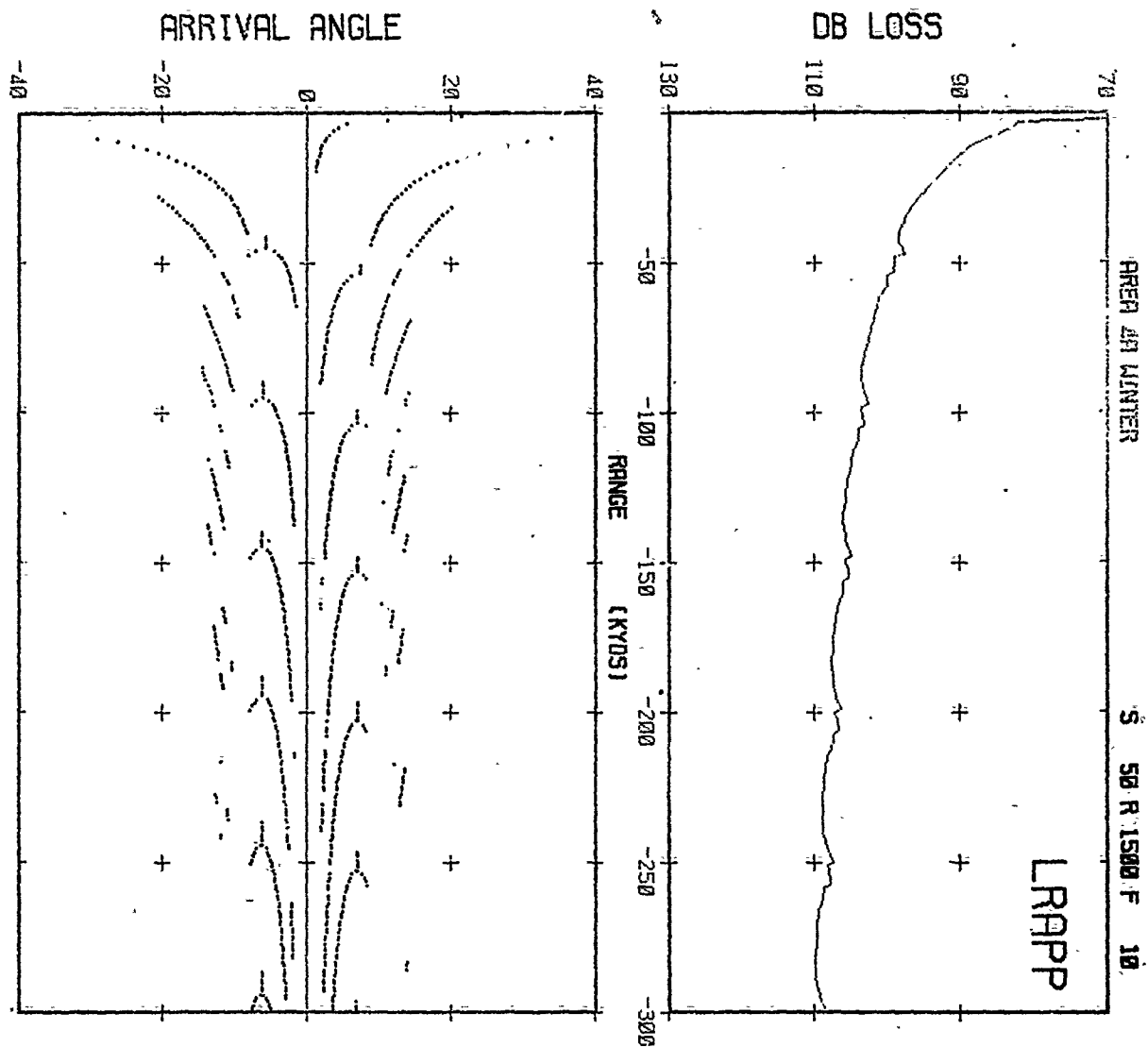
NOISE (DB)



TOTAL -17.7 db





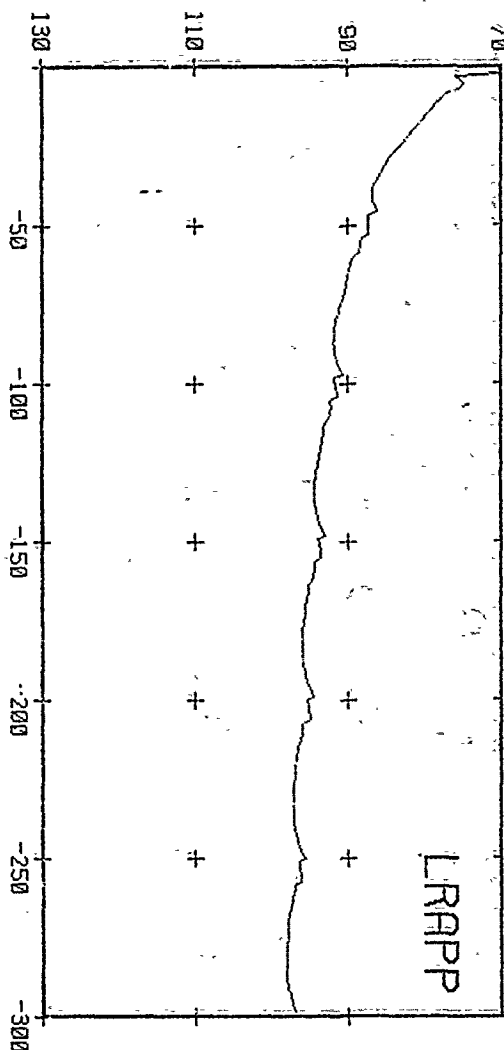


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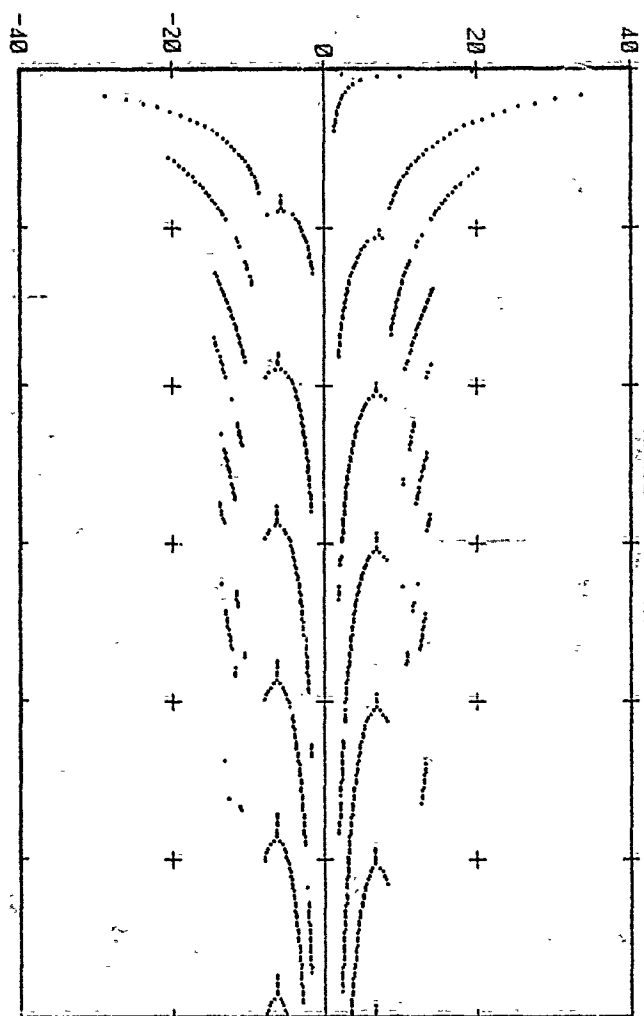
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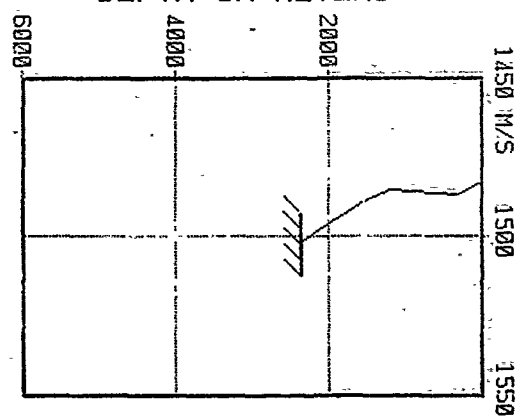
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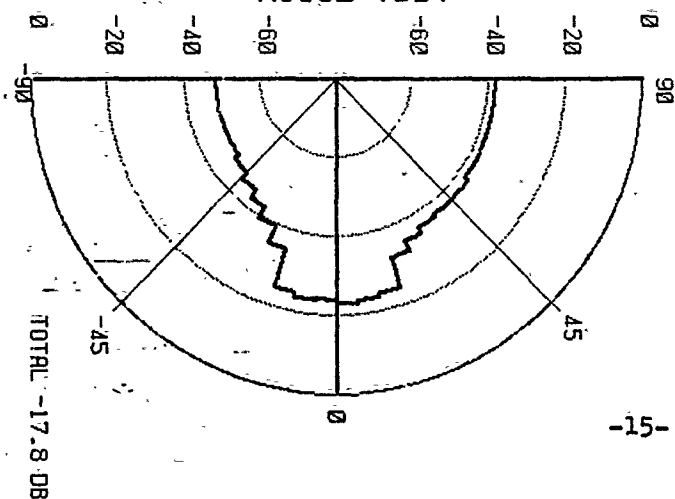
ARRIVAL ANGLE



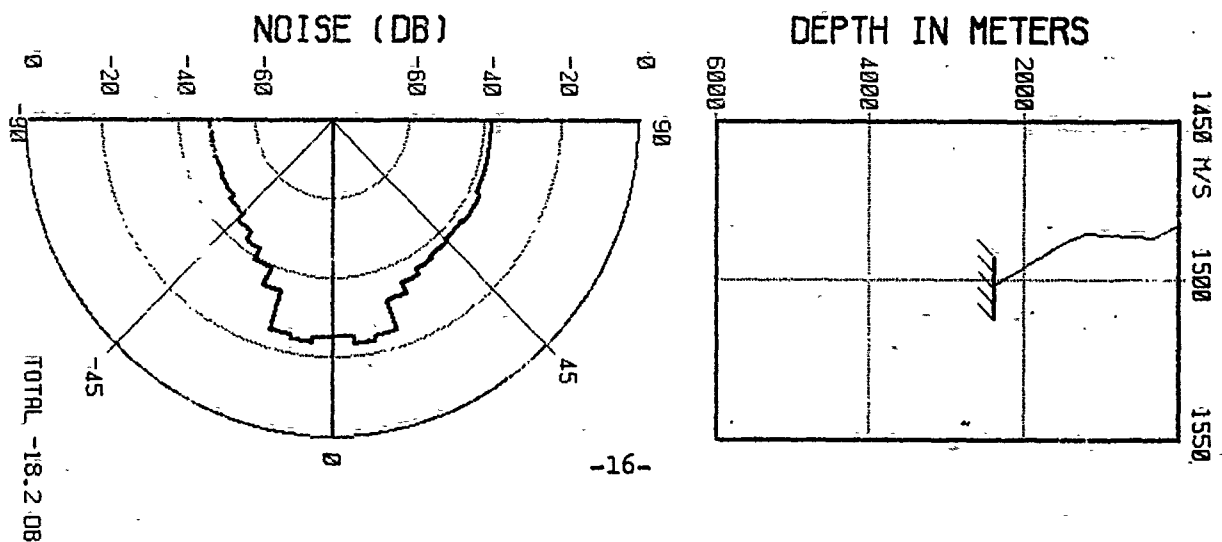
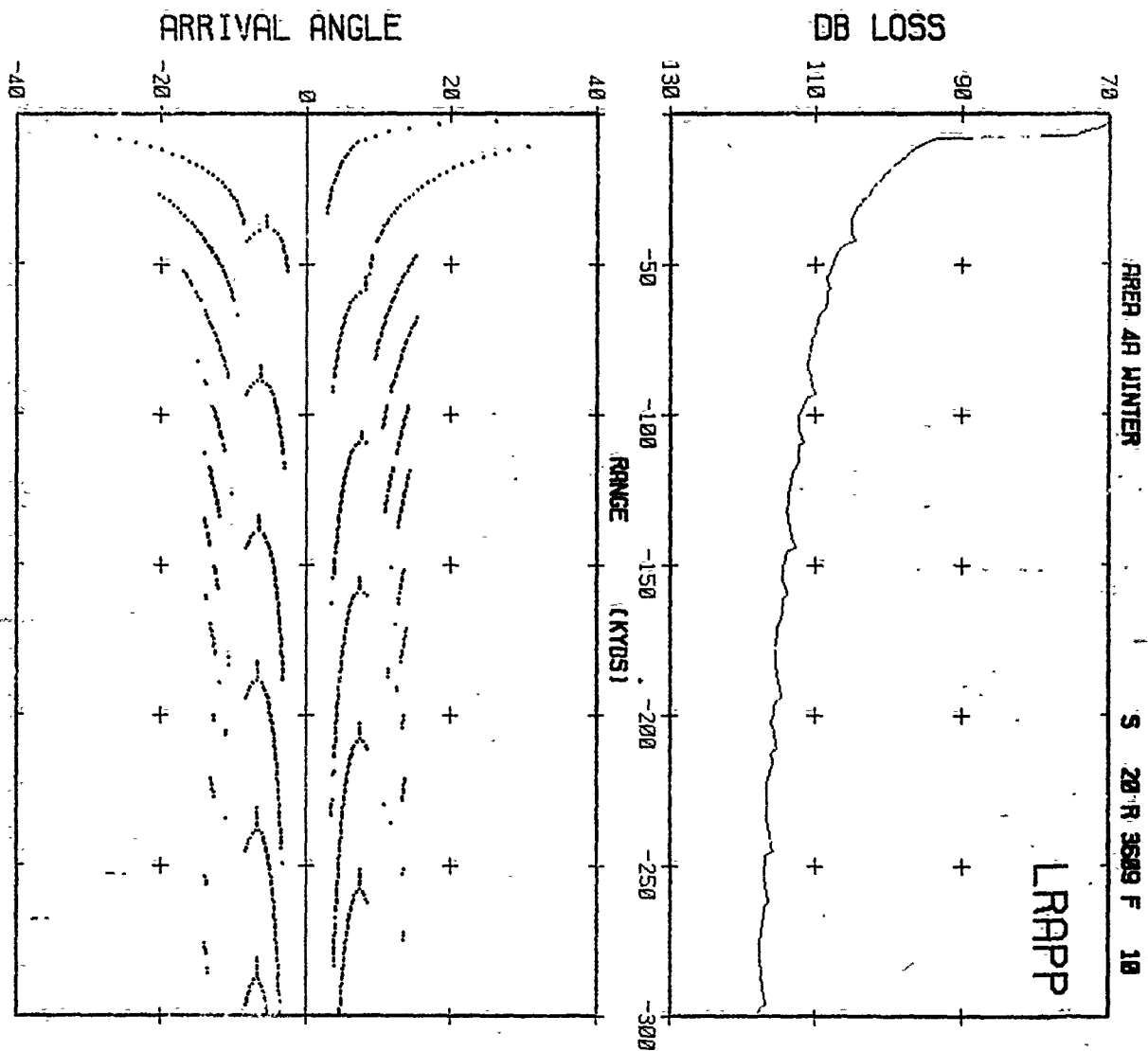
DEPTH IN METERS



NOISE (DB)



TOTAL -17.8 DB

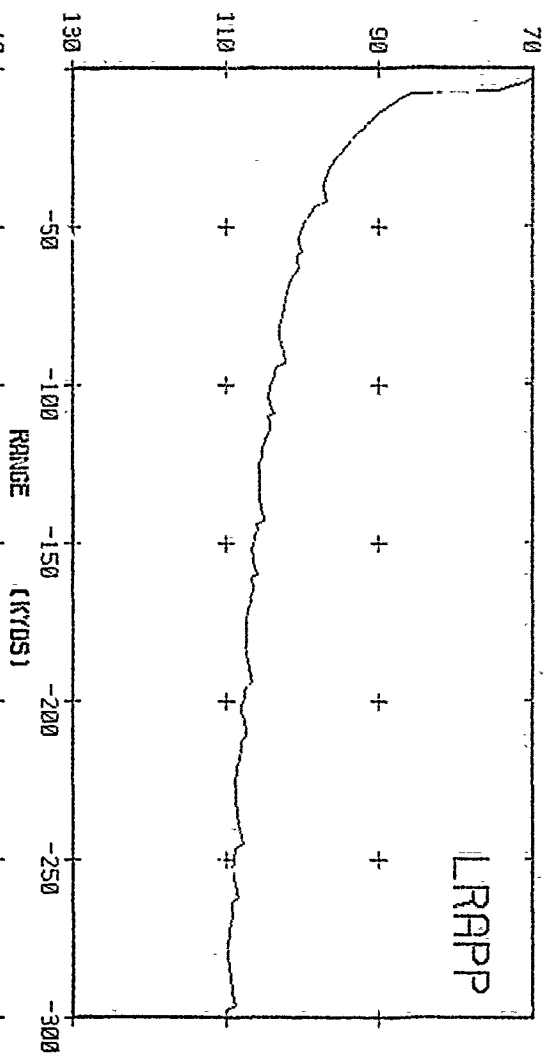


AREA 40 WINTER

S 50 R 3659 F 10

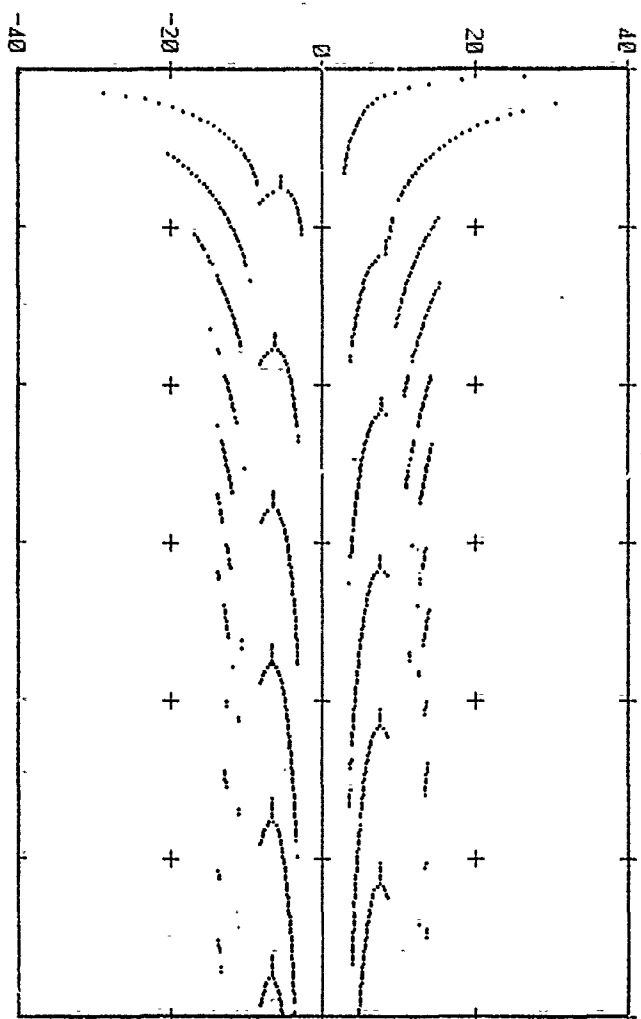
1450 M/S 1500 1550

DB LOSS

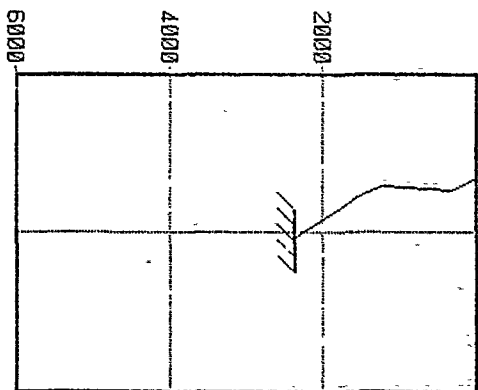


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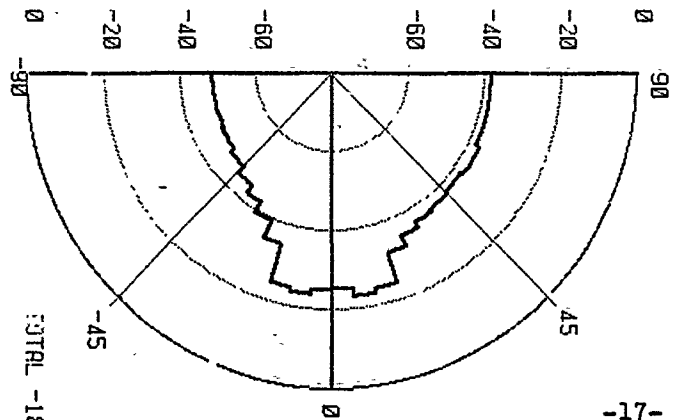
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -18.2 DB

-17-

FREE AIR MINTER

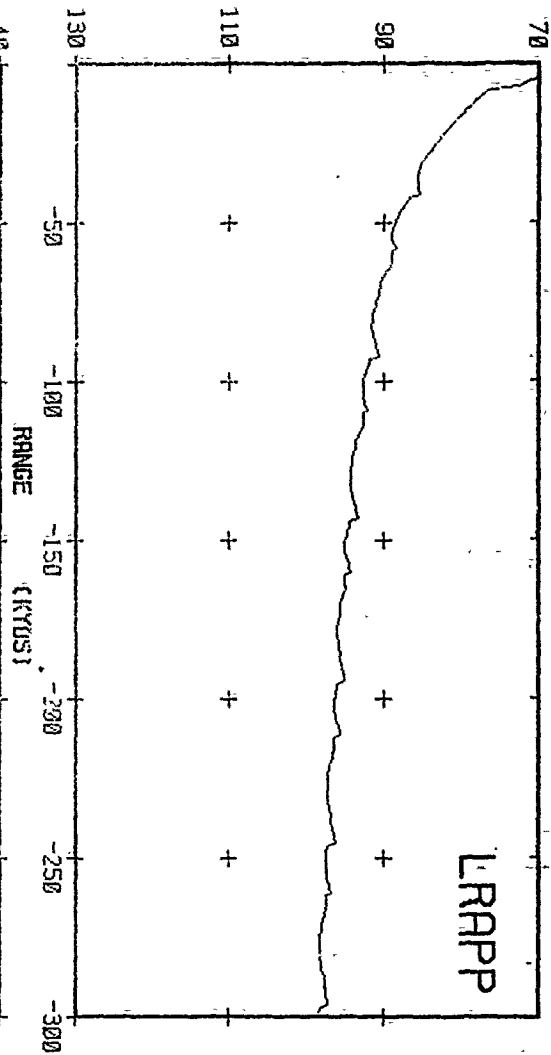
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1450 M/S

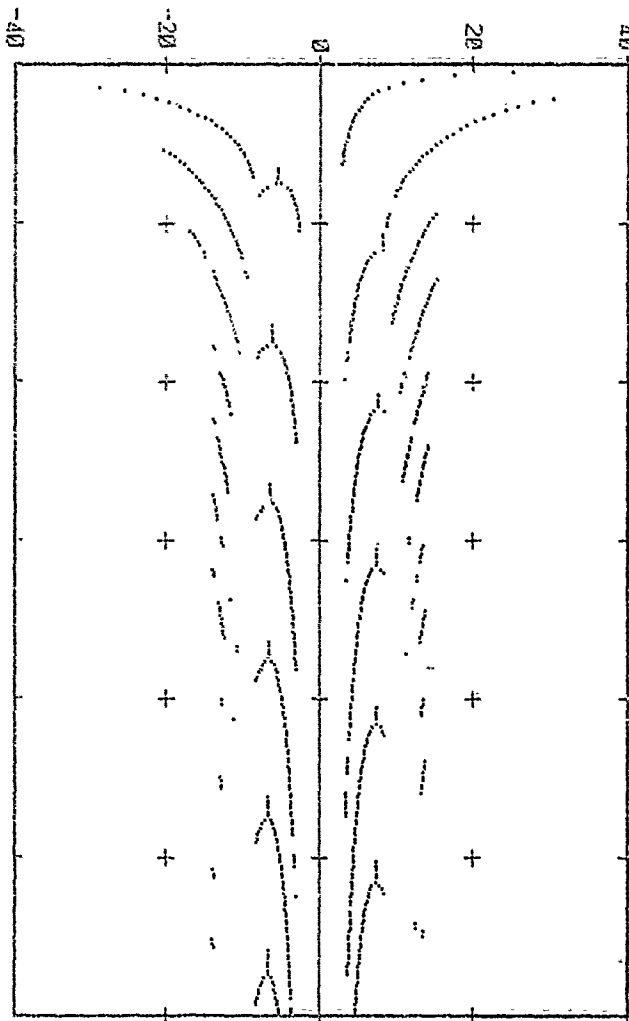
1500

1550

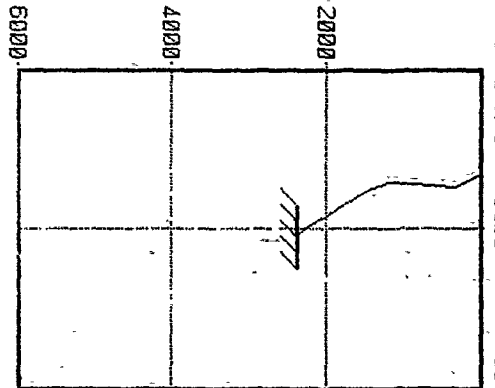
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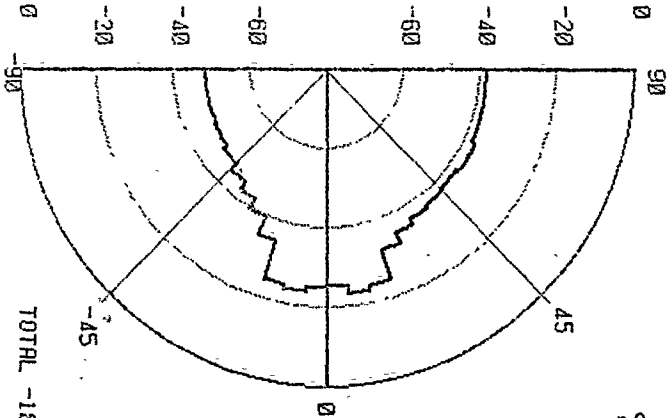
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



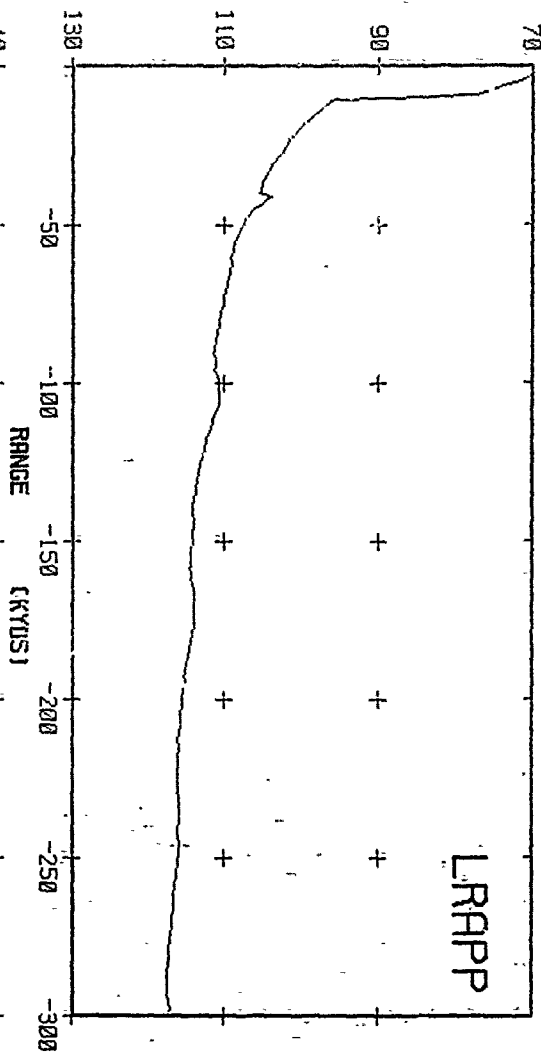
TOTAL -18.2 DB

AREA 4R WINTER

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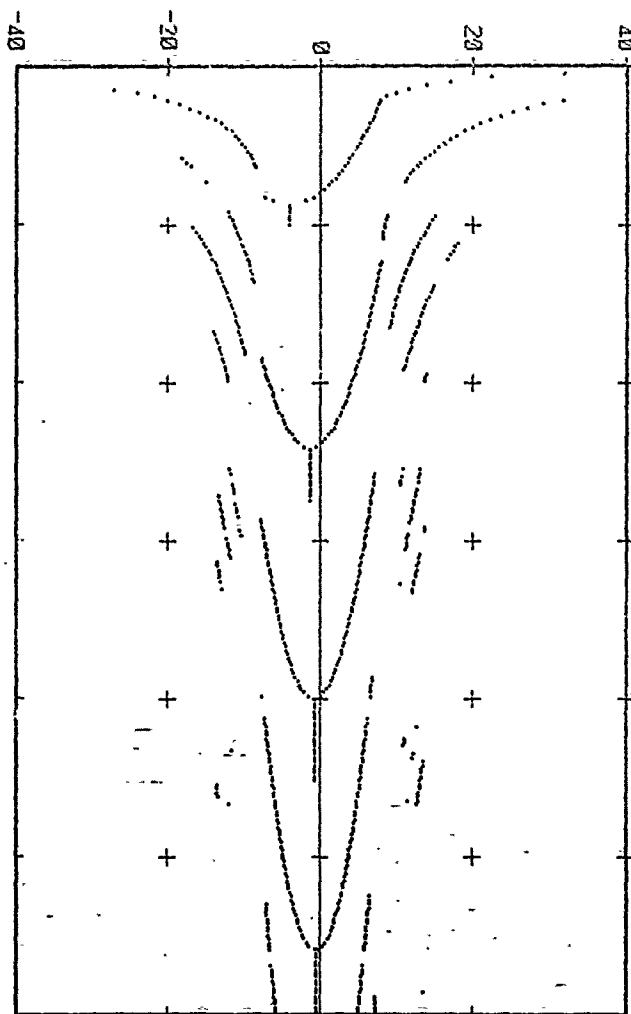
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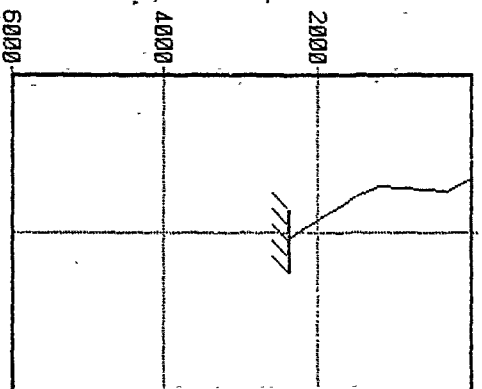


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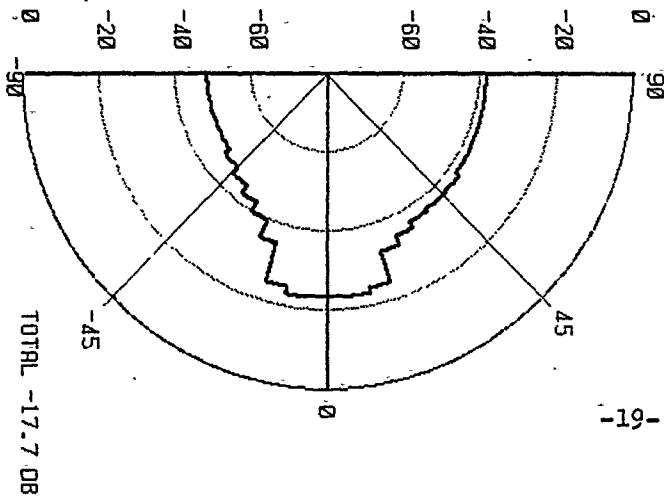
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DEPTH IN METERS



NOISE (DB)



TOTAL -17.7 DB

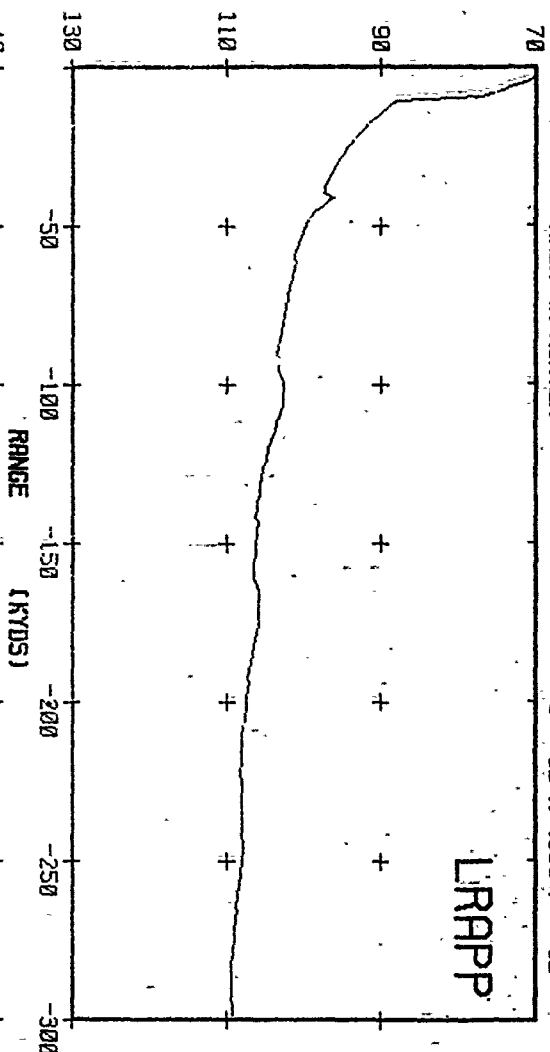
FREE AIR WINTER

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1450 M/S 1500

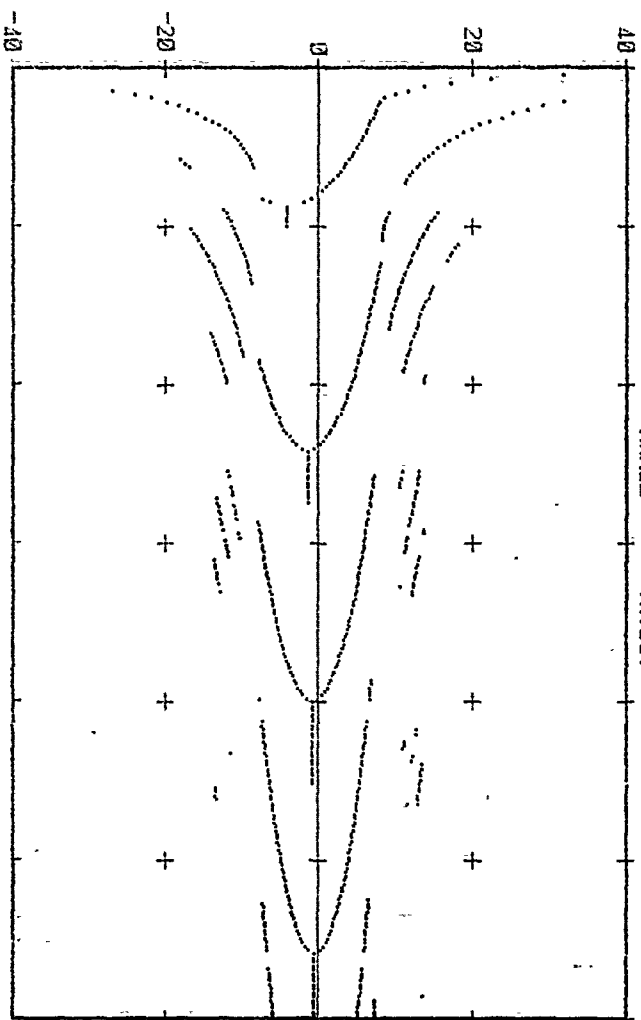
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DB LOSS

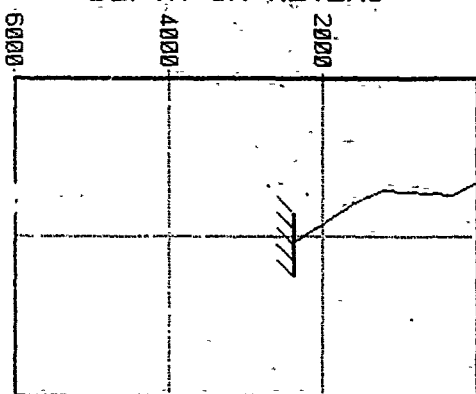


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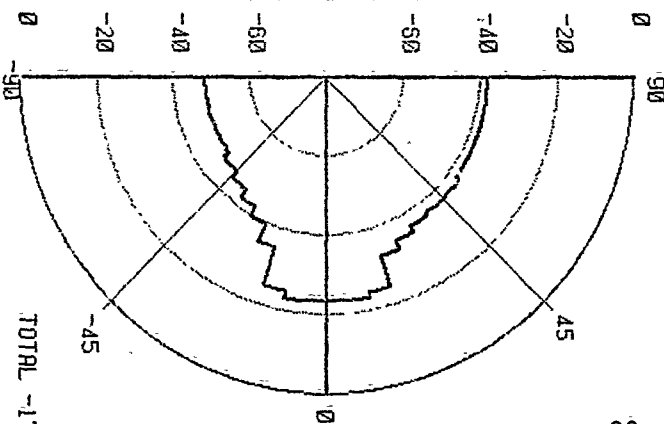
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



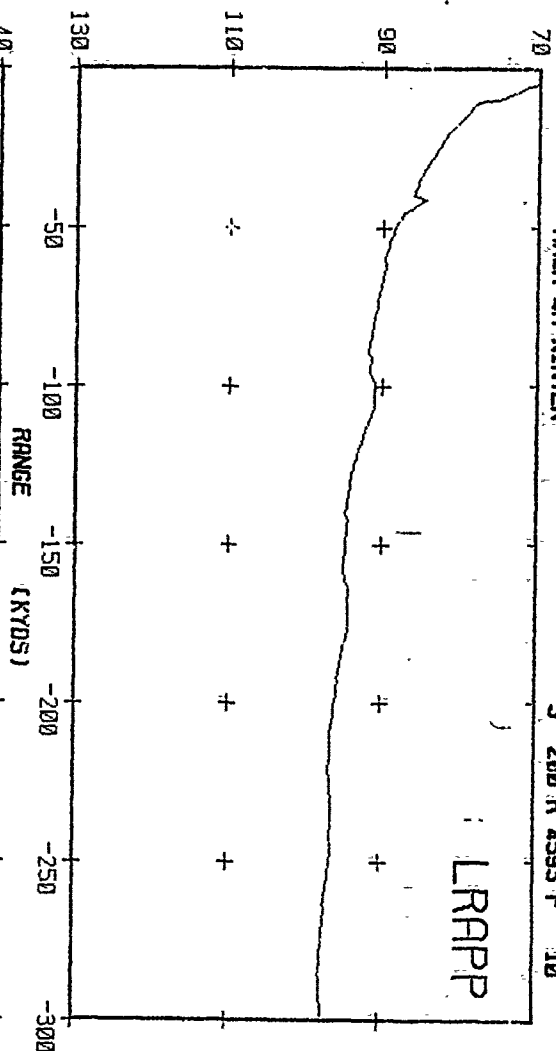
TOTAL -17.7 DB

AREA 4A WINTER

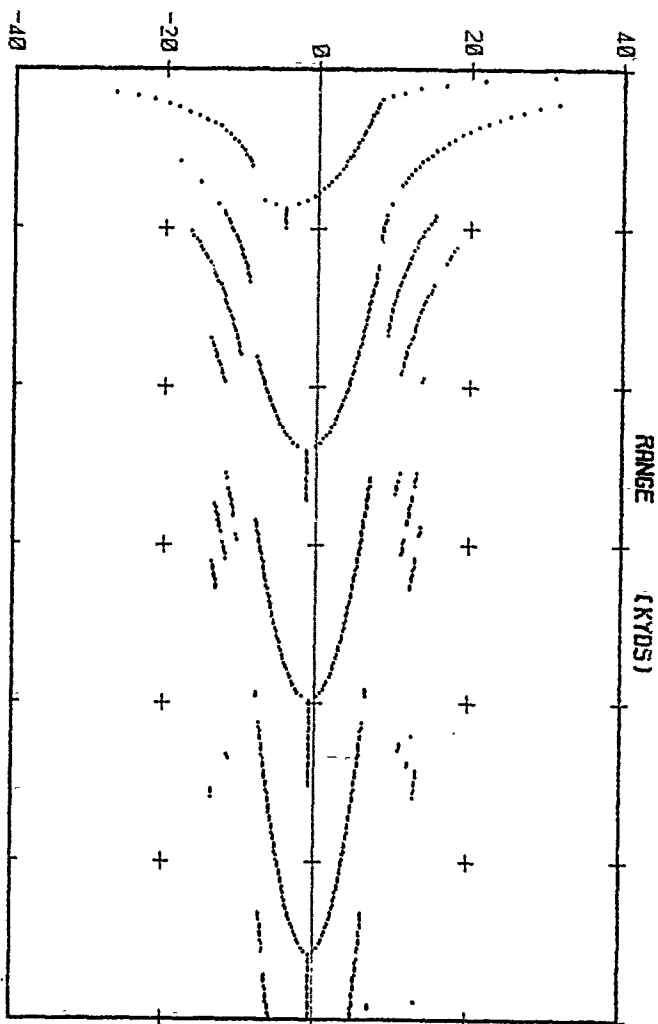
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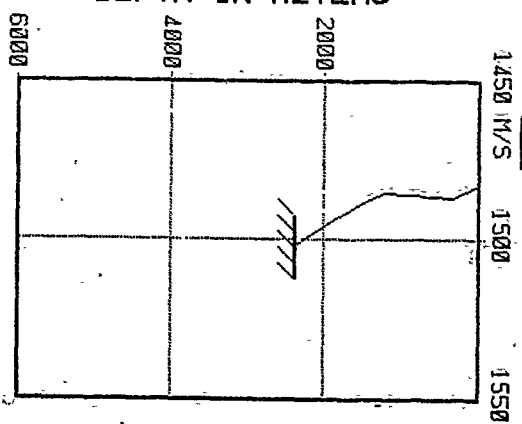
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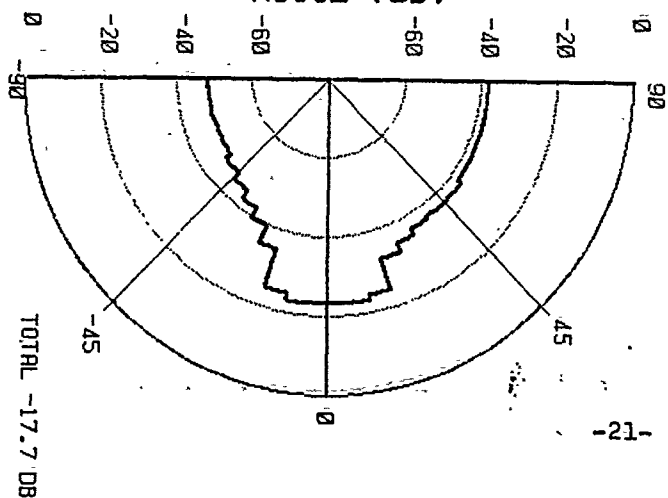
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

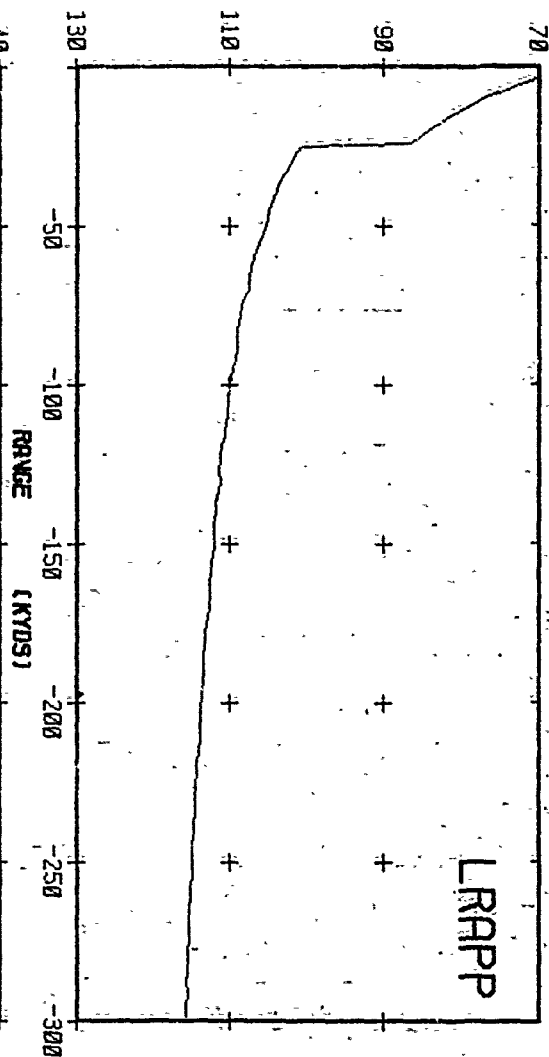


PERE 49 WINTER

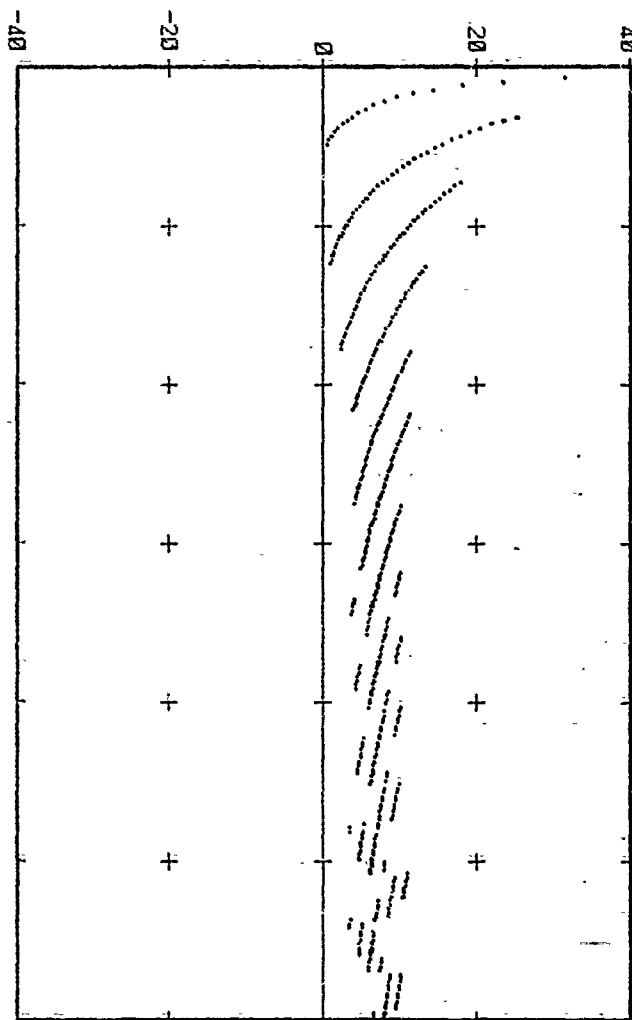
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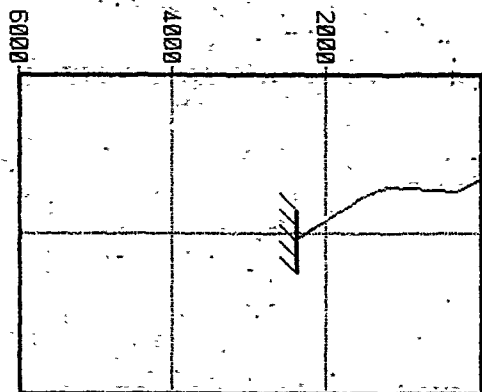
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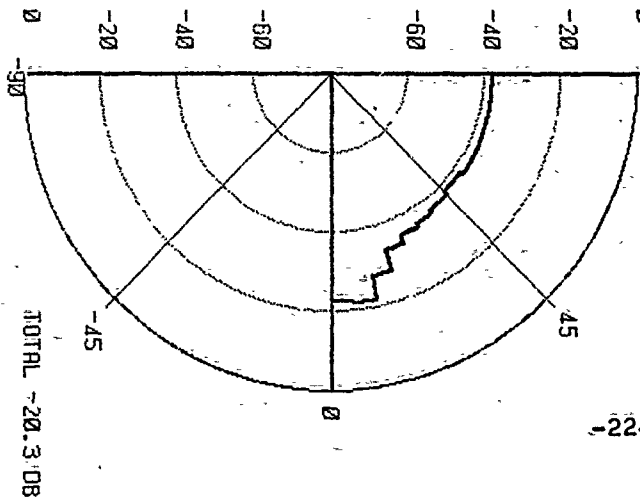
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

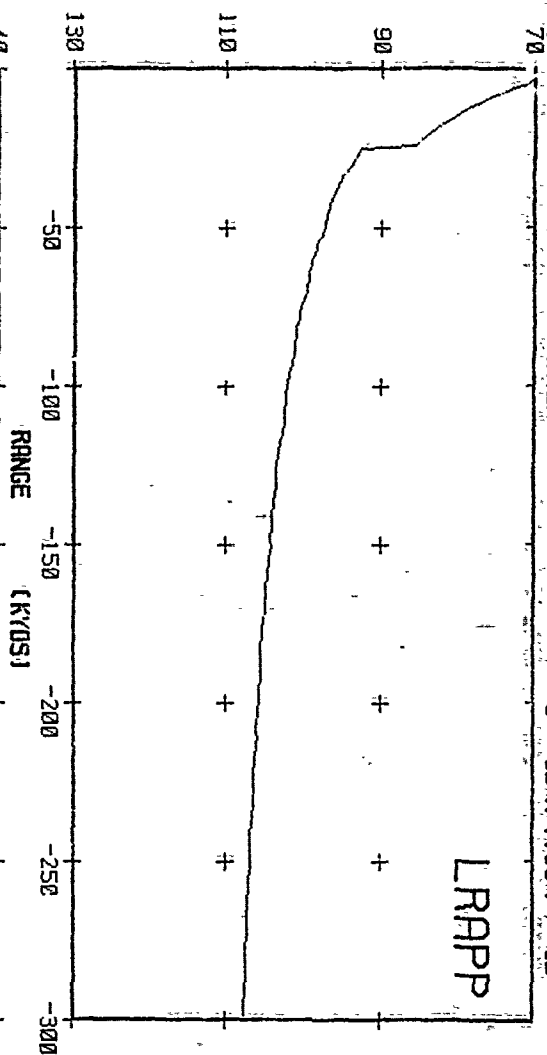


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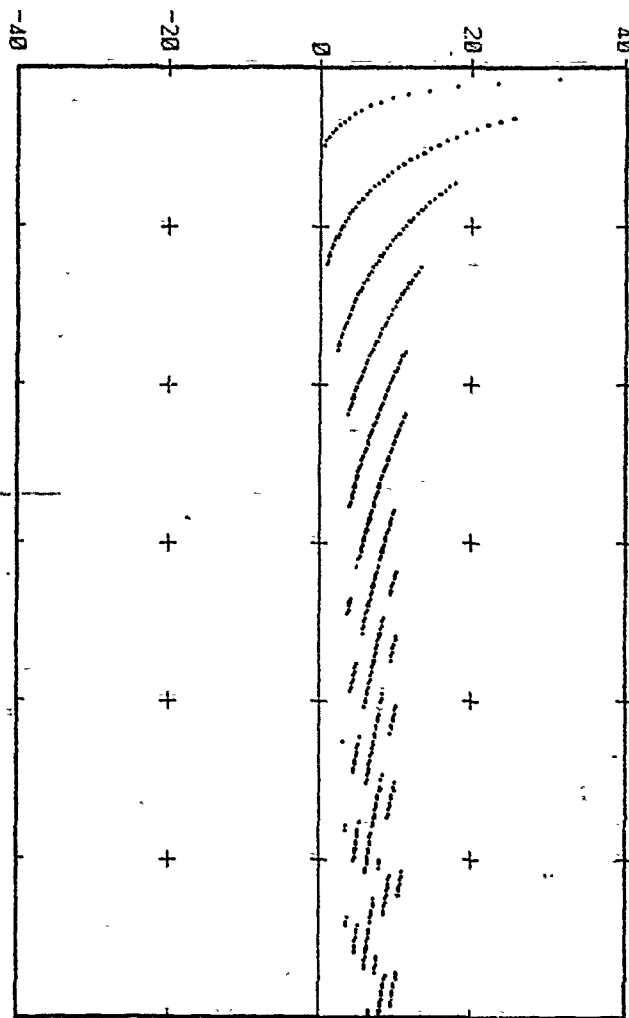
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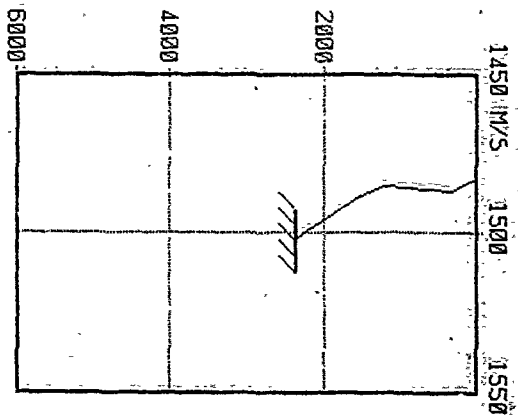
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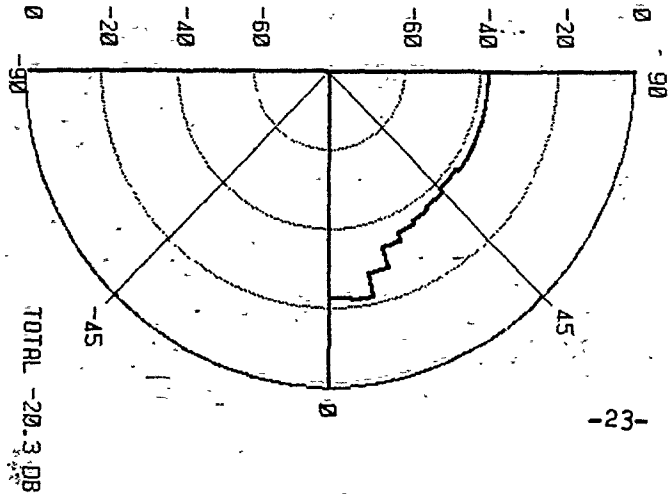
ARRIVAL ANGLE

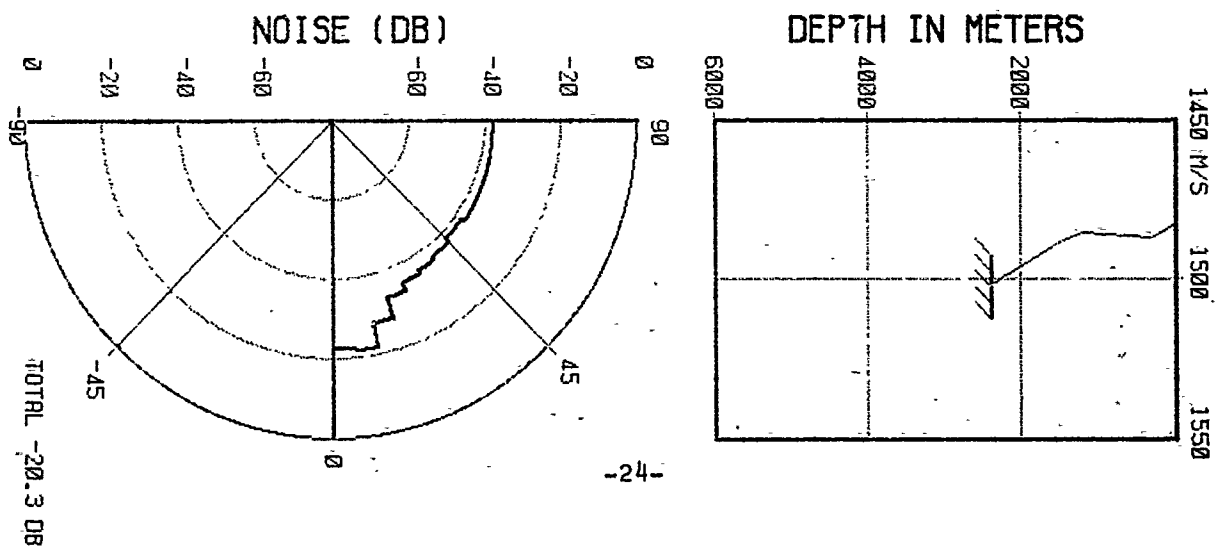
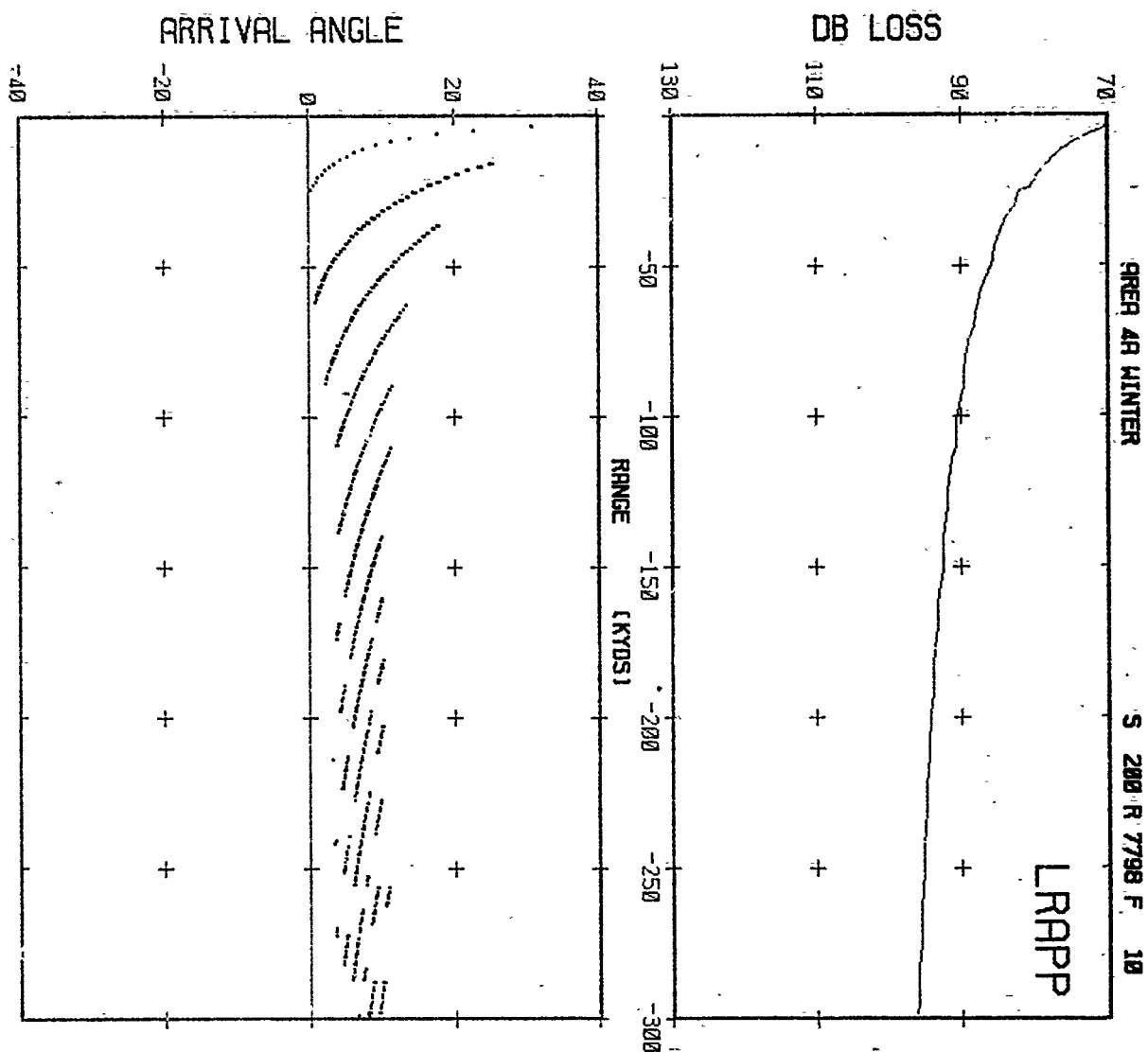


DEPTH IN METERS



NOISE (DB)



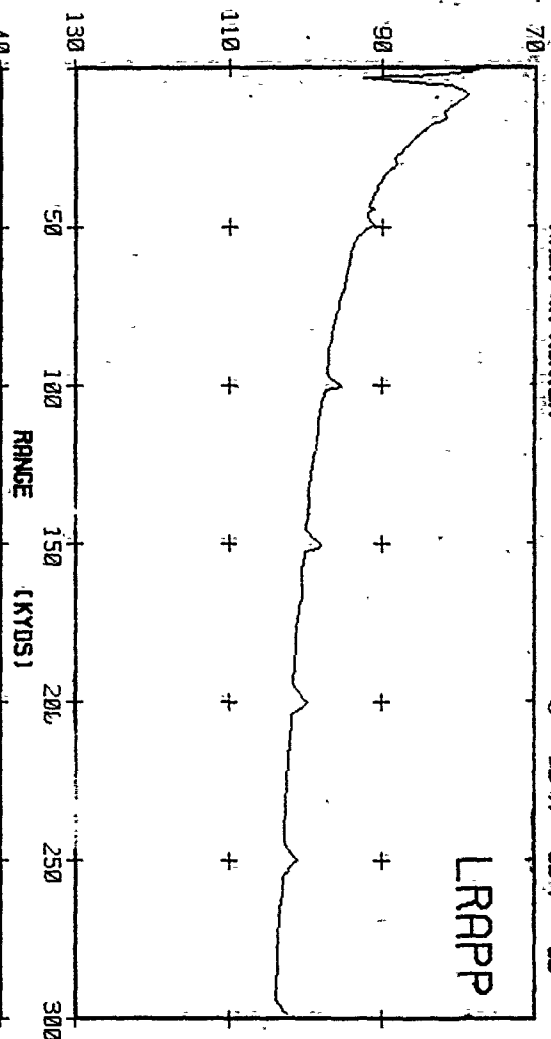


ANCHER AB WINTER

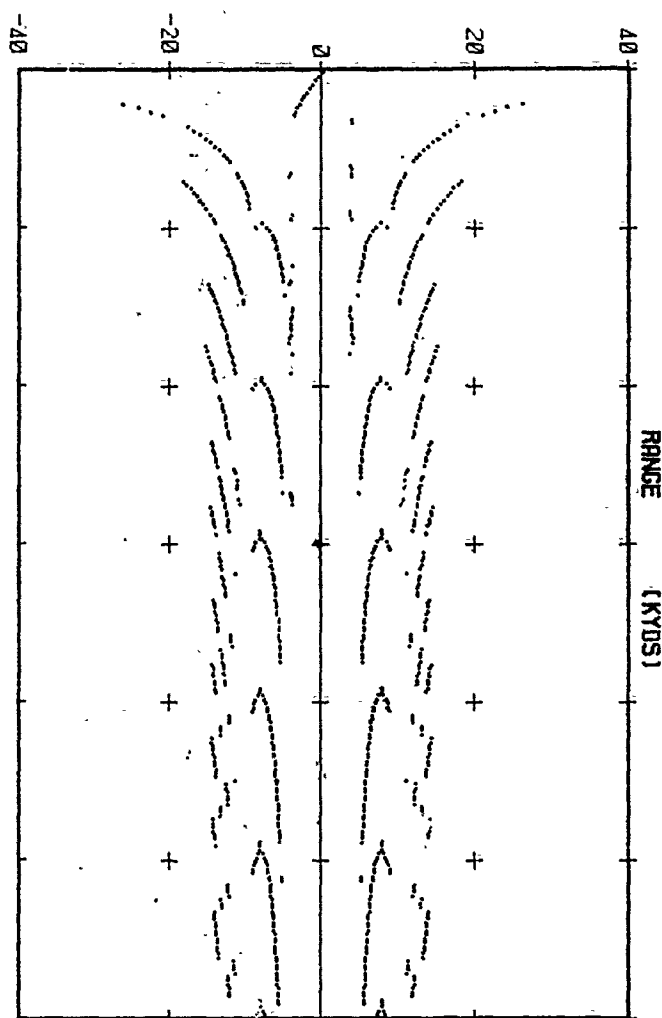
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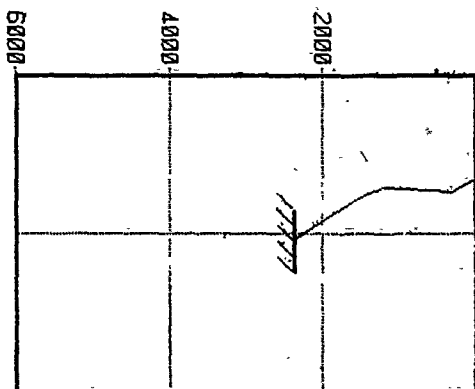
DB LOSS



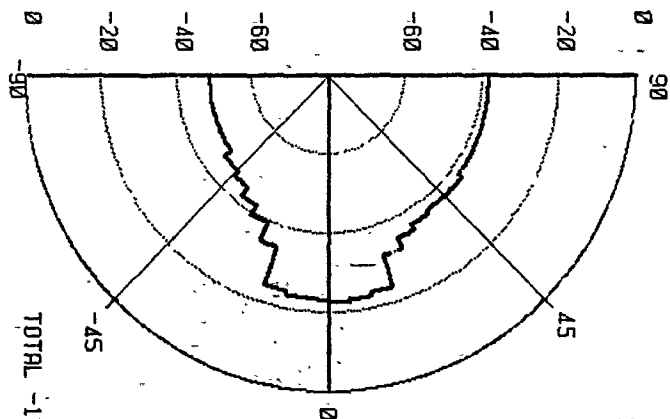
ARRIVAL ANGLE



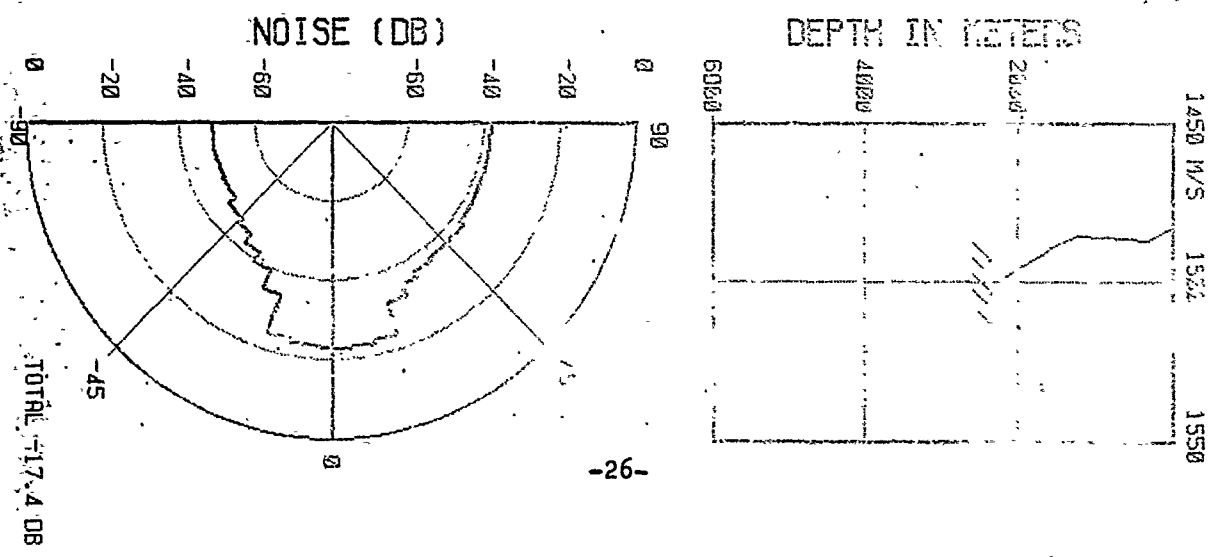
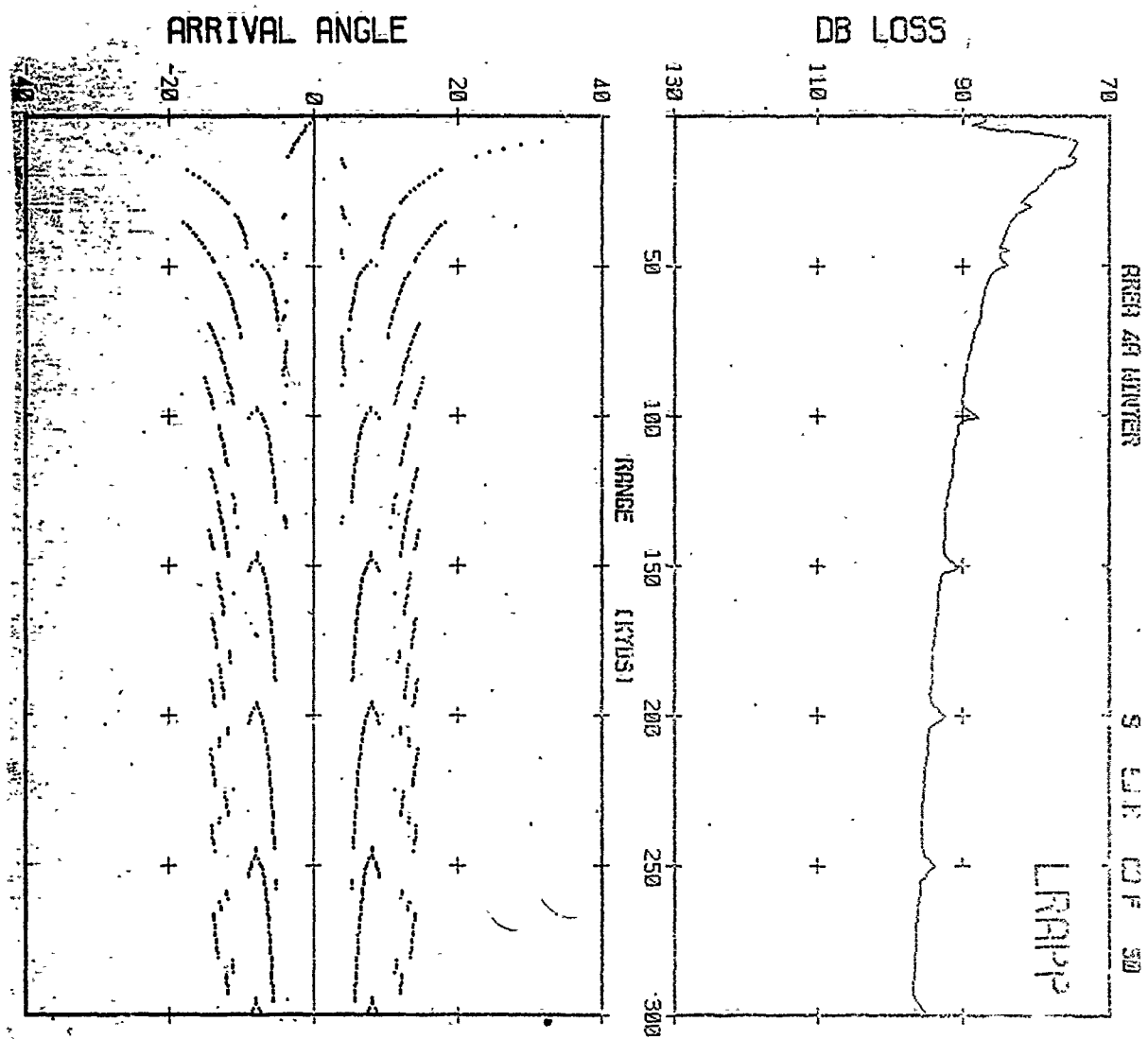
DEPTH IN METERS



NOISE (DB)



TOTAL -17.4 DB

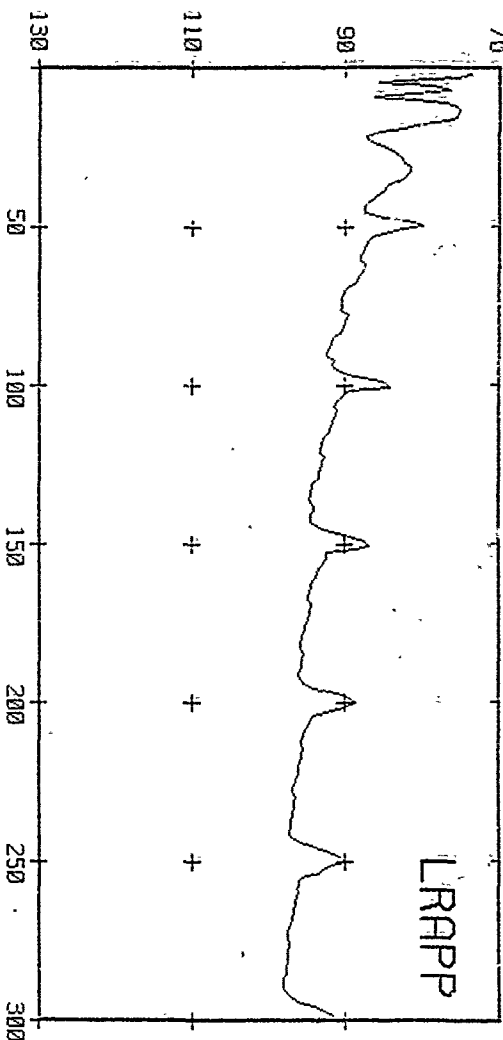


AREA AIR WINTER

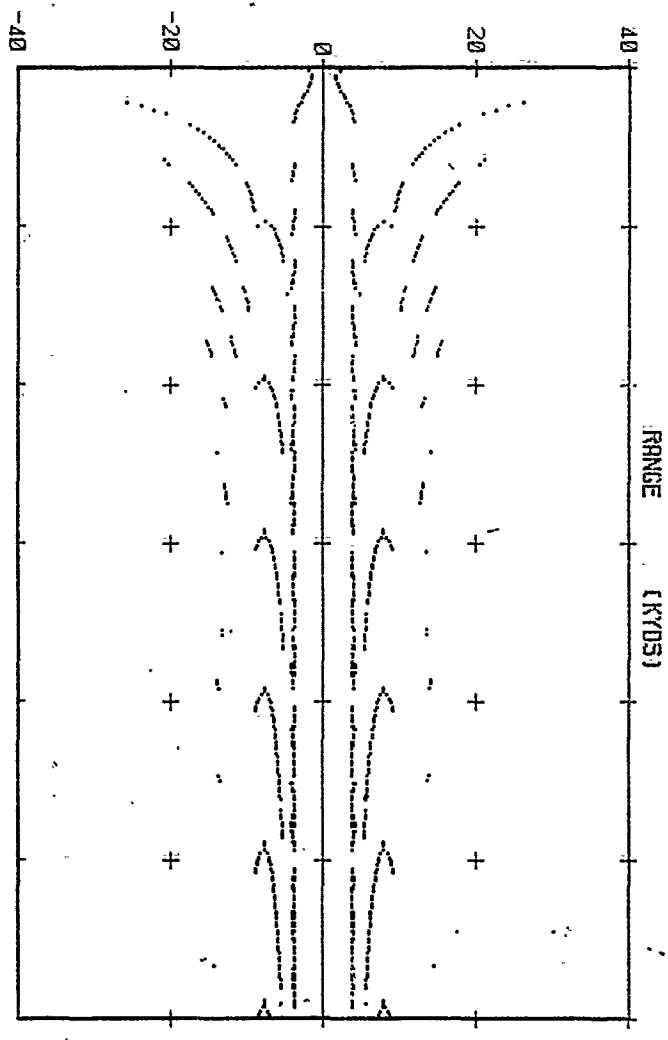
S 200 R 60 F 50

1450 11/5 1500 1550

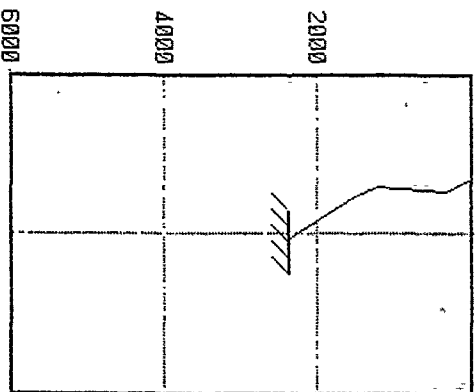
DB LOSS



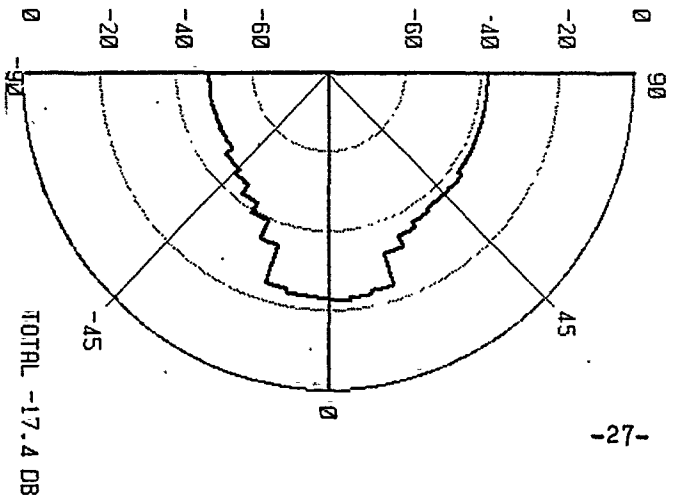
ARRIVAL ANGLE

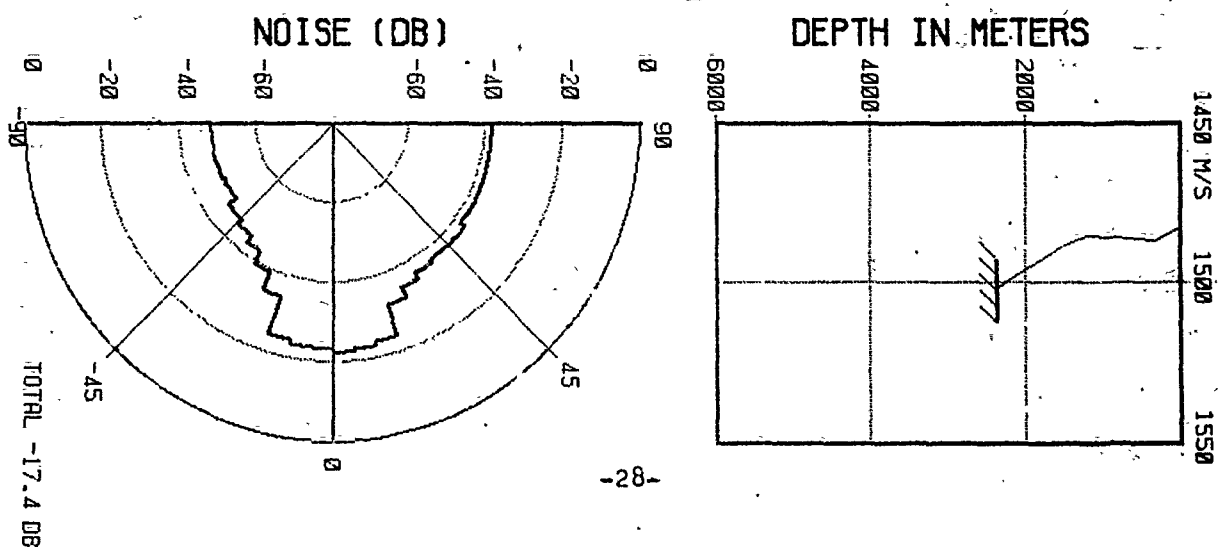
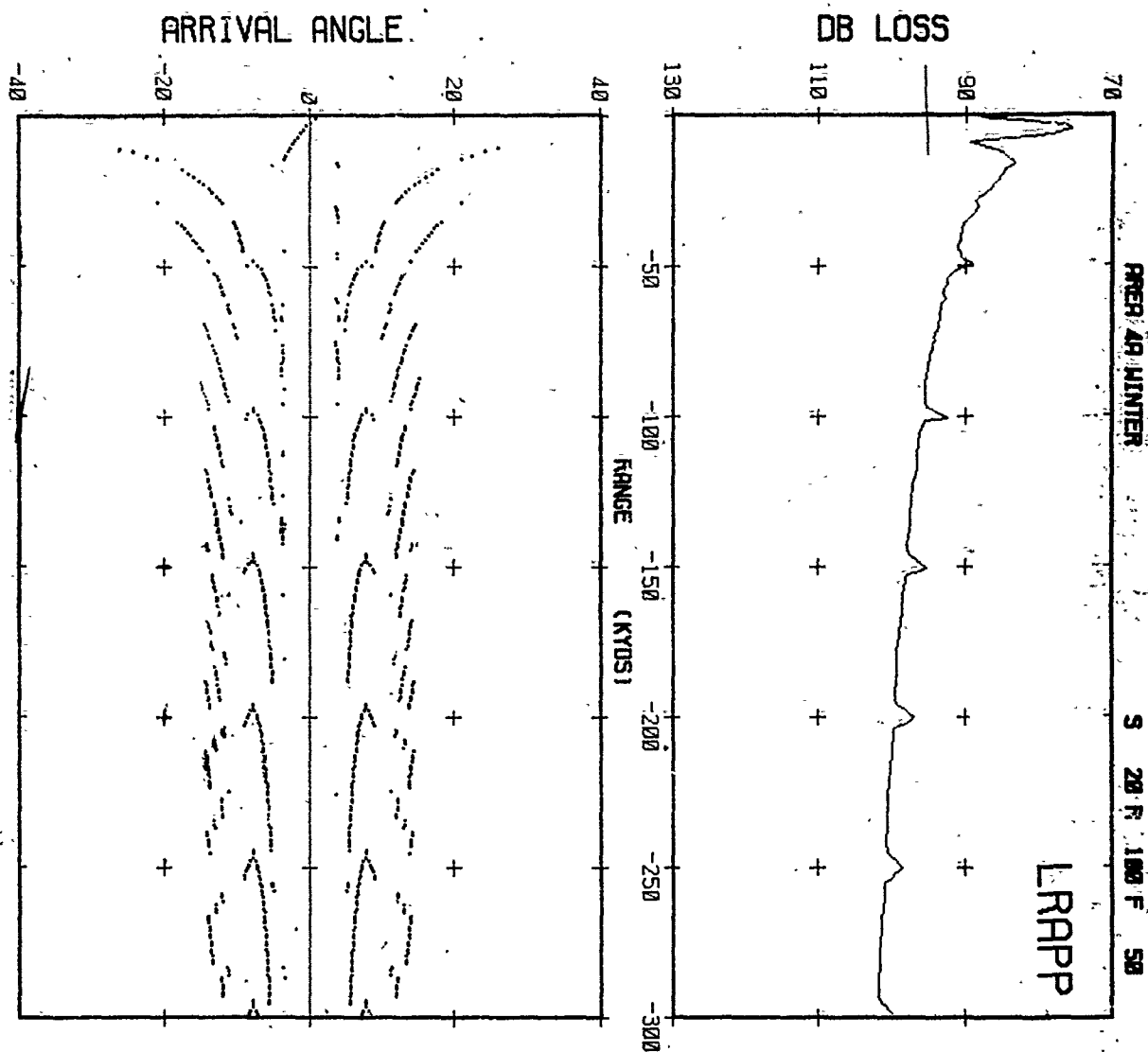


DEPTH IN METERS



NOISE (DB)



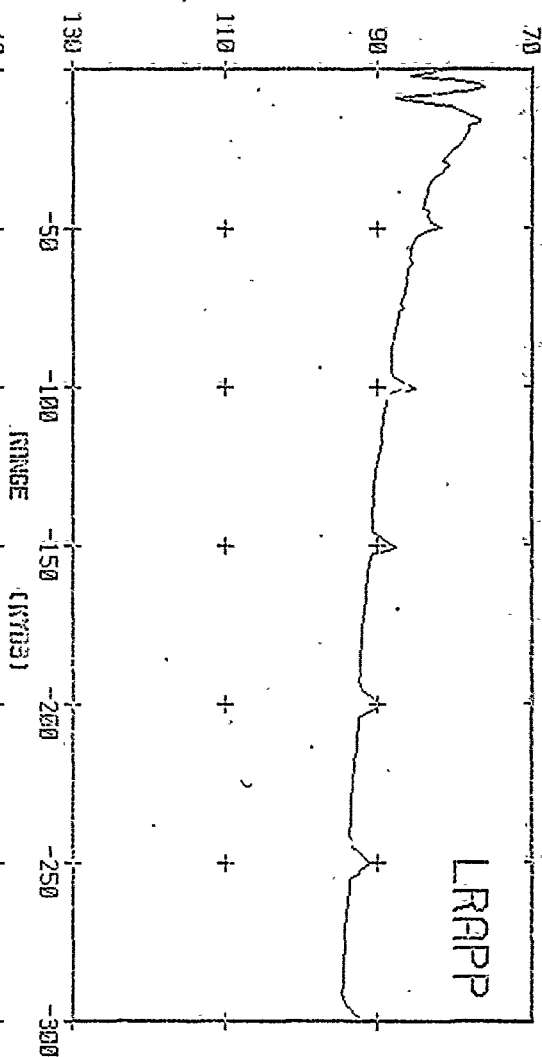


RRR AB WINTER

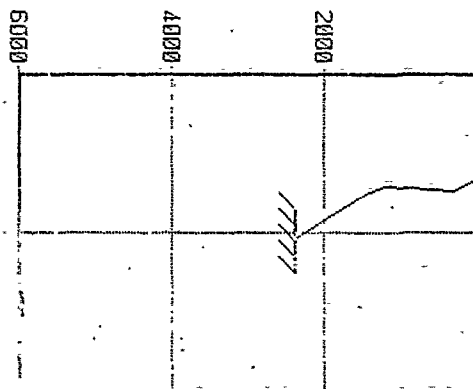
S 50 R 100 F 50

1450 M/S 1500 1550

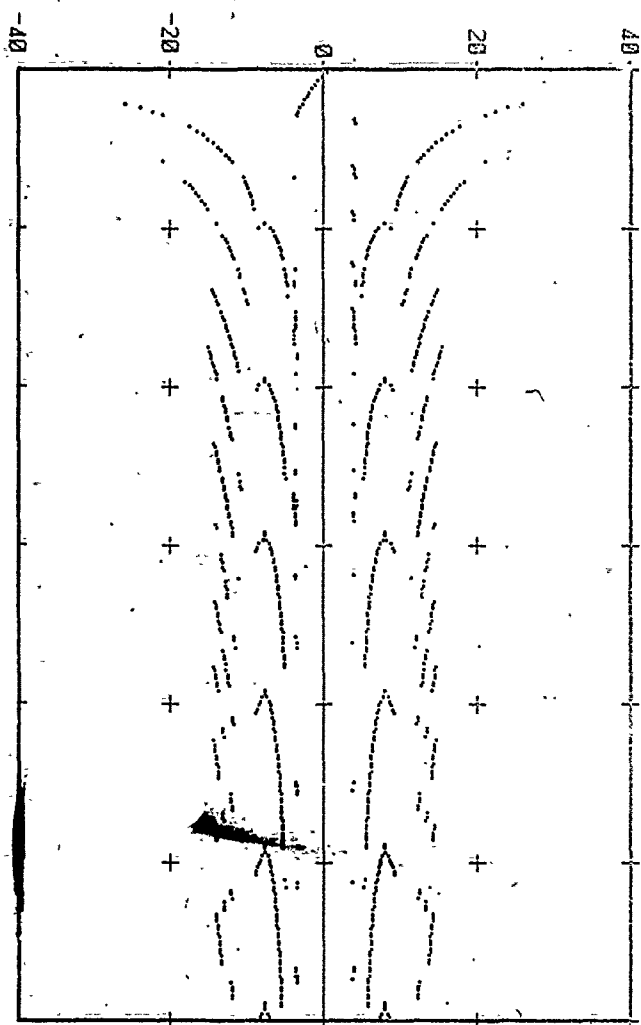
DB LOSS



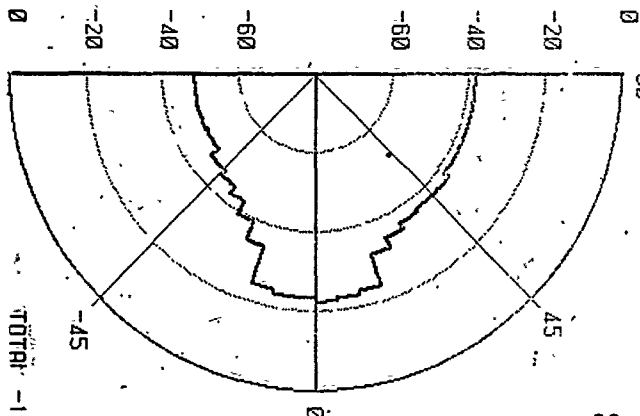
DEPTH IN METERS



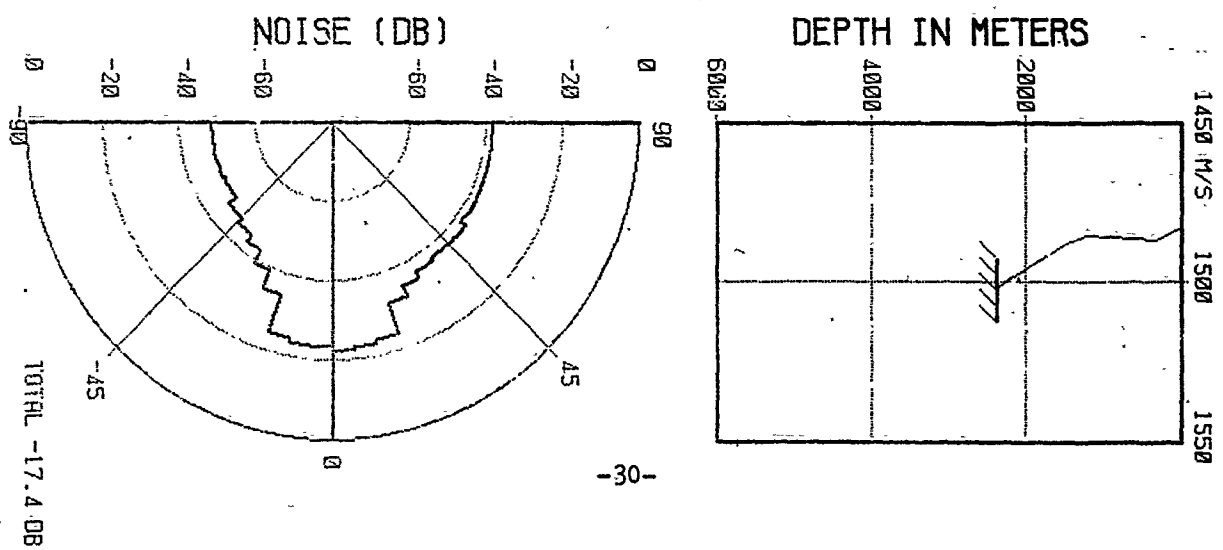
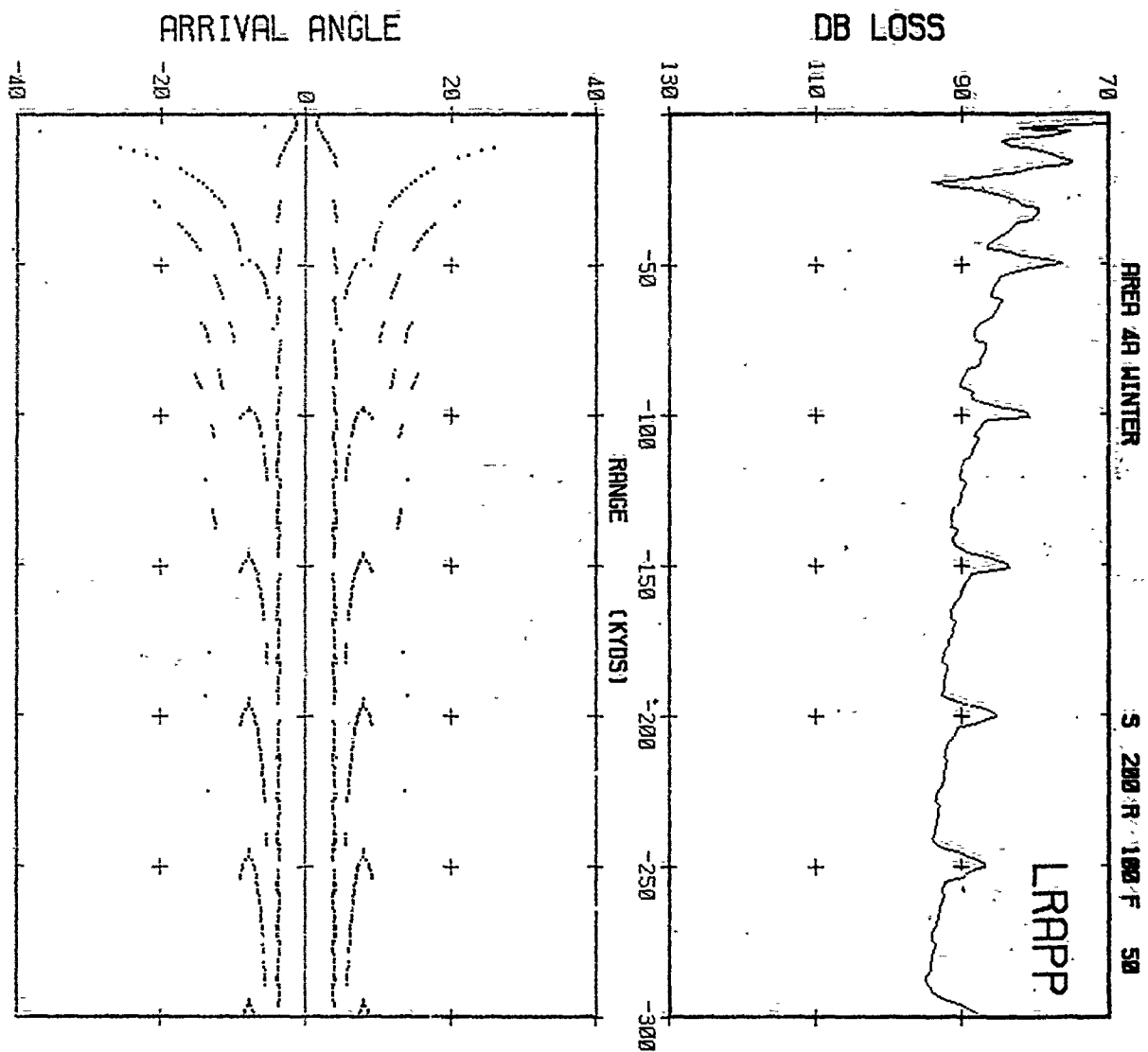
ARRIVAL ANGLE



NOISE (DB)



TOTAL -17.4 NR

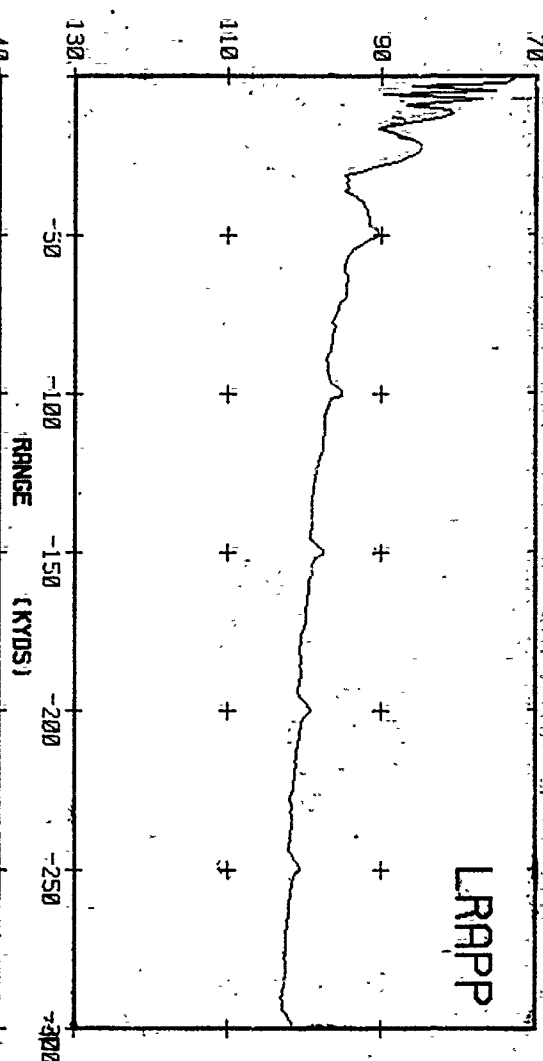


AREA 4R WINTER

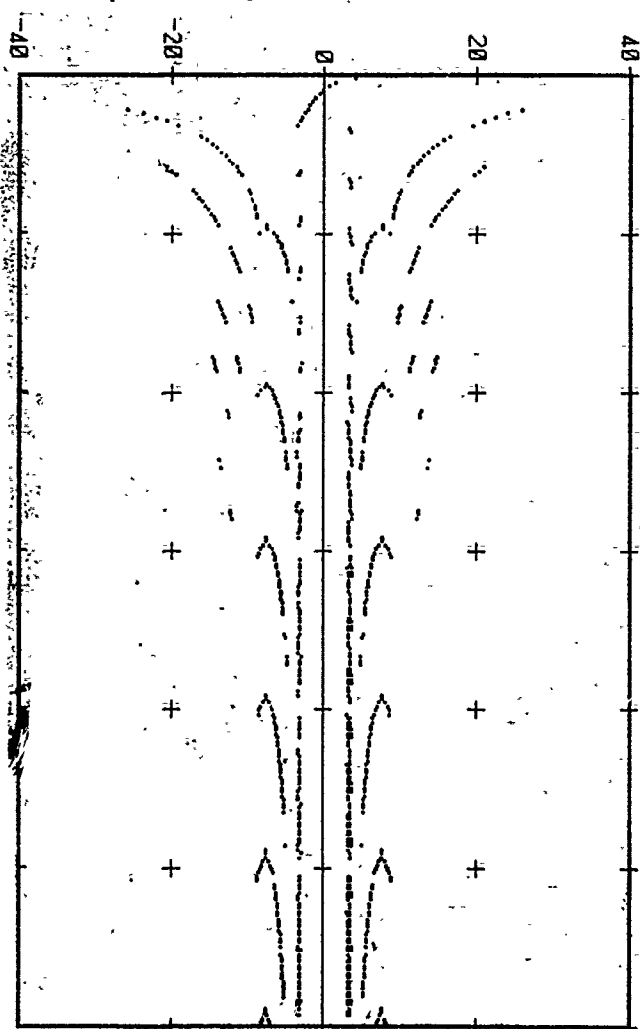
S 20 R 300 F 50

LRAPP

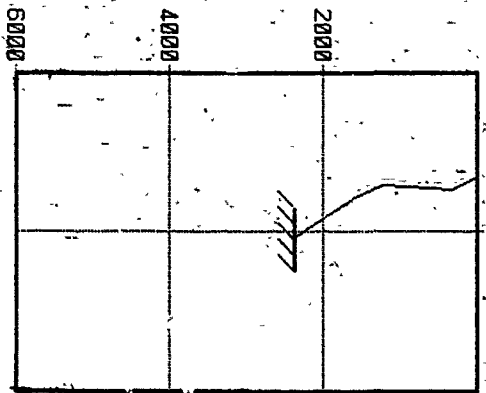
DB LOSS



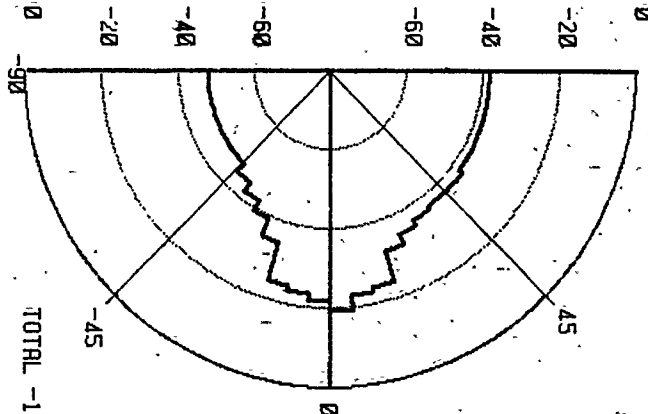
ARRIVAL ANGLE



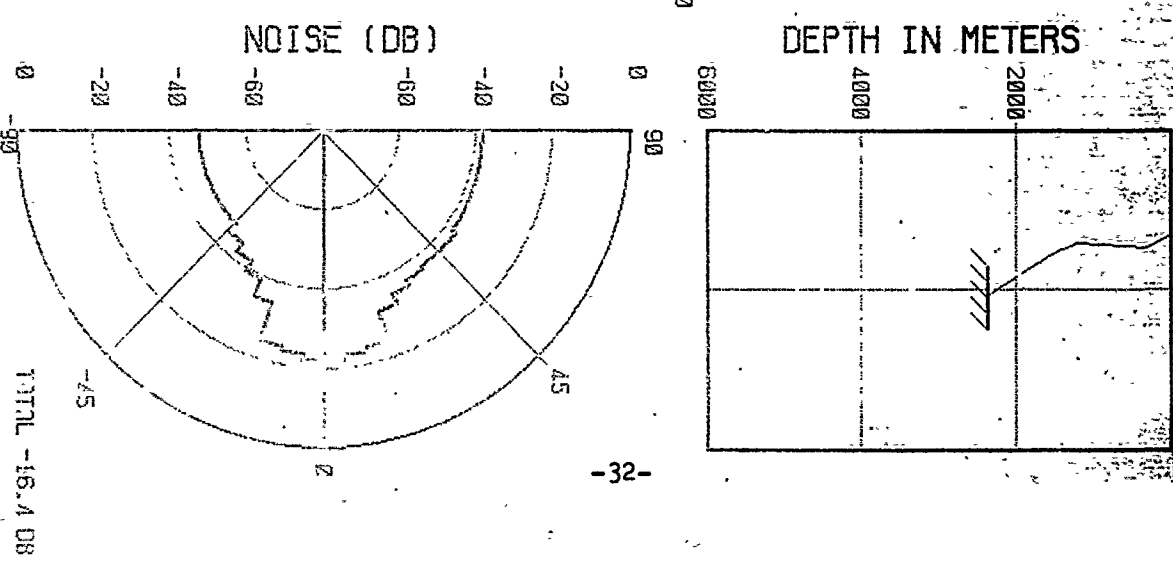
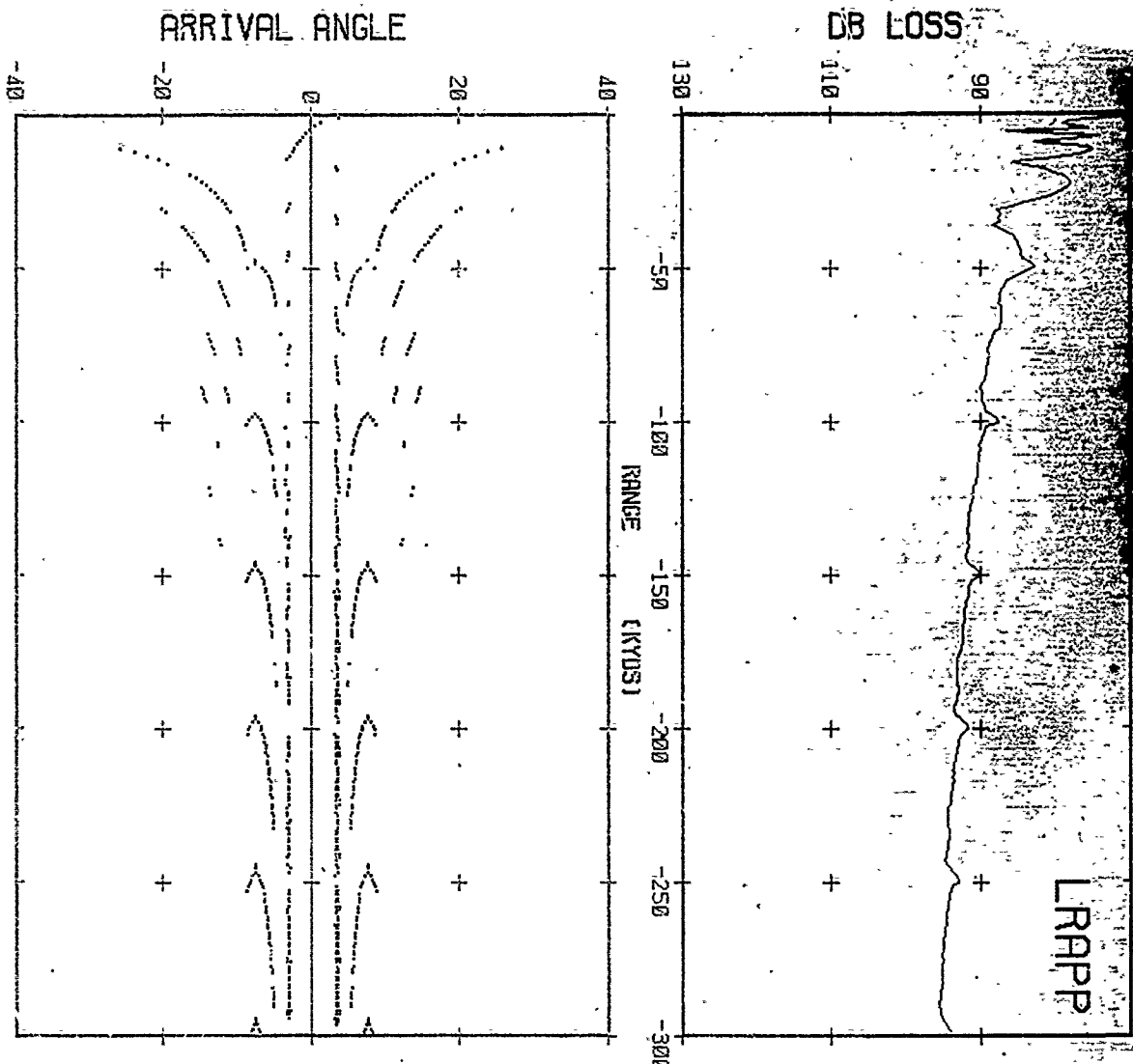
DEPTH IN METERS



NOISE (DB)



TOTRL -16.4 DB

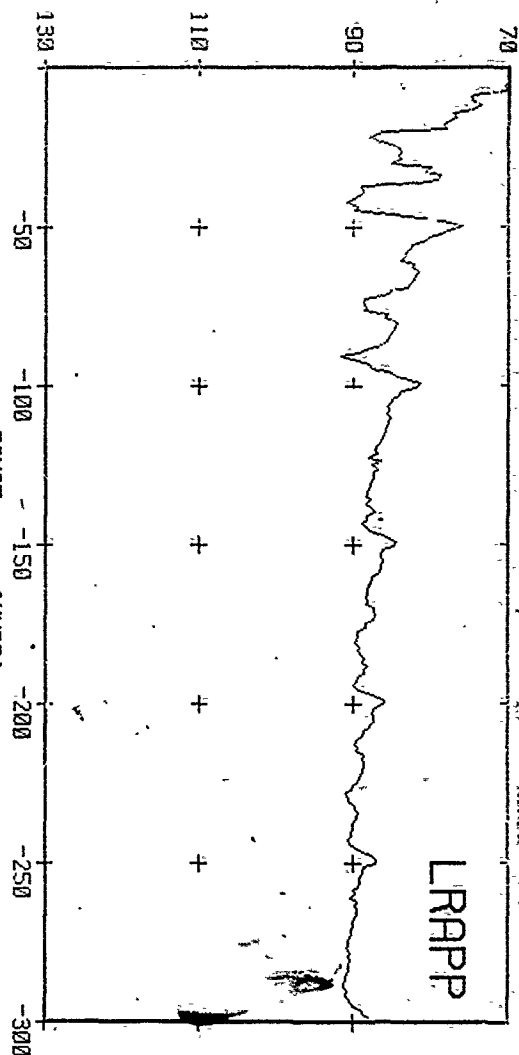


AREA AIR WINTER

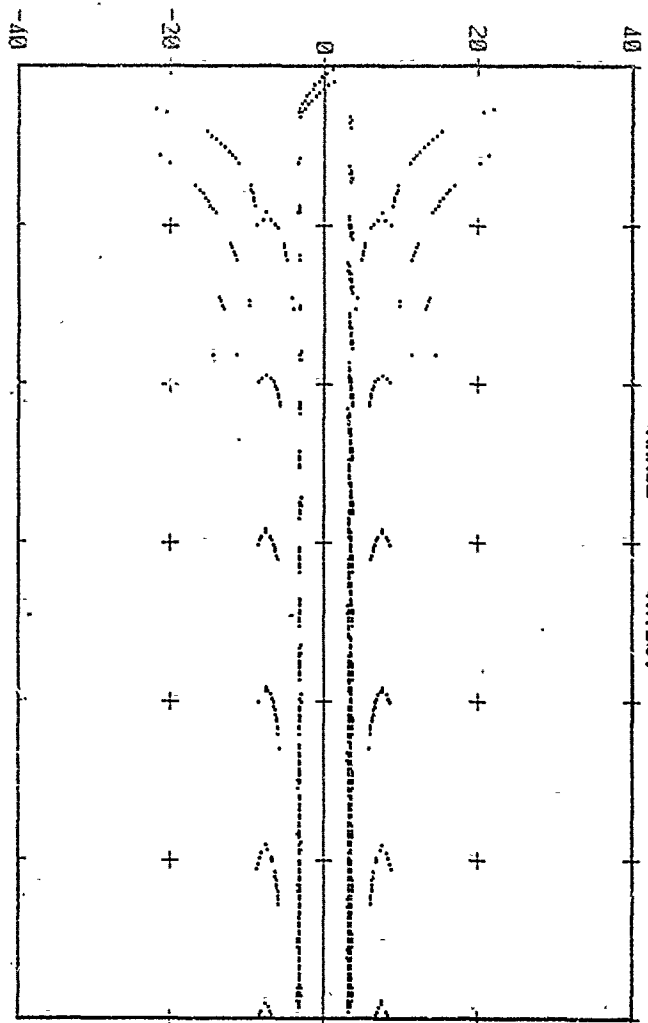
S 200 R 300 F 50

1450 M/S 1500 1550

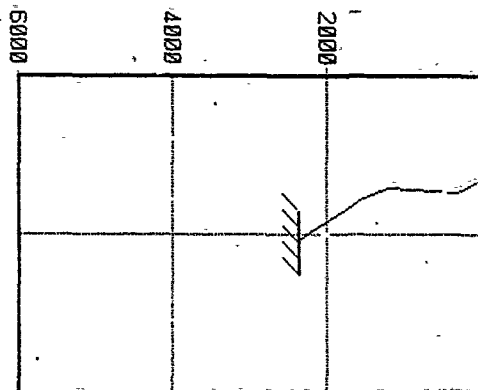
DB LOSS



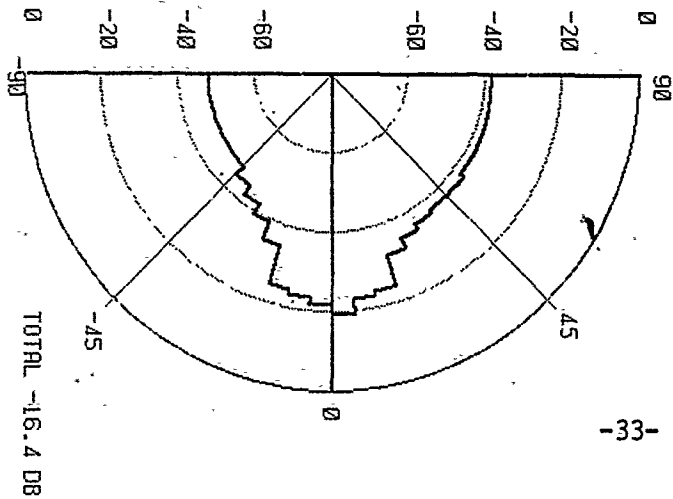
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

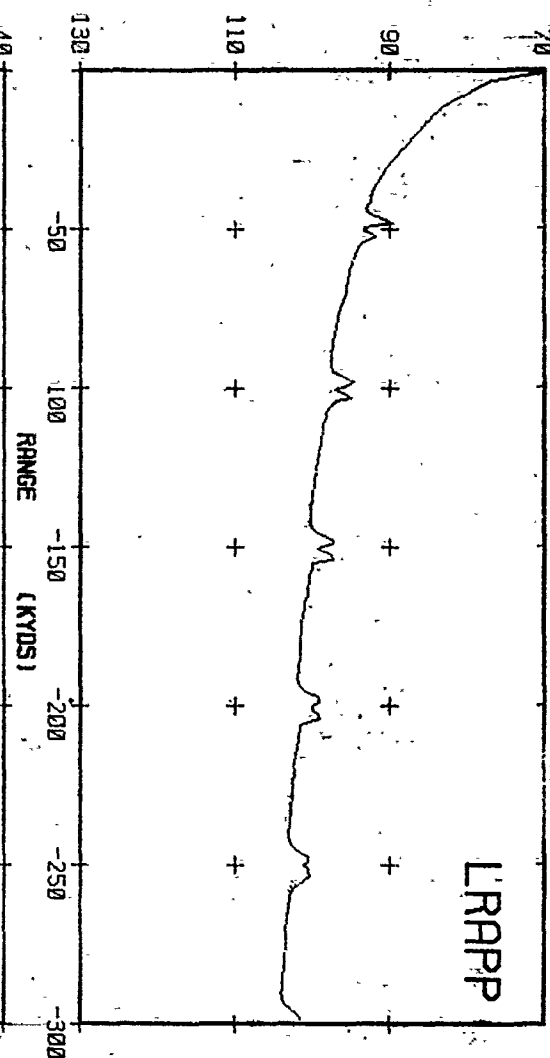


AREA 40 WINTER

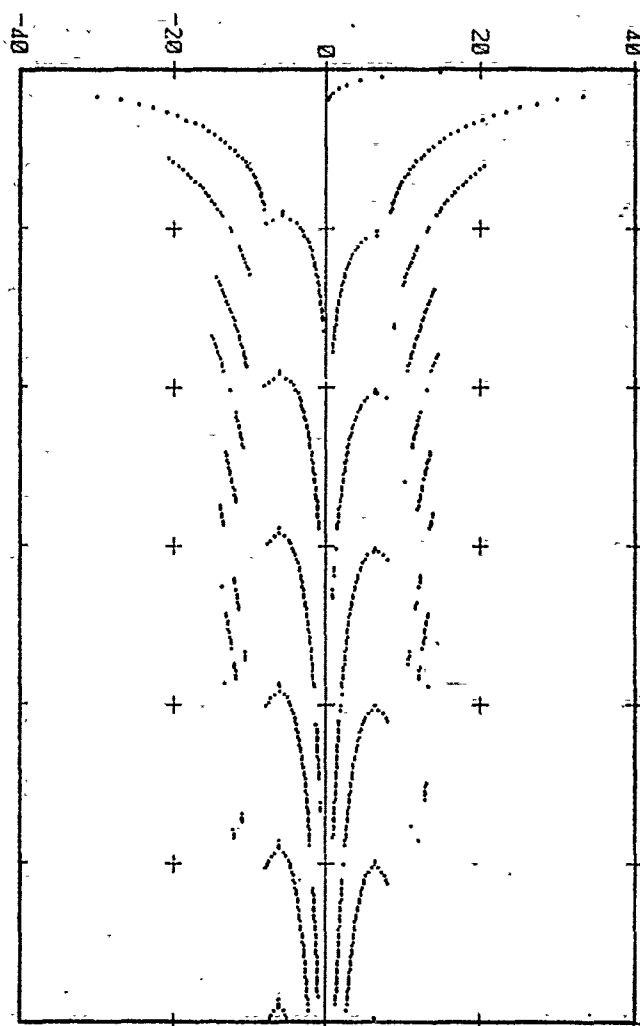
S 20 R 1000 F 50

1450 M/S 1500 1550

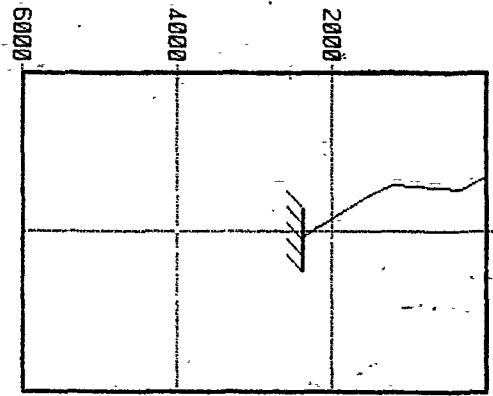
DB LOSS



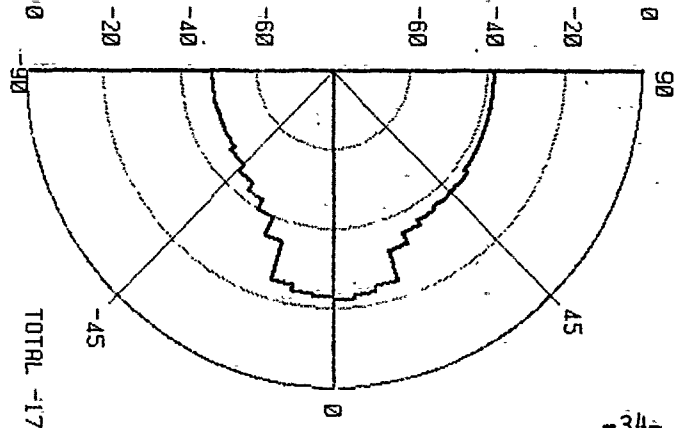
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

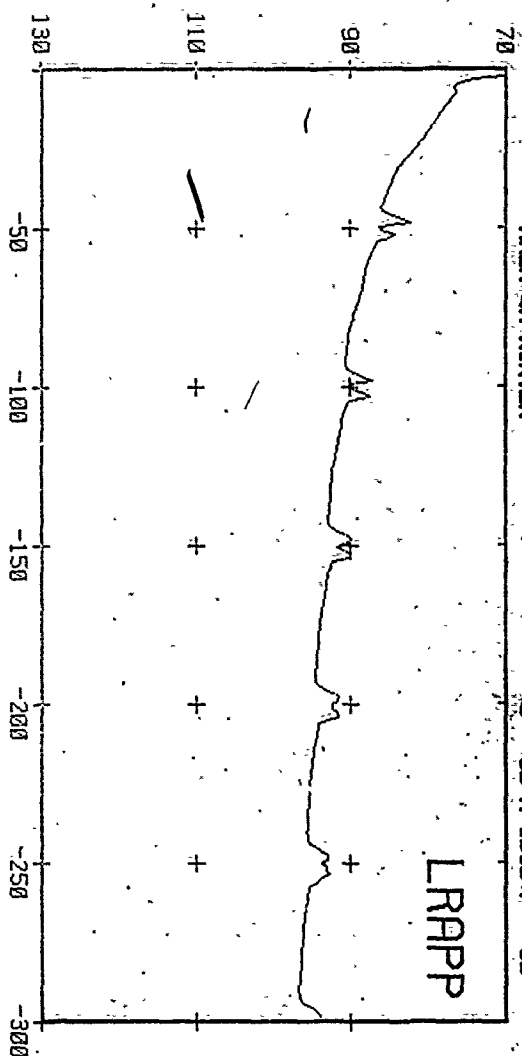


AREA 49 WINTER

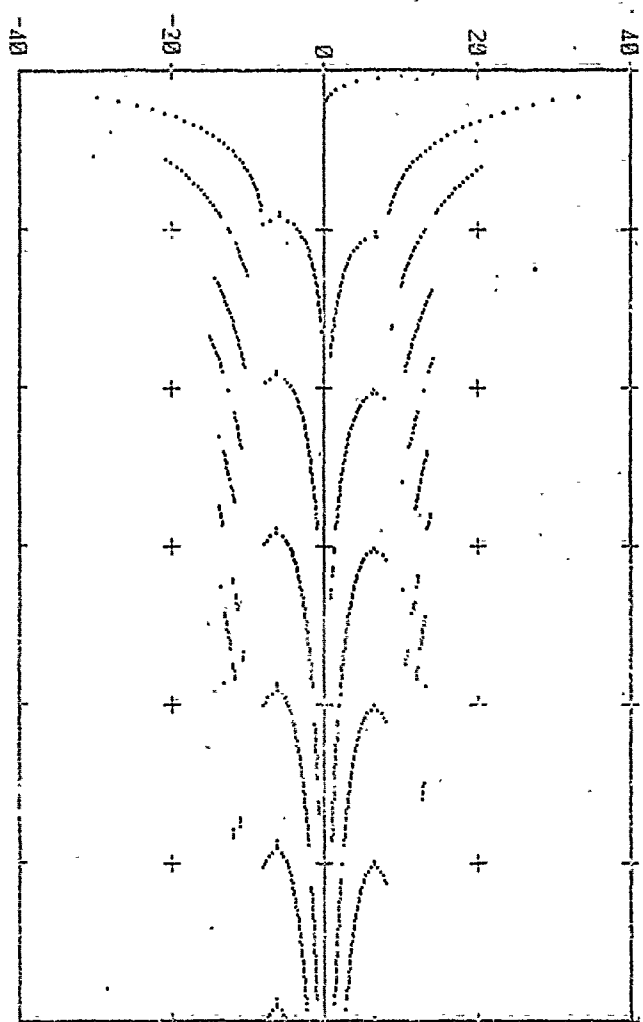
50 R 1000 F 50

1450 M/S 1500 1550

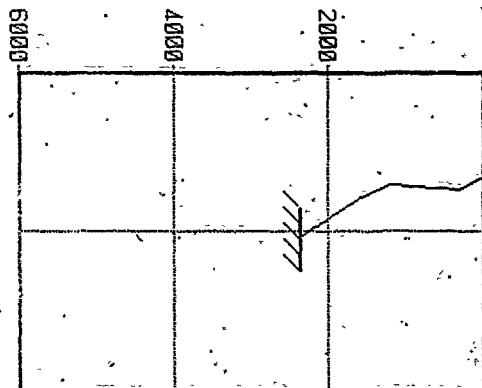
DB LOSS



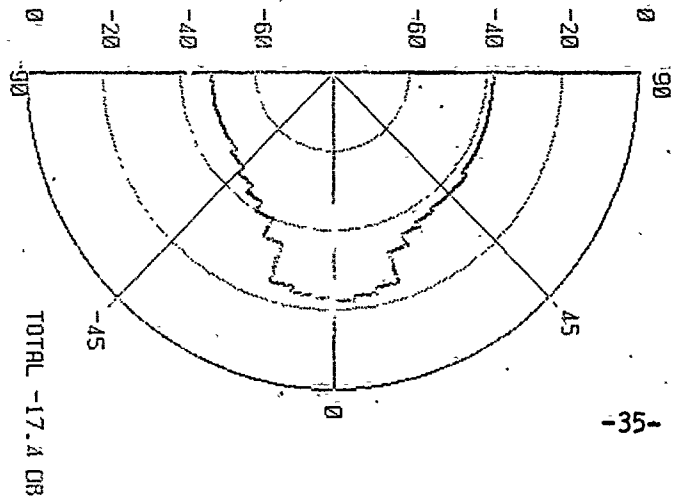
ARRIVAL ANGLE

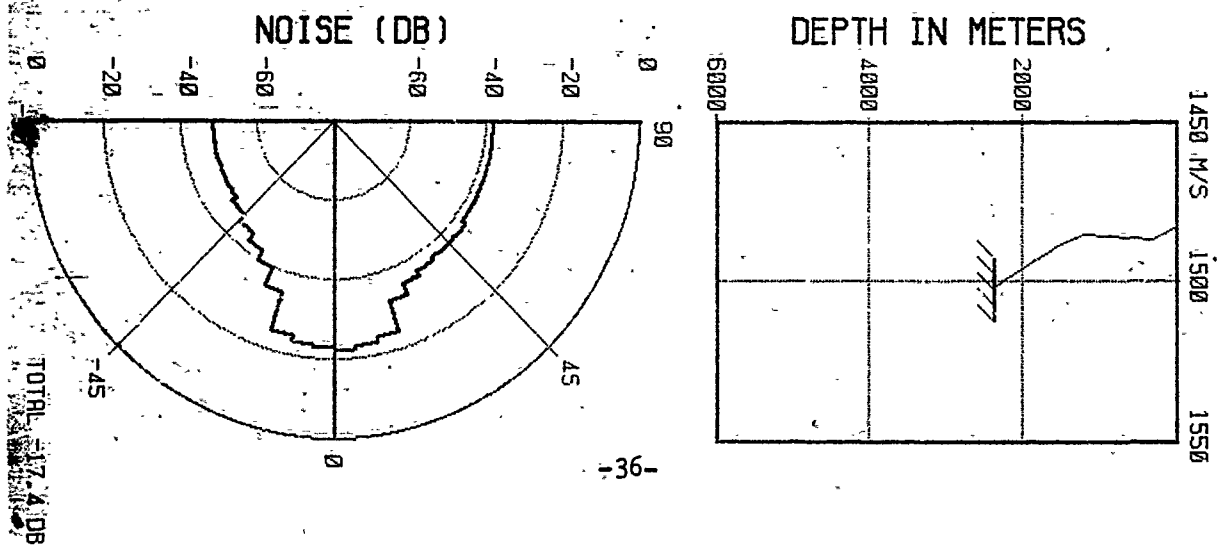
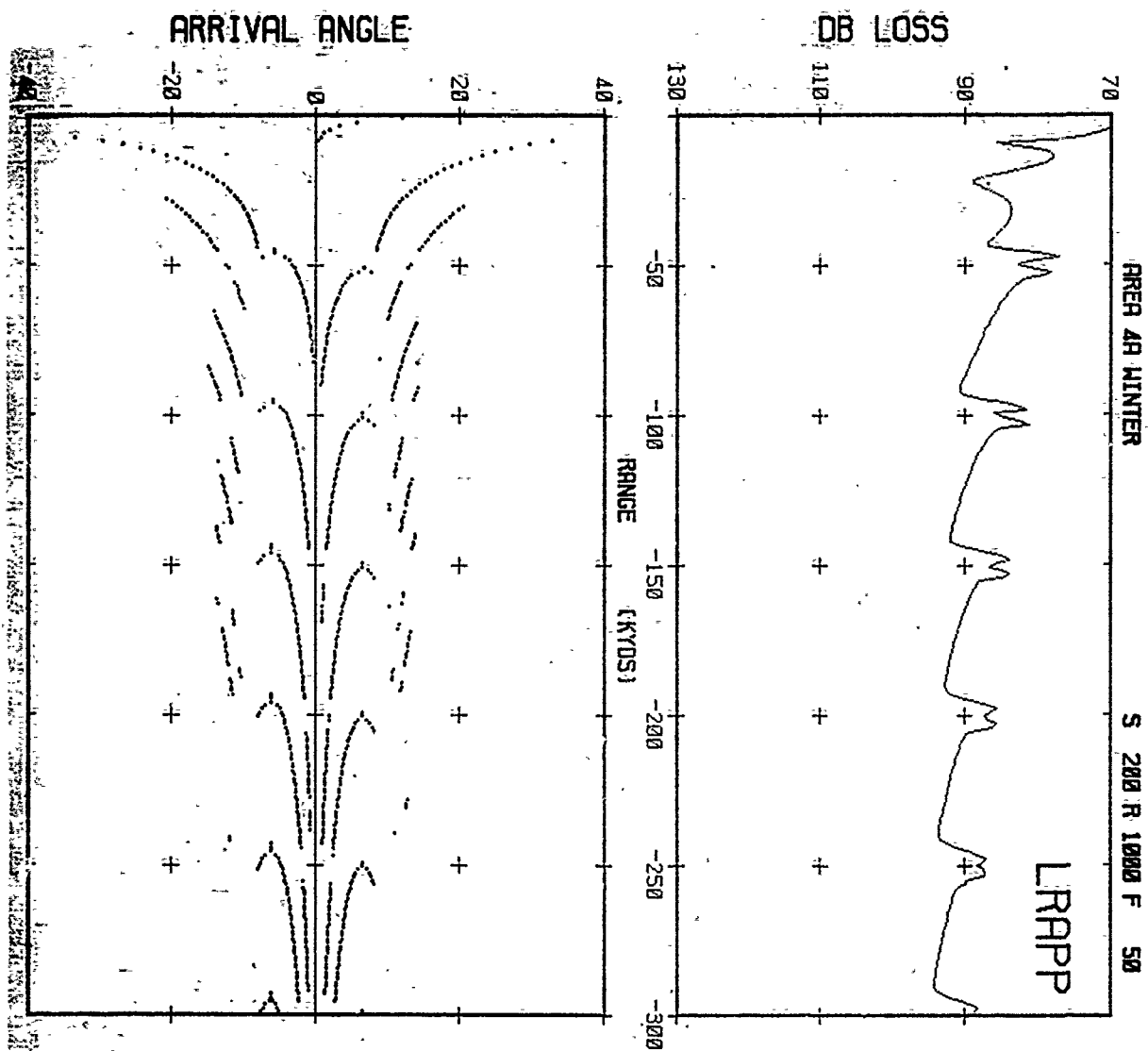


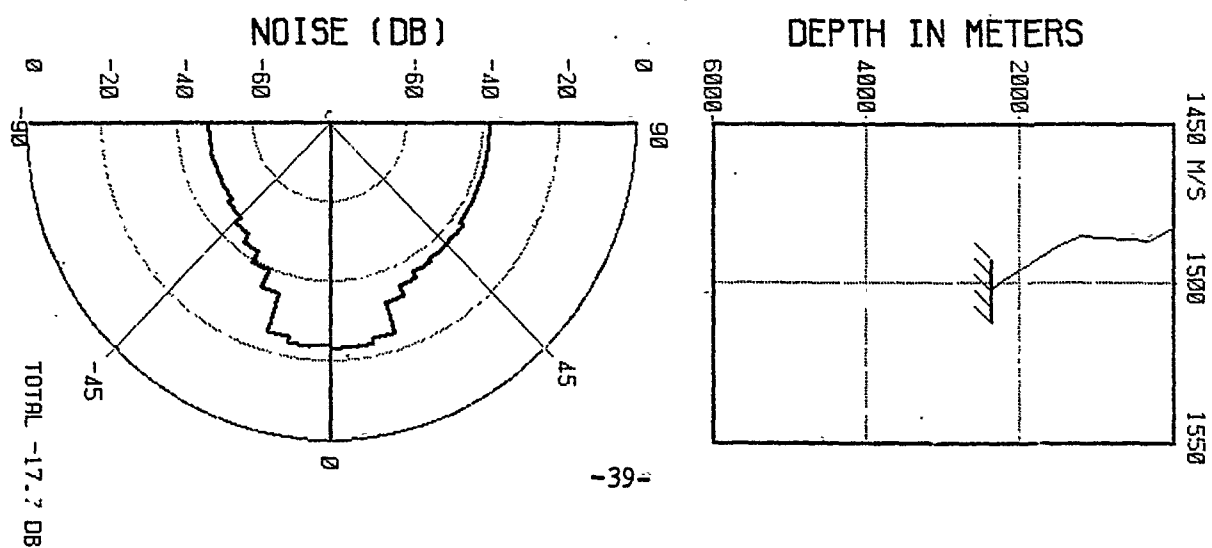
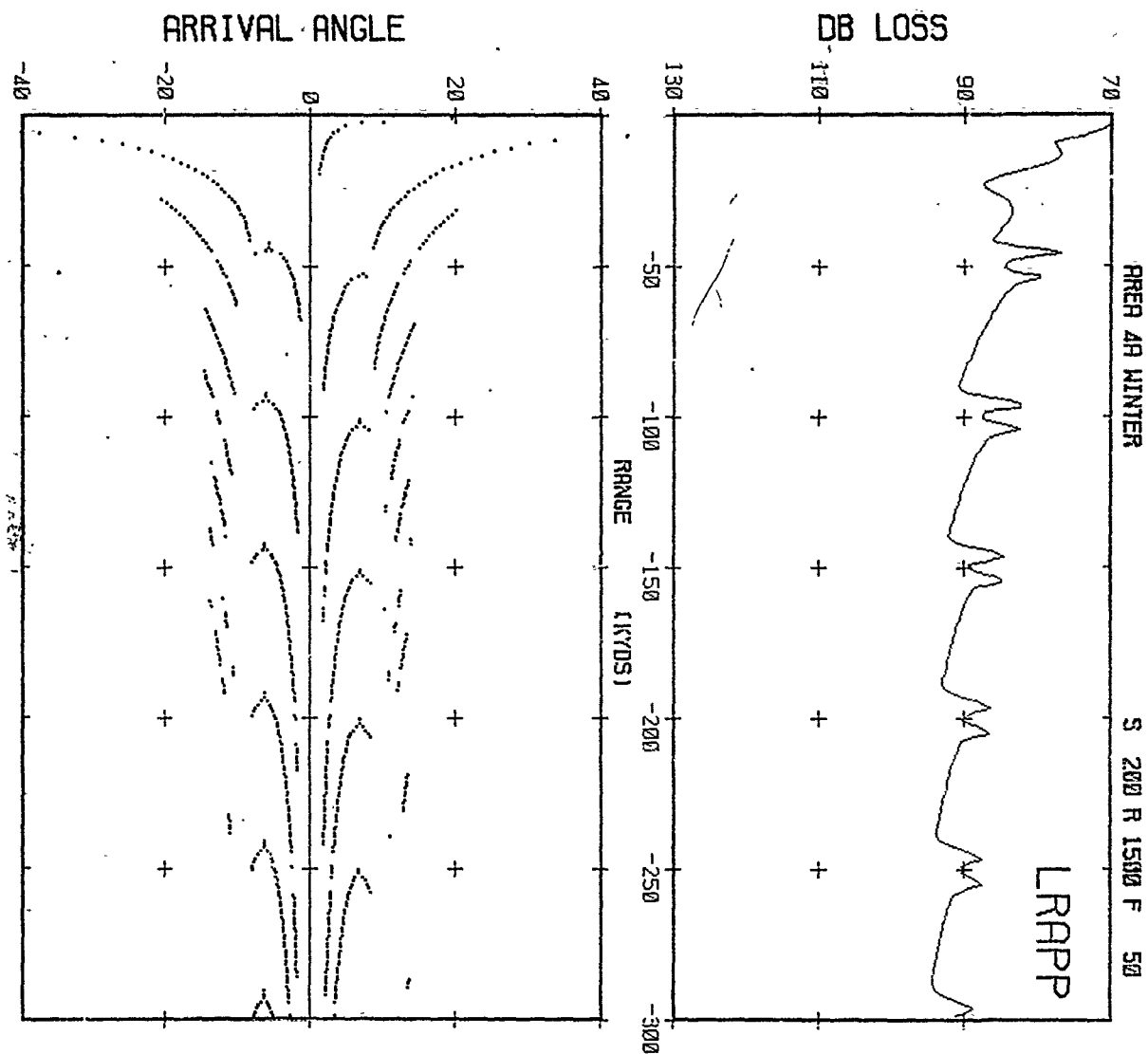
DEPTH IN METERS

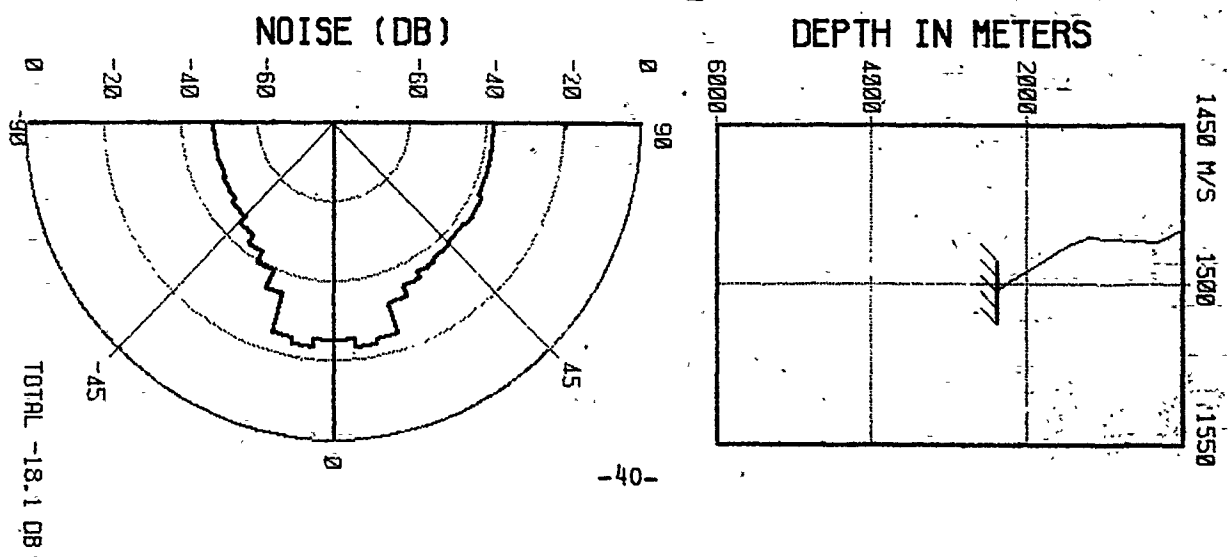
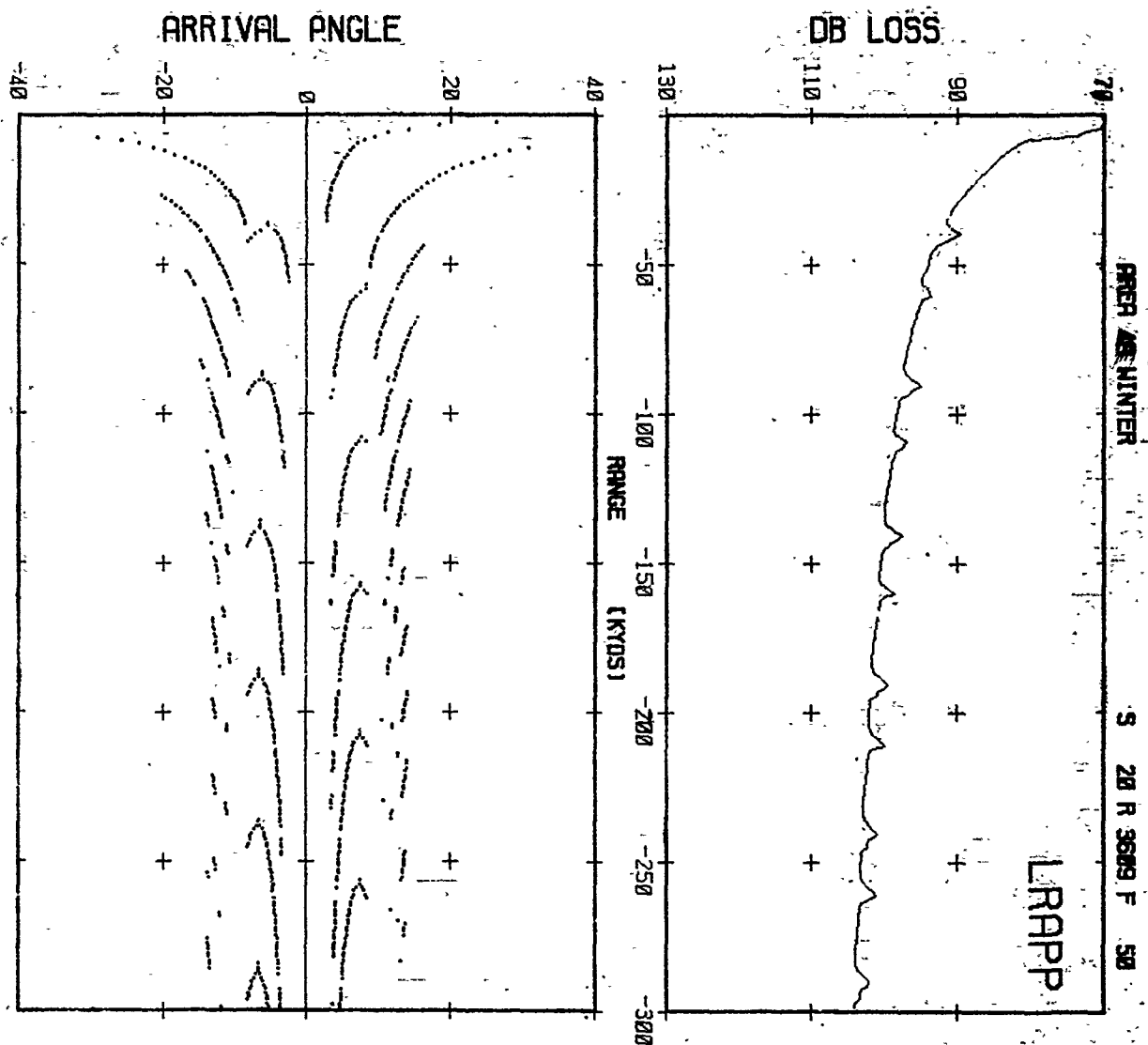


NOISE (DB)







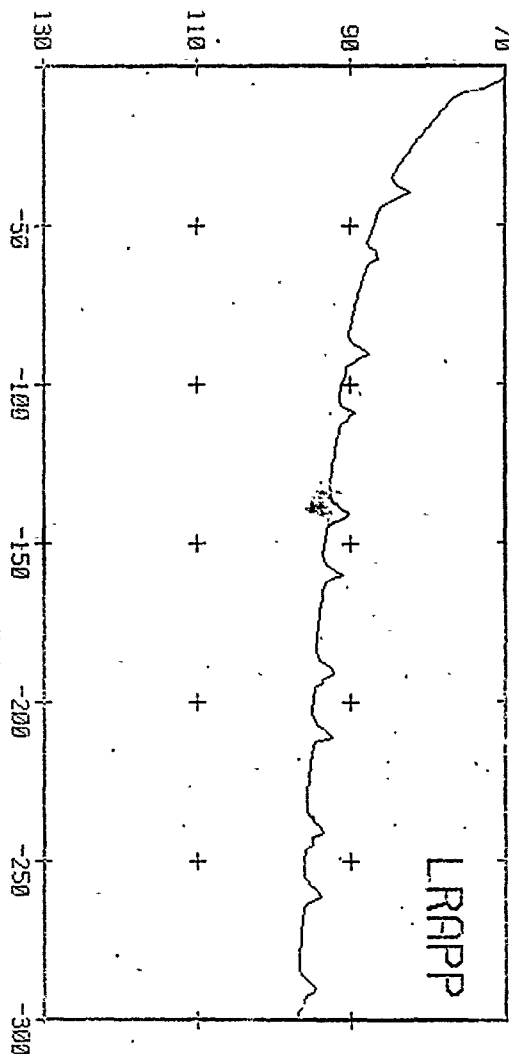


RPER 4R WINTER

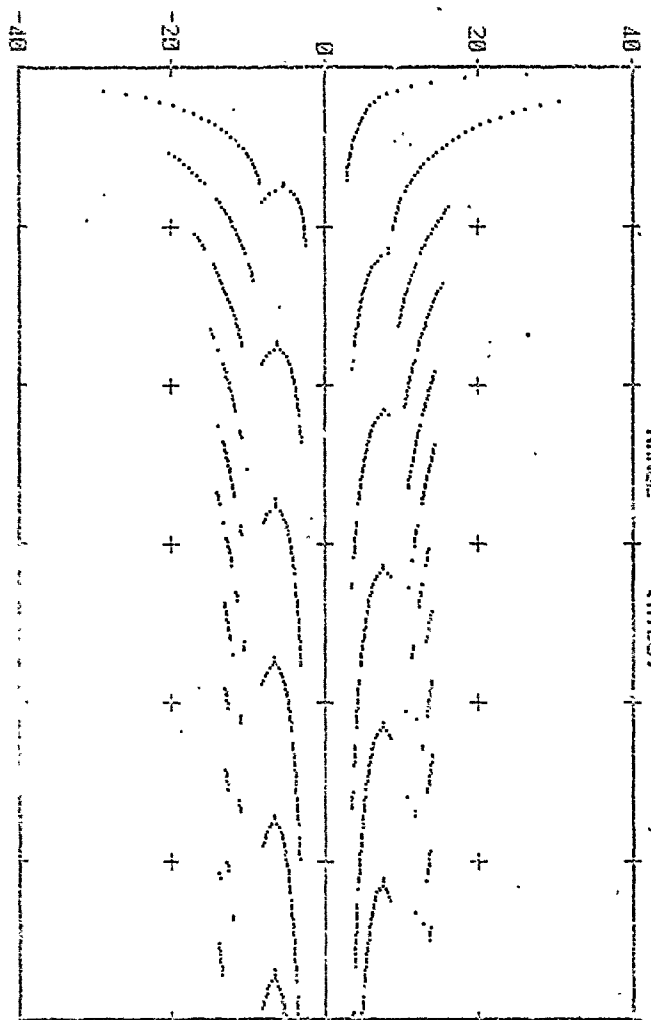
S 50 R 3000 F 50

1450 M/S 1500 1550

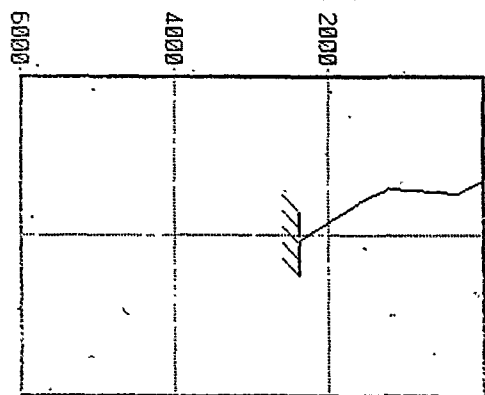
DB LOSS



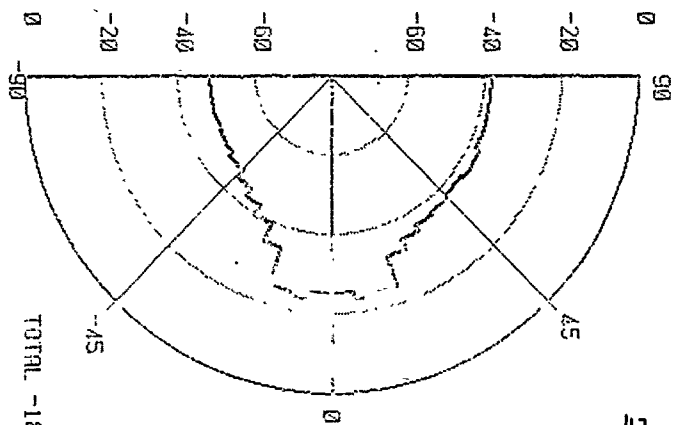
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



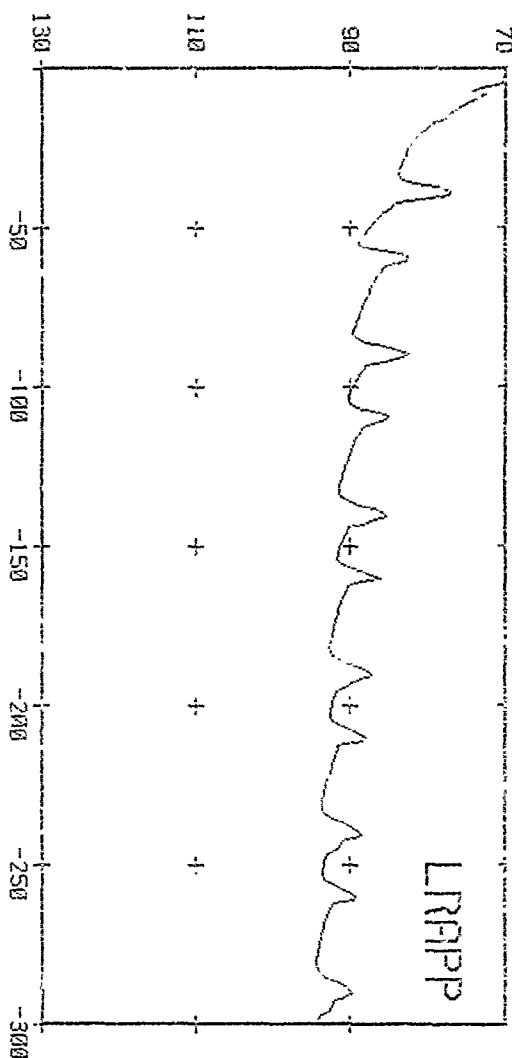
TOTAL -18.1 DB

FREE AIR WINTER

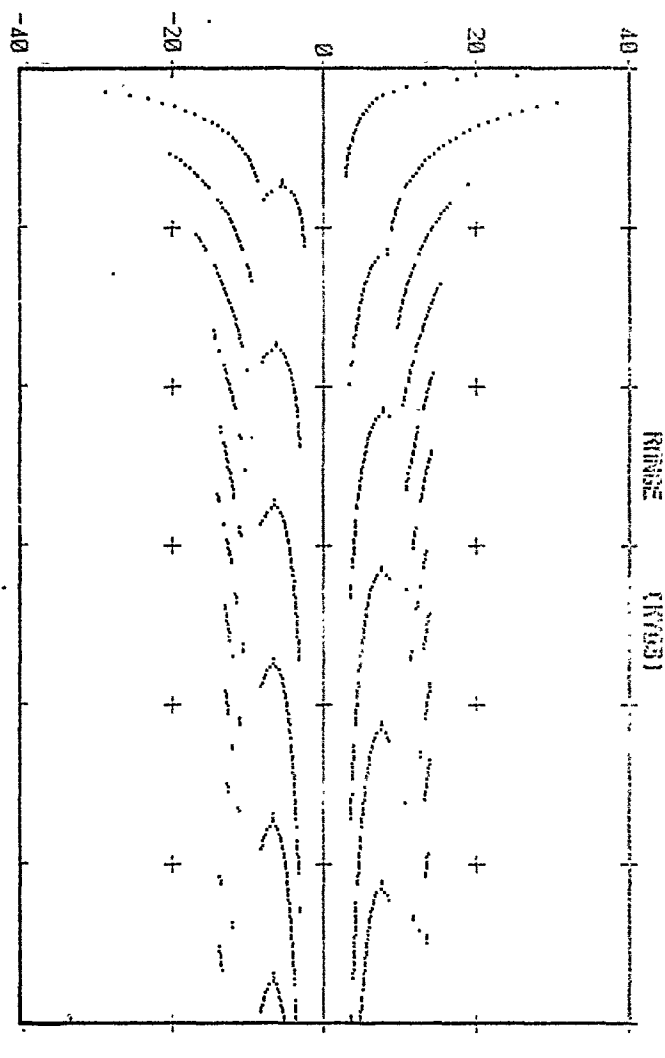
S 220 N 3000 F 50

LRRPP

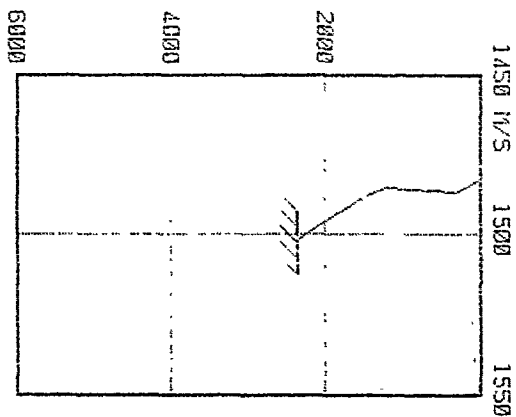
DB LOSS



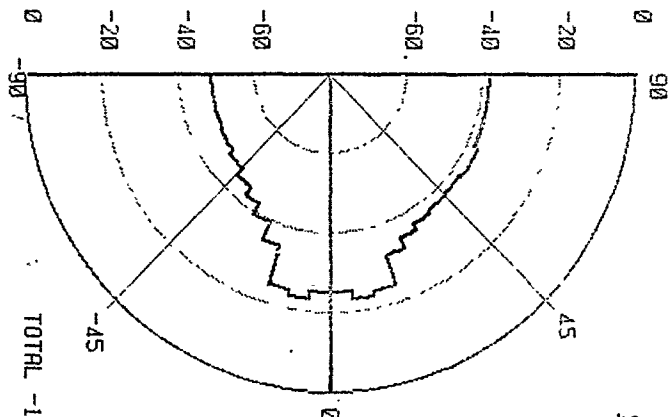
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



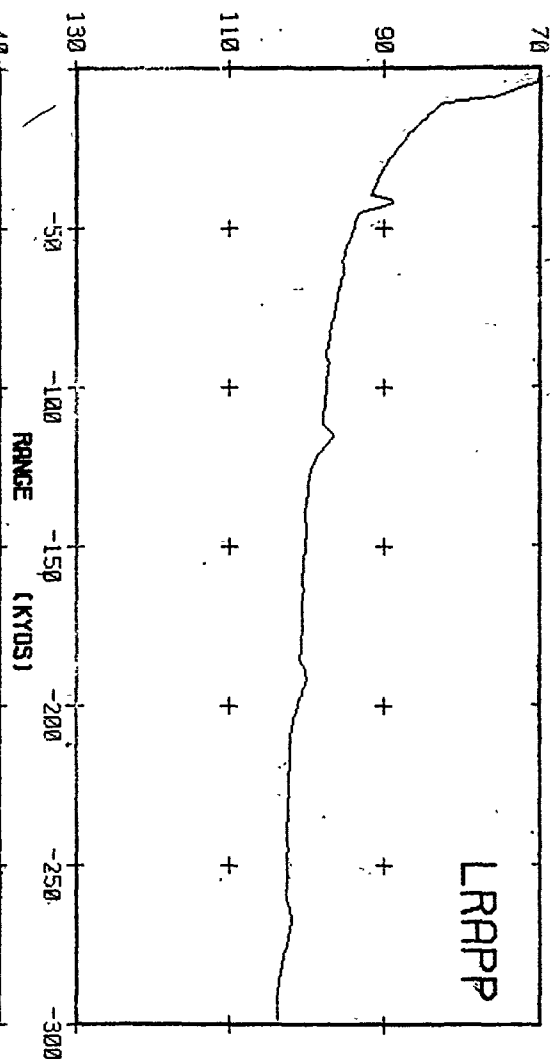
TOTAL -18.1 DB

AREA 4A WINTER

S 20 R 4593 F 50

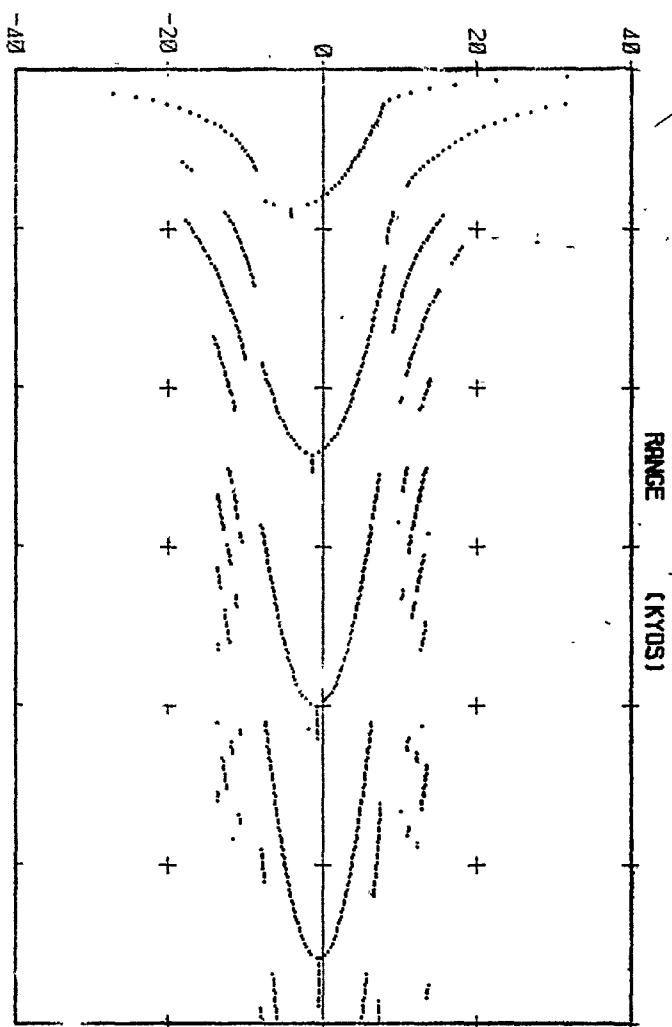
1450 M/S 1500 1550

DB LOSS

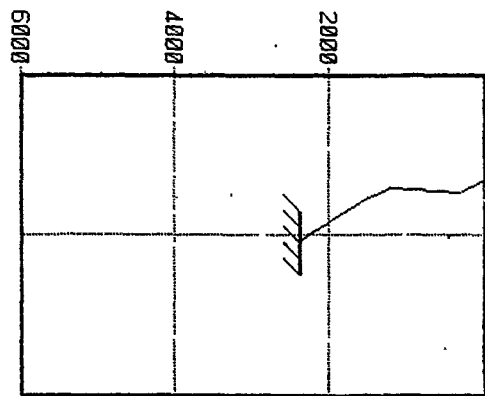


LRAPP

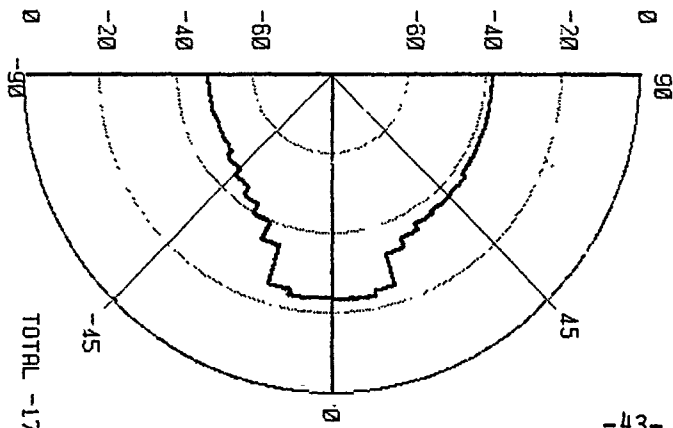
ARRIVAL ANGLE



DEPTH IN METERS

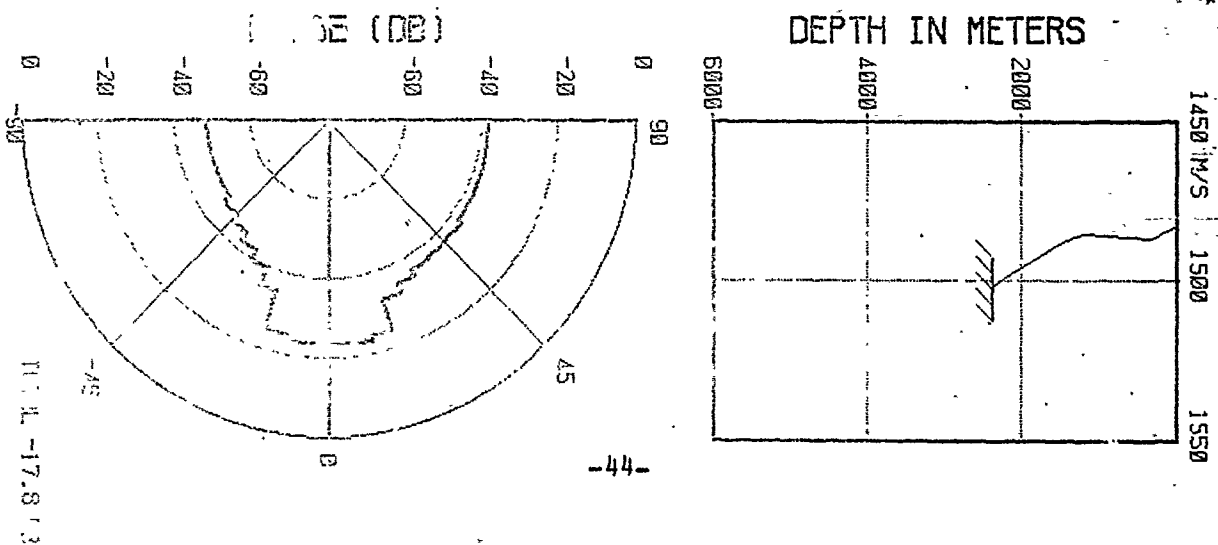
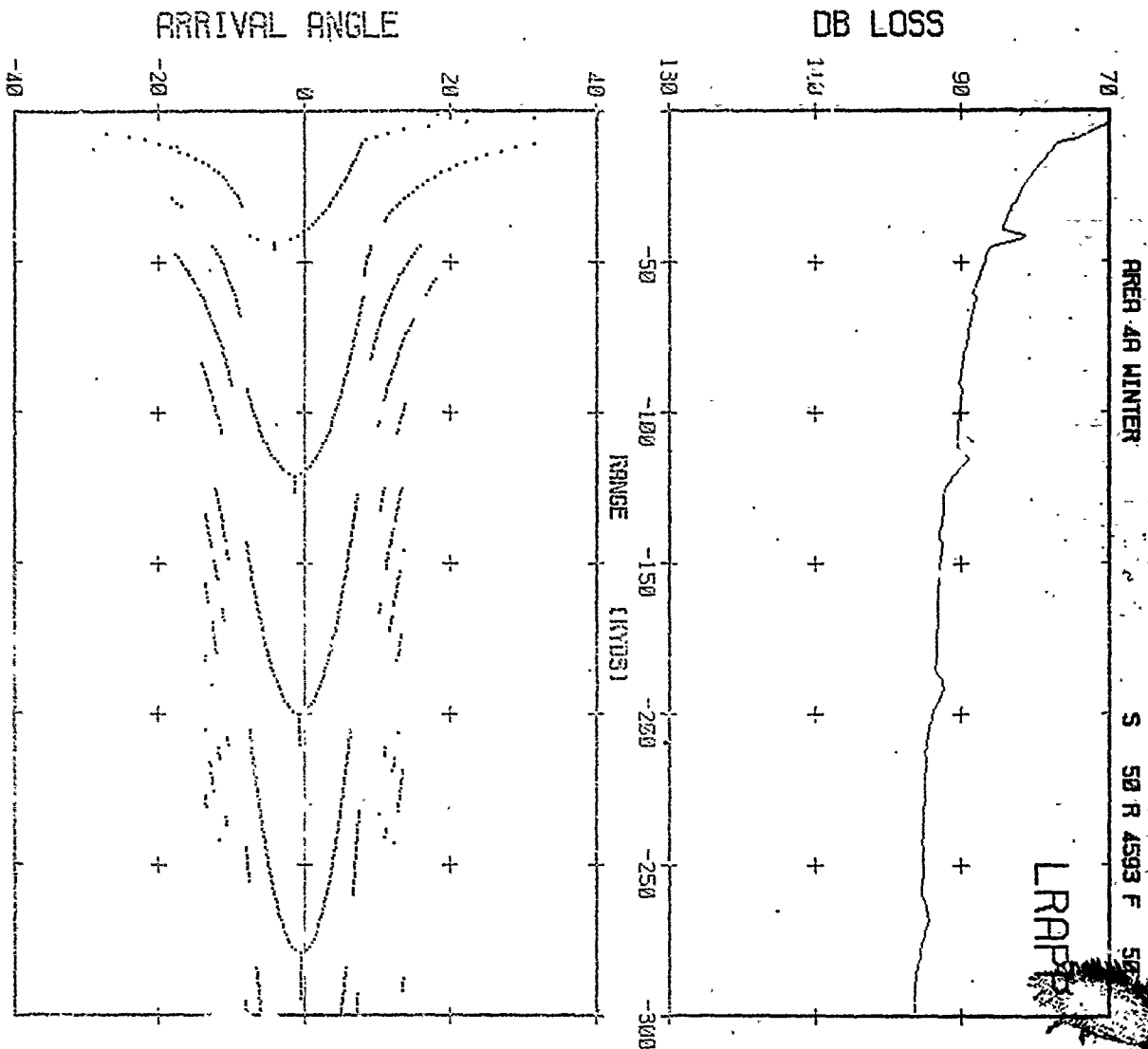


NOISE (DB)



TOTAL -17.8 DB

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



PREA AIR WINTER

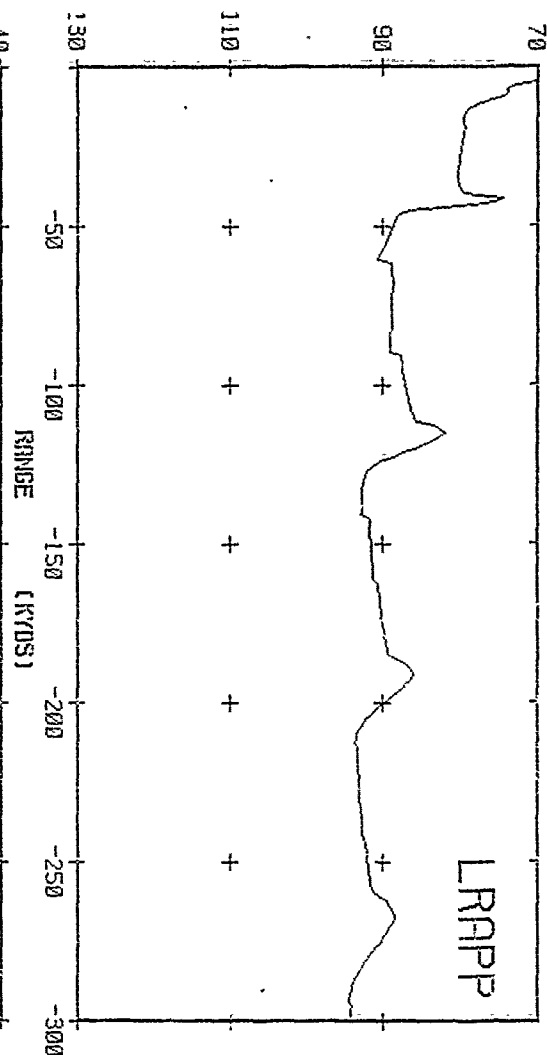
S 250 R 4503 F 50

1450 M/S

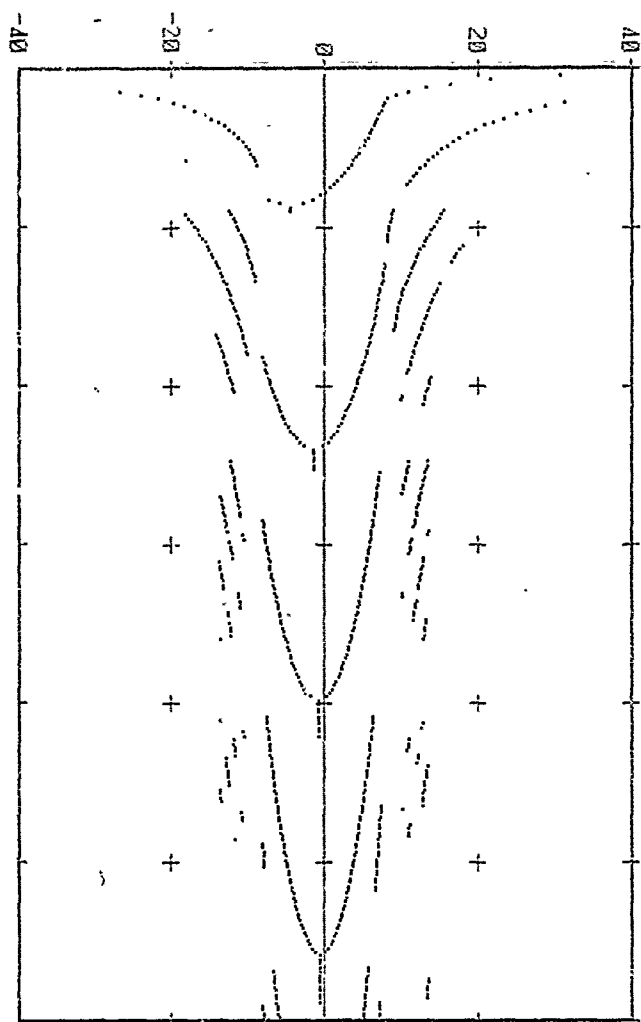
1500

1550

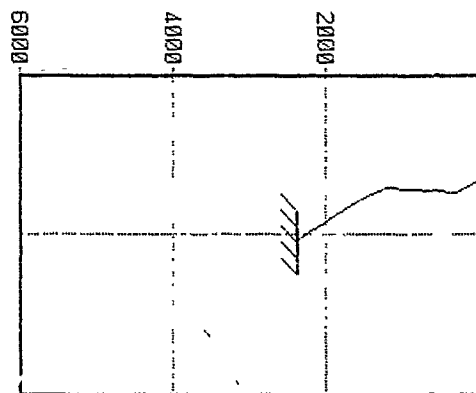
DB LOSS



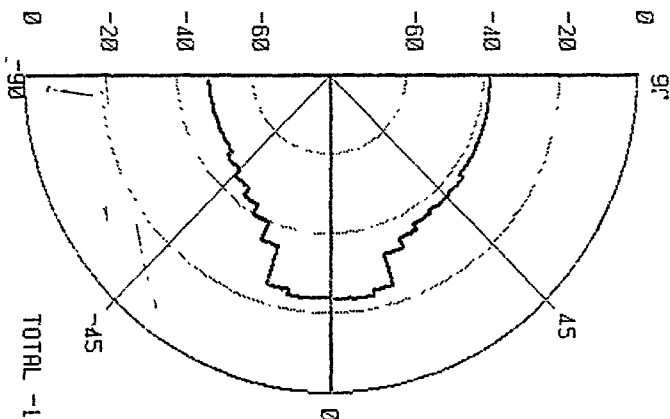
ARRIVAL ANGLE



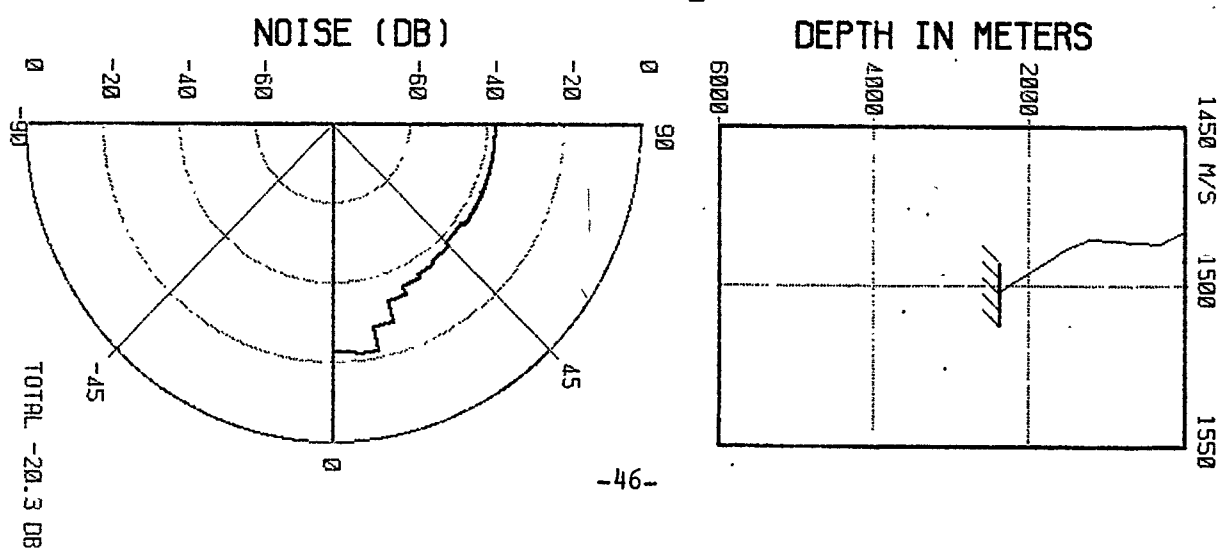
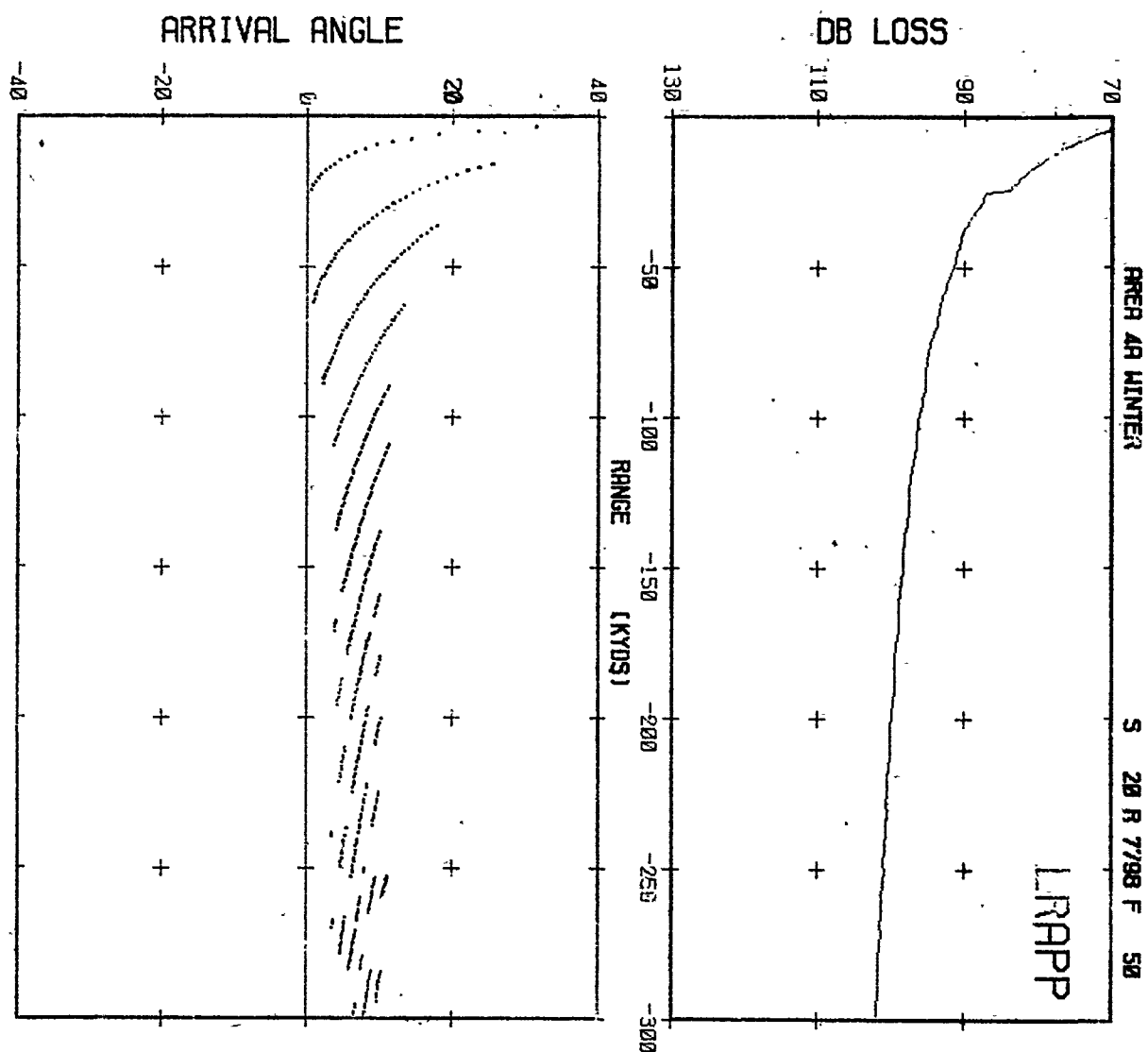
DEPTH IN METERS



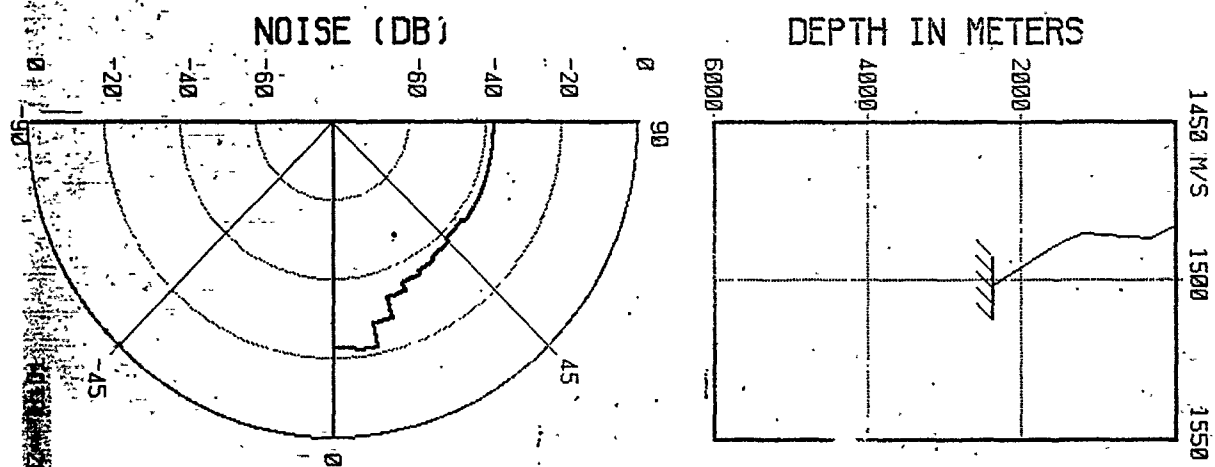
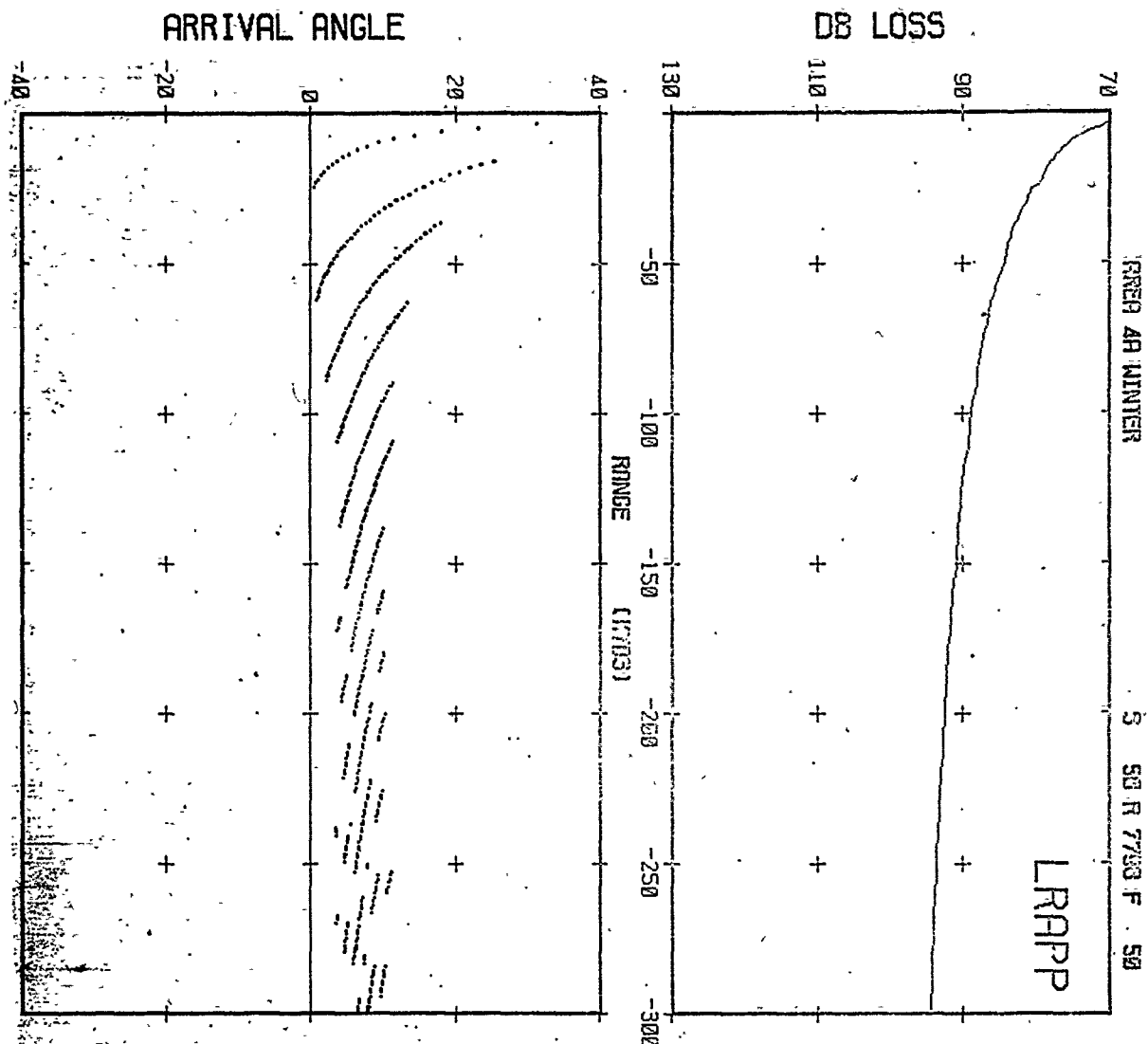
NOISE (DB)

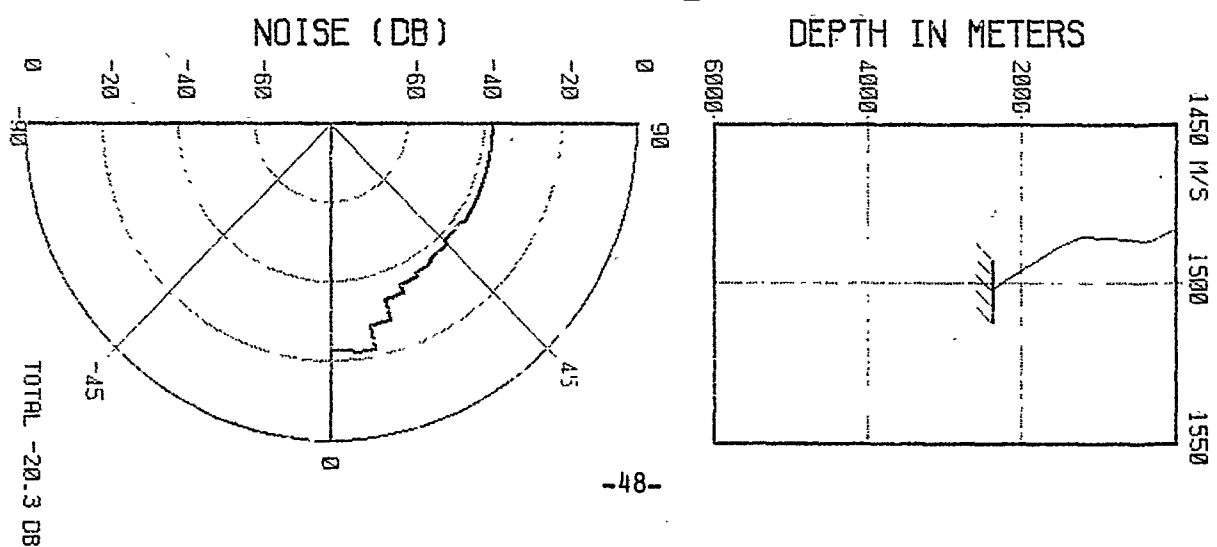
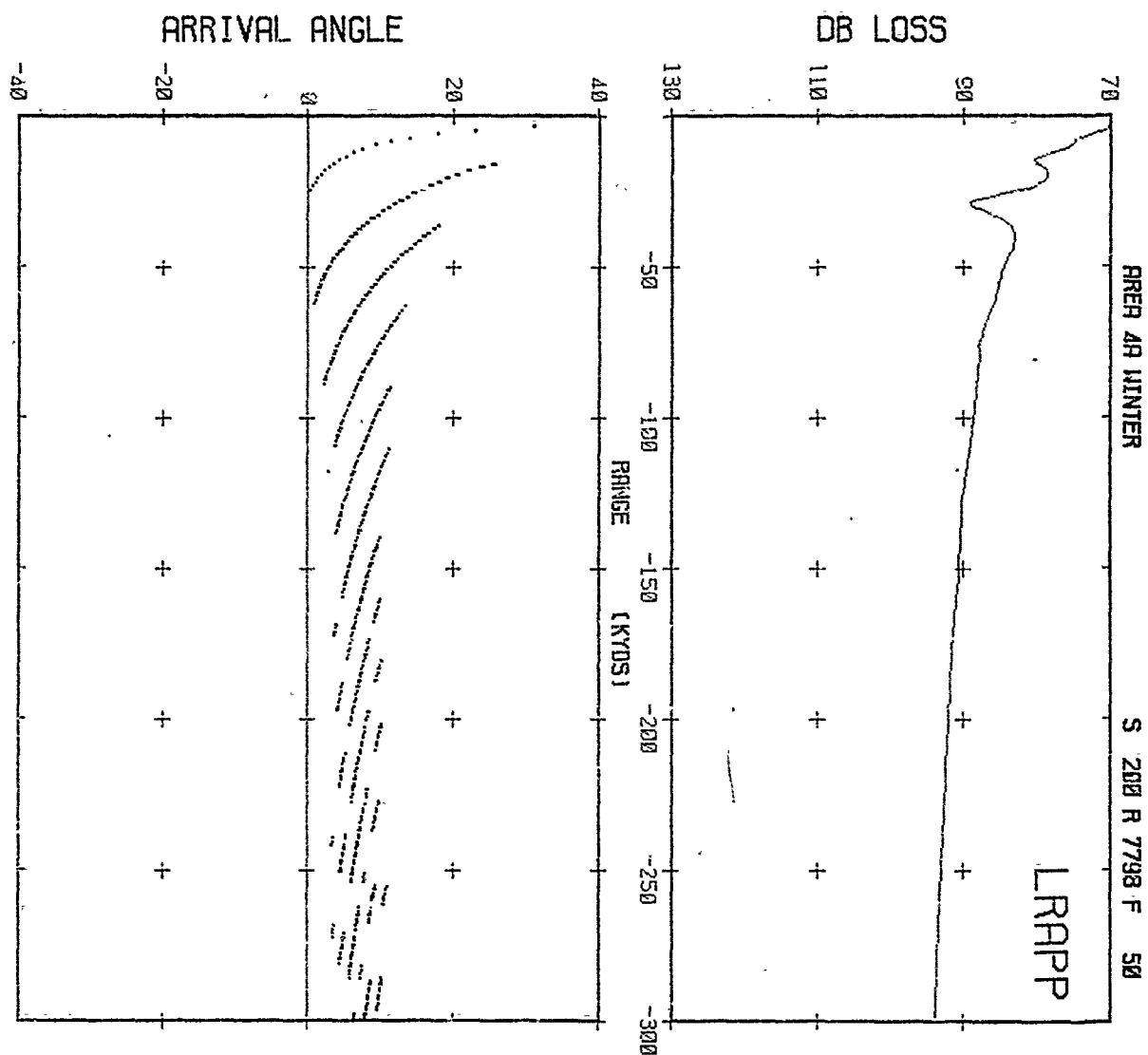


TOTAL -17.8 DB



TOTAL -20.3 DB



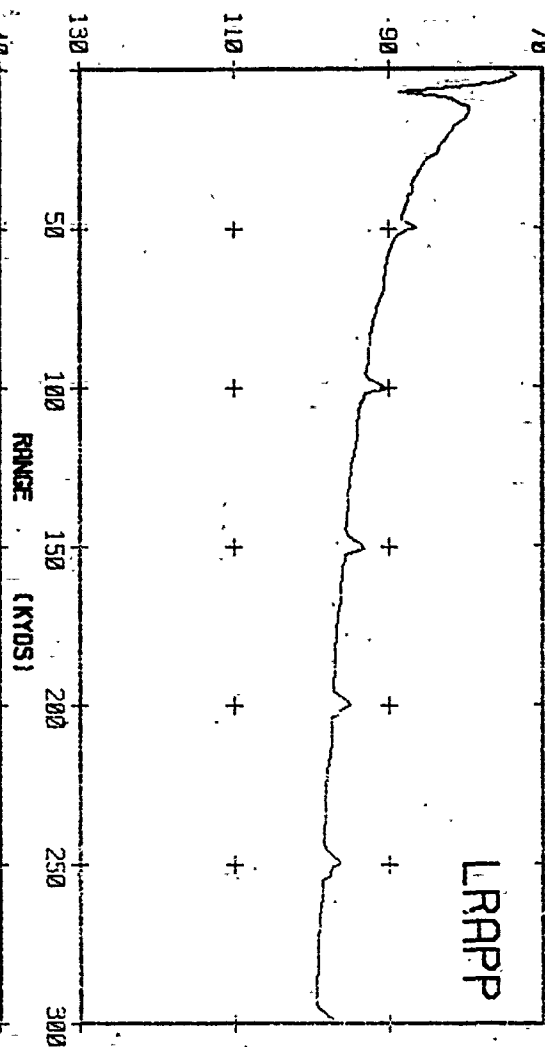


RPER 4R WINTER

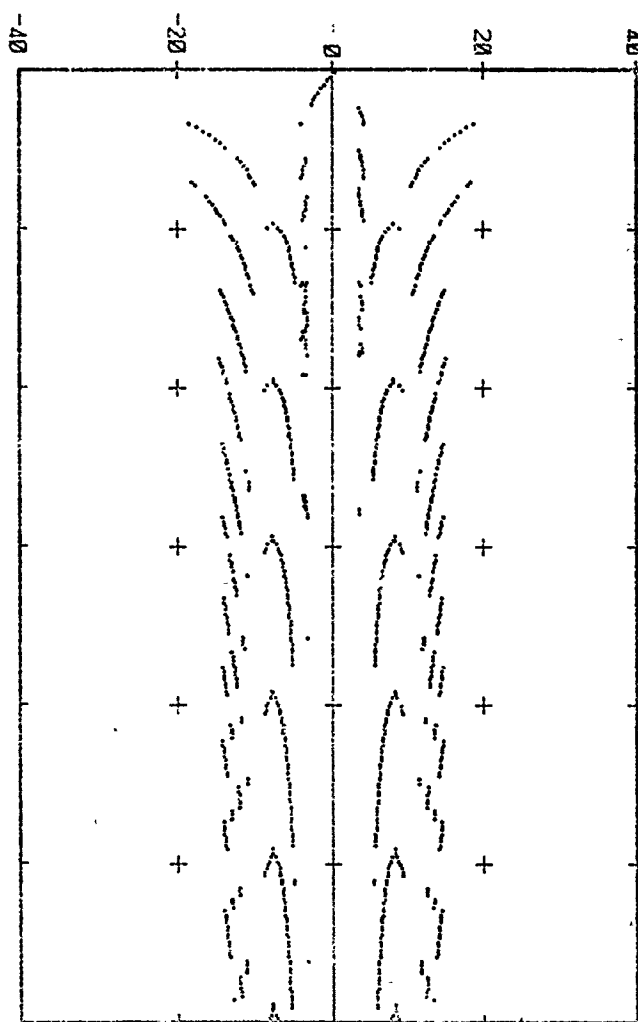
S 20 R 66 F 70

1450 M/S 1500 1550

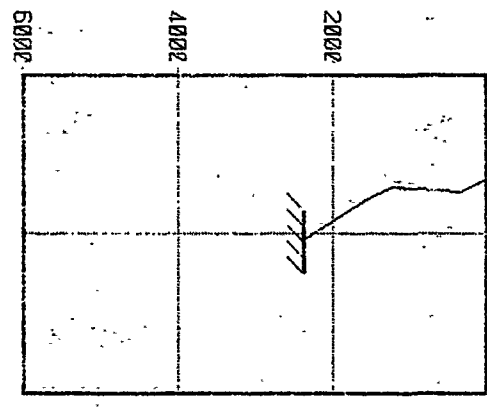
DB LOSS



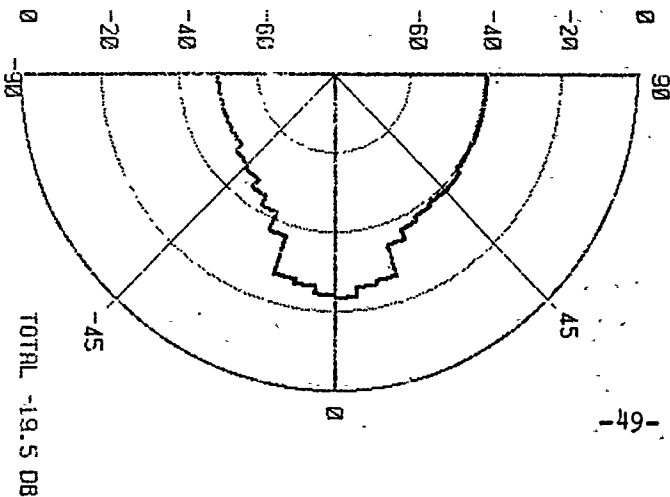
ARRIVAL ANGLE

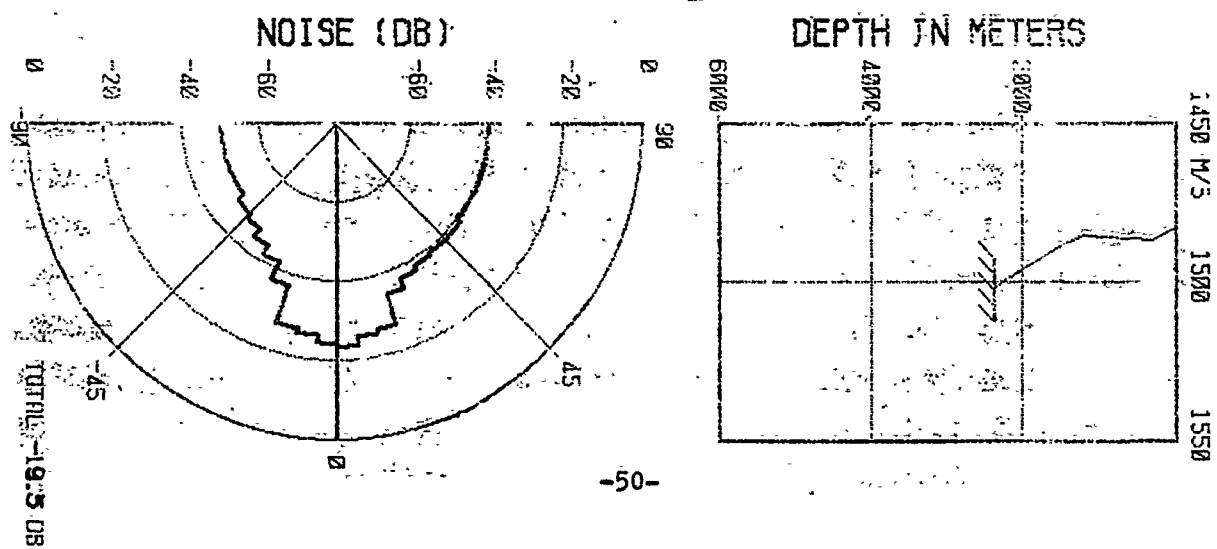
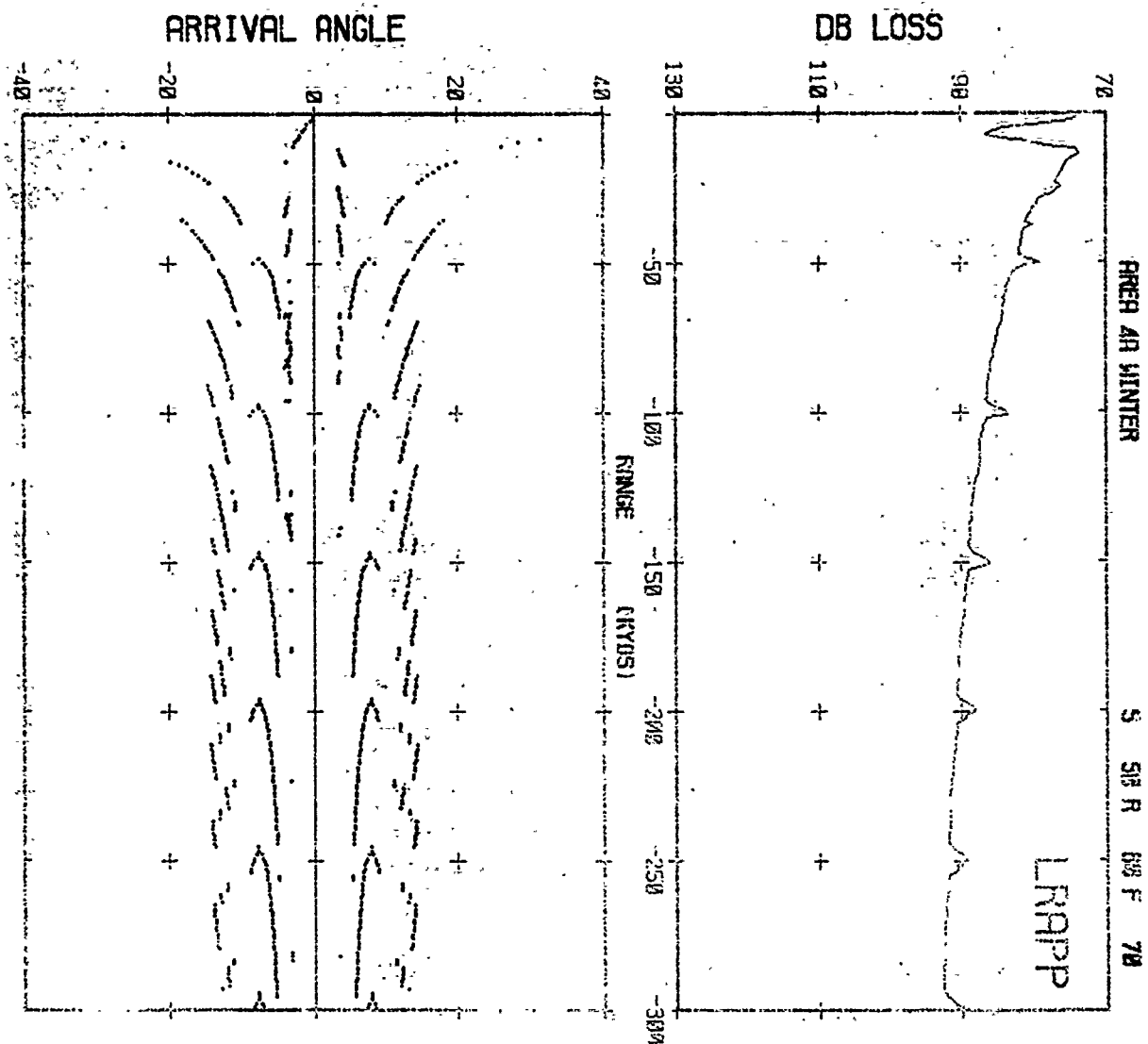


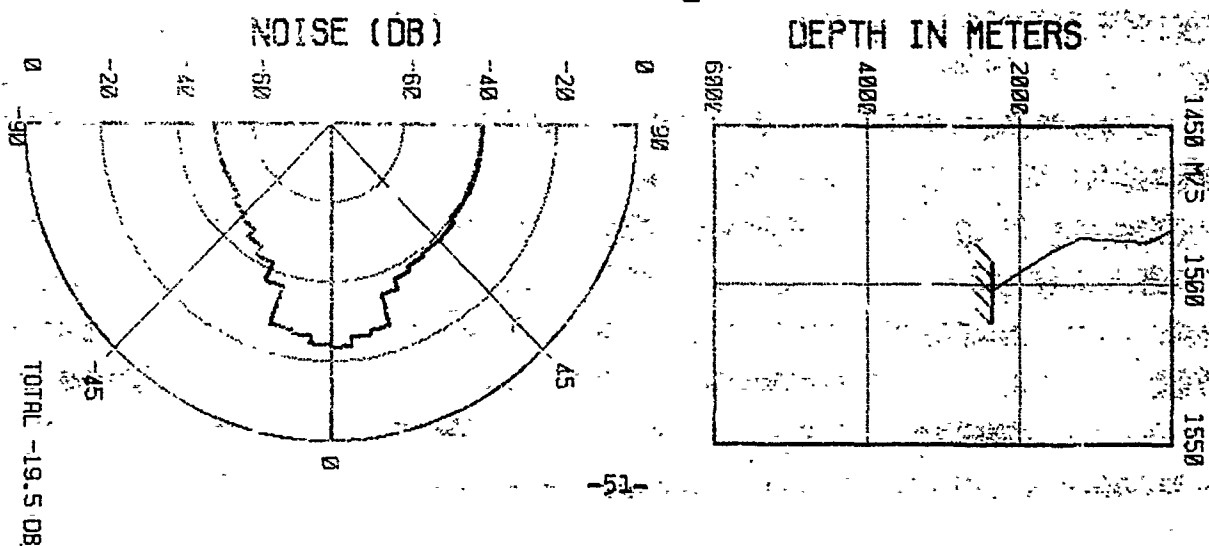
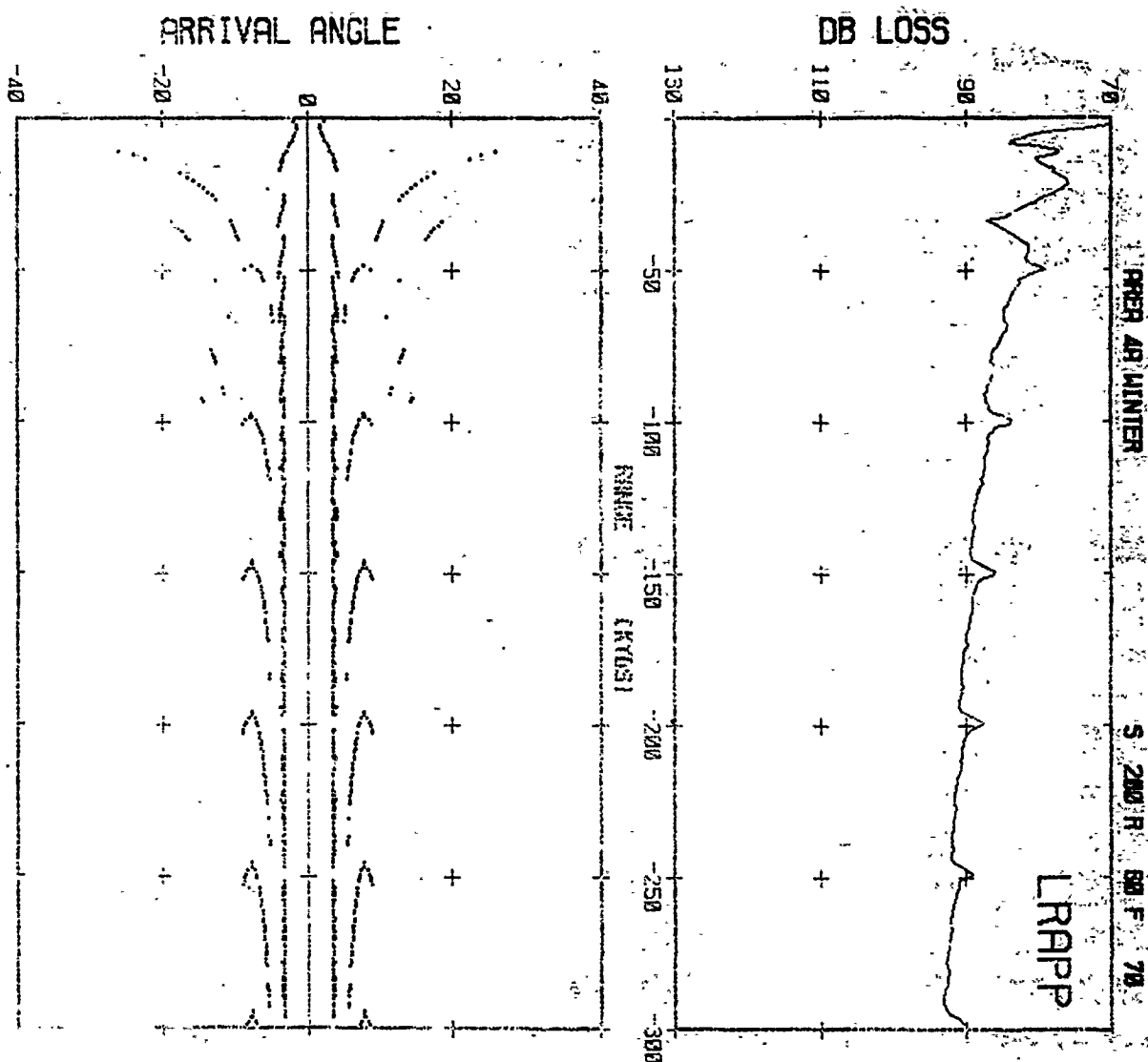
DEPTH IN METERS

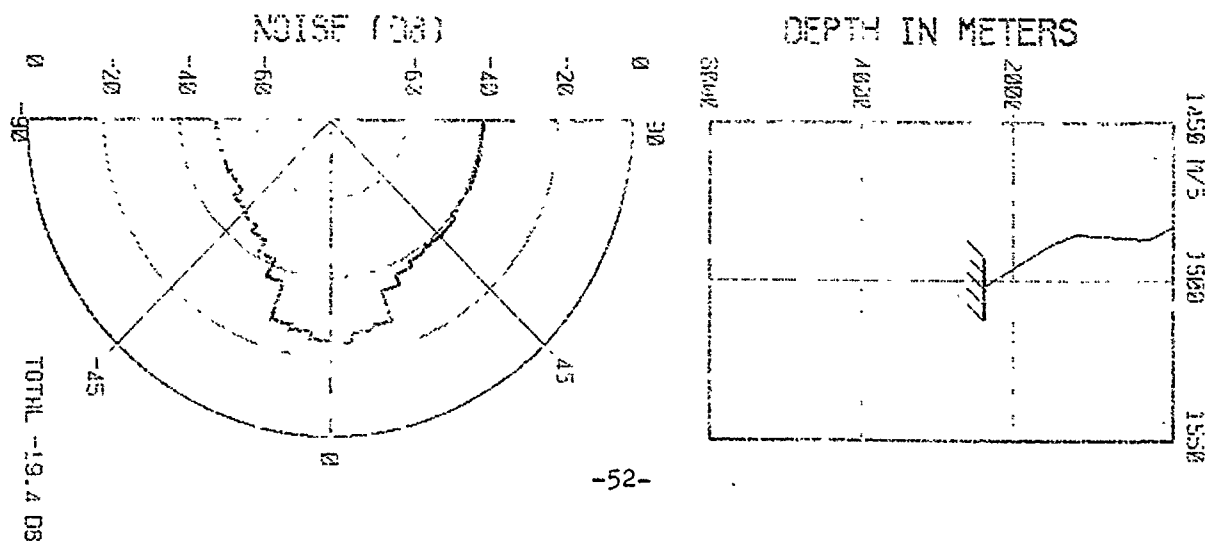
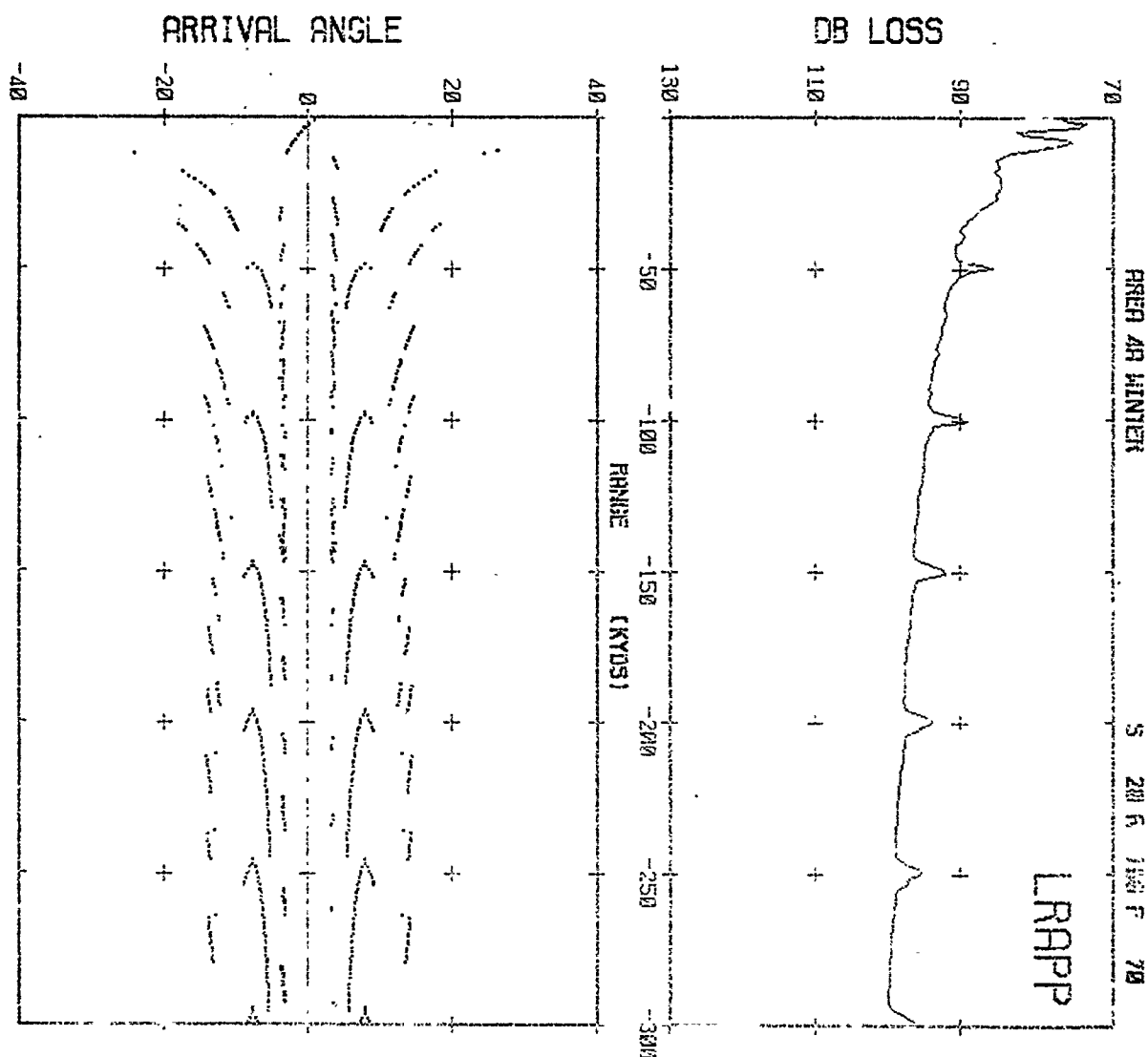


NOISE (DB)







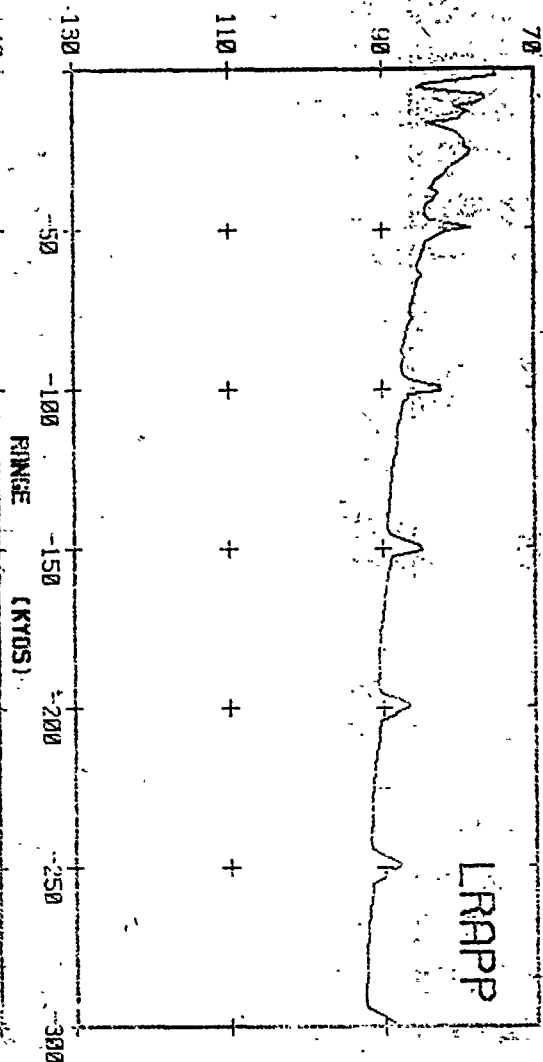


PRER APR WINTER

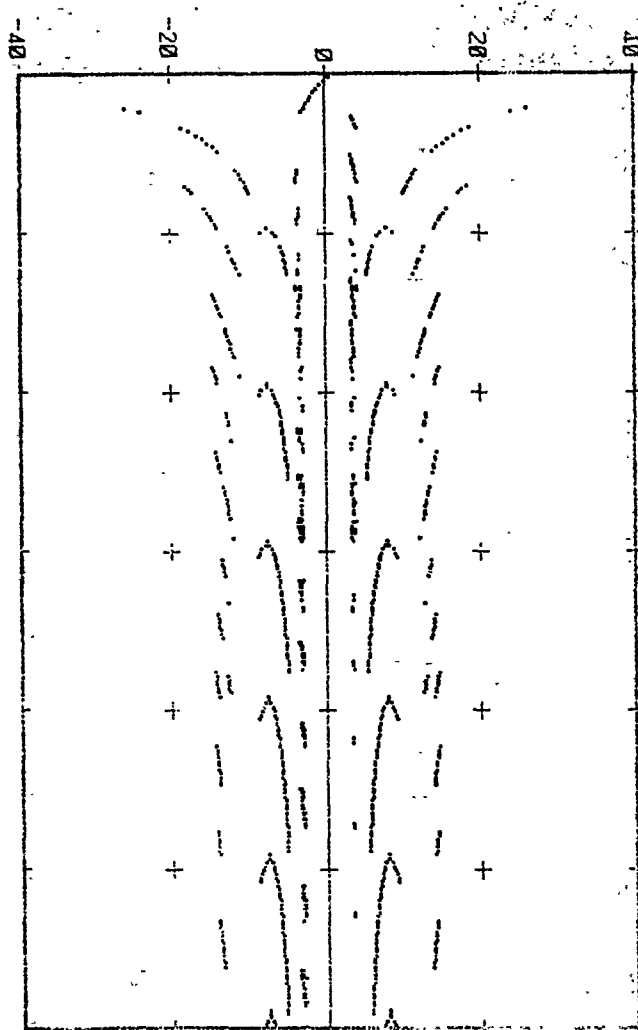
S. 50 R. 16W F. 70

1450 M/S 1500 1550

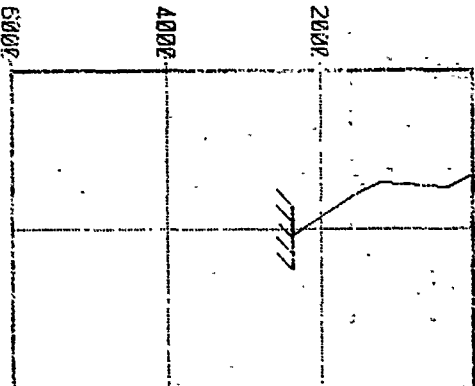
DB LOSS



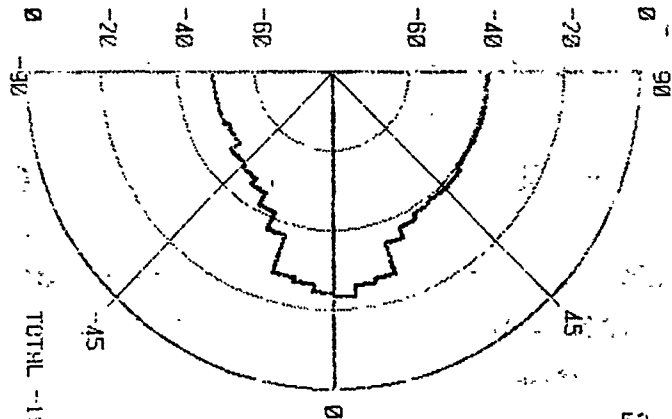
ARRIVAL ANGLE

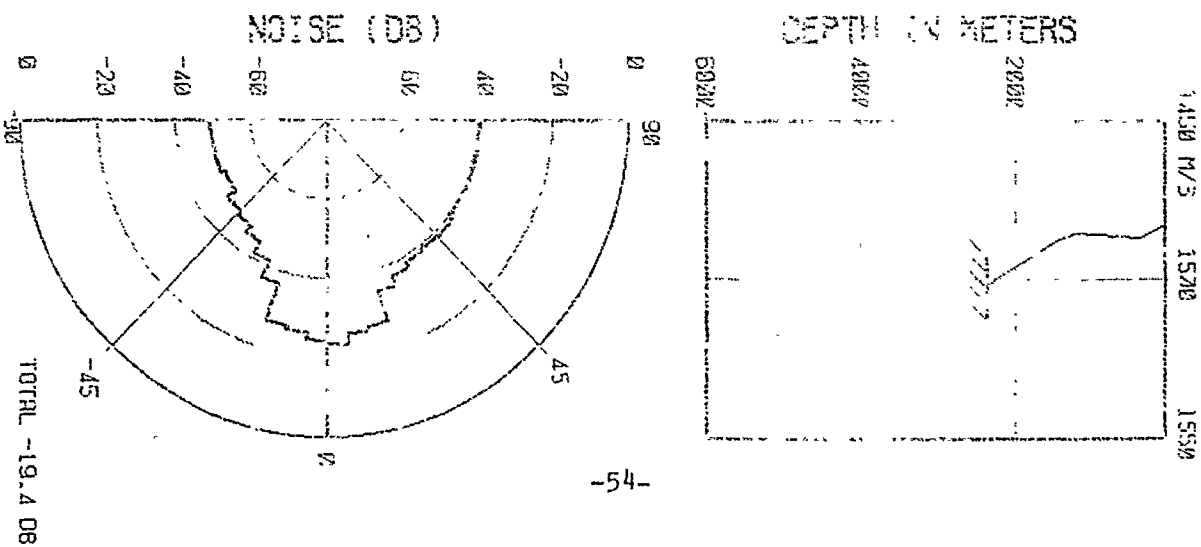
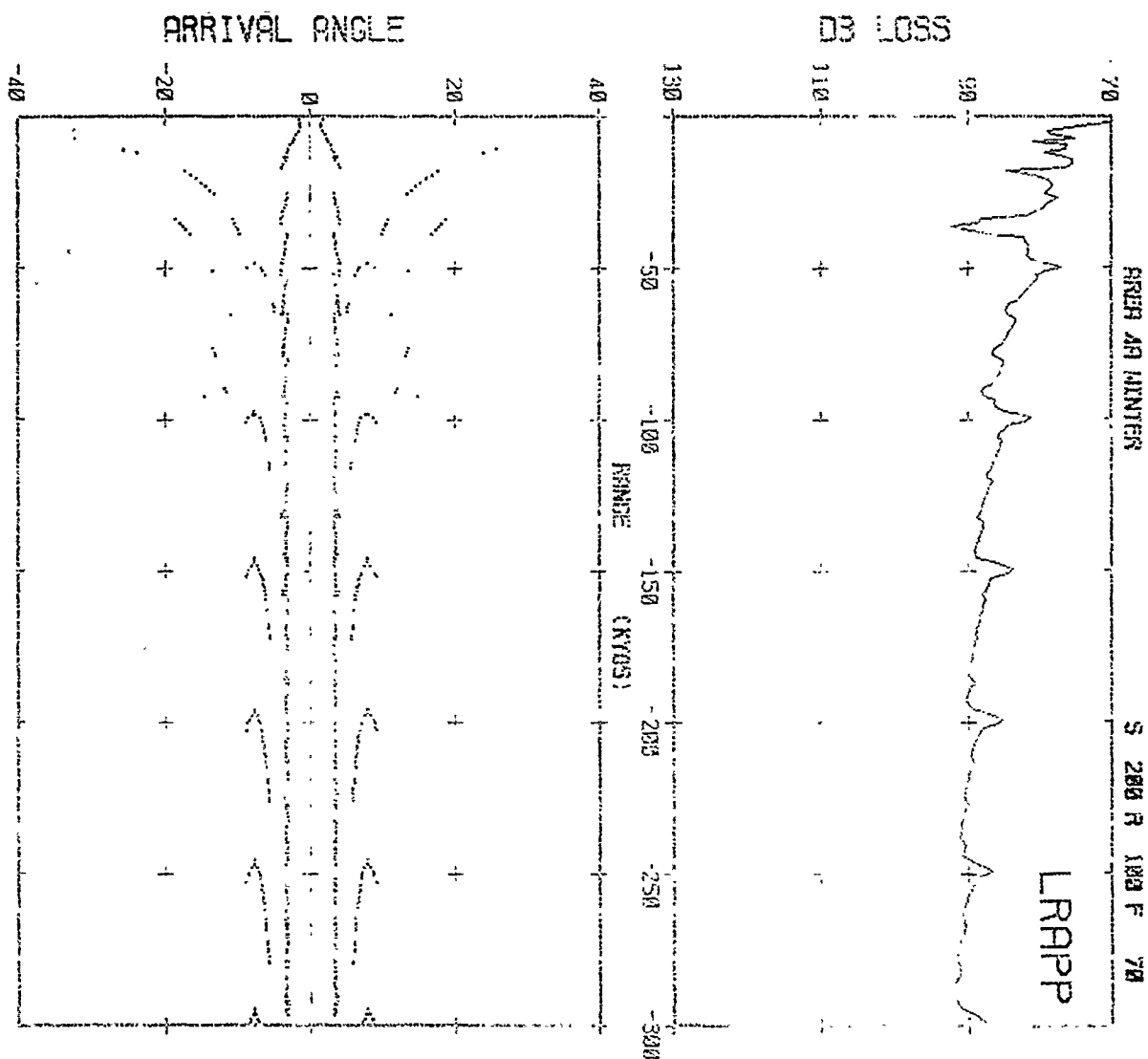


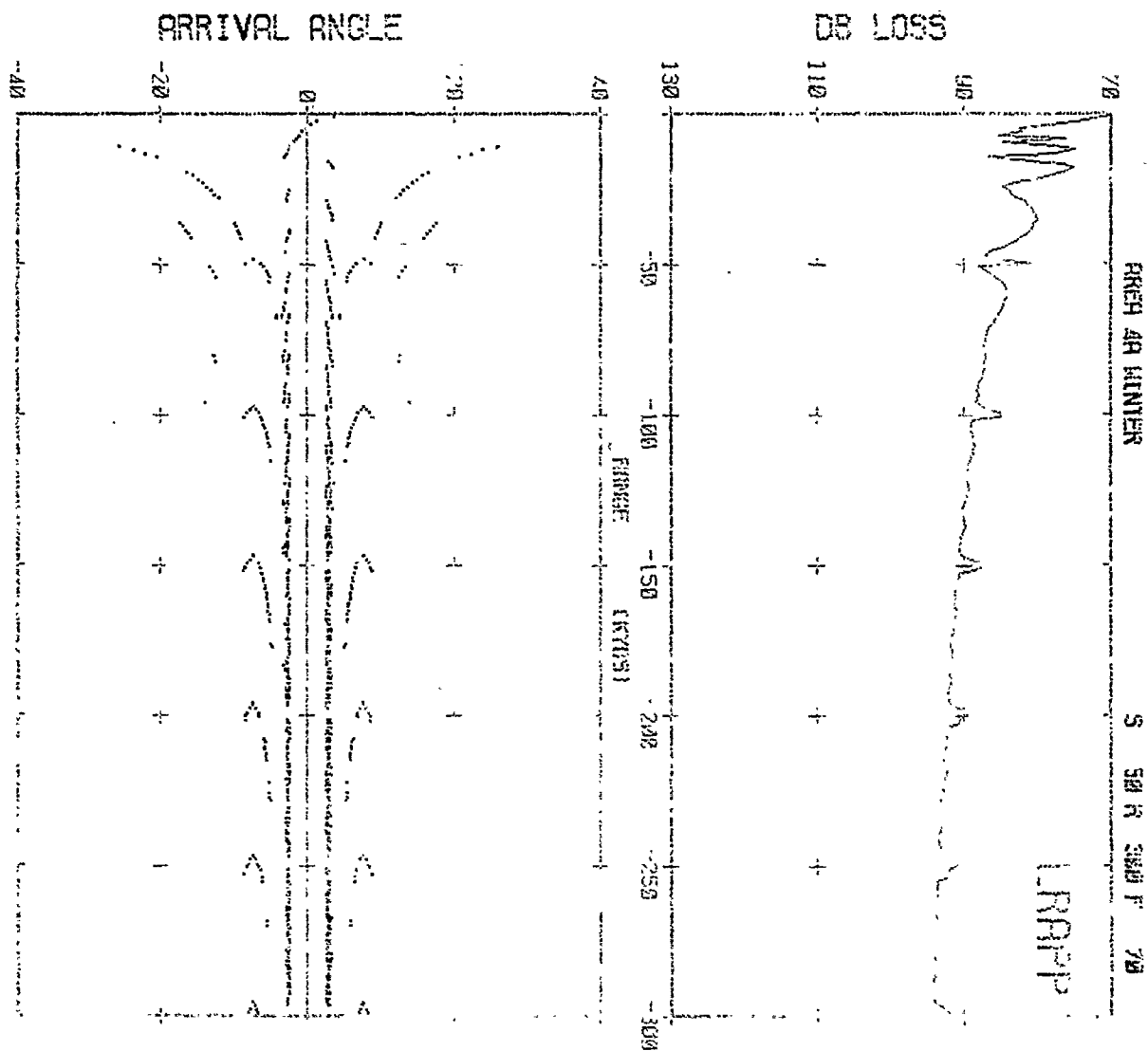
DEPTH IN METERS



NOISE (DB)







PREP AIR WINTER

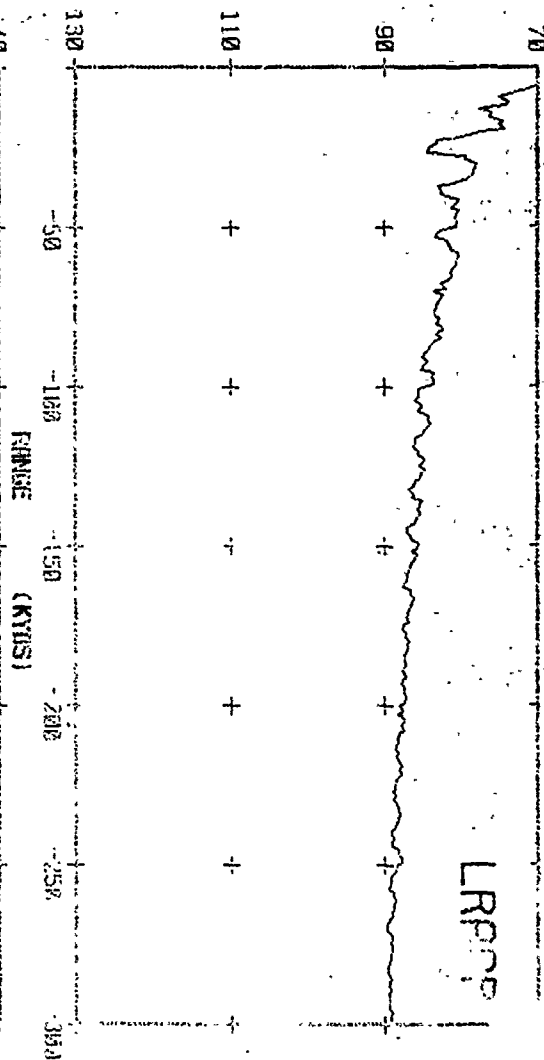
5 200 R 200 P 79

1500 M/S 1500

151

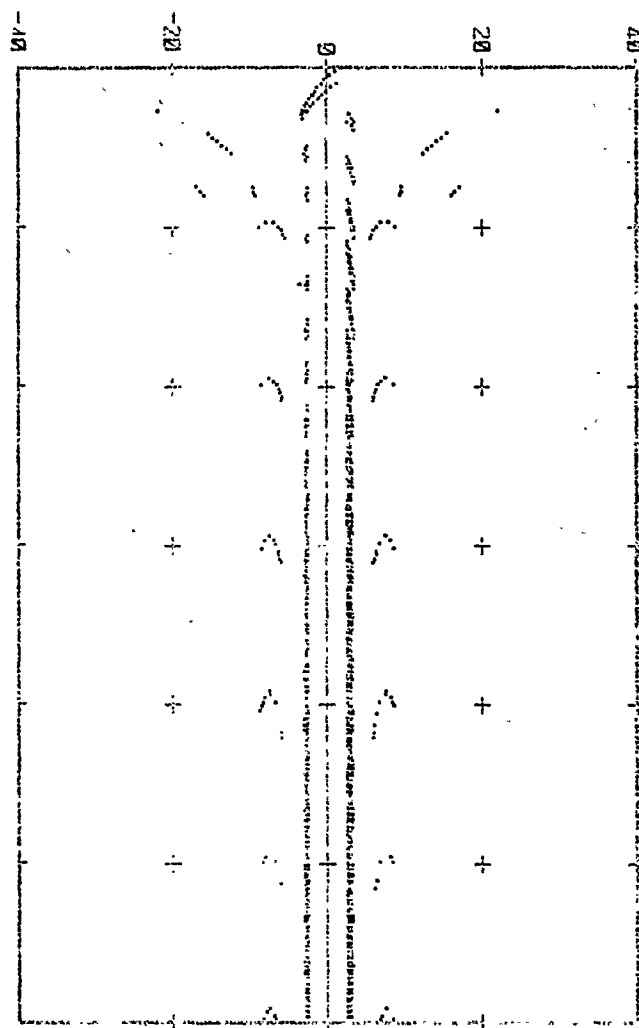
LRPOT

DB LOSS

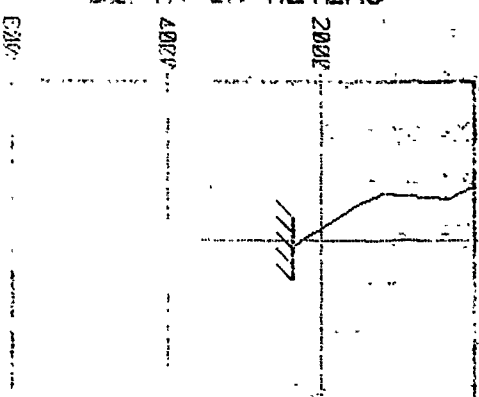


RANGE (KM)

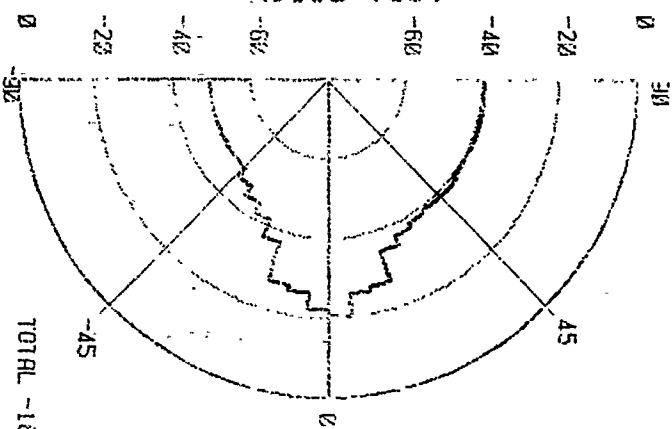
ARRIVAL ANGLE



DEPTH IN METERS

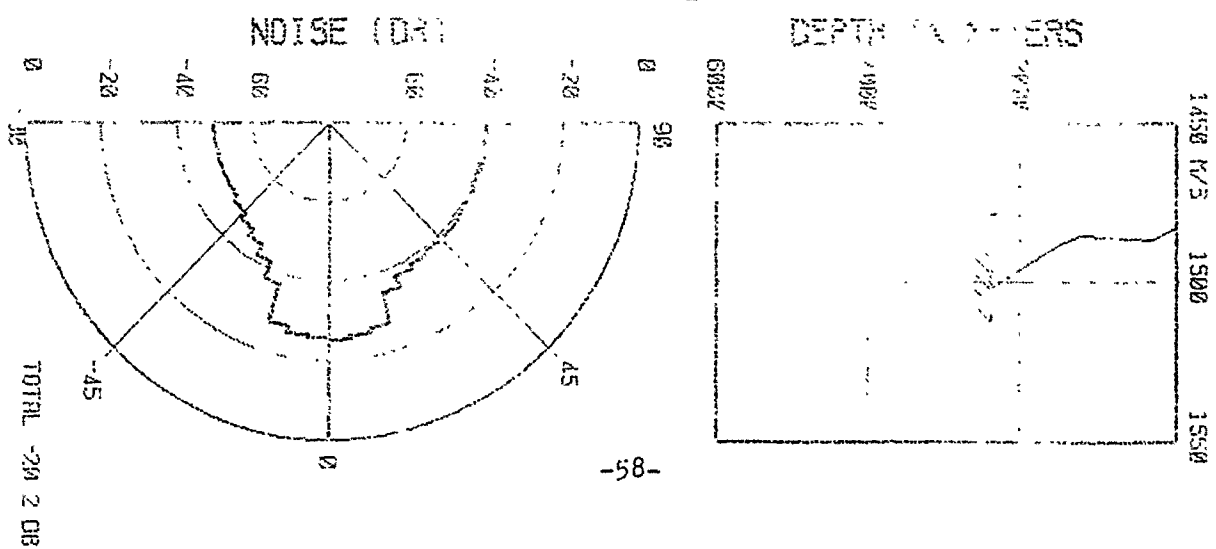
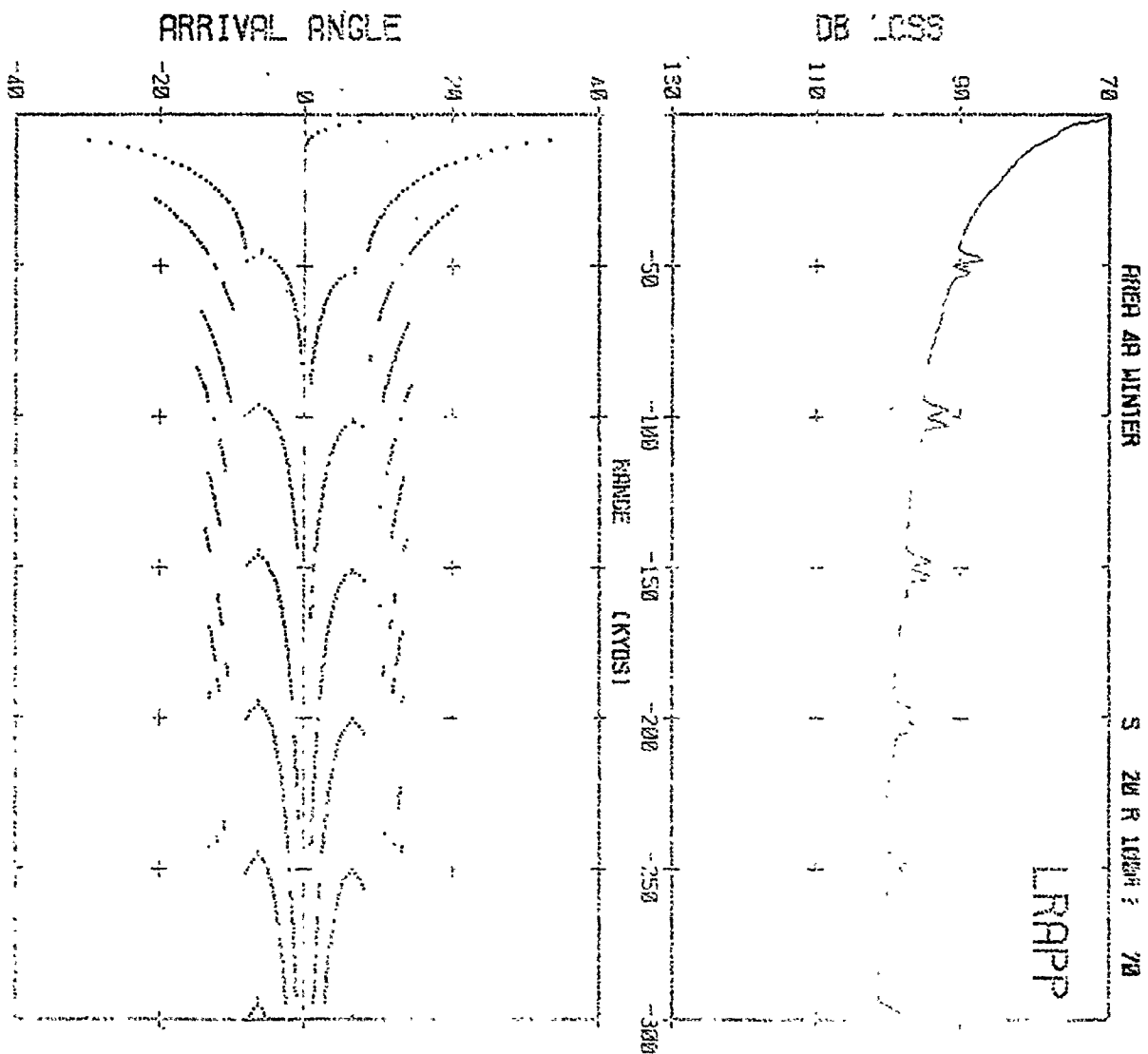


NOISE (DB)



TOTAL -18.1 DB

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

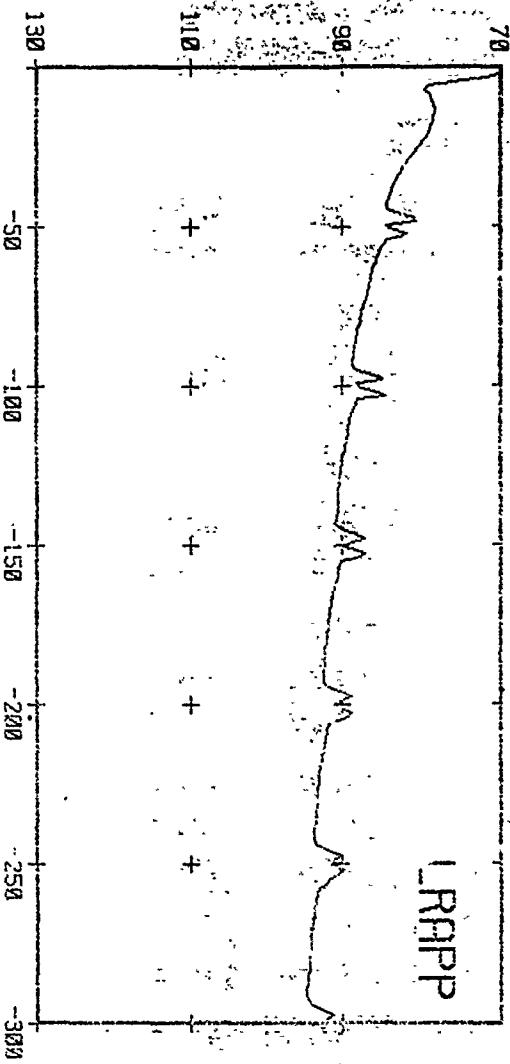


AREA 4A WINTER

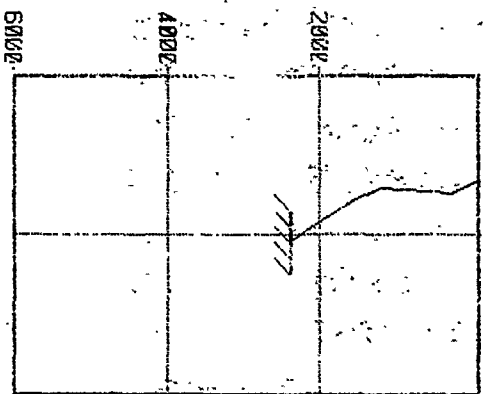
S 50 R 10N F 70

1450 M/S 1500 1550

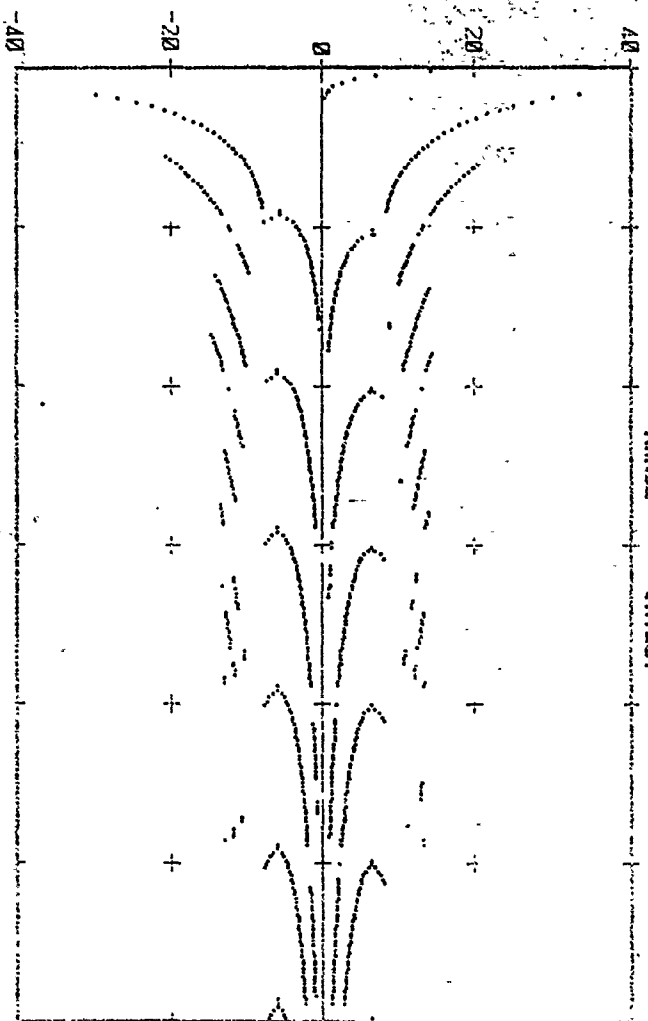
DB LOSS



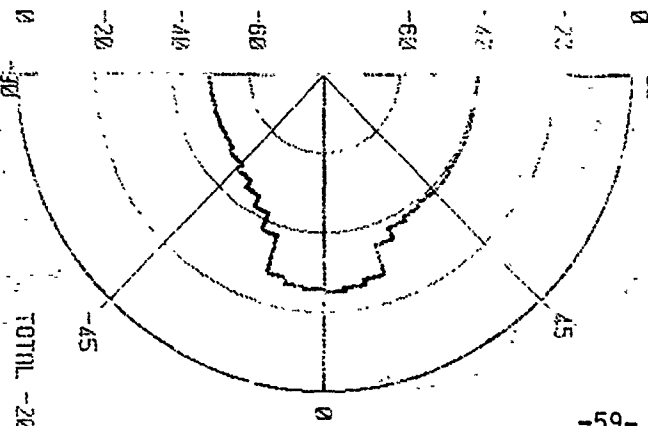
DEPTH IN METERS

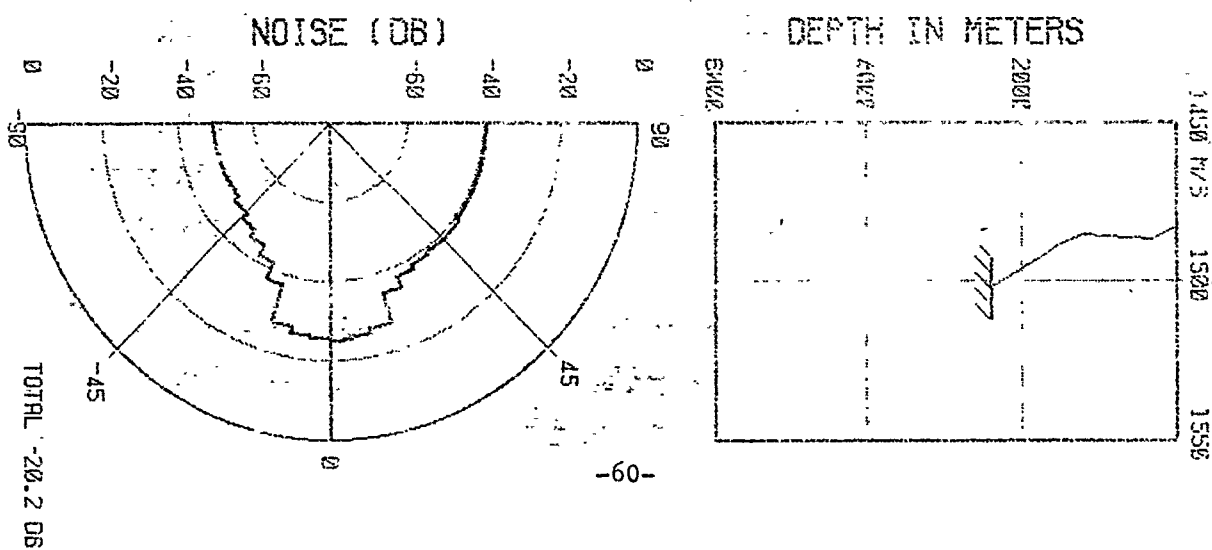
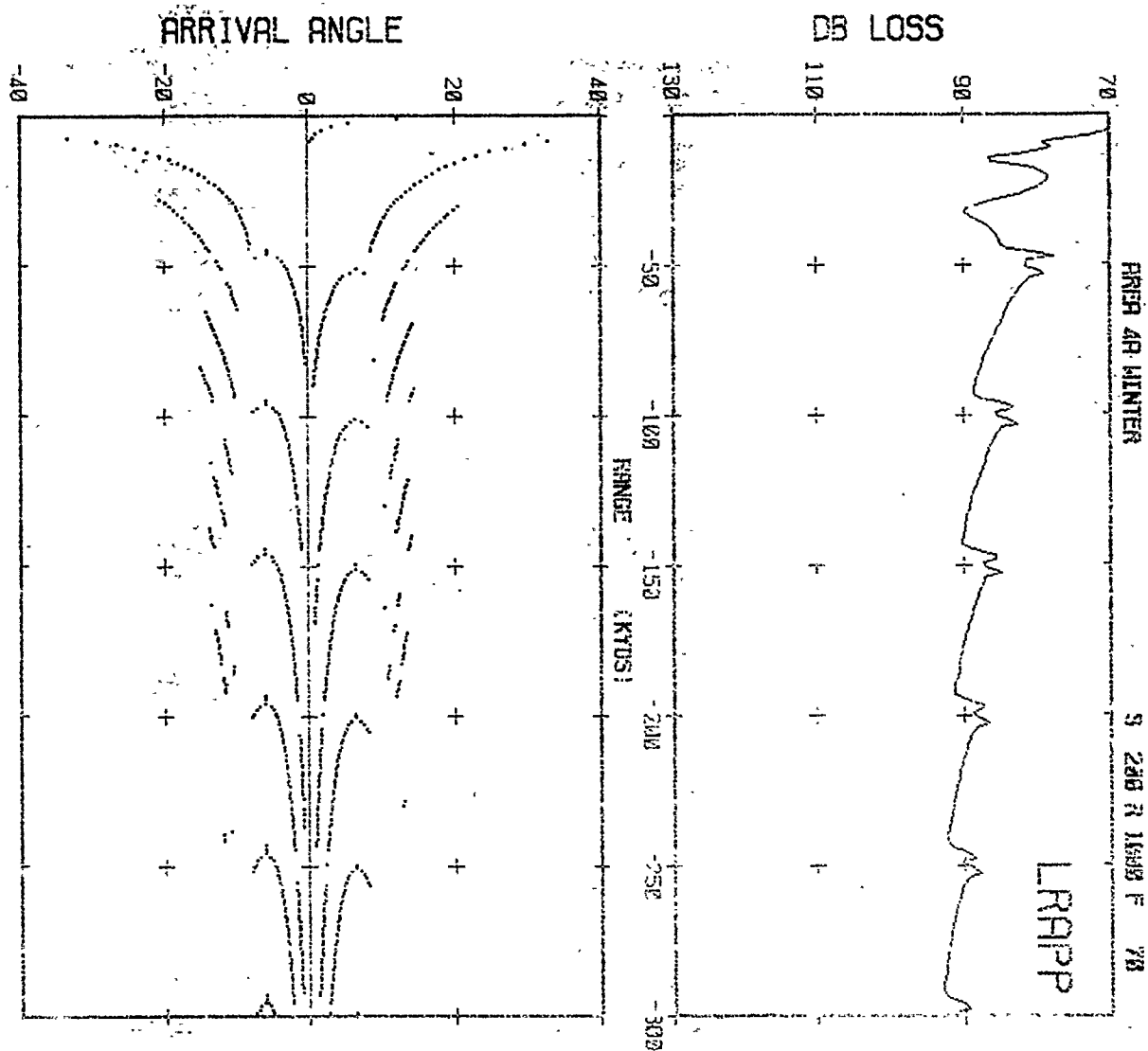


ARRIVAL ANGLE



NOISE (DB)





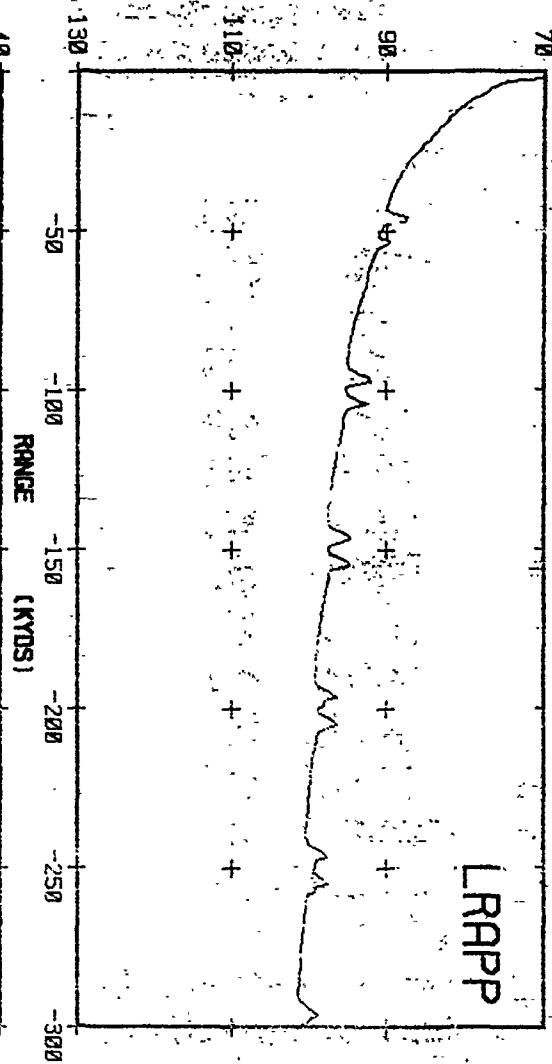
TOTAL -20.2 DB

AREA 49 MINTER

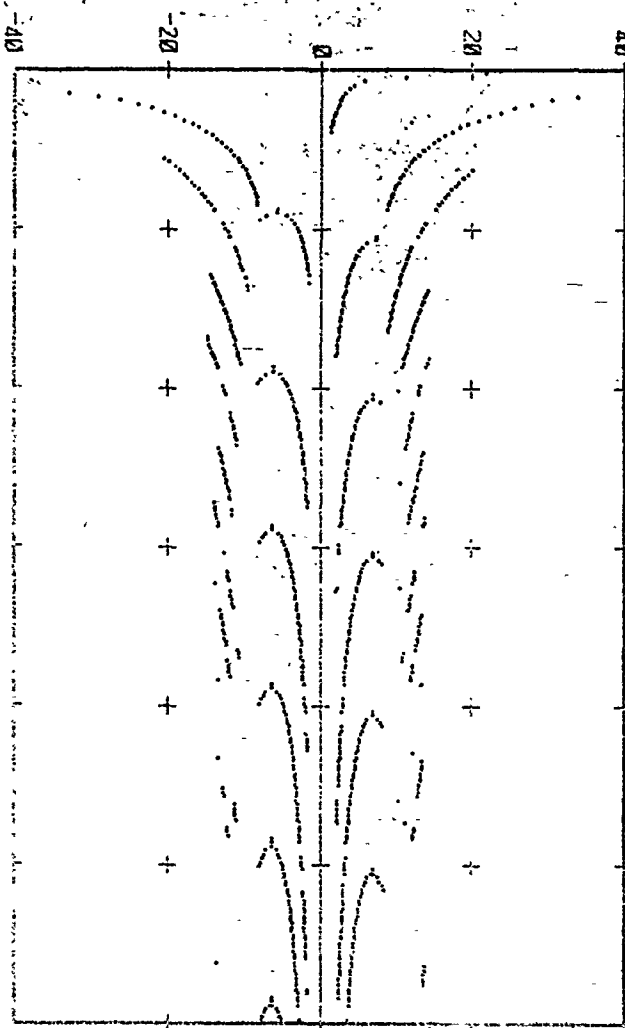
S 20 R 1500 F 70

1450 M/S 1530 1550

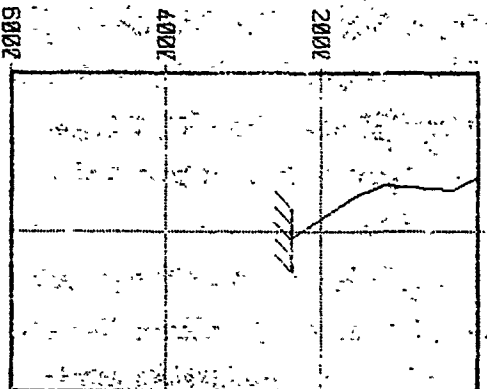
DB LOSS



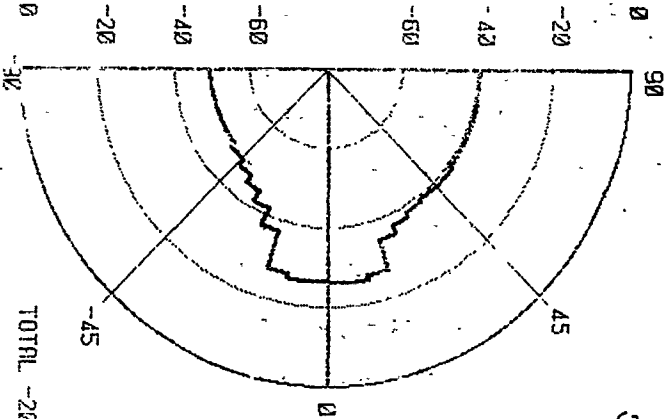
ARRIVAL ANGLE



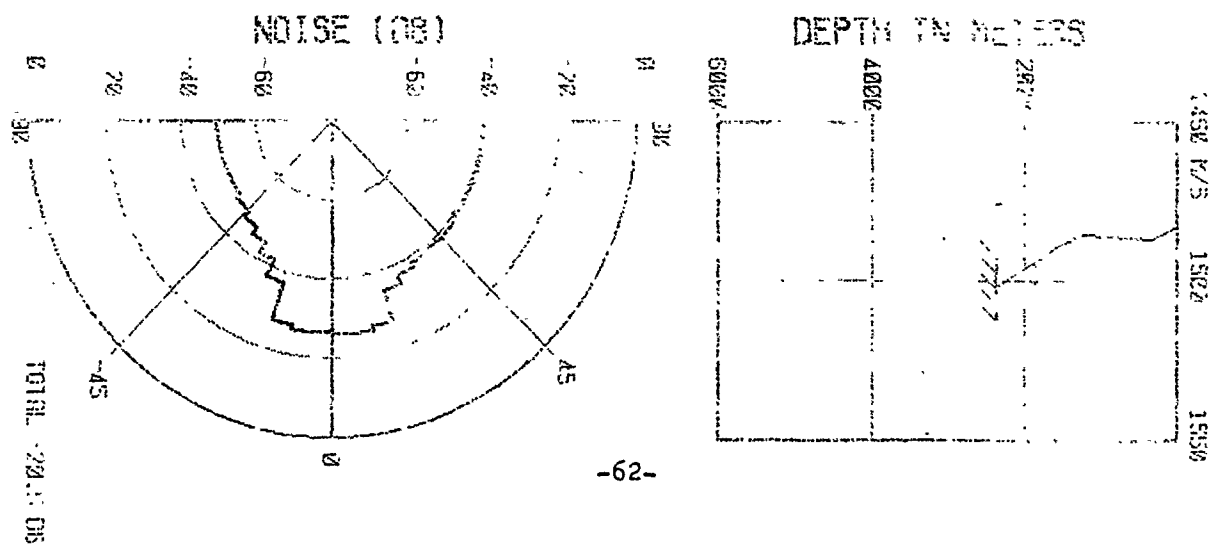
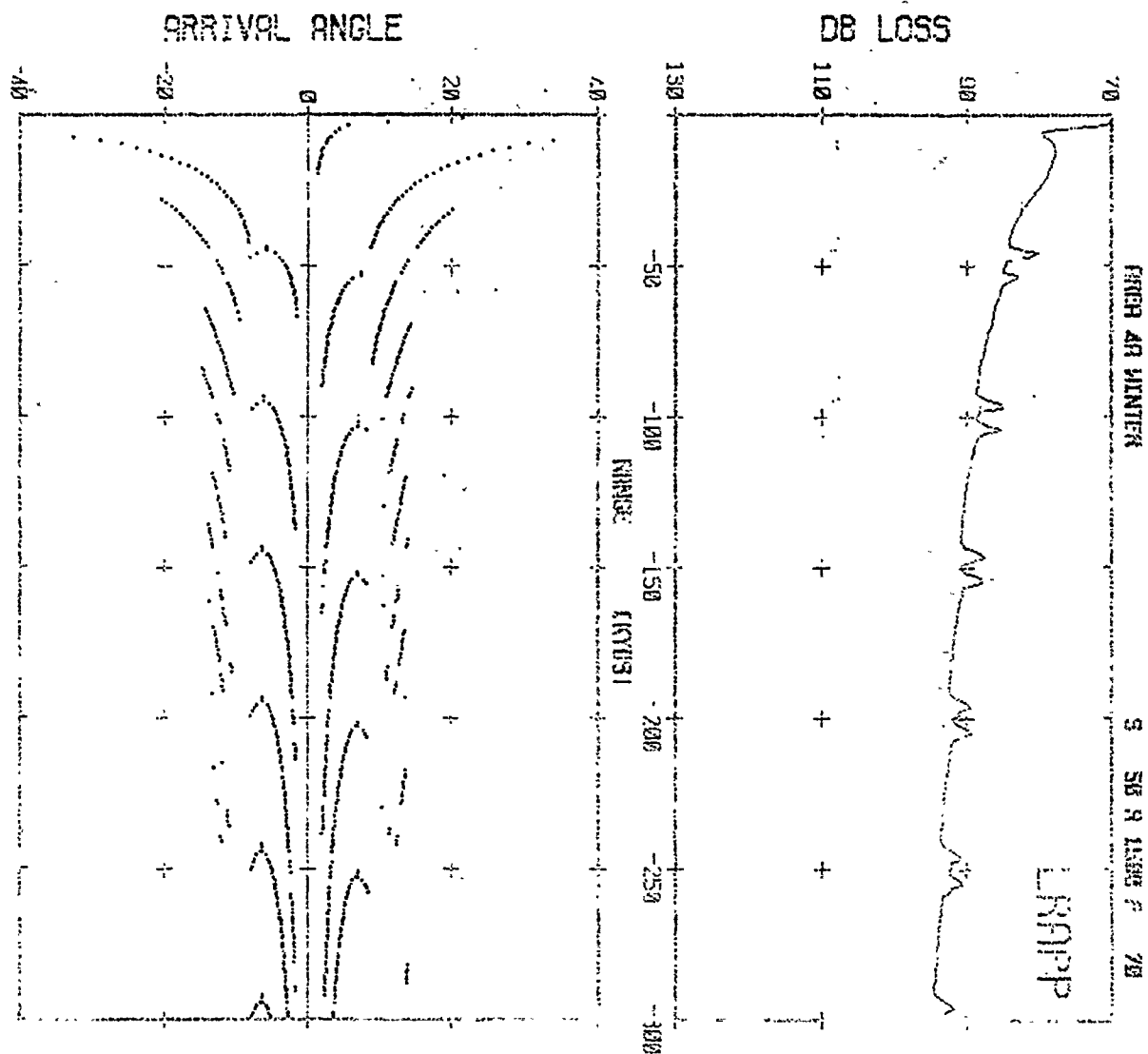
DEPTH IN METERS

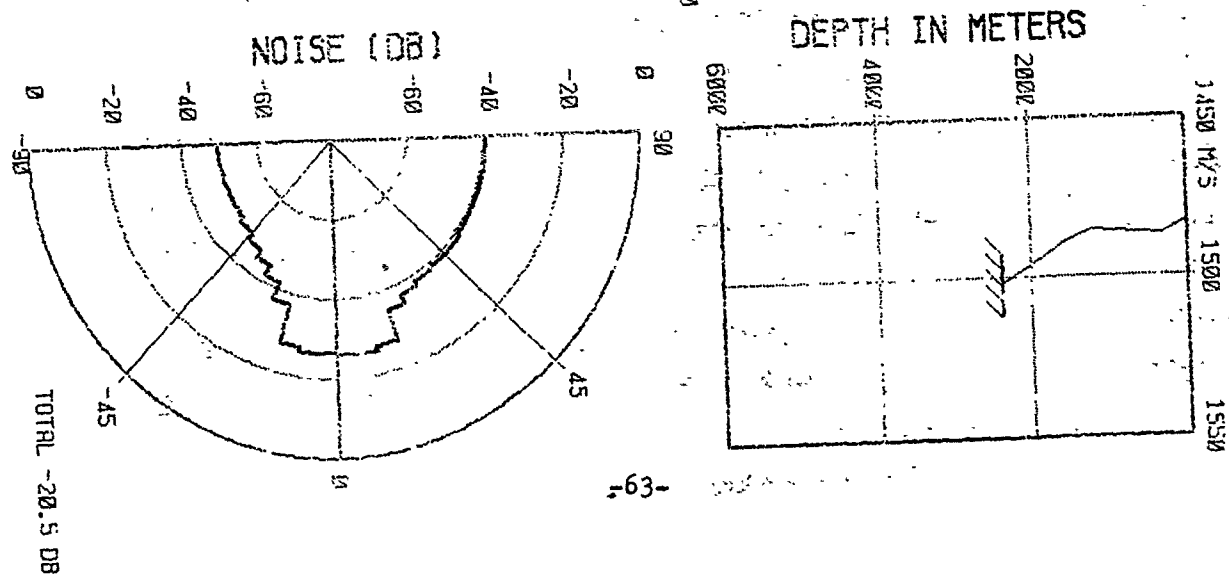
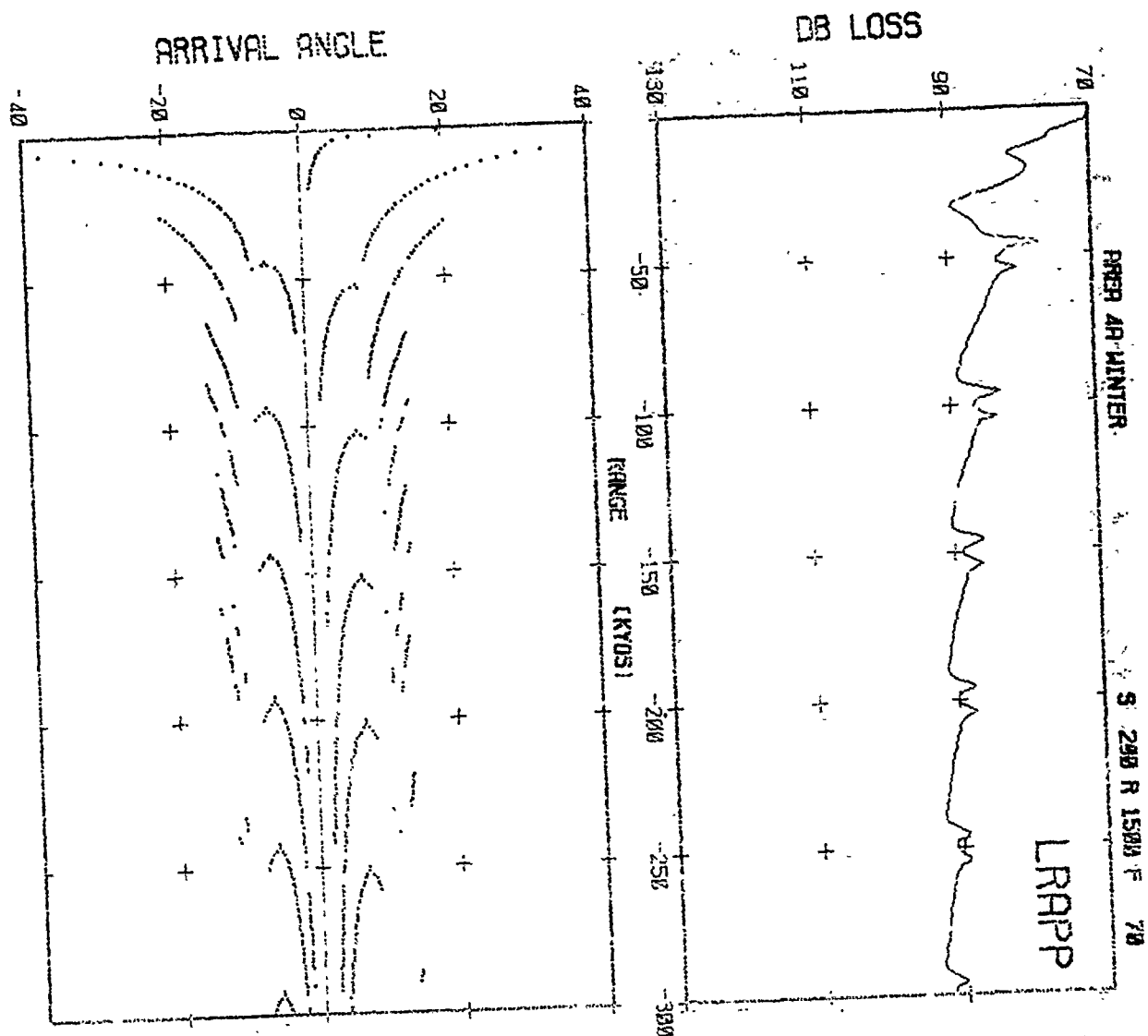


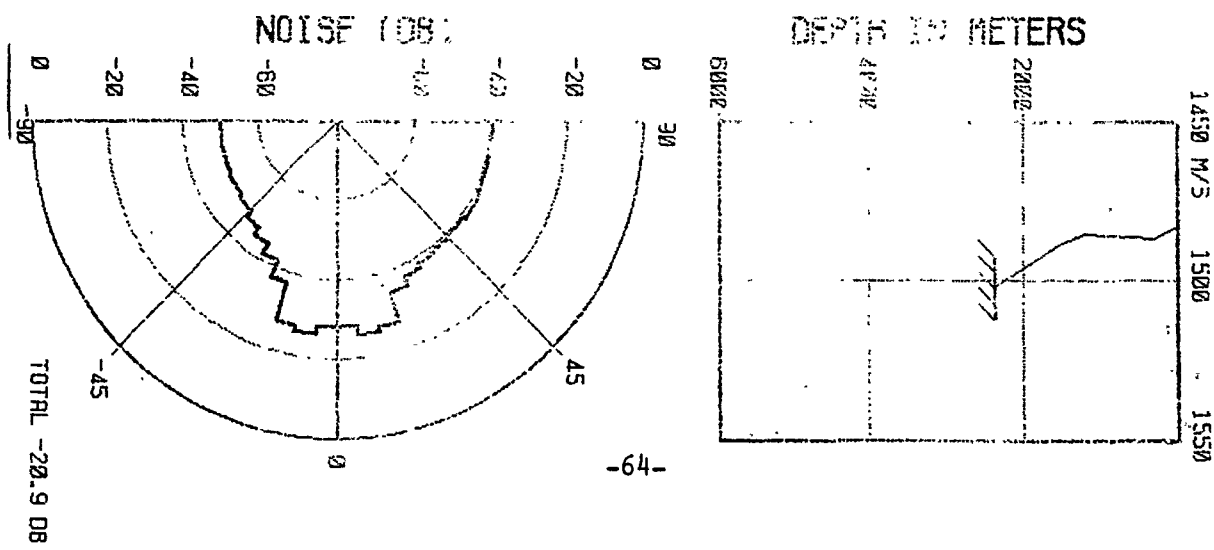
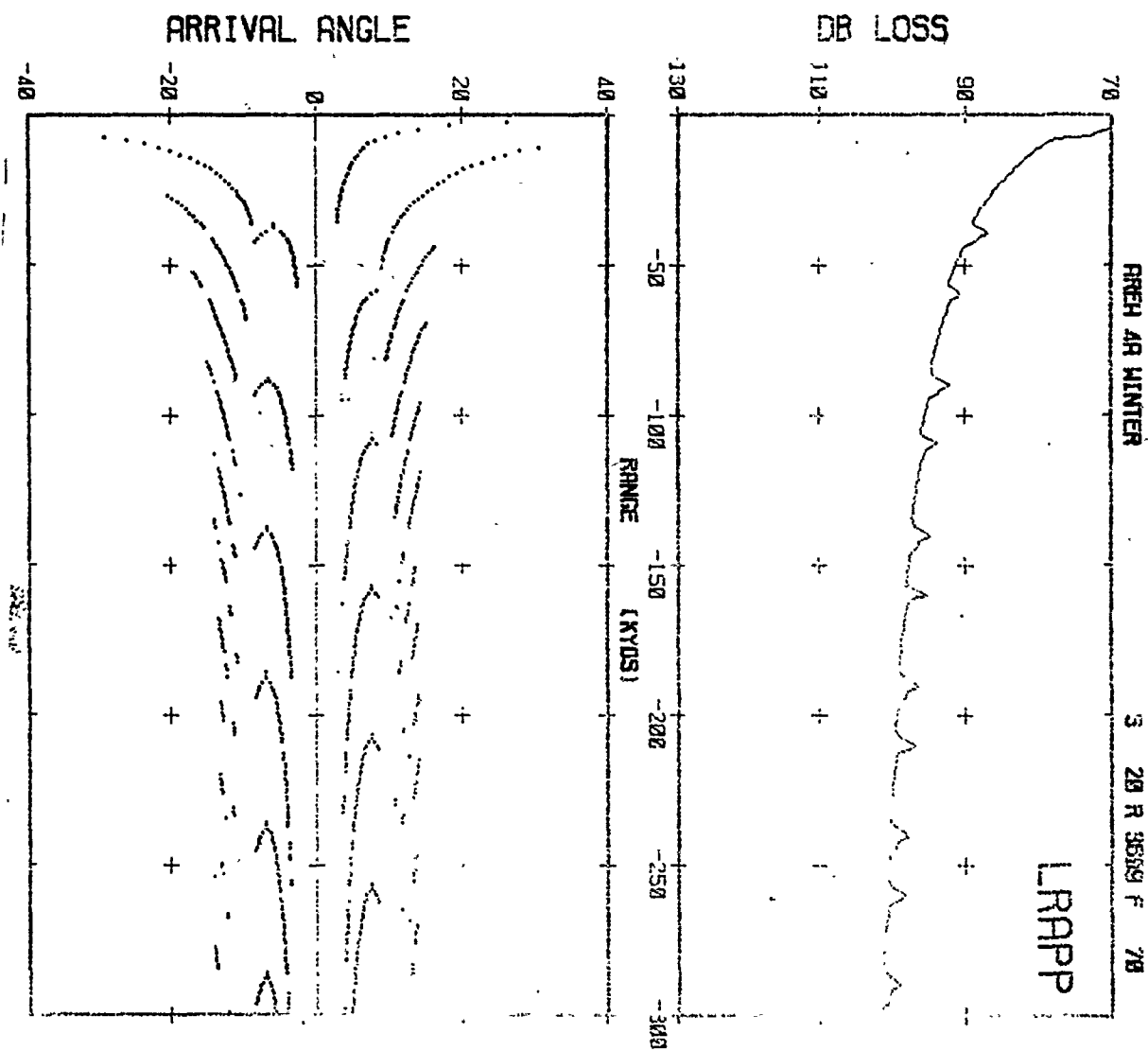
NOISE (DB)

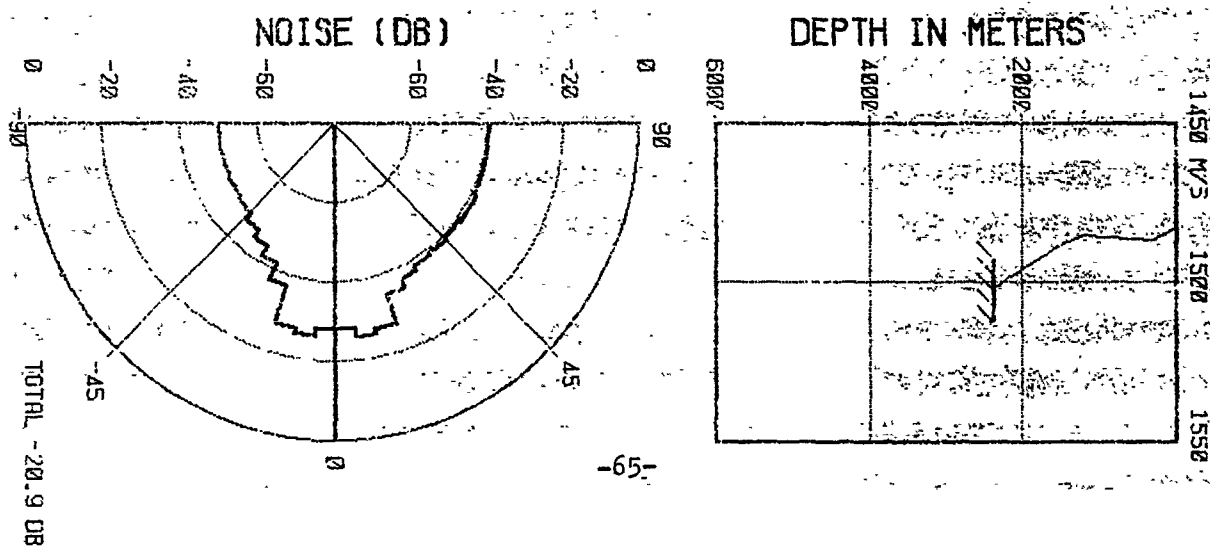
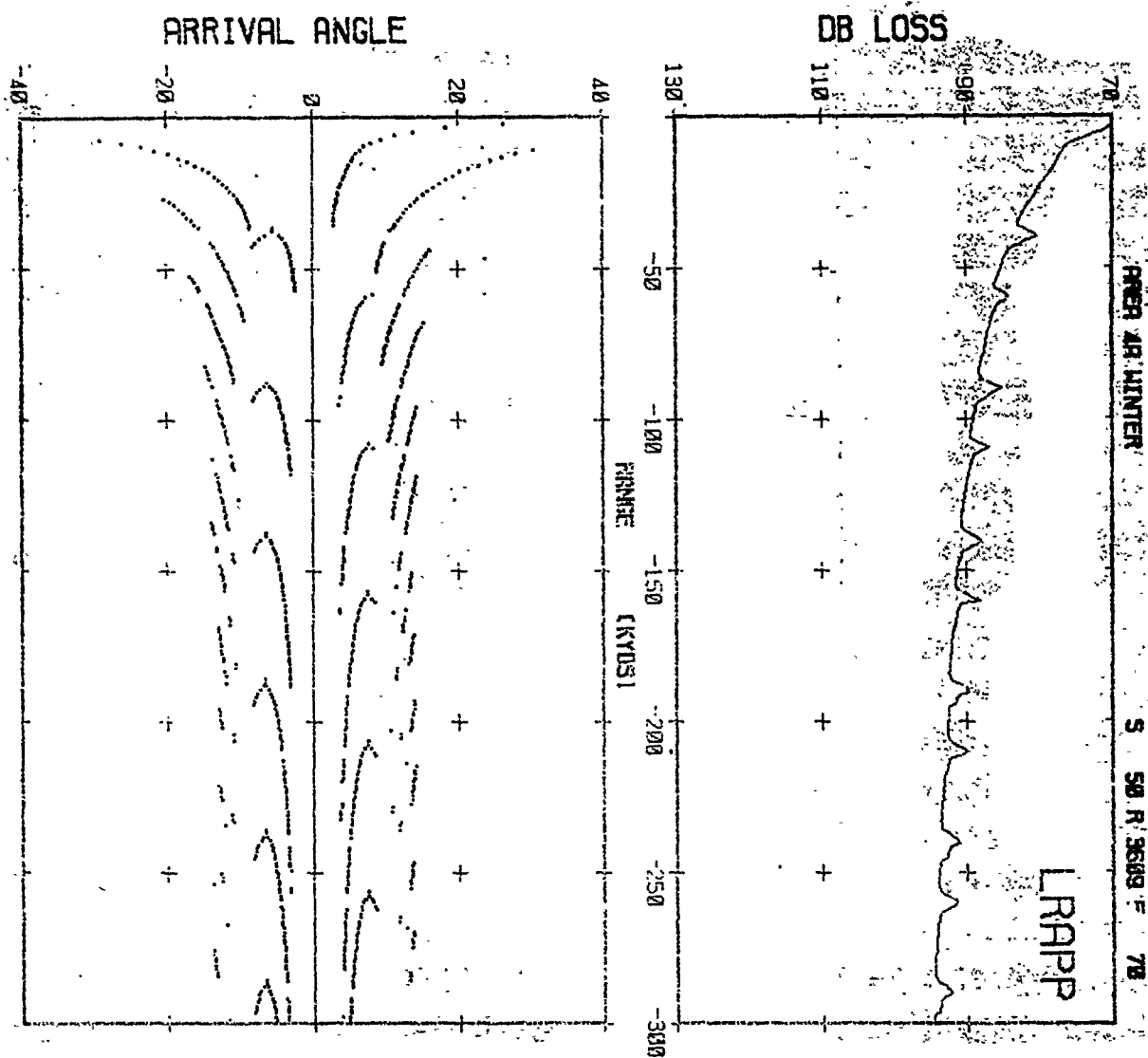


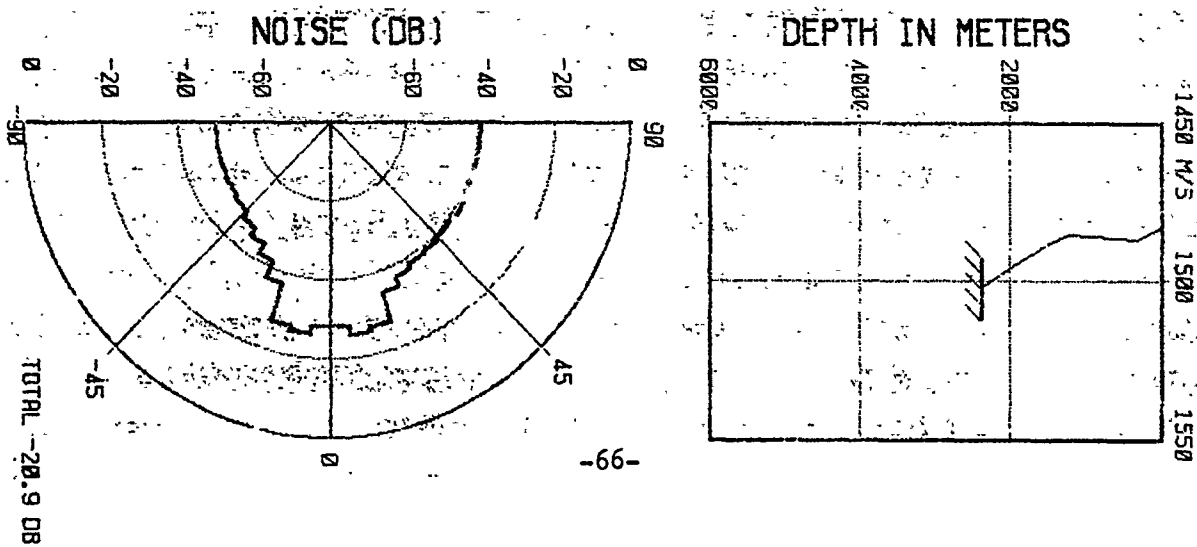
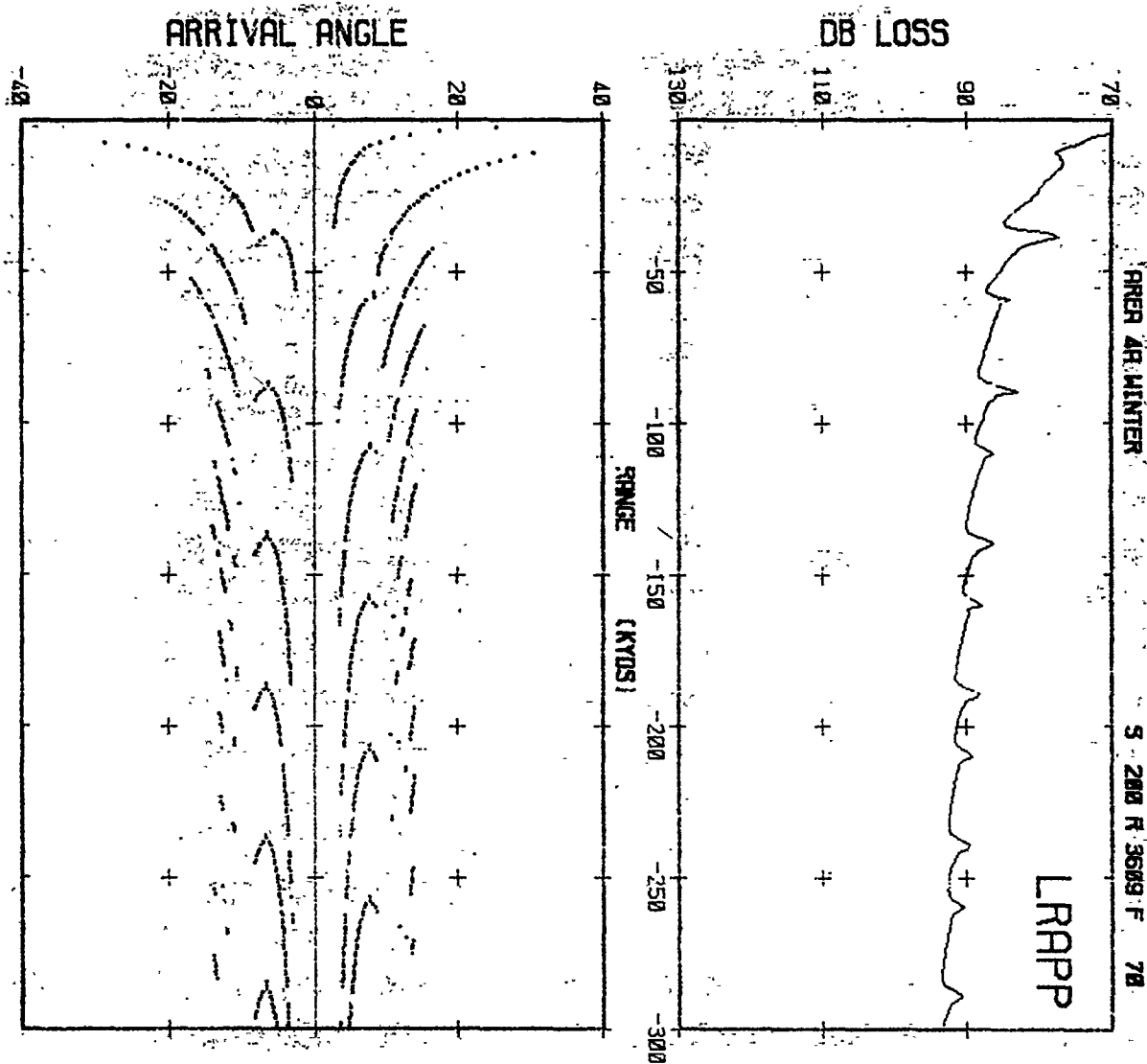
TOTAL -20.5 DB

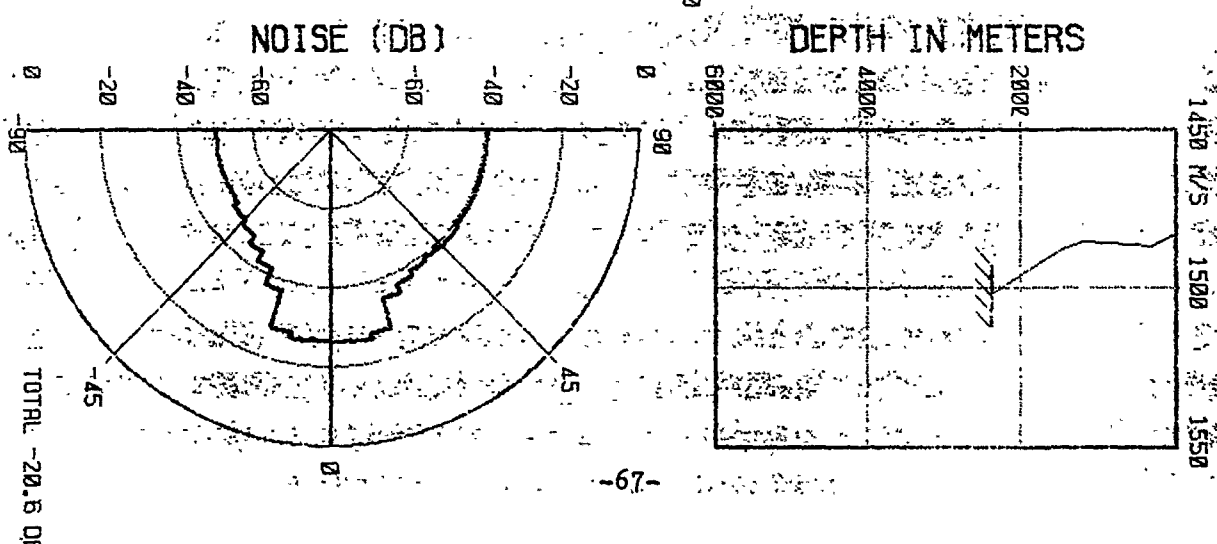
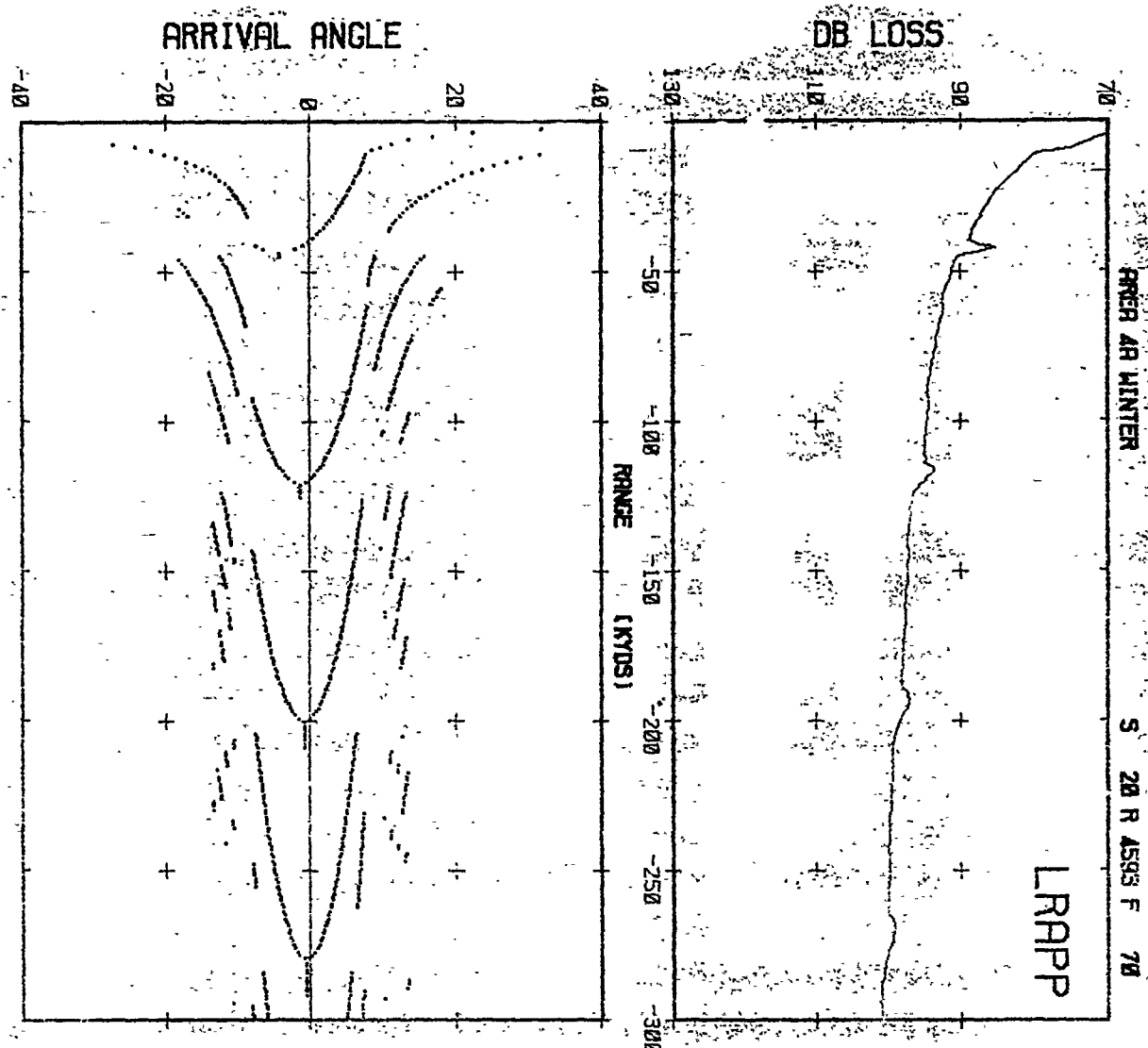


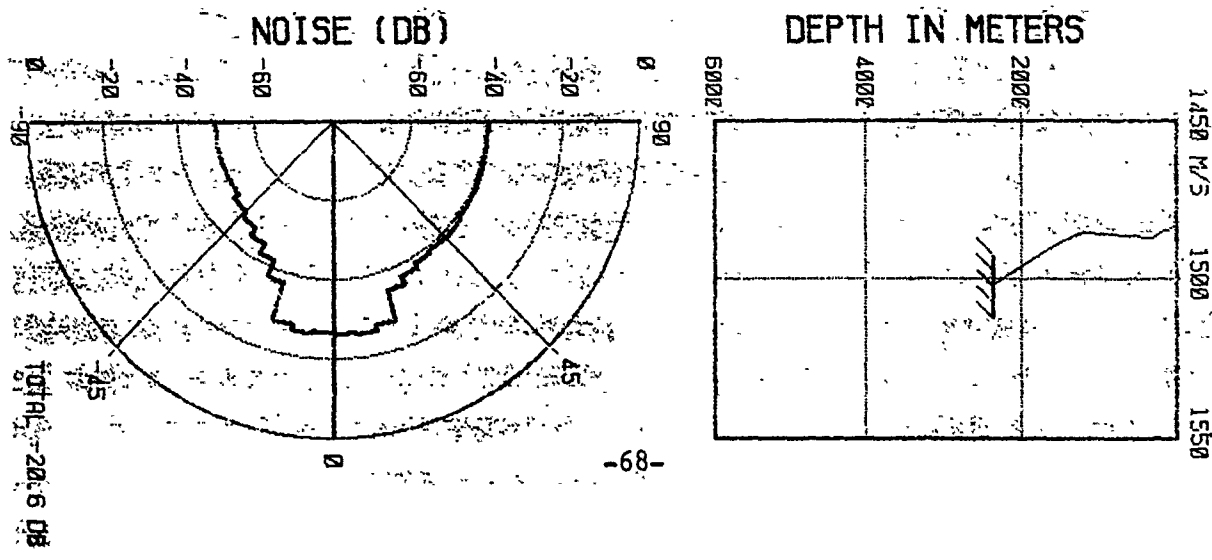
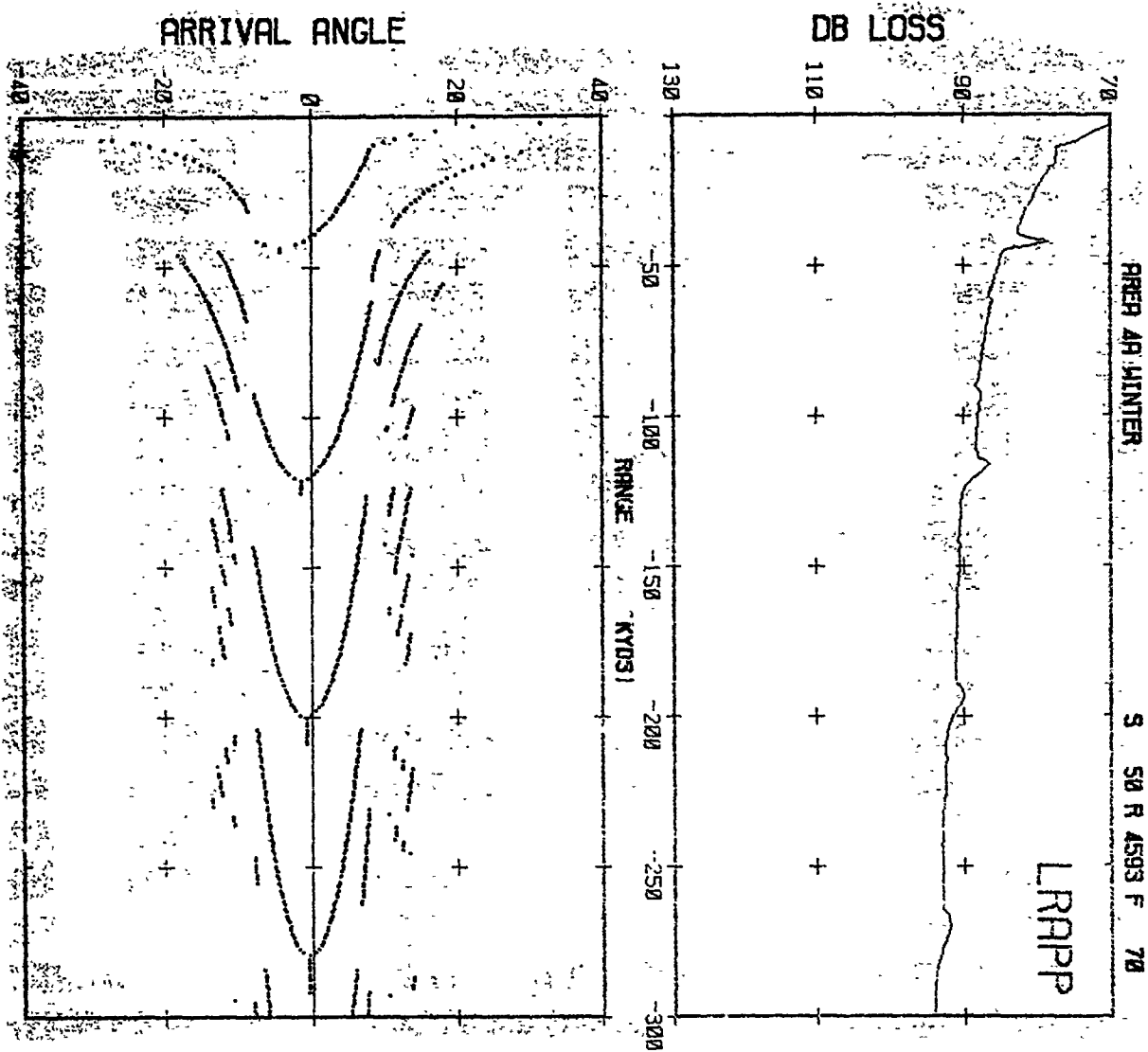


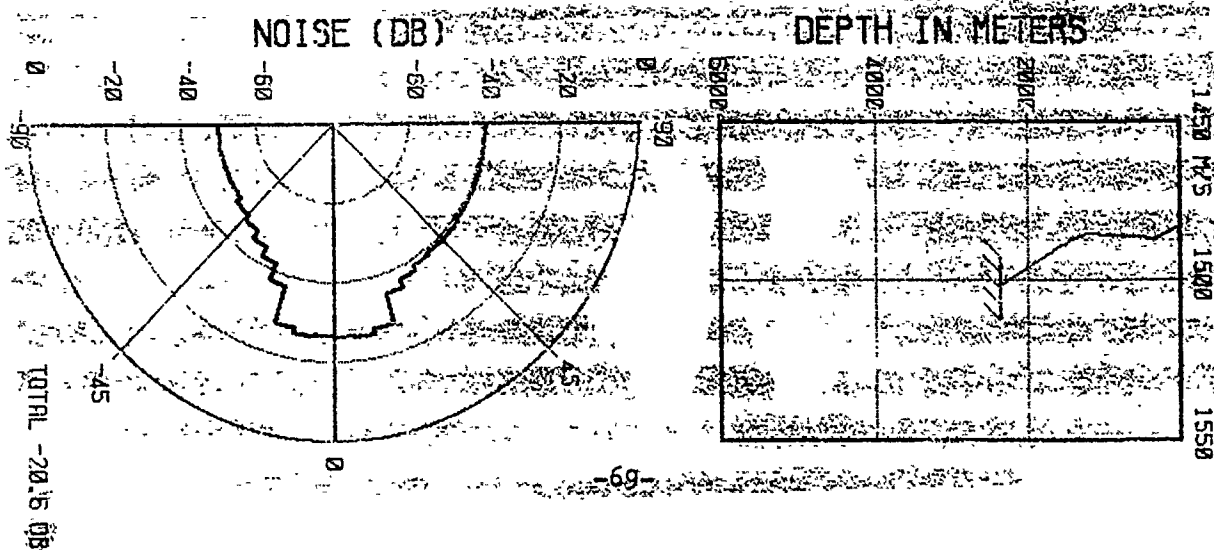
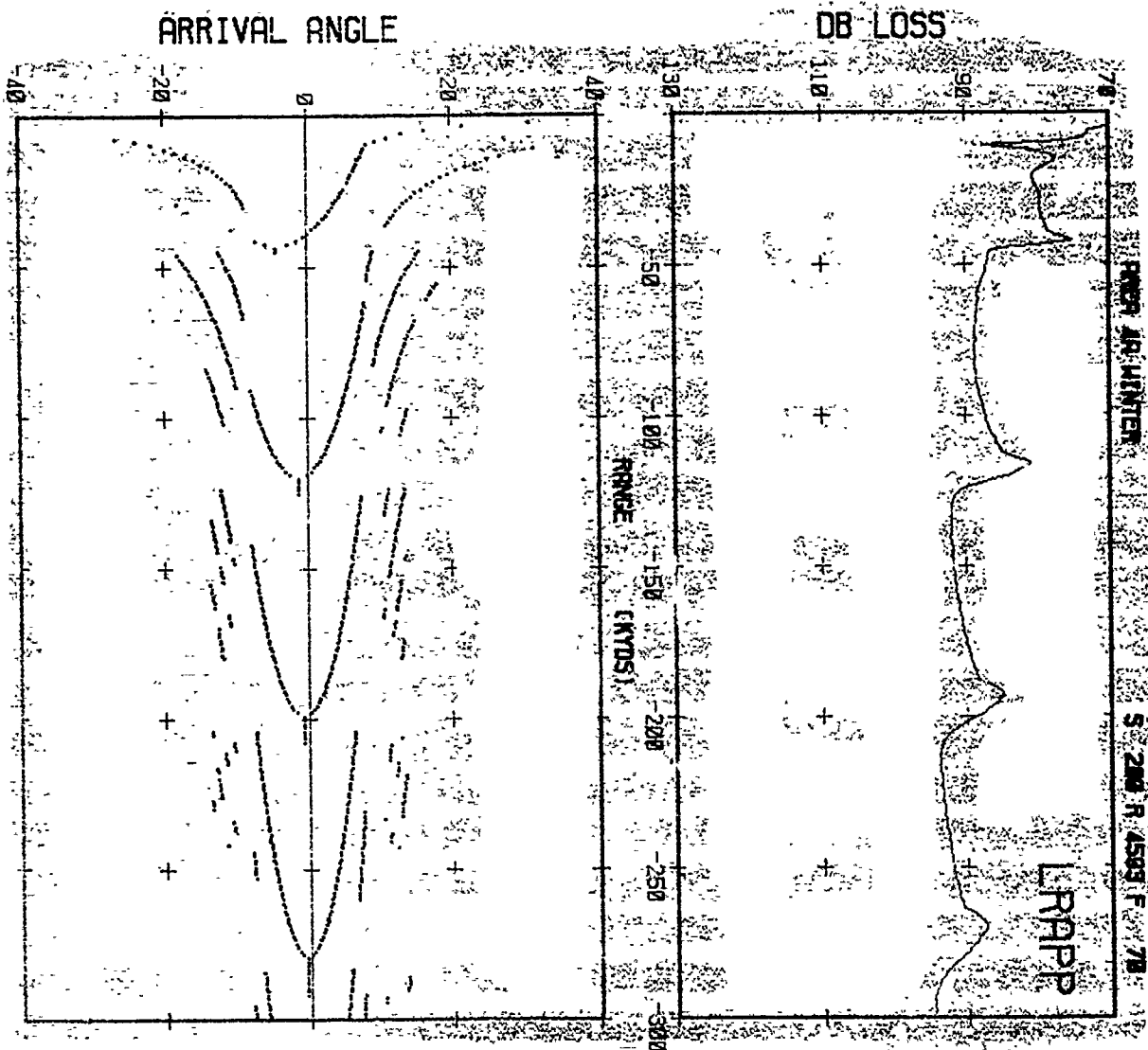








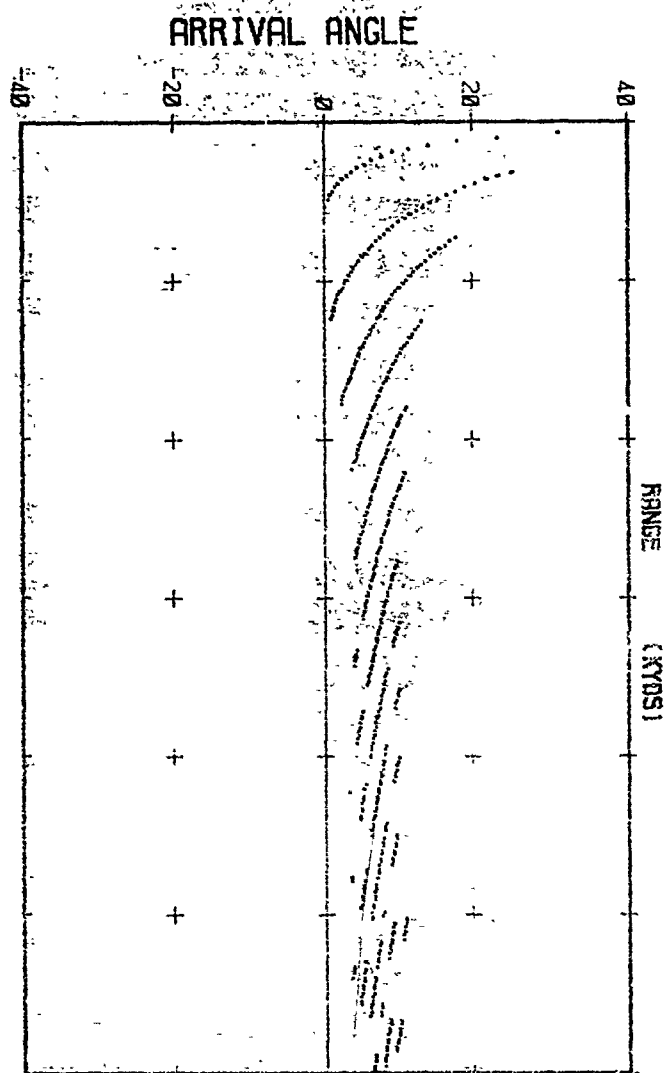
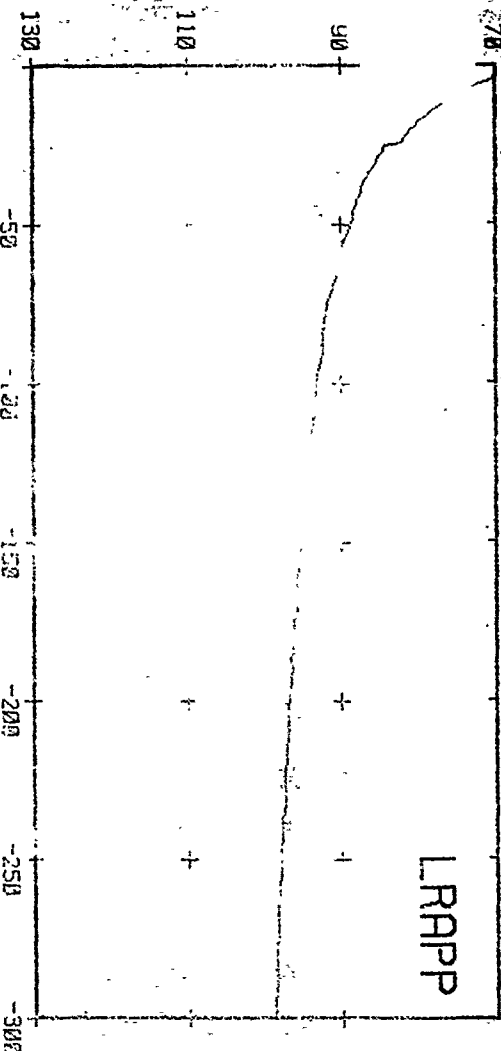




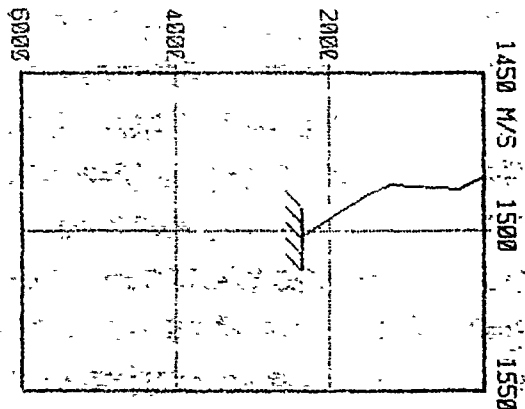
PRER APR WINTER

S 20 R 7798 F 70

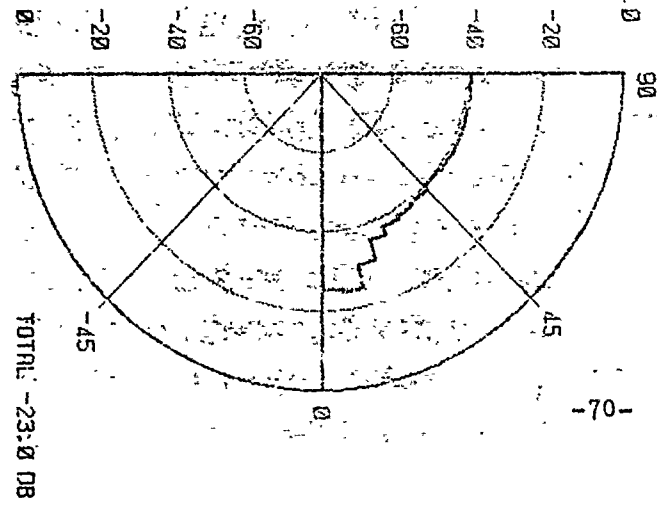
LRAPP



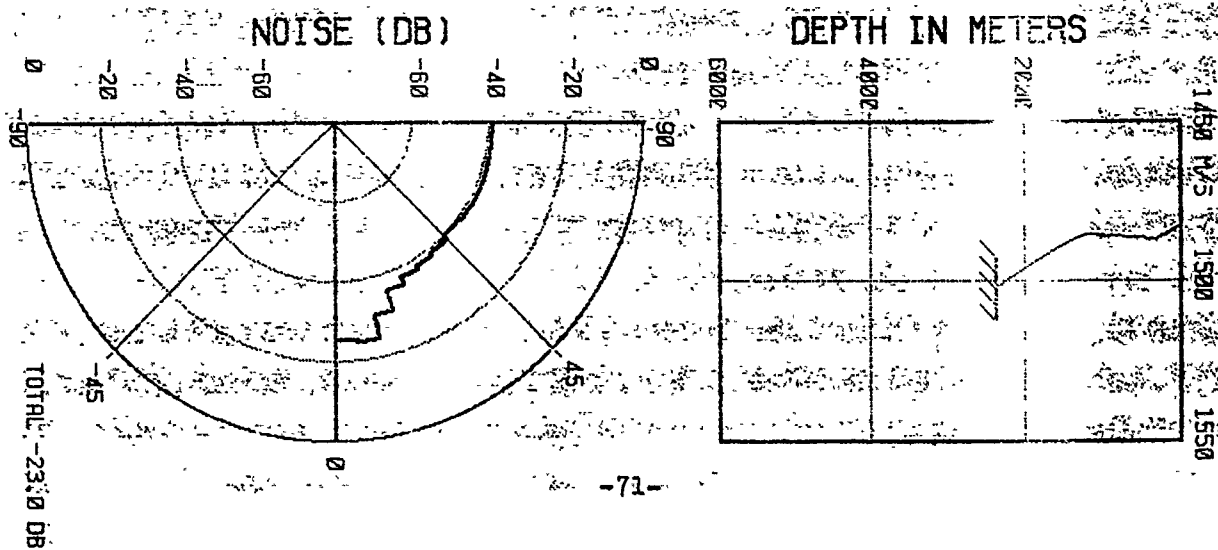
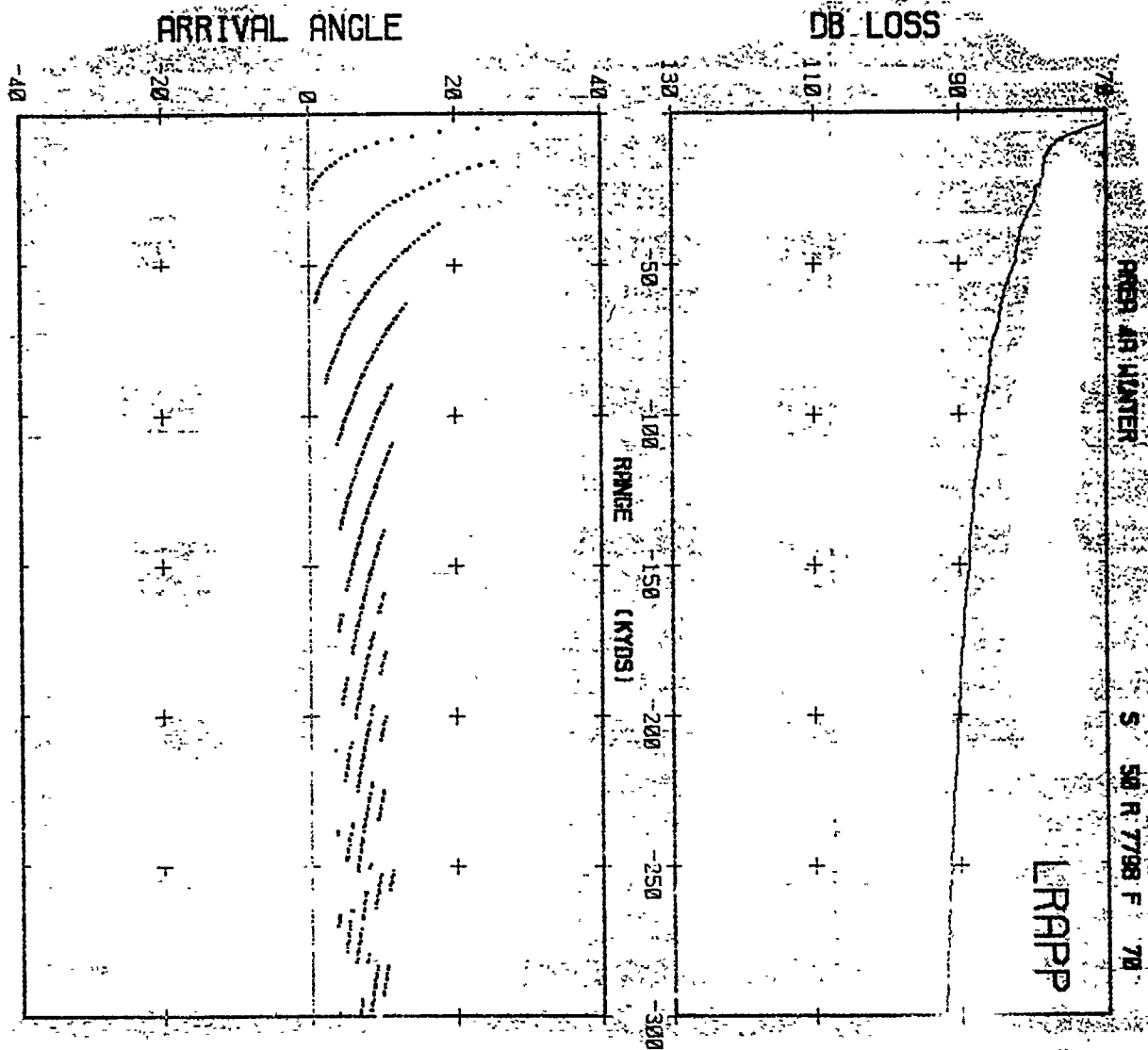
DEPTH IN METERS

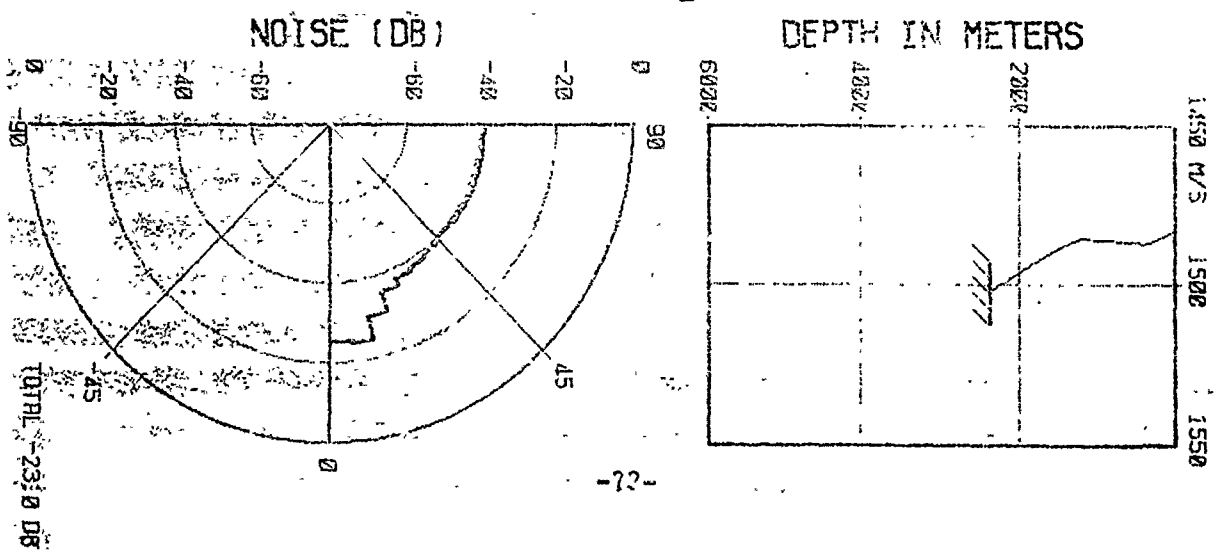
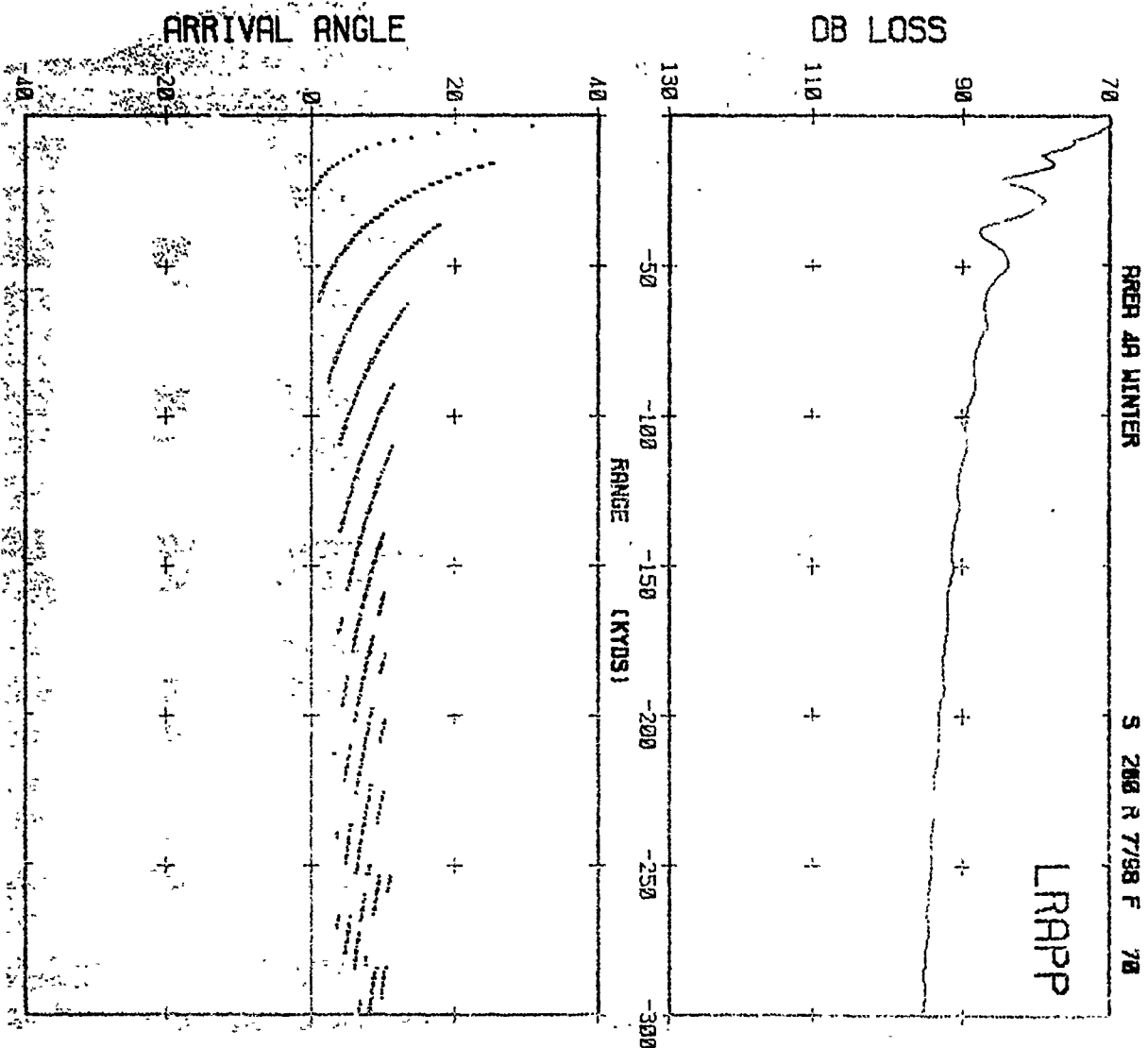


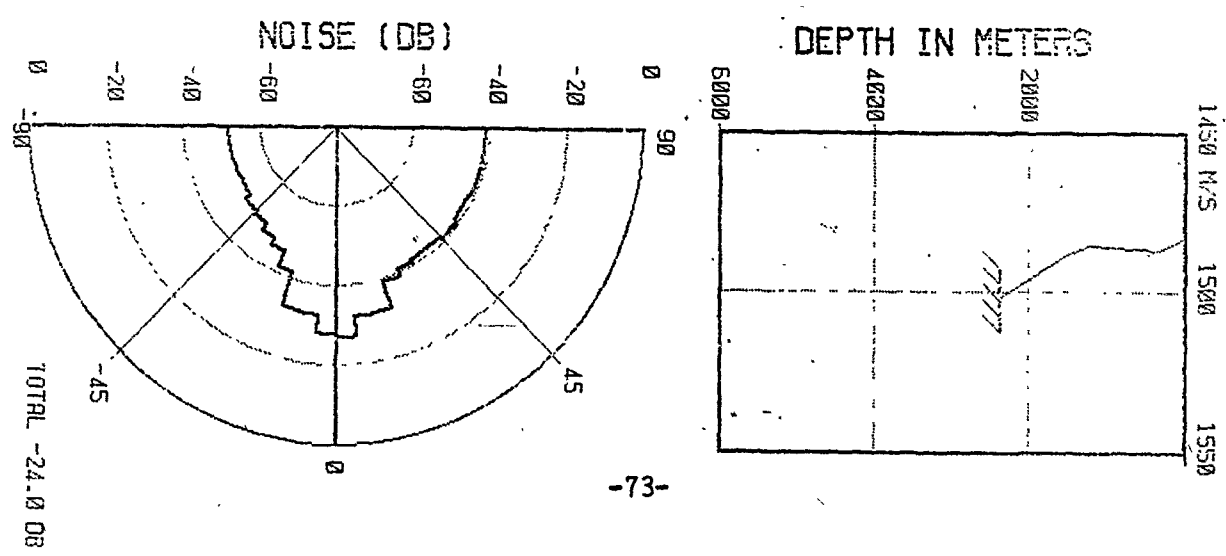
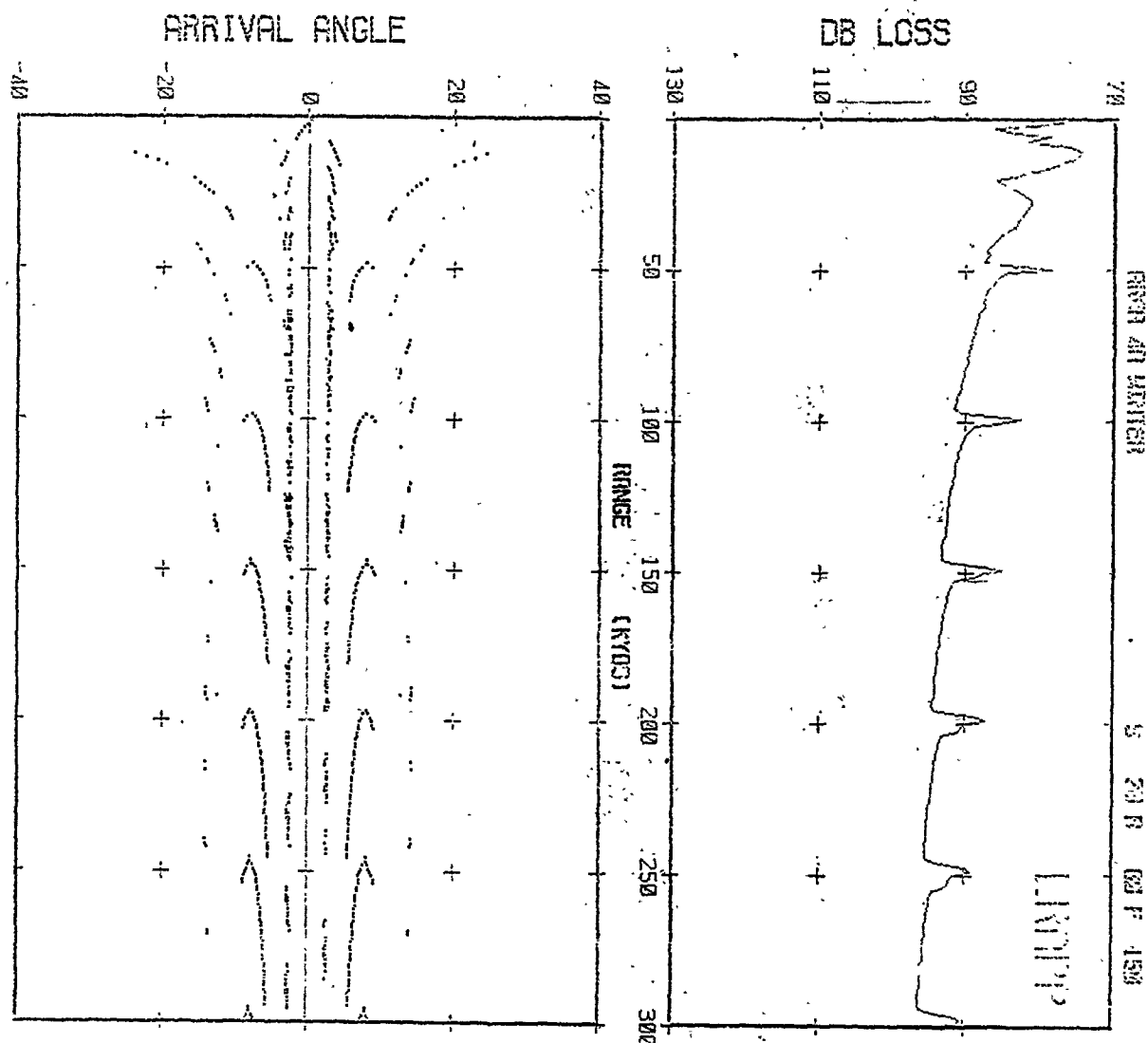
NOISE (DB)



TOTAL -23.0 DB





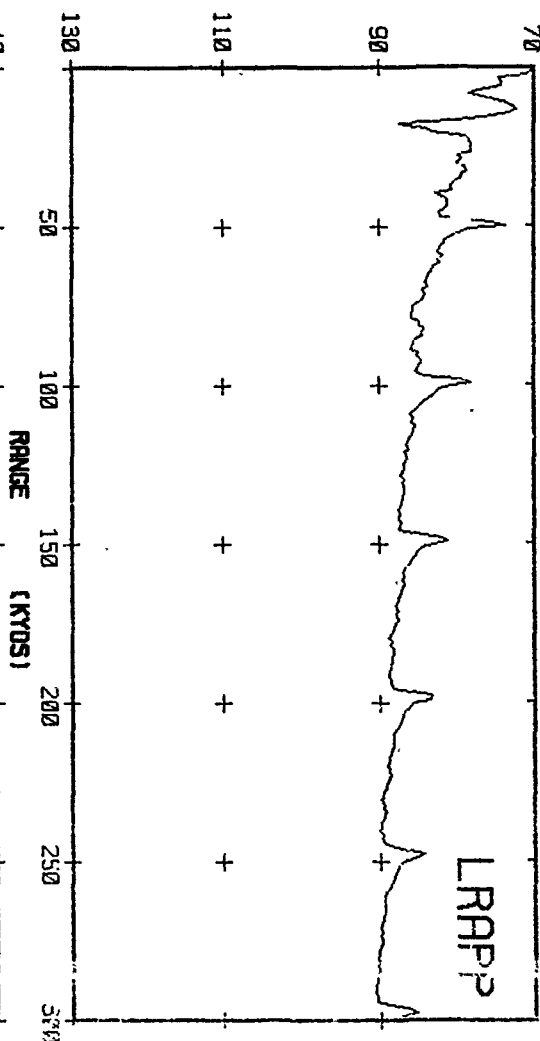


AREA AIR WINTER

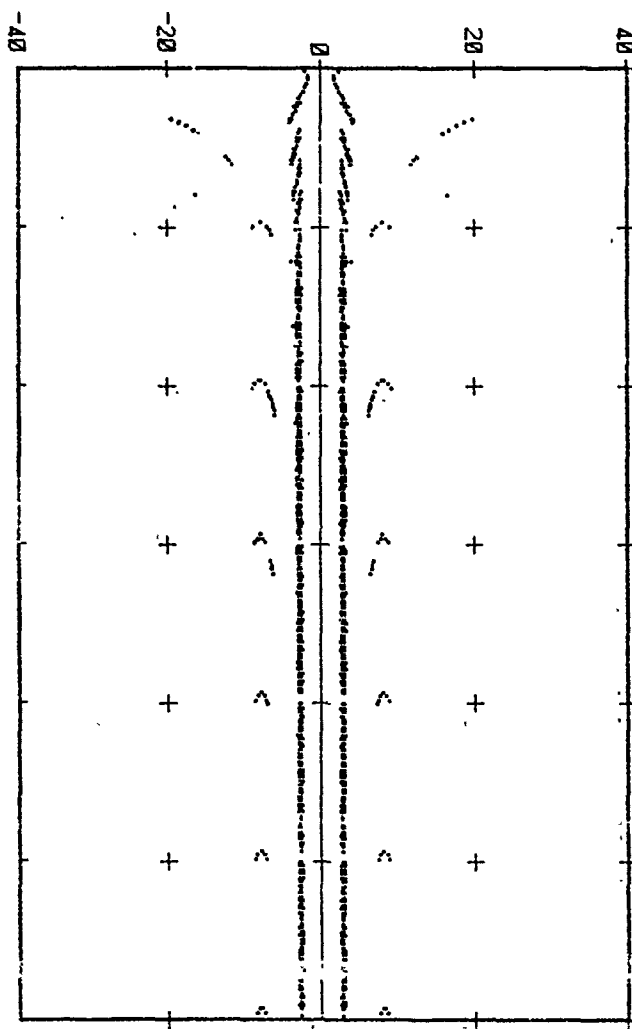
S 200 R 60 F 15°

1450 M/S 1500 1550

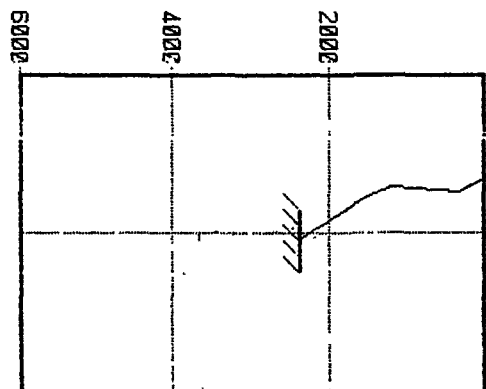
DB LOSS



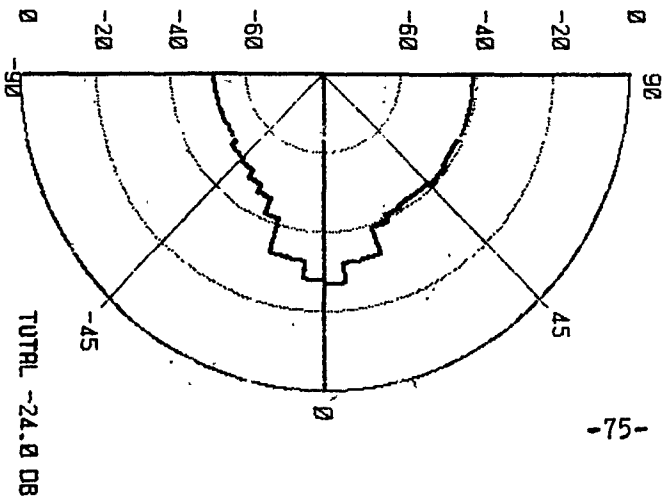
ARRIVAL ANGLE

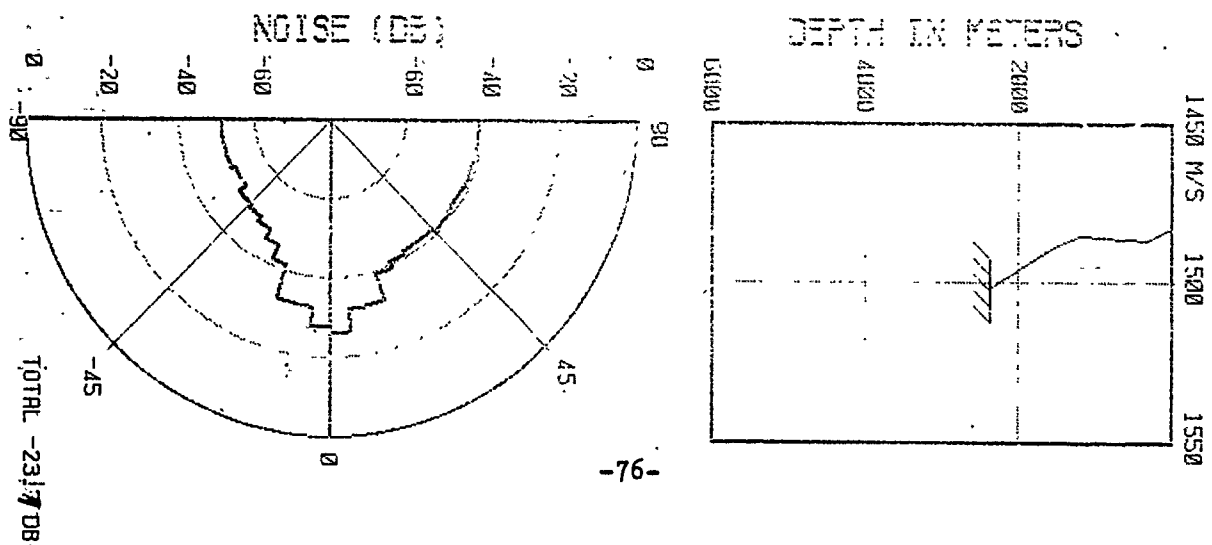
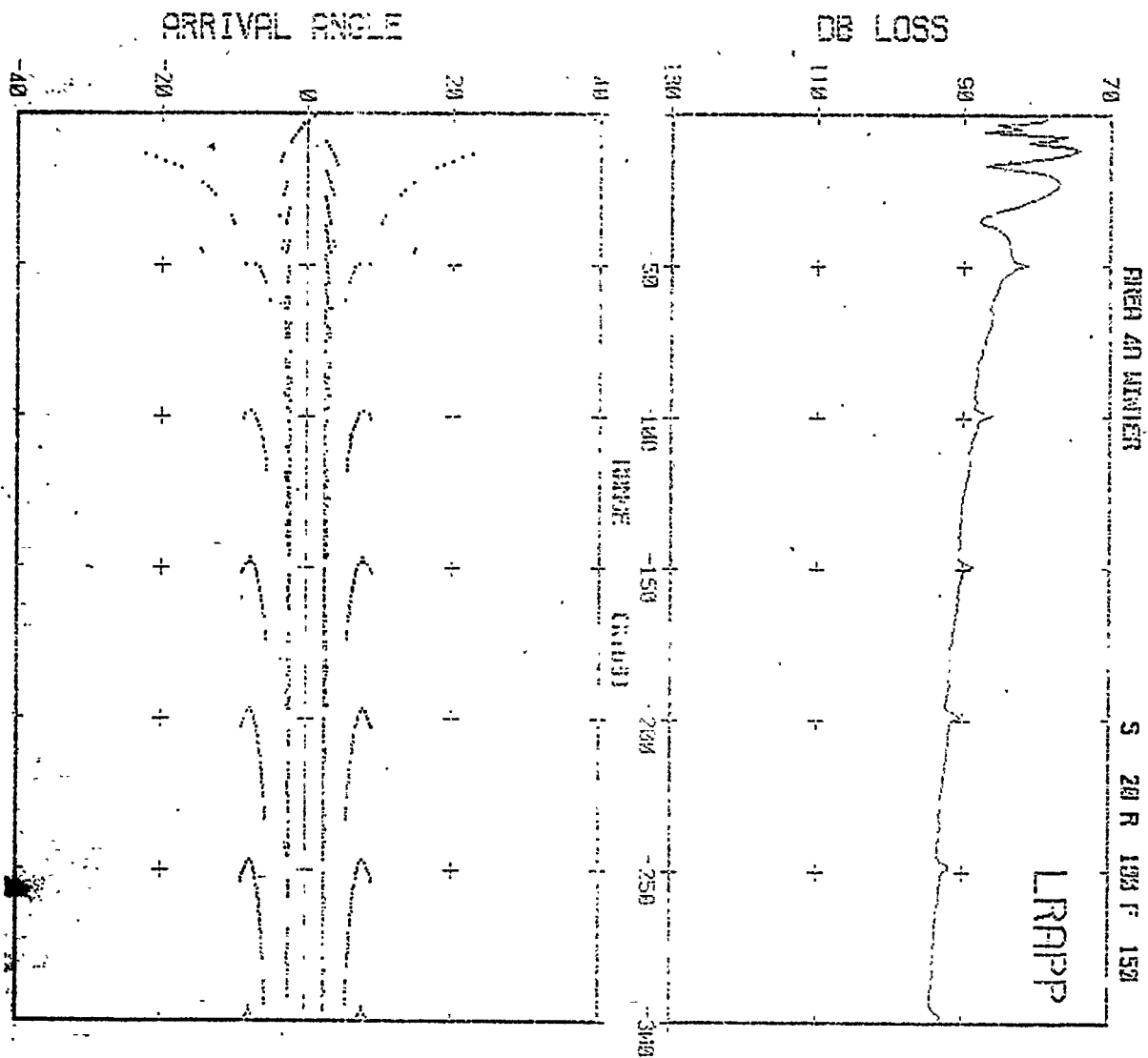


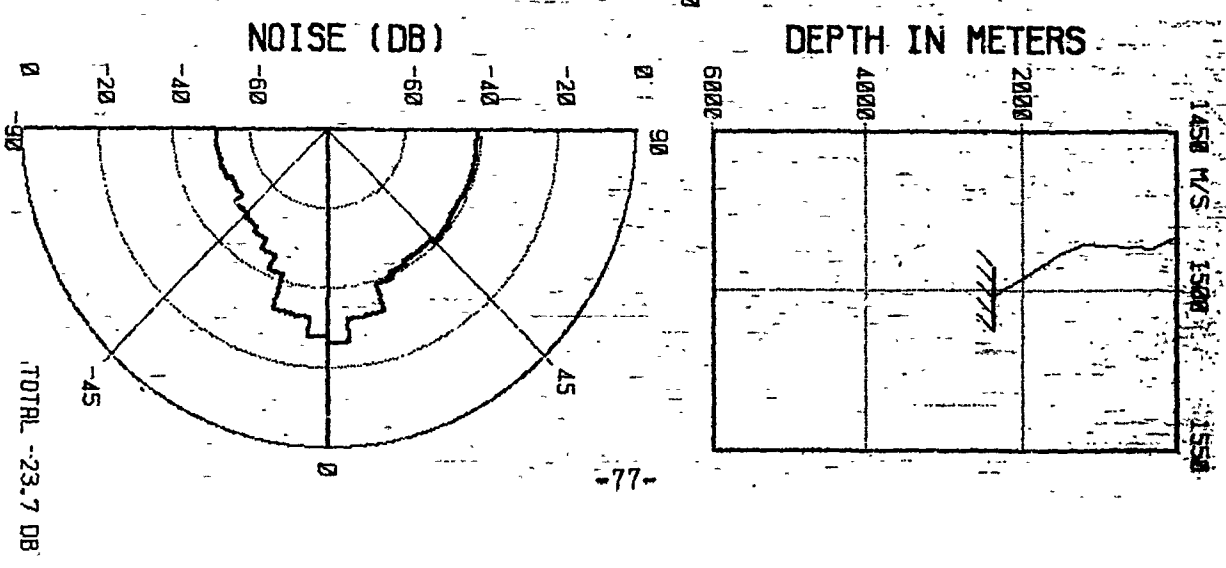
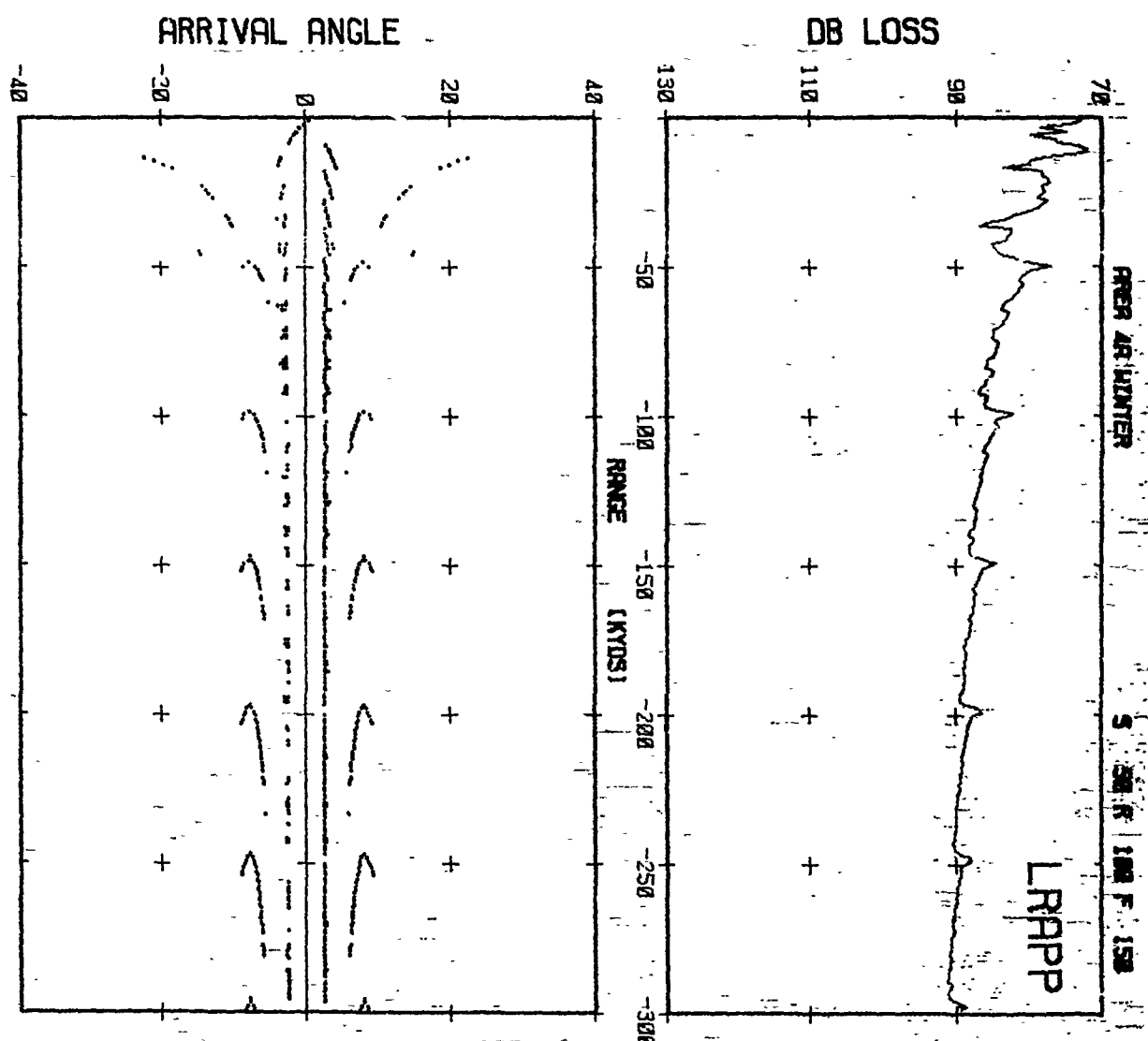
DEPTH IN METERS

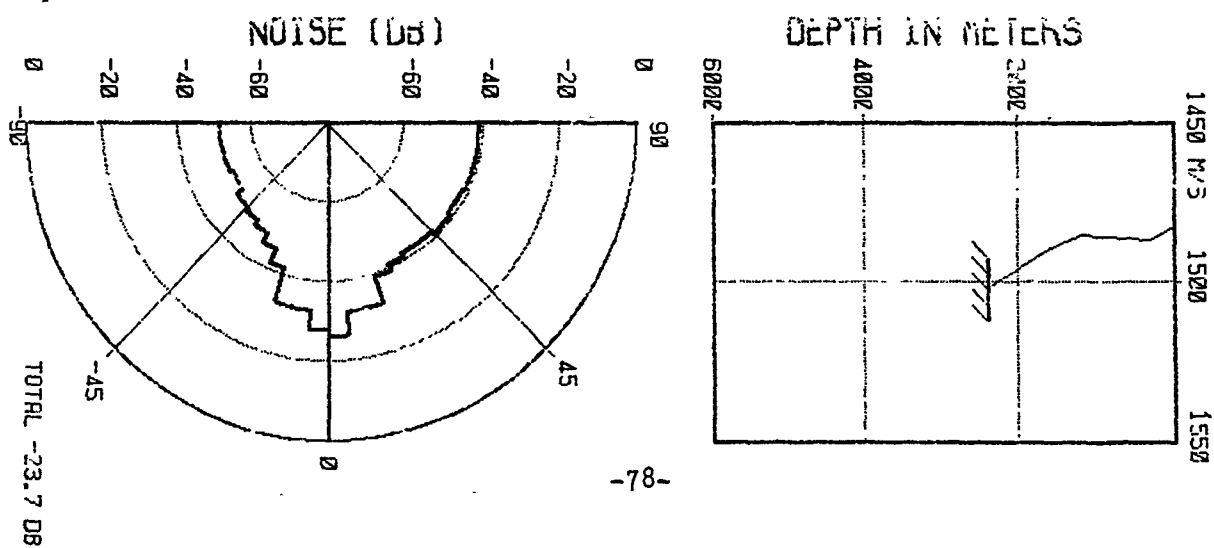
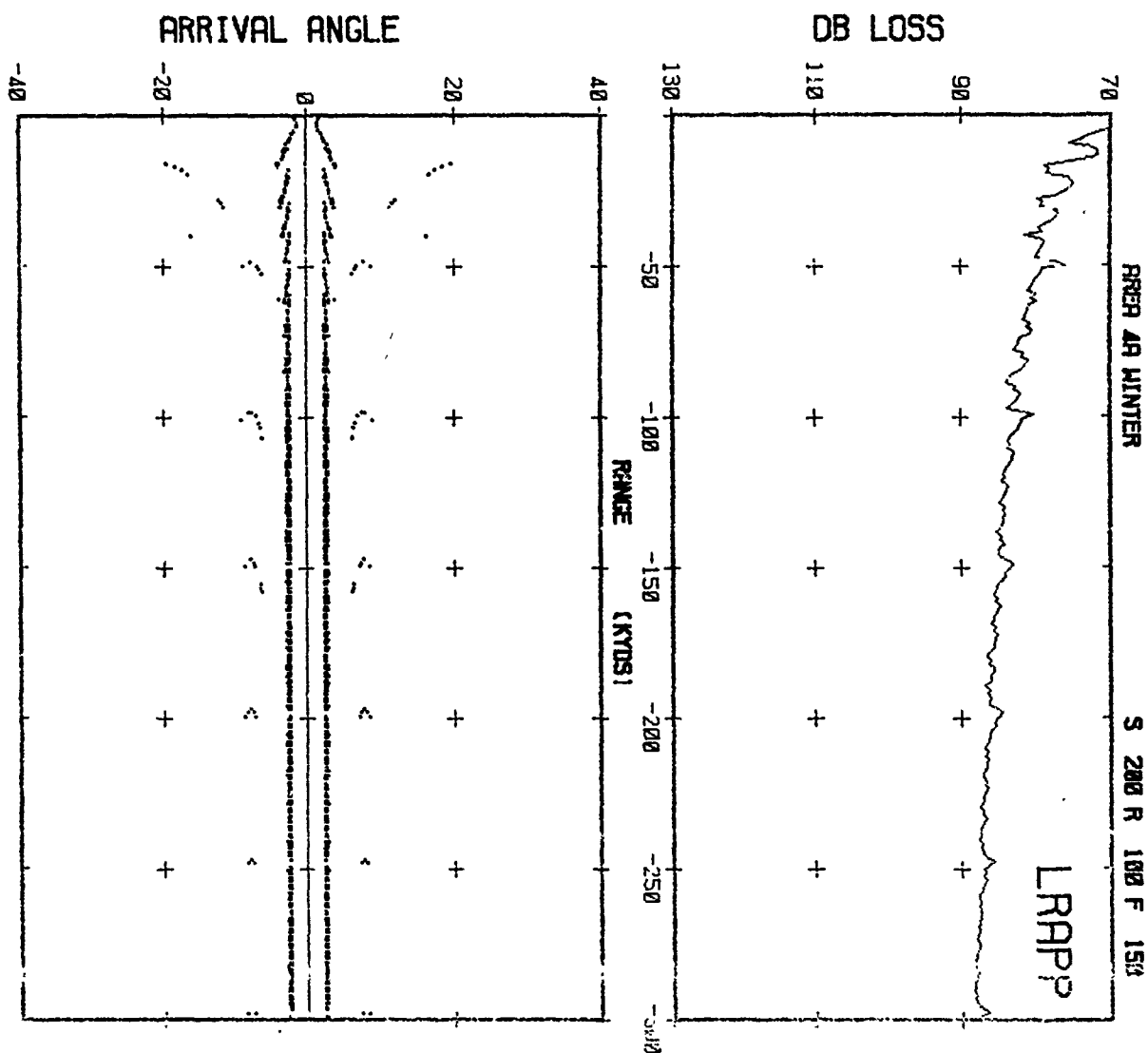


NOISE (DB)









FREQ 40 HZ

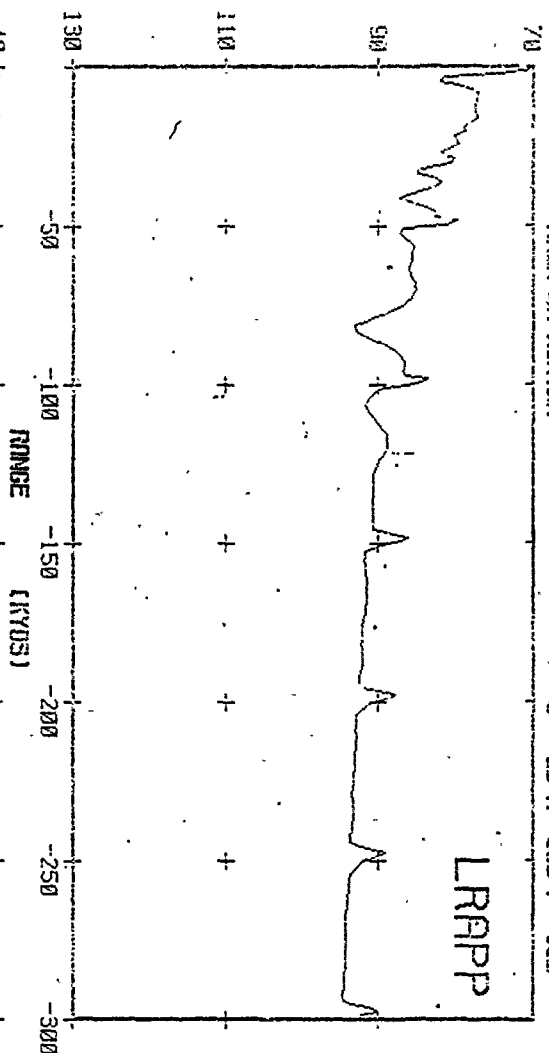
S 20 R 300 F 150

1450 M/S

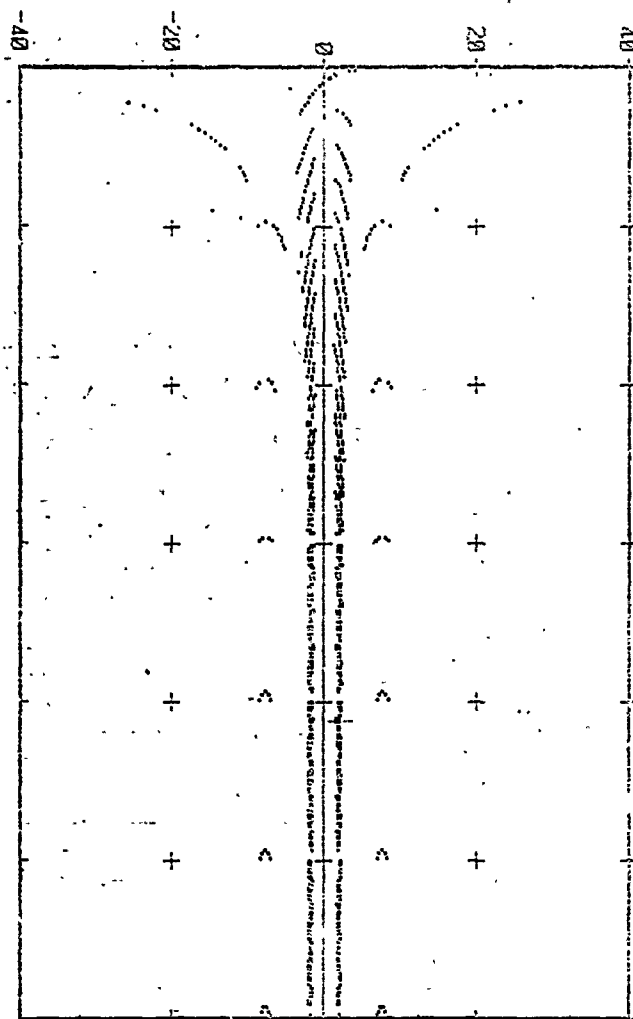
1500

1550

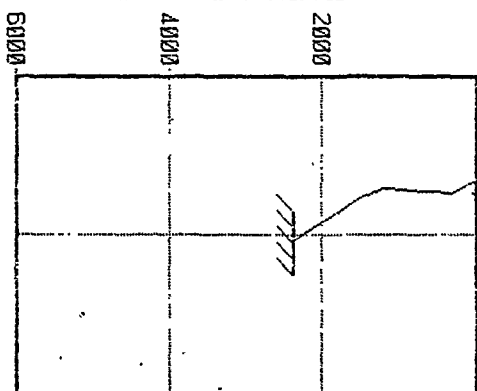
DB LOSS



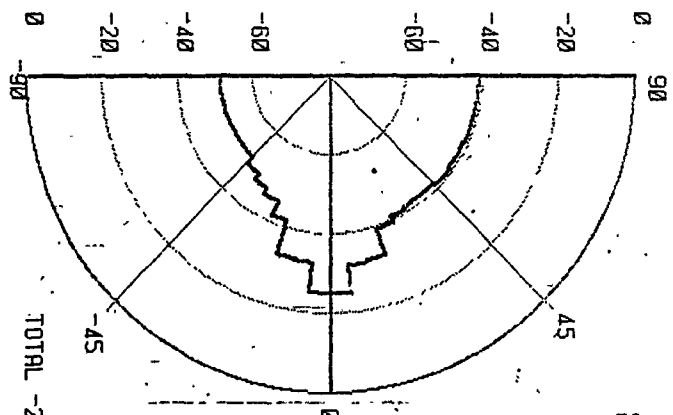
ARRIVAL ANGLE



DEPTH IN METERS



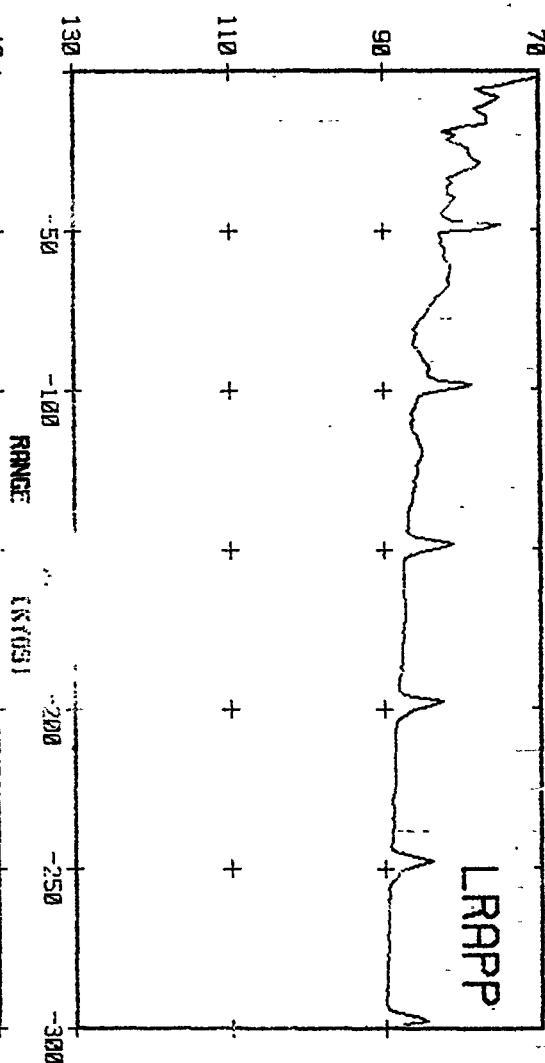
NOISE (DB)



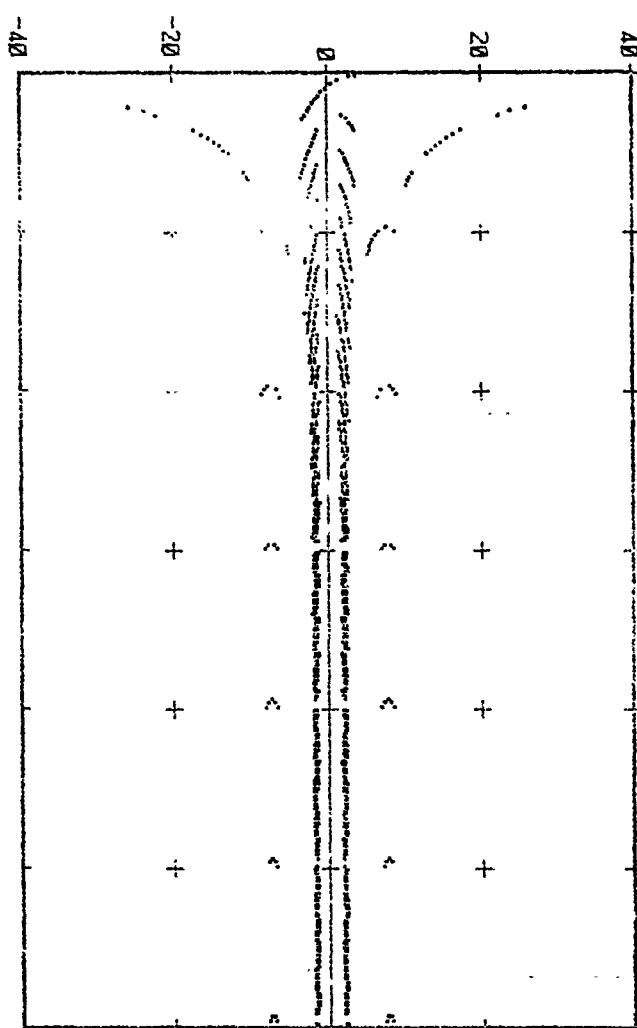
PRER 4R HINTER

S 50 R 300 F 150

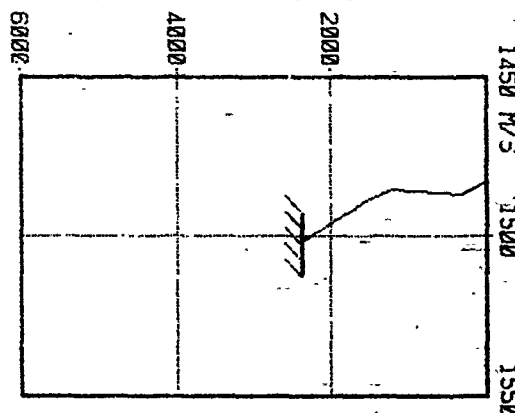
DB LOSS



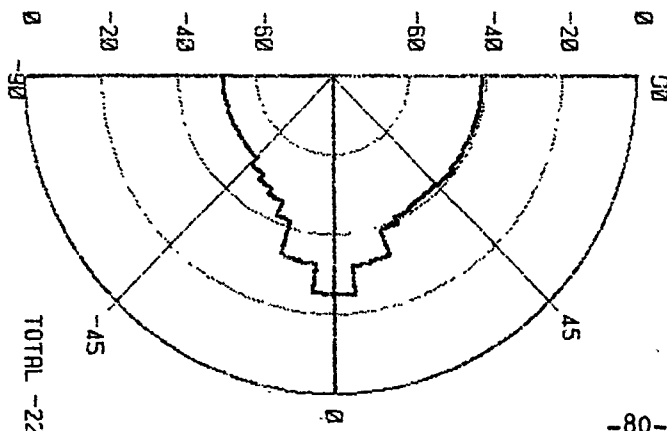
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

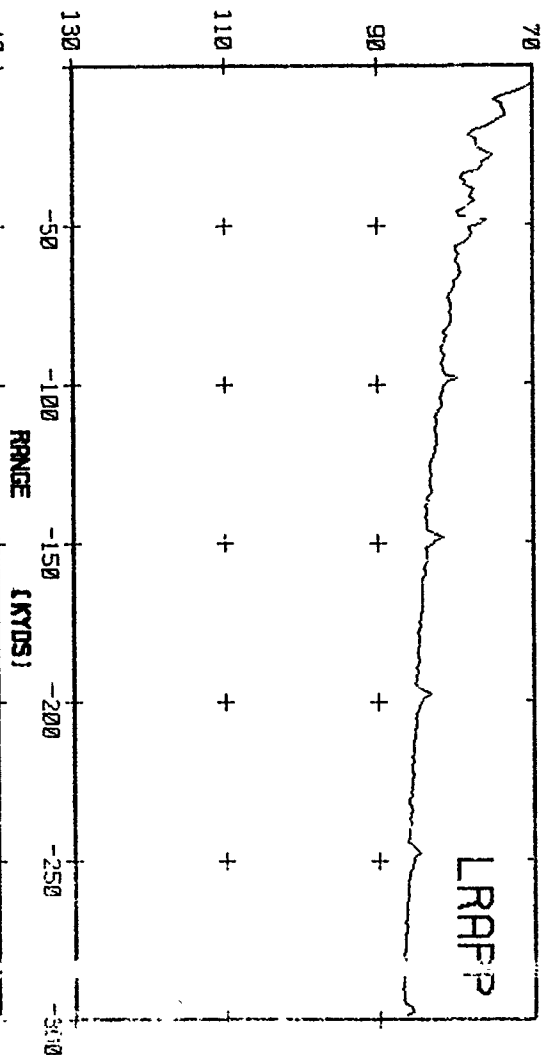


TOTAL -22.4 DB

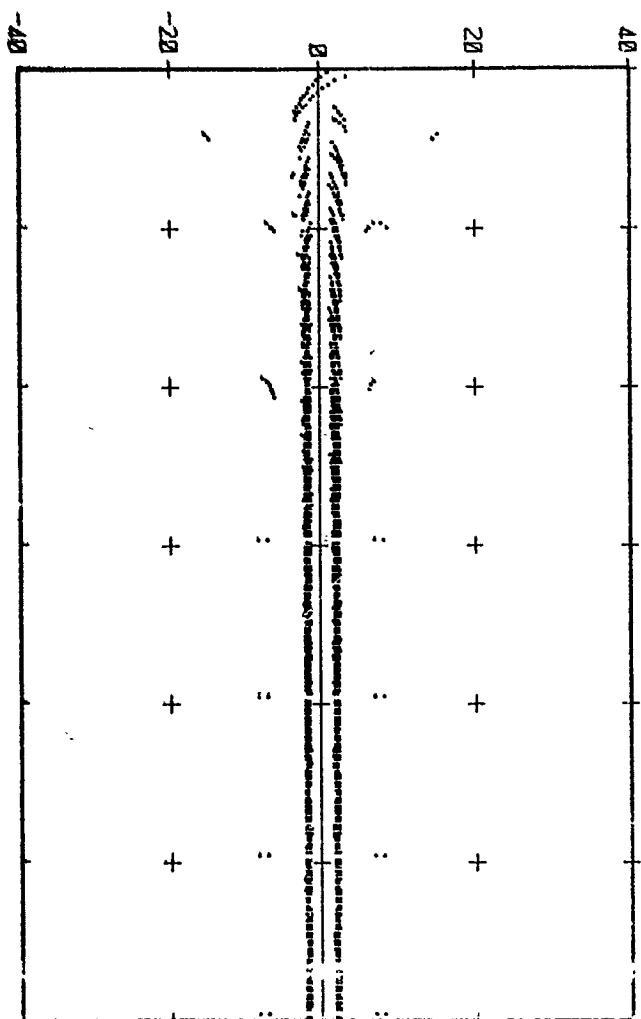
AREA 4R WINTER

S 280 R 300 F 152

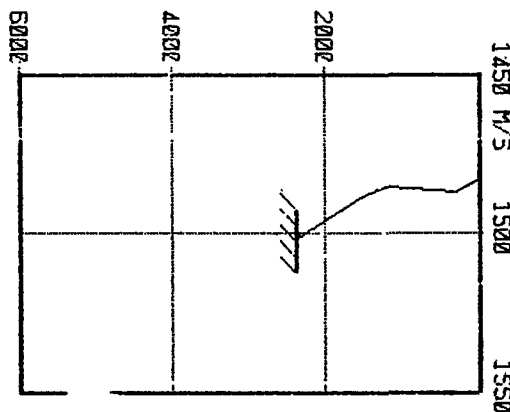
DB LOSS



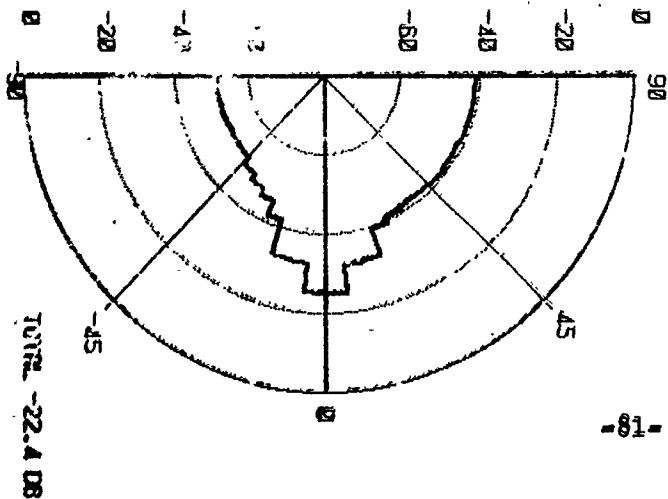
ARRIVAL ANGLE

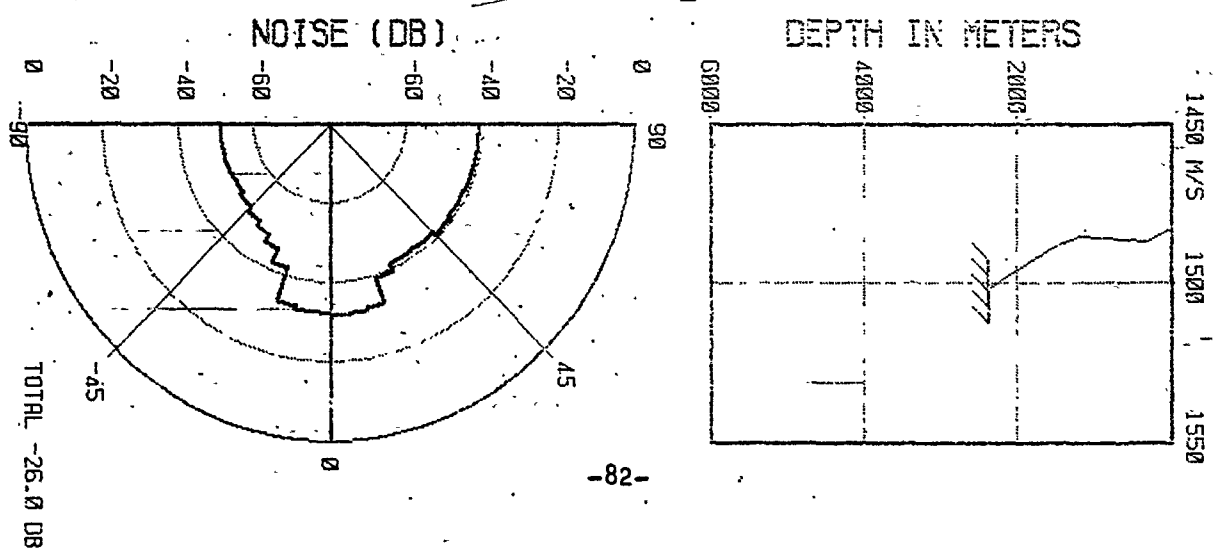
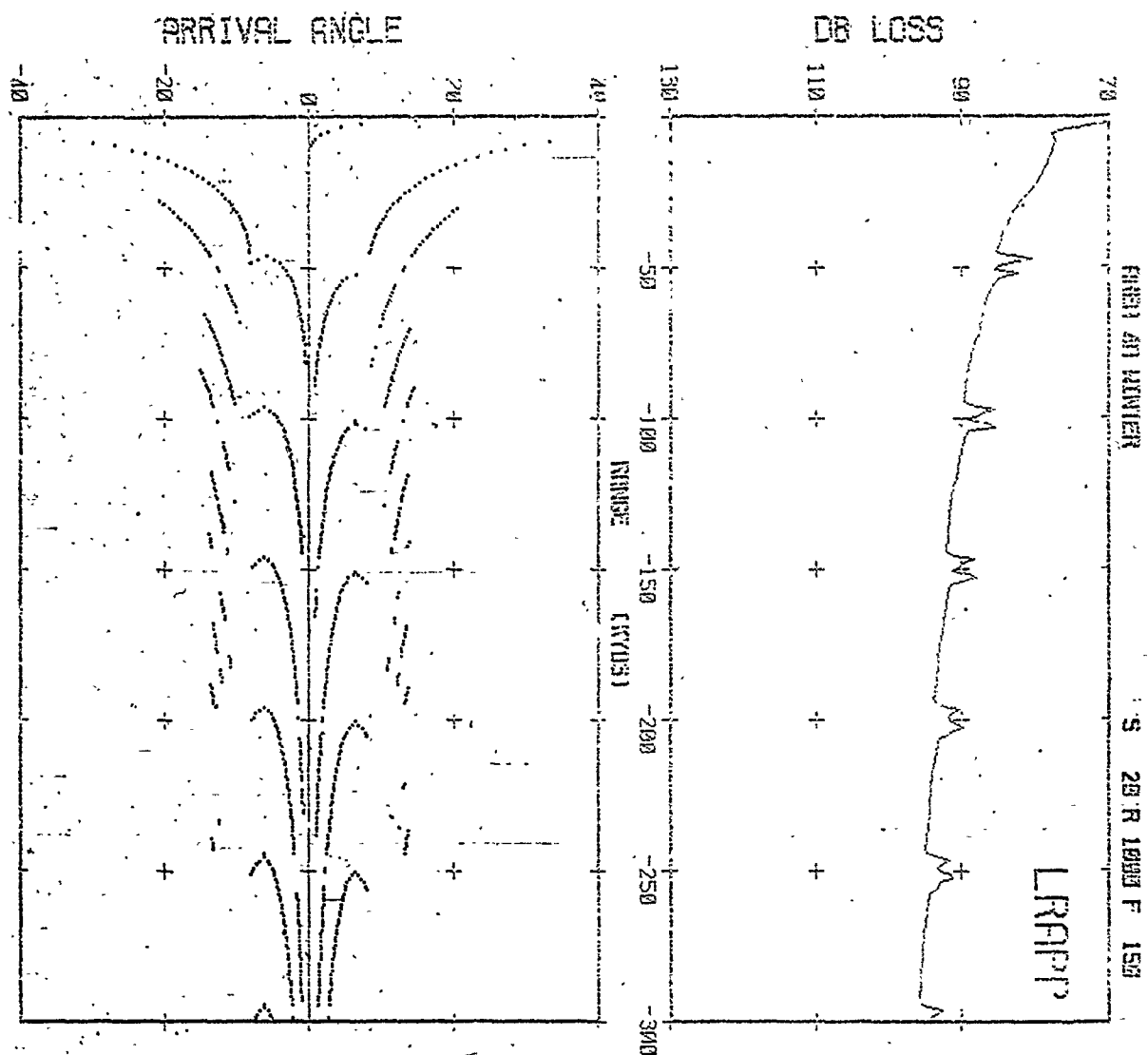


DEPTH IN METERS



NOISE (DB)



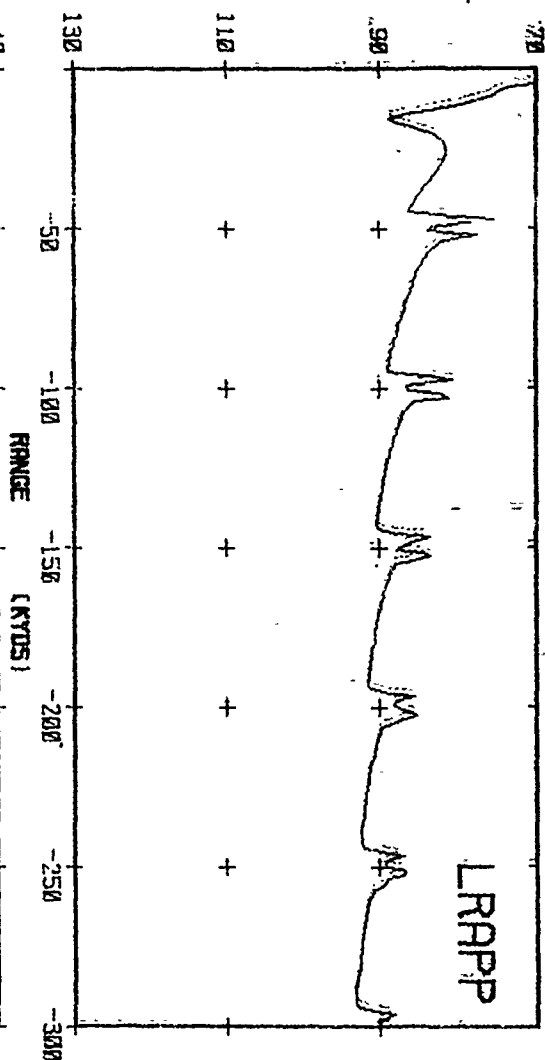


RIVER AIR JUNCTION

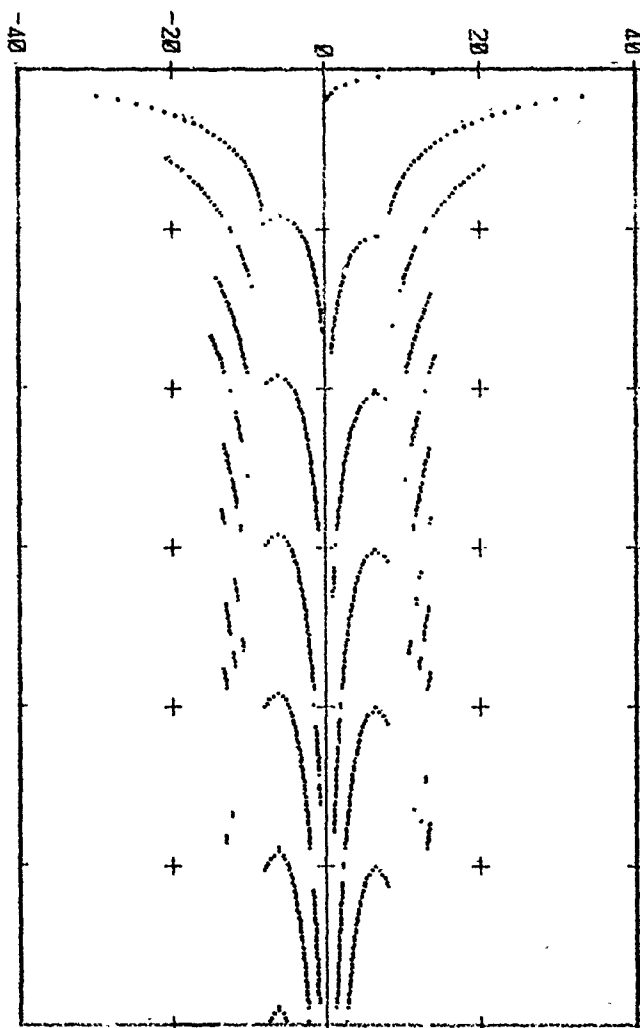
8 300 IN 1000 F 150

LRAPP

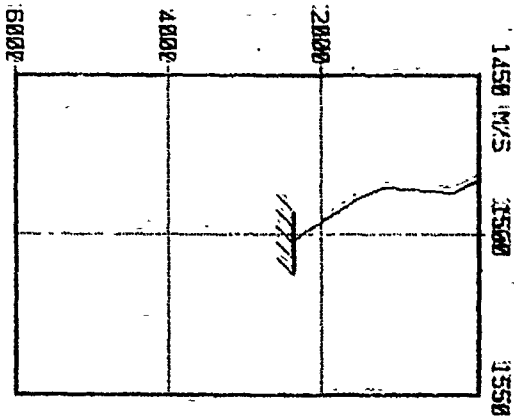
DB LOSS



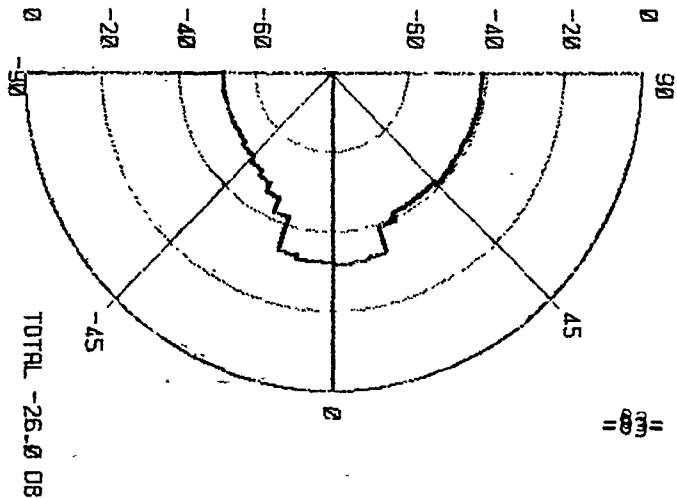
ARRIVAL ANGLE

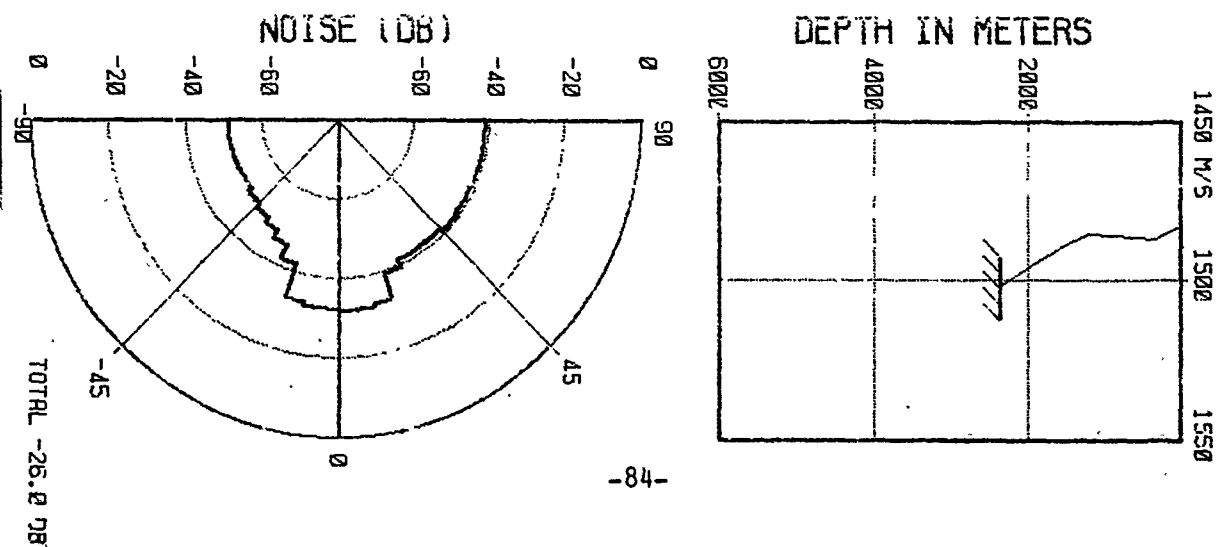
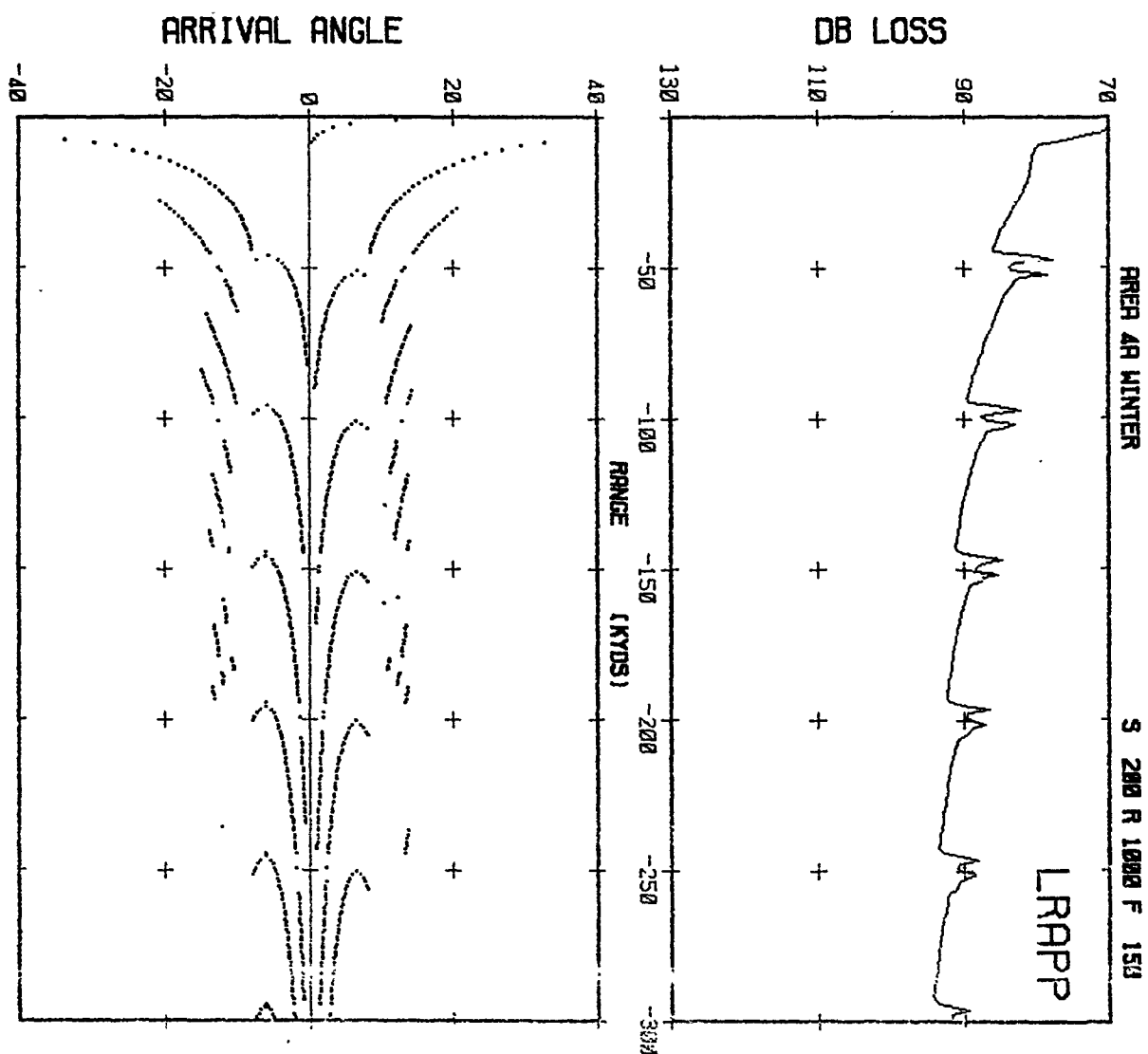


DEPTH IN METERS



NOISE (DB)



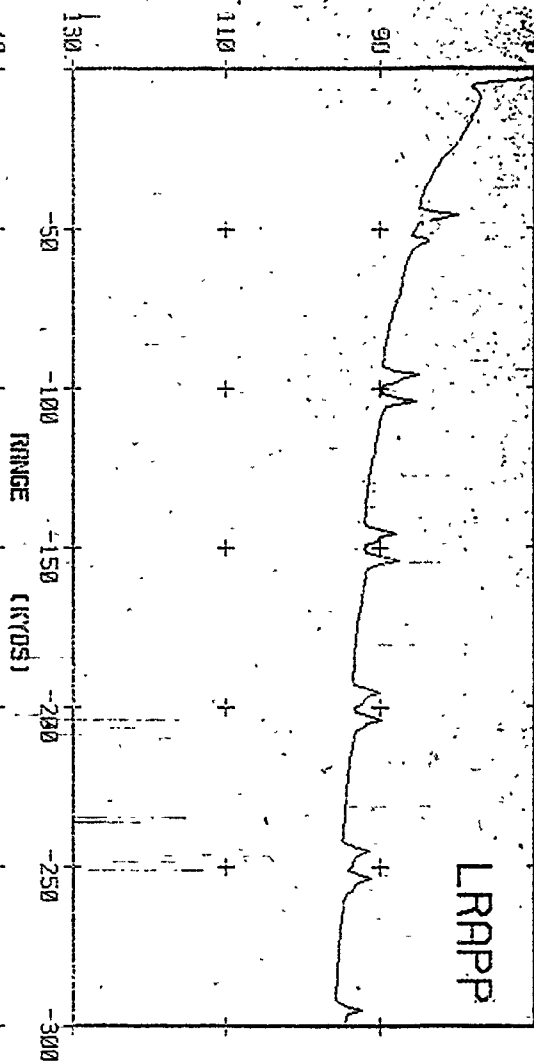


FREE AIR WINTER

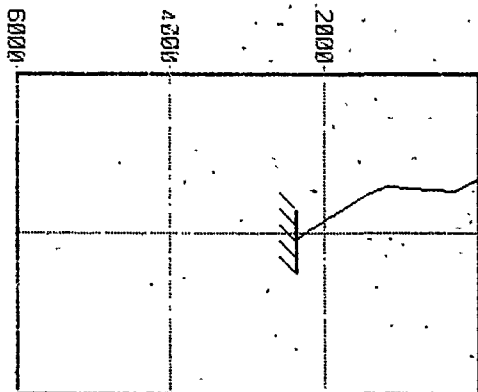
S 20 R 1500 F 1150

1450 M/S 1500 1550

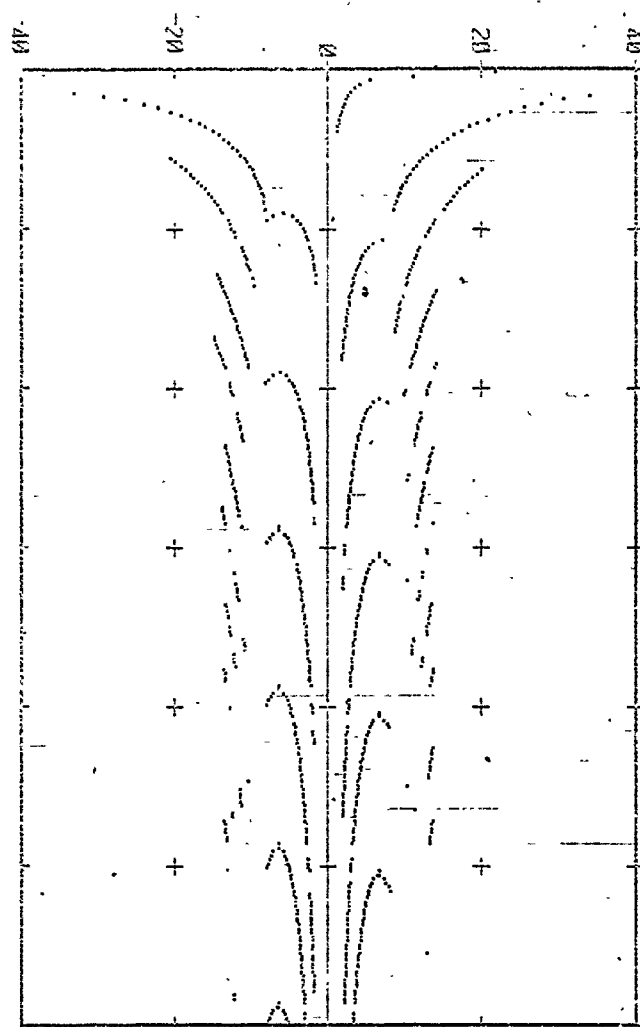
DB LOSS



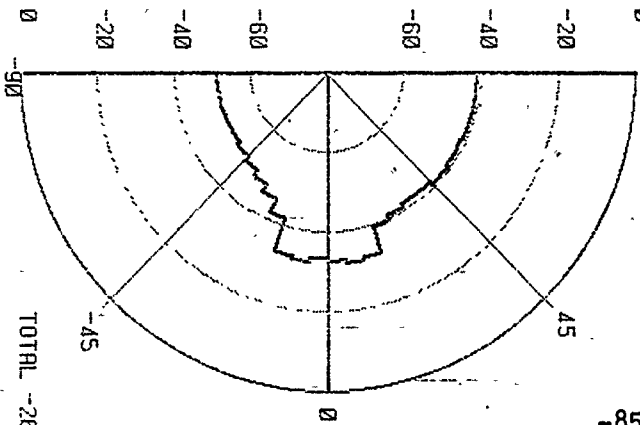
DEPTH IN METERS



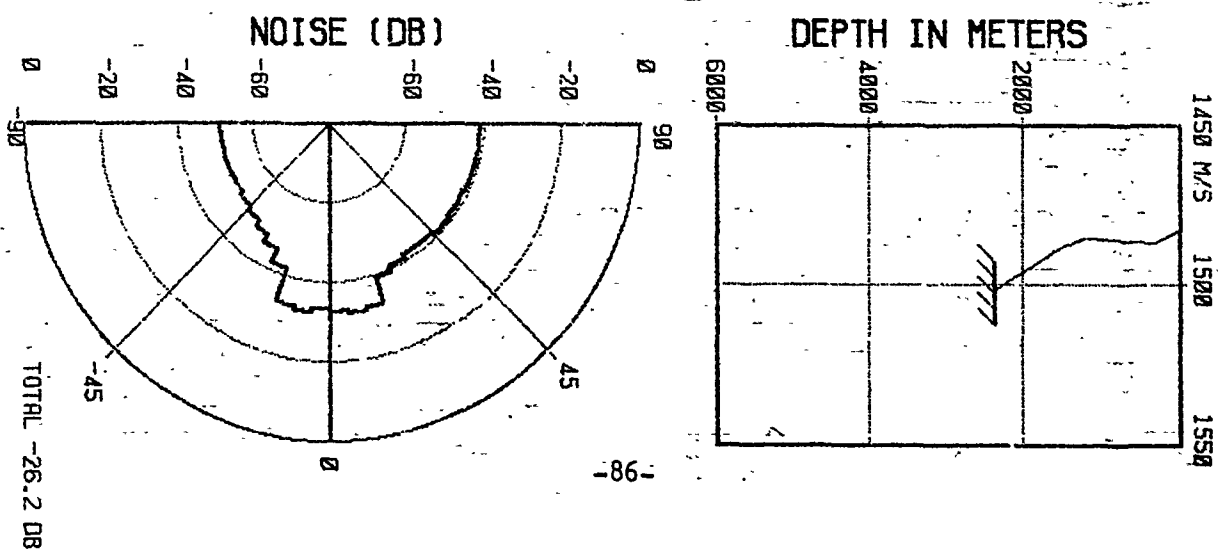
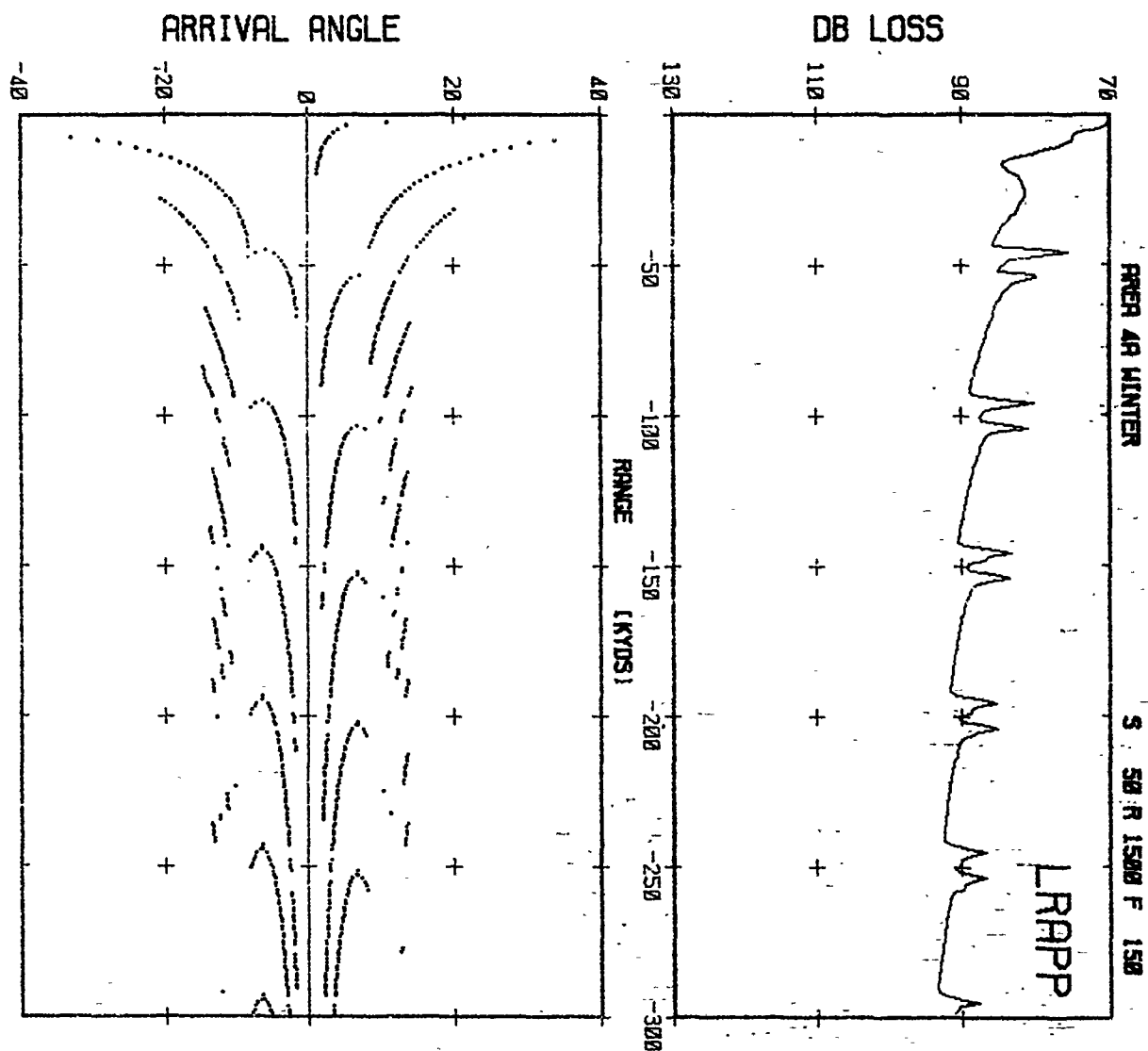
ARRIVAL ANGLE



NOISE (DB)



TOTAL -26.2 DB

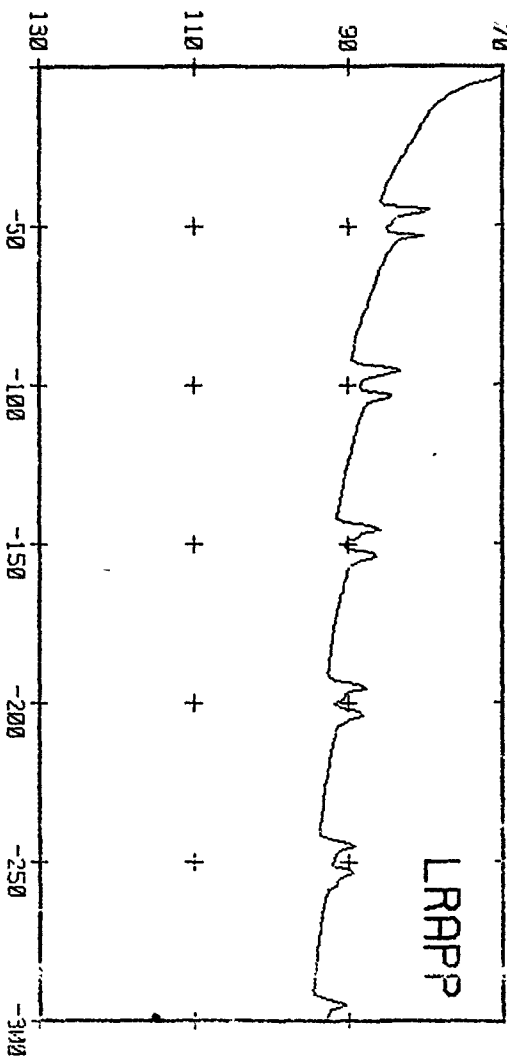


PRER AR HINTER

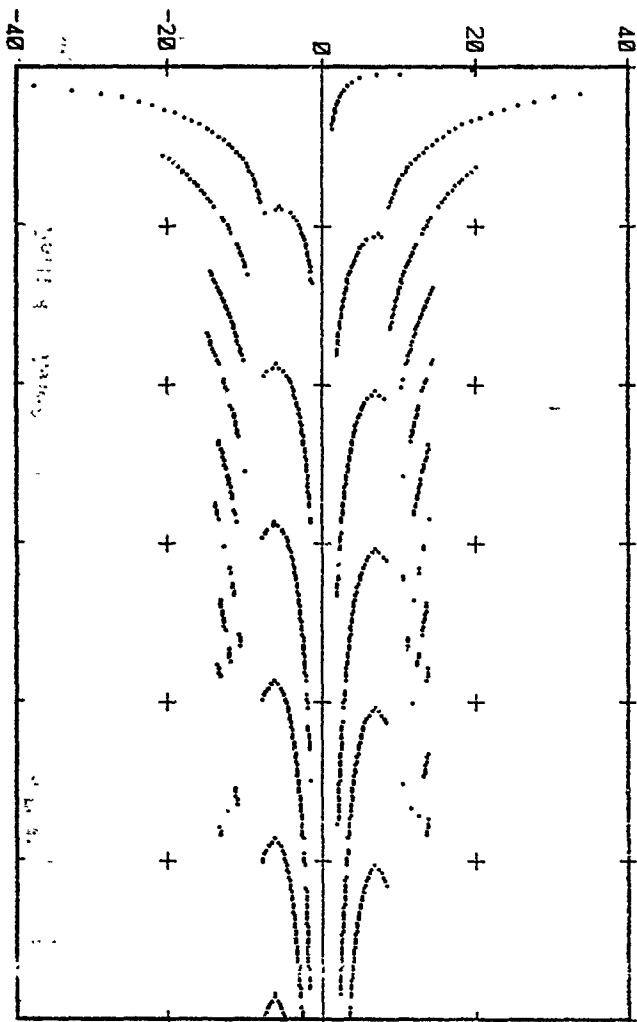
S 200 R 1500 F 150

1450 M/S 1500 1550

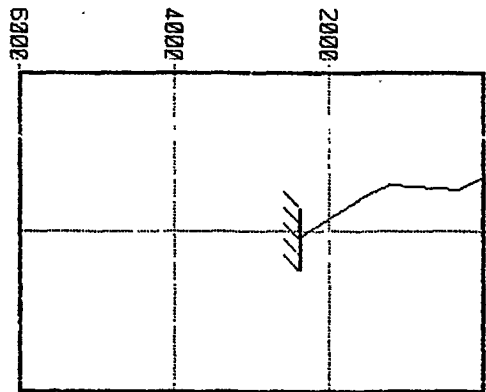
DB LOSS



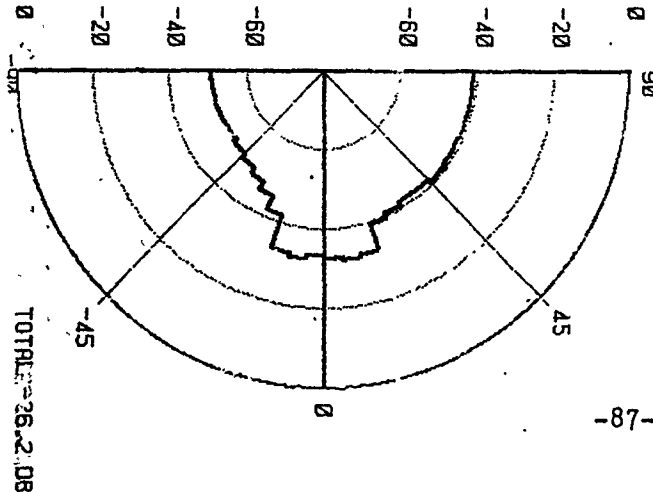
ARRIVAL ANGLE

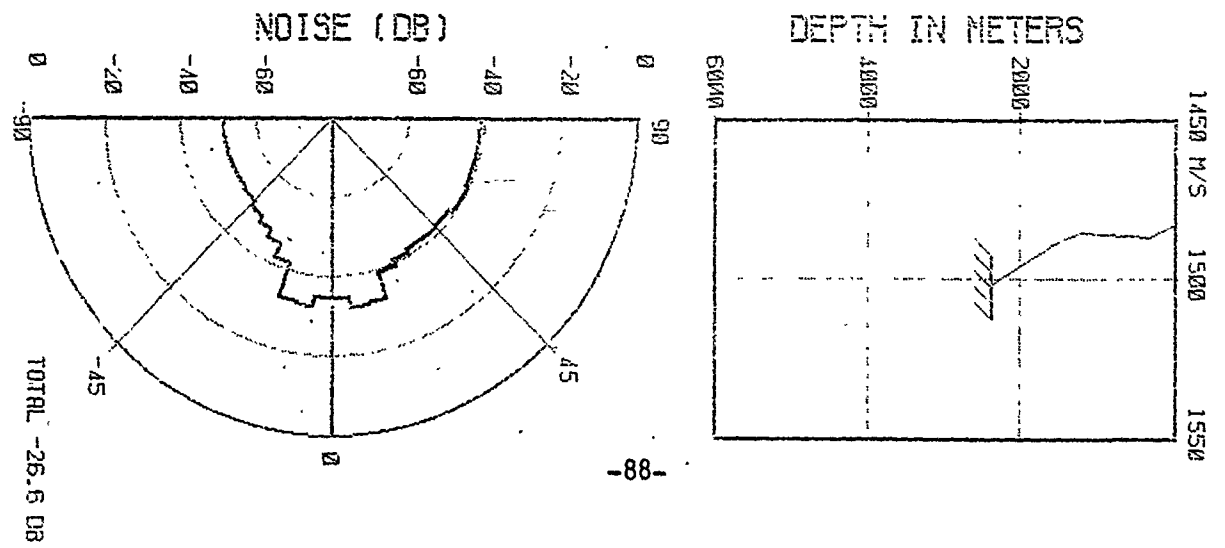
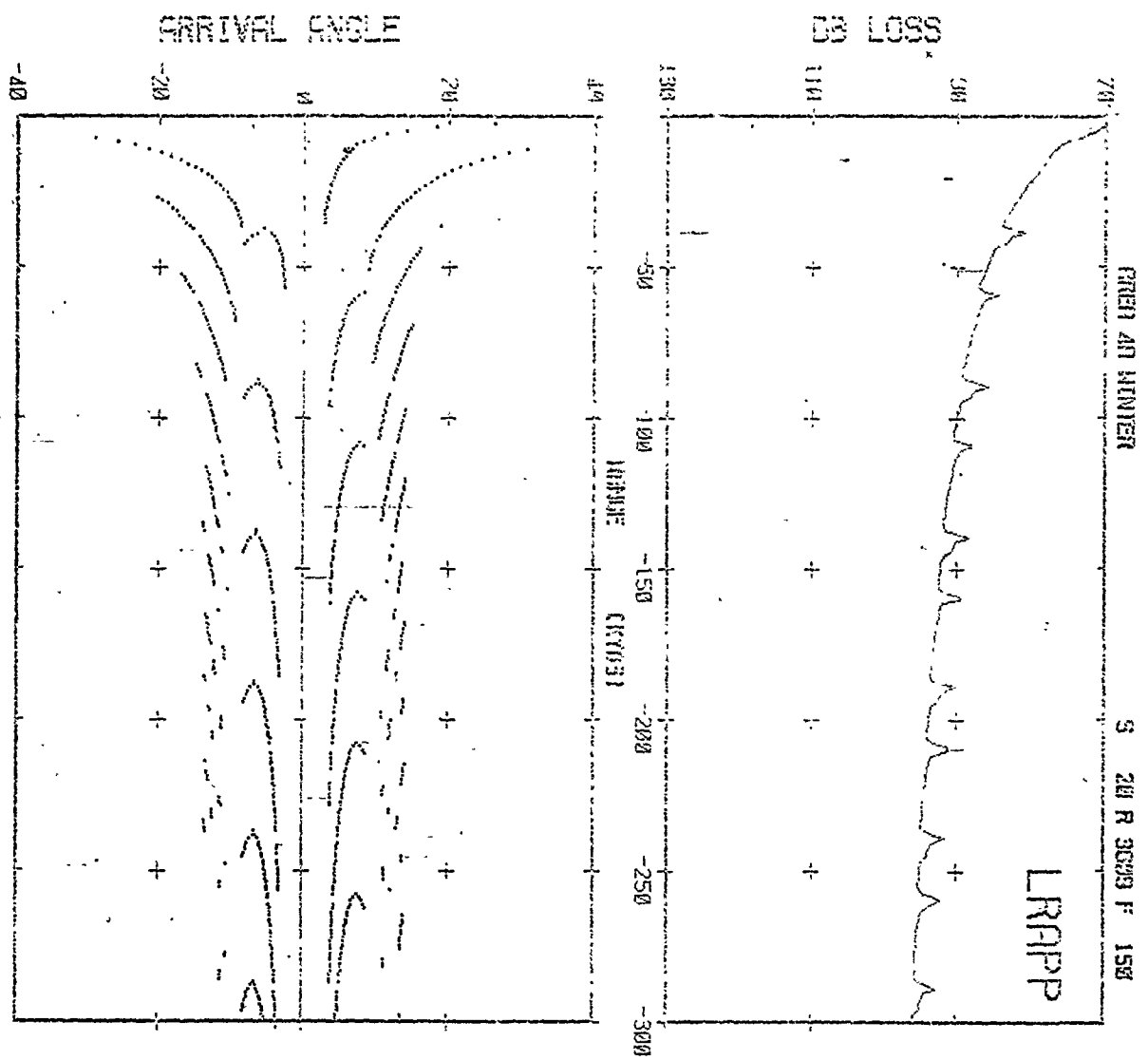


DEPTH IN METERS



NOISE (DB)





AREA 4R WINTER

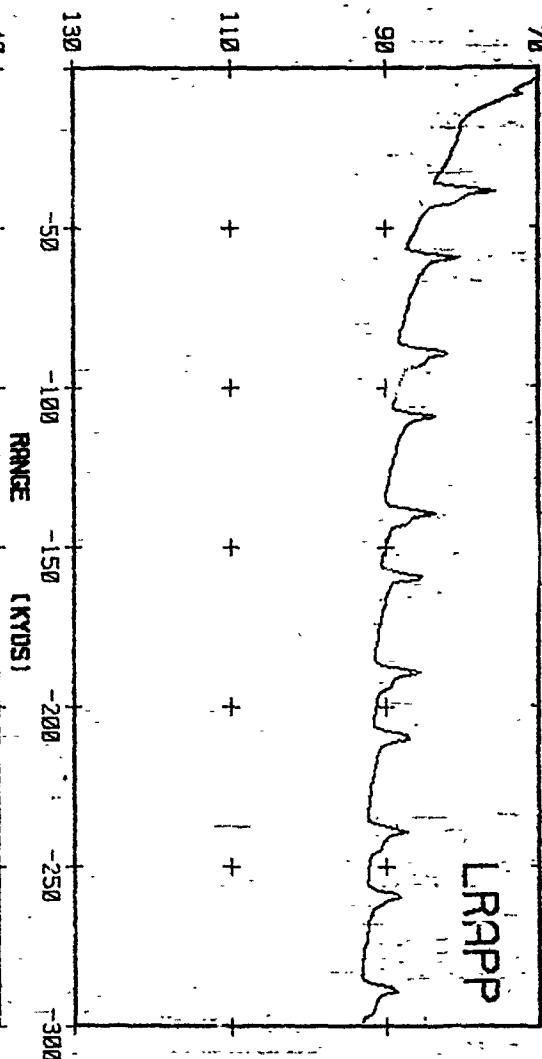
S. 50 N. 3000 F. 150

1450 M/S

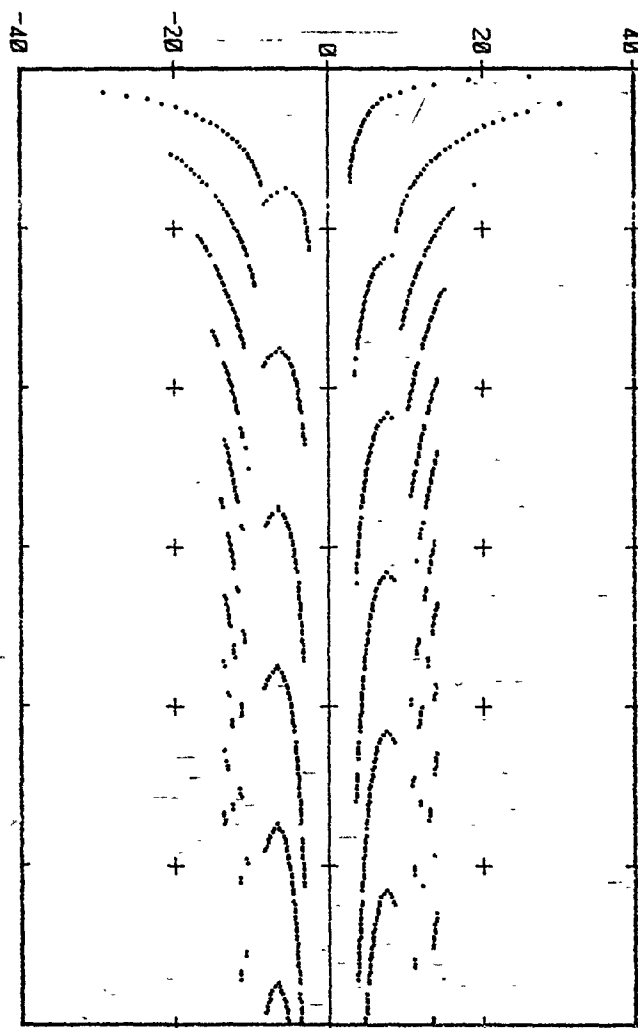
1500

1550

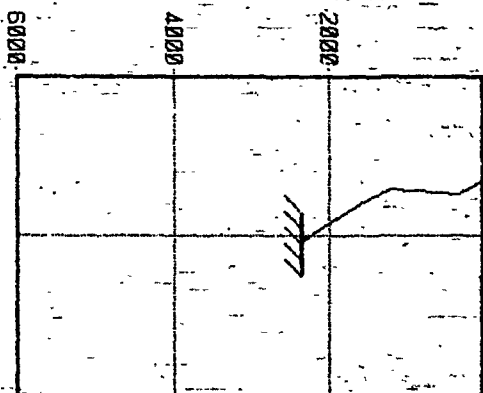
DB LOSS



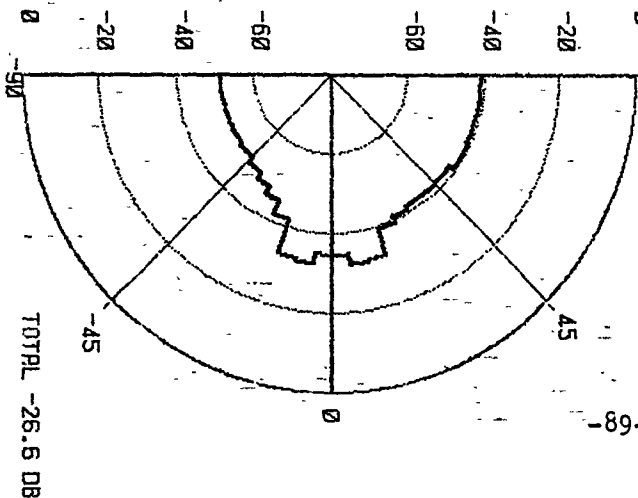
ARRIVAL ANGLE

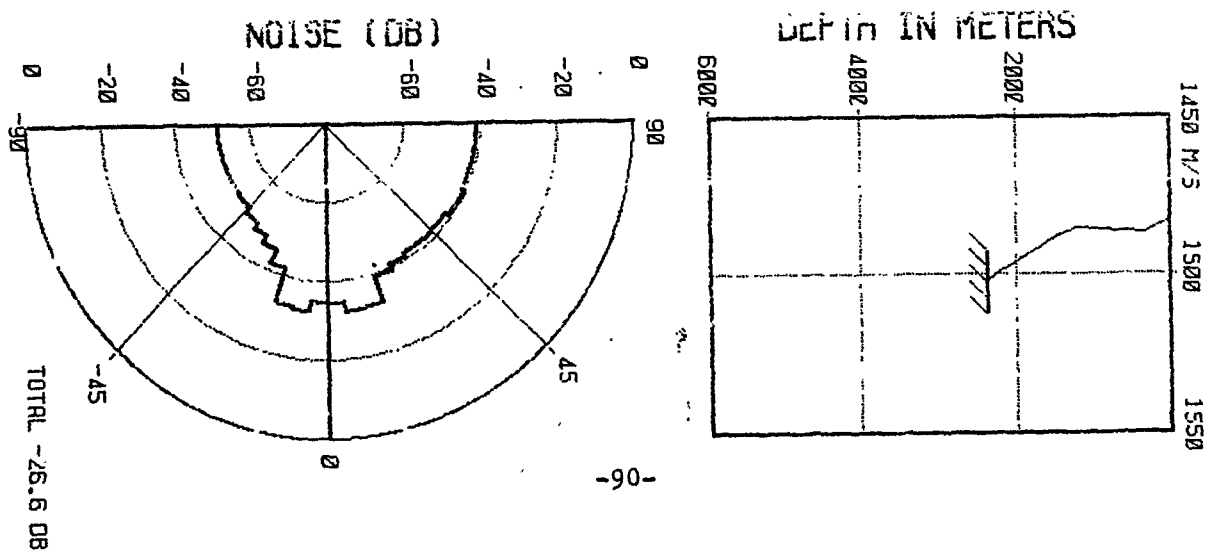
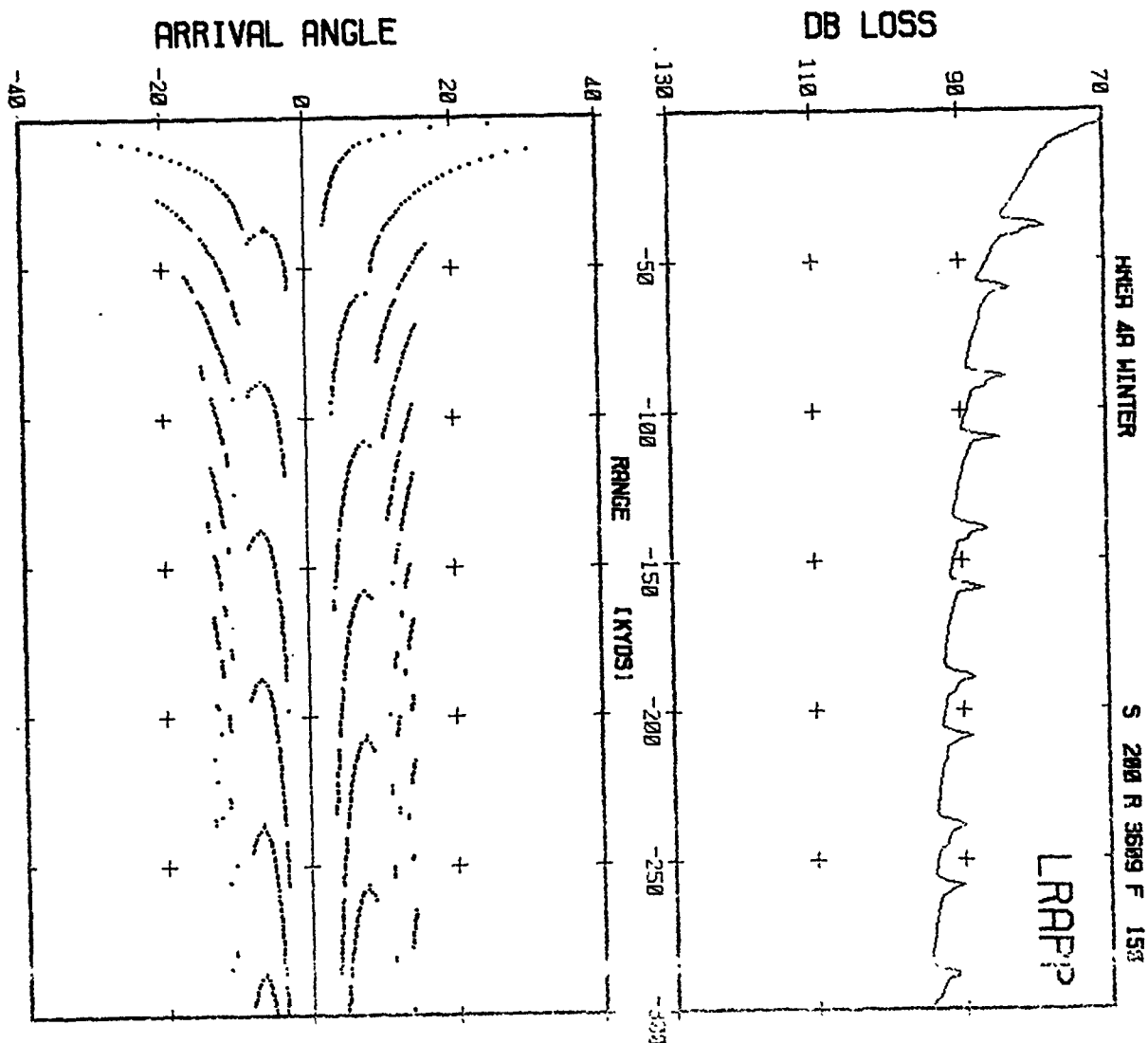


DEPTH IN METERS



NOISE (DB)



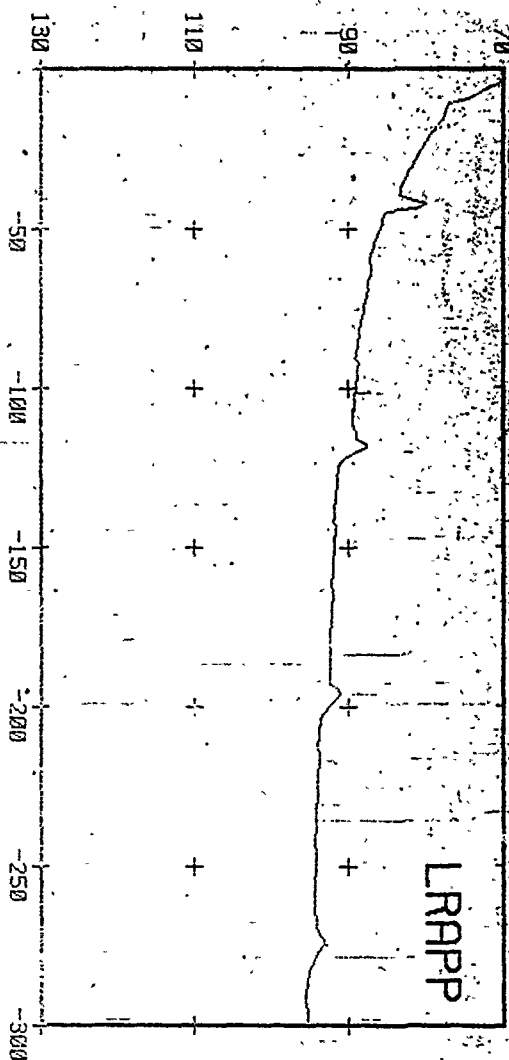


PREP. 40 WINTER

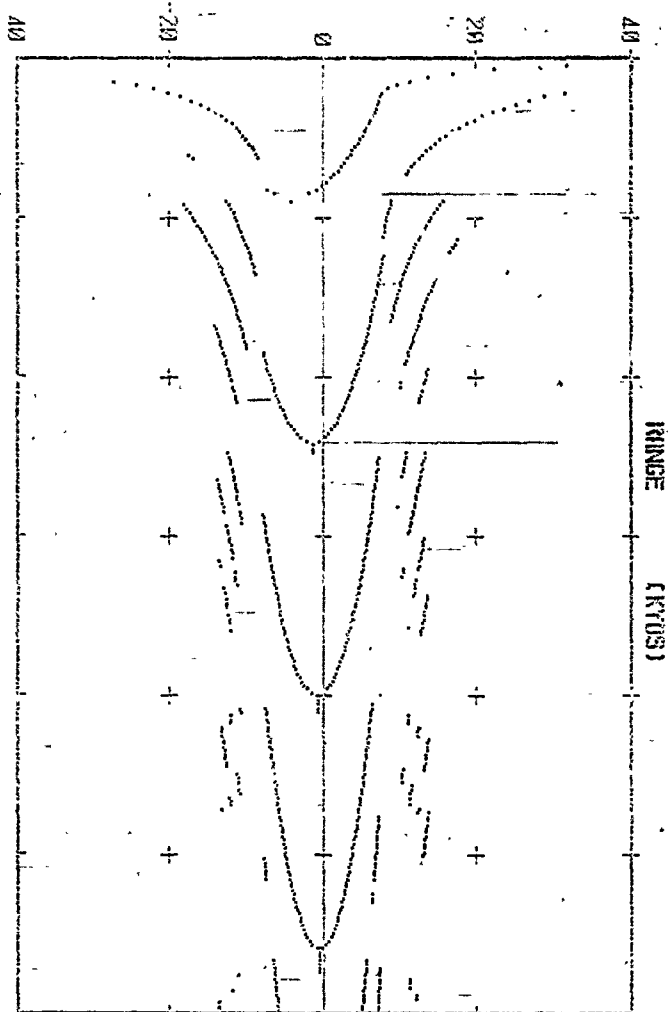
S 20 R 4503 F 150

1450 M/S 1500 1550

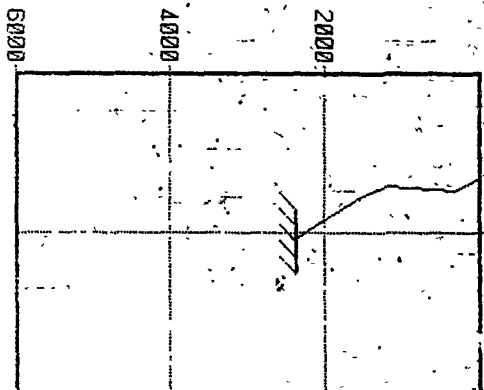
DB LOSS



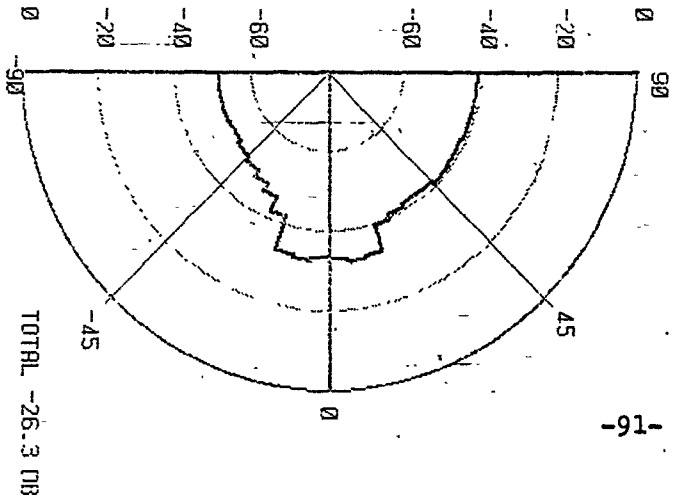
ARRIVAL ANGLE

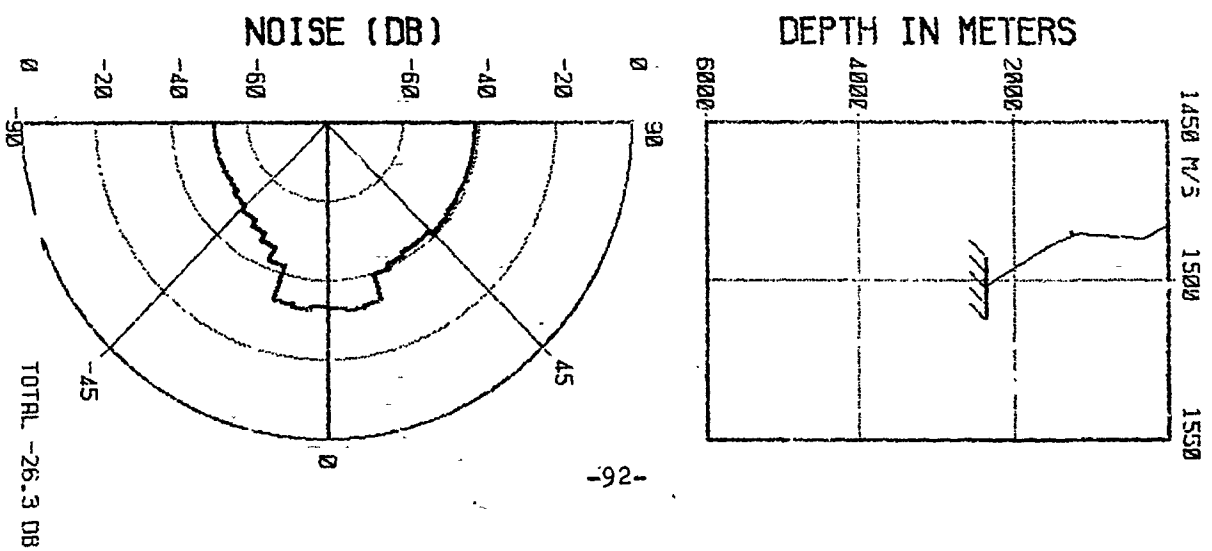
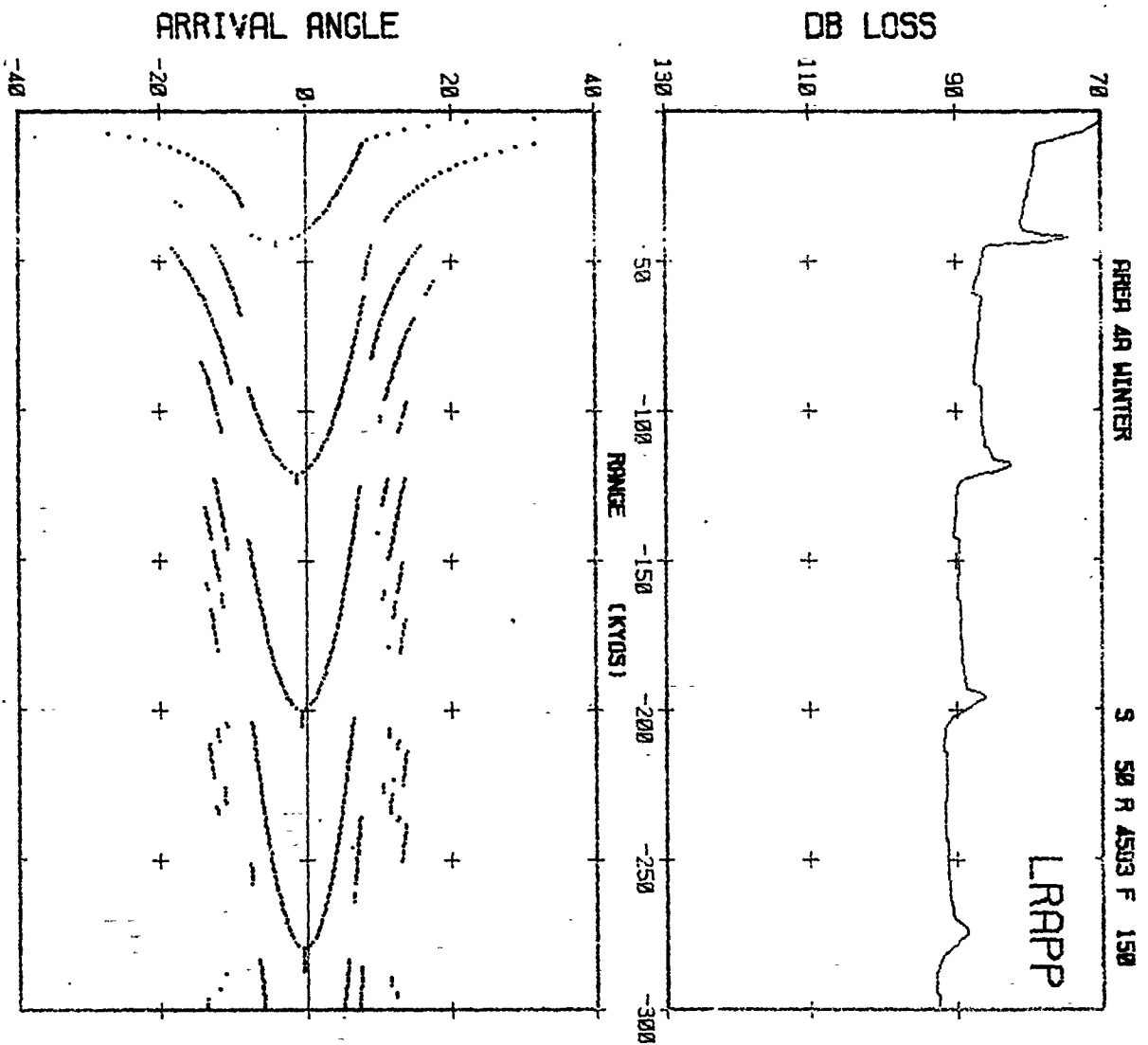


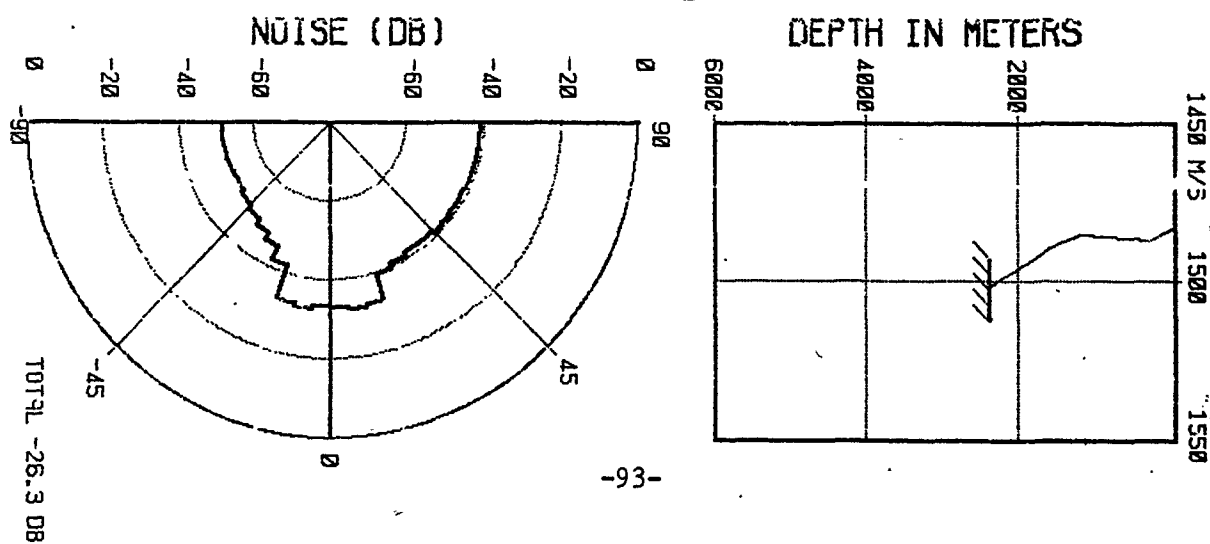
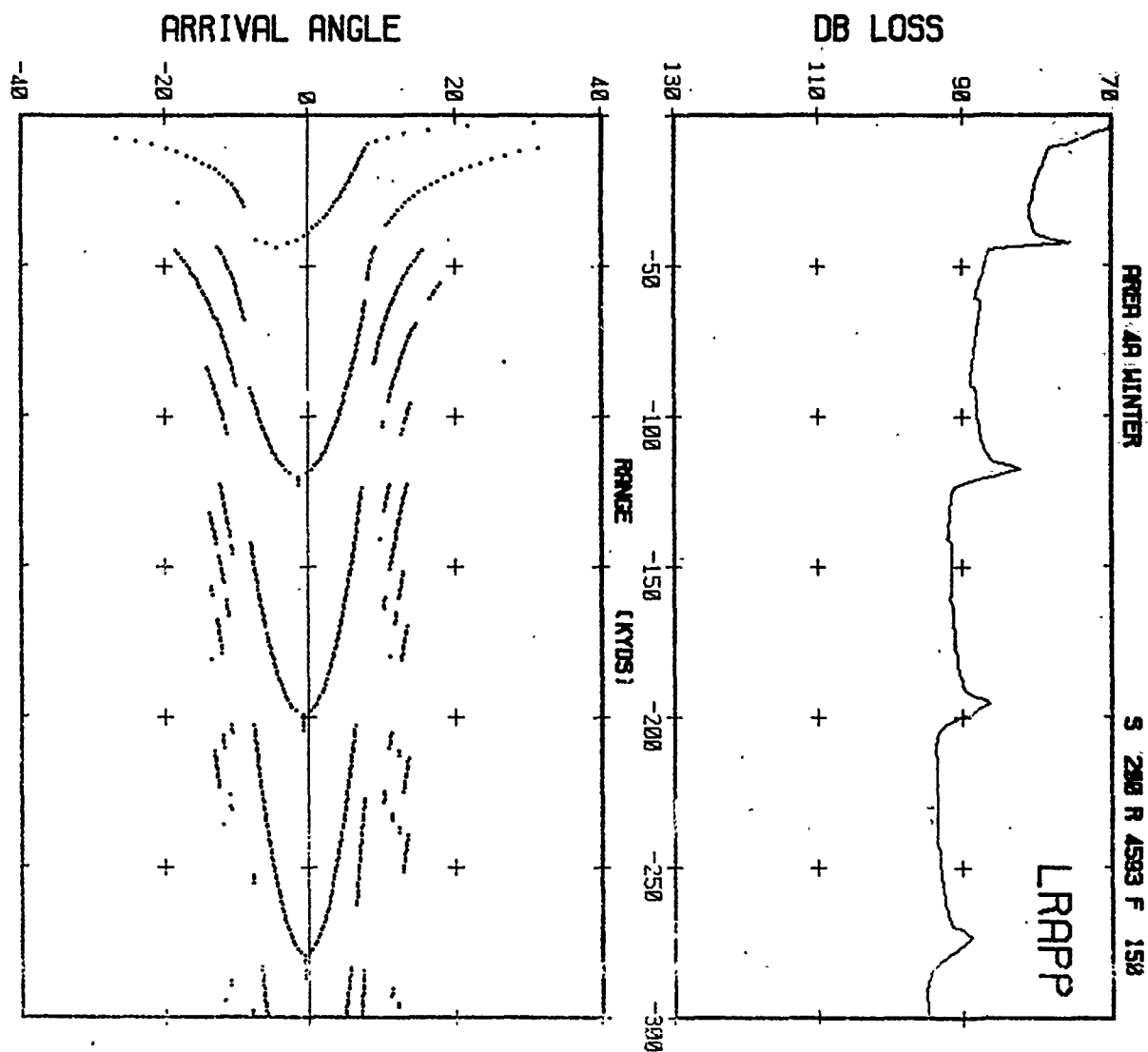
DEPTH IN METERS

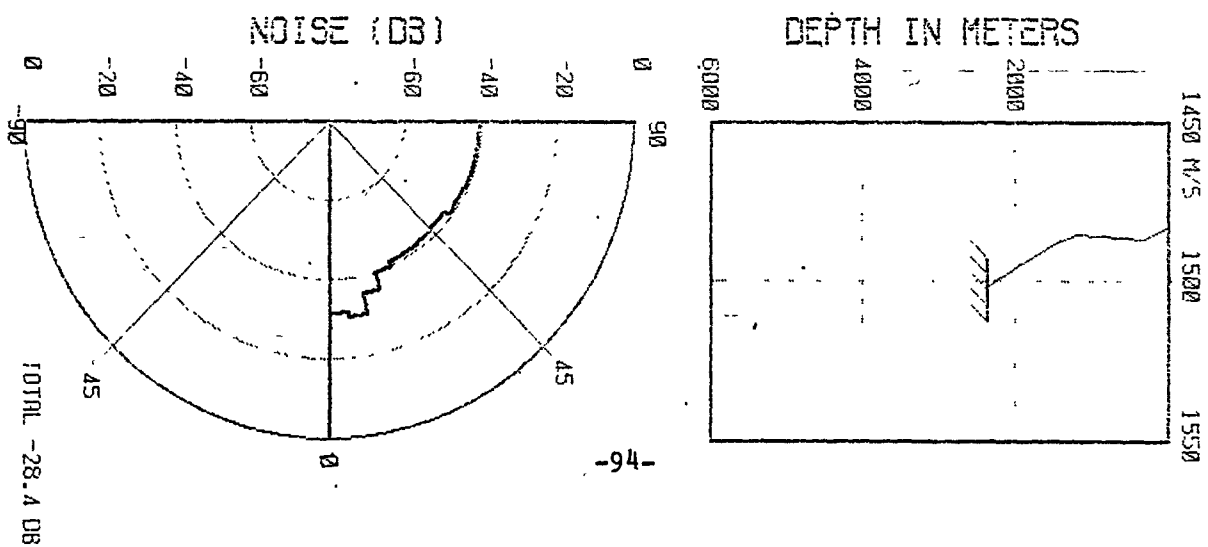
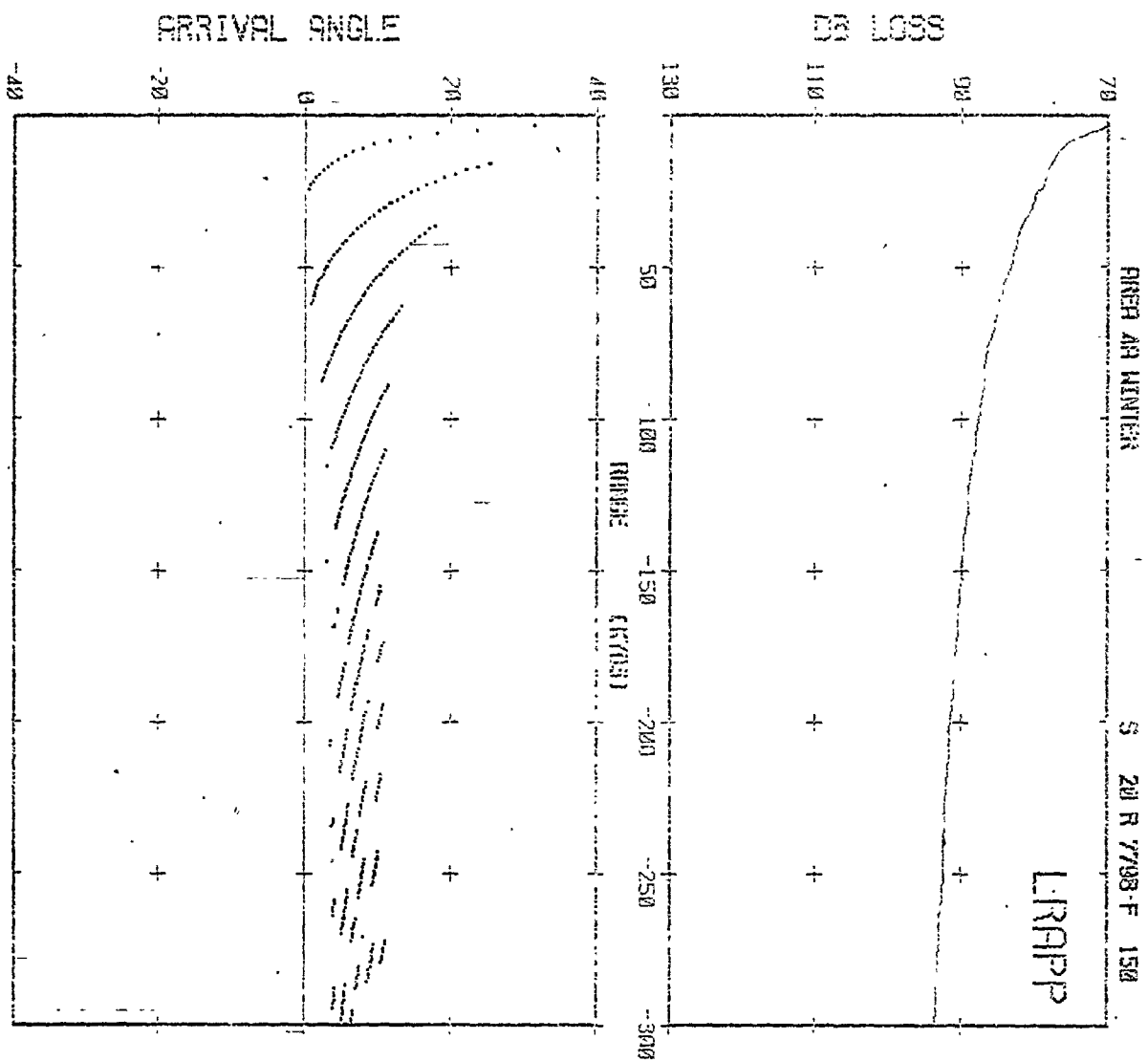


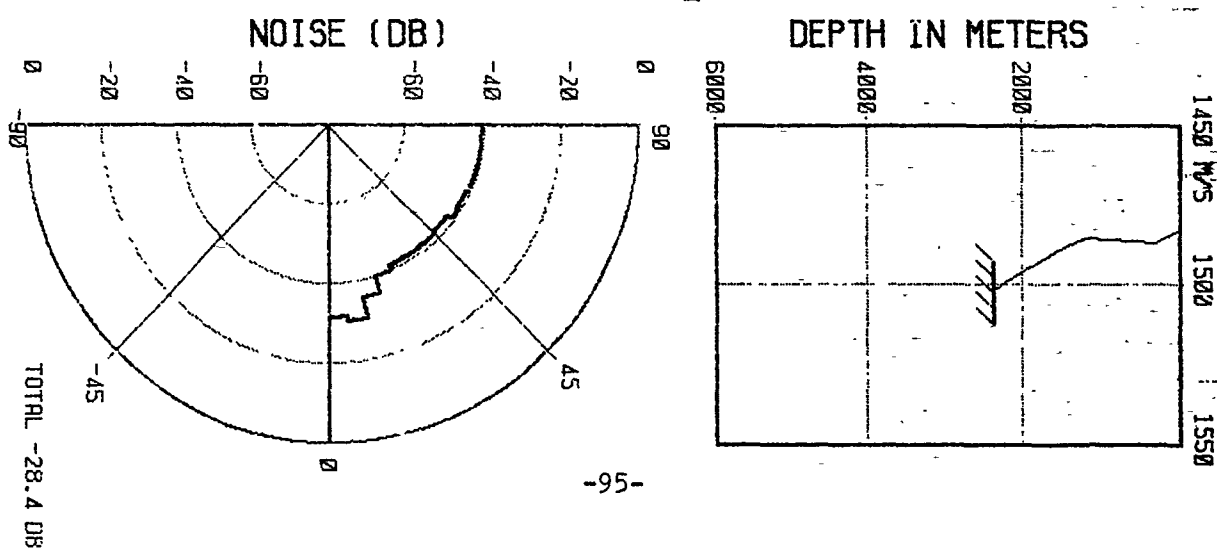
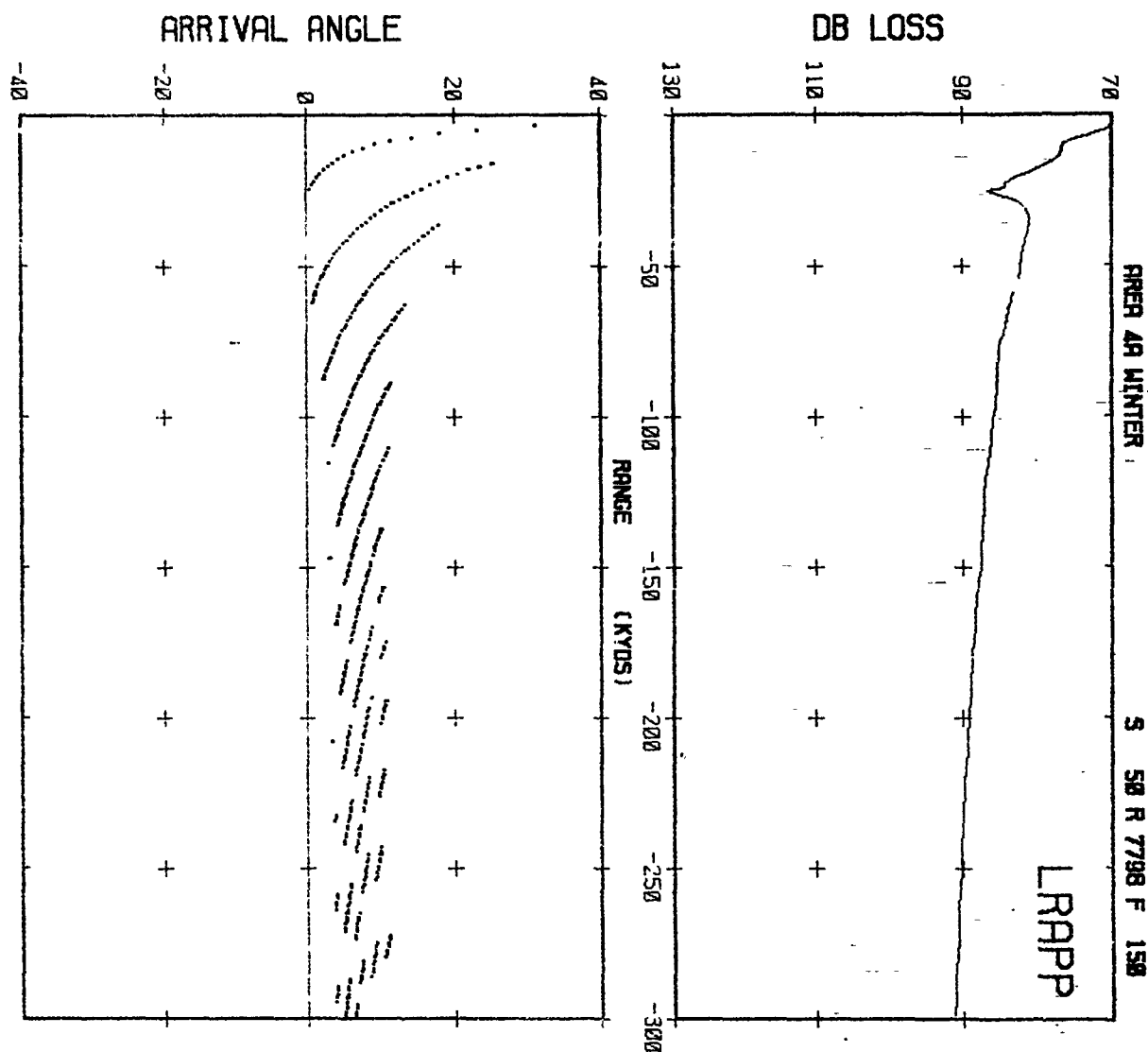
NOISE (DB)

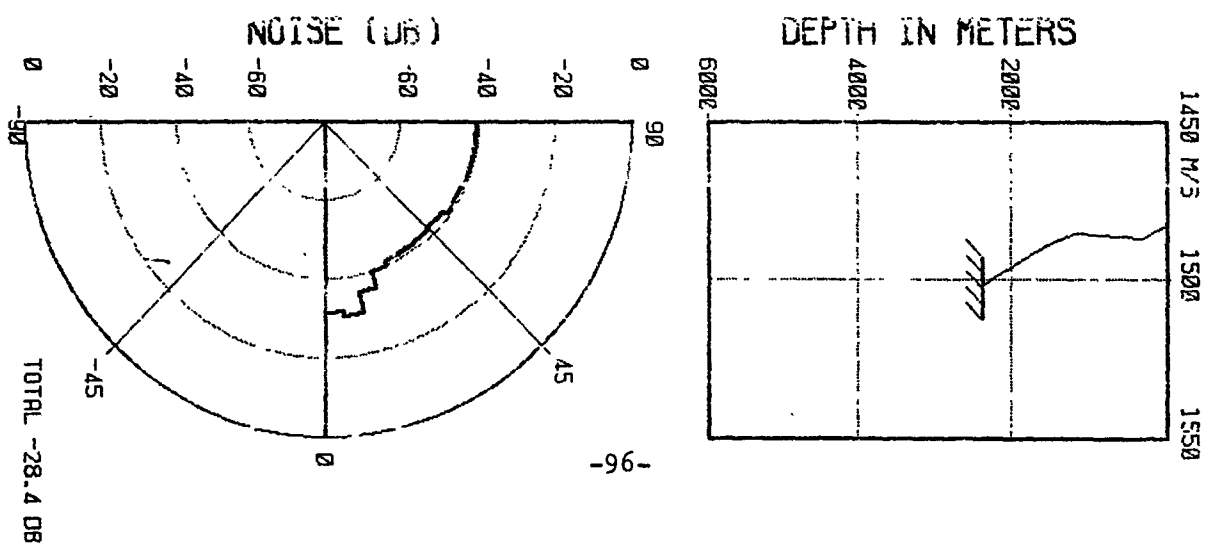
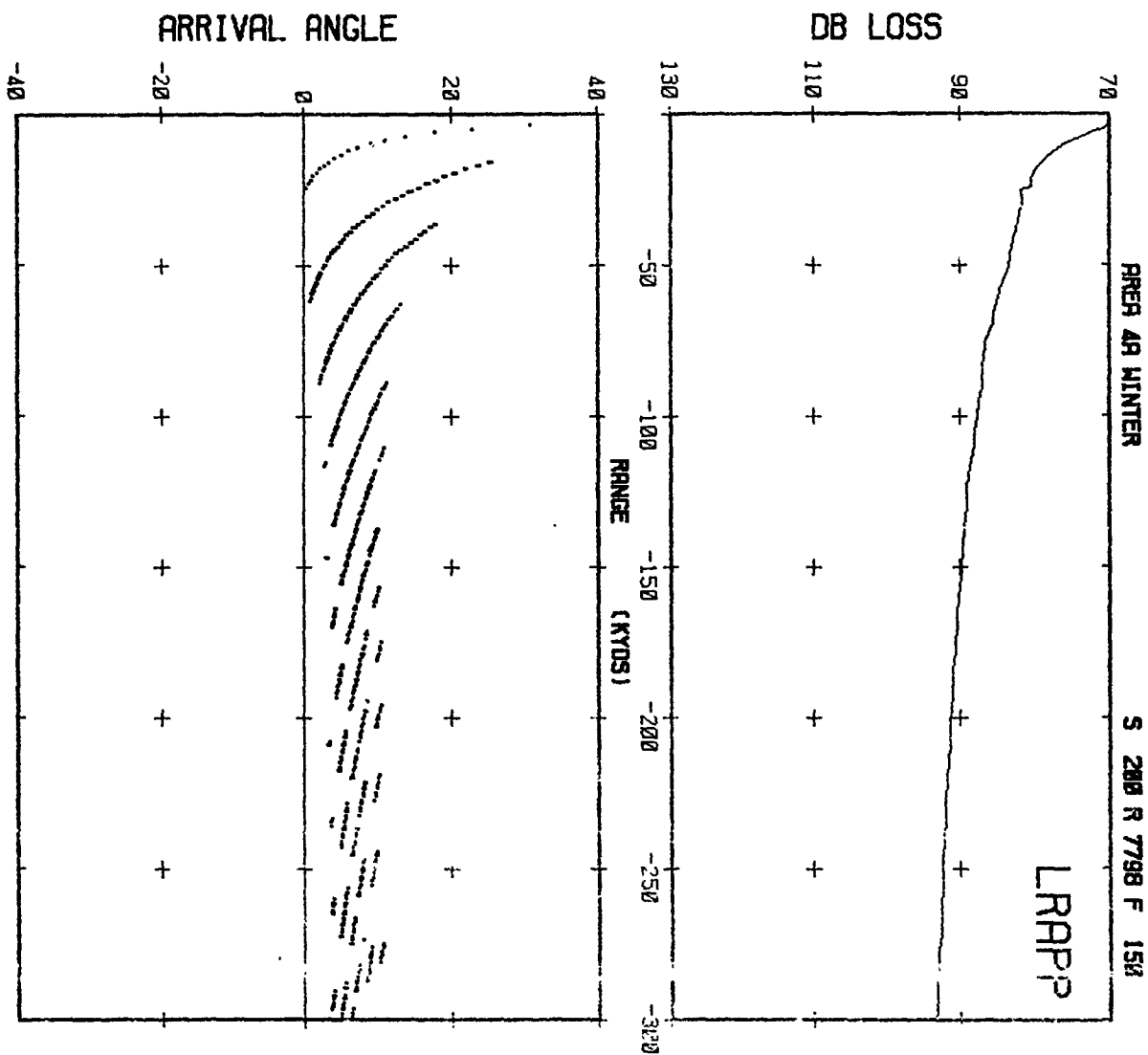


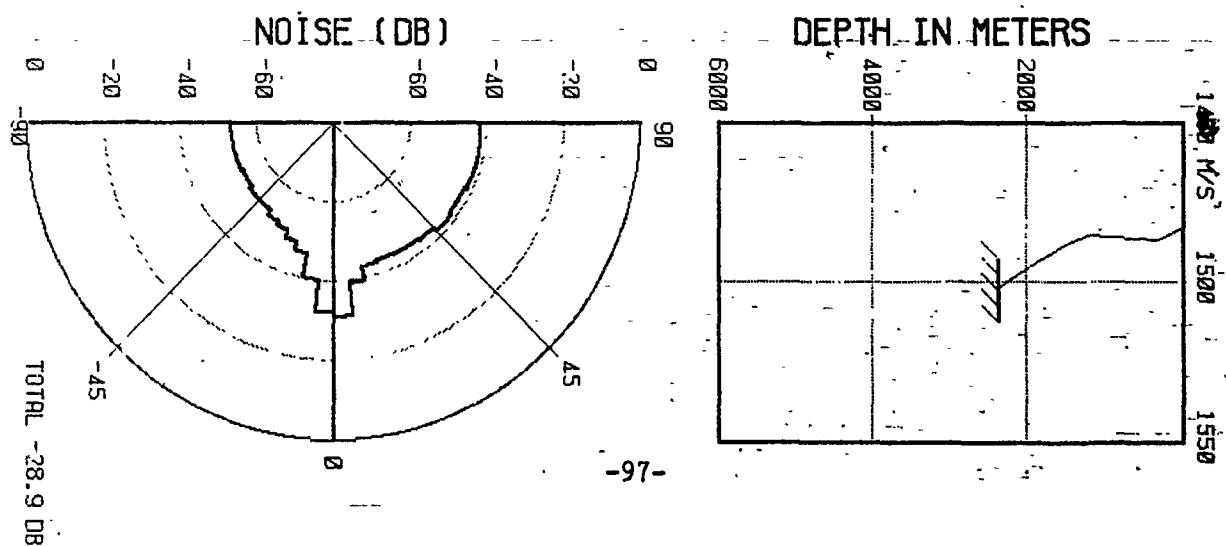
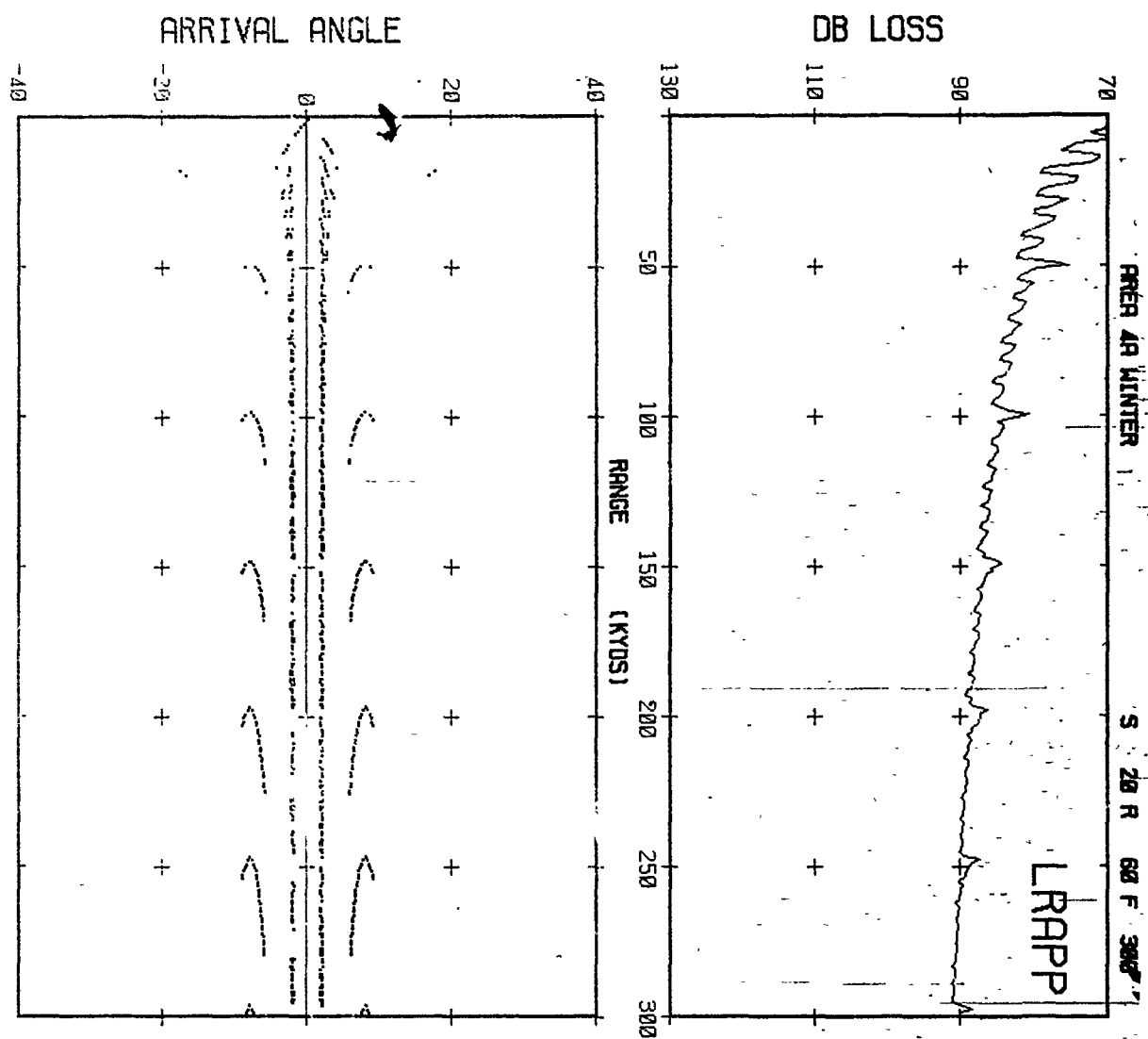


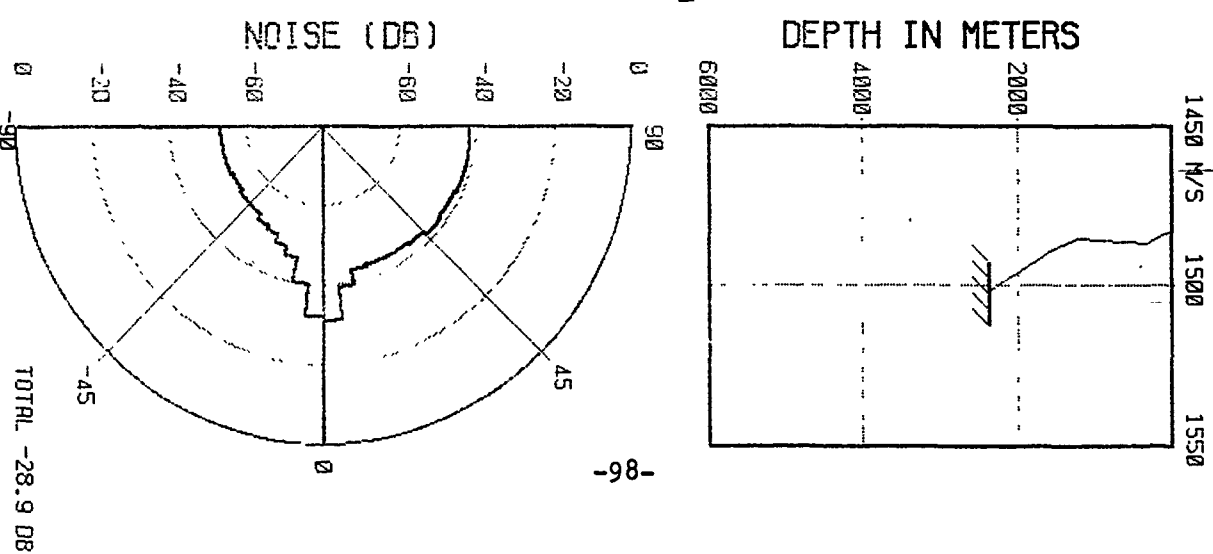
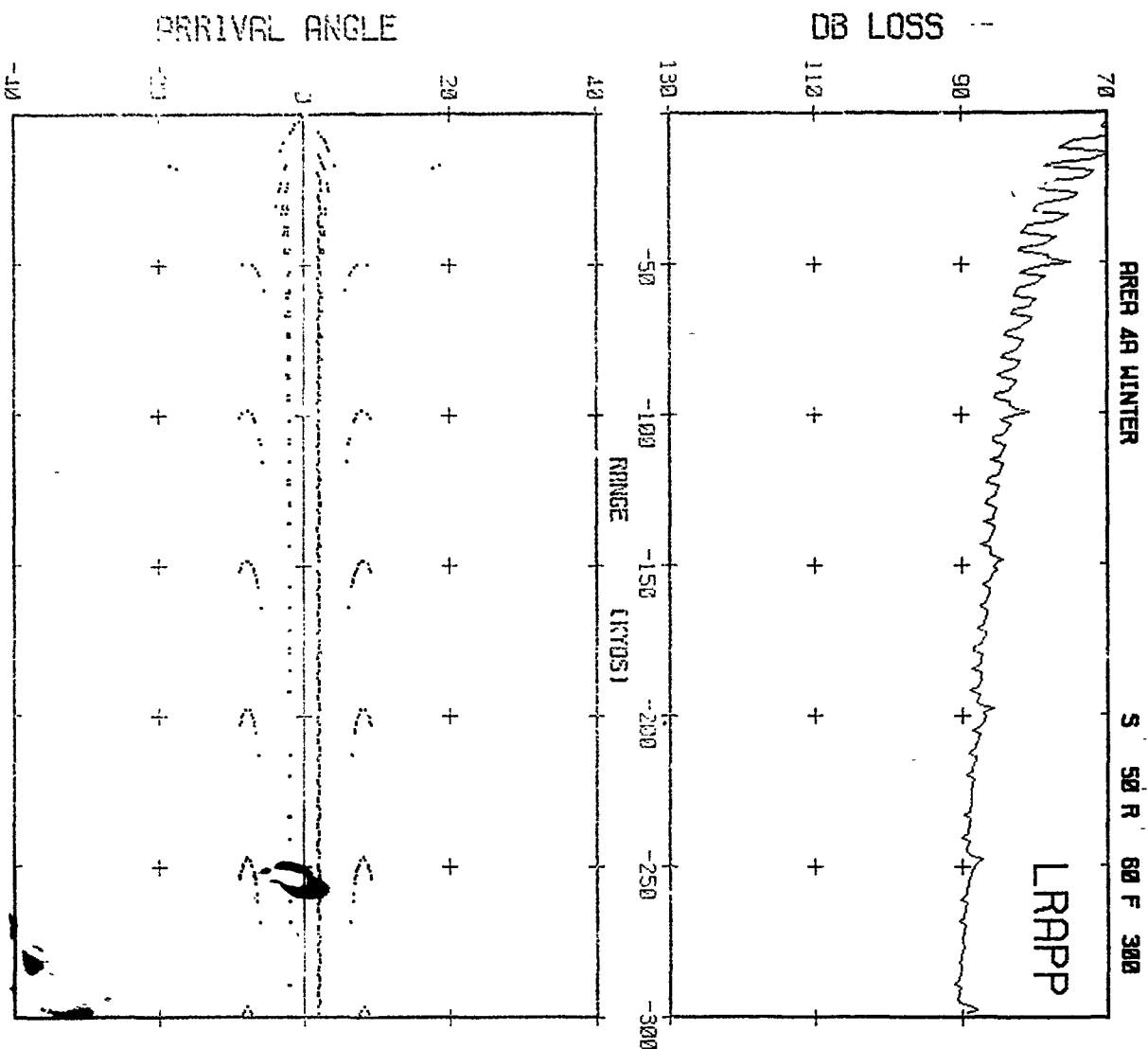


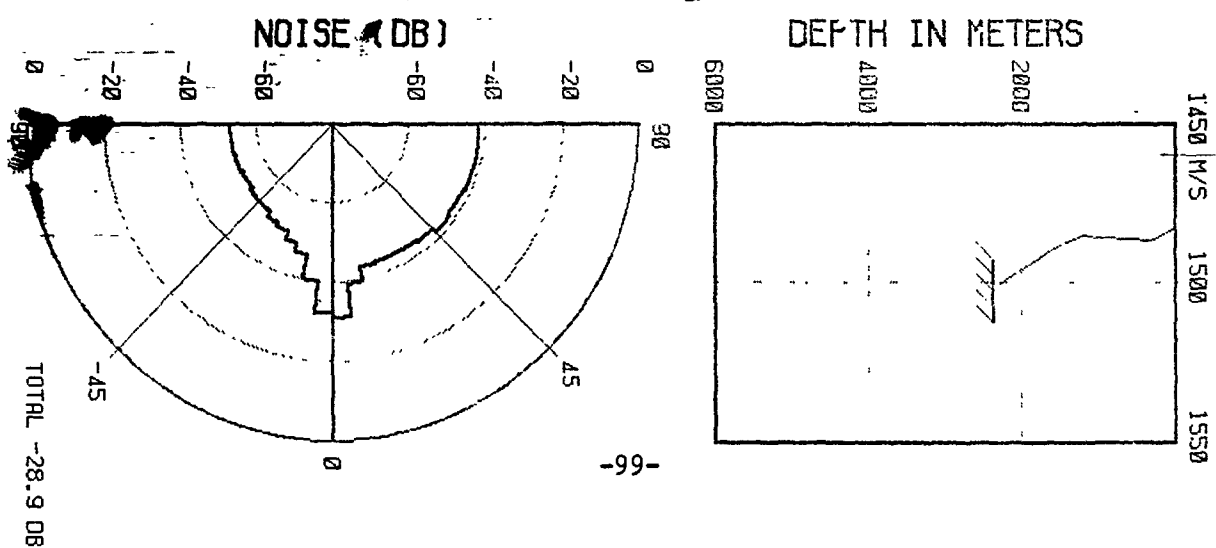
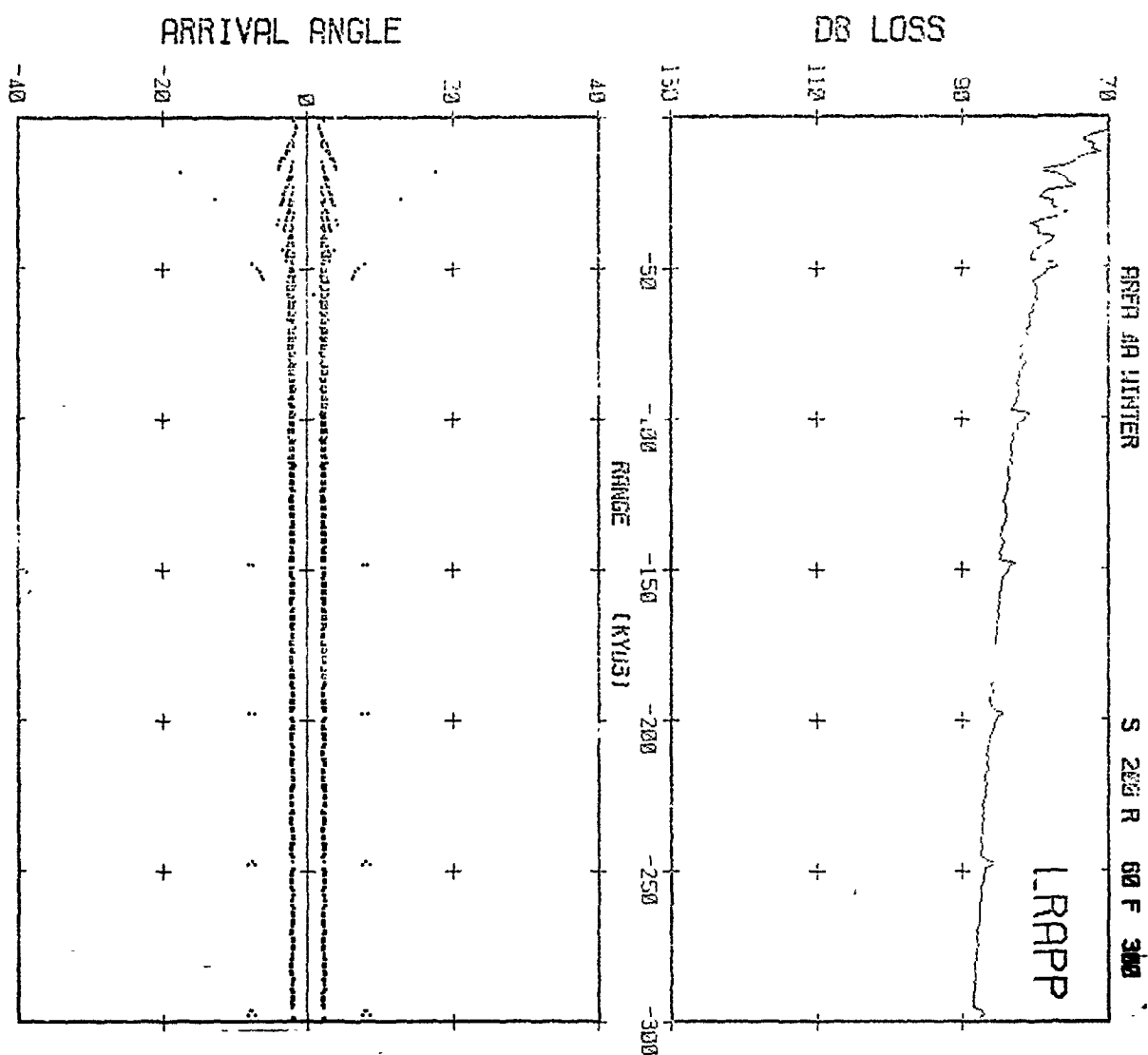


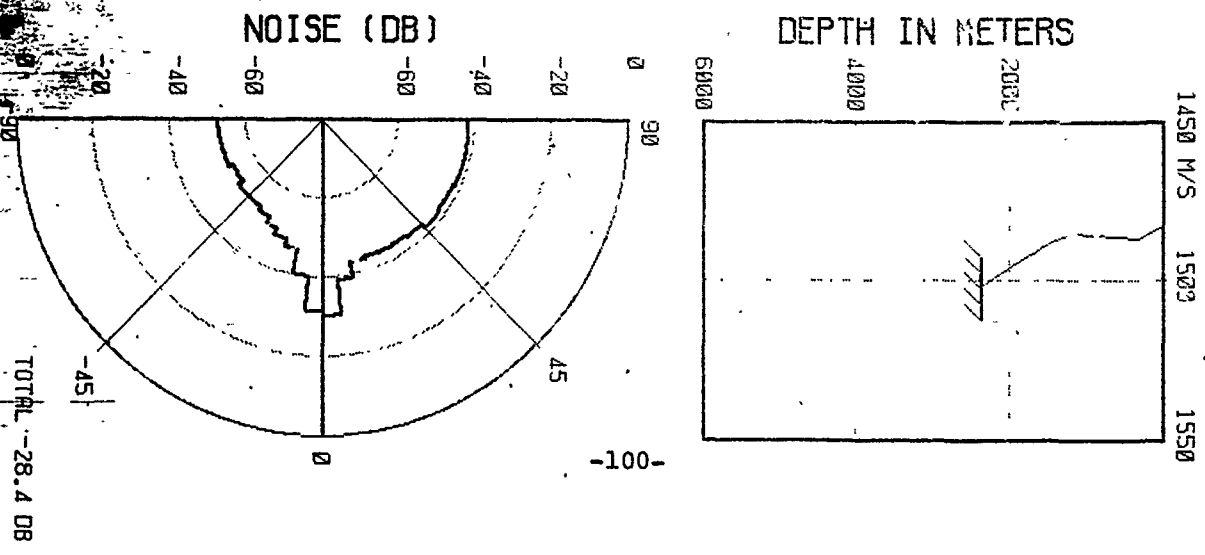
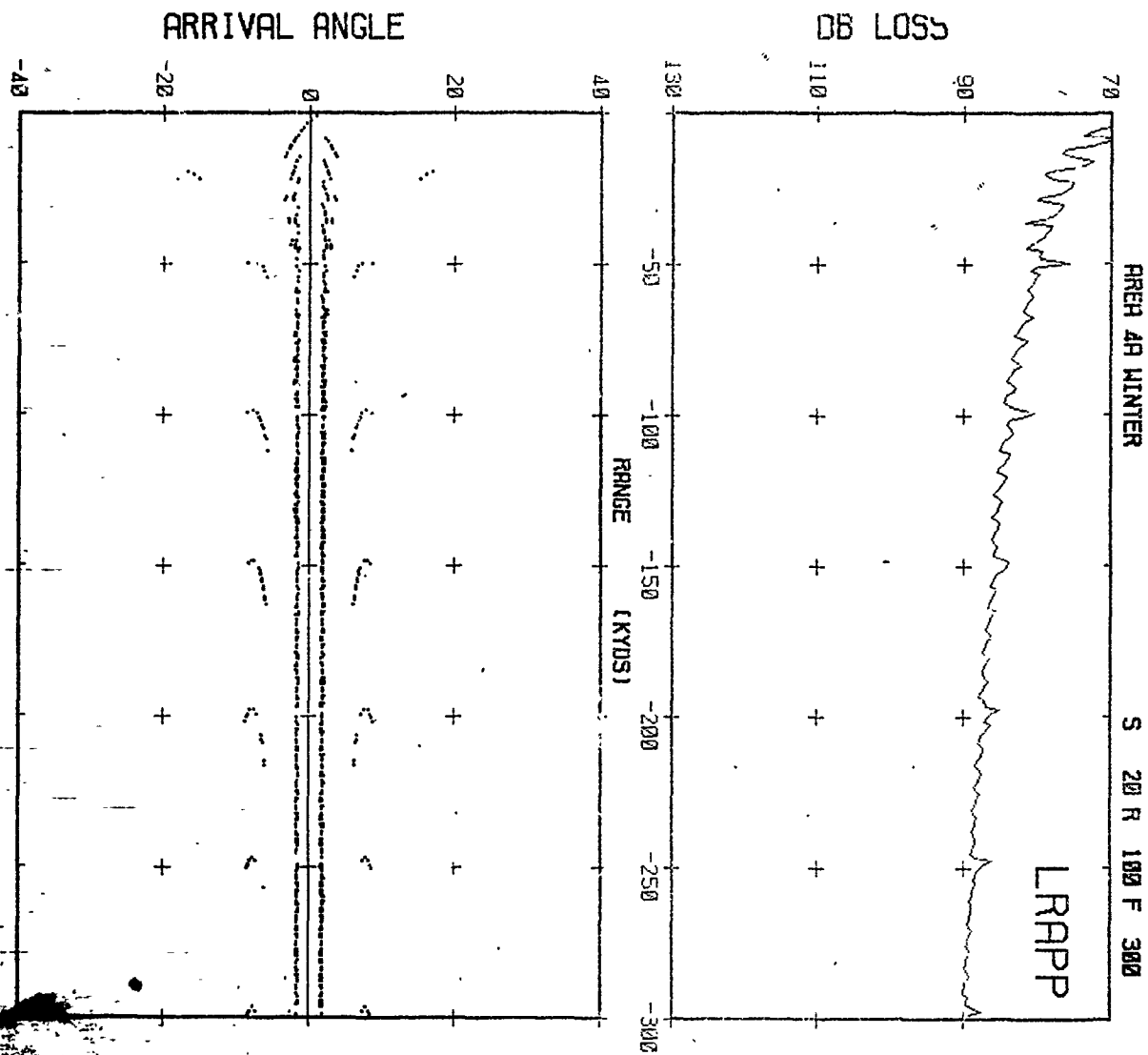










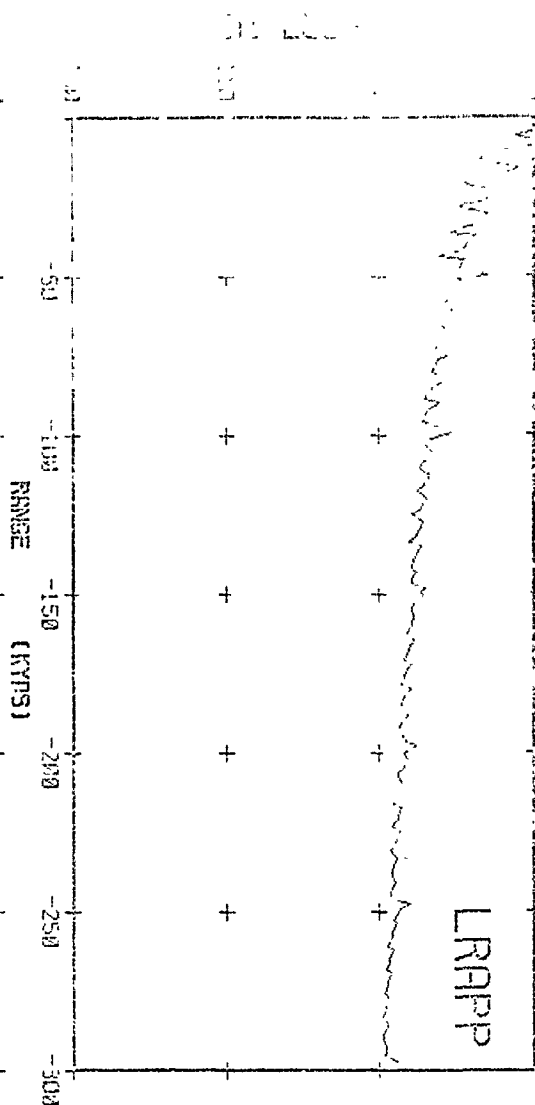


FREE AIR HUNTER

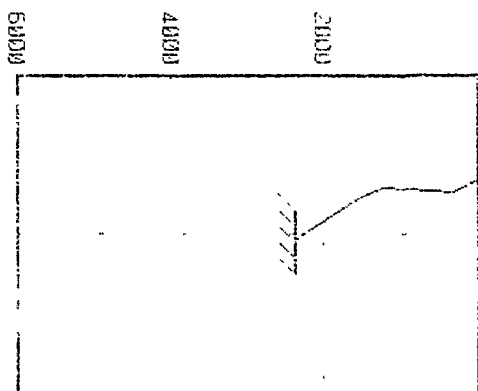
S 53 R 150 F 320

1450 M/S 1502 1550

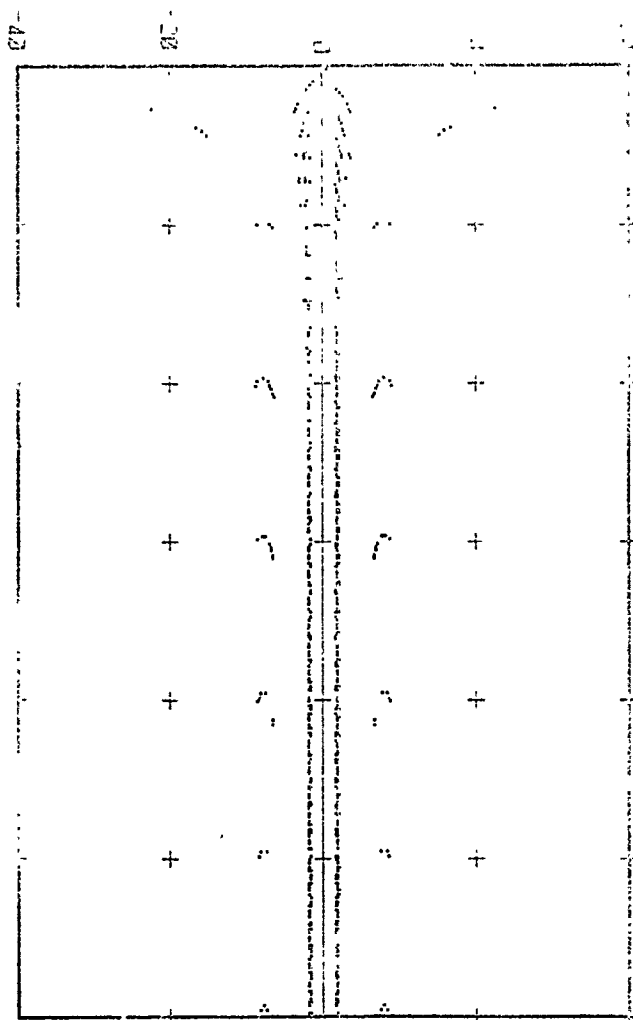
LRAPP



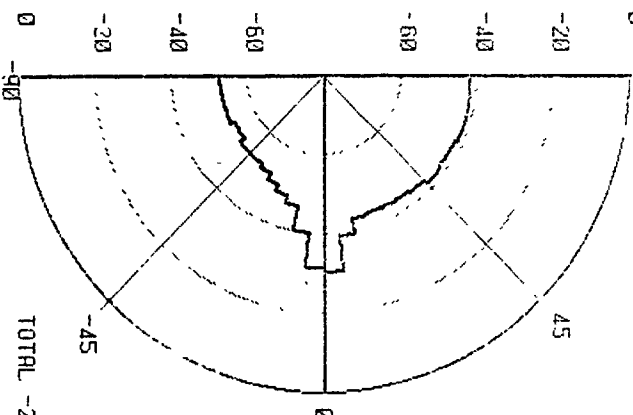
DEPTH IN METERS



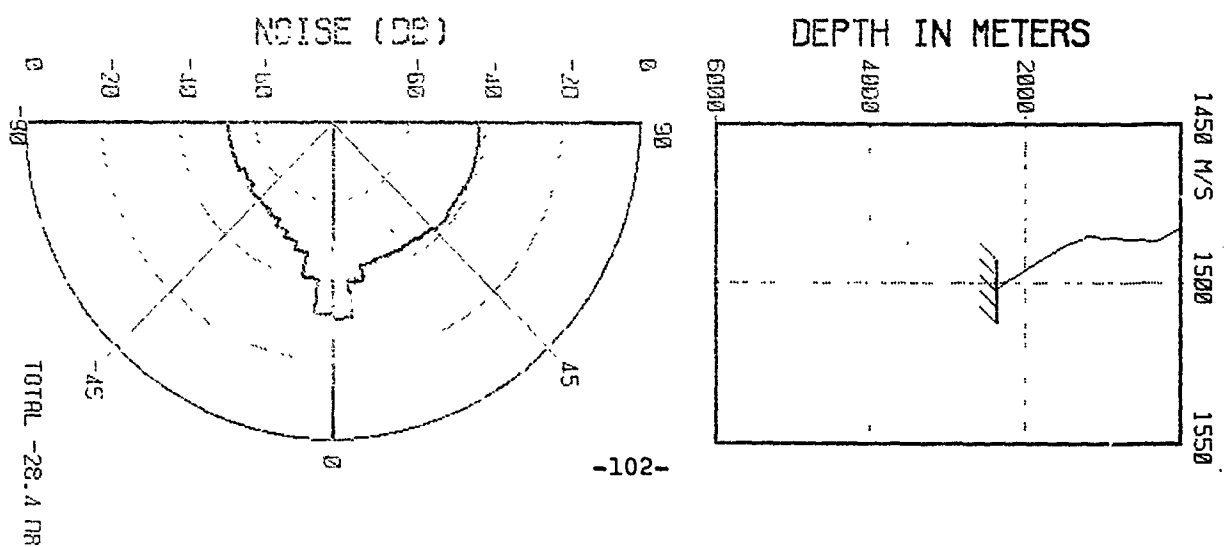
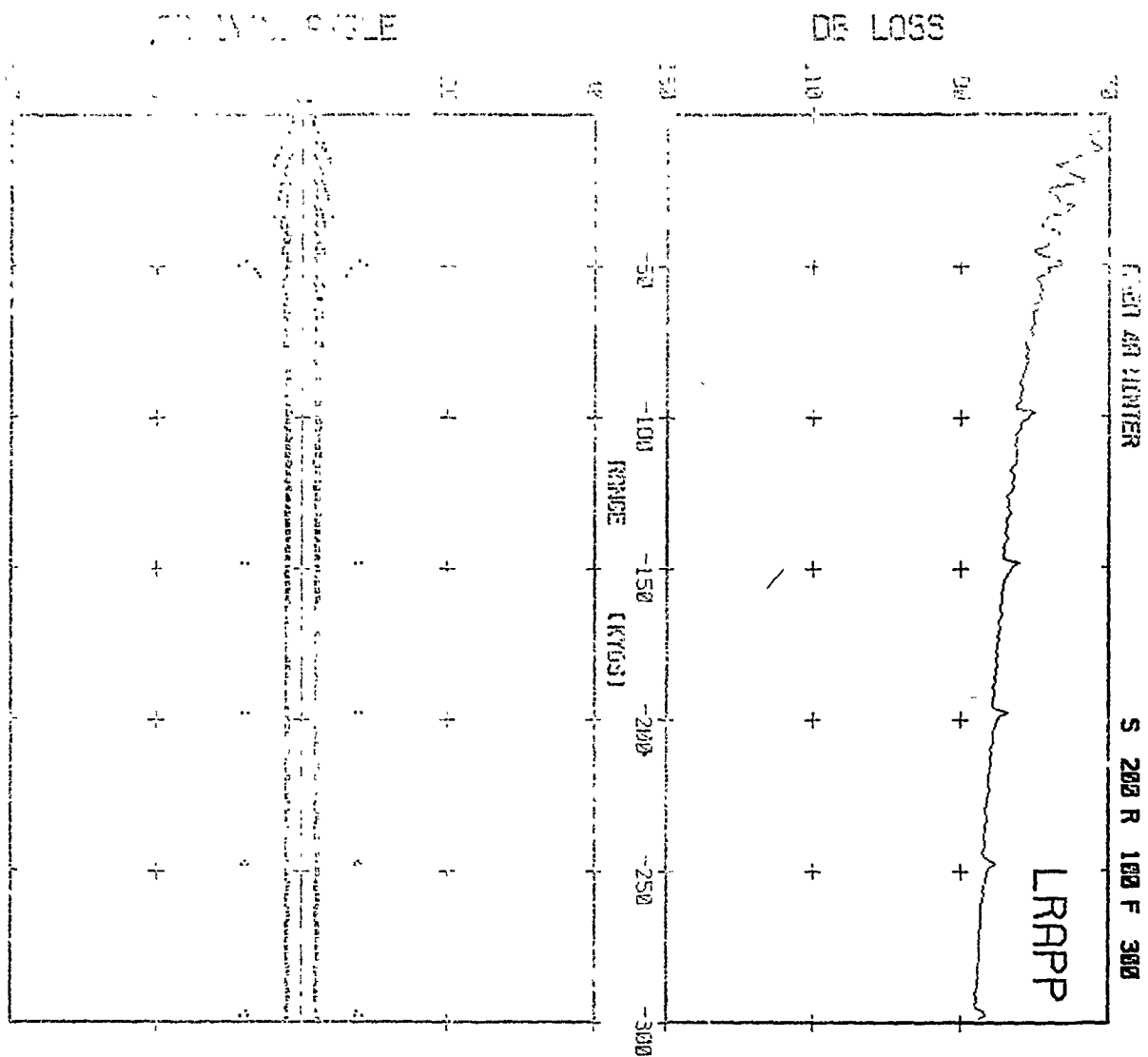
ARRIVAL ANGLE



NOISE (DB)



TOTAL -28.4 DB

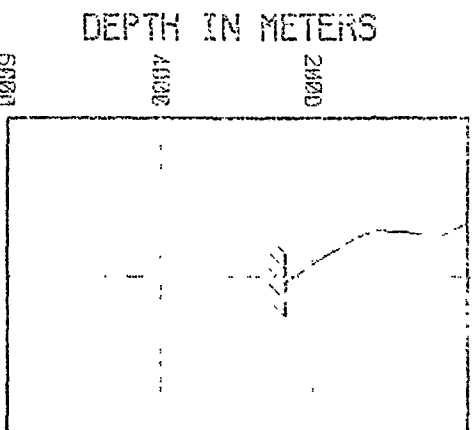
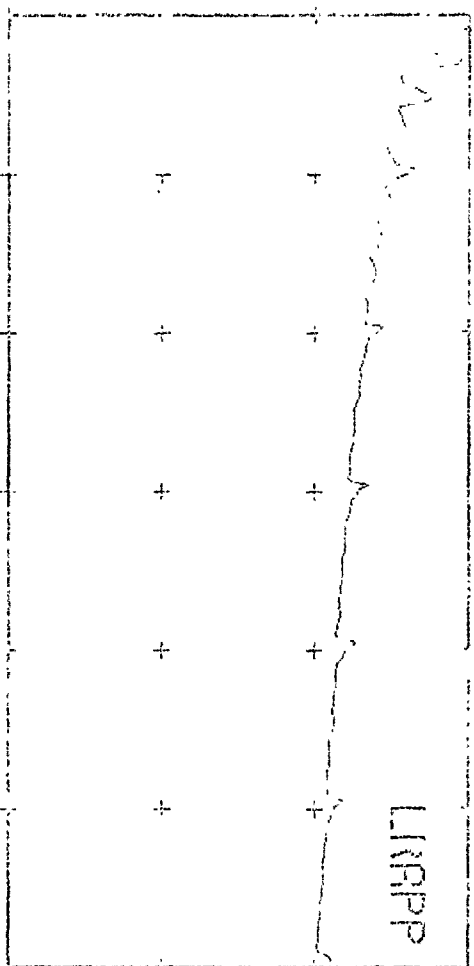


0. 1100

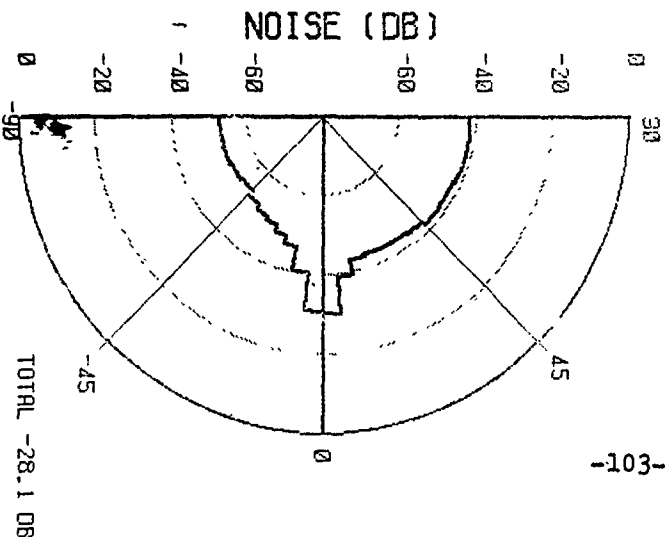
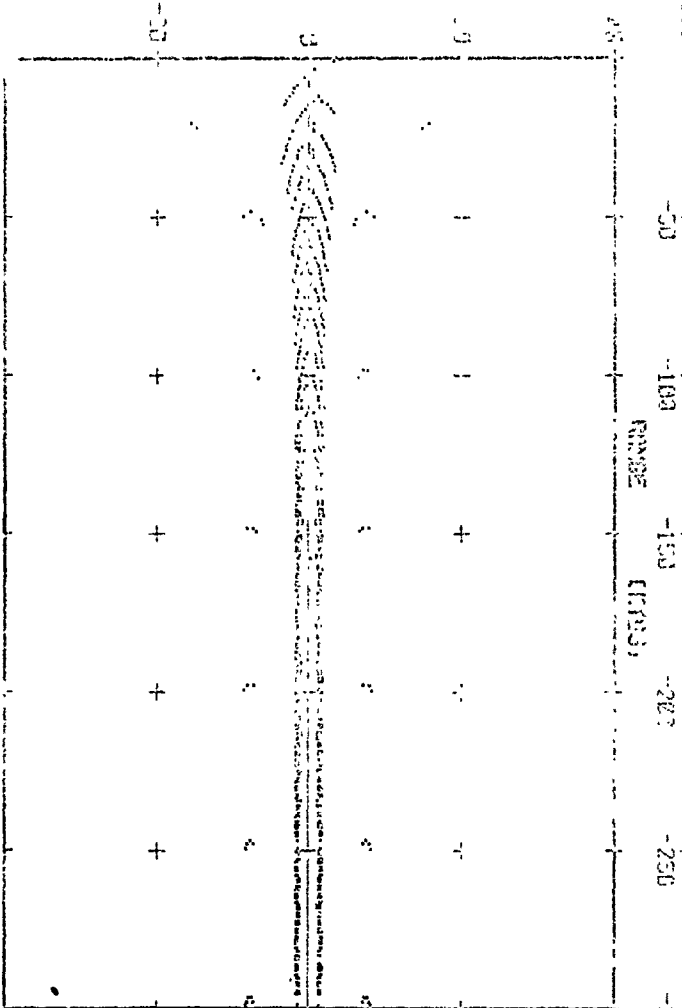
0000 400 HUNTER

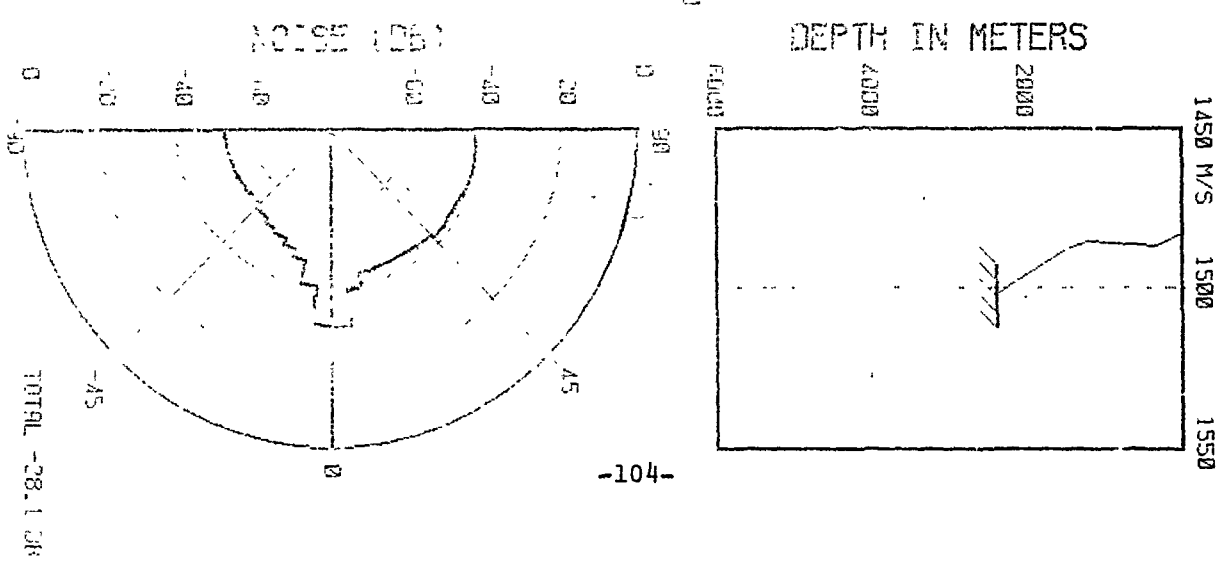
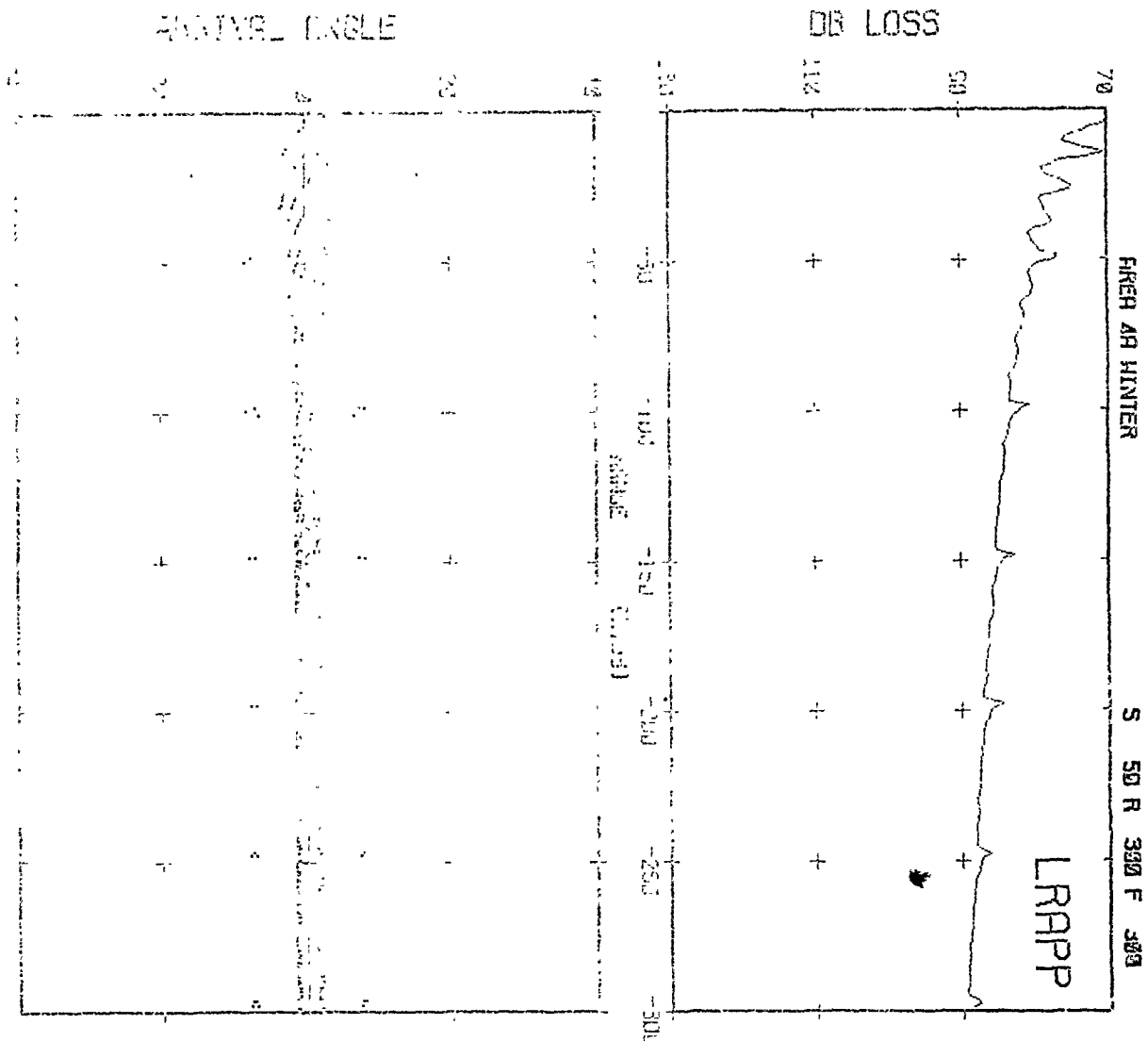
S 20 H 5.4 P 553

1450 W/S 1502 1550



ARRIVAL ANGLE



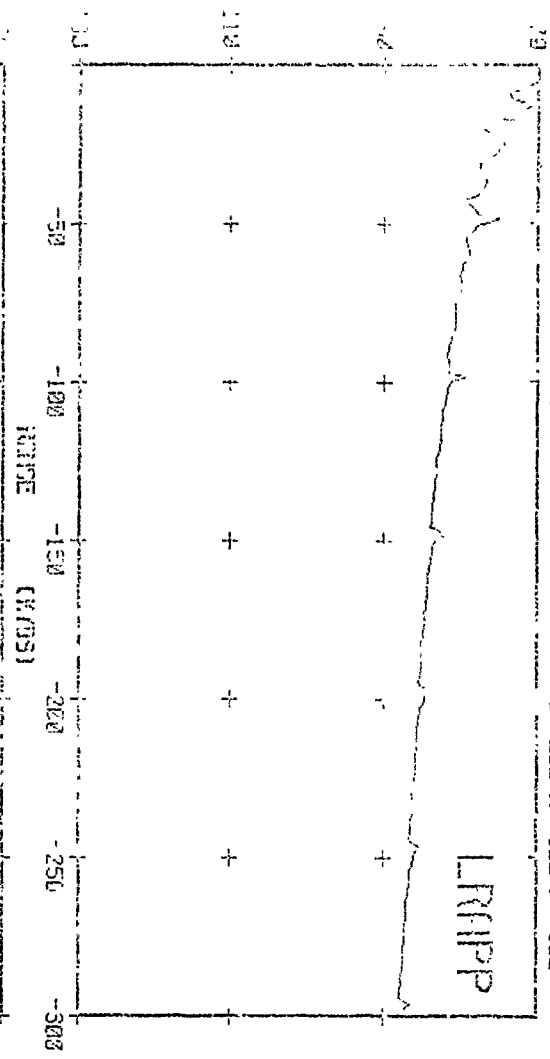


GREEN AIR WINNER

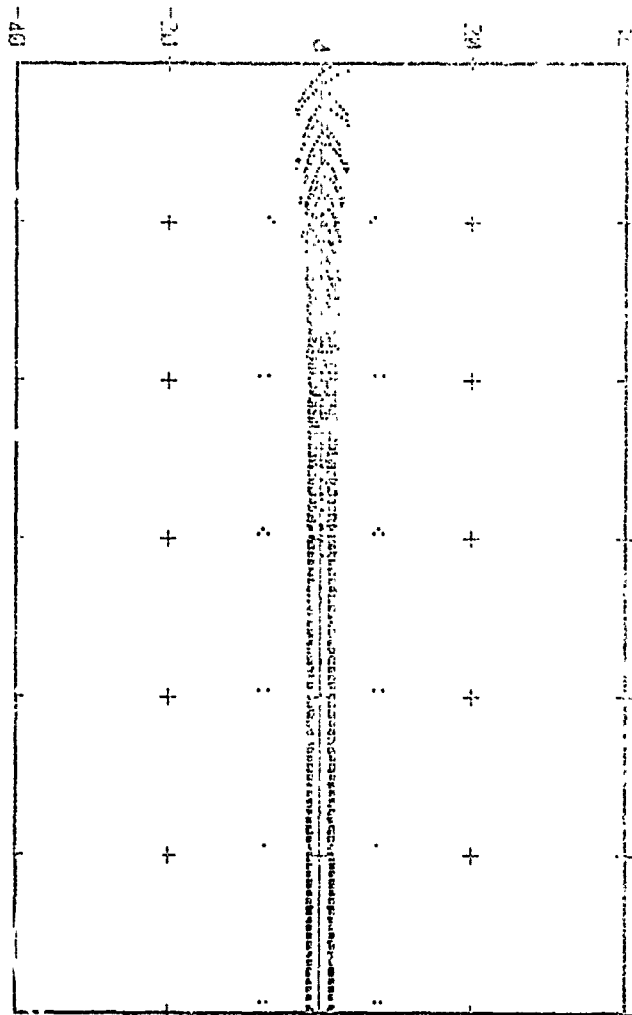
S 333 R SCL F 341

1450 M/S 1500 1550

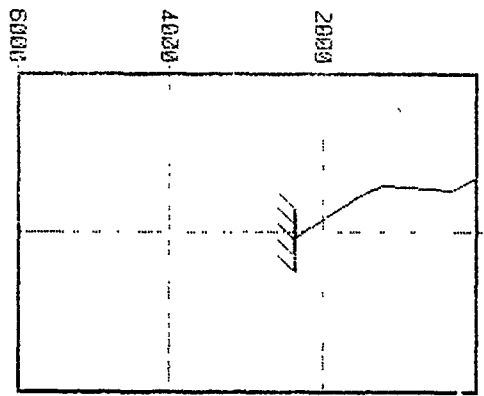
DB LOSS



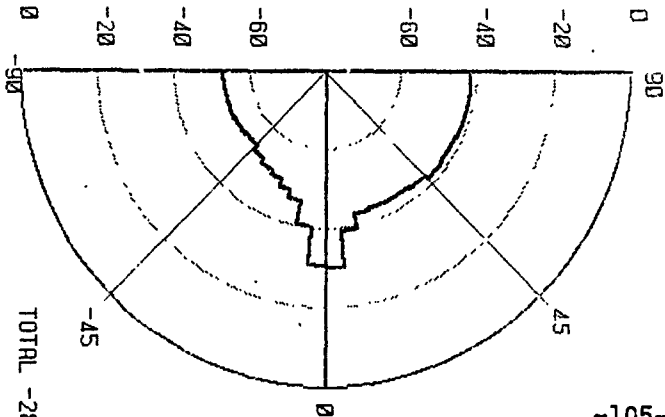
PRELIM RAGLE

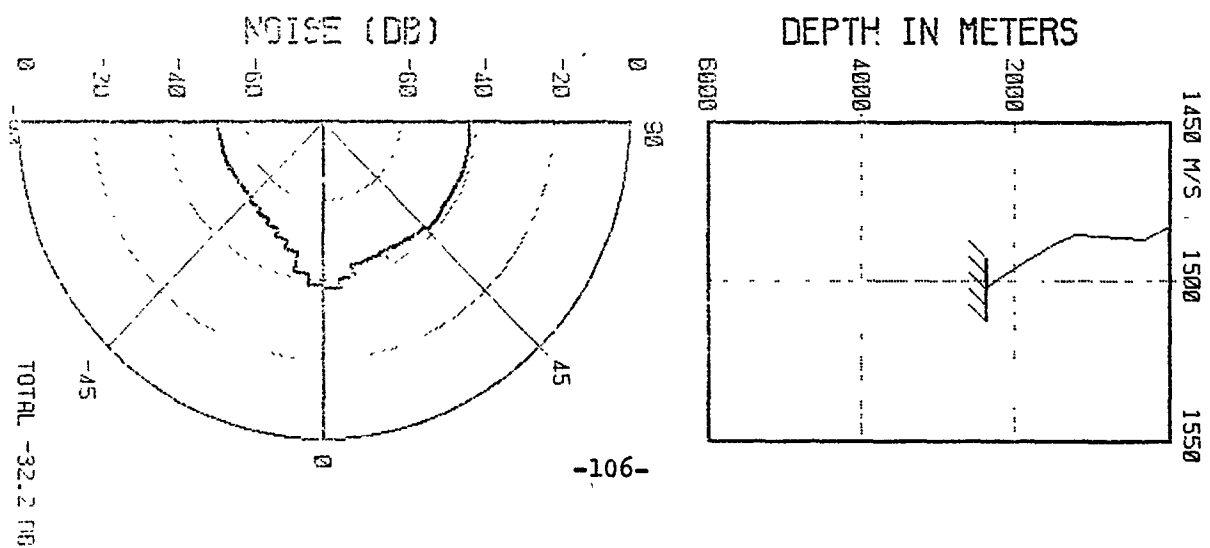
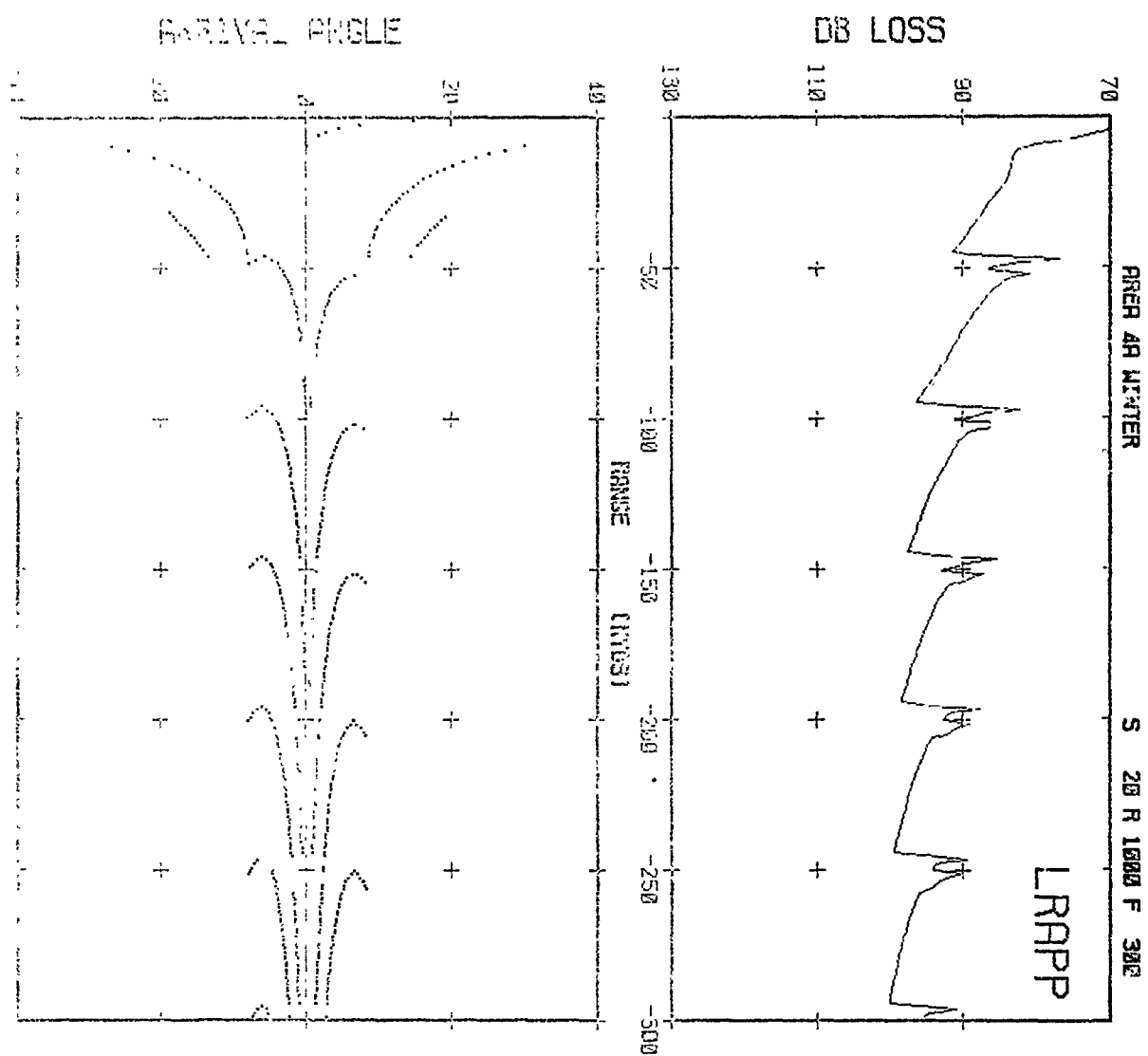


DEPTH IN METERS



NOISE (DB)



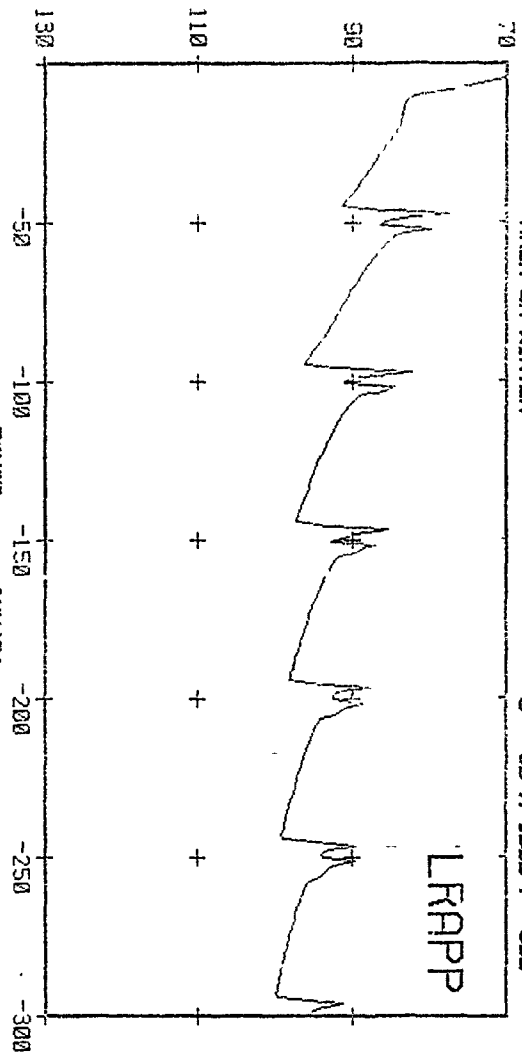


AREA 47 WINTER

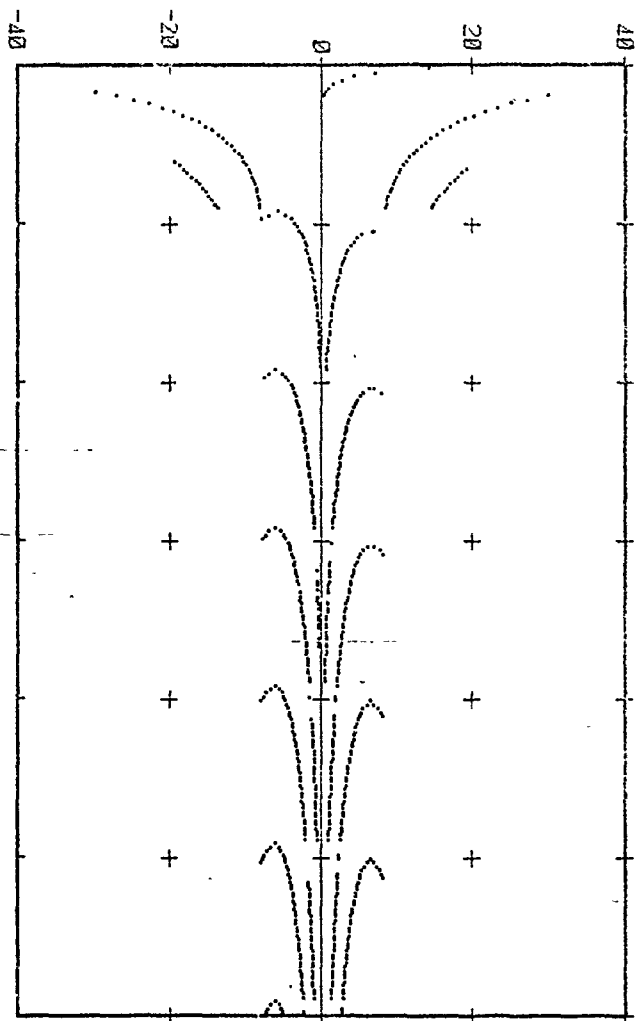
S 50 R 1000 F 300

1450 M/S 1500 1550

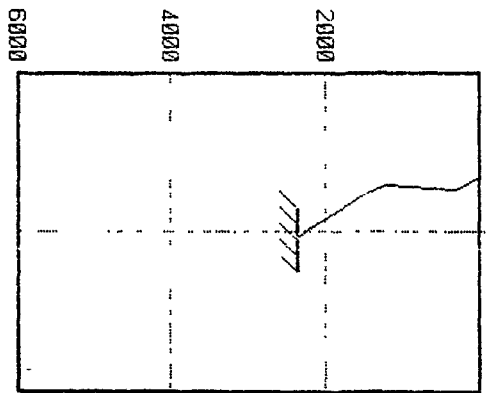
DB LOSS



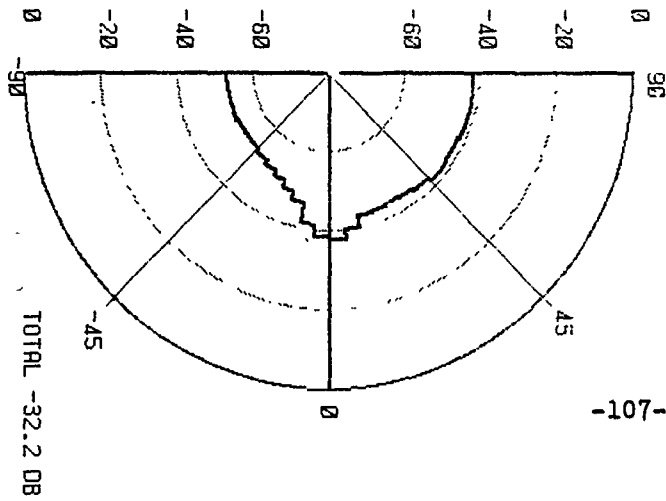
ARRIVAL ANGLE



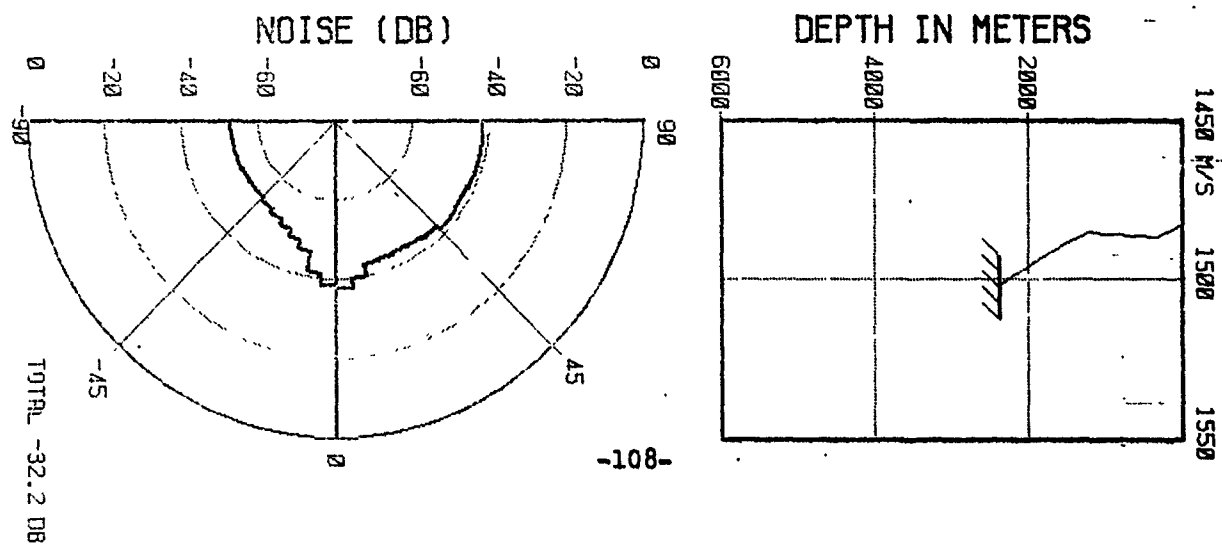
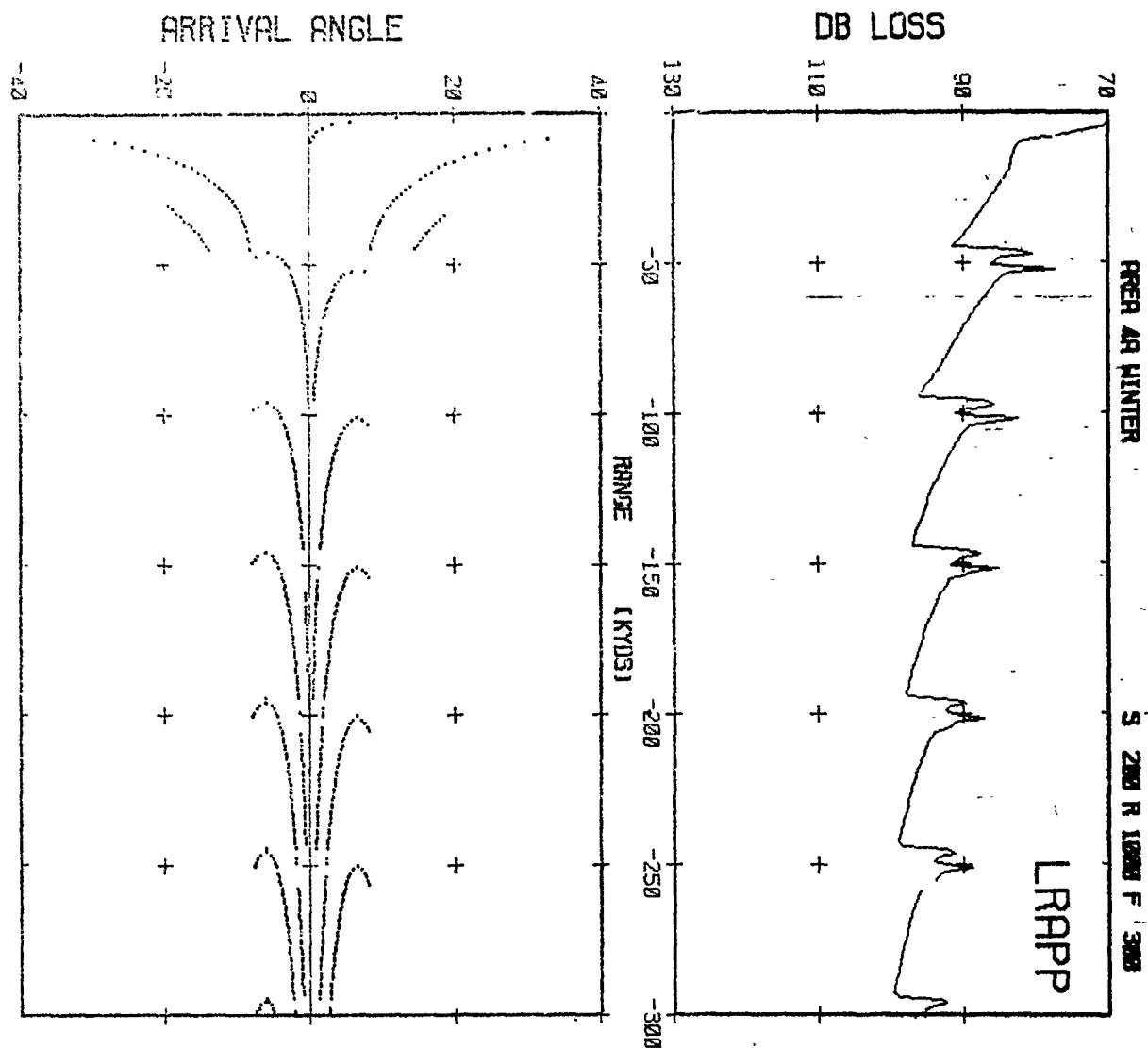
DEPTH IN METERS

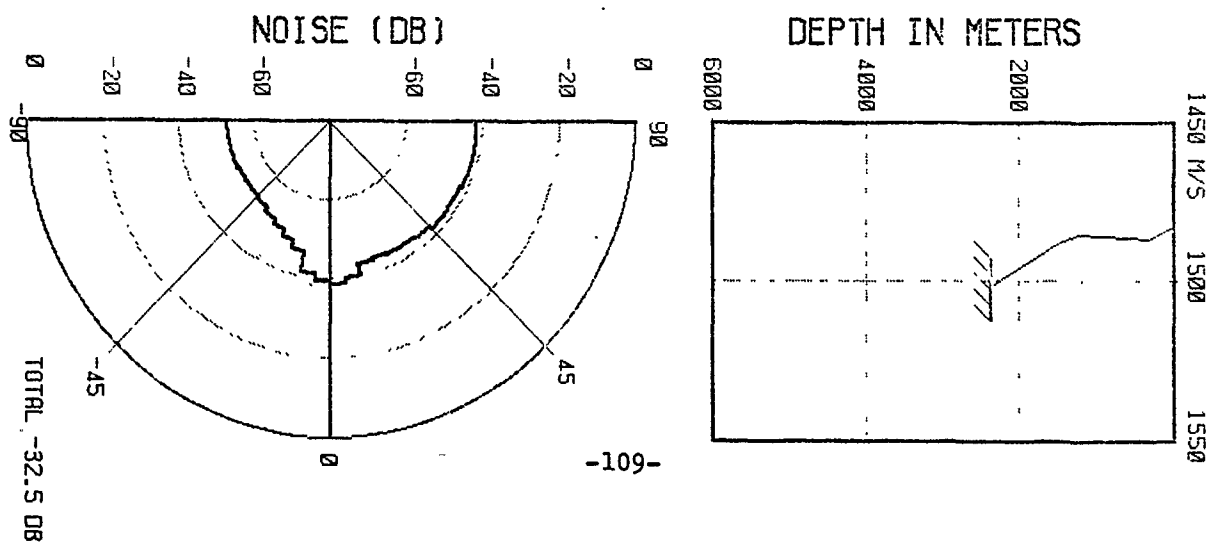
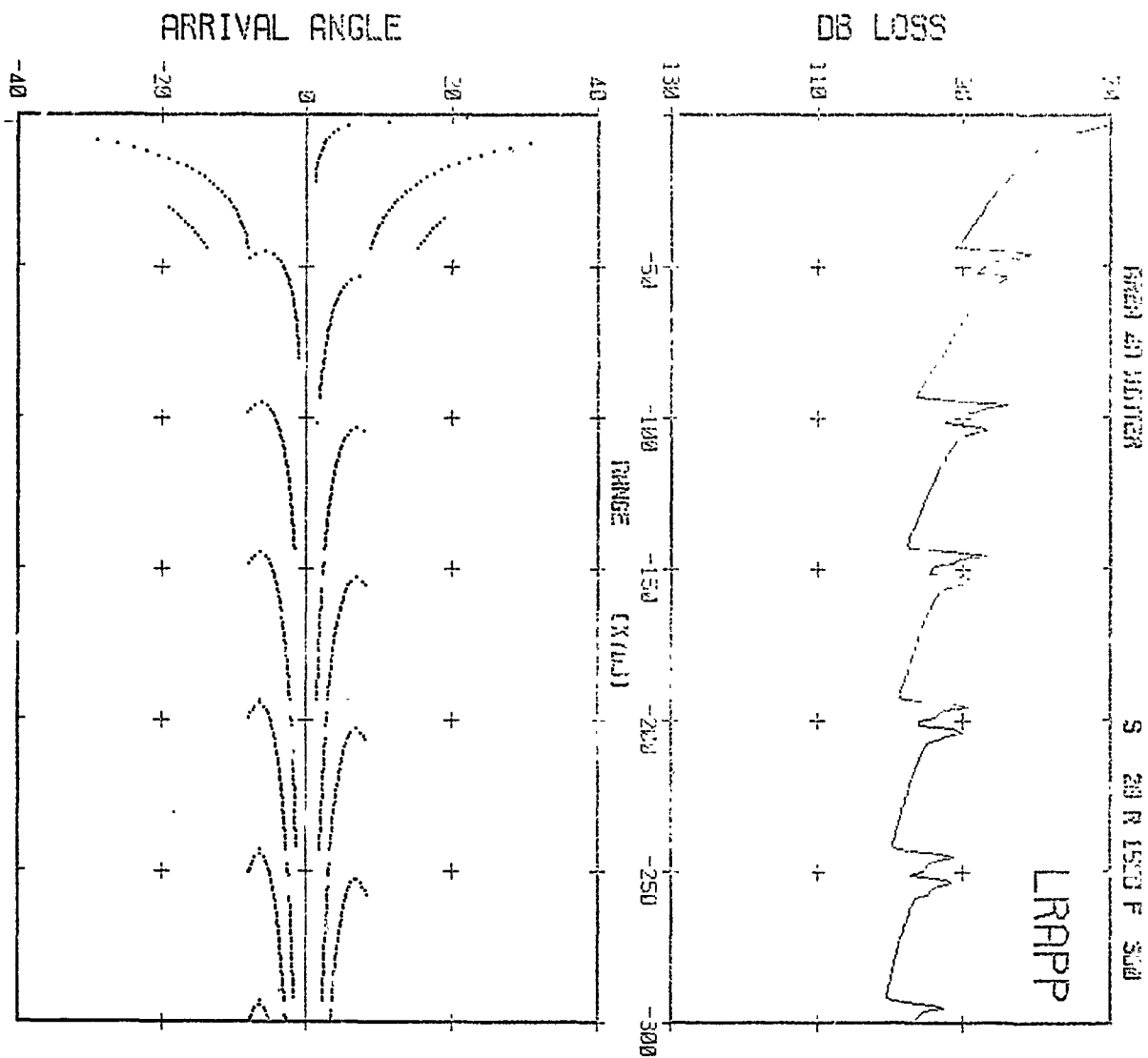


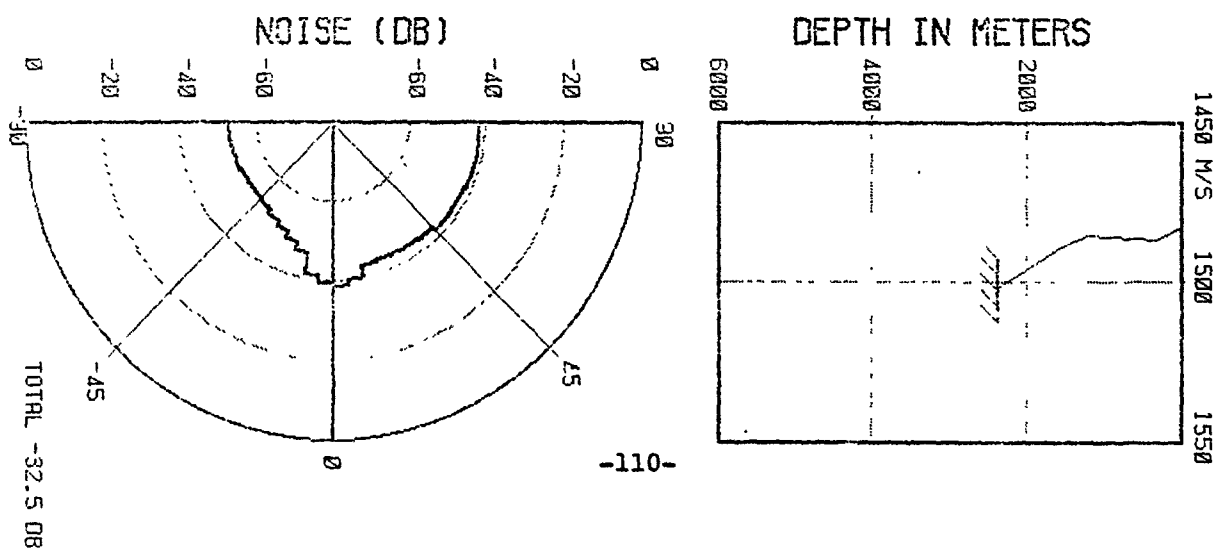
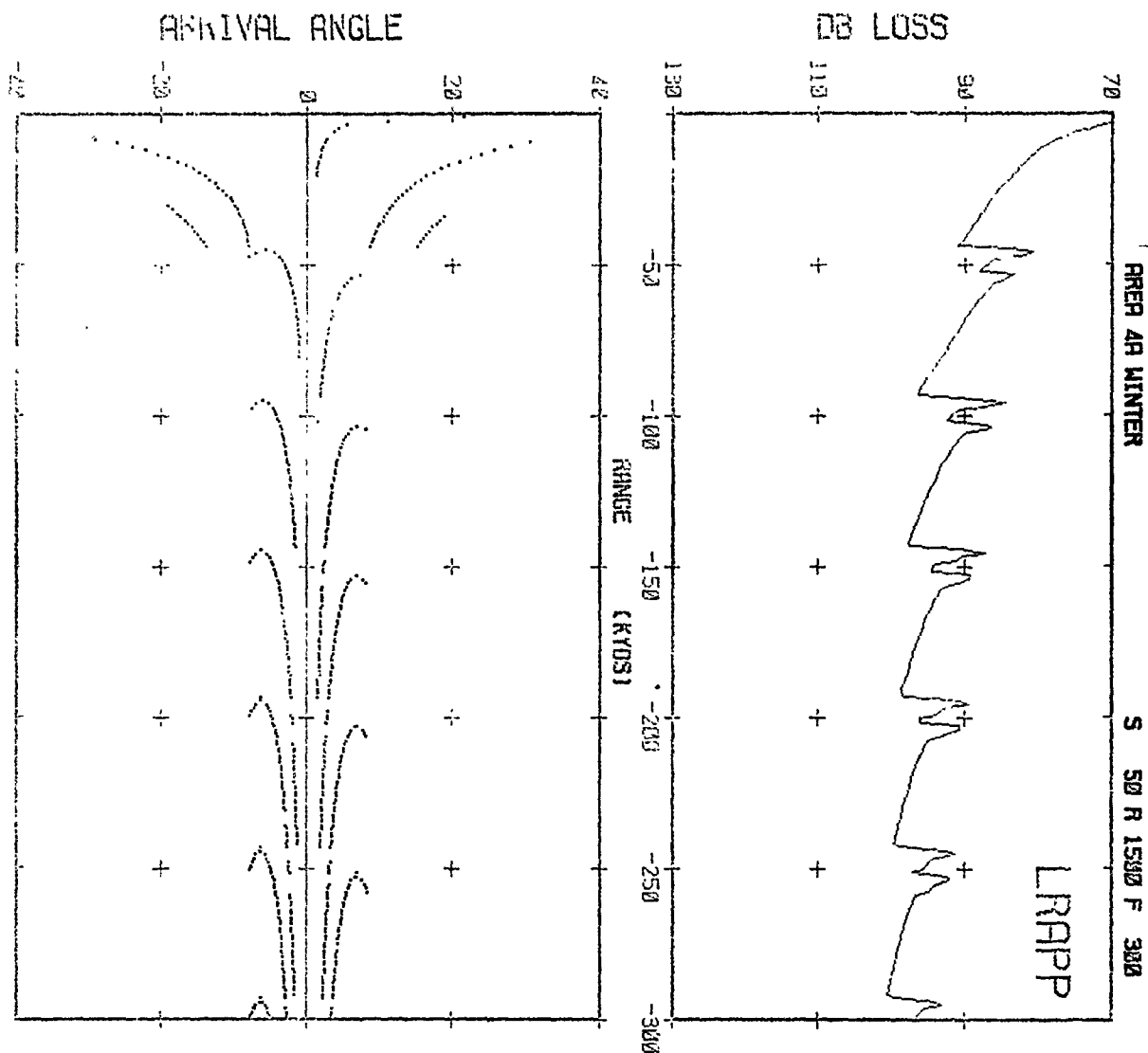
NOISE (DB)



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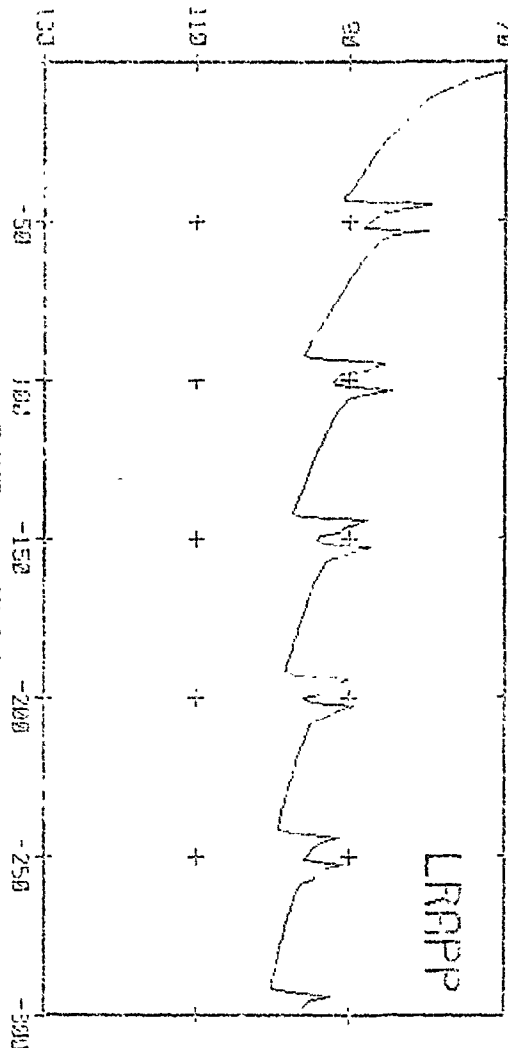


AREA 2A WINTER

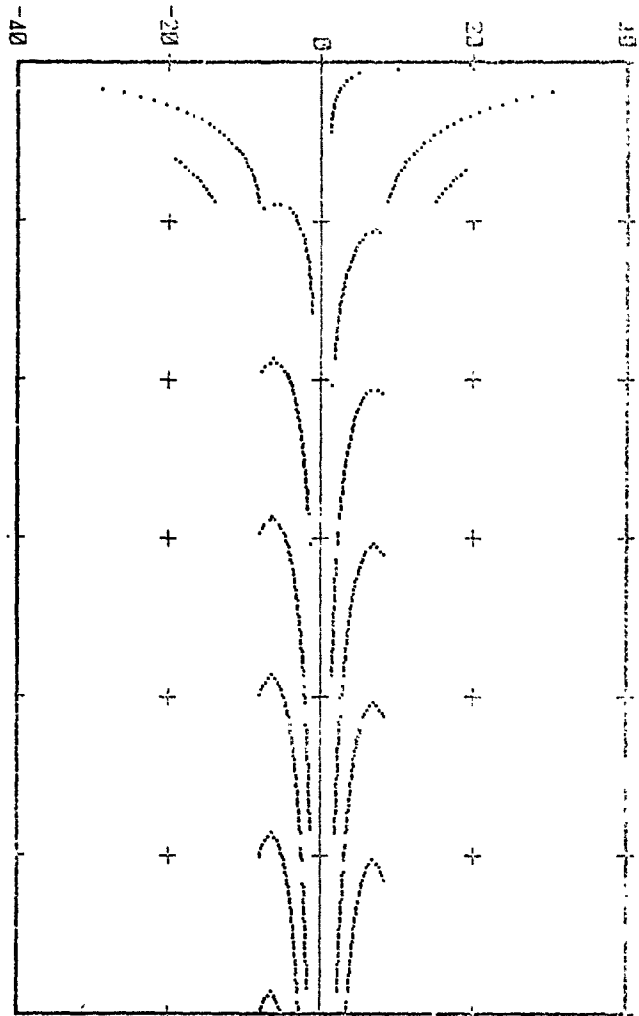
3 240 R 1530 F 34.0

1450 H/S 1500 1550

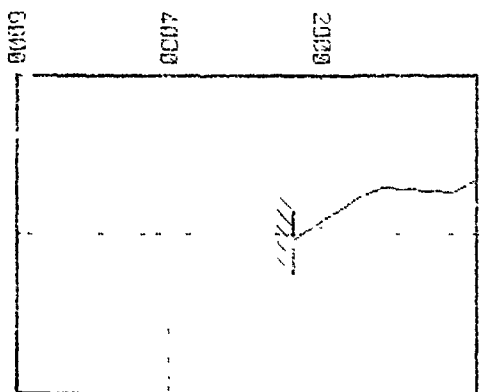
DB LOSS



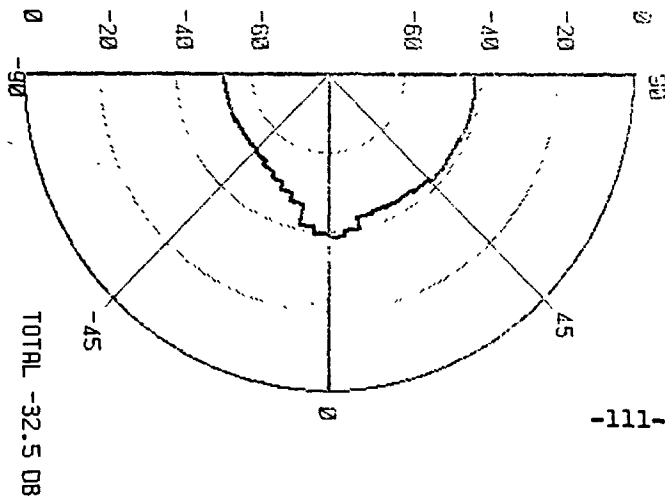
ARRIVAL ANGLE

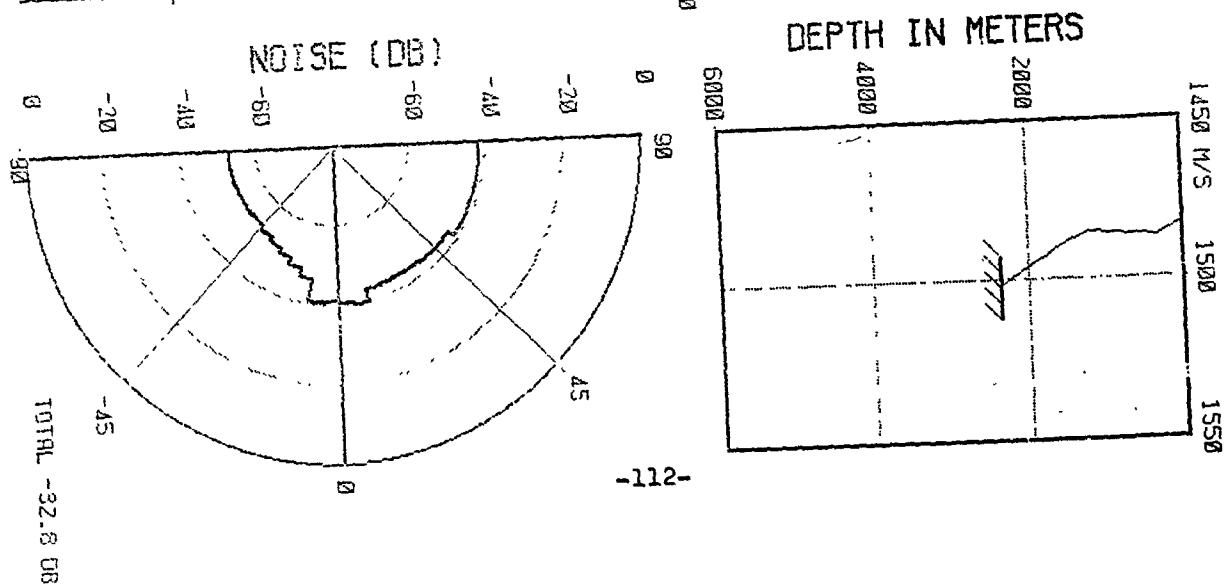
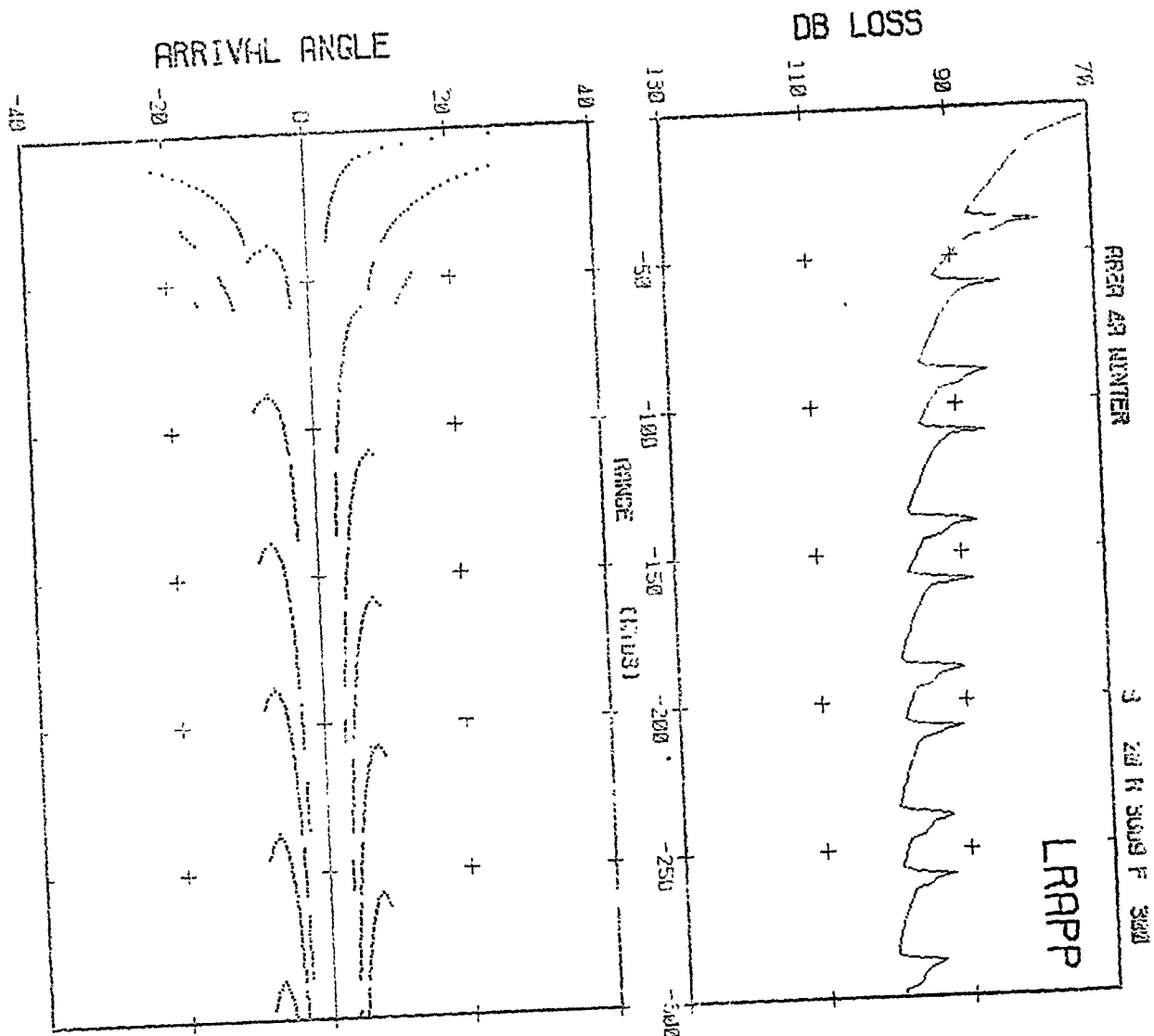


DEPTH IN METERS



NOISE (DB)





AREA 4A WINTER

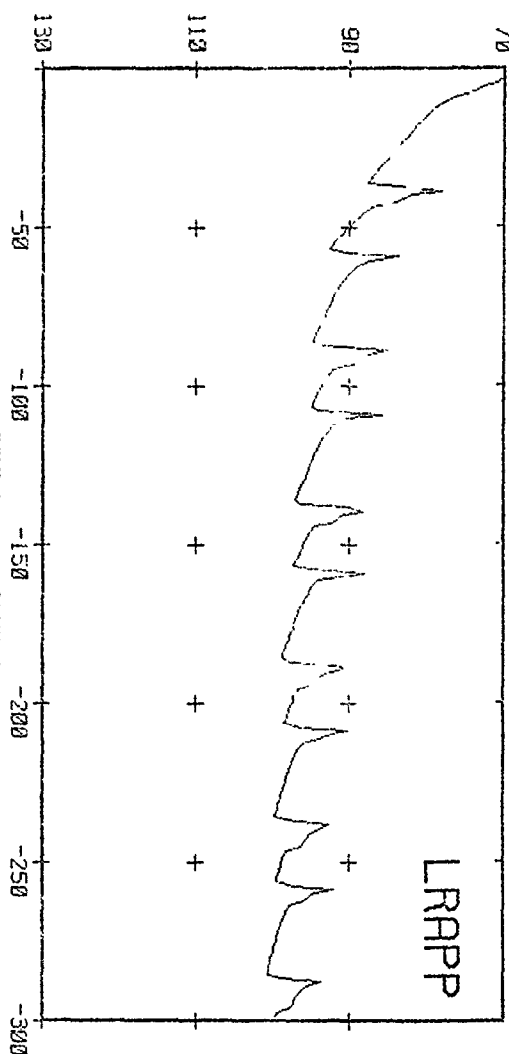
S 50 R 3603 F 300

1450 M/S

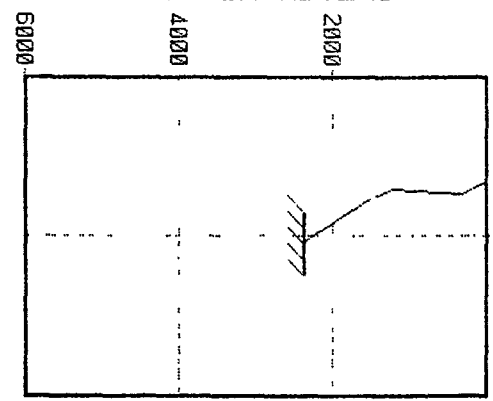
1500

1550

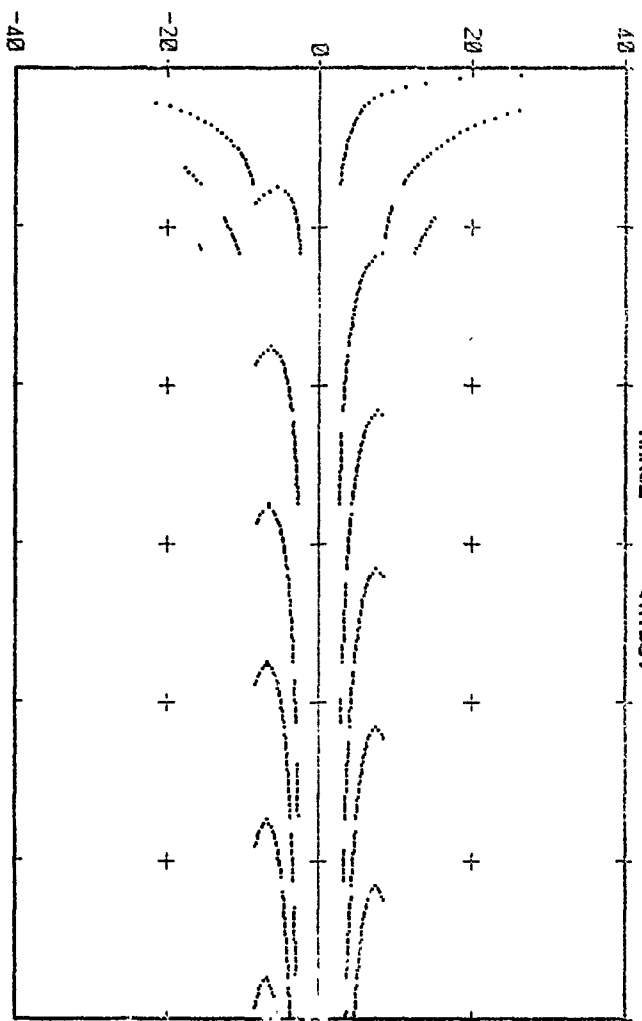
DB LOSS



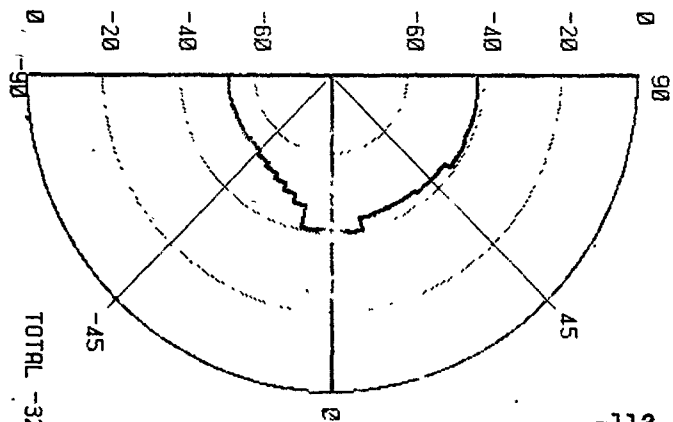
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -32.8 DB

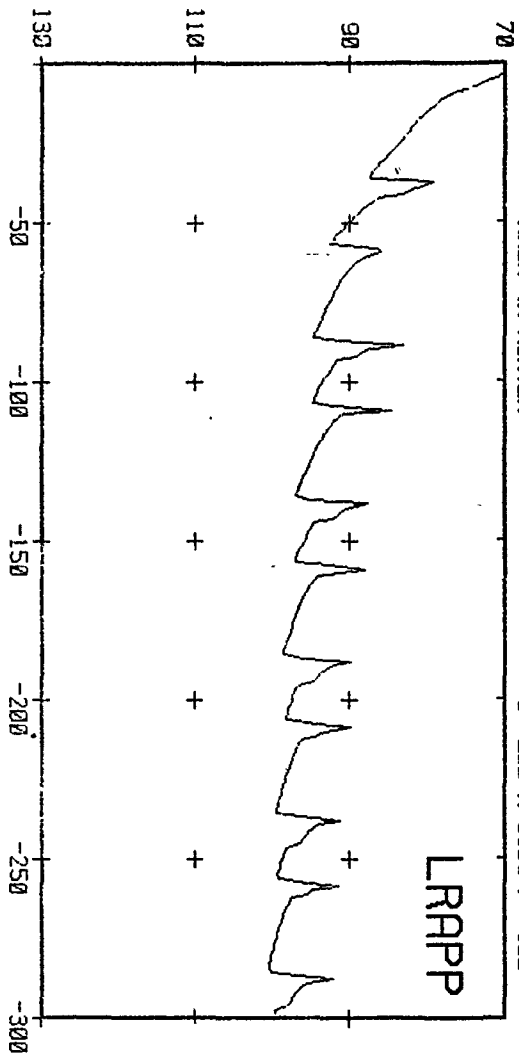
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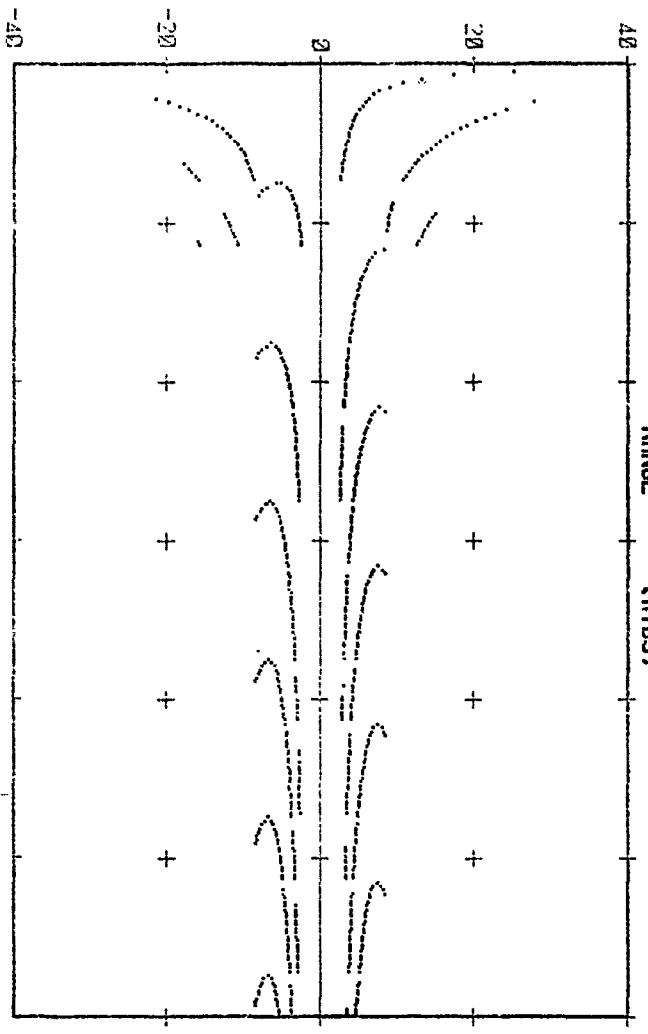
AREA 4A WINTER S 200 R 3609 F 300

LRAPP

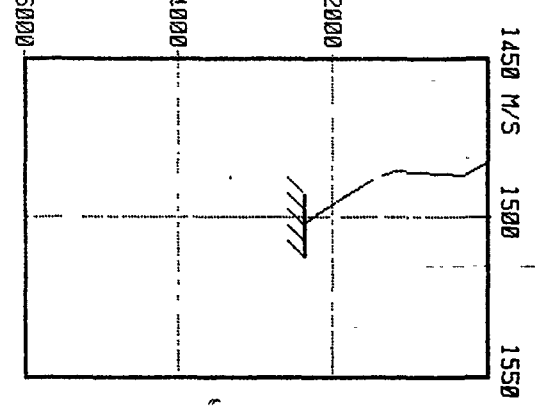
DB LOSS



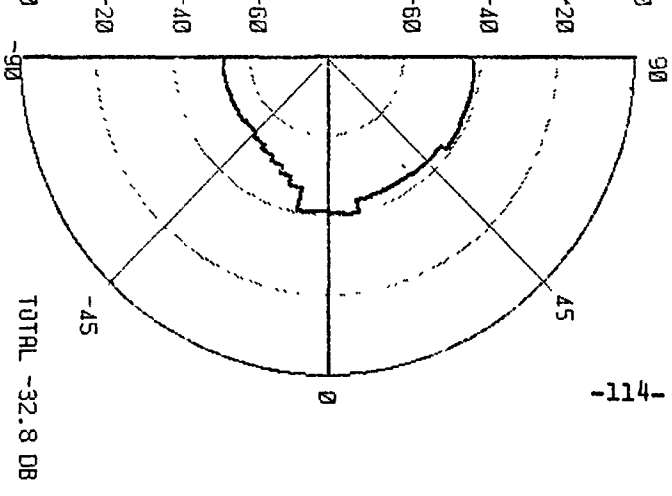
ARRIVAL ANGLE

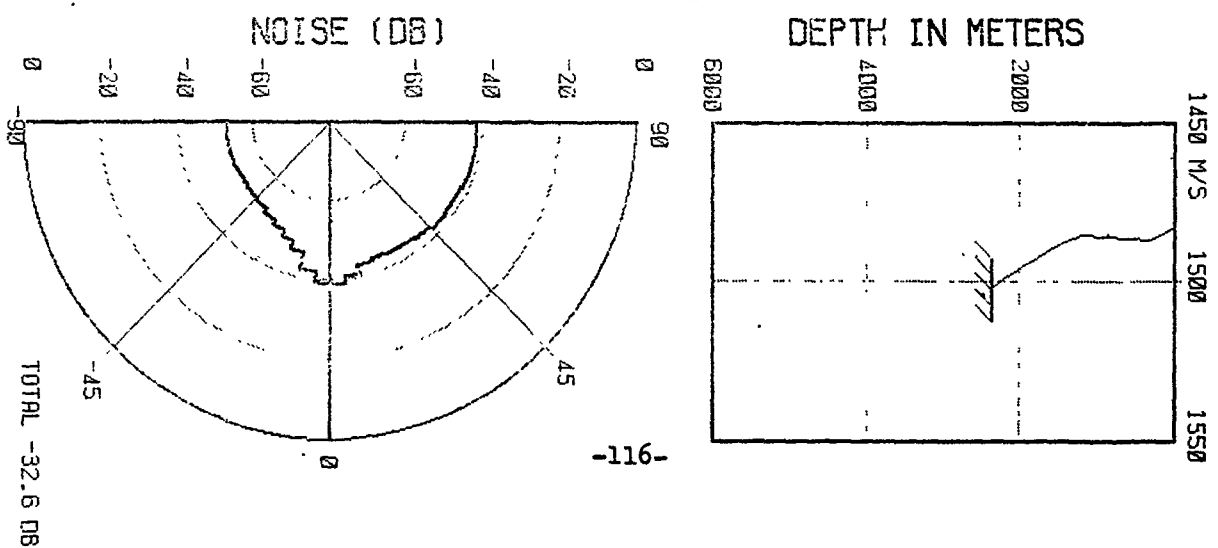
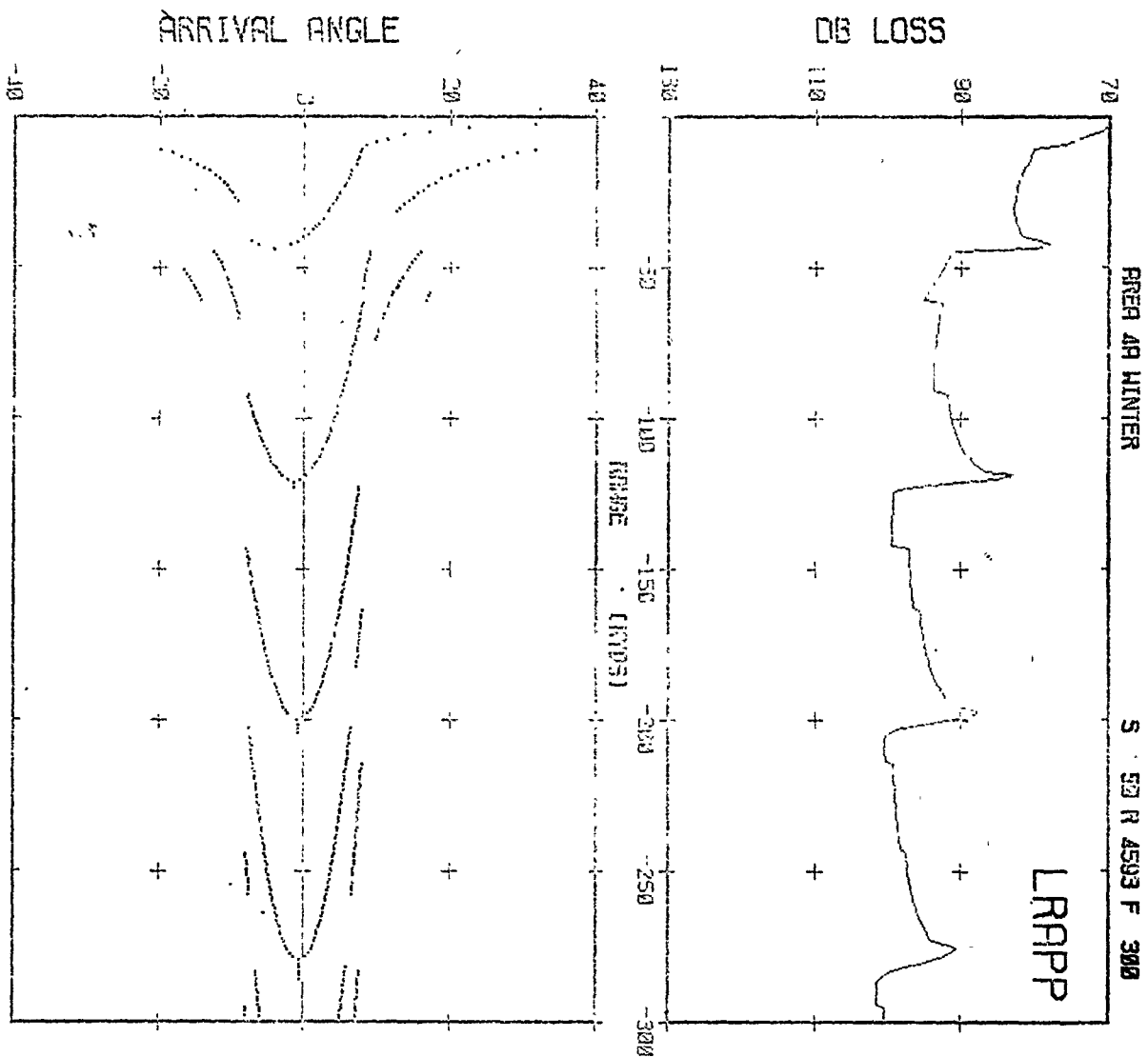


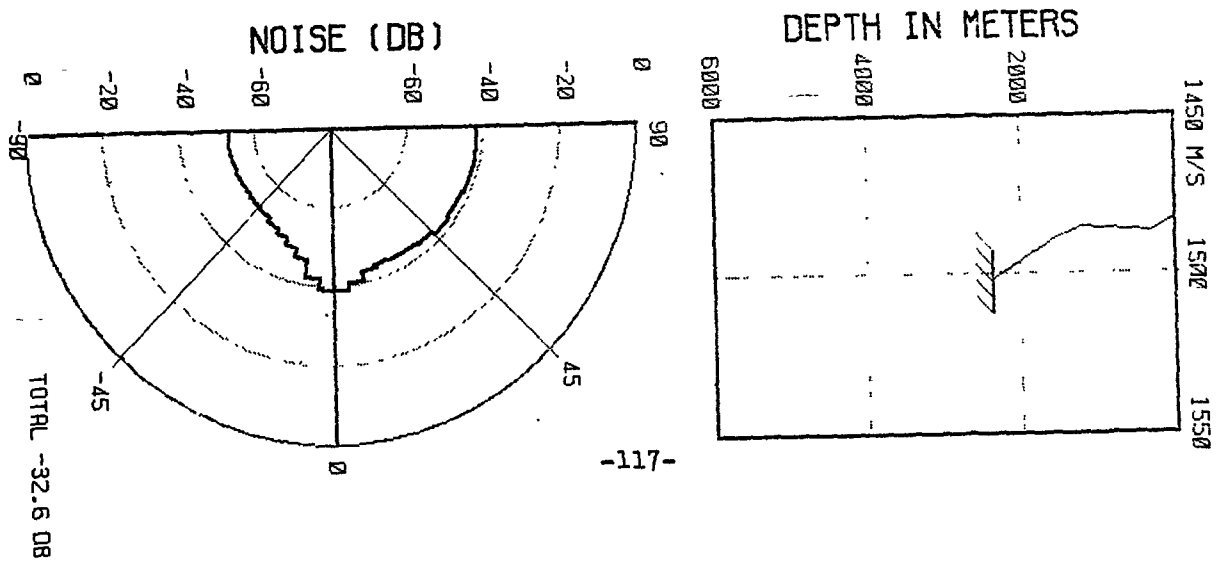
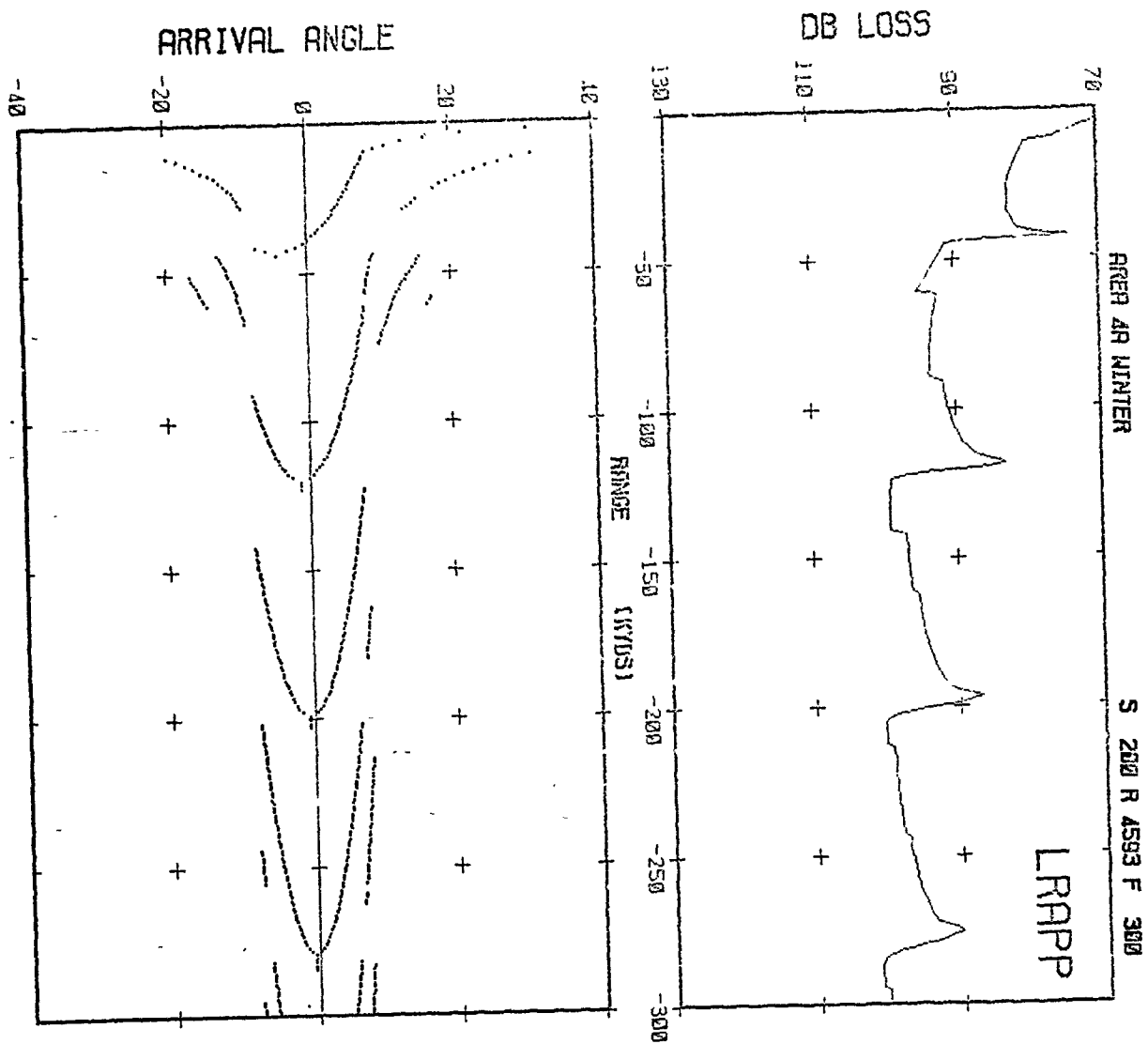
DEPTH IN METERS



NOISE (DB)





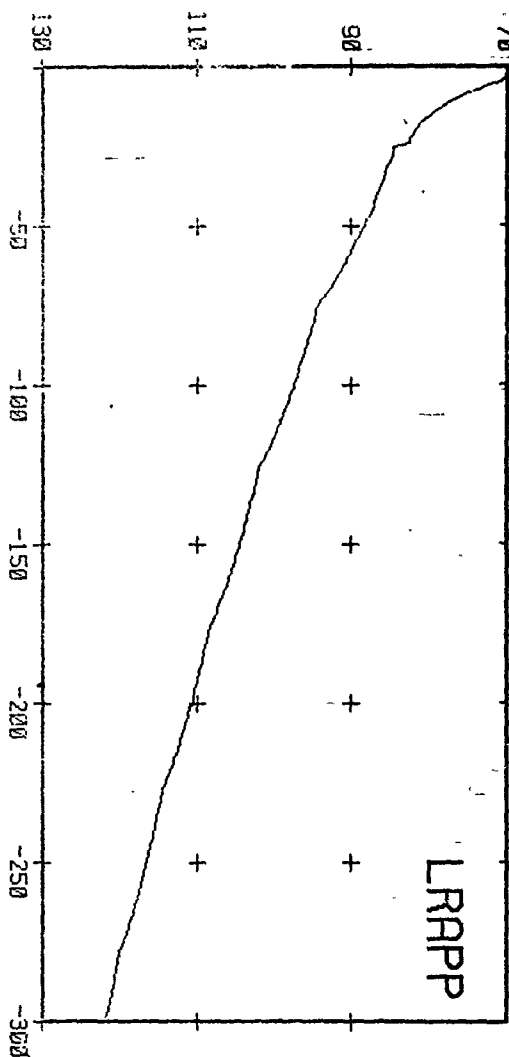


AREA 4A WINTER

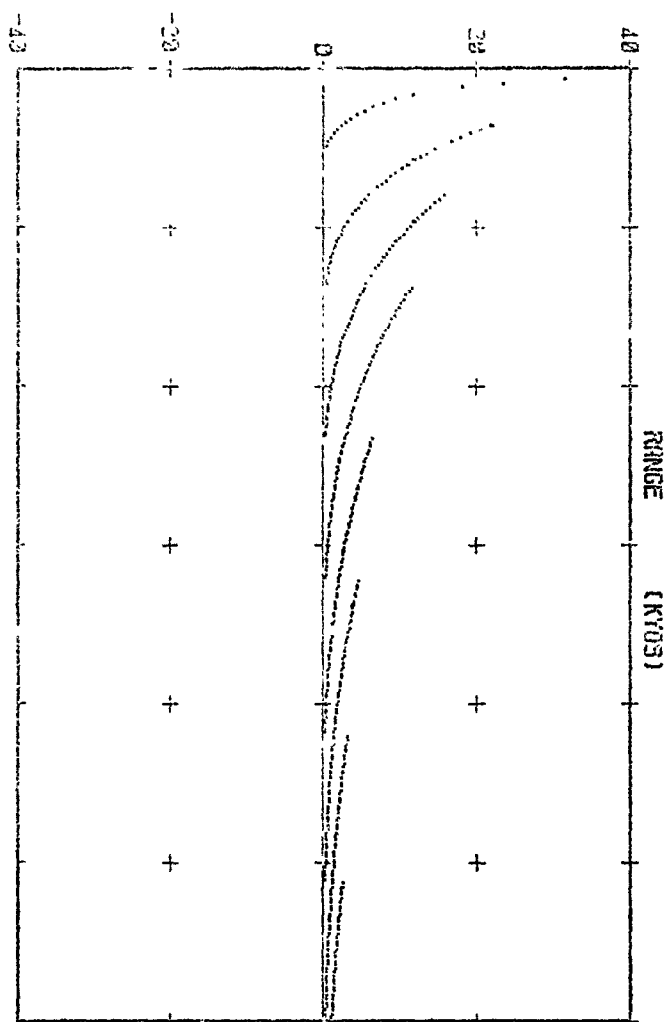
S 20 R 7798 F 300

1450 M/S 1500 1550

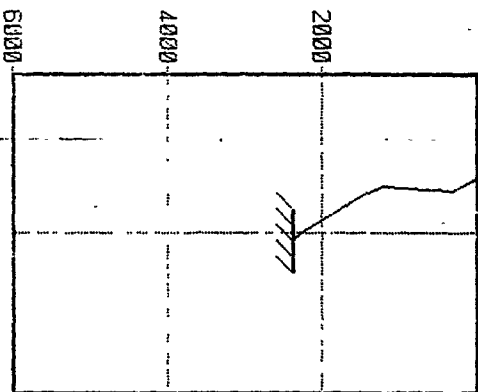
DB LOSS



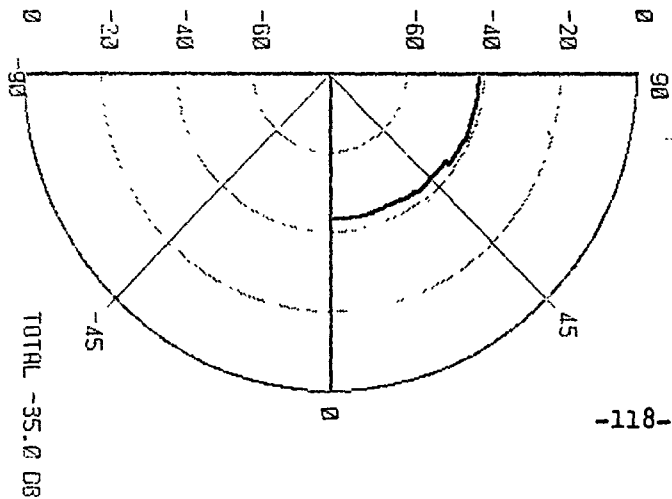
ARRIVAL ANGLE

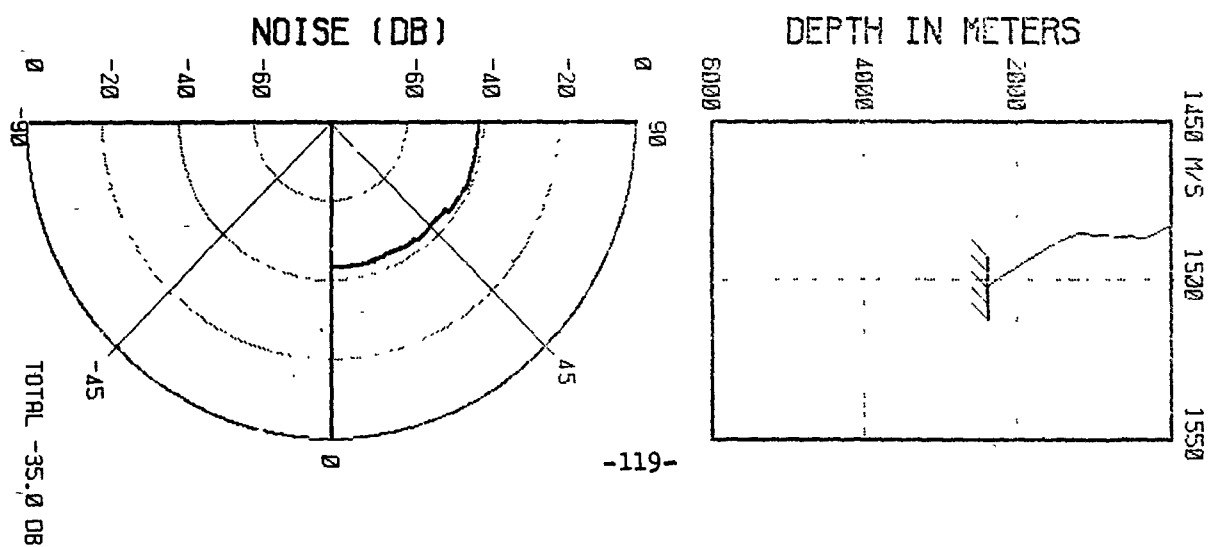
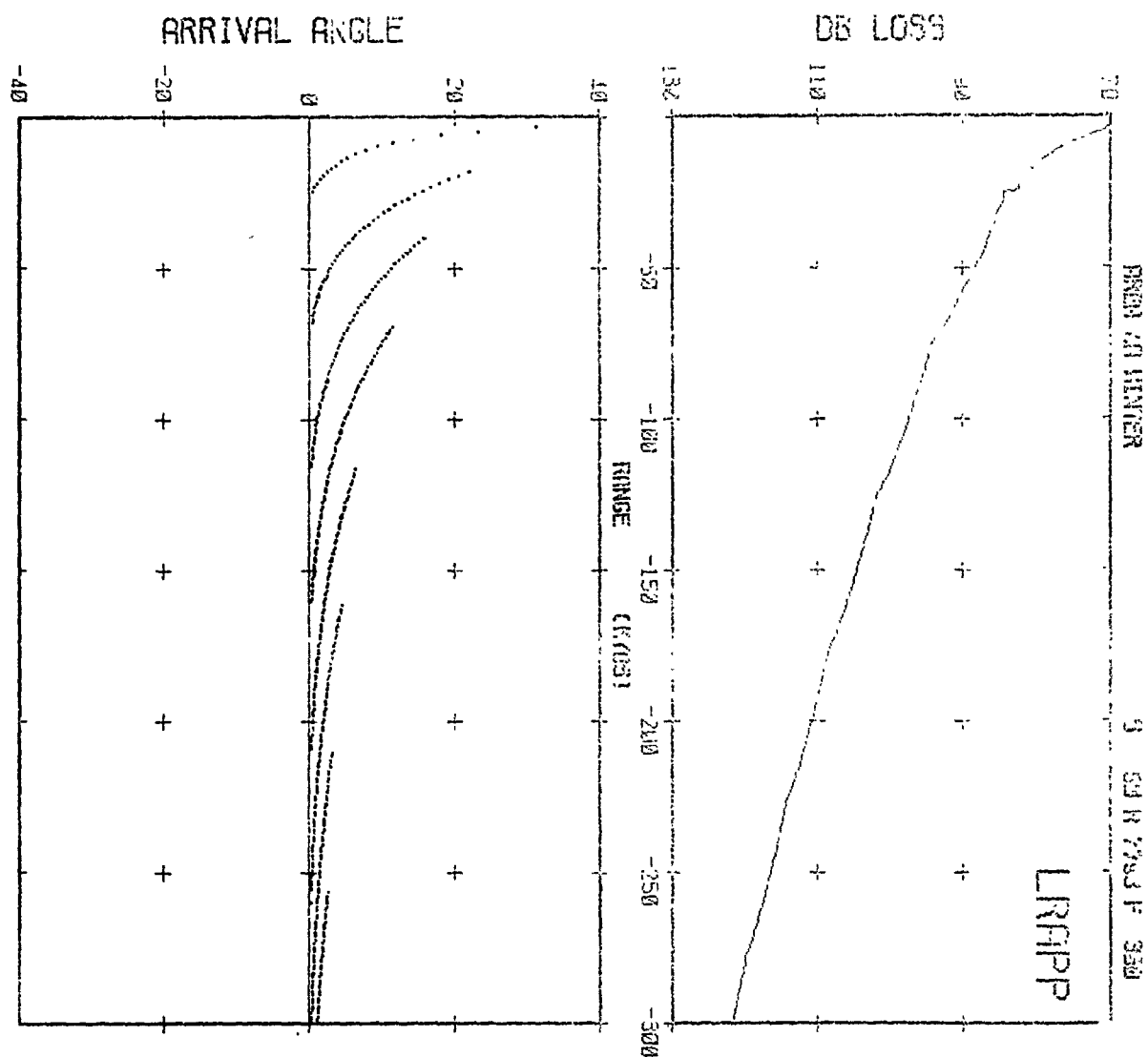


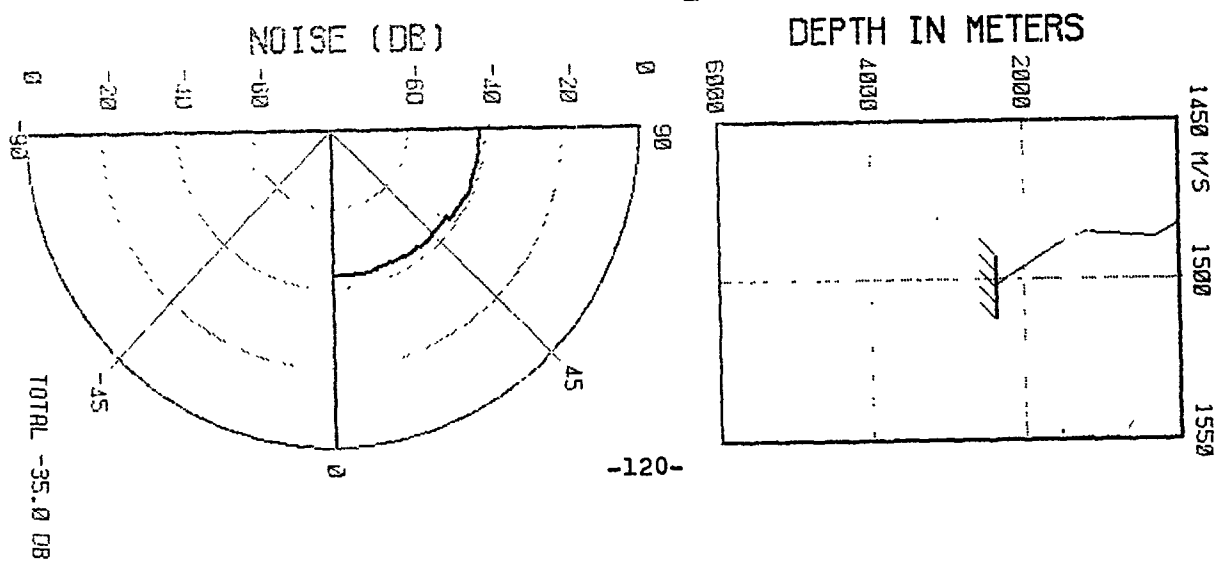
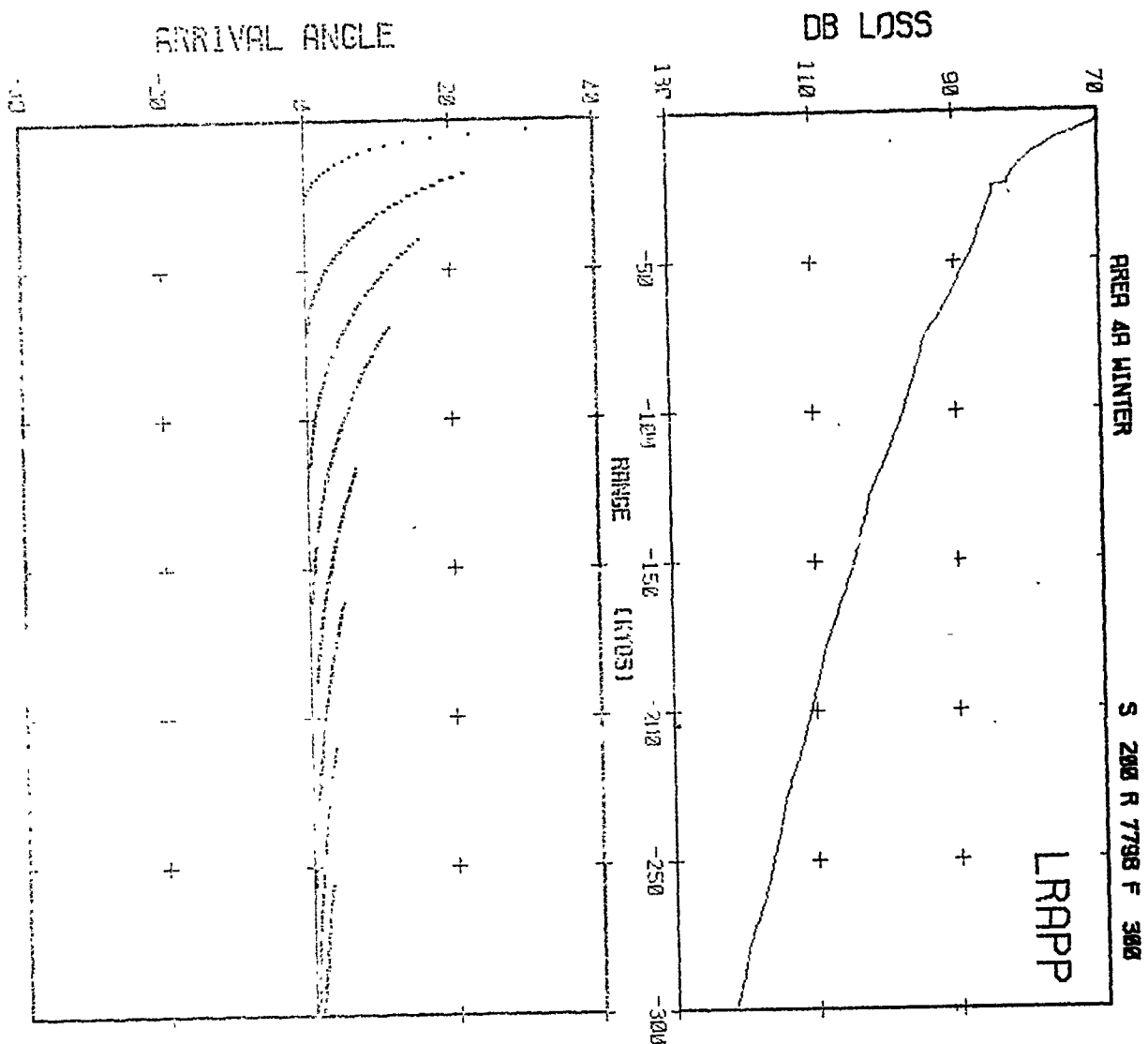
DEPTH IN METERS

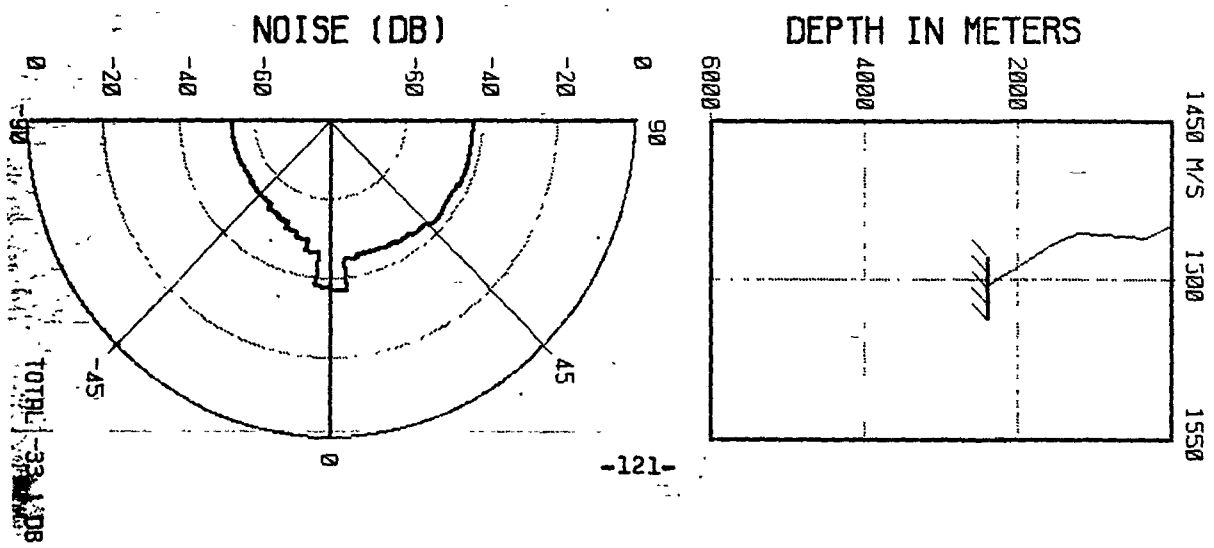
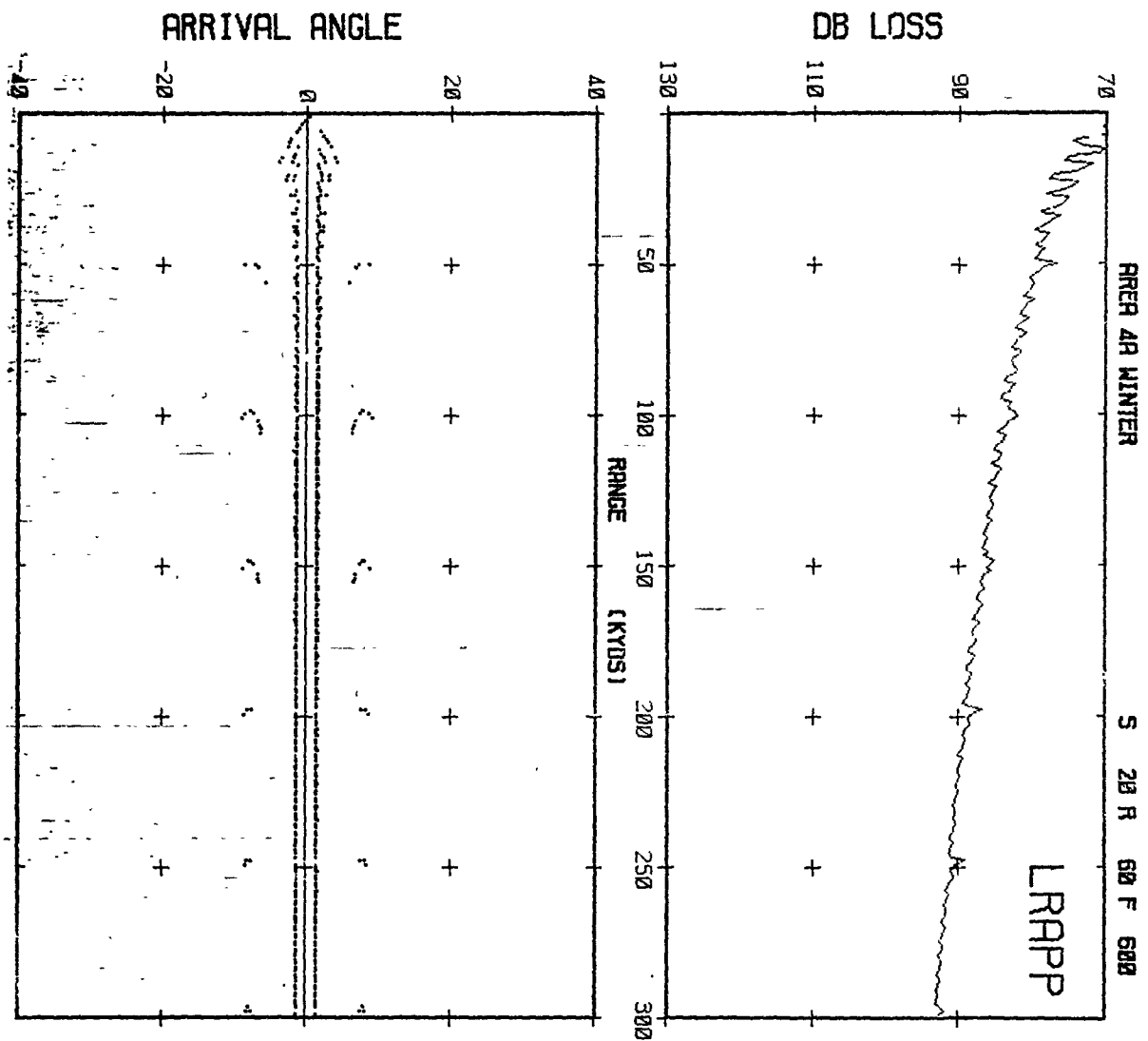


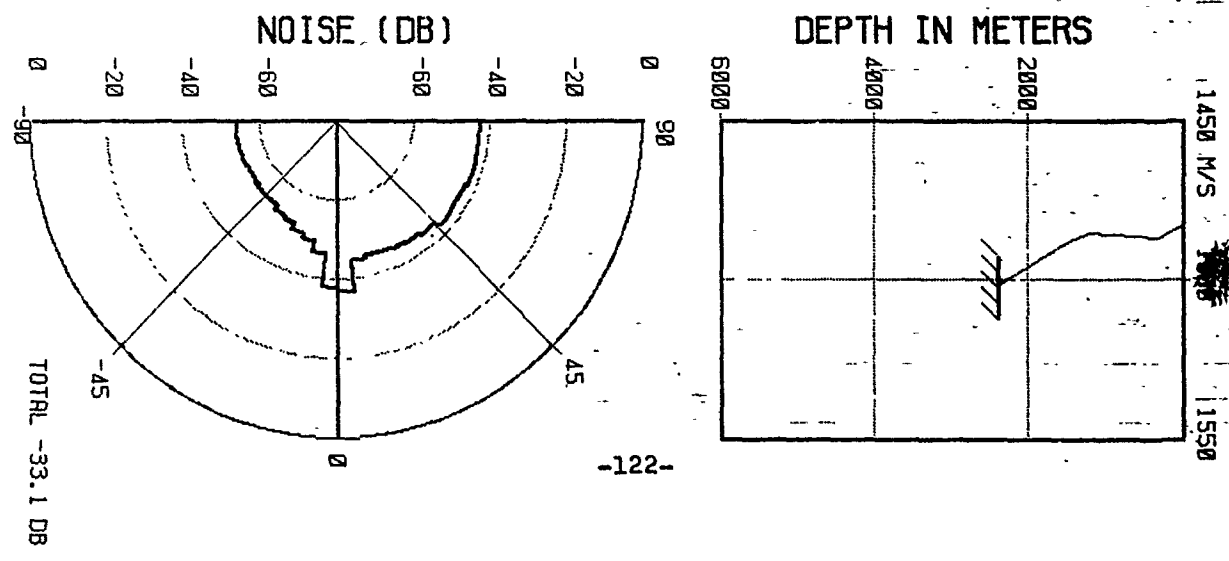
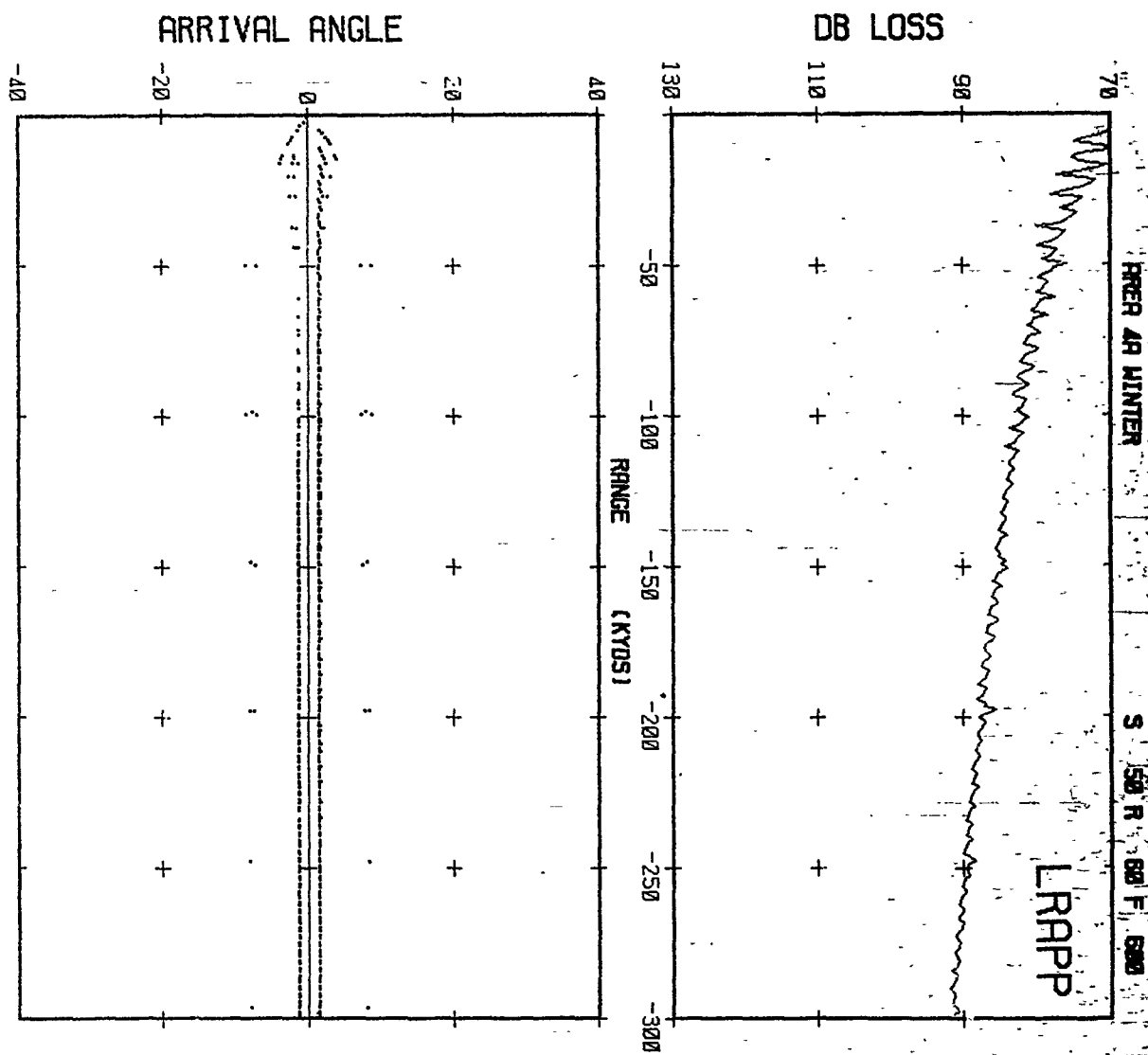
NOISE (DB)

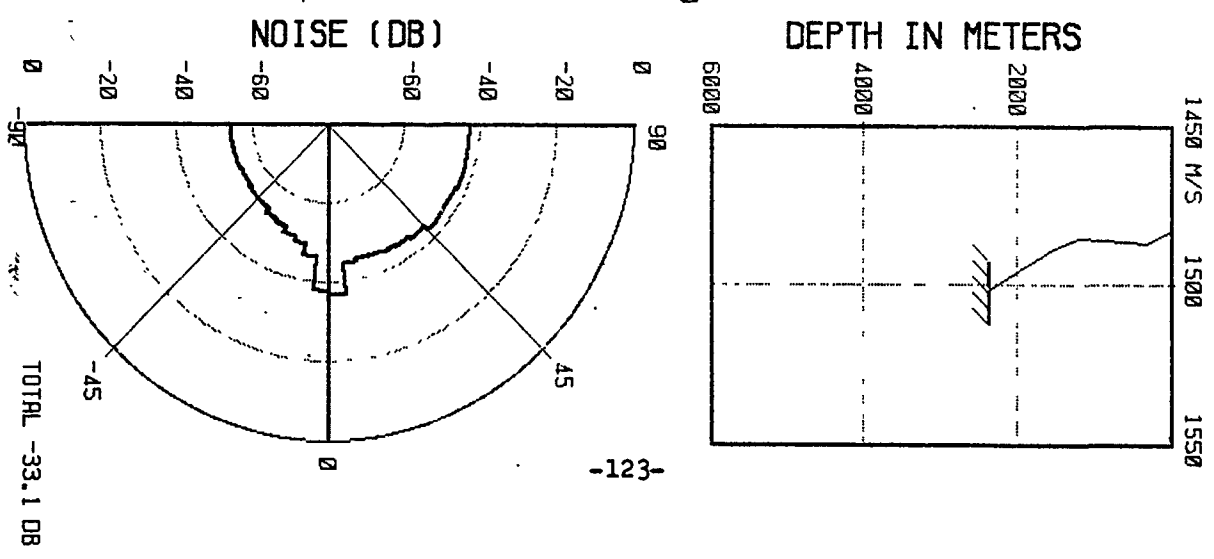
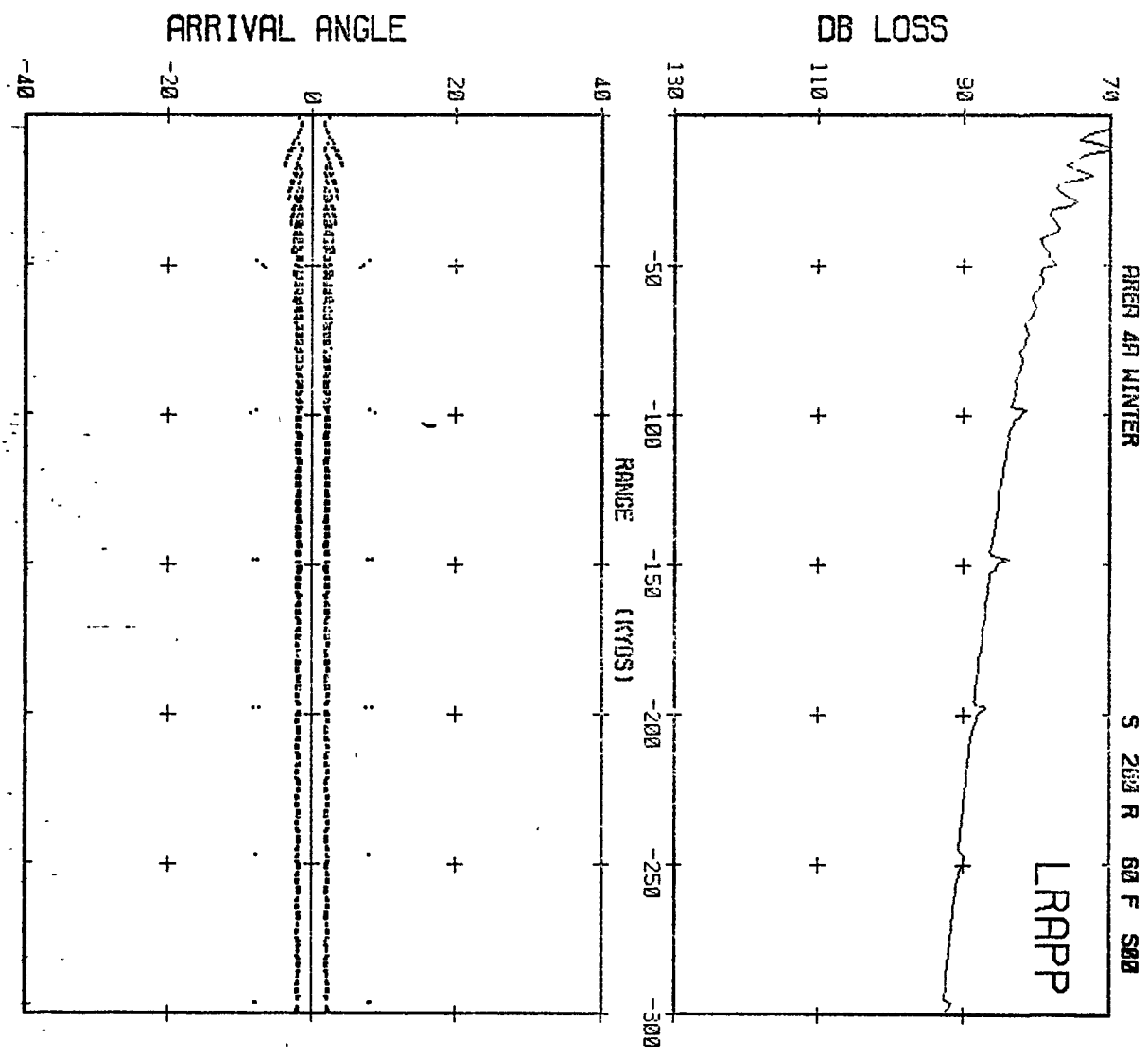


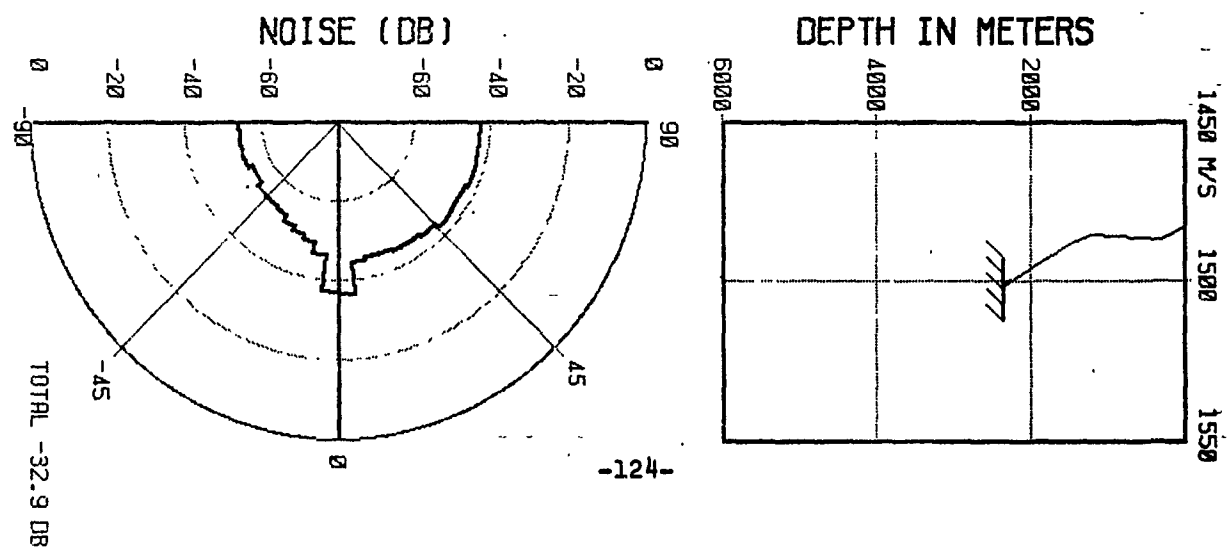
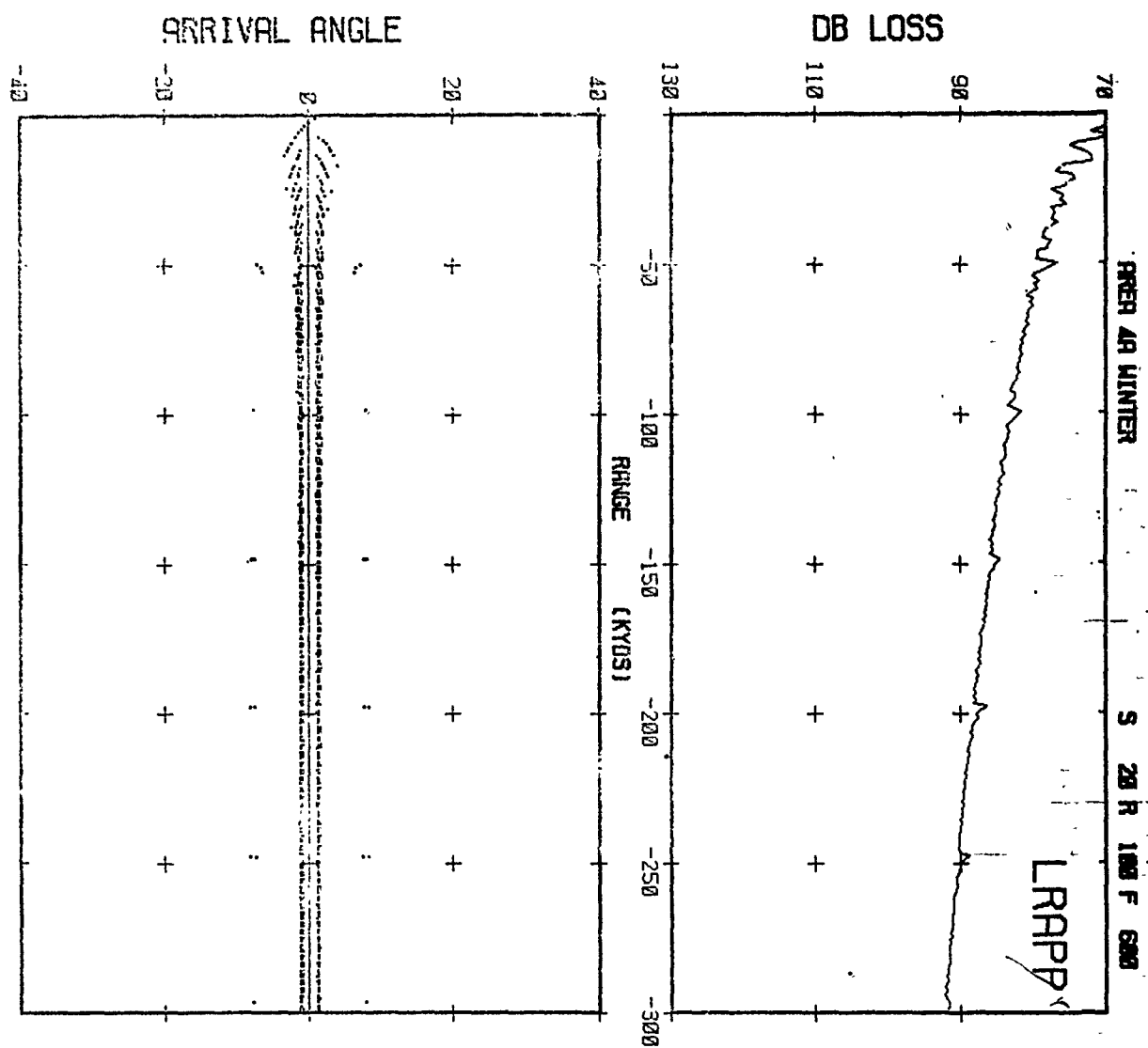


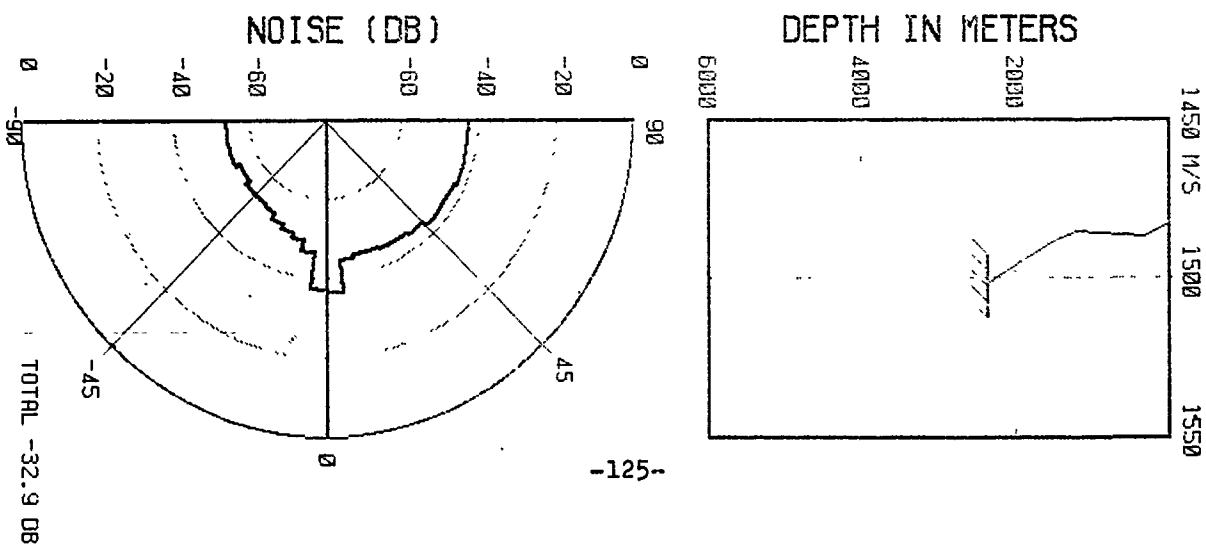
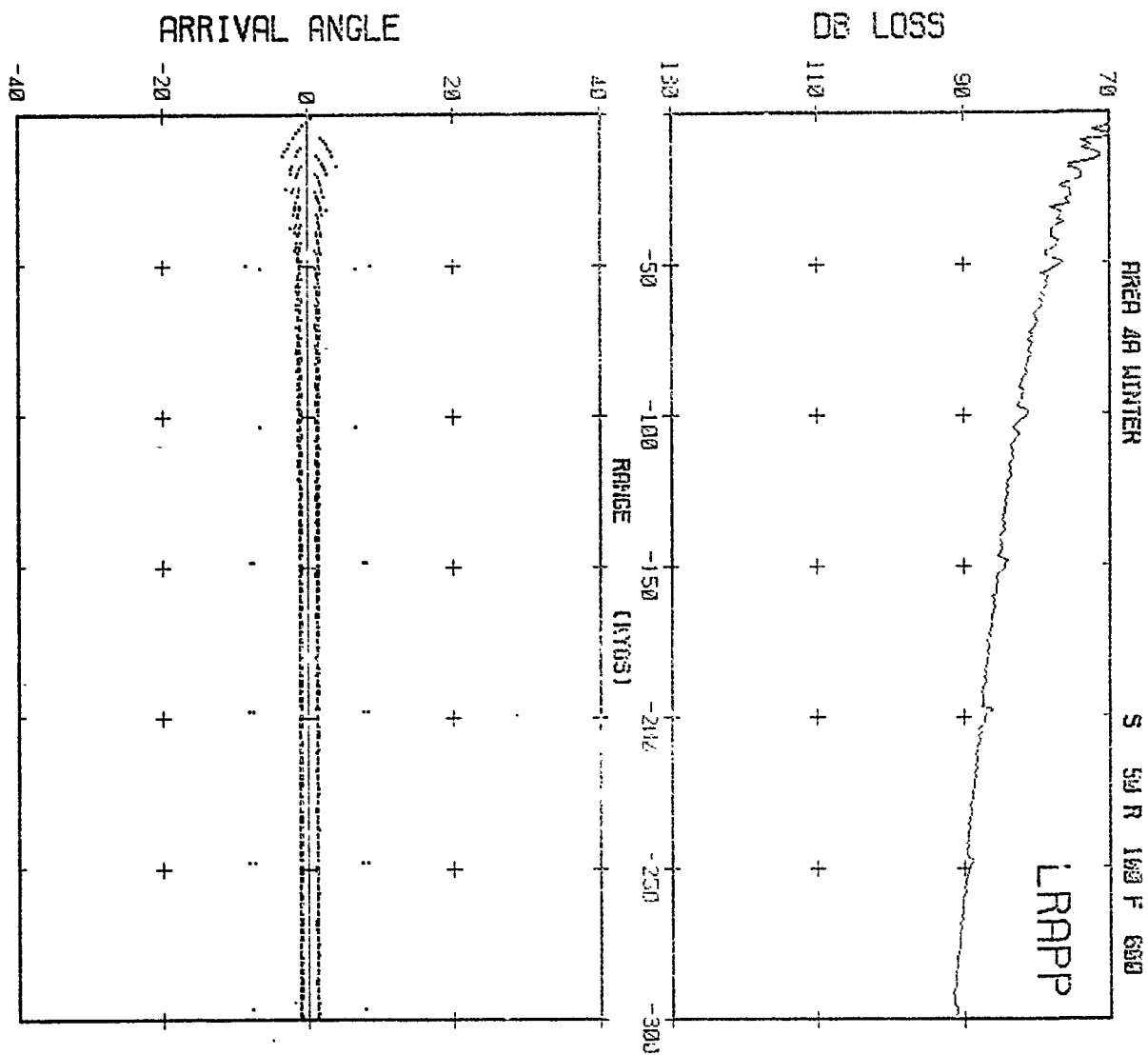










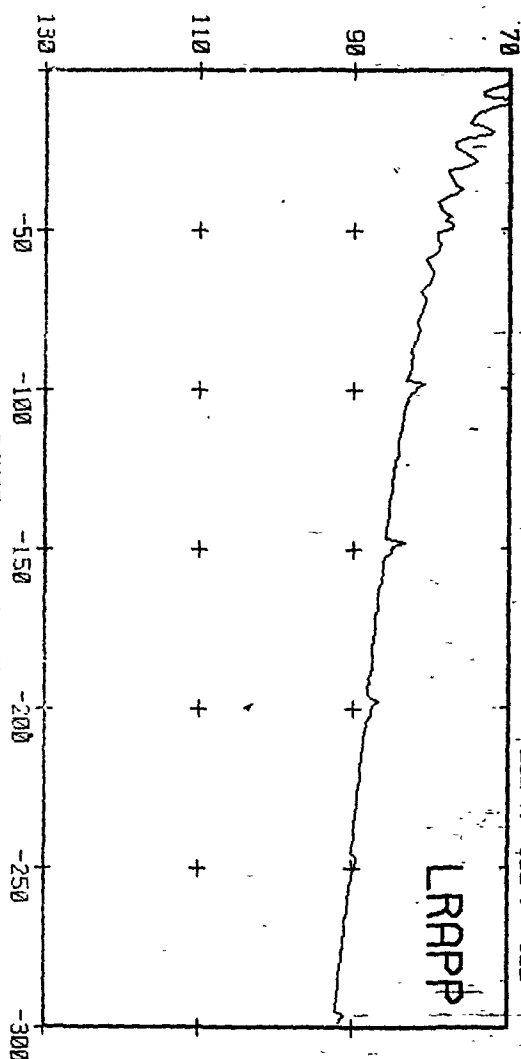


PREP AIR HINTER

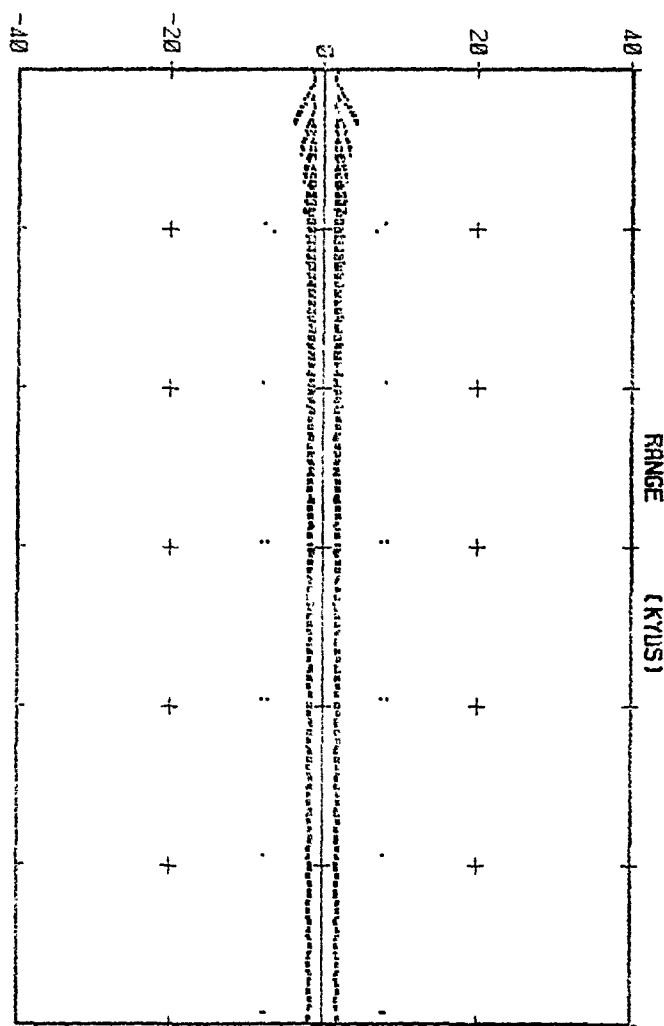
S 200 R 100 F 600

1450 M/S 1500 1550

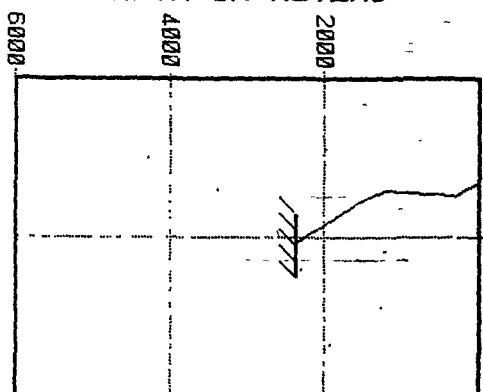
DB LOSS



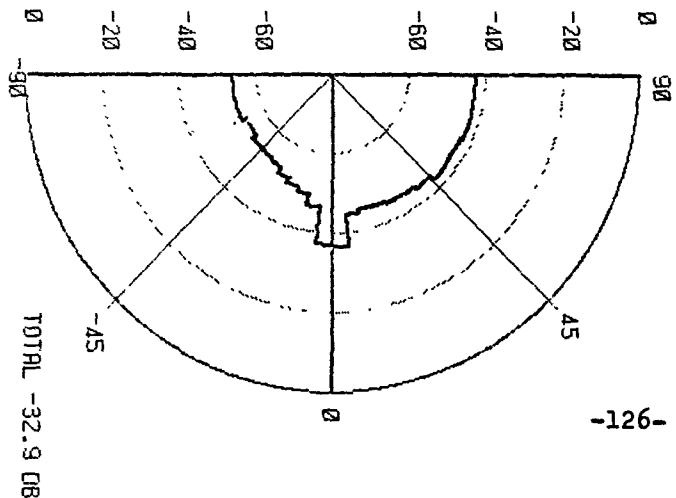
ARRIVAL ANGLE

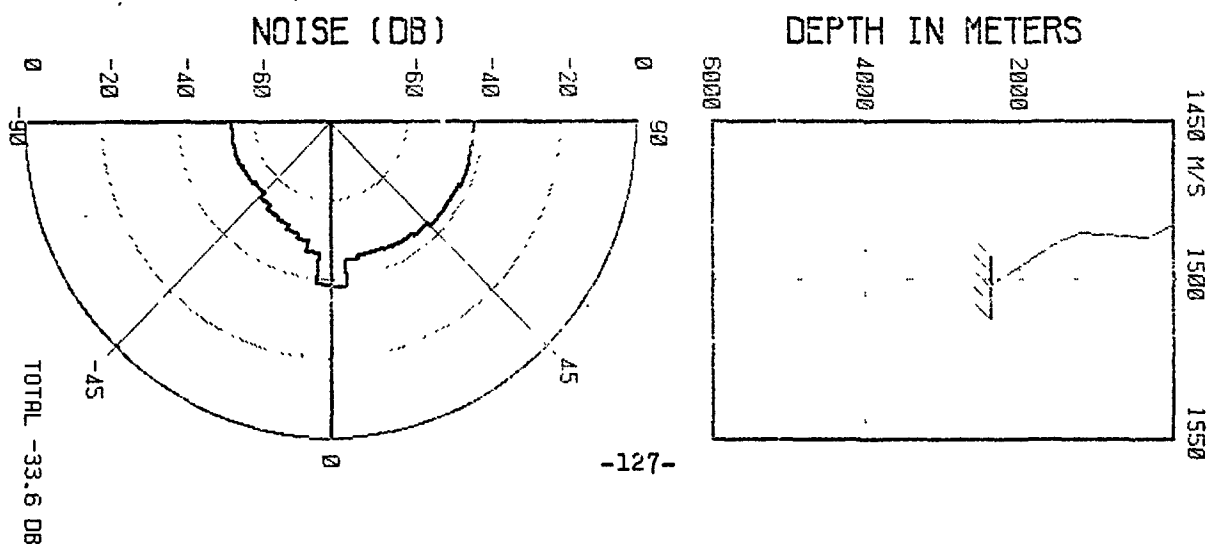
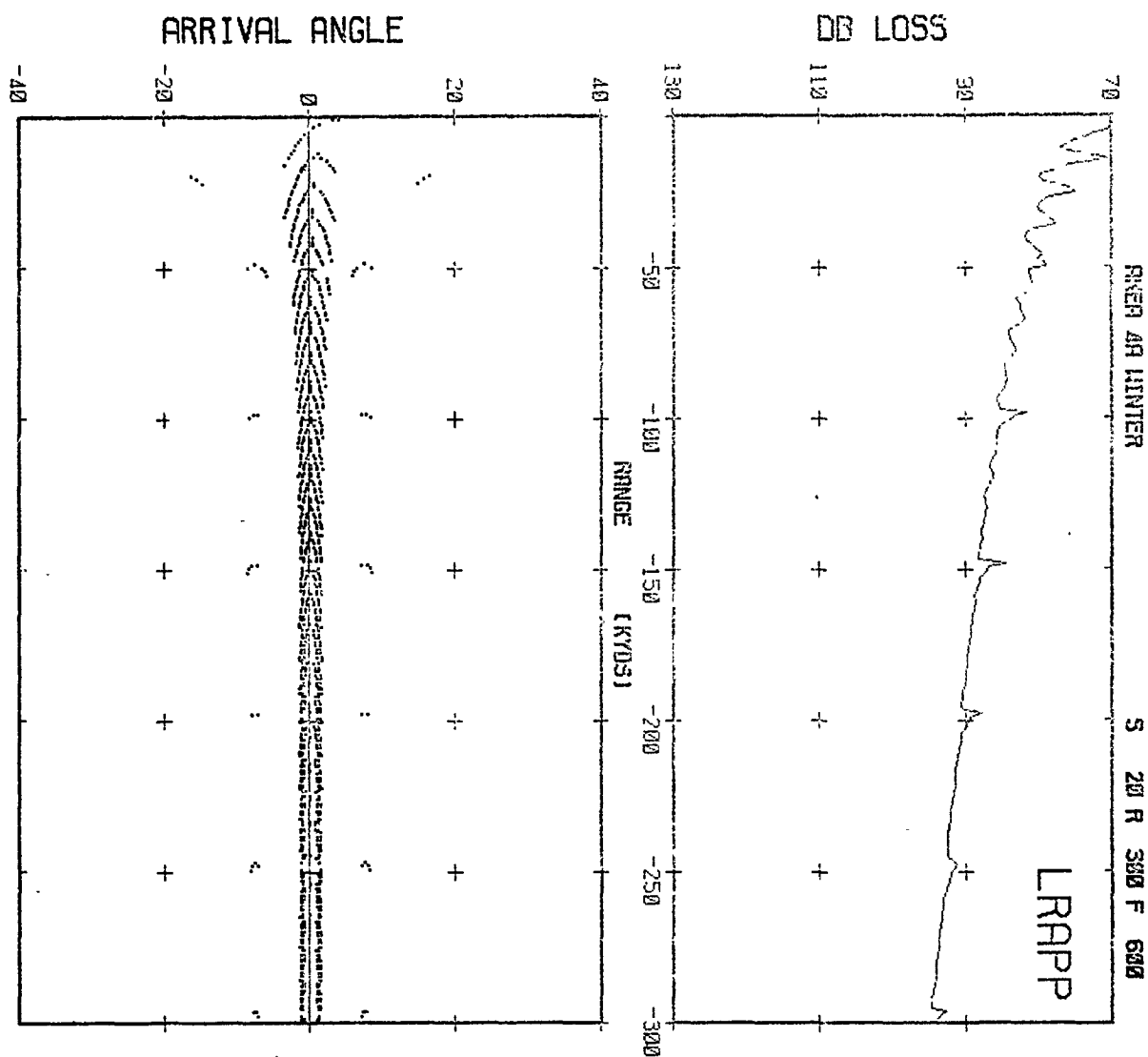


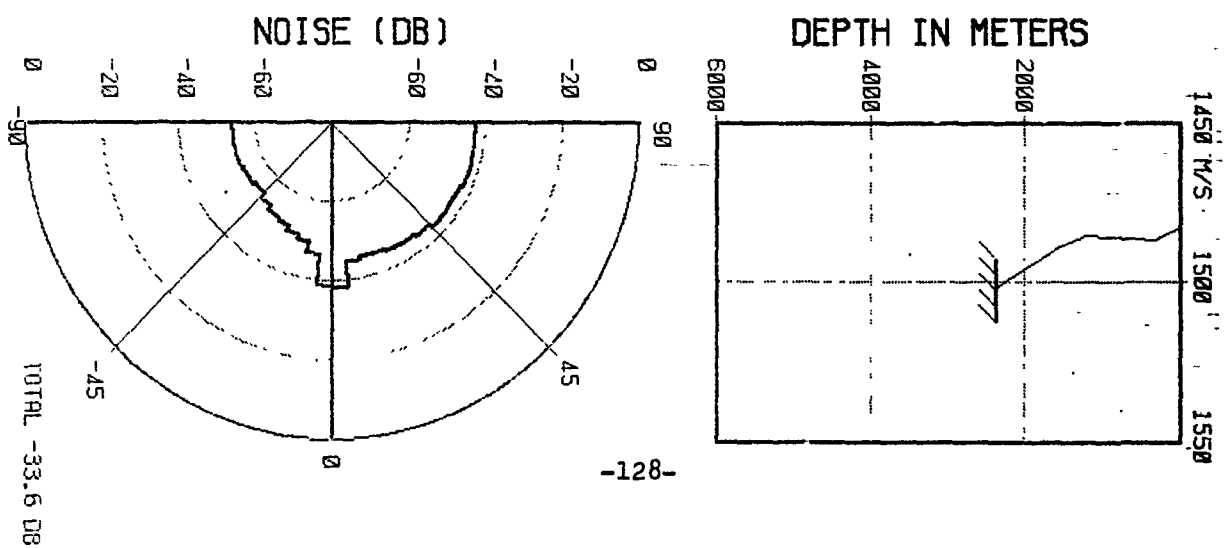
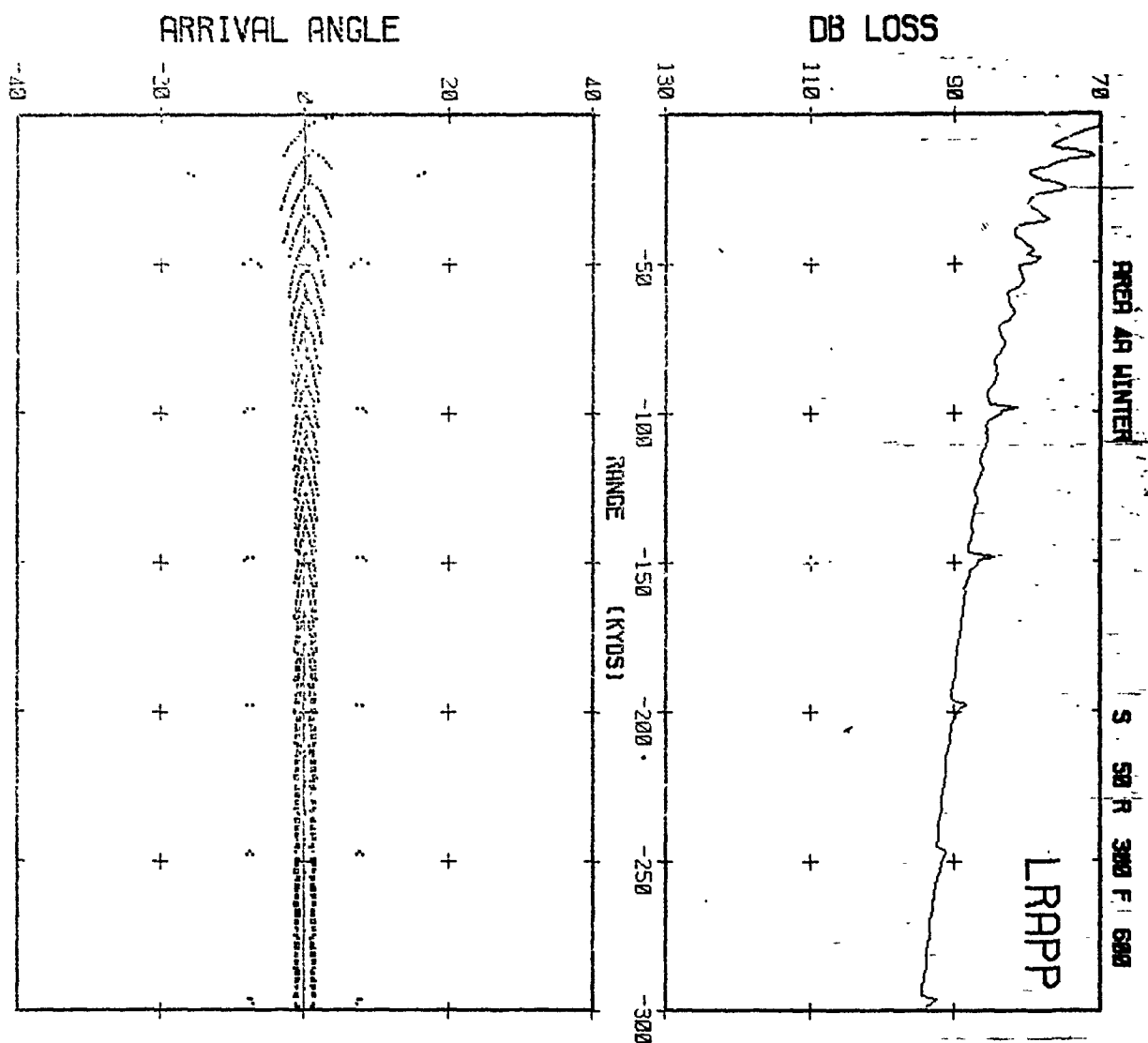
DEPTH IN METERS

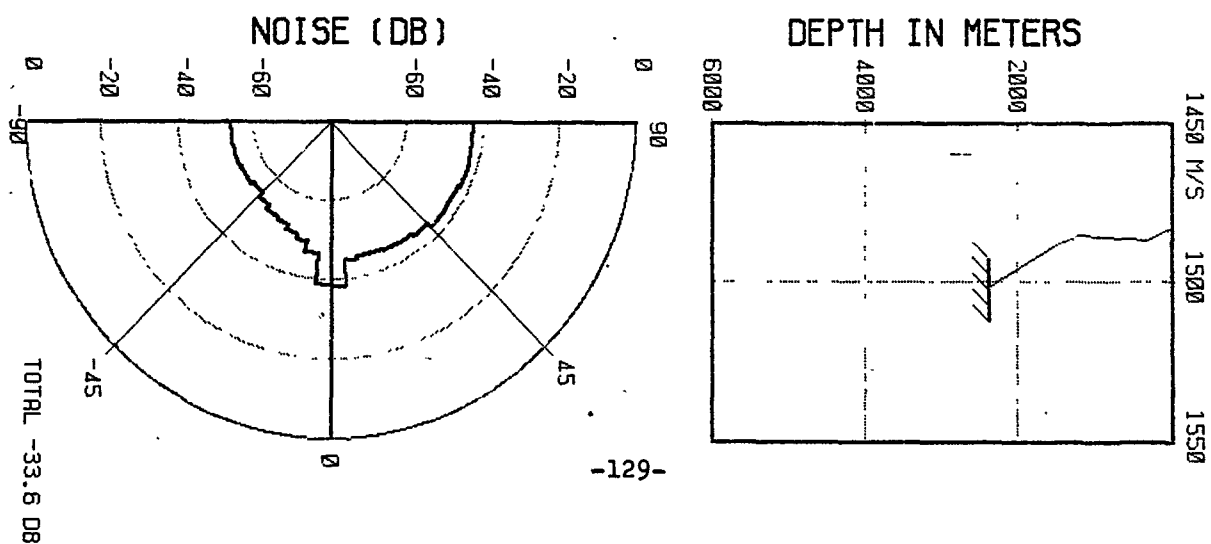
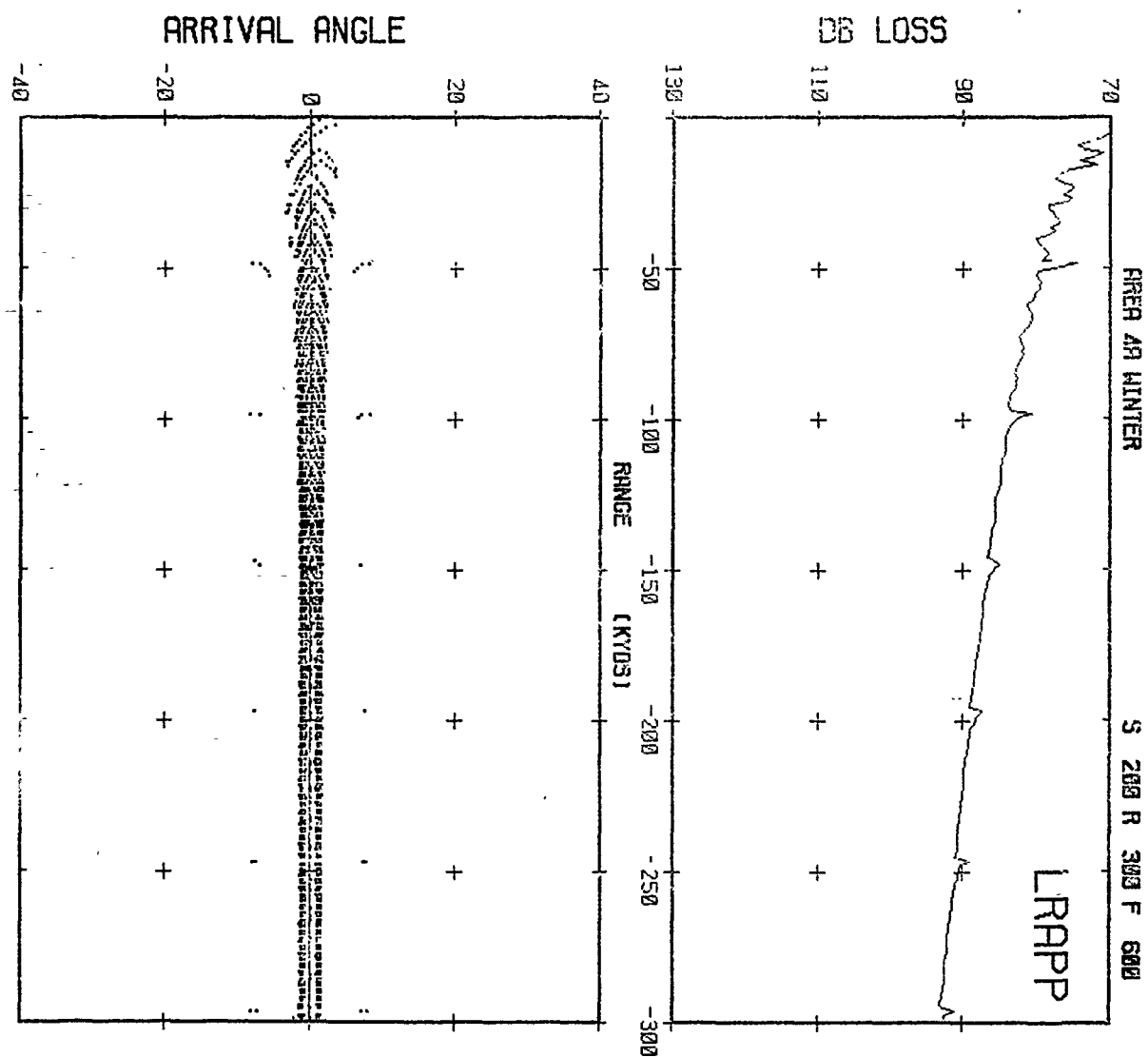


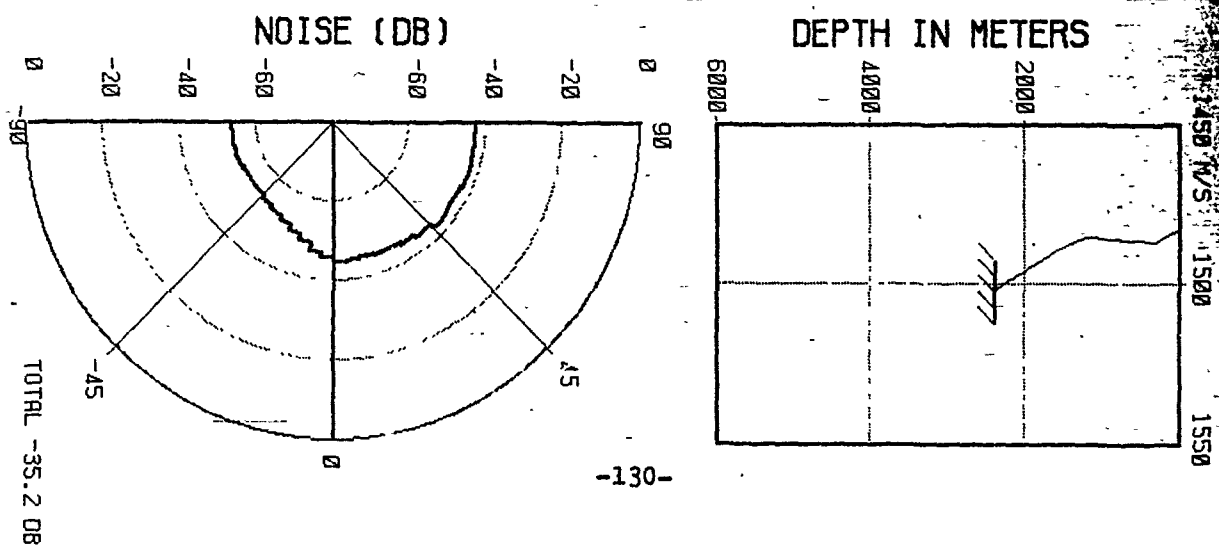
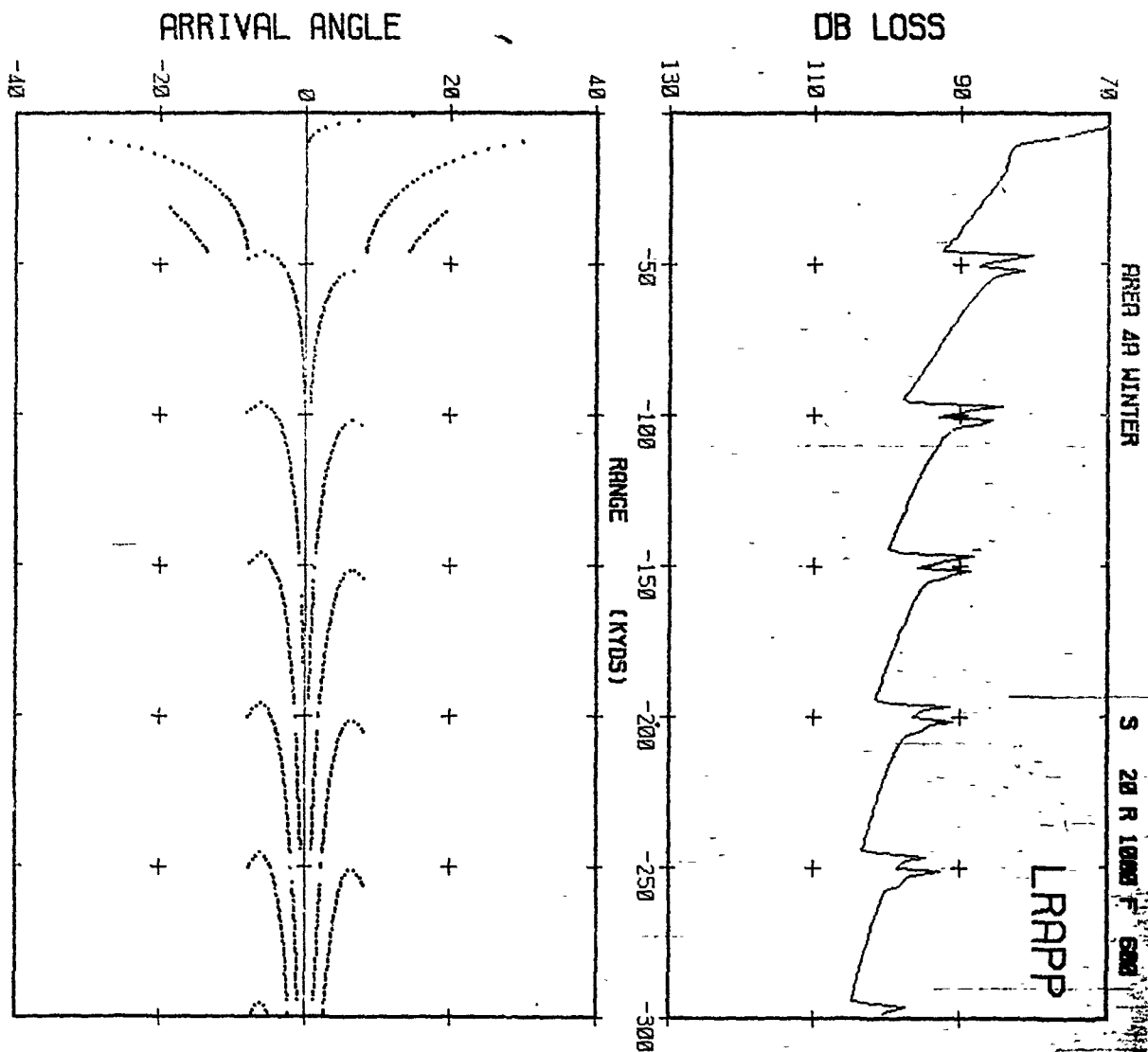
NOISE (DB)

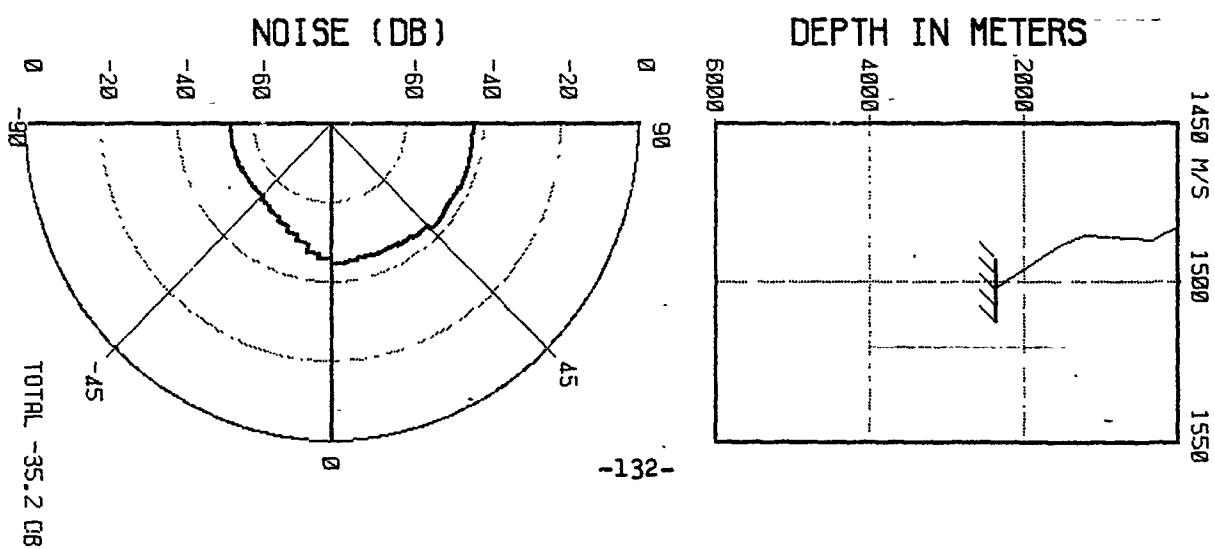
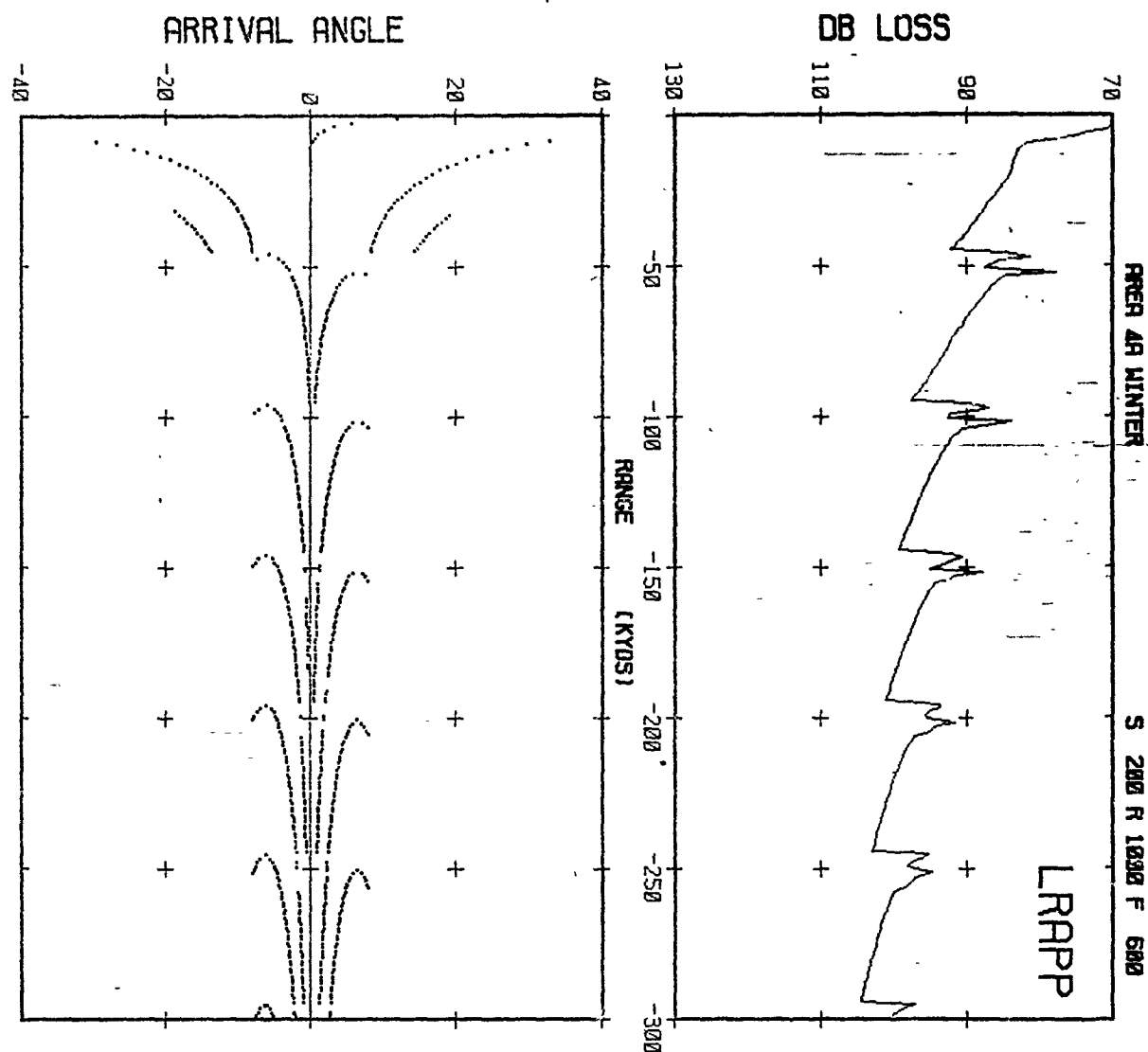












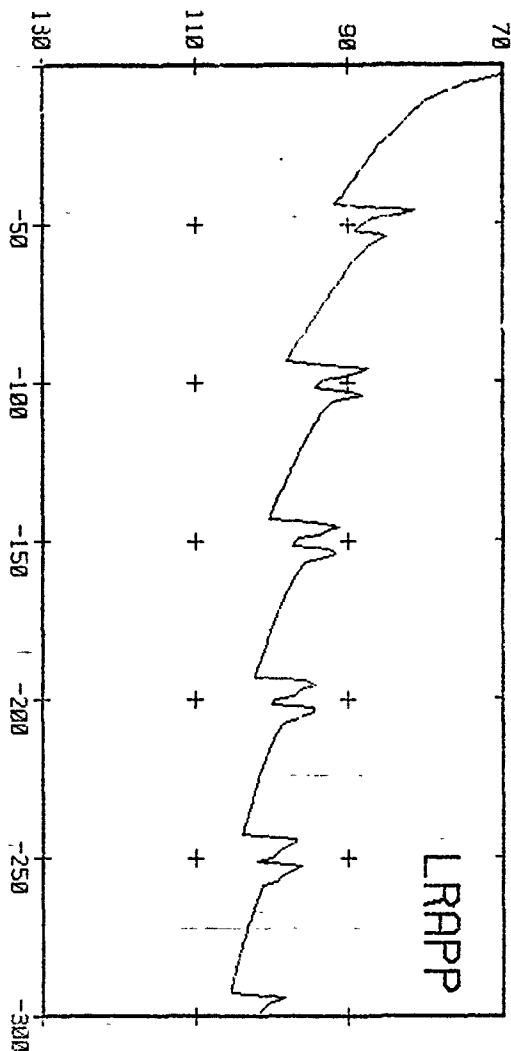
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AREA 4R MINIER

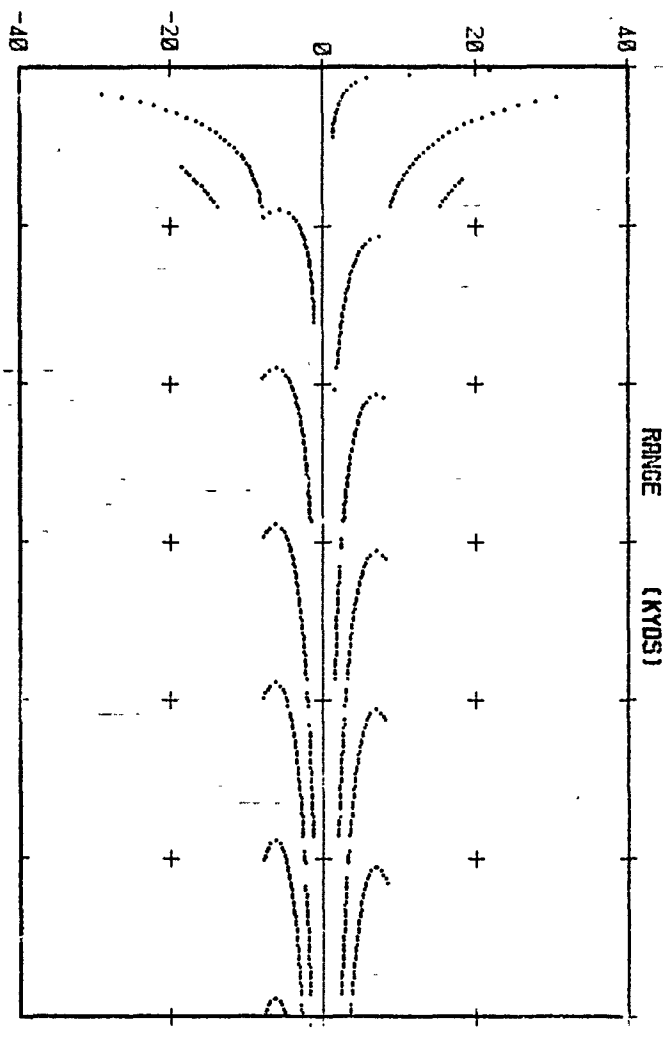
S 20 R 1500 F 600

1450 M/S 1500 1550

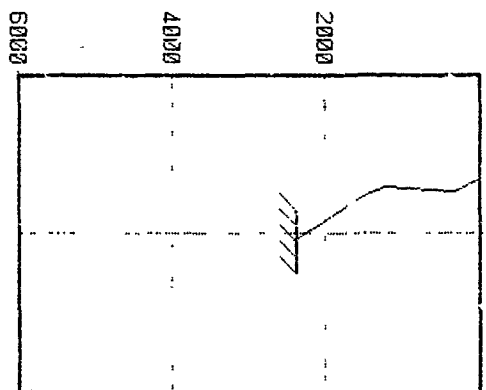
DB LOSS



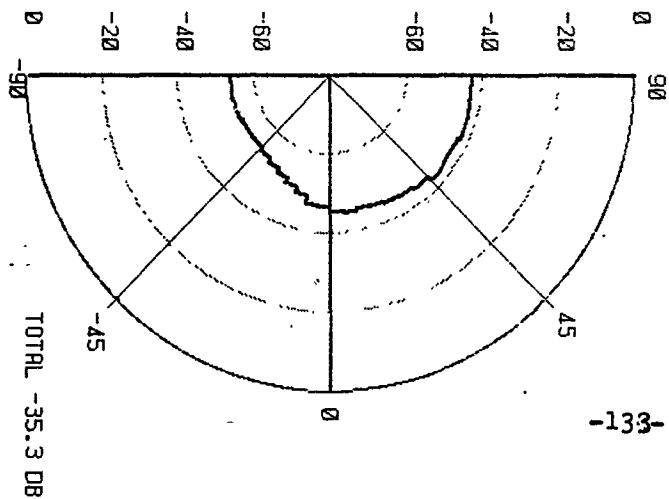
ARRIVAL ANGLE



DEPTH IN METERS

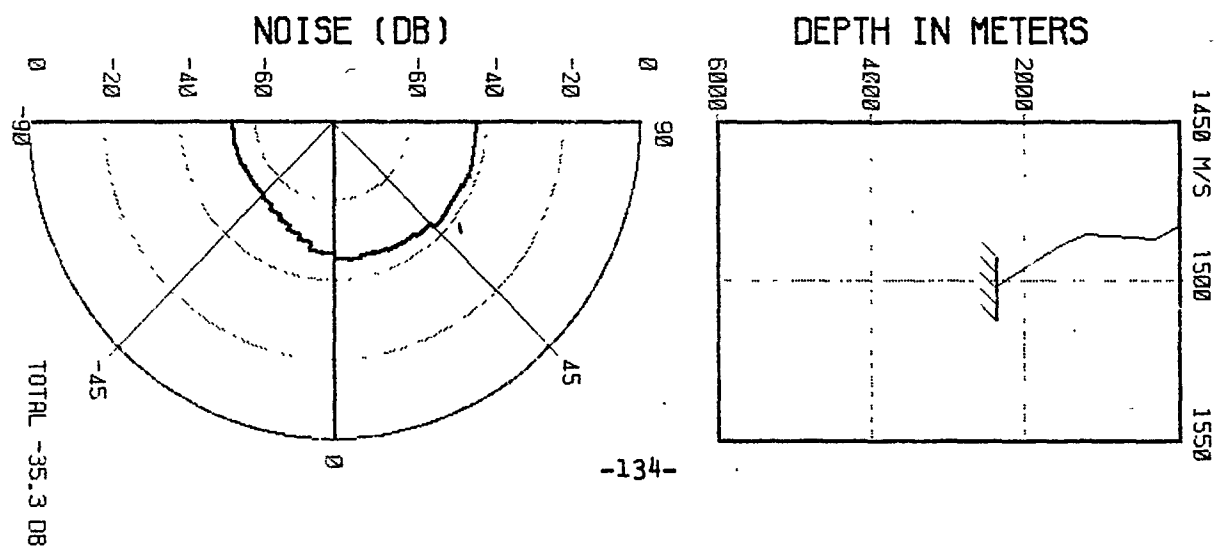
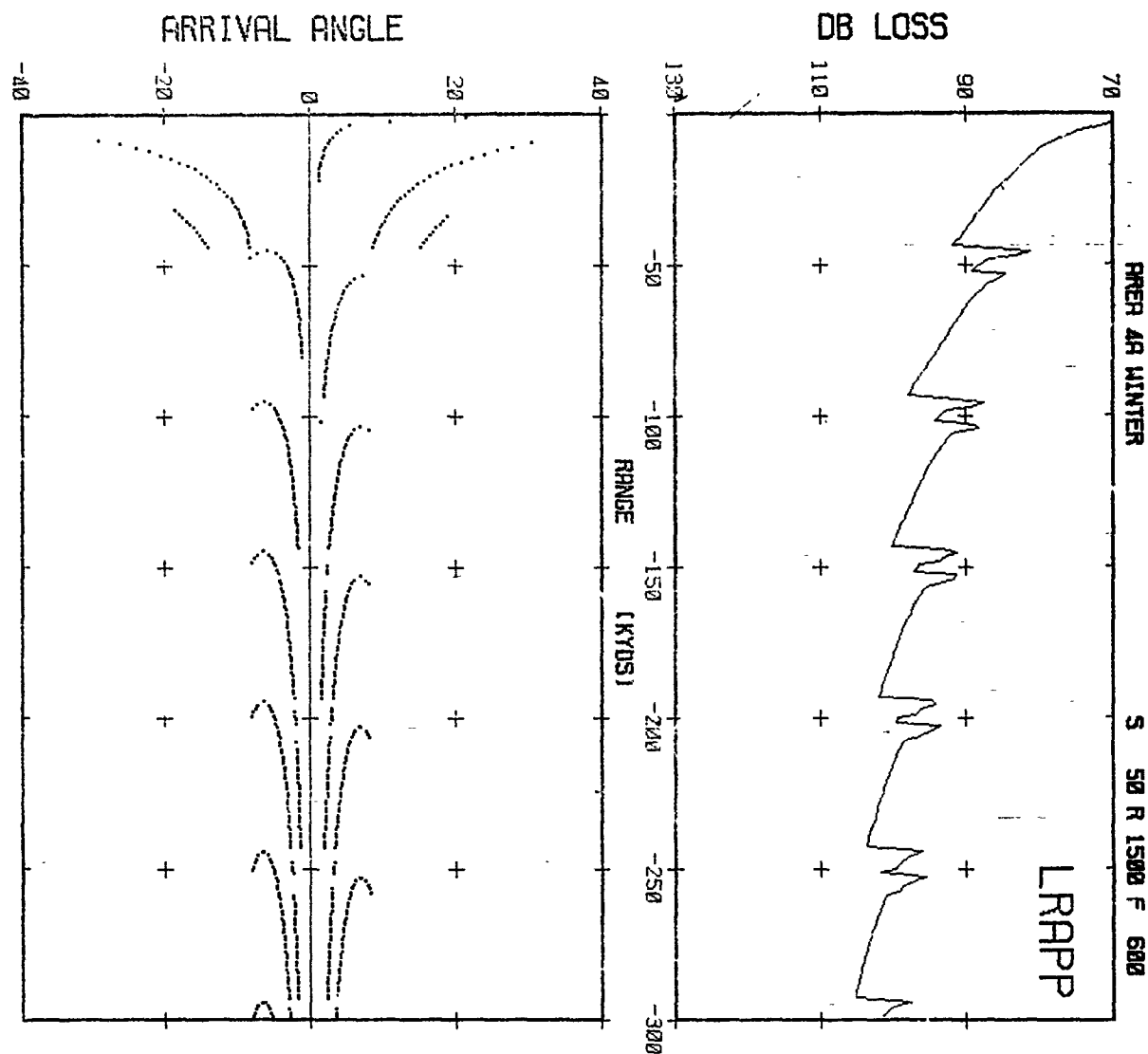


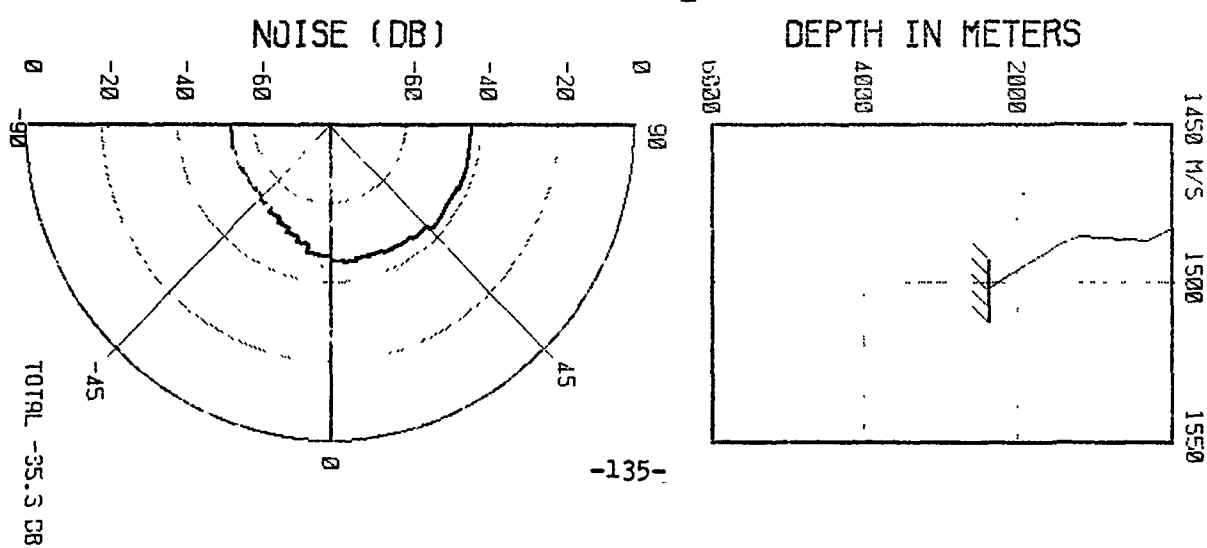
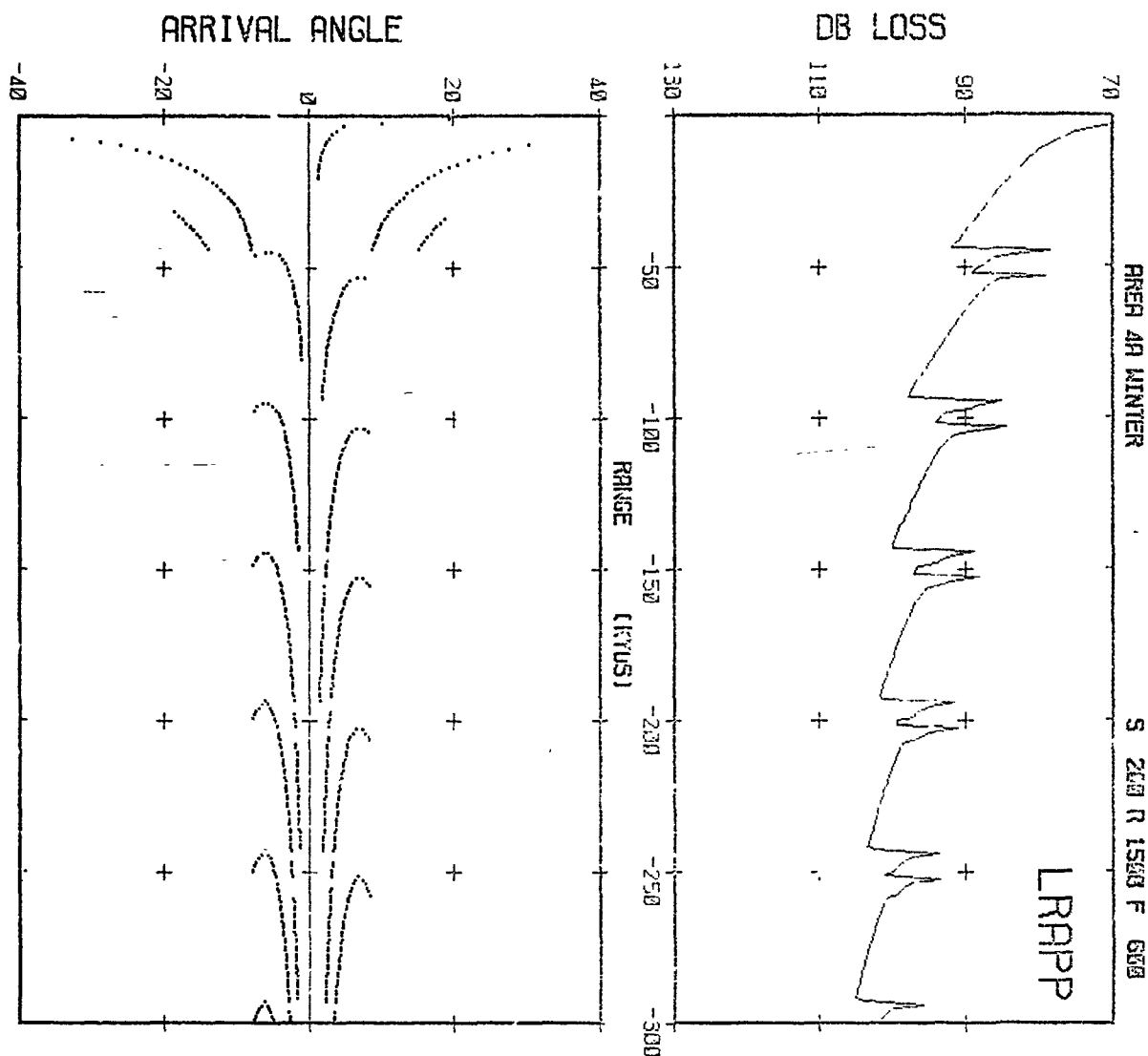
NOISE (DB)

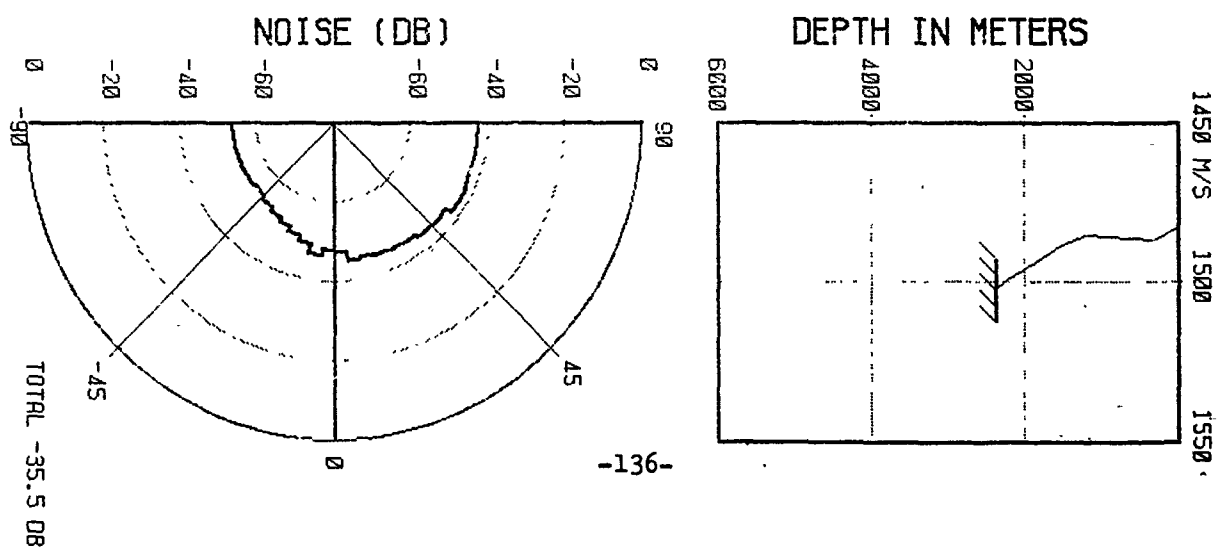
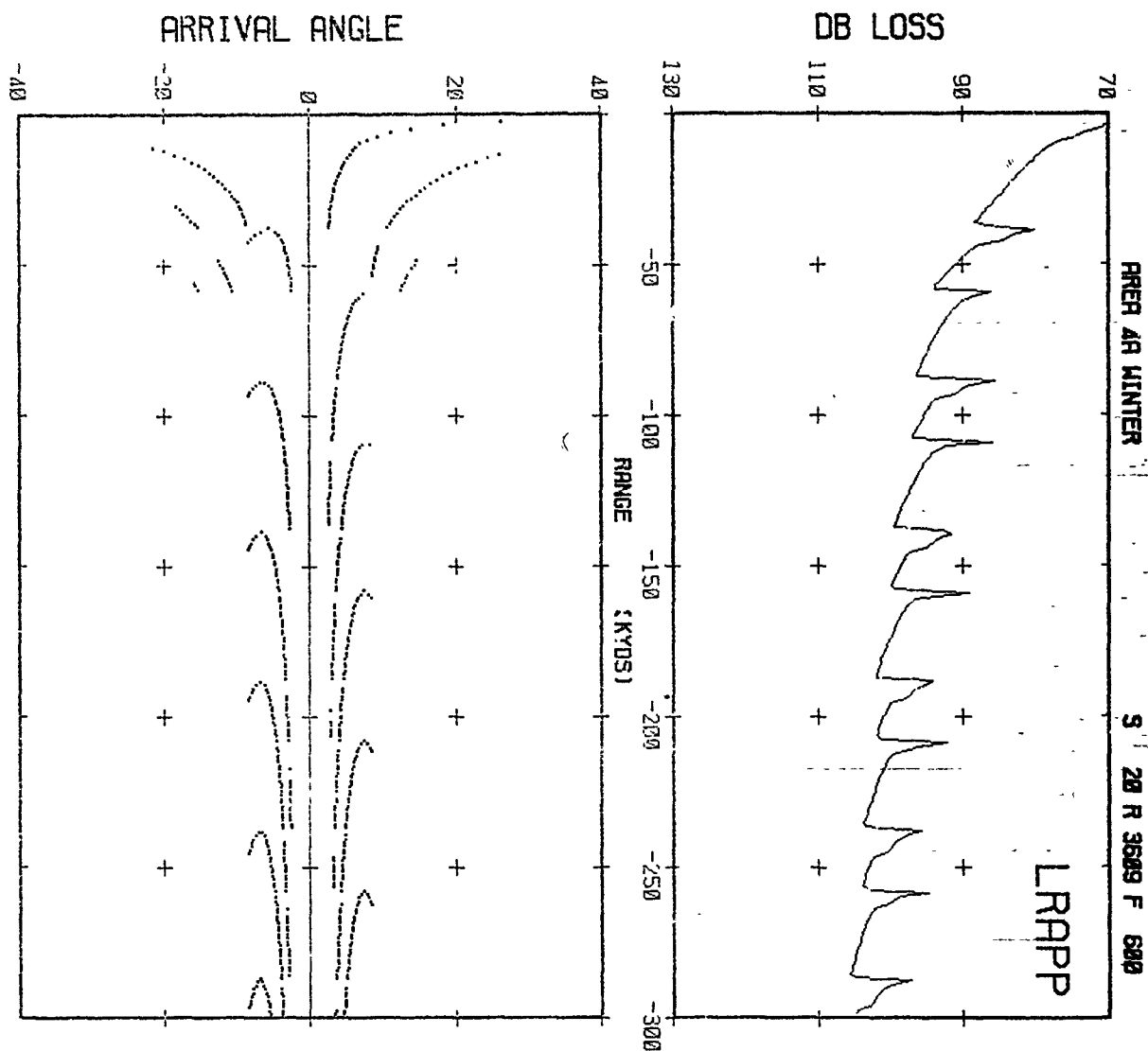


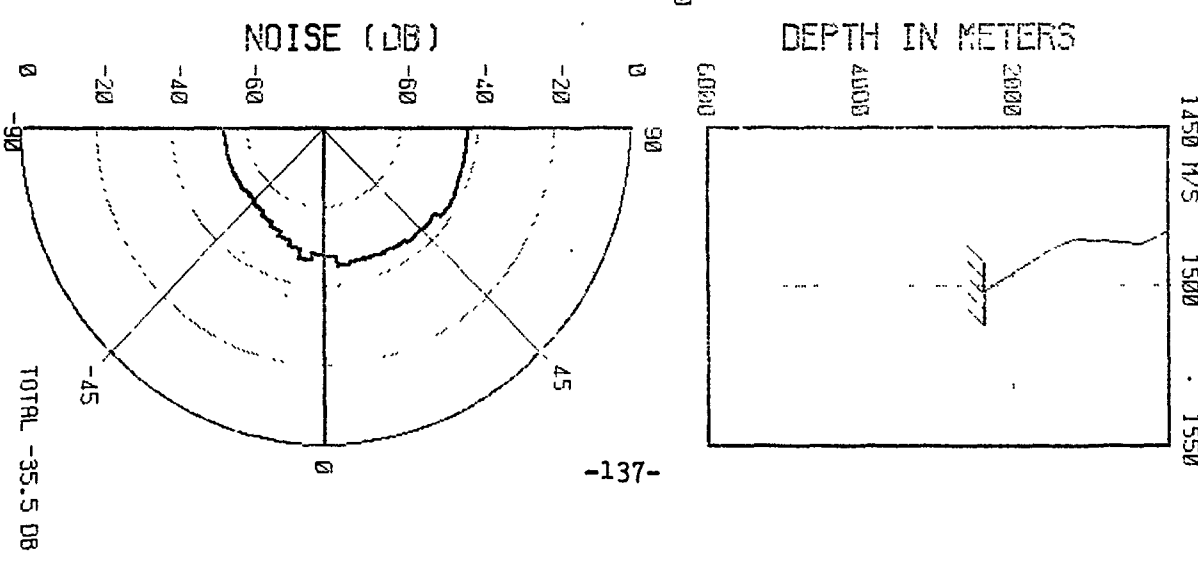
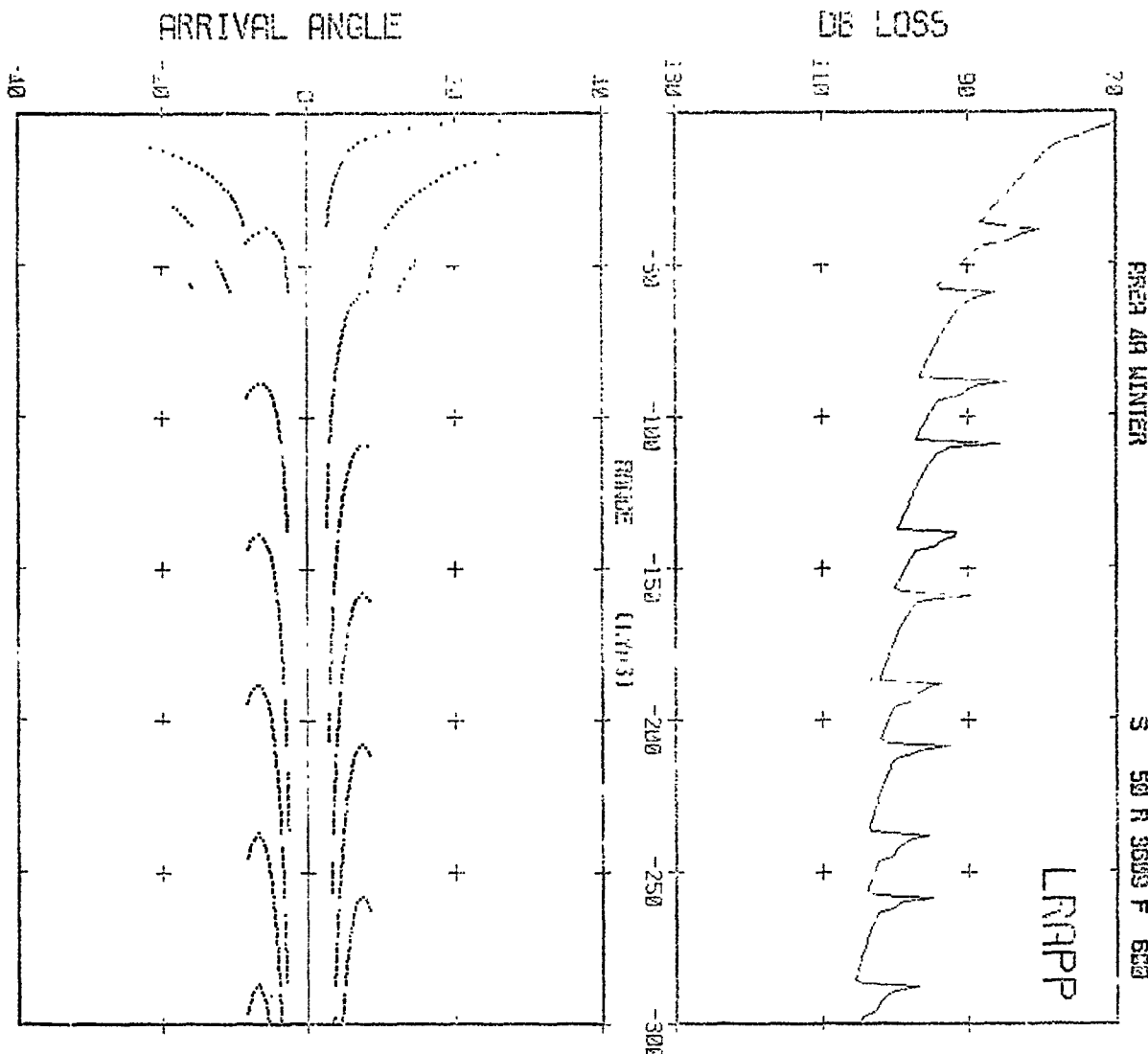
-133-

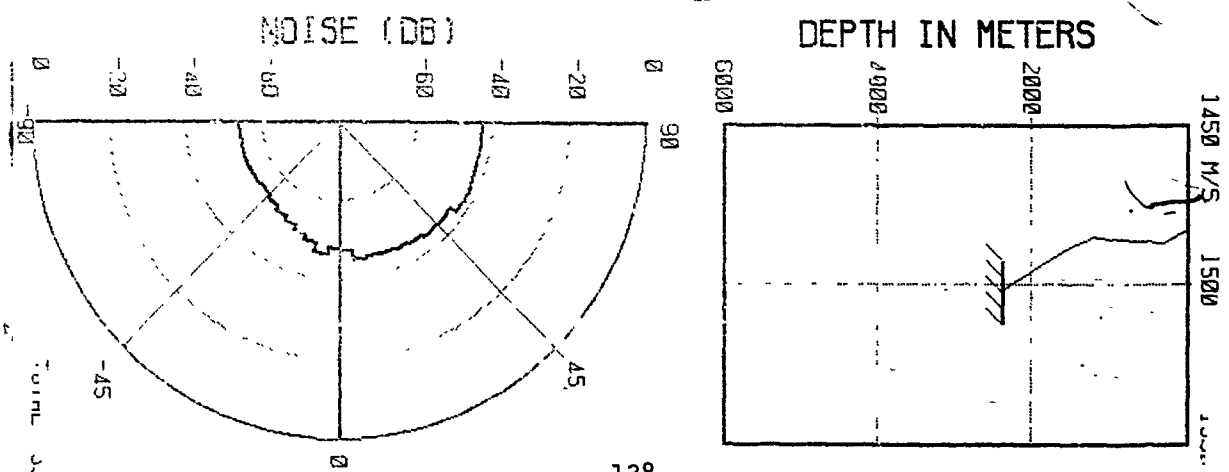
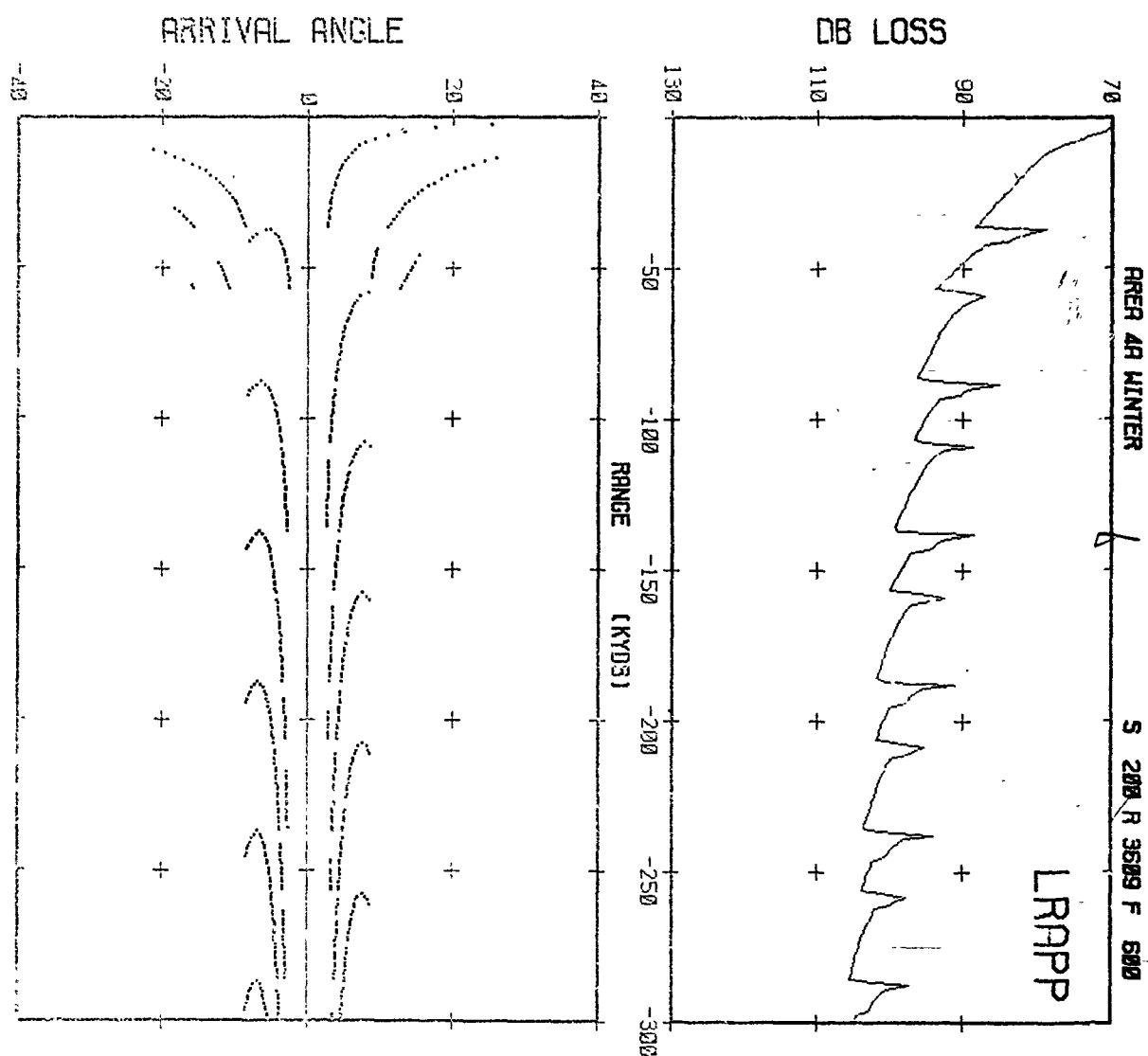
TOTAL -35.3 DB

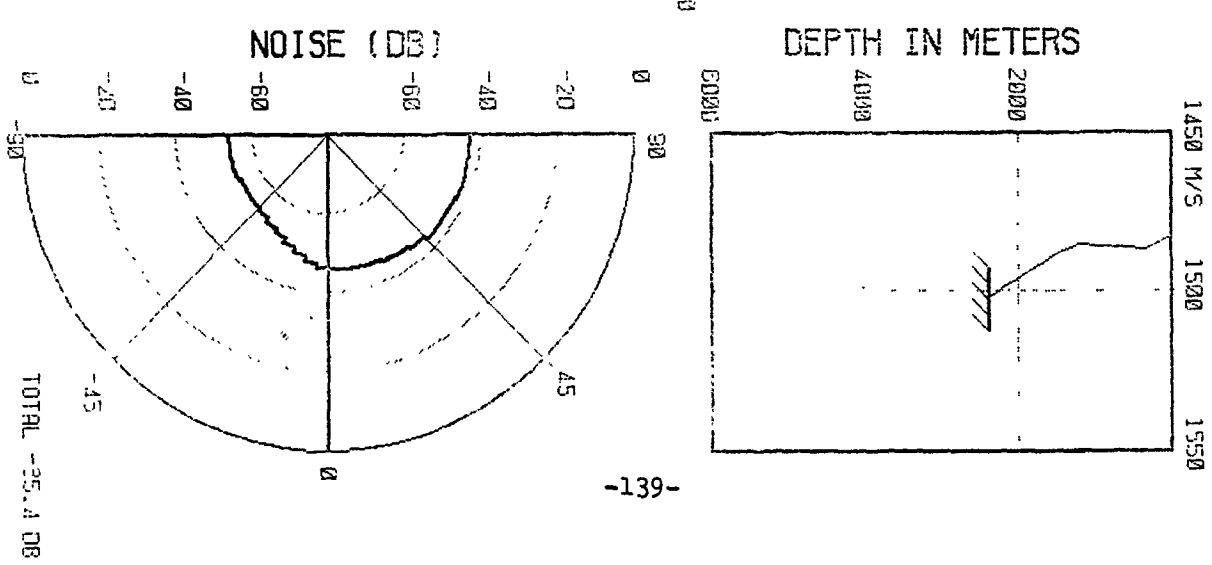
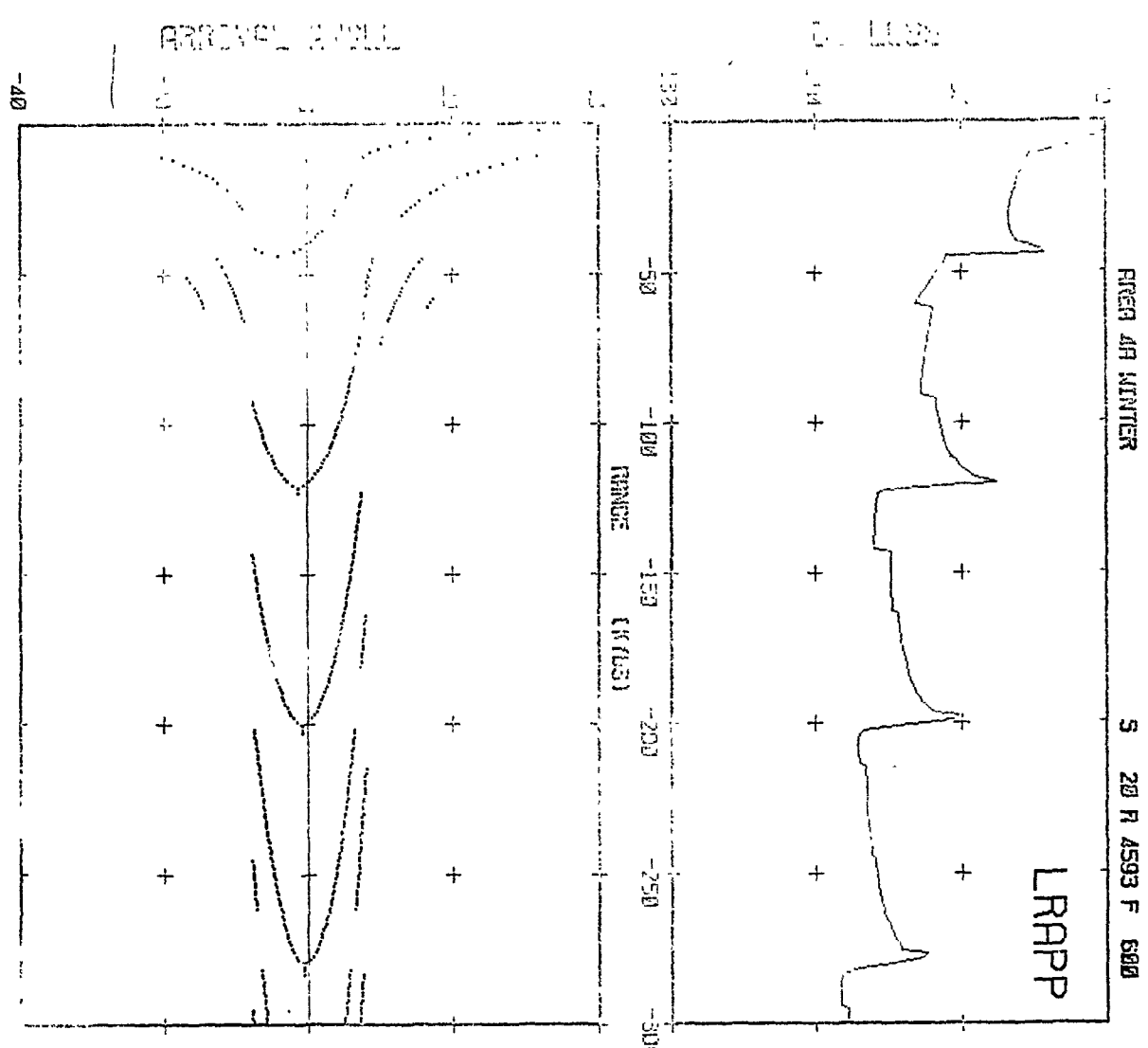


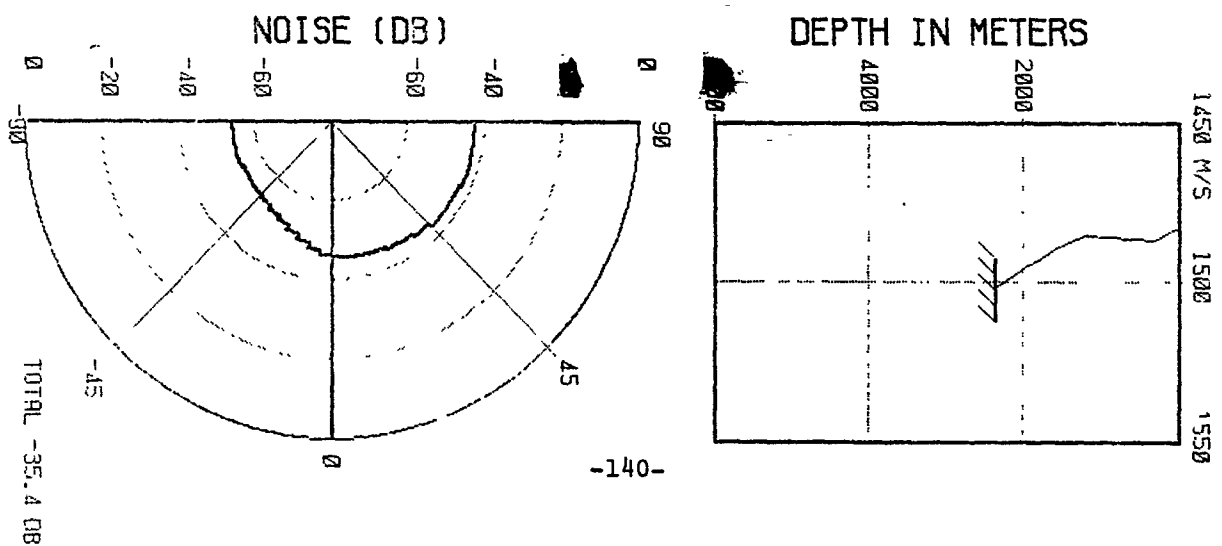
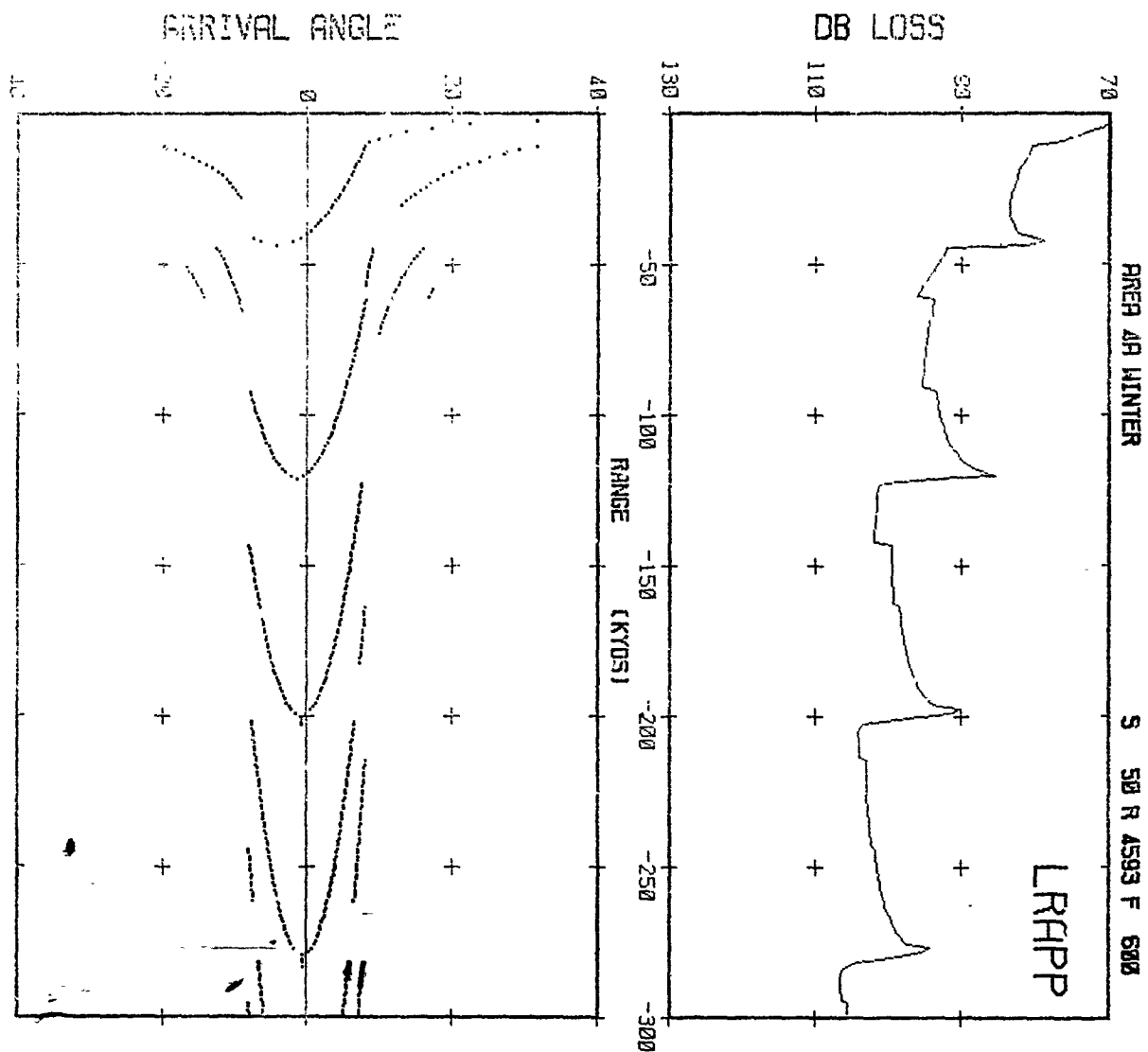




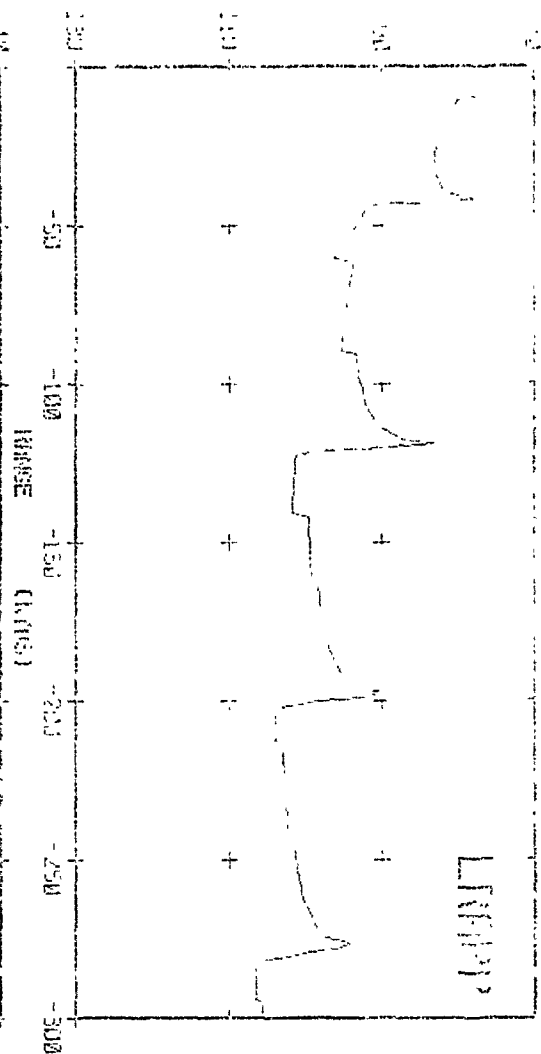




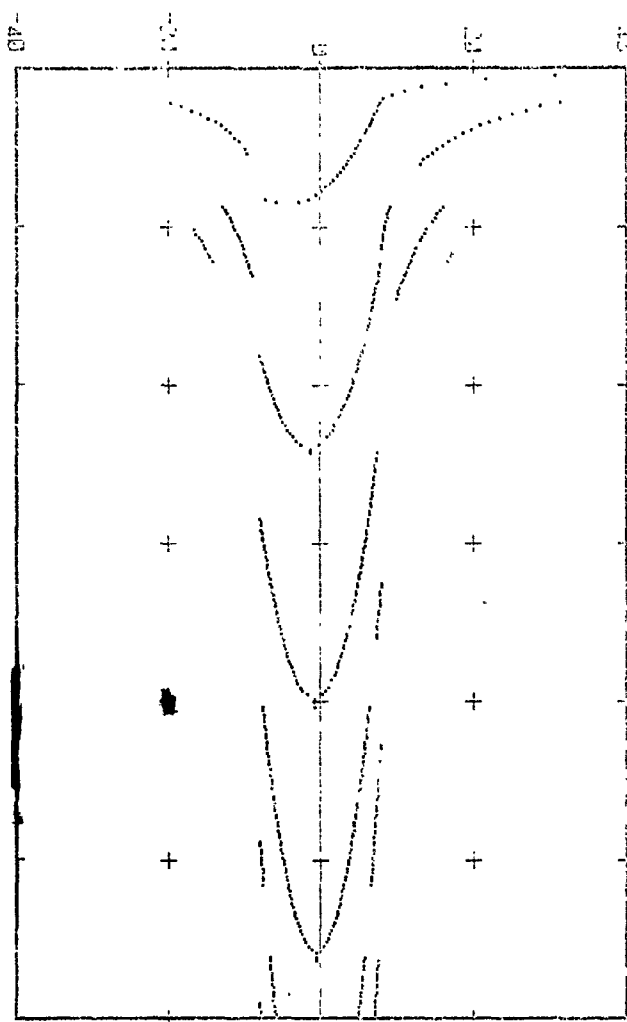




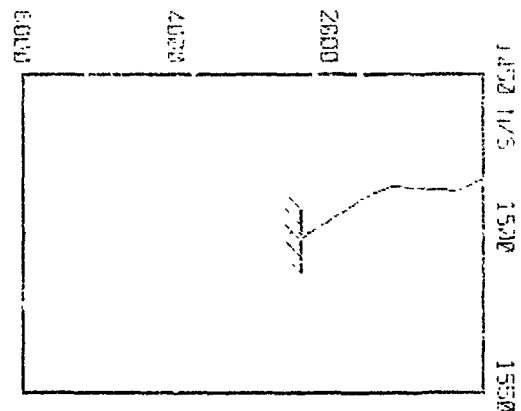
LOSS



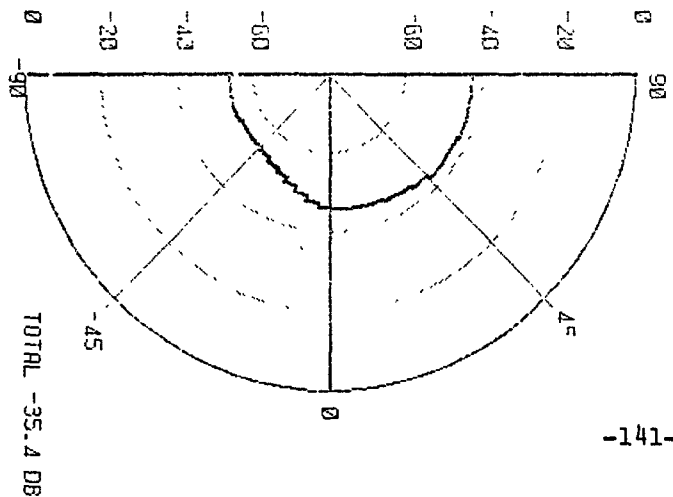
ARRIVAL ANGLE

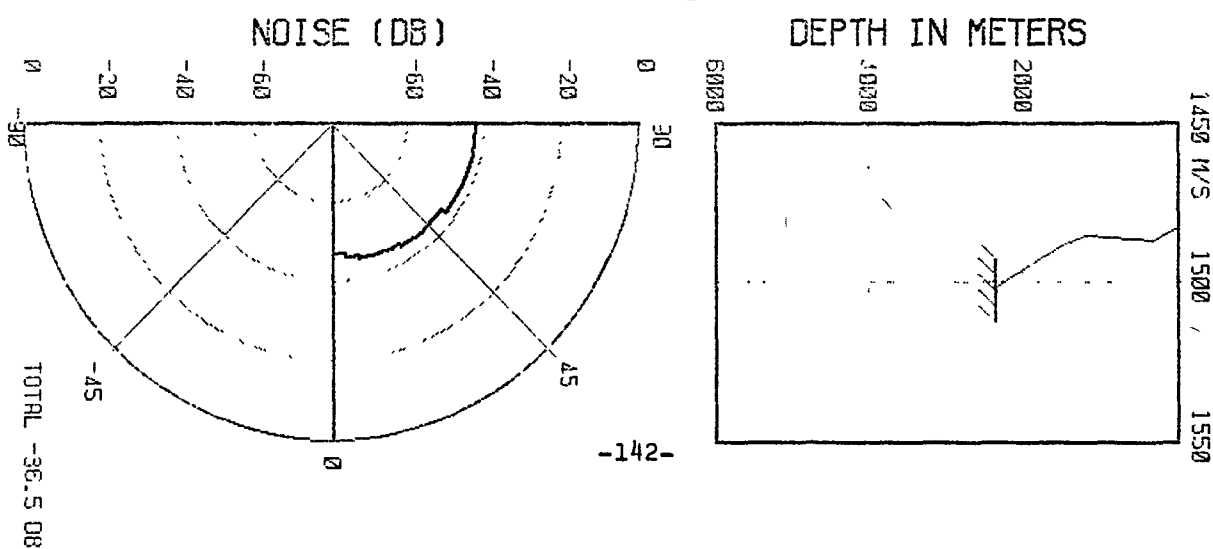
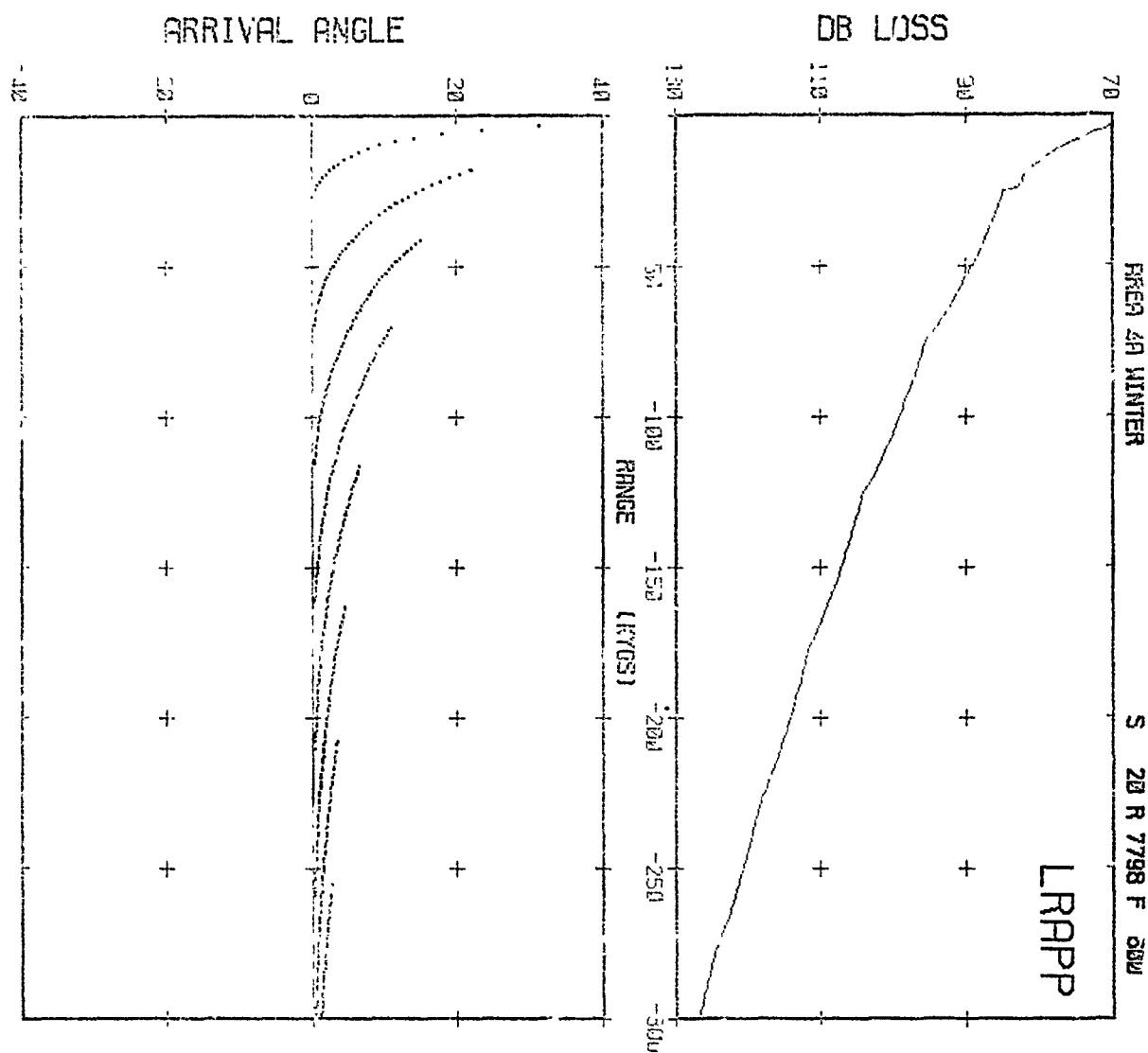


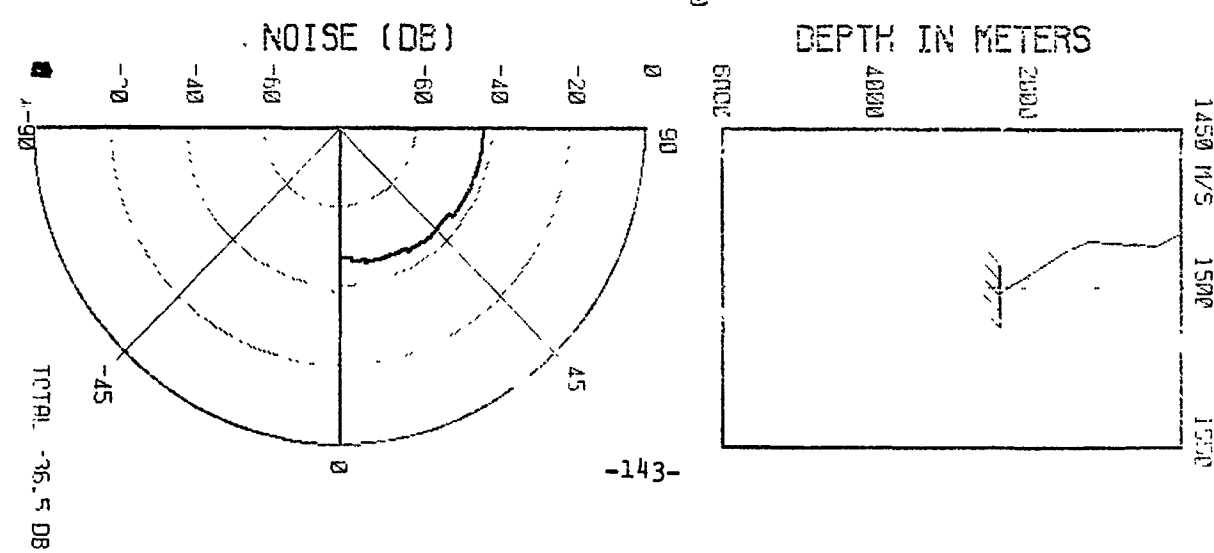
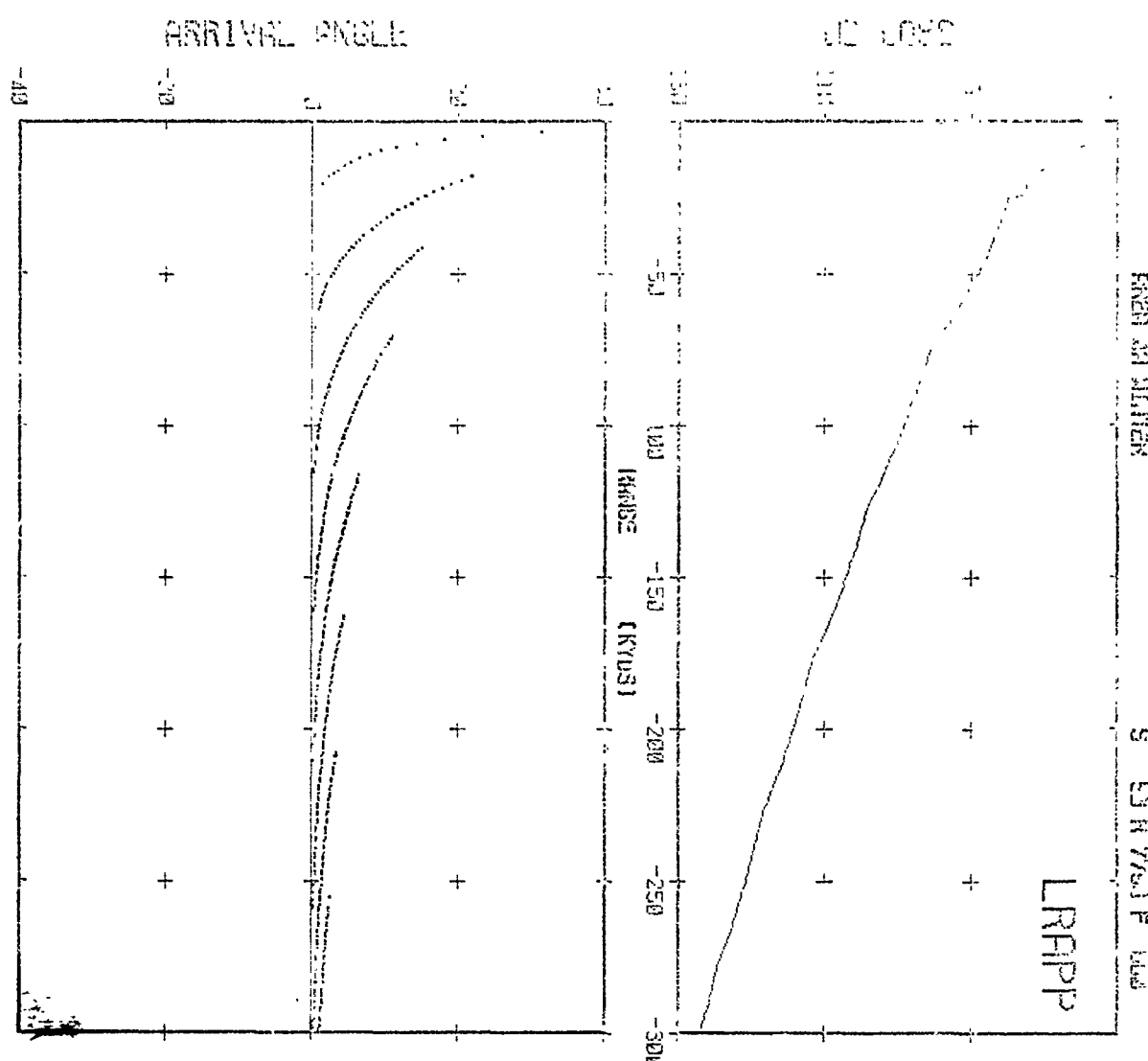
DEPTH IN METERS

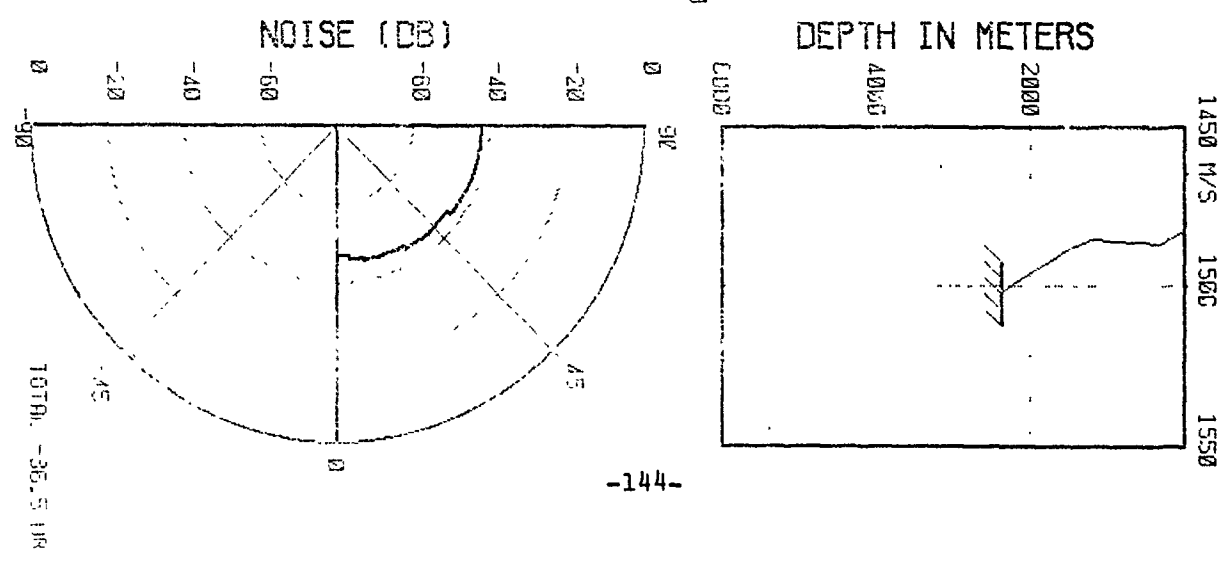
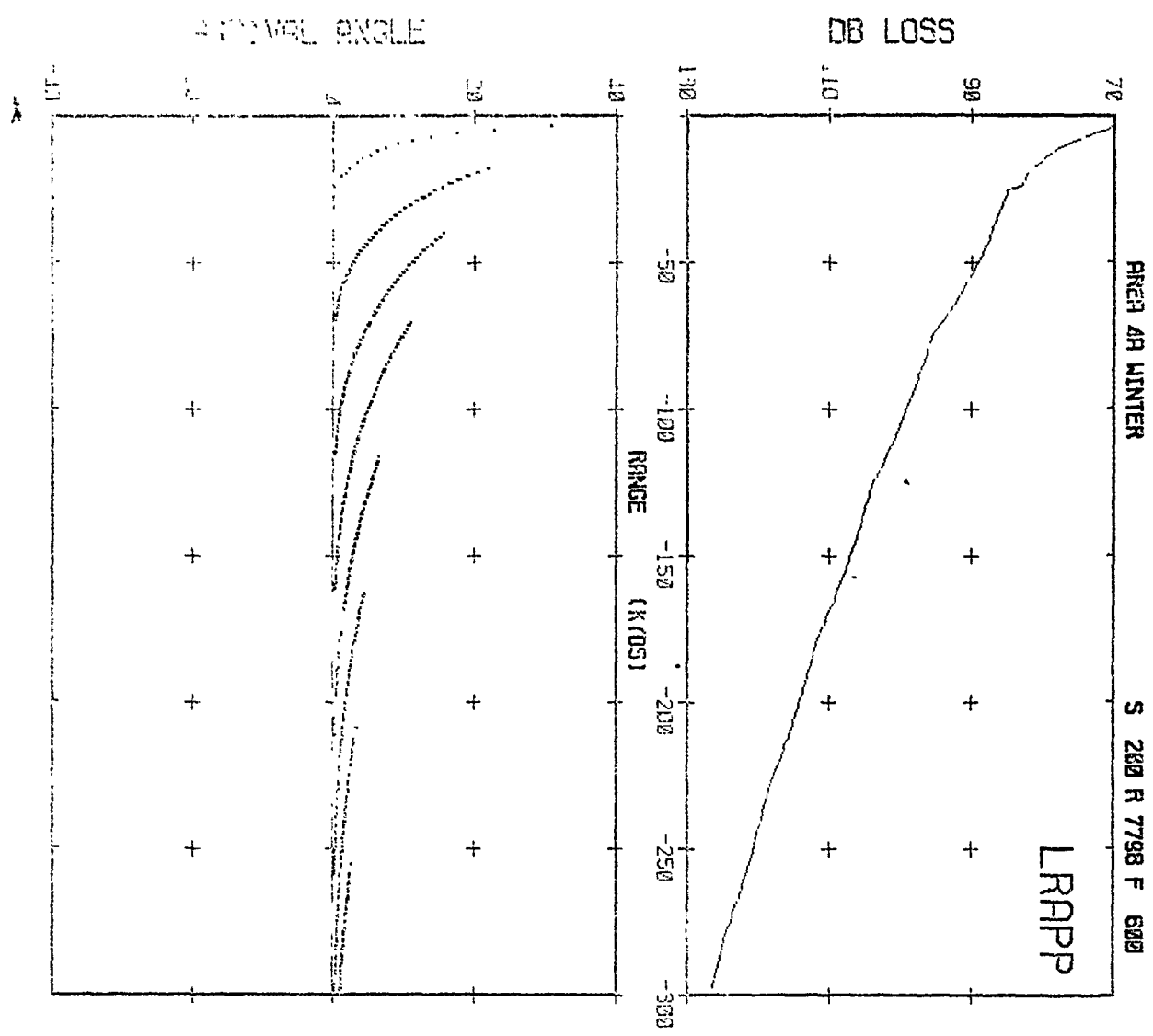


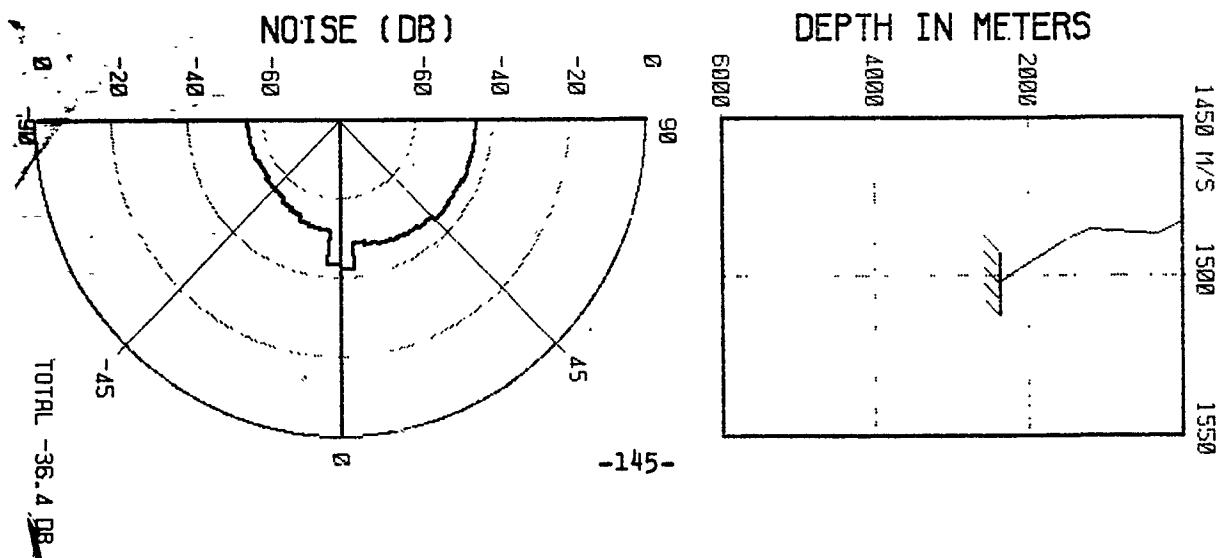
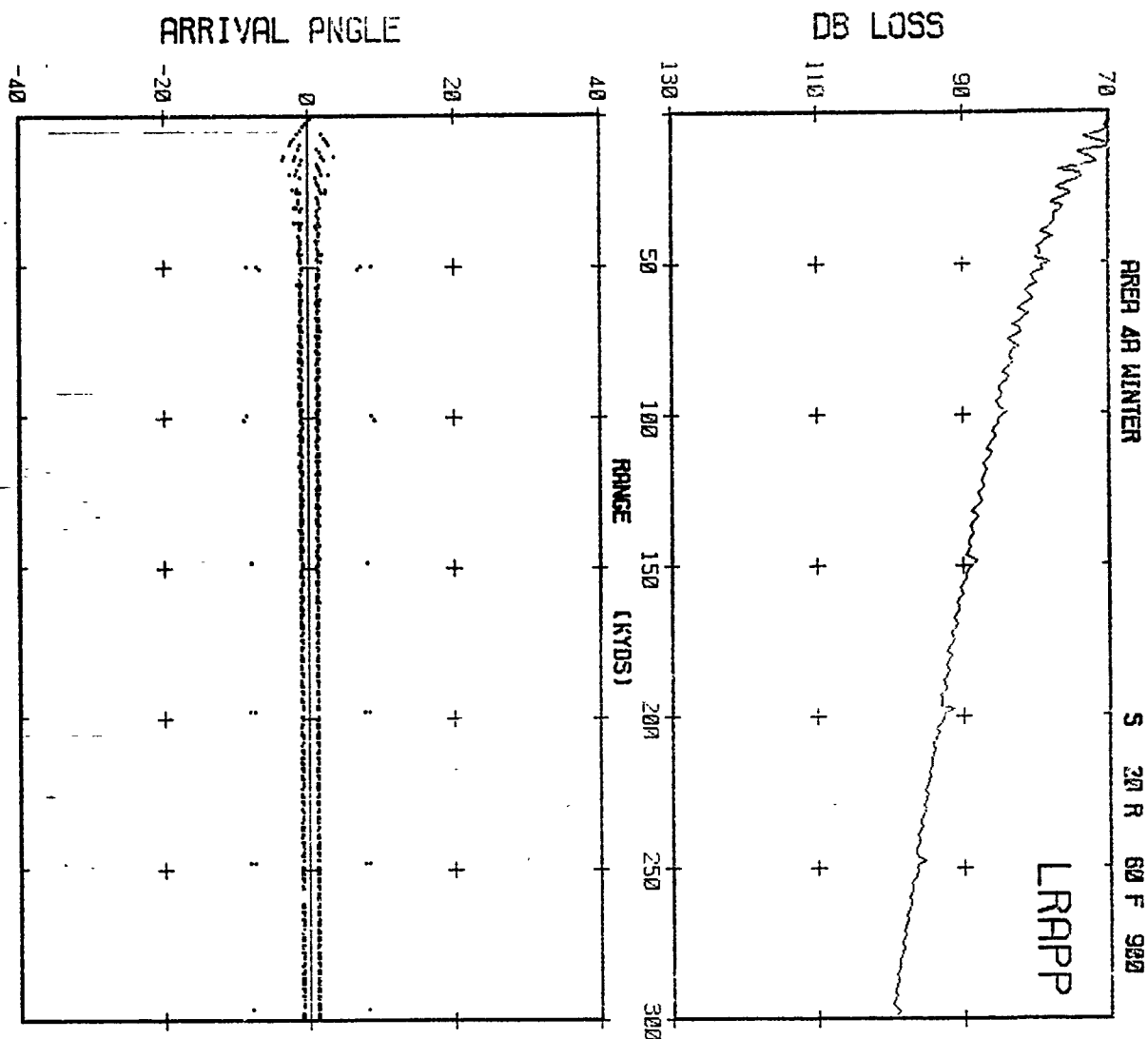
NOISE (DB)

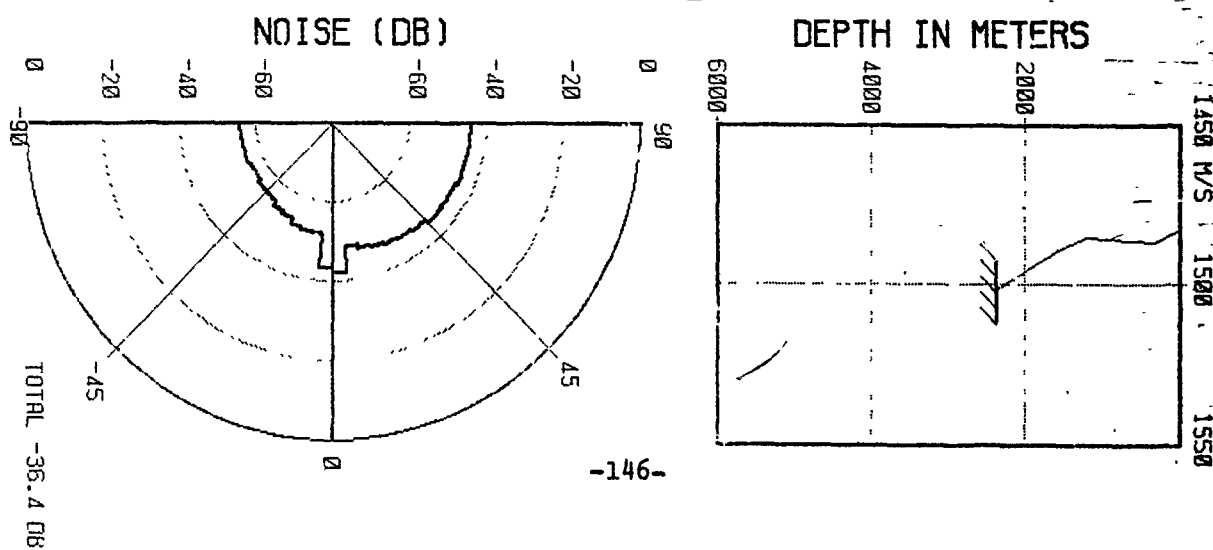
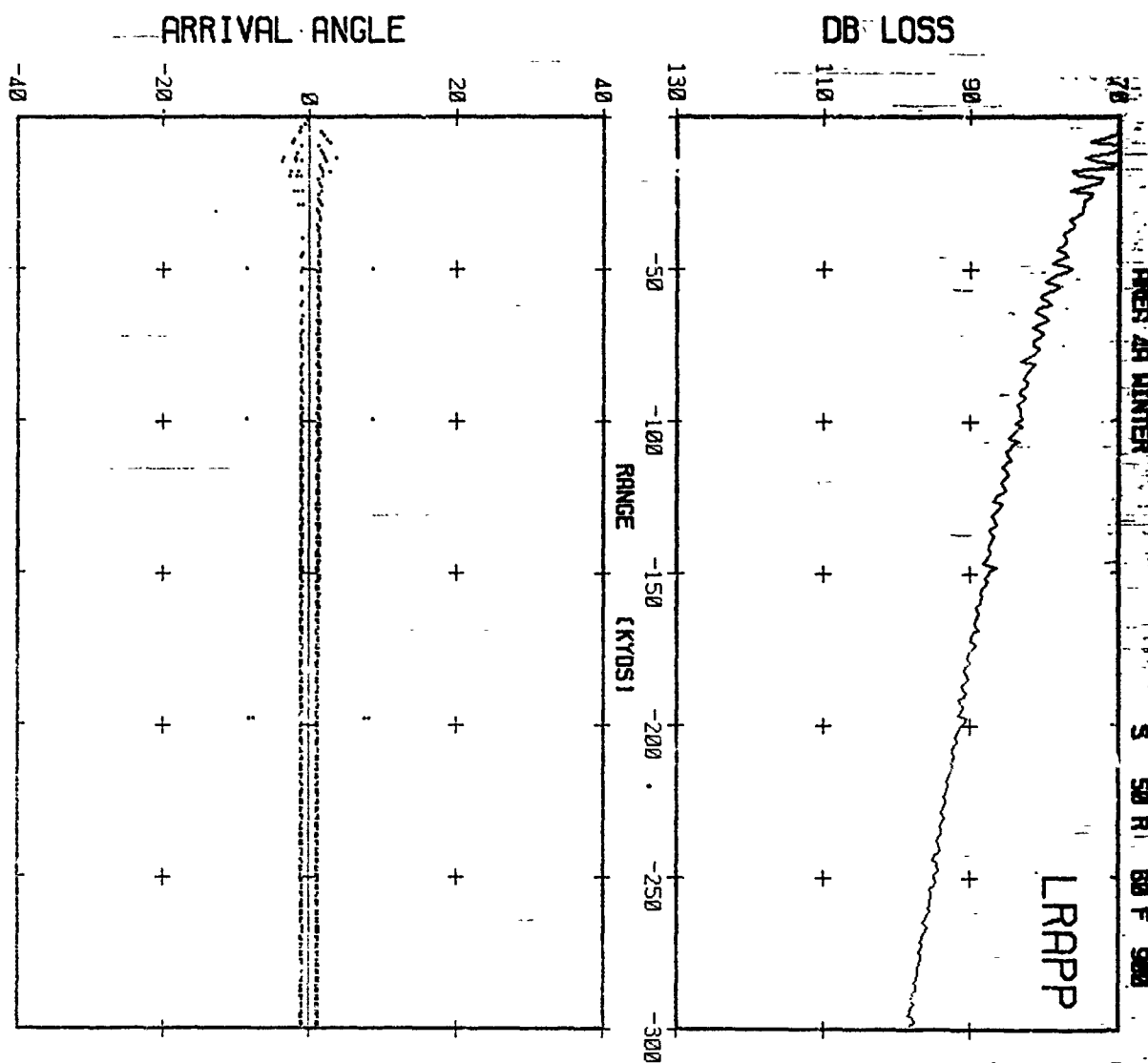


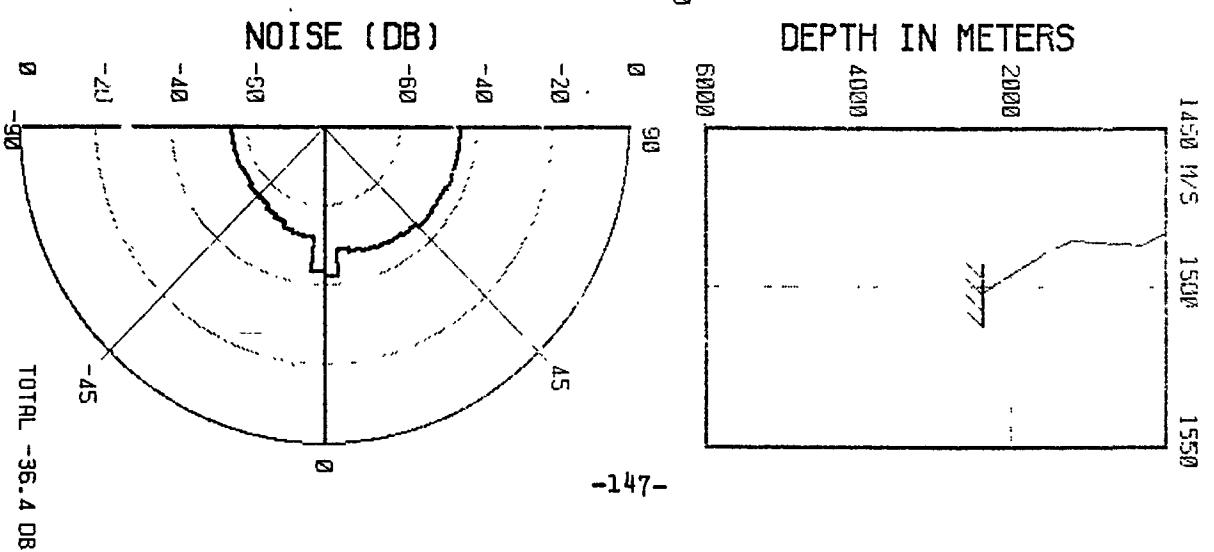
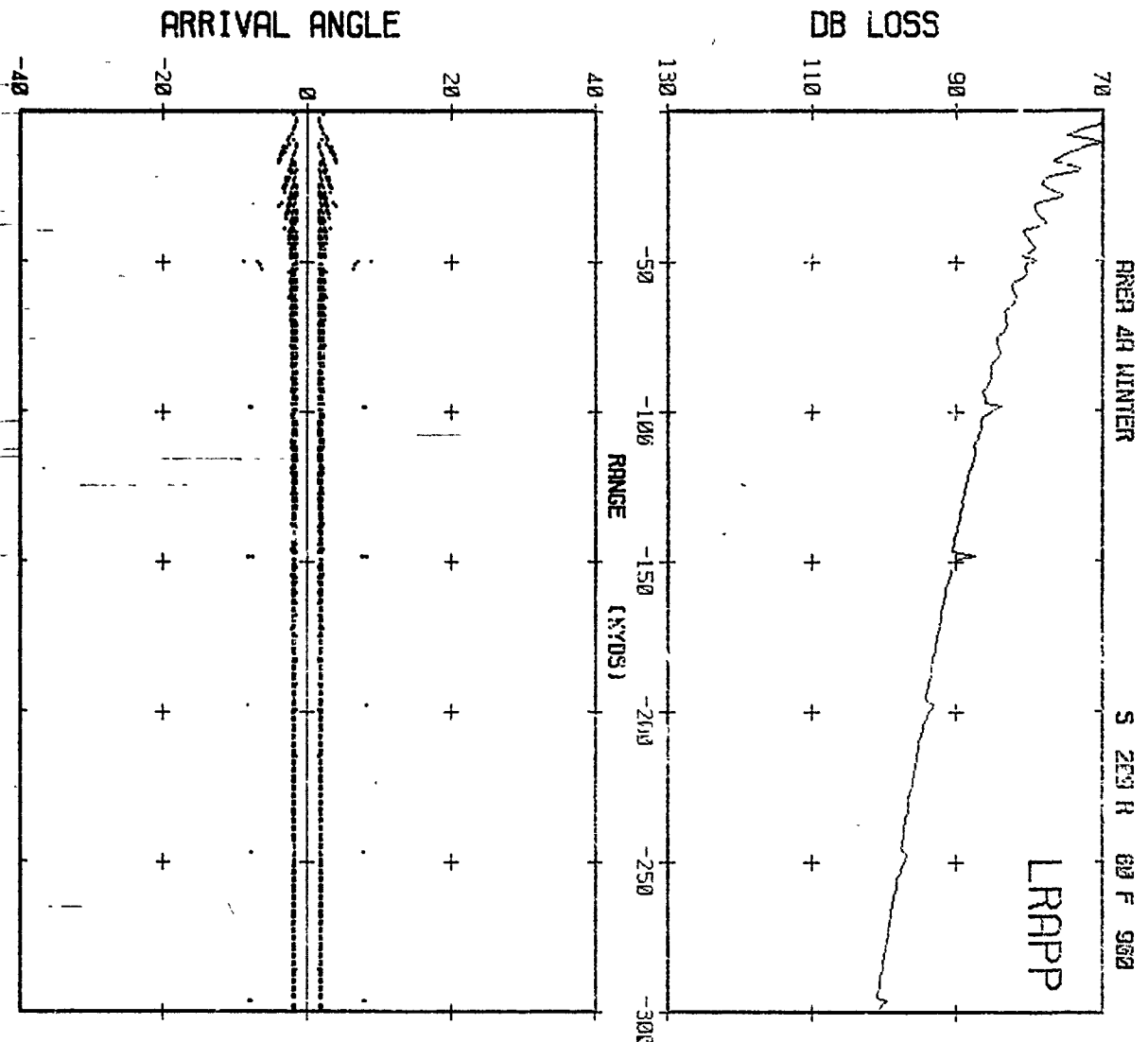


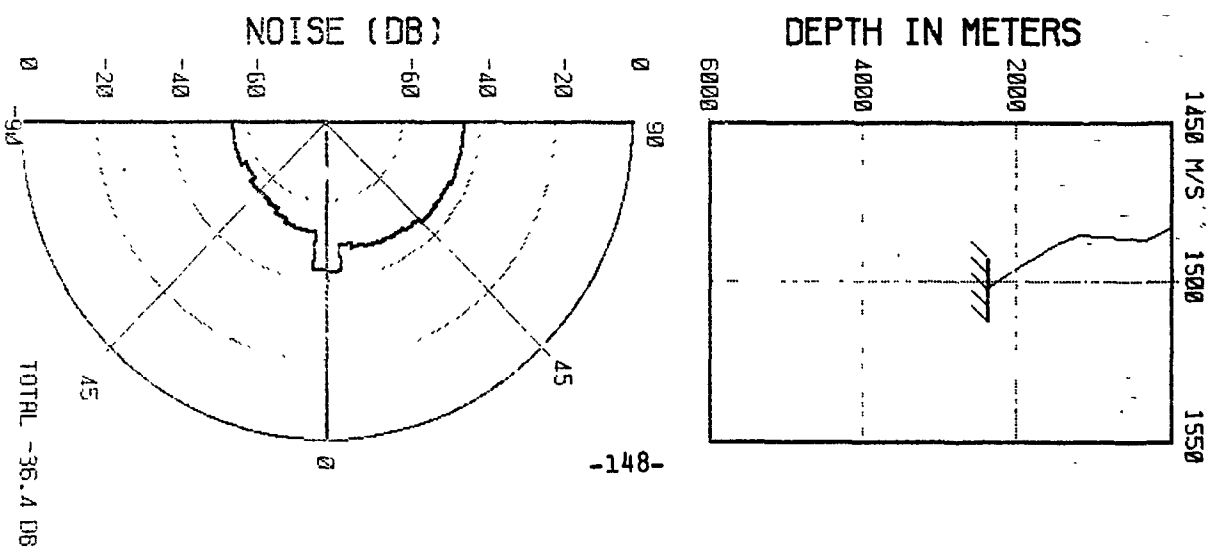
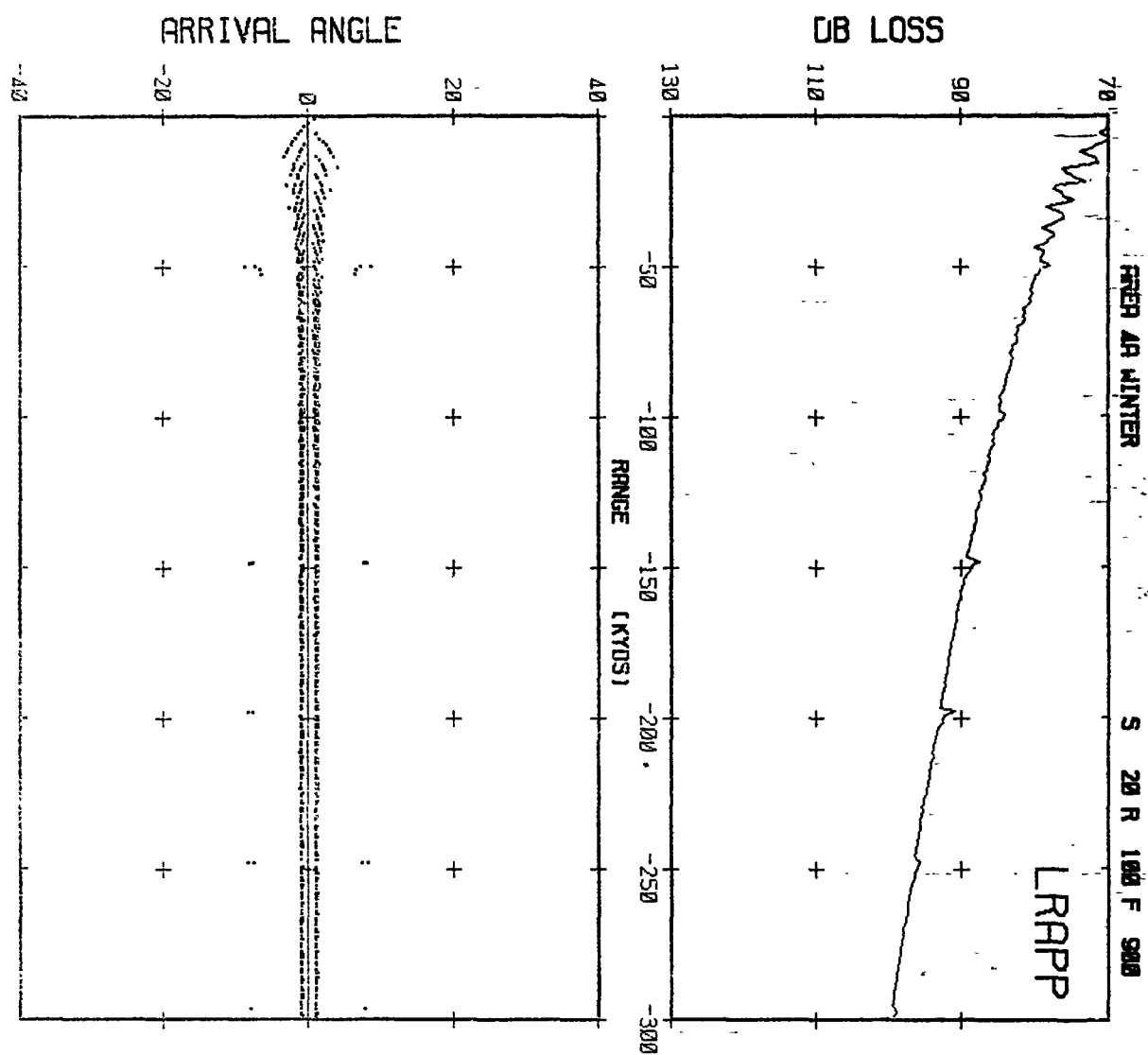


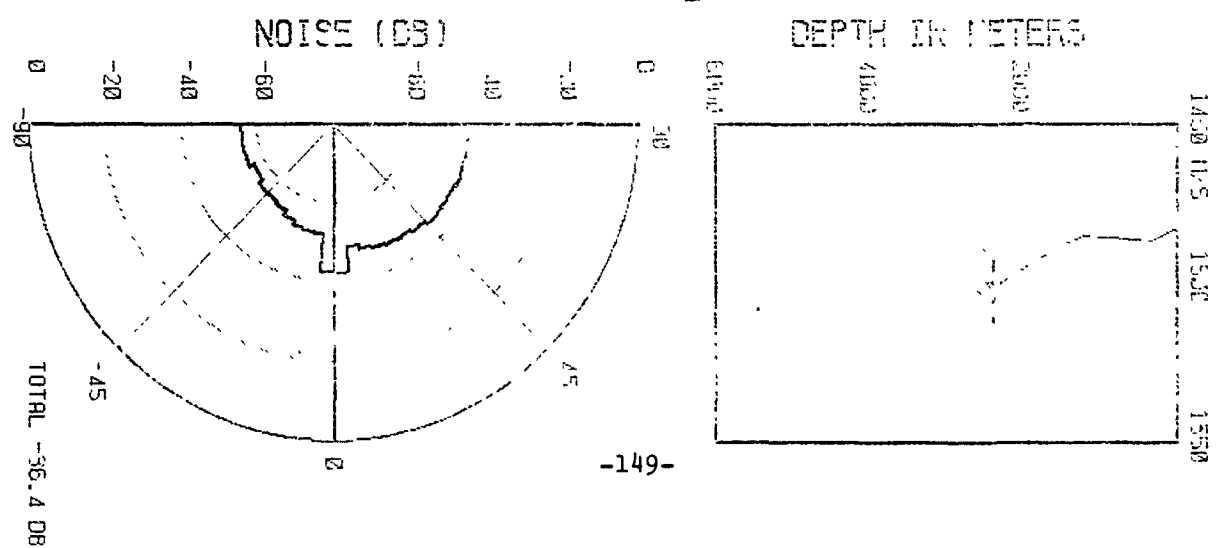
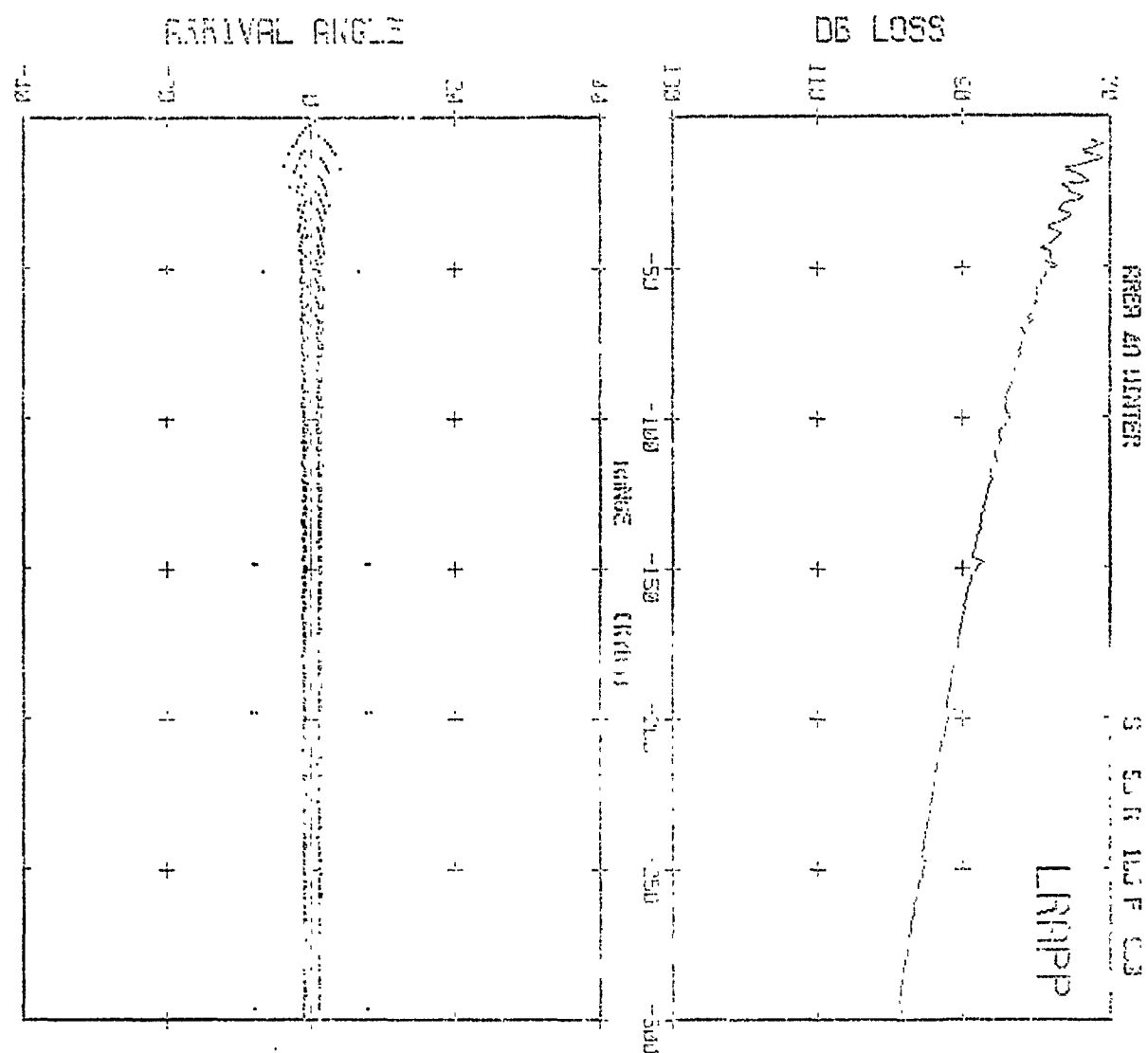


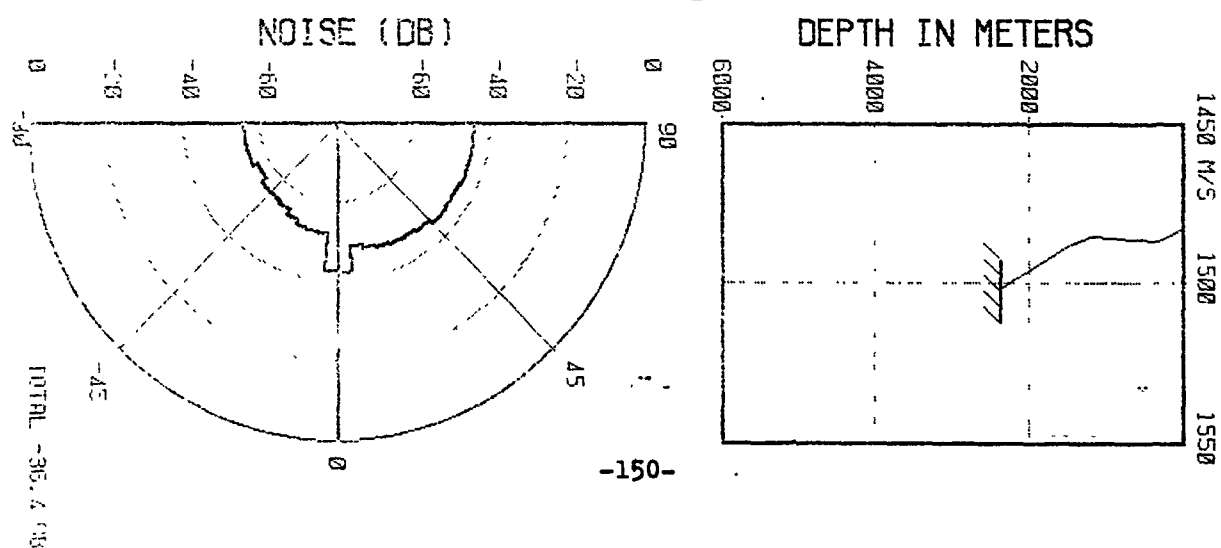
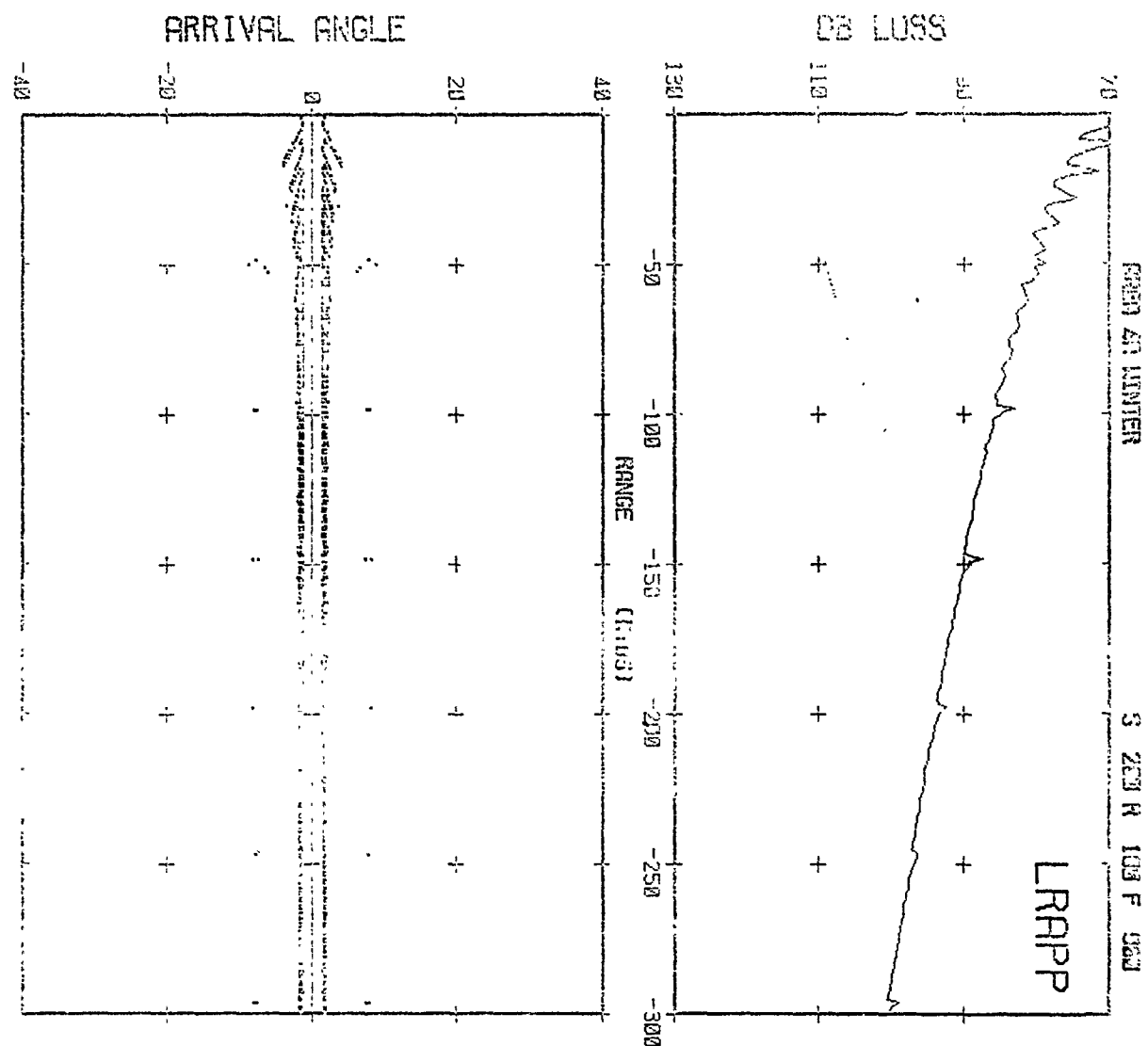


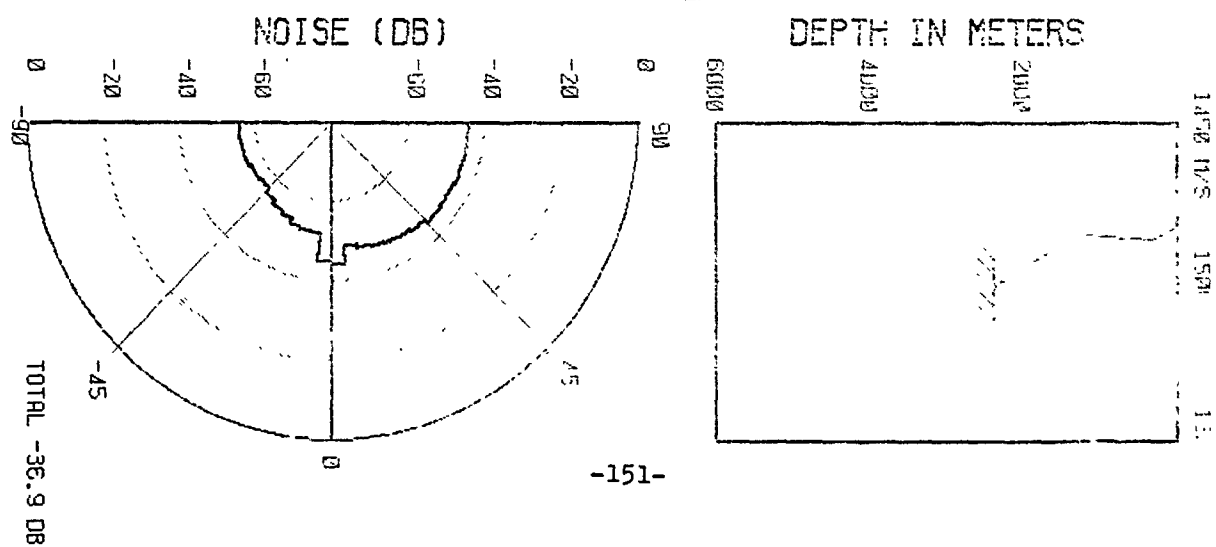
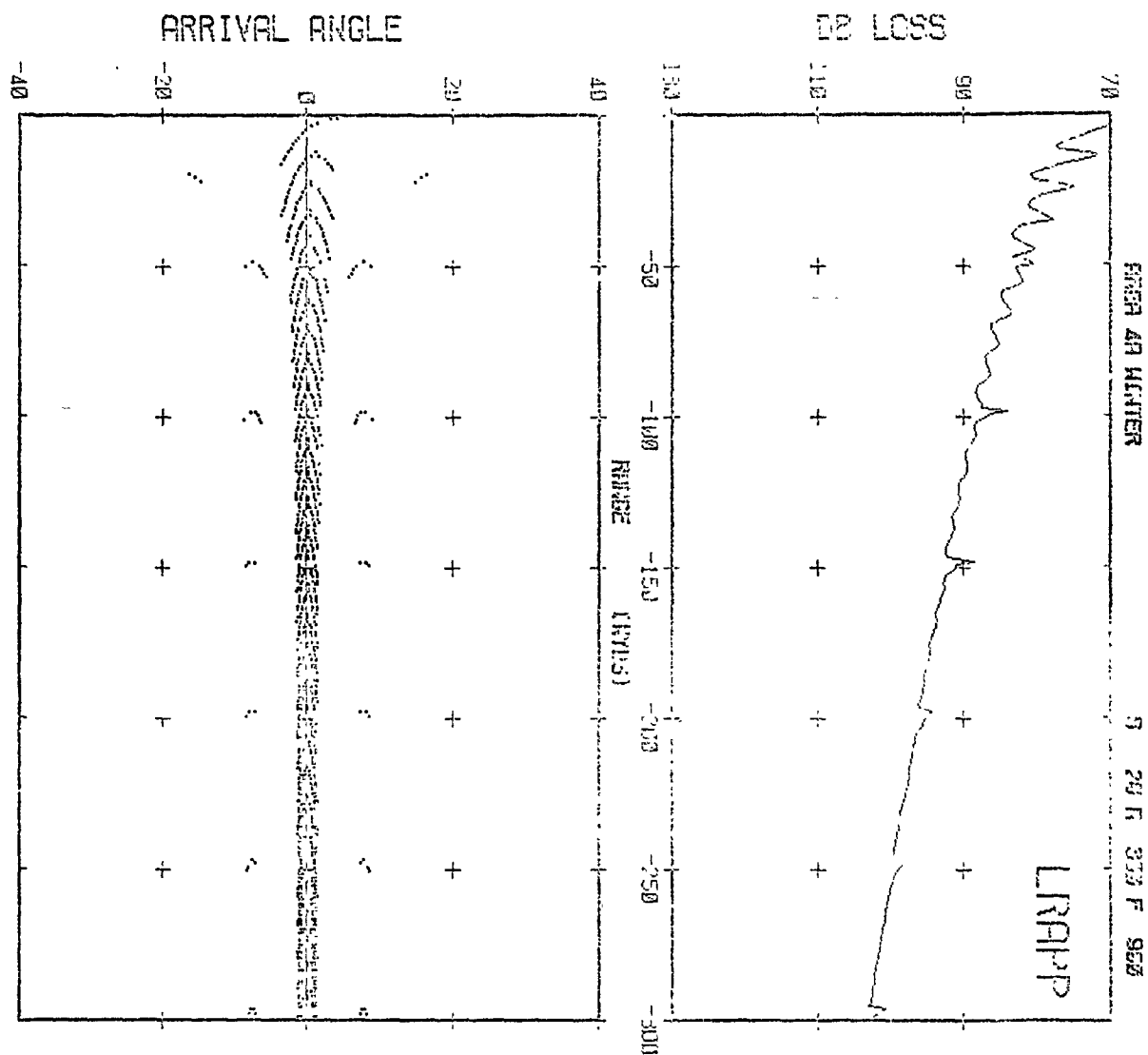


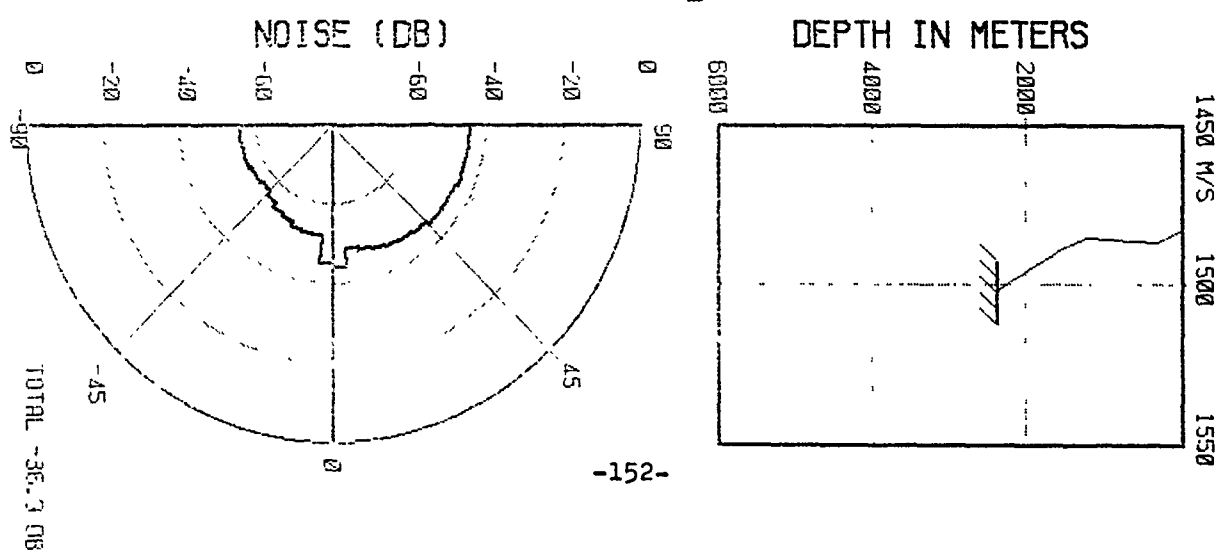
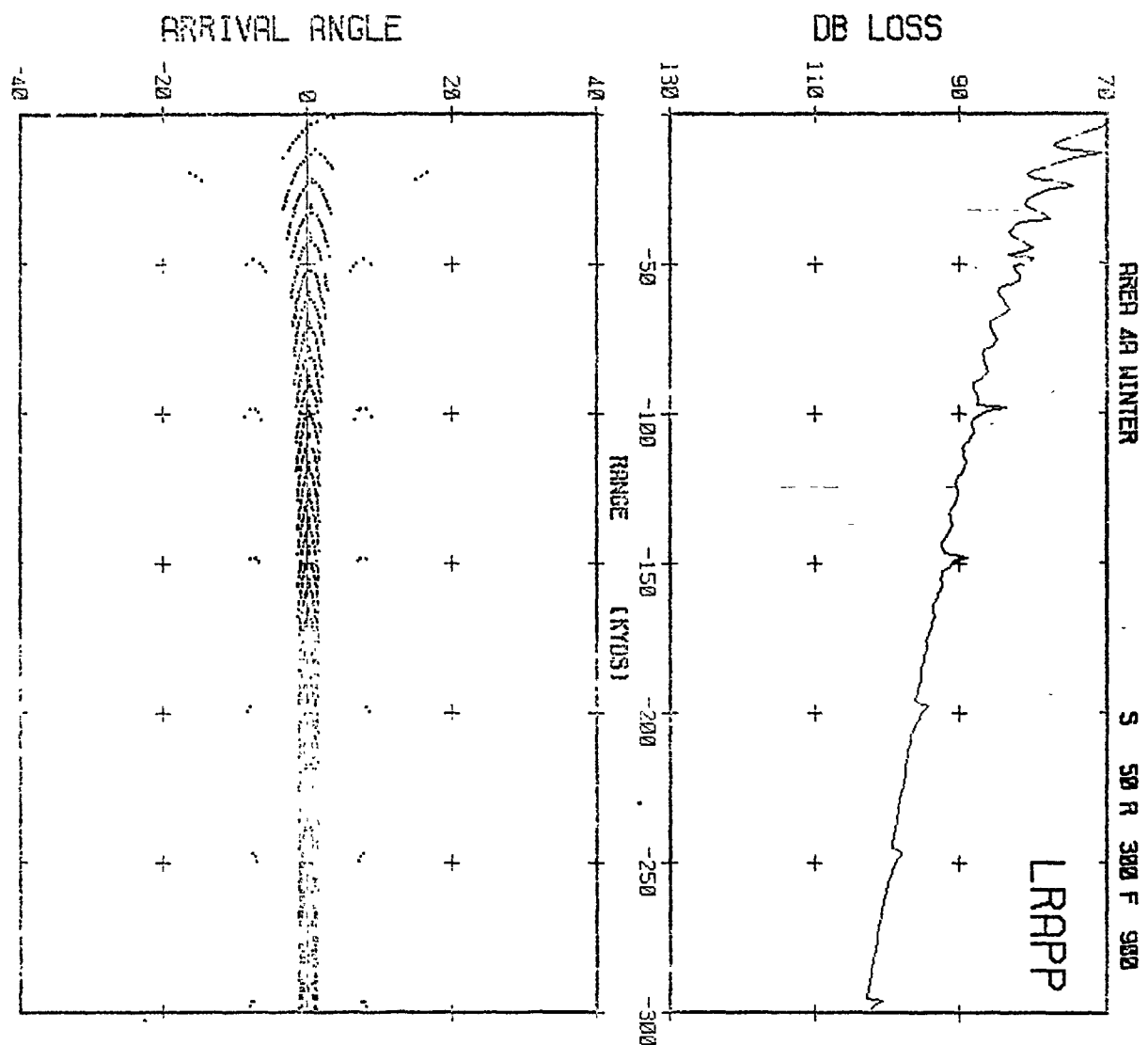


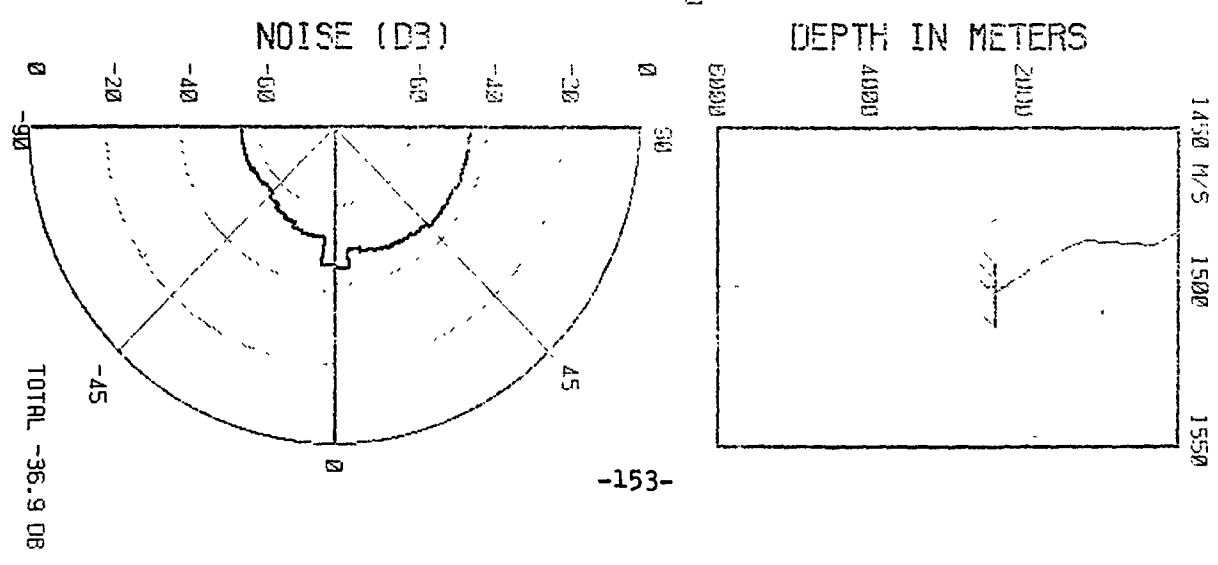
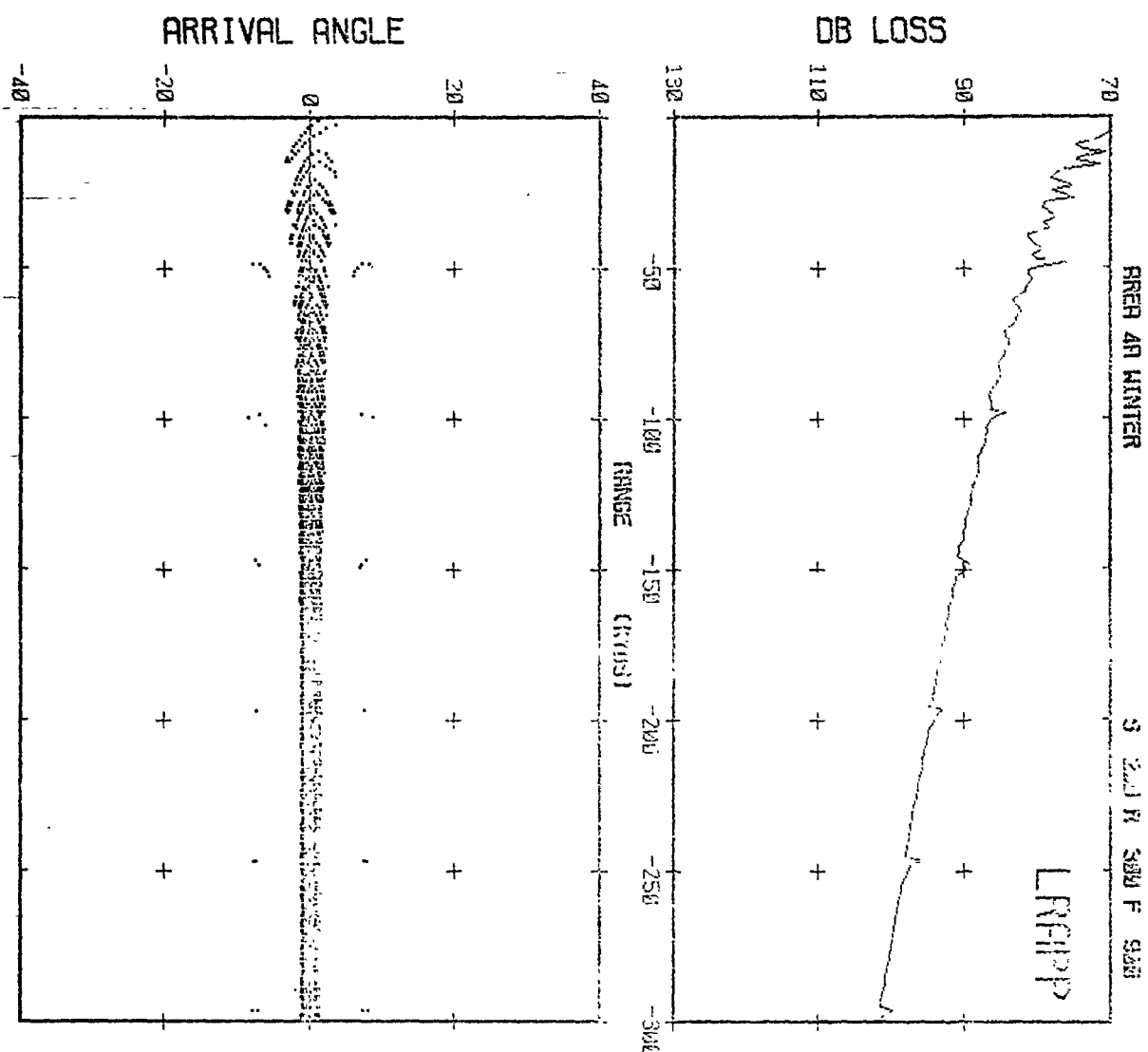


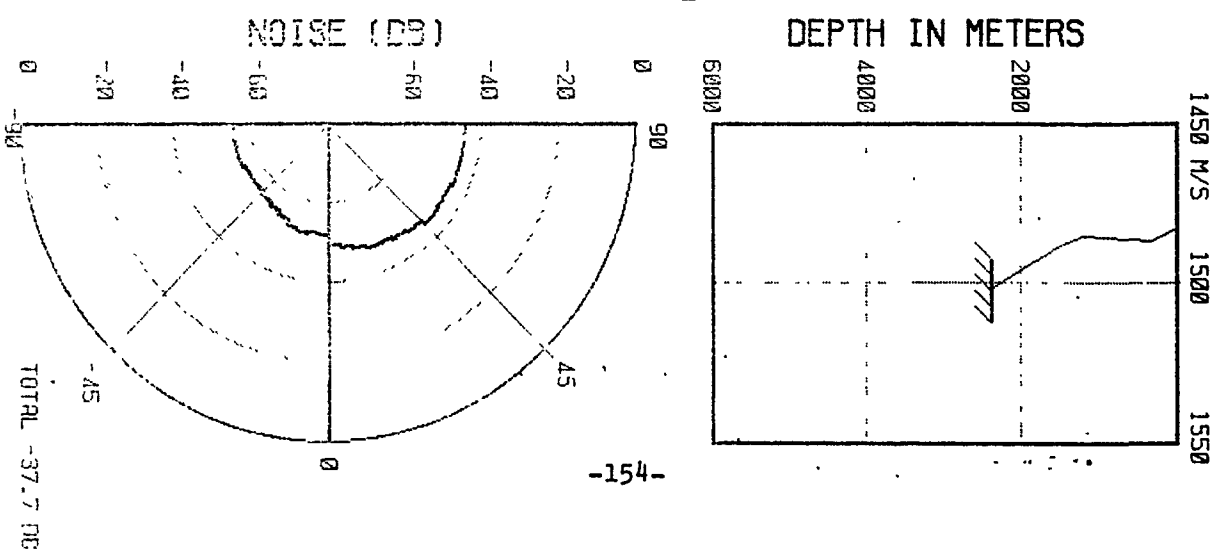
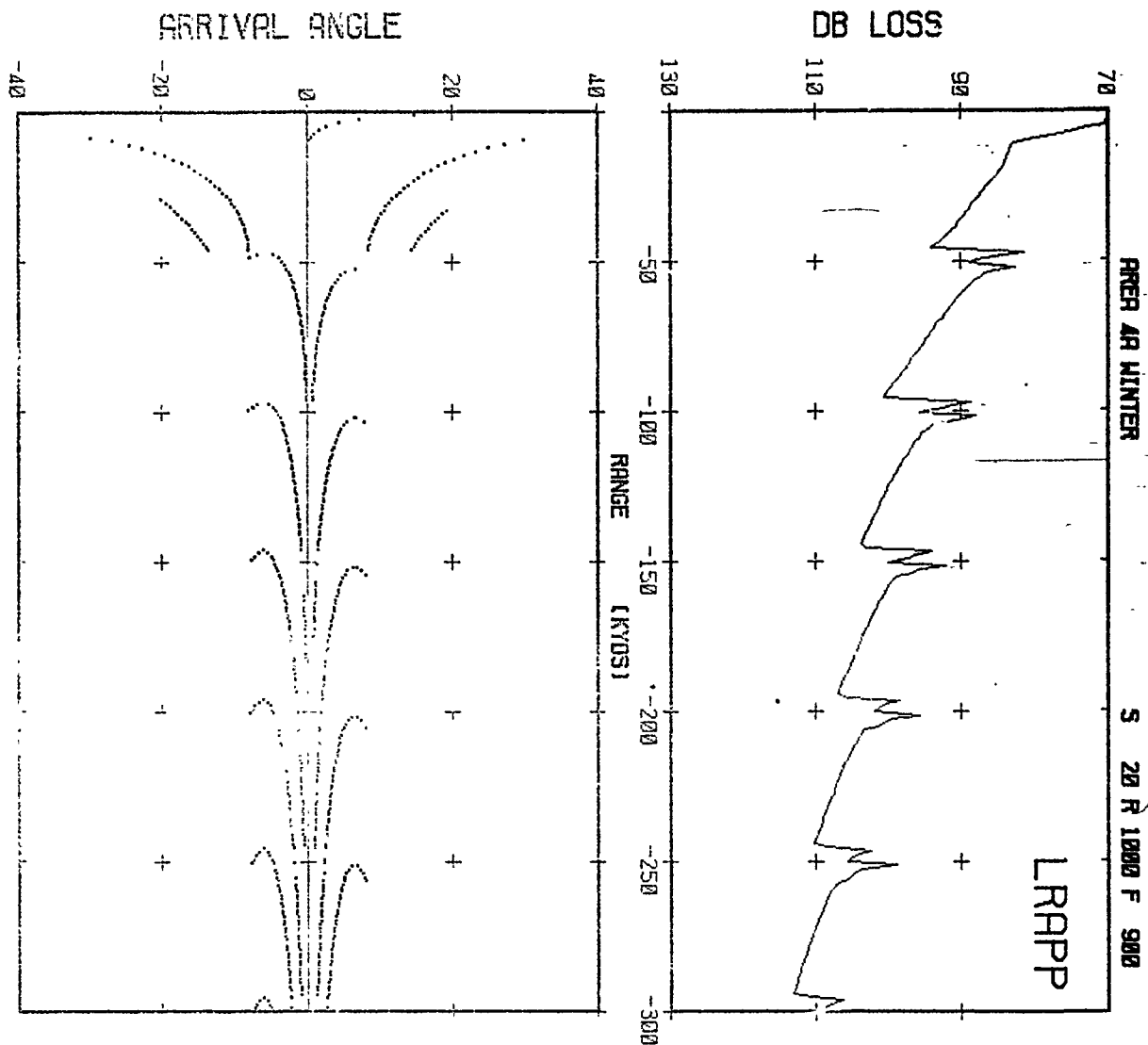










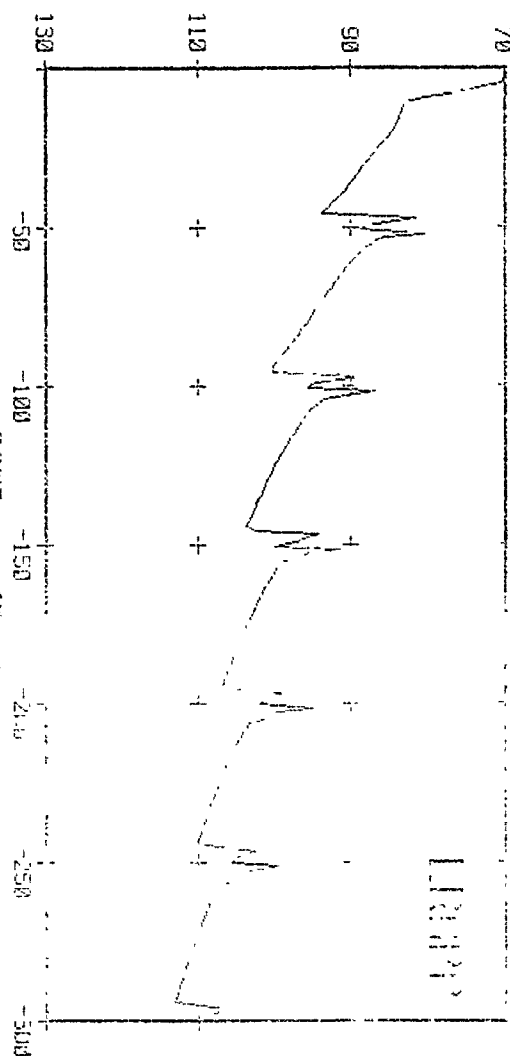


AREA 4R LUNTER

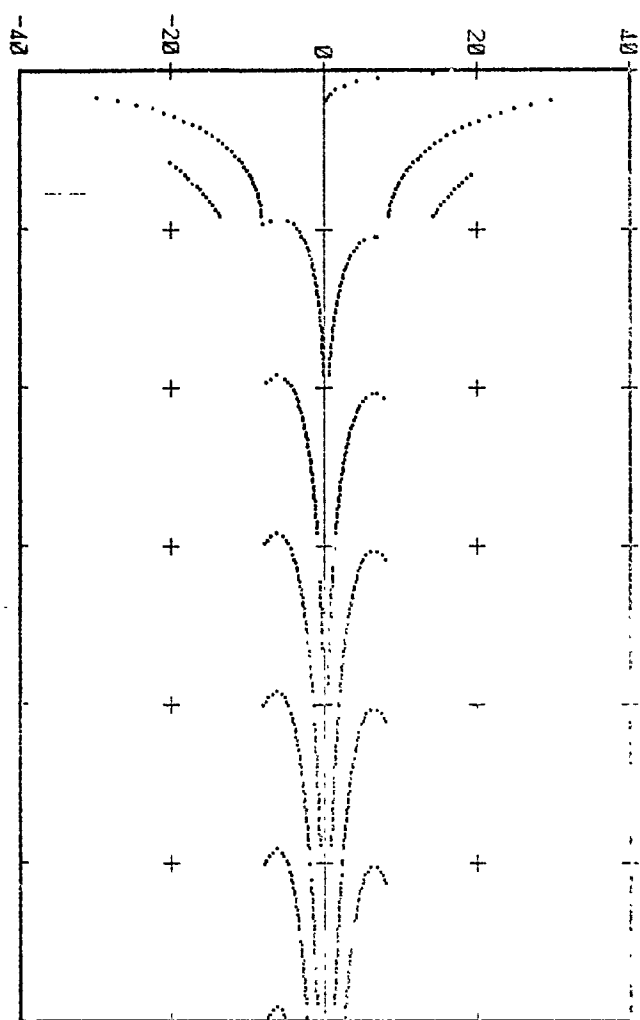
3 SURF J

1450 11/5 1500 1550

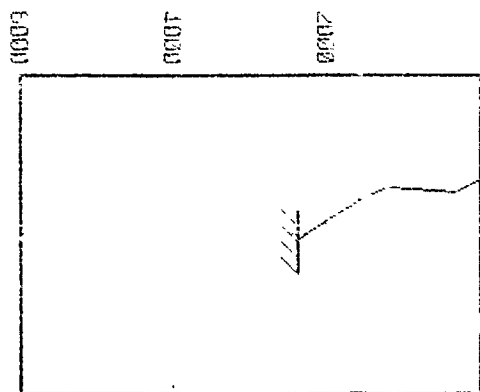
DB LOSS



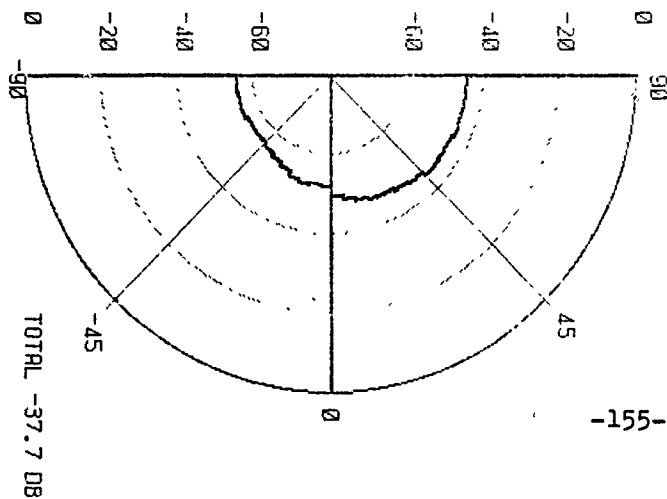
ARRIVAL ANGLE

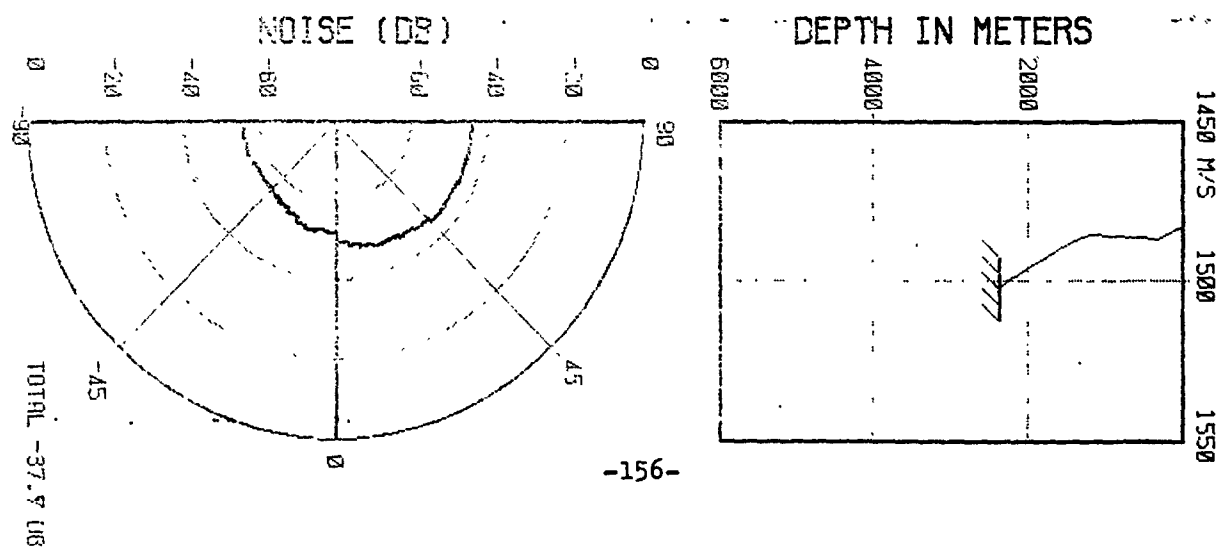
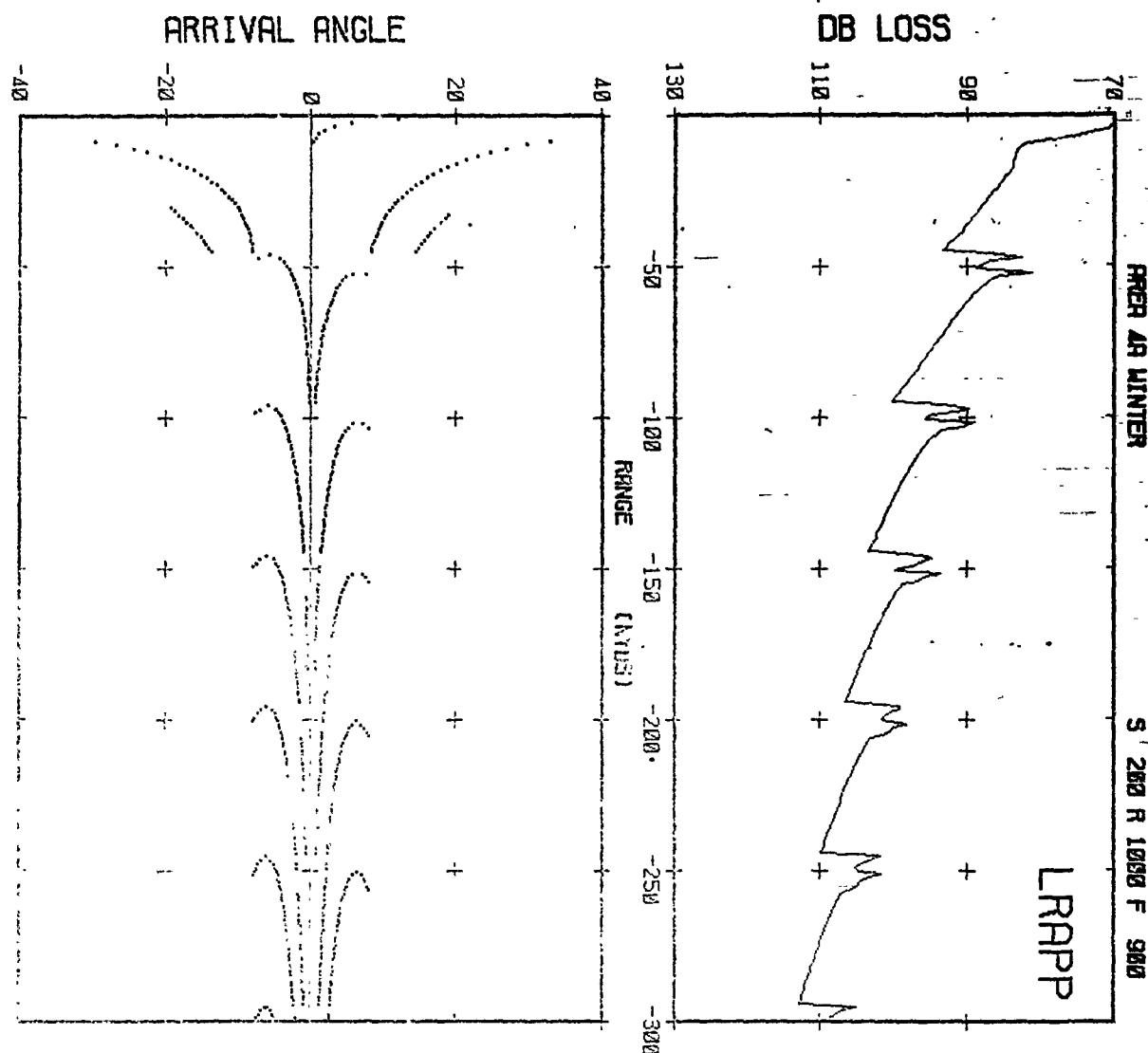


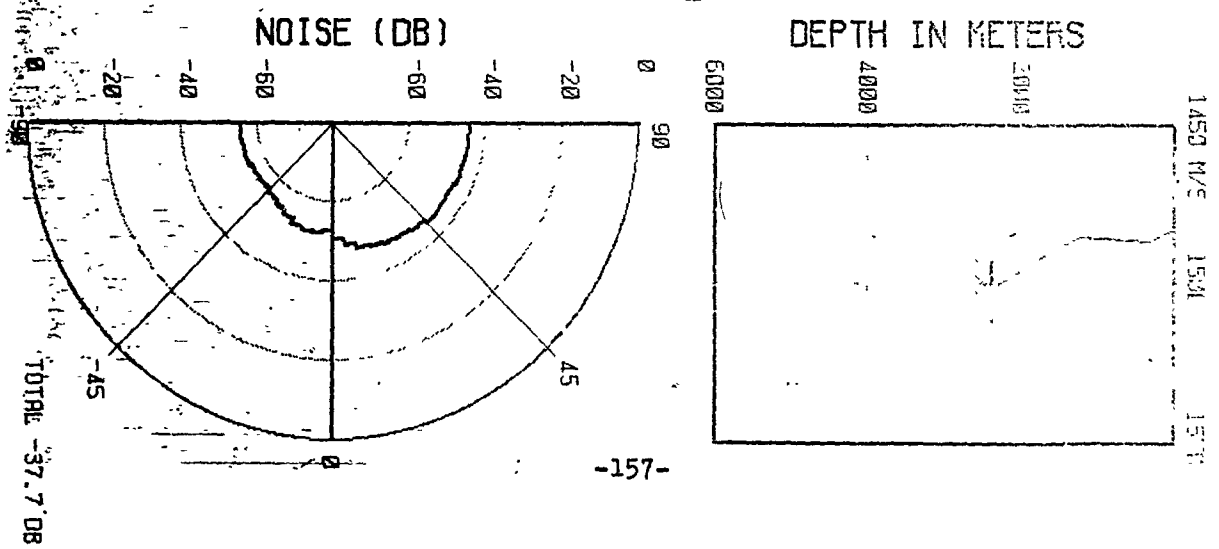
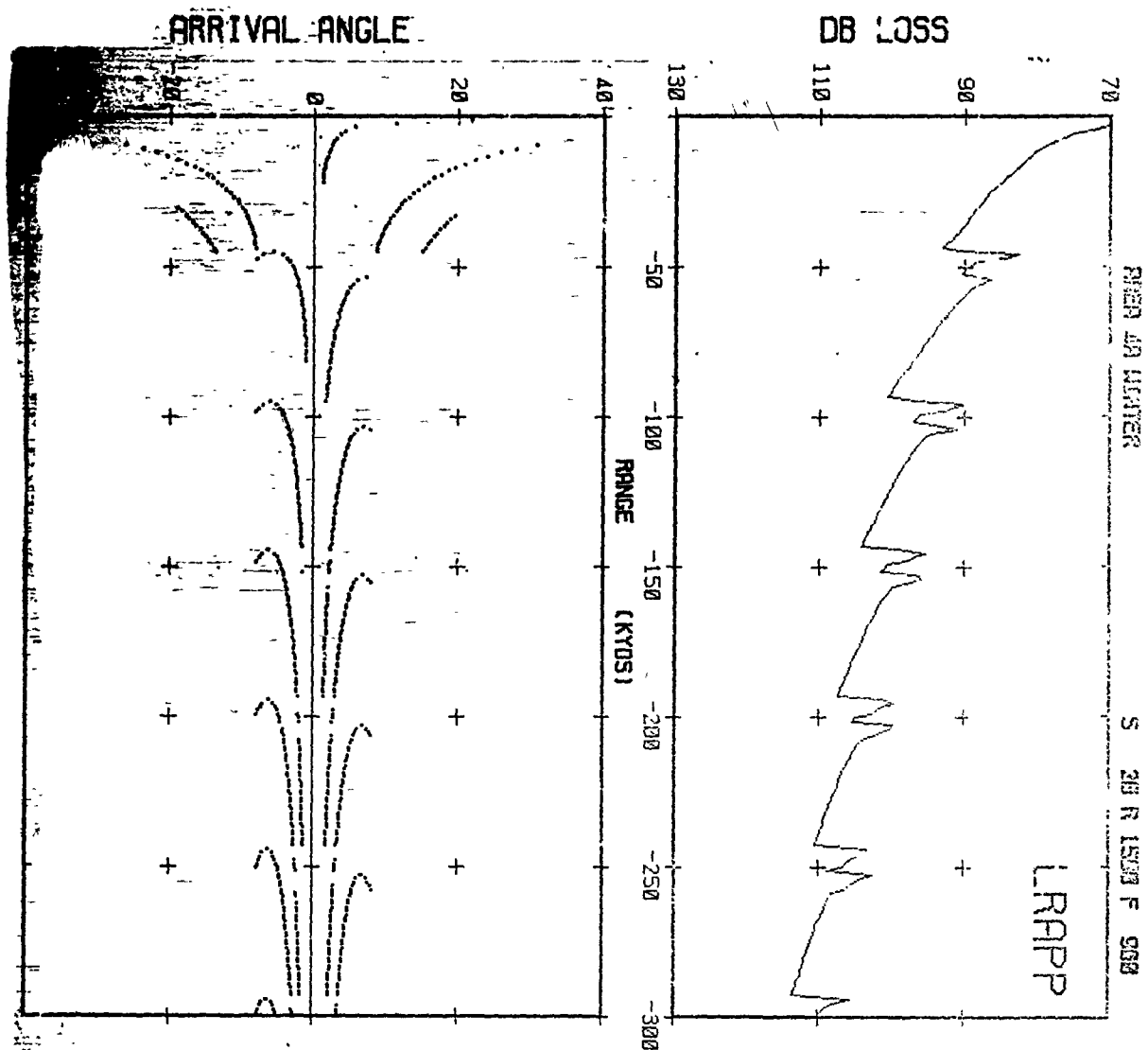
DEPTH IN METERS

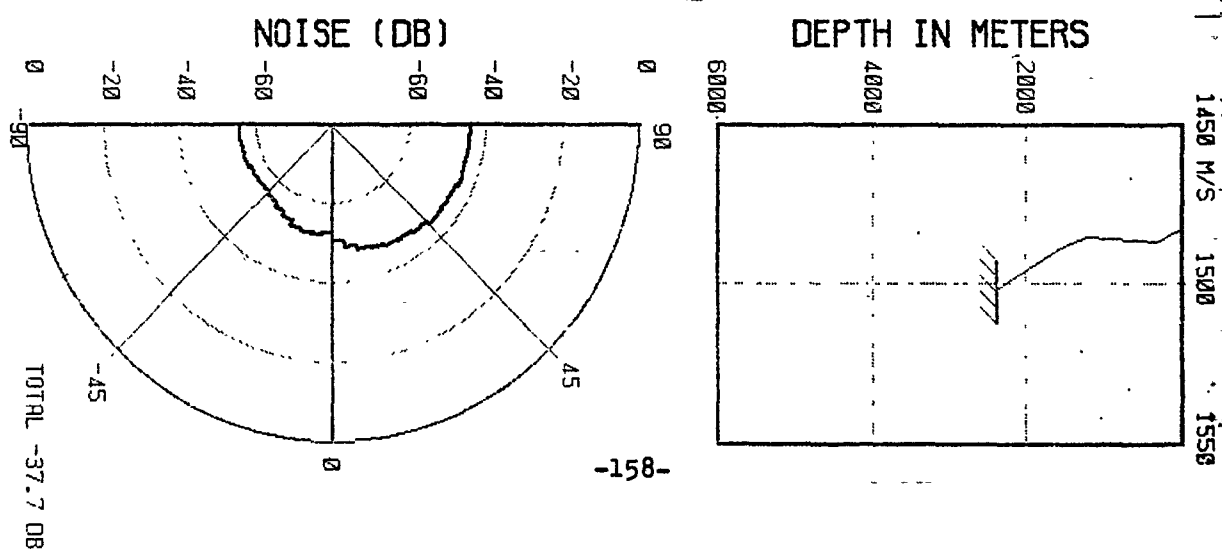
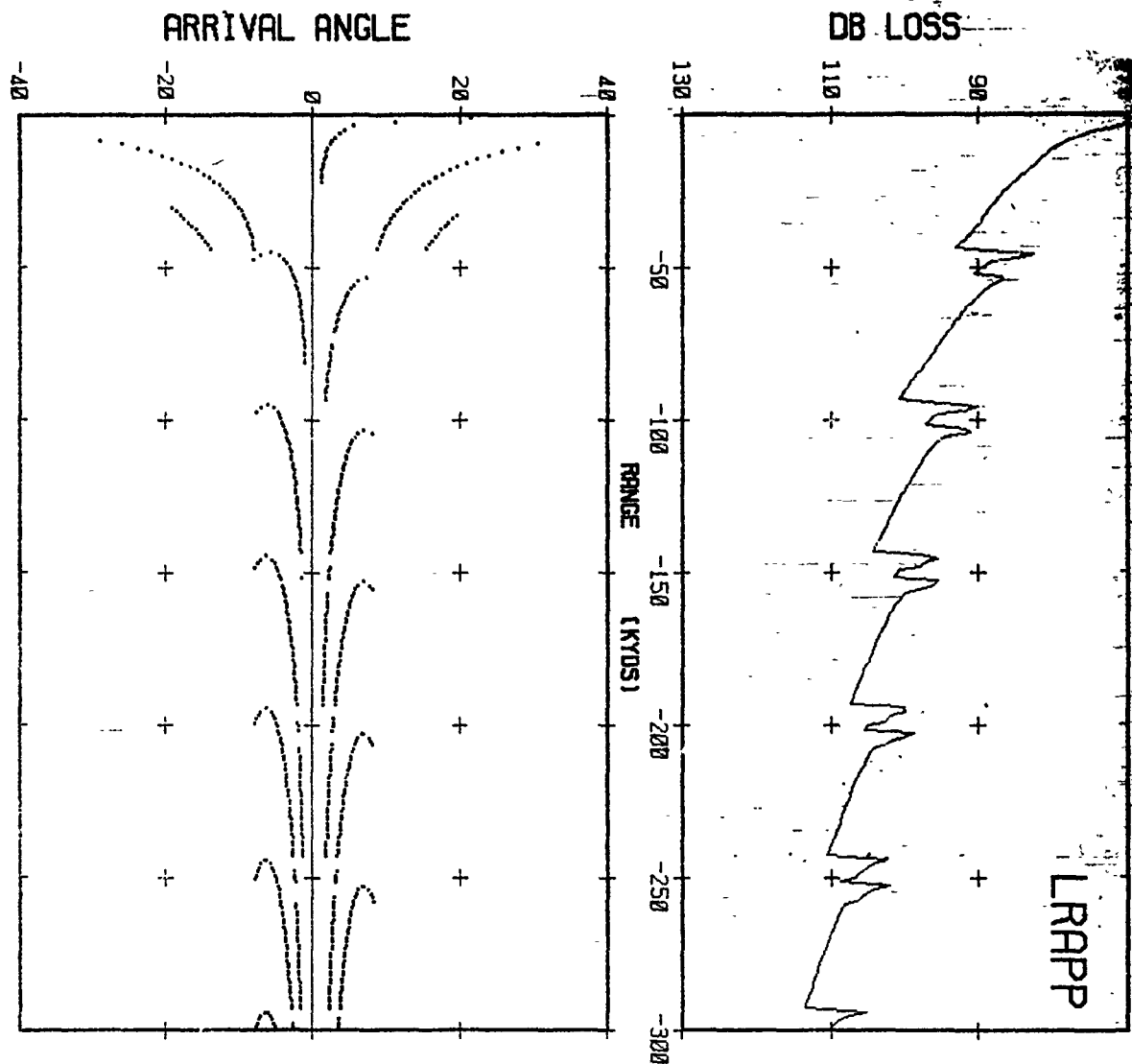


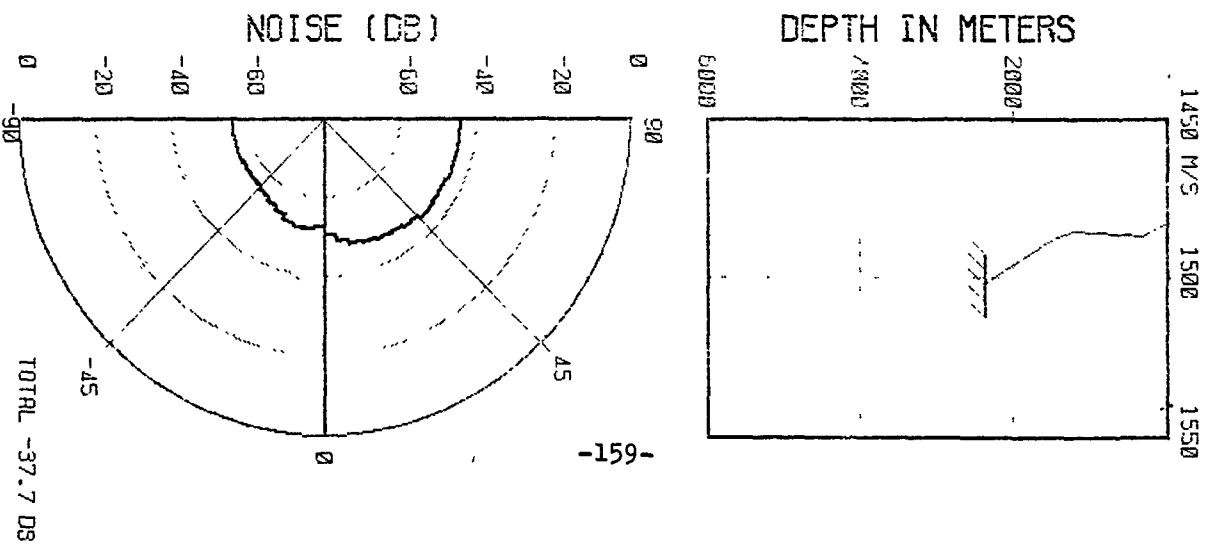
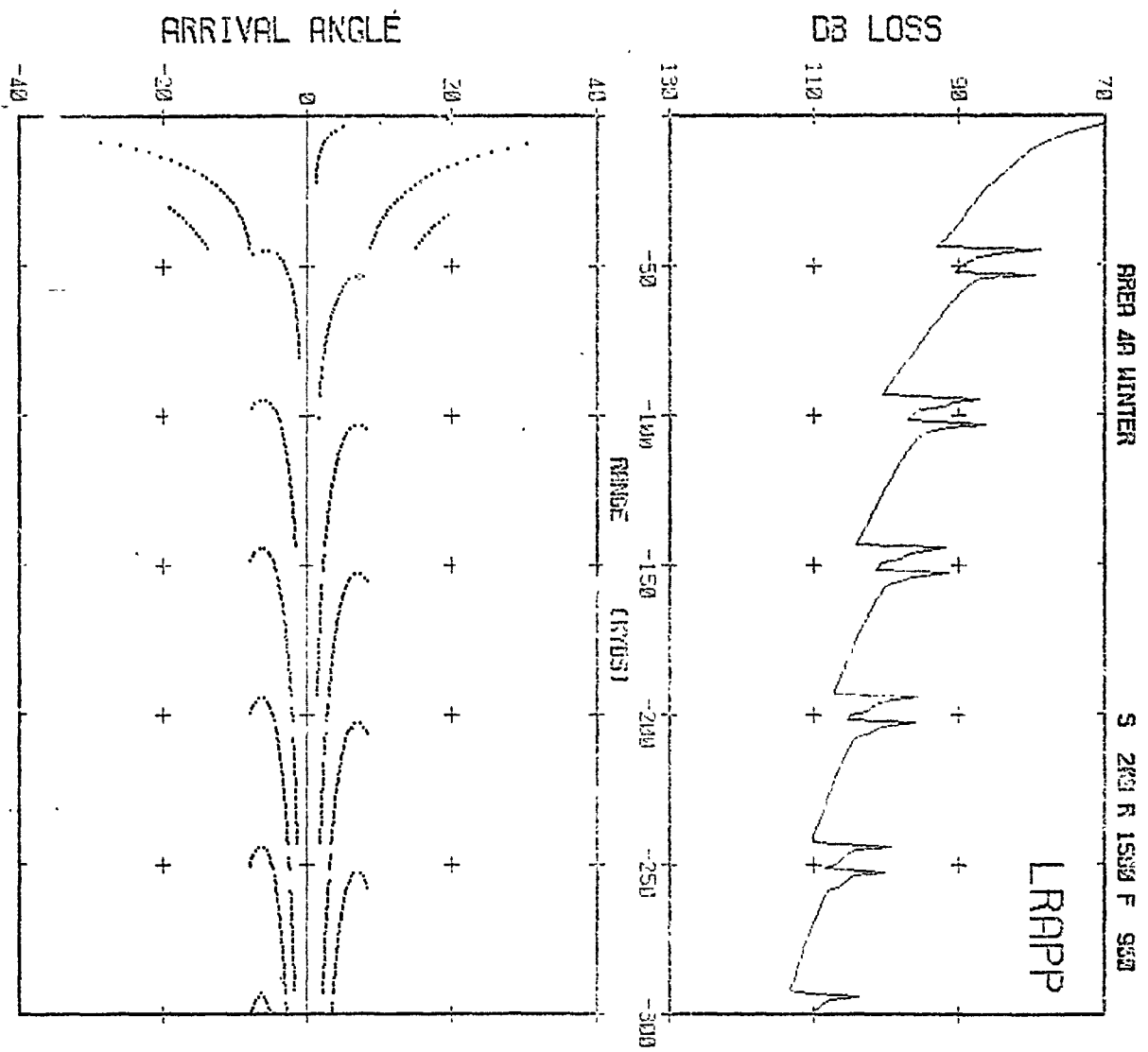
NOISE (DB)









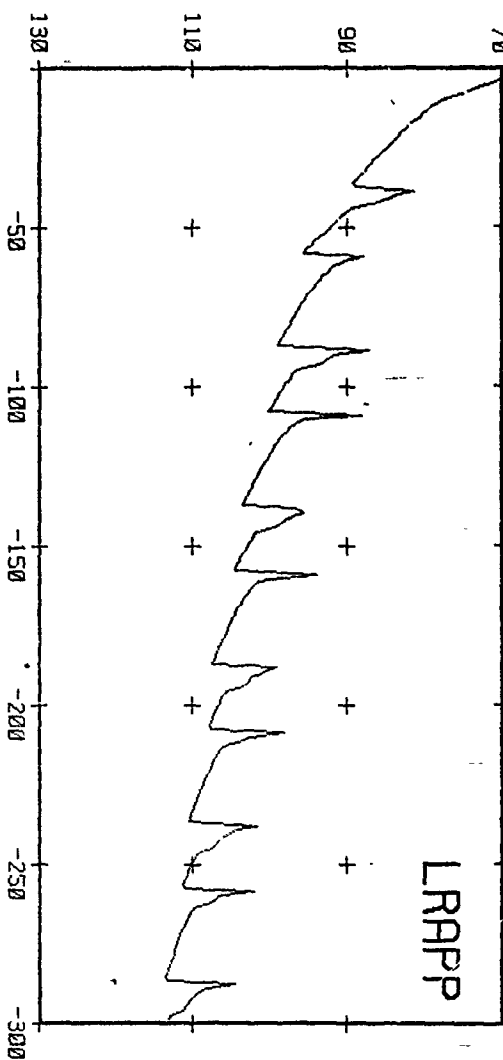


AREA 4A WINTER

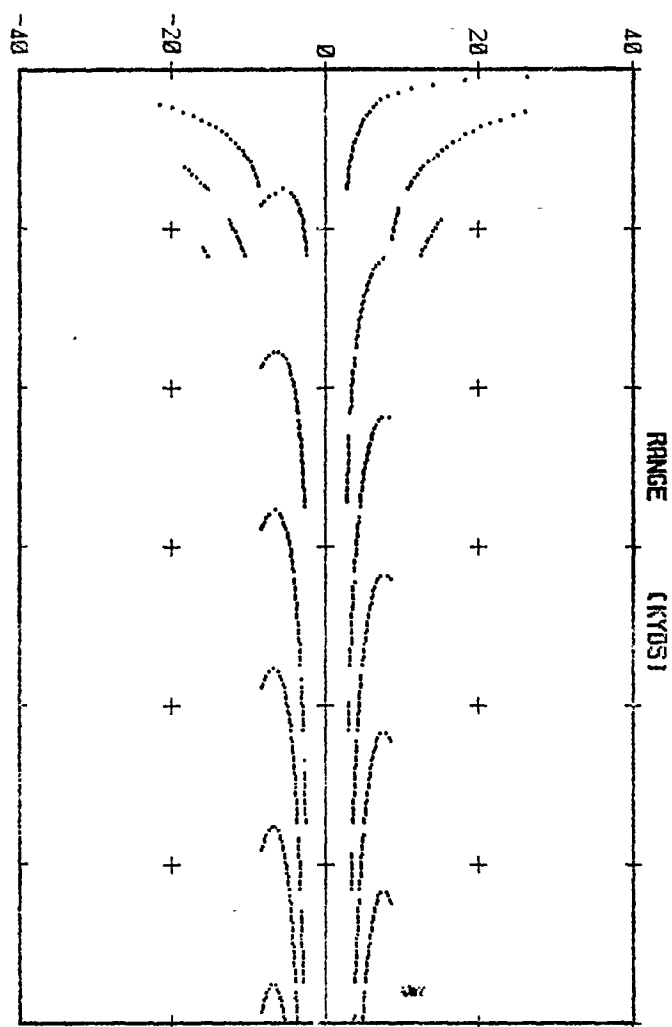
S 20 R 3629 F 900

LRAPP

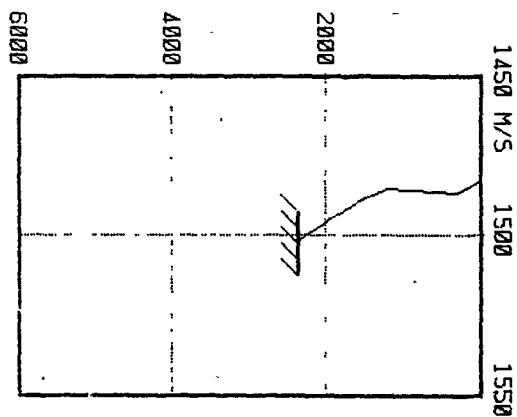
DB LOSS



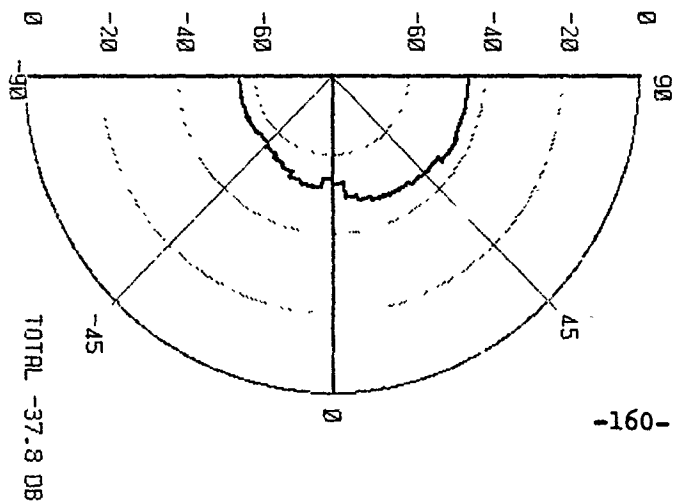
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

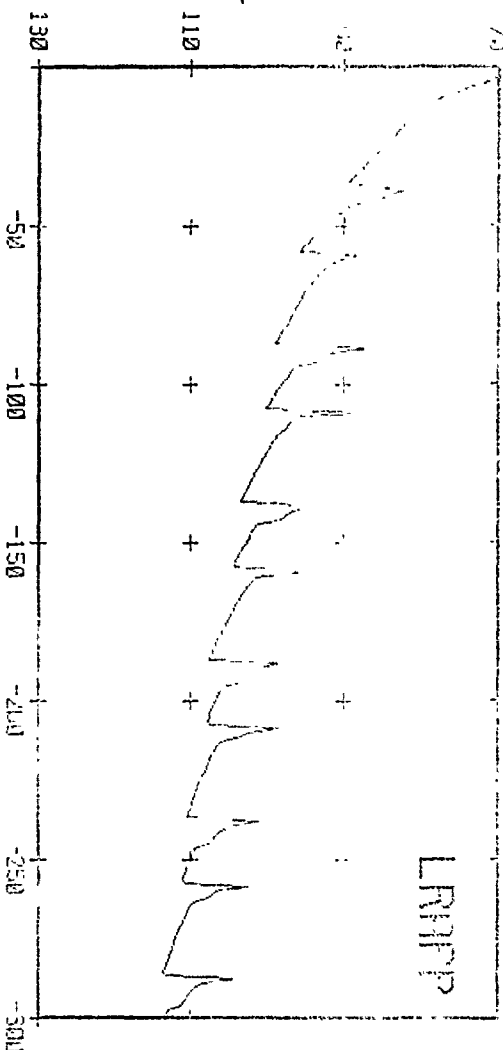


FIELD CHARTER

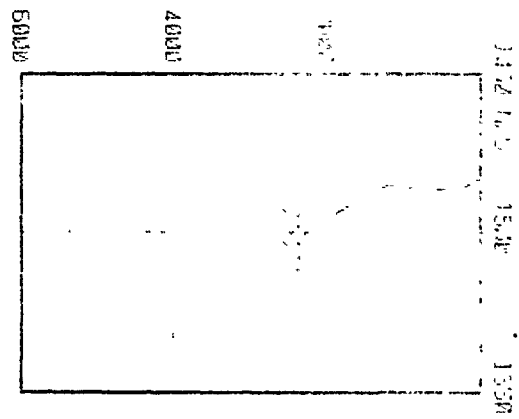
S. 4. R. 30.3 F. 0.5

LRAPP

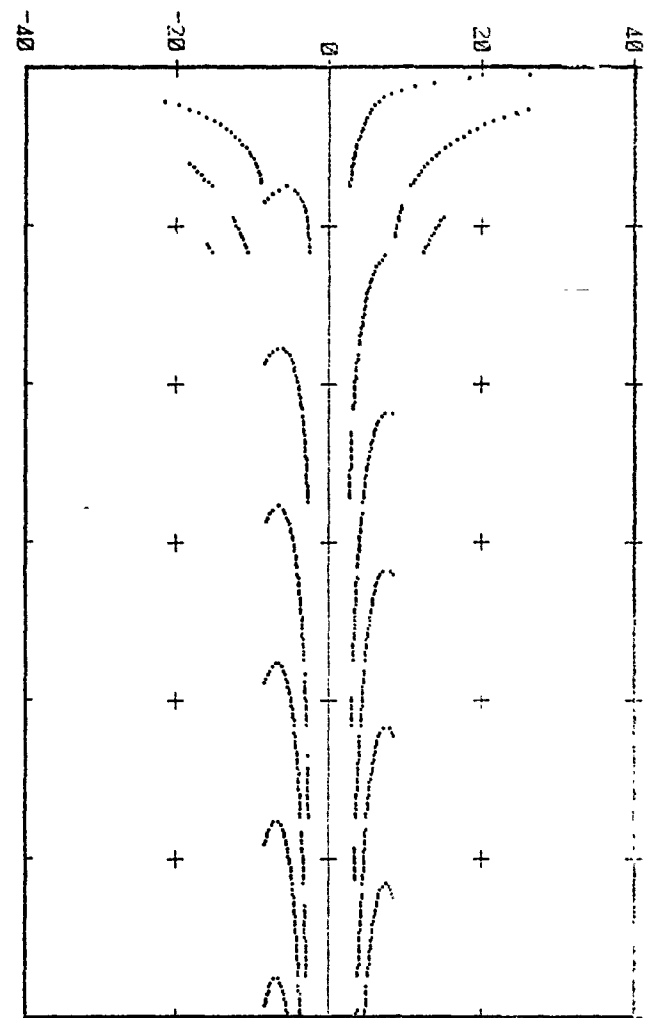
DB LOSS



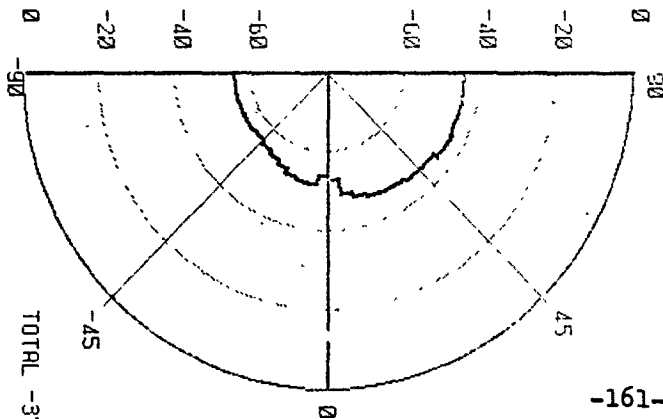
DEPTH IN METERS



ARRIVAL ANGLE

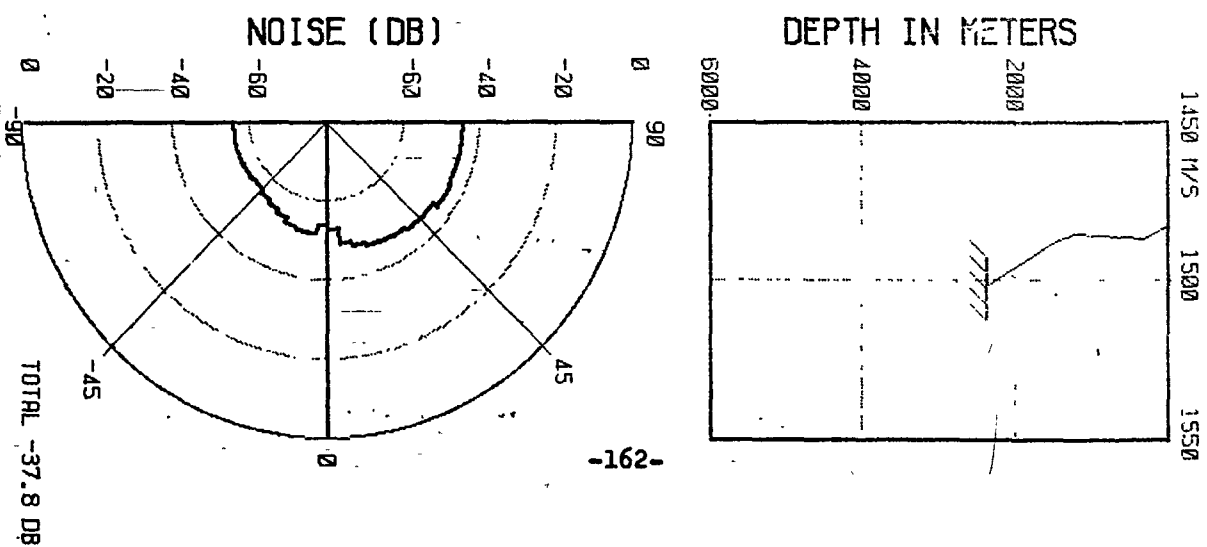
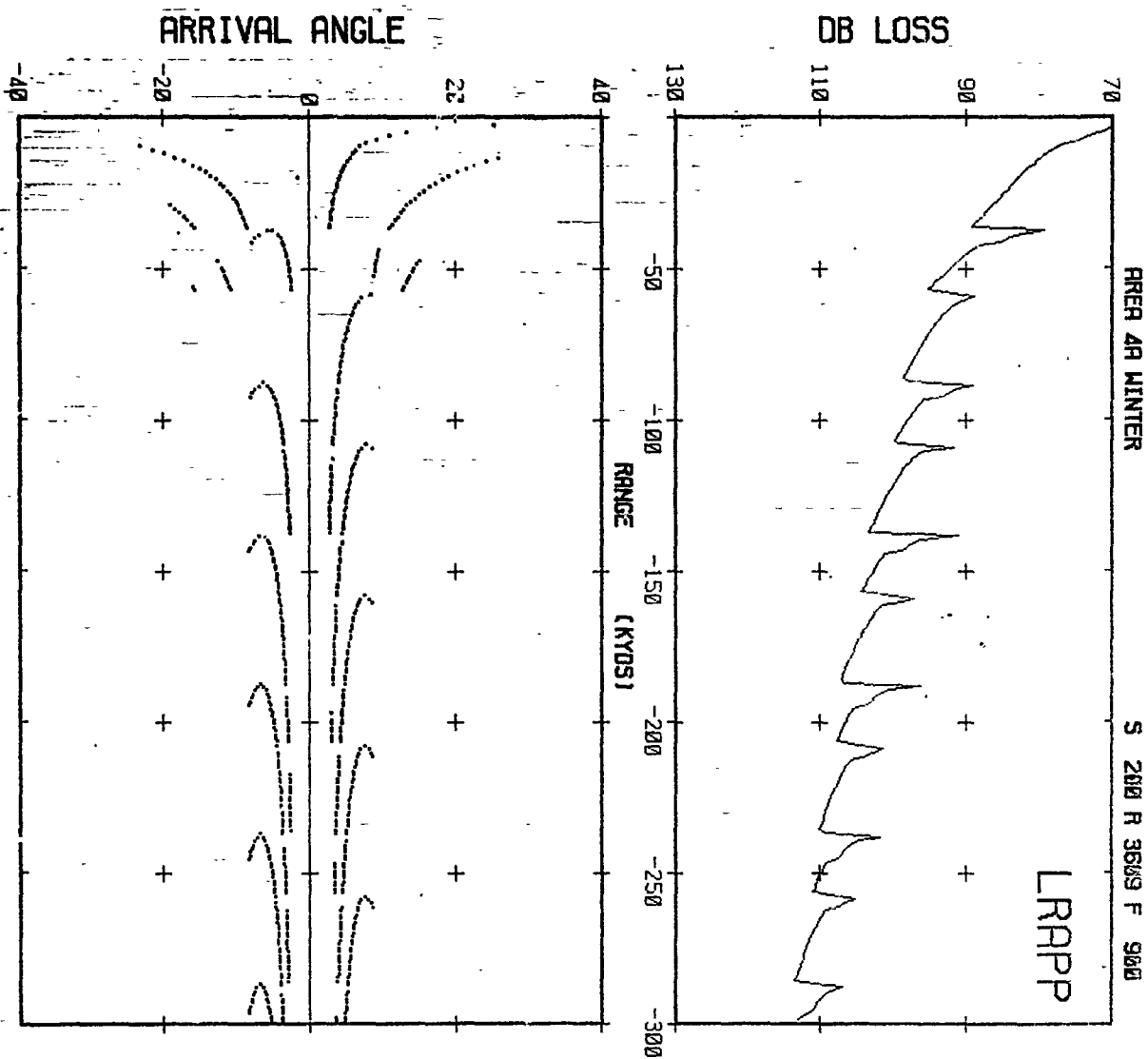


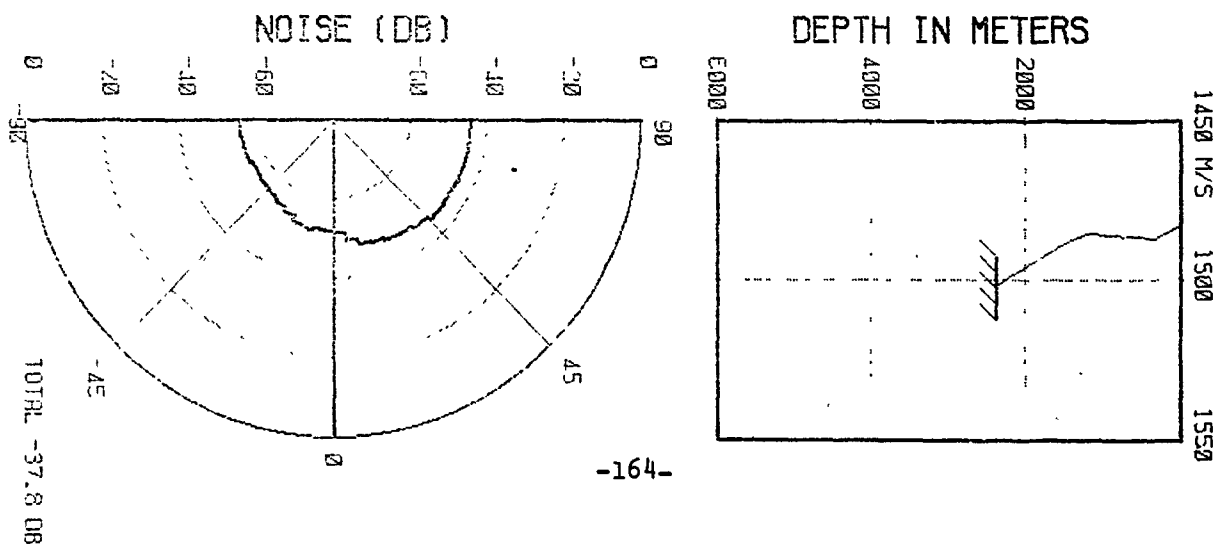
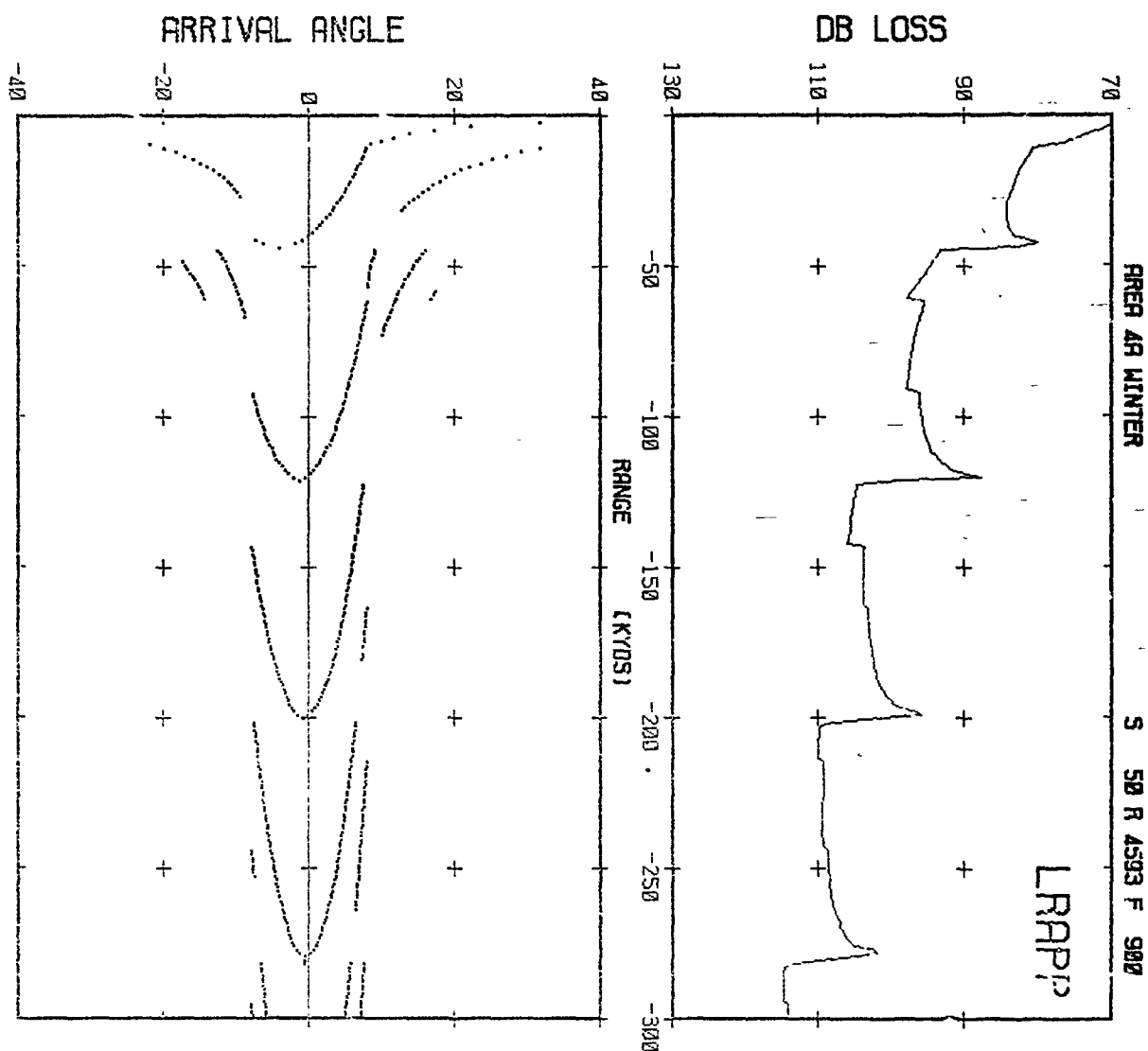
NOISE (DB)

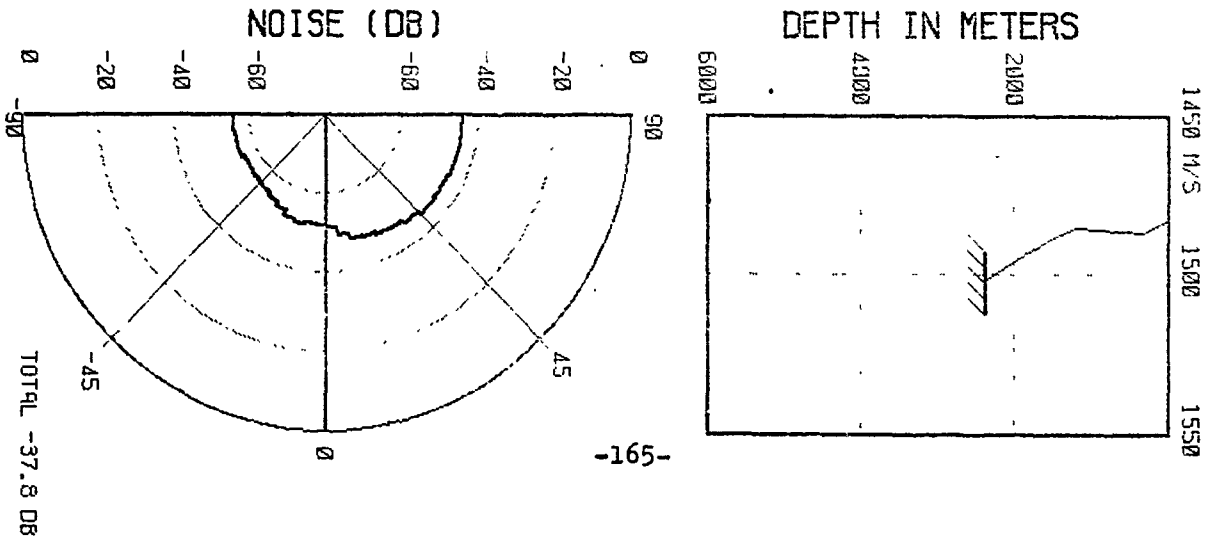
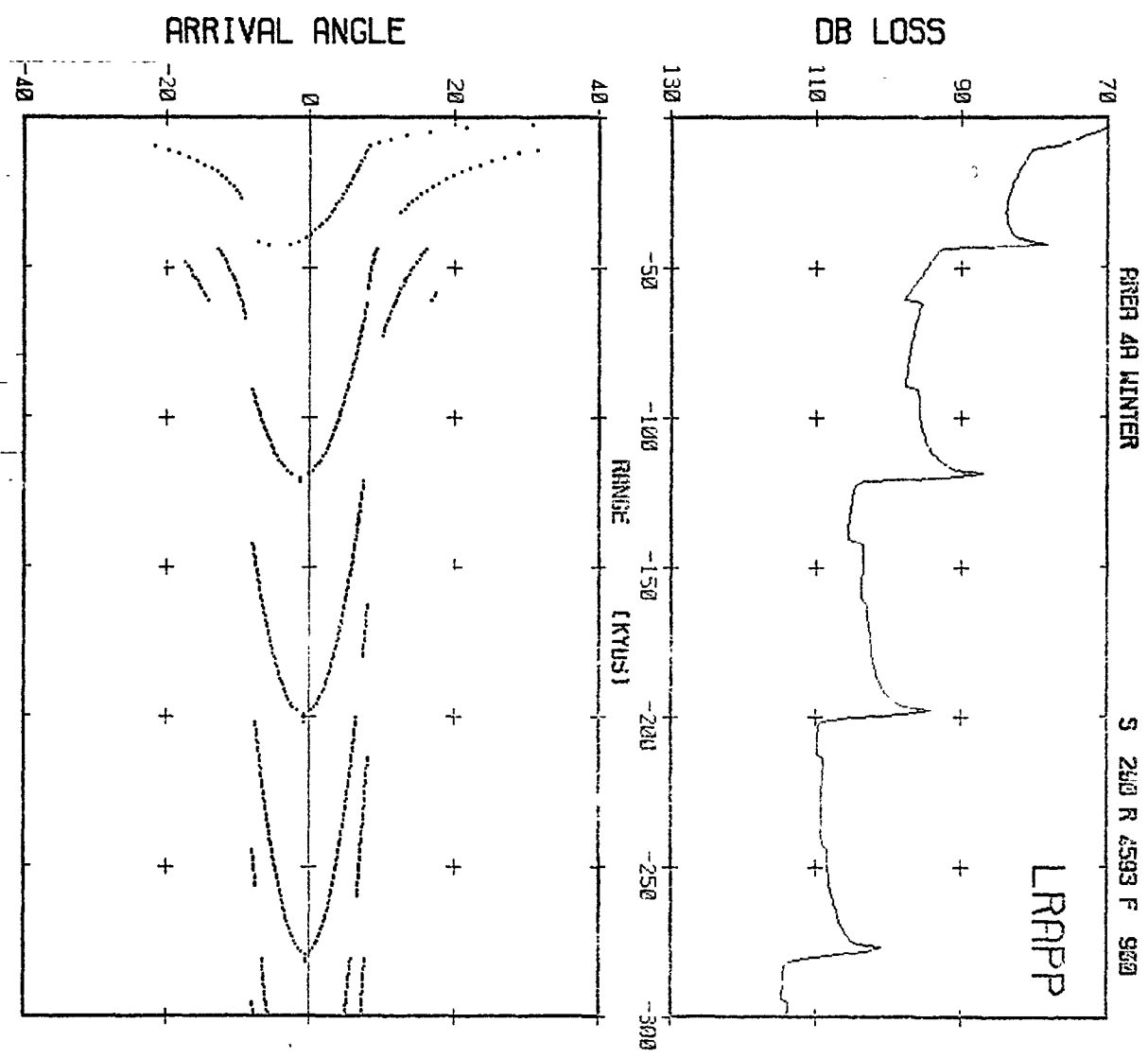


TOTAL -37.8 DB

-161-







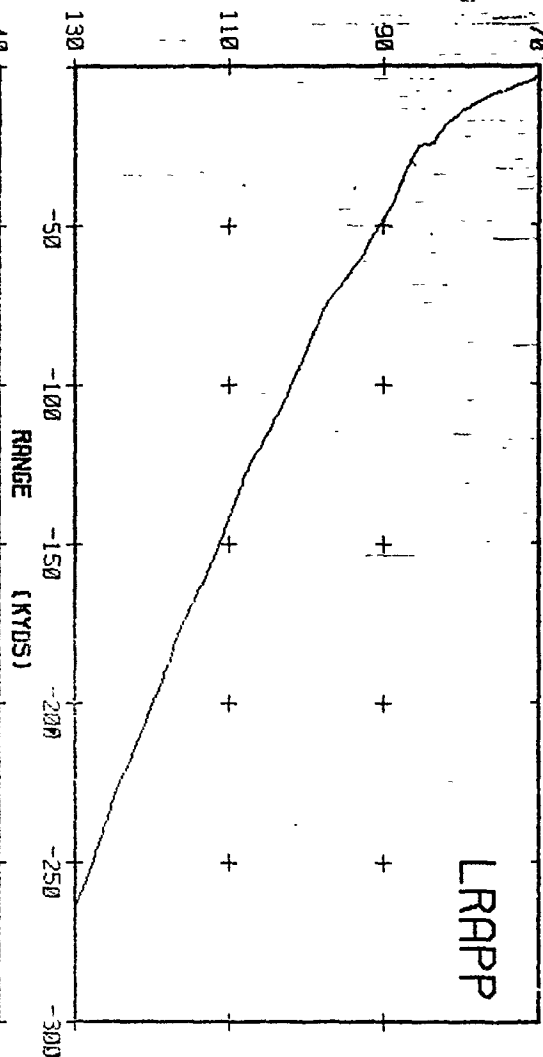
PER 4R WINTER

S

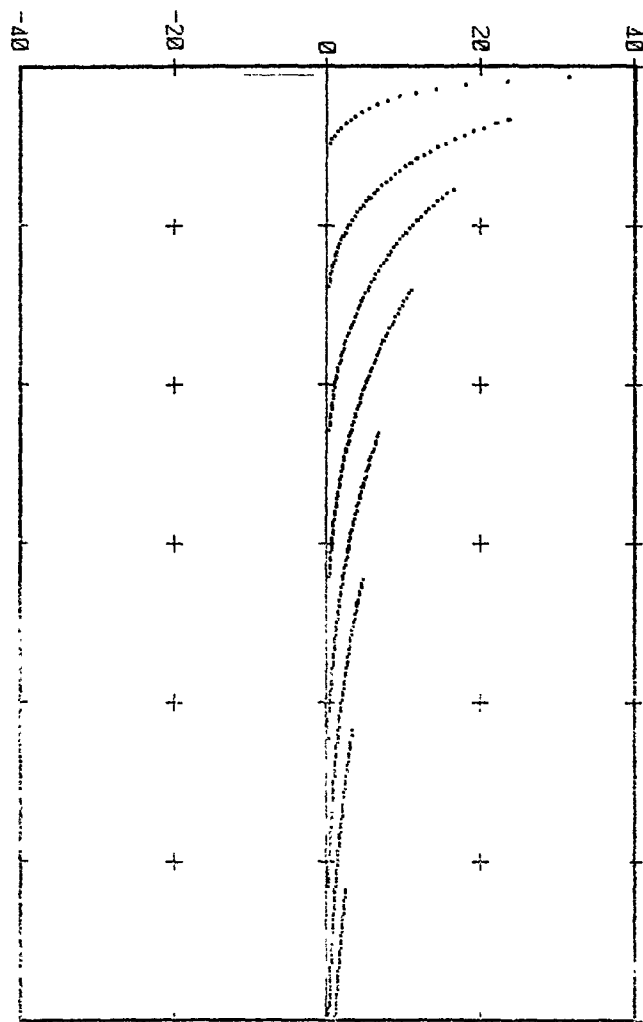
20 R : 798 F 900

LRAPP

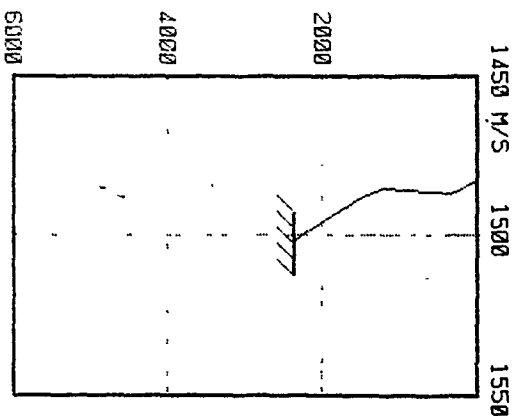
DB LOSS



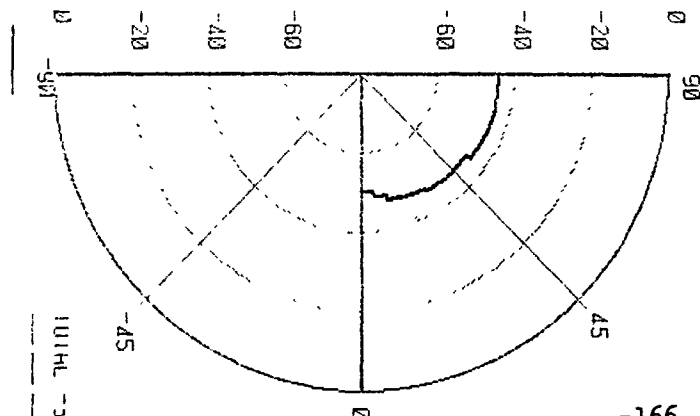
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

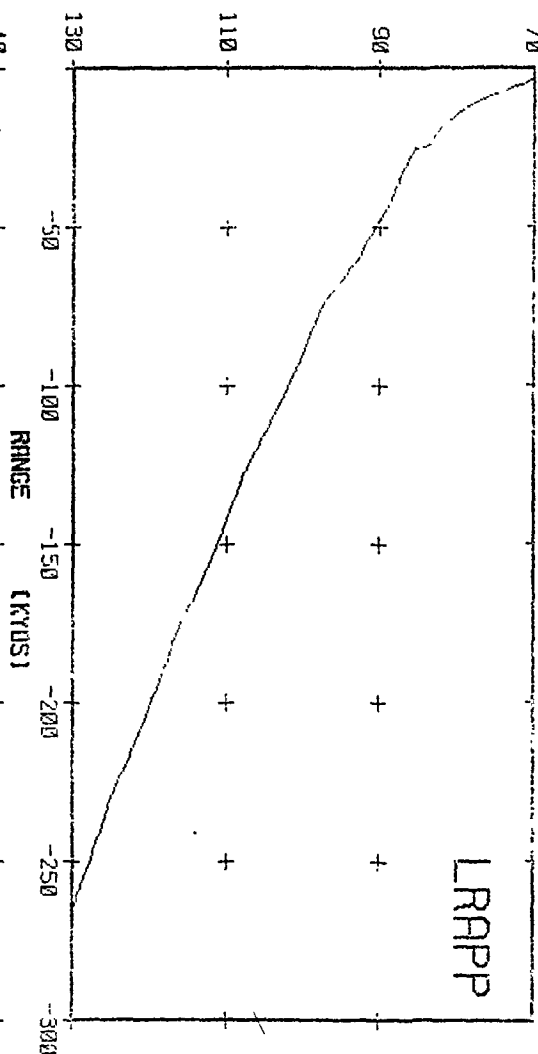


FROM AN HUNTER

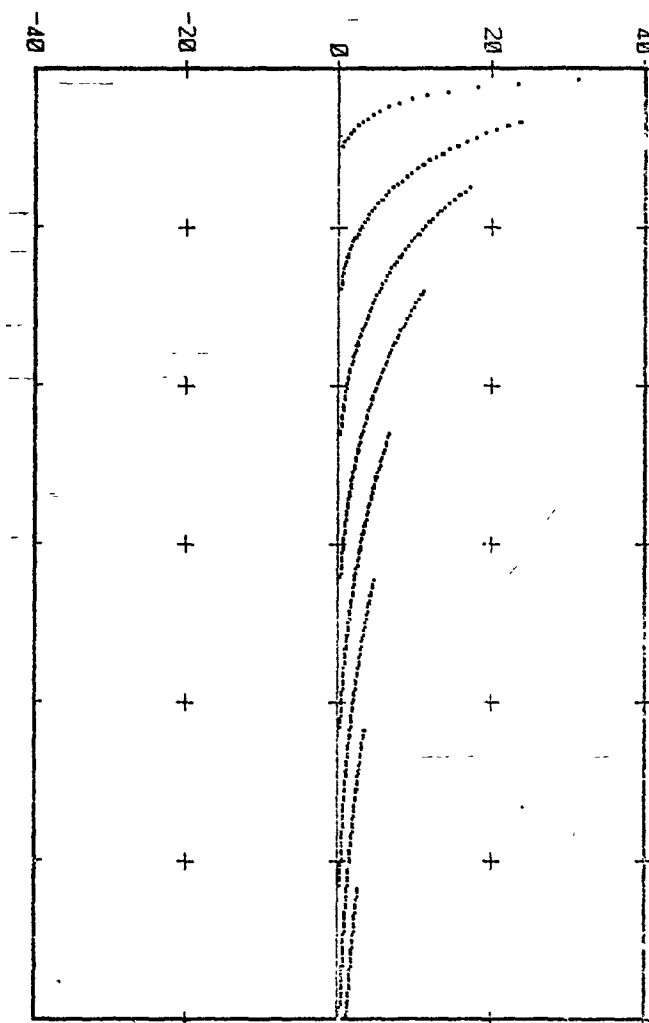
S 59 R 7750 F 969

1450 M/S 1500 1550

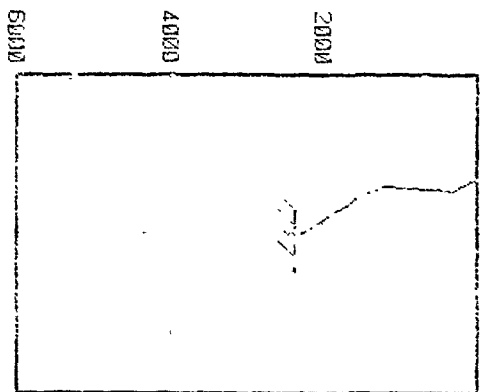
DB LOSS



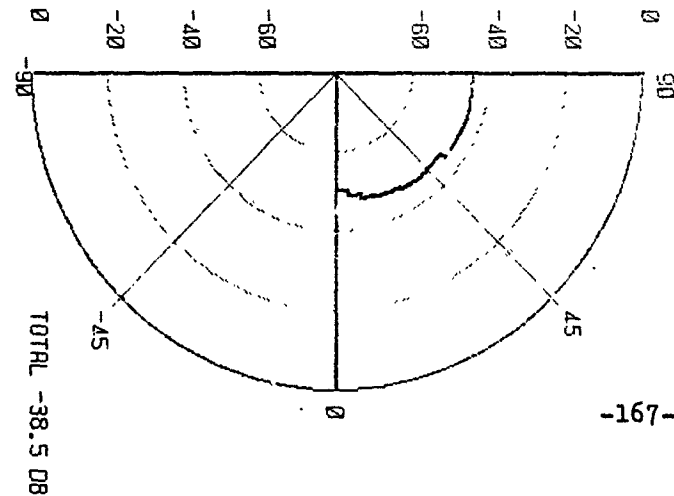
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA AIR WINTER

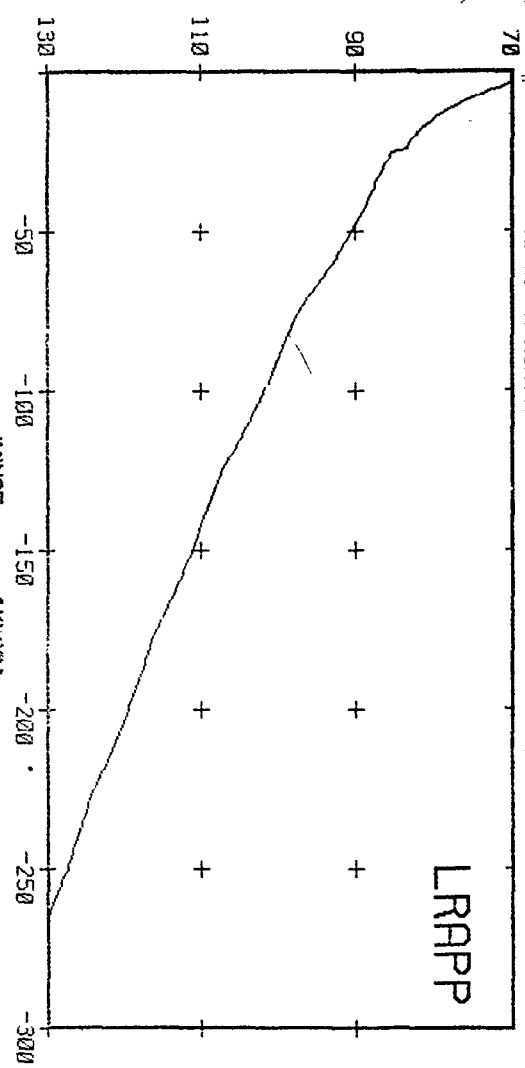
S 200 R 7798 F 900

1450 M/S

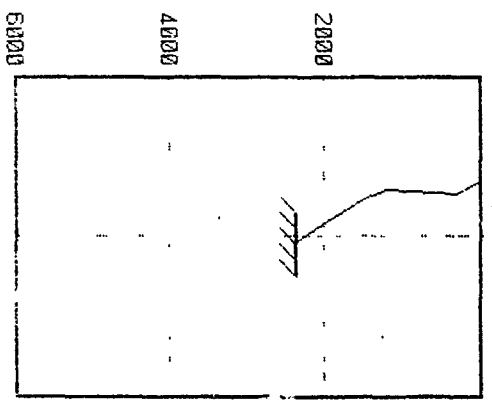
1500

1550

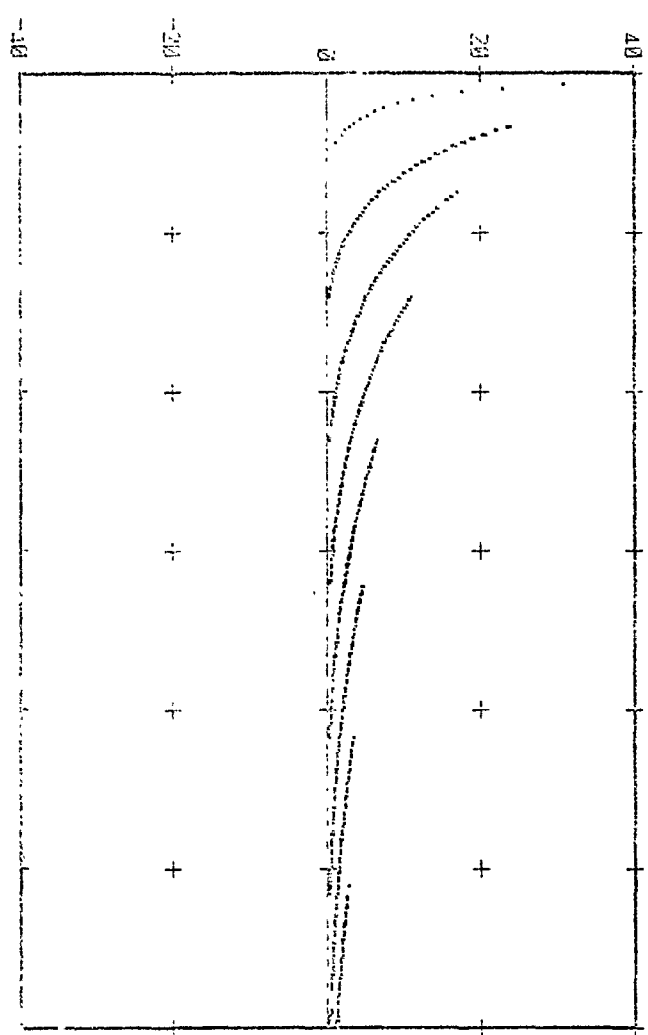
DB LOSS



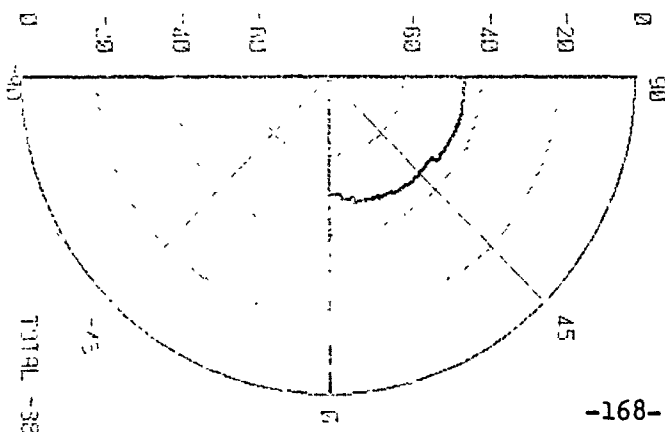
DEPTH IN METERS

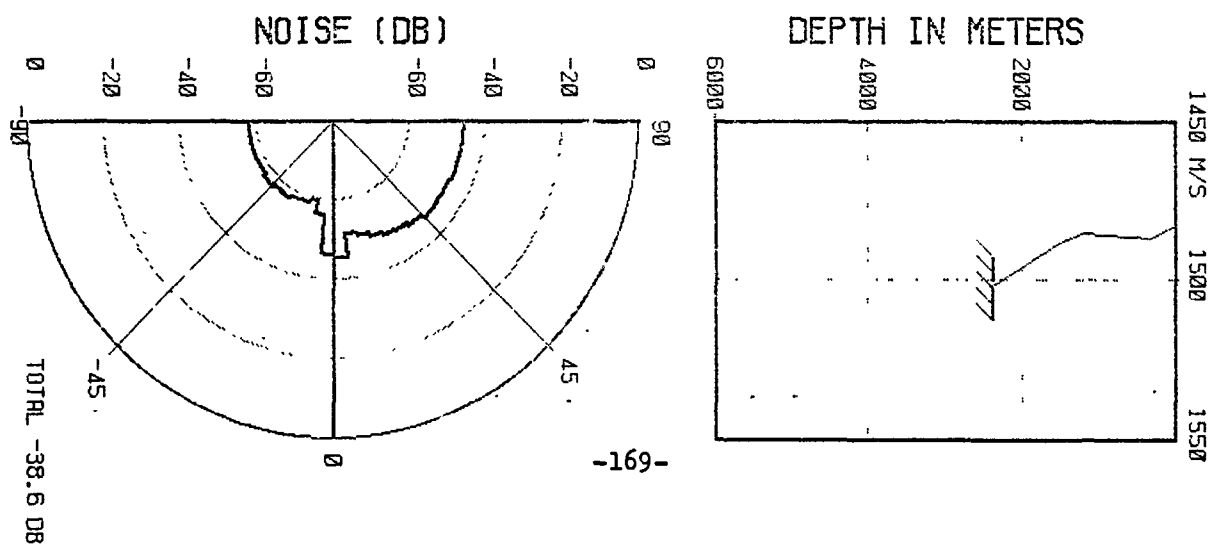
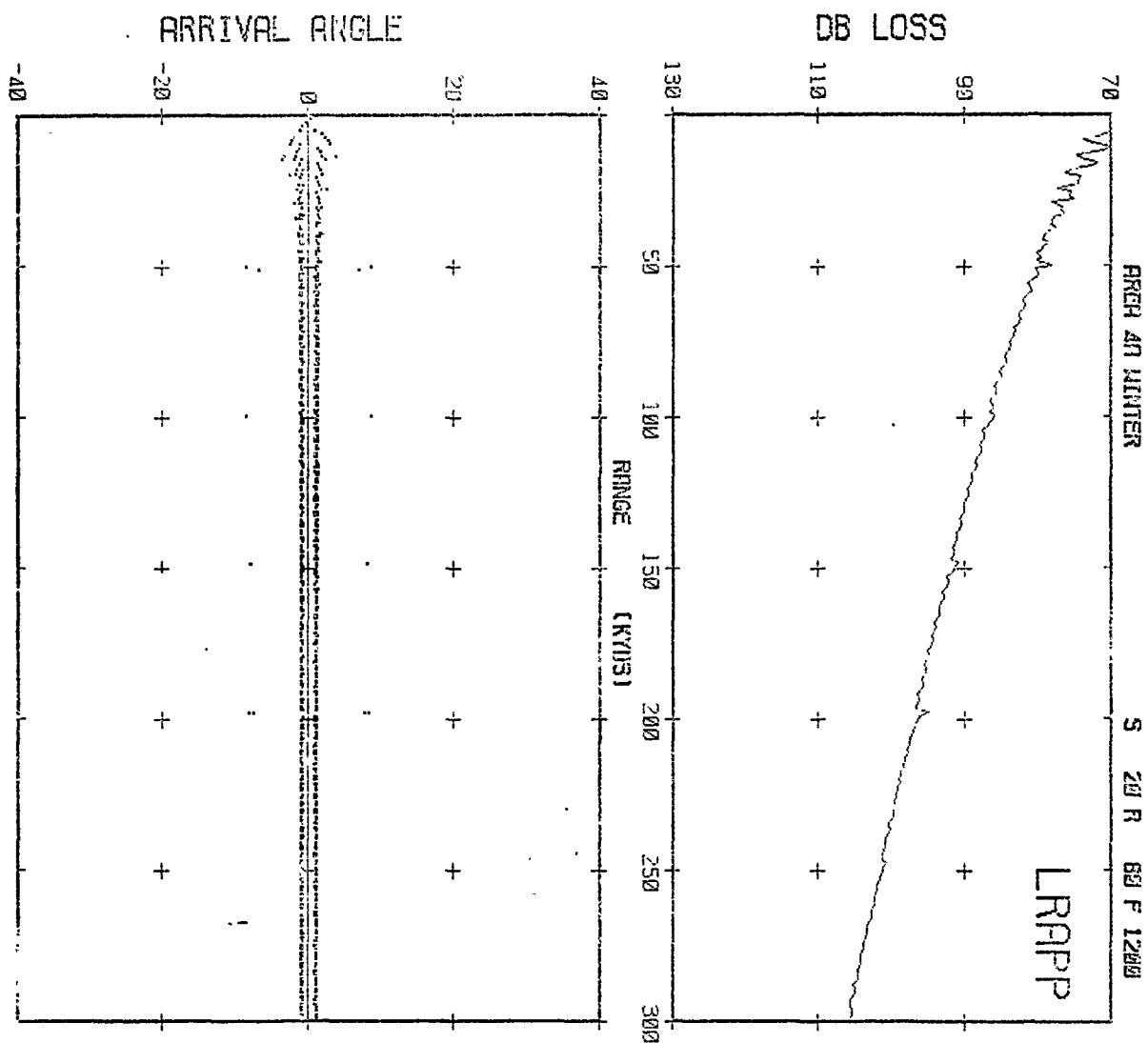


ARRIVAL ANGLE



NOISE (DB)



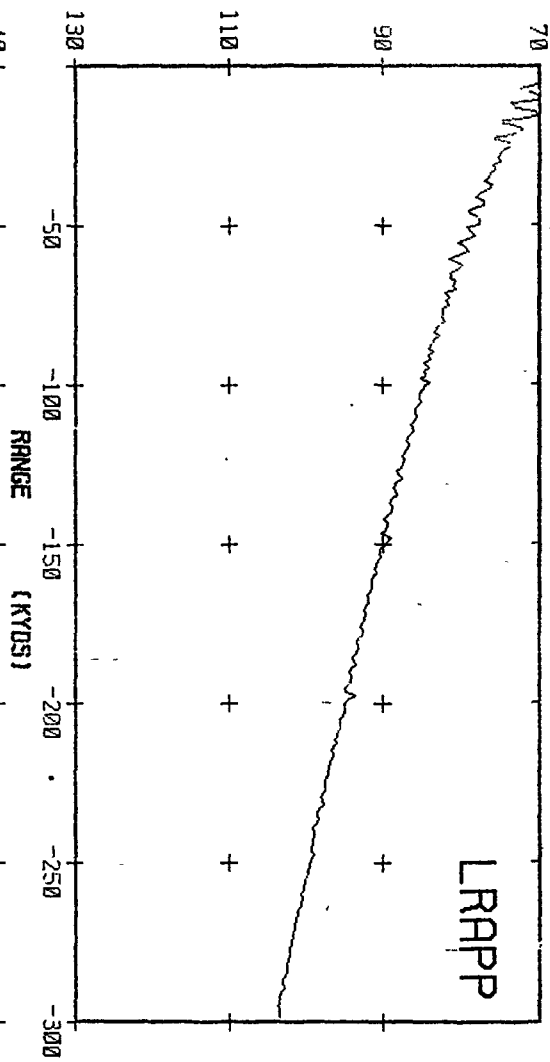


AREA AIR WINTER

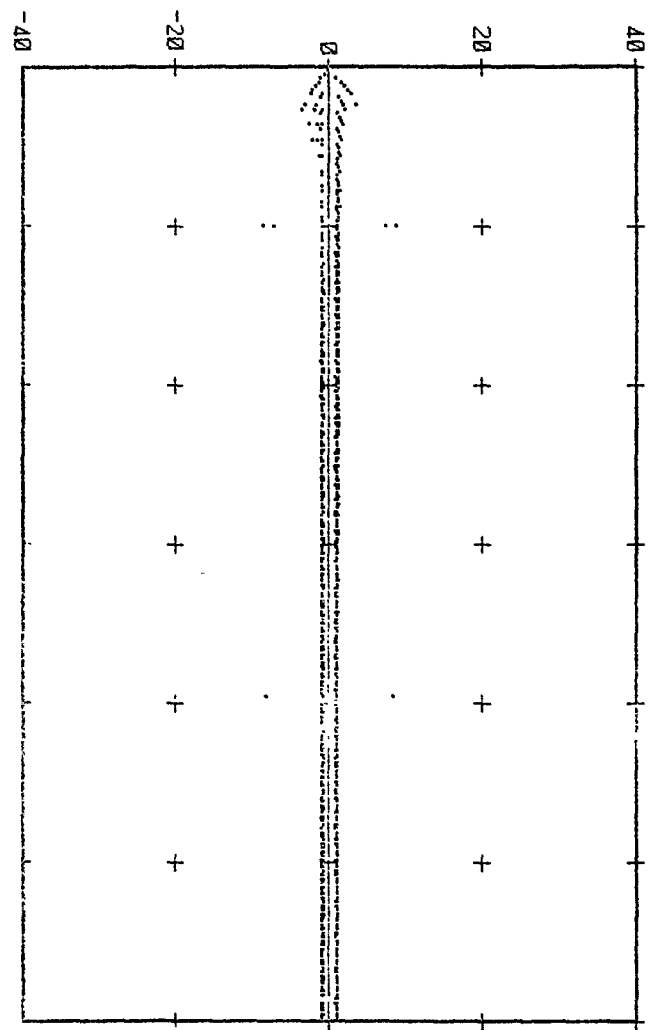
S 50 R 60 F 1200

1450 H/S 1500 1550

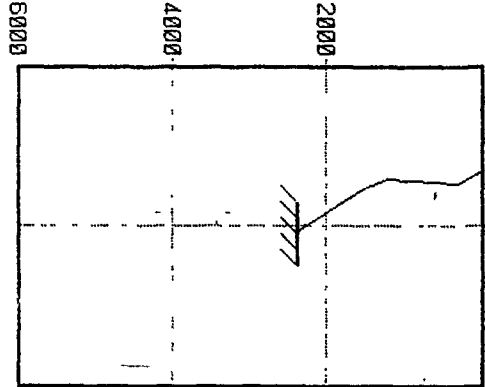
DB LOSS



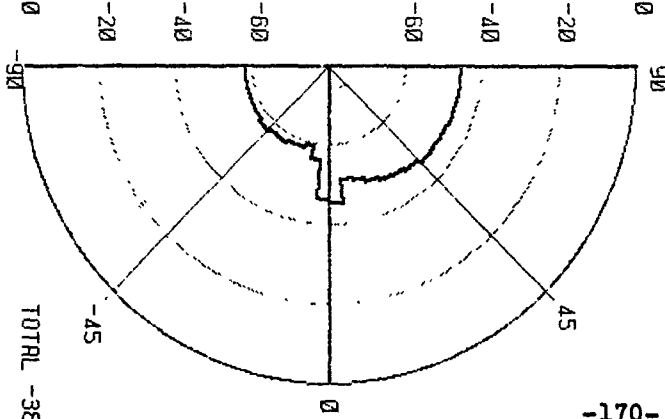
ARRIVAL ANGLE



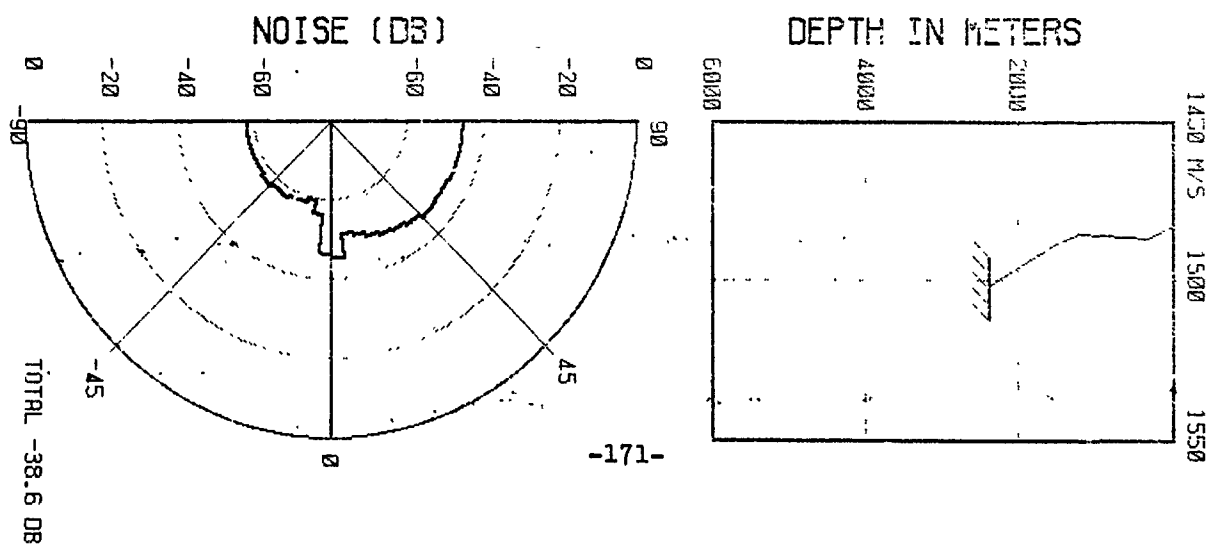
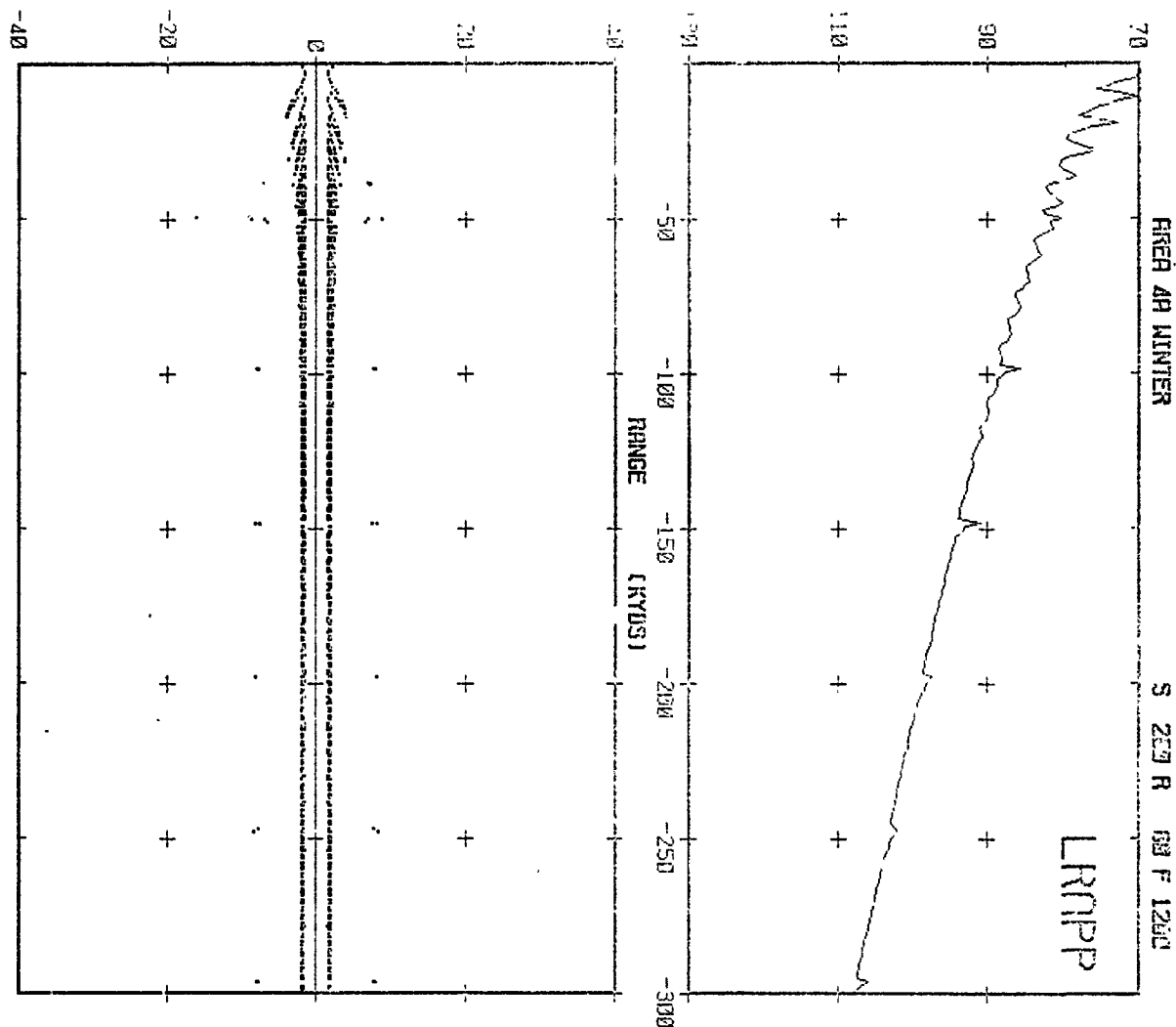
DEPTH IN METERS

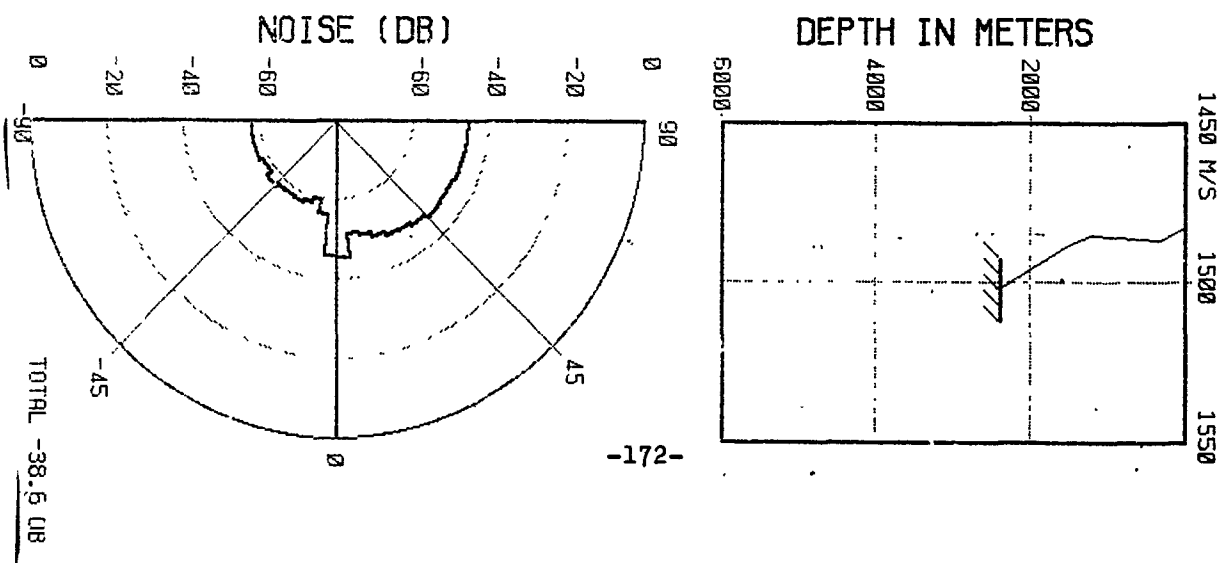
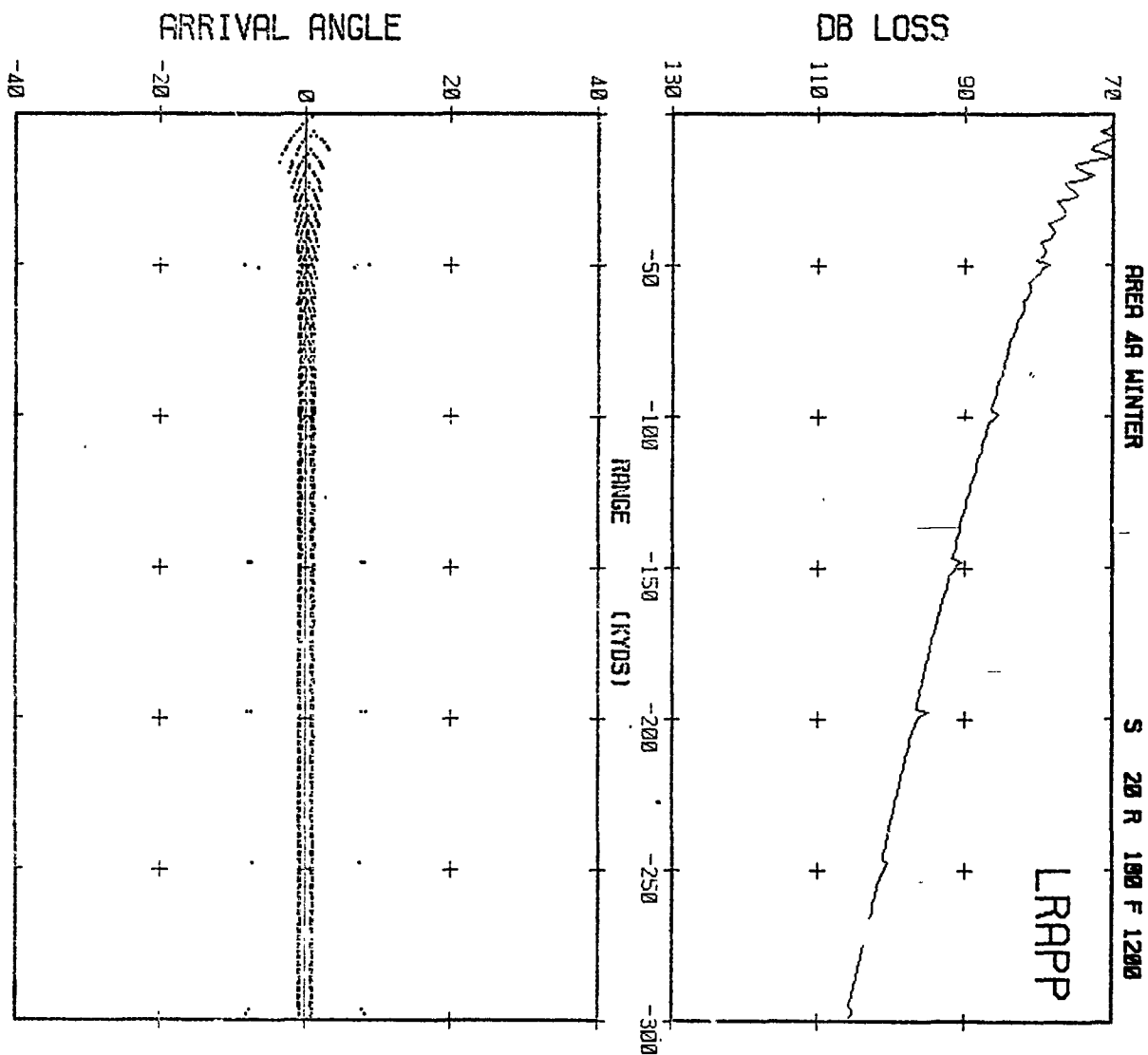


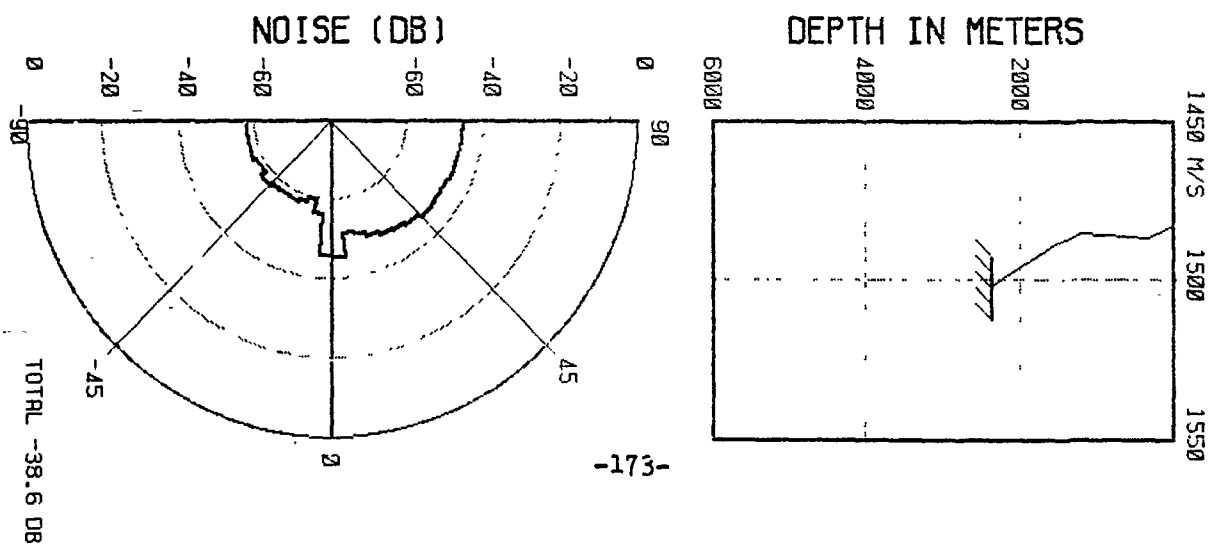
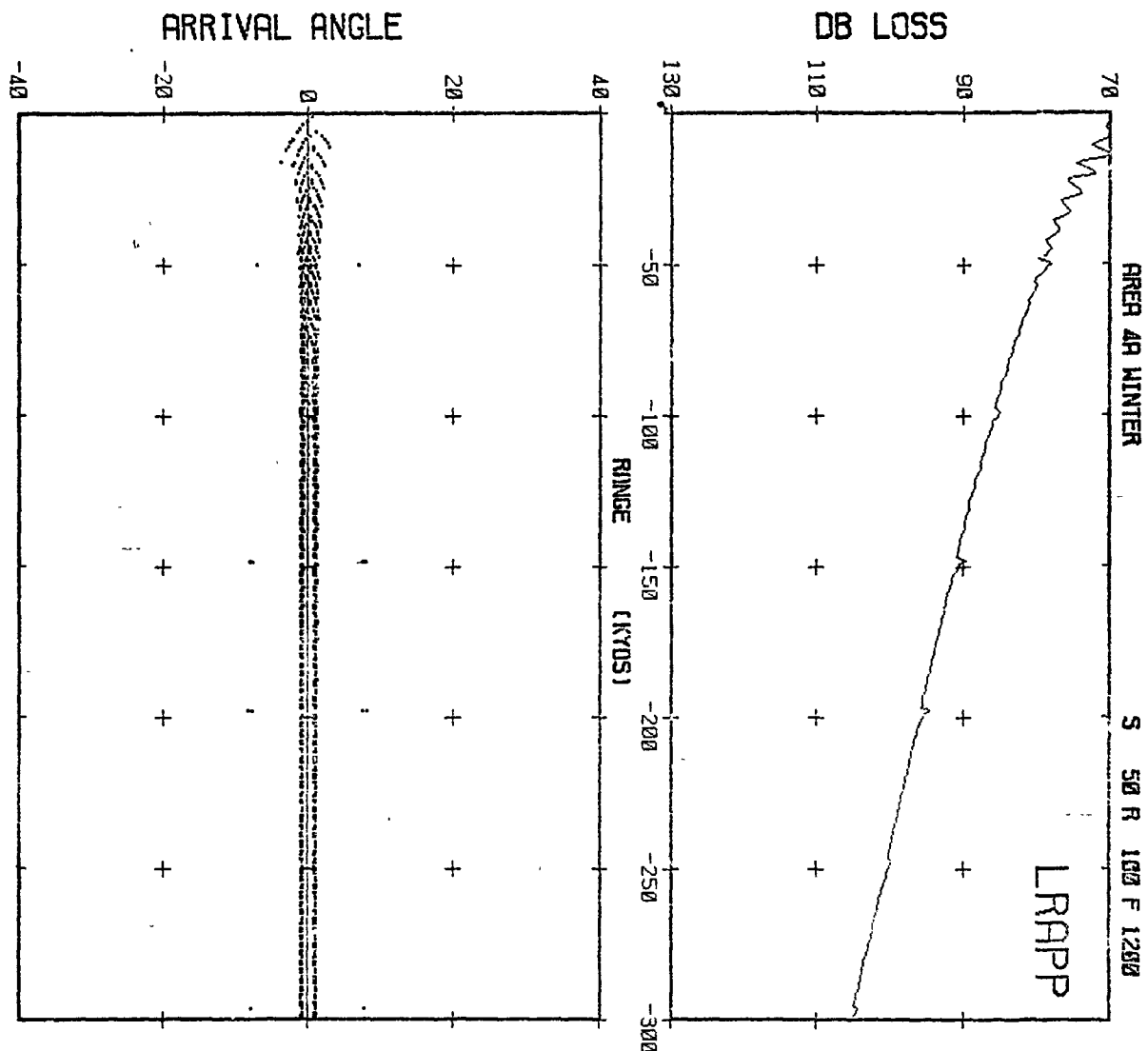
NOISE (DB)

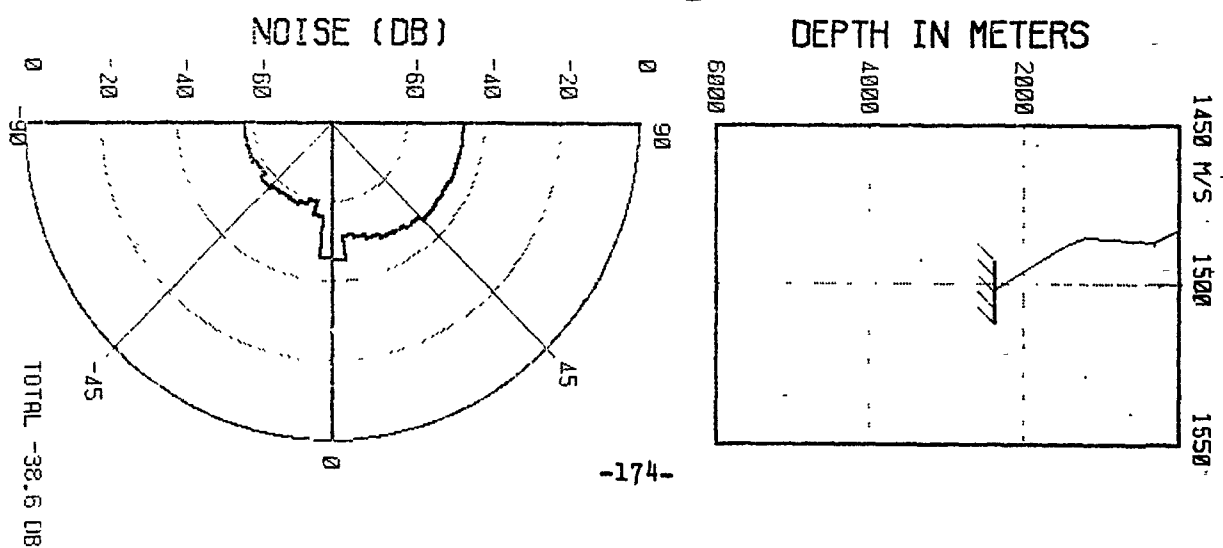
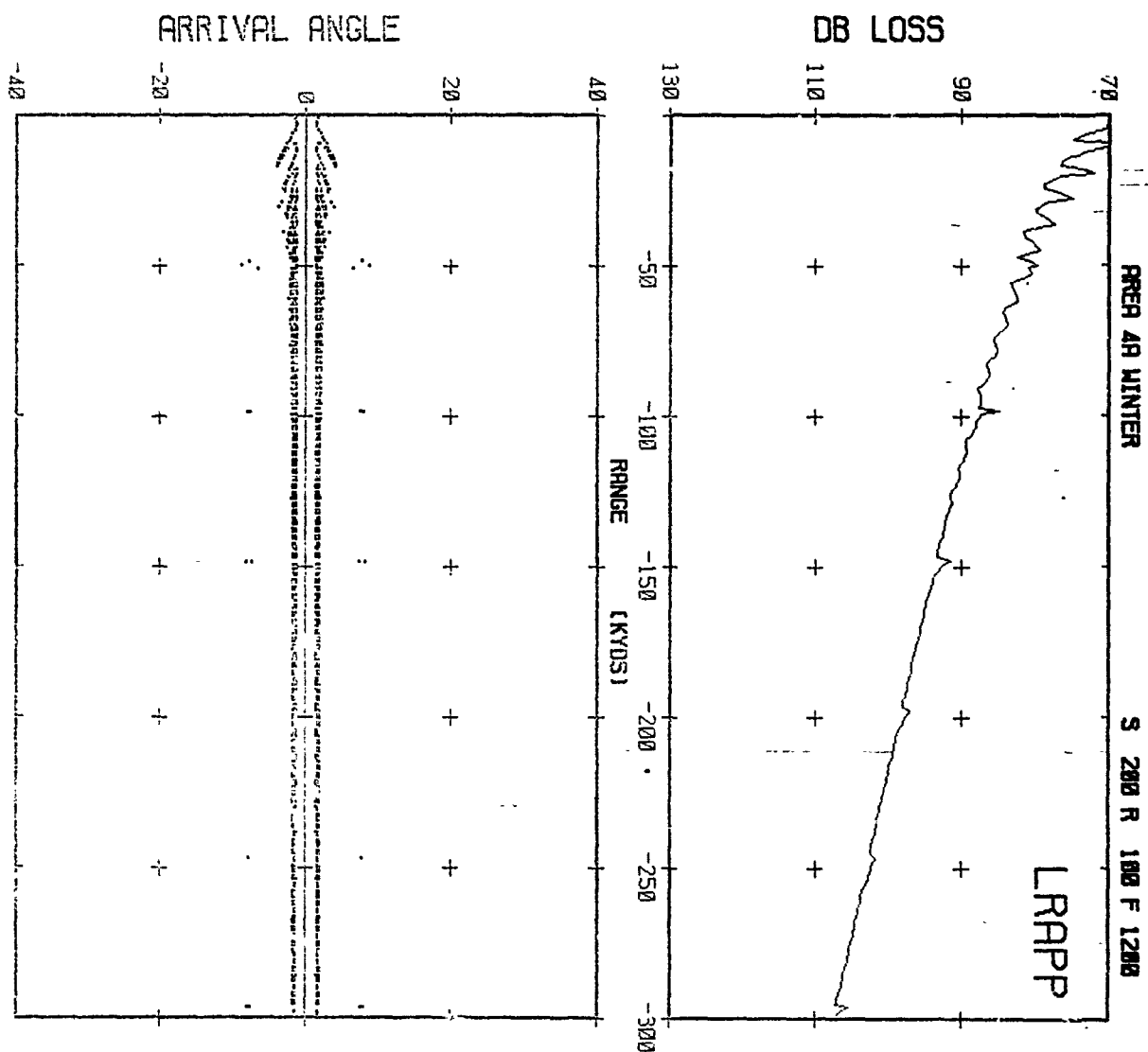


SAMPLE PAGE

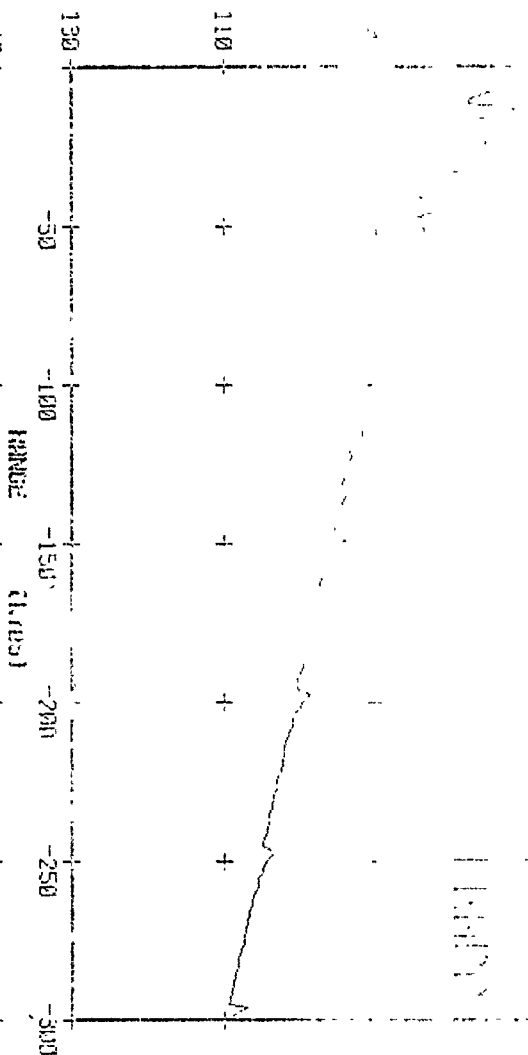




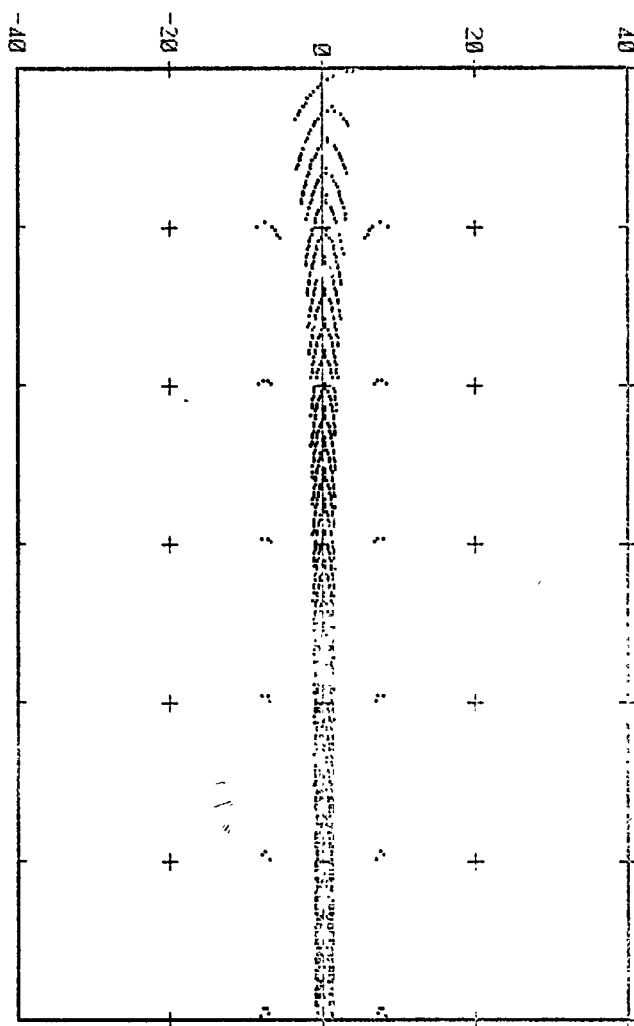




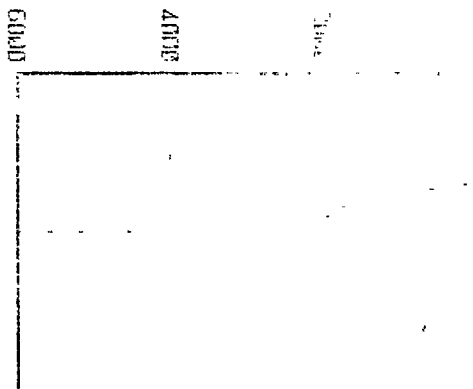
DB LOSS



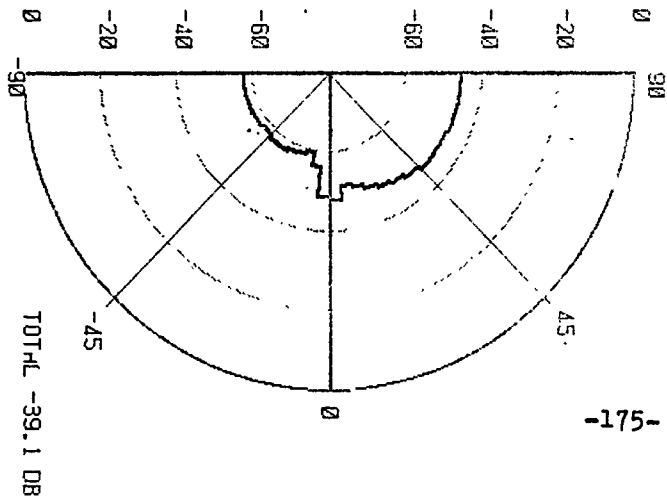
ARRIVAL ANGLE



DEPTH IN FATHOMS



NOISE (DB)

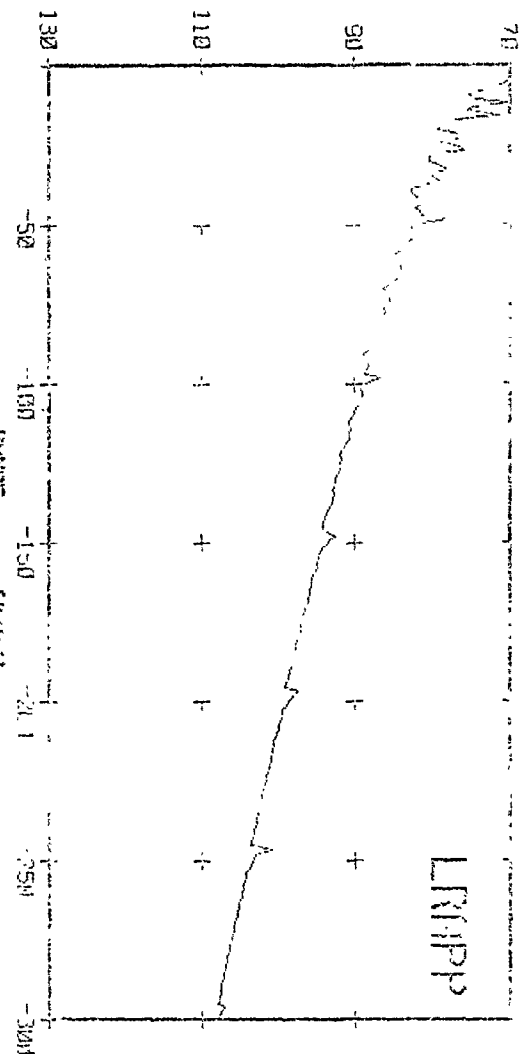


1500 H 21 0000Z

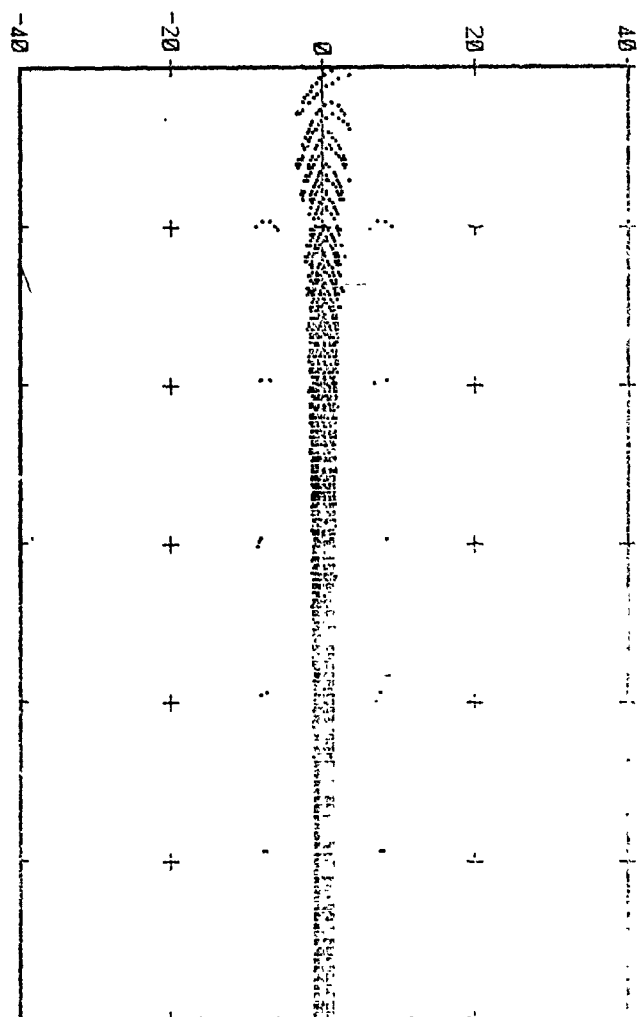
S 260 R 300 F 1200

LRIPP

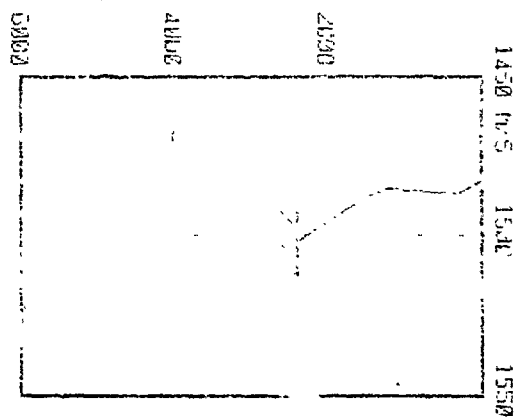
DB LOSS



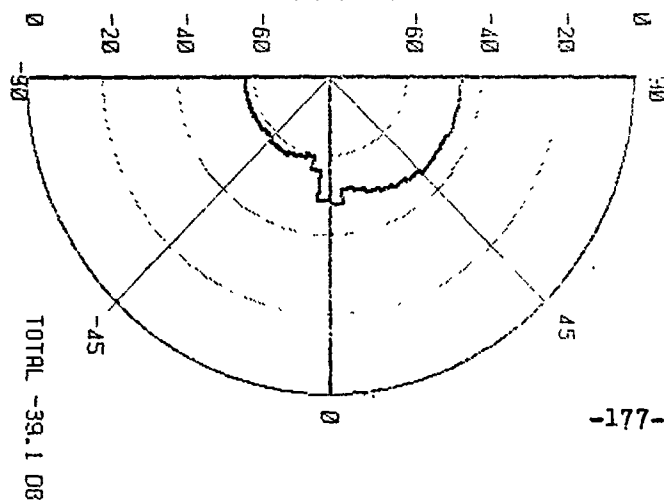
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-177-

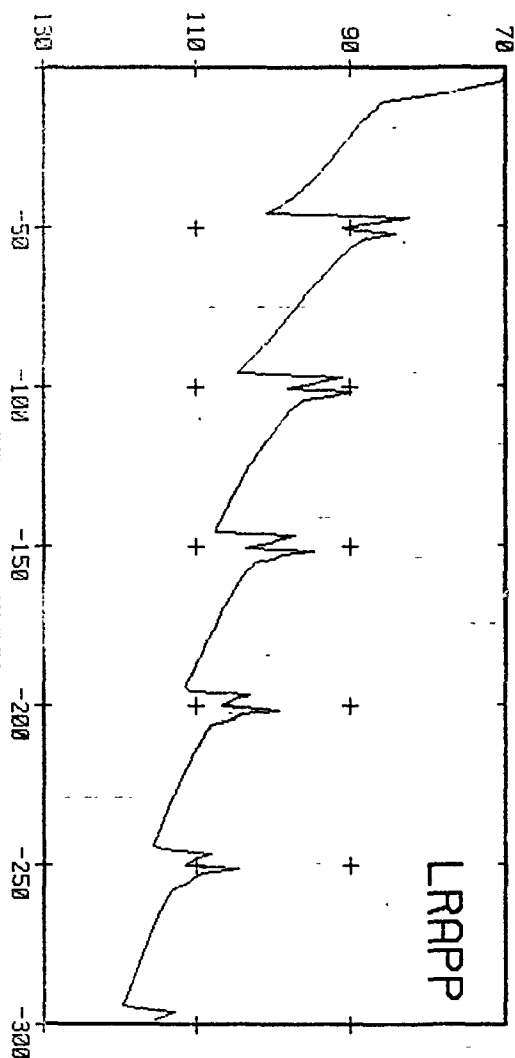
TOTAL -39.1 DB

PRER APR WINTER

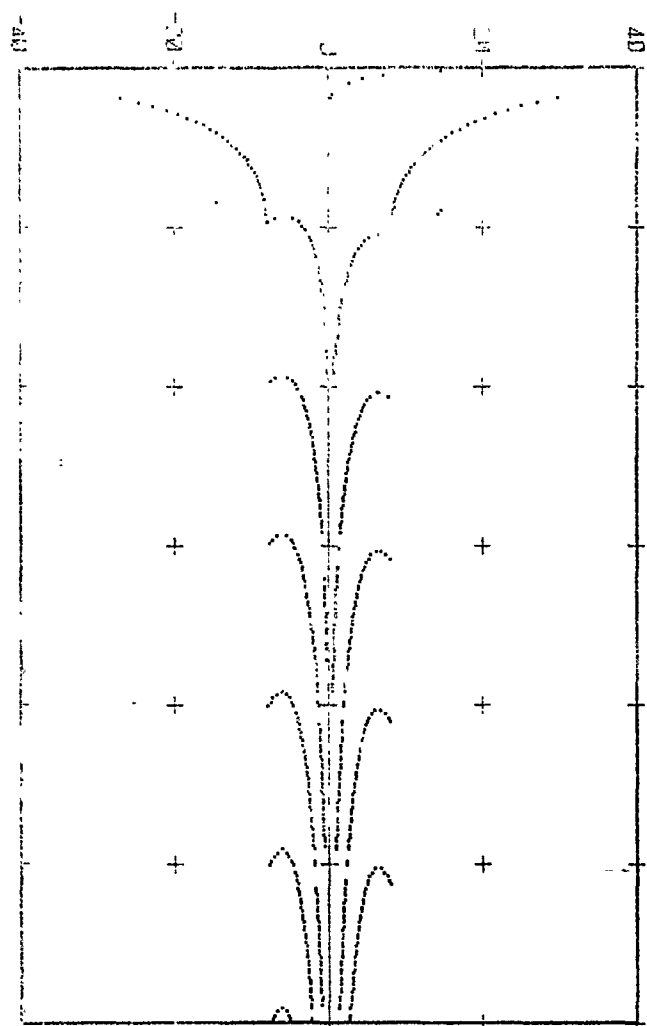
S 20 R 1000 F 1200

LRAPP

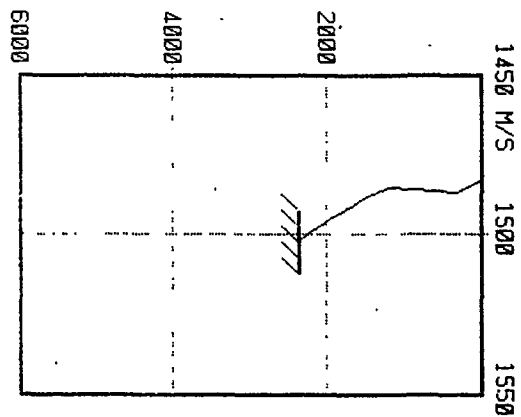
DB LOSS



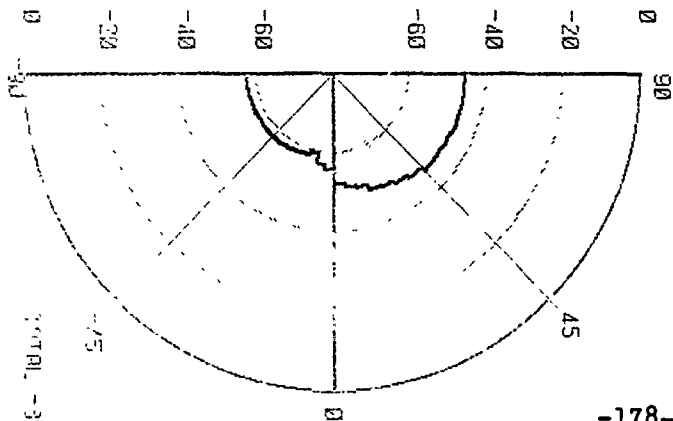
ARRIVAL ANGLE

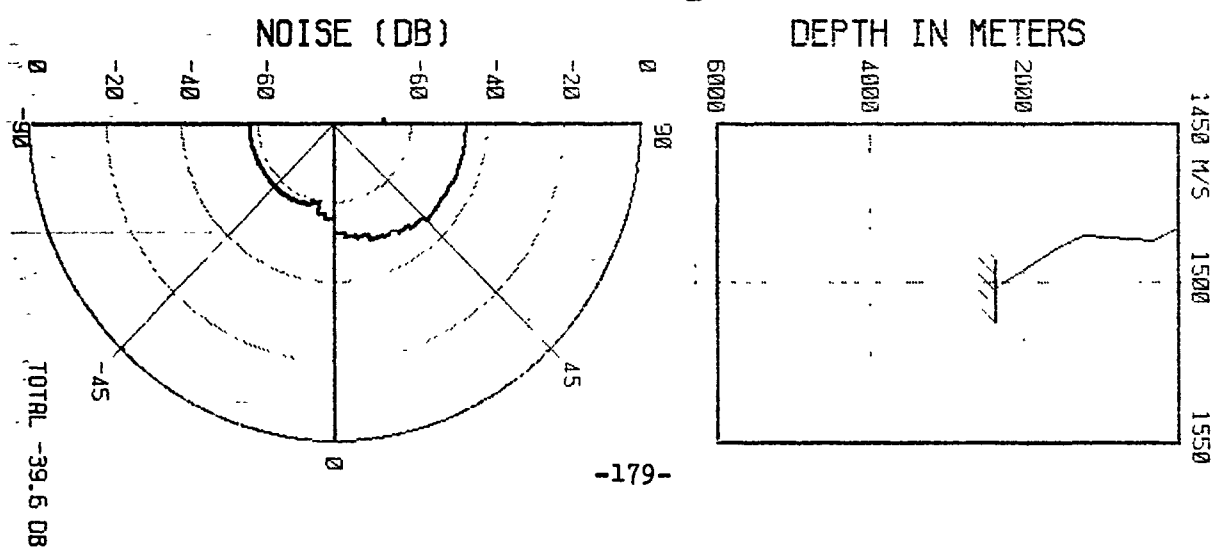
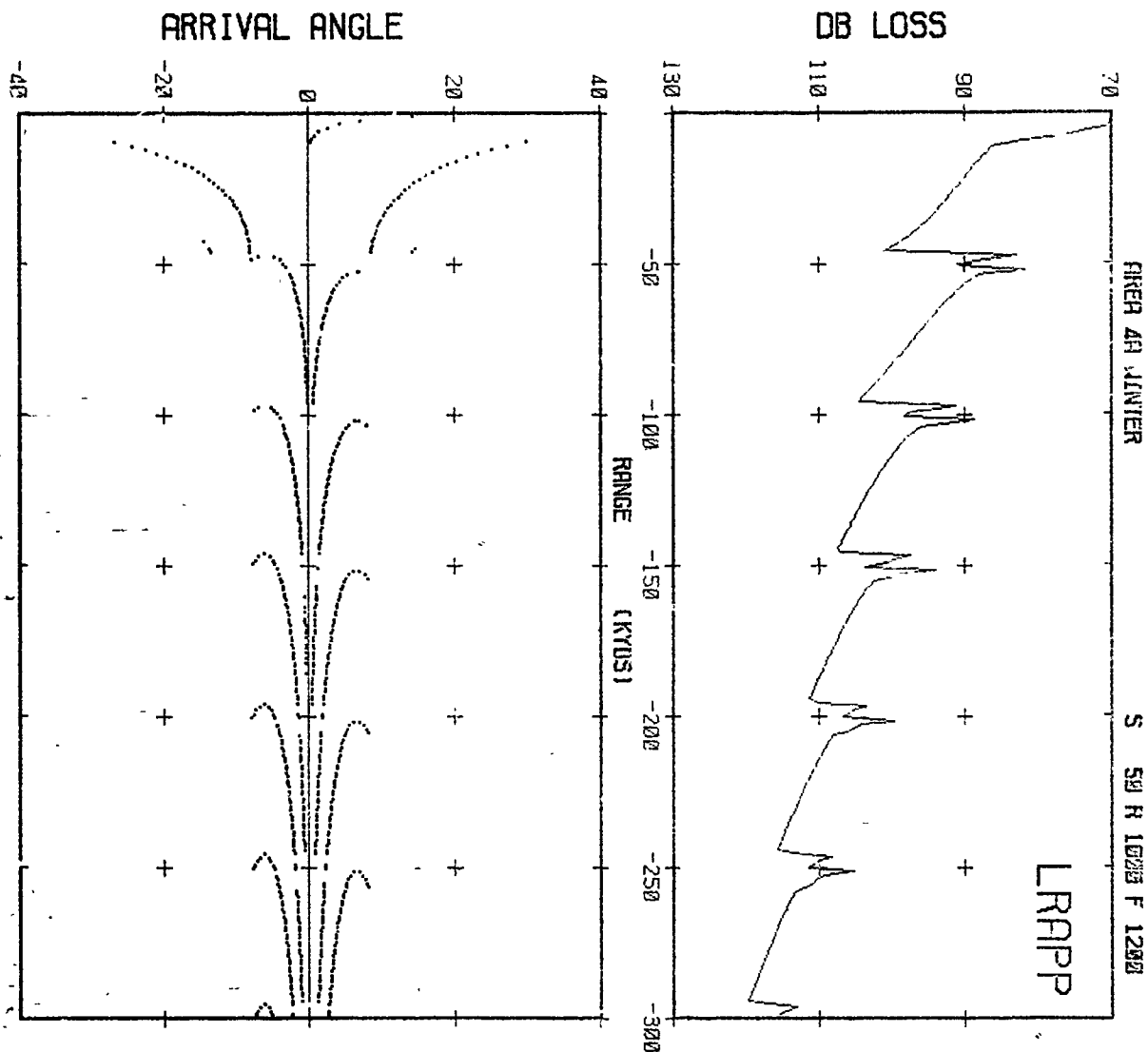


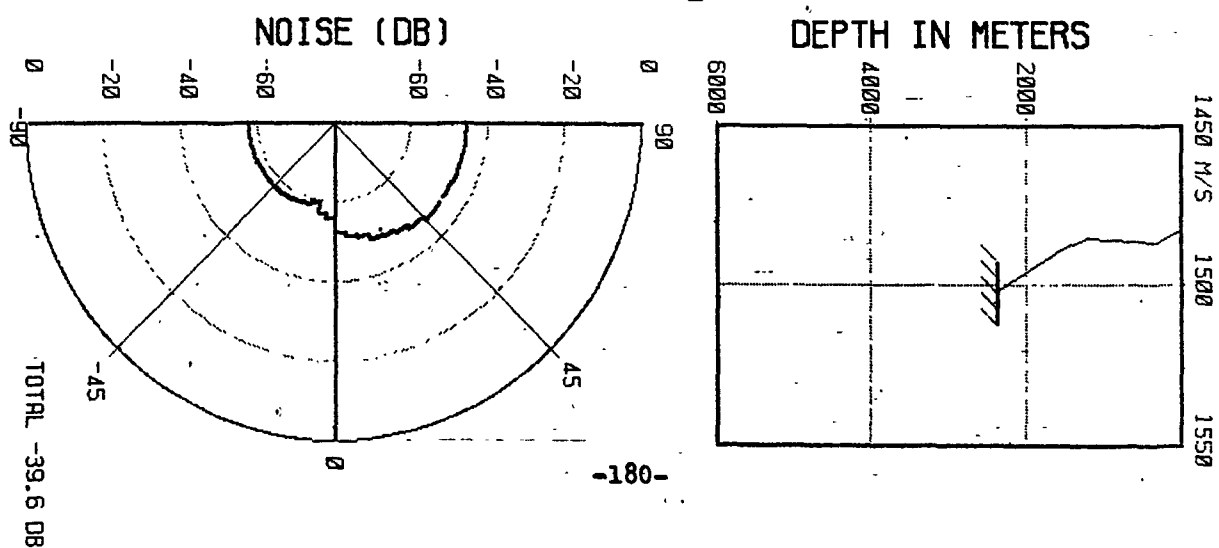
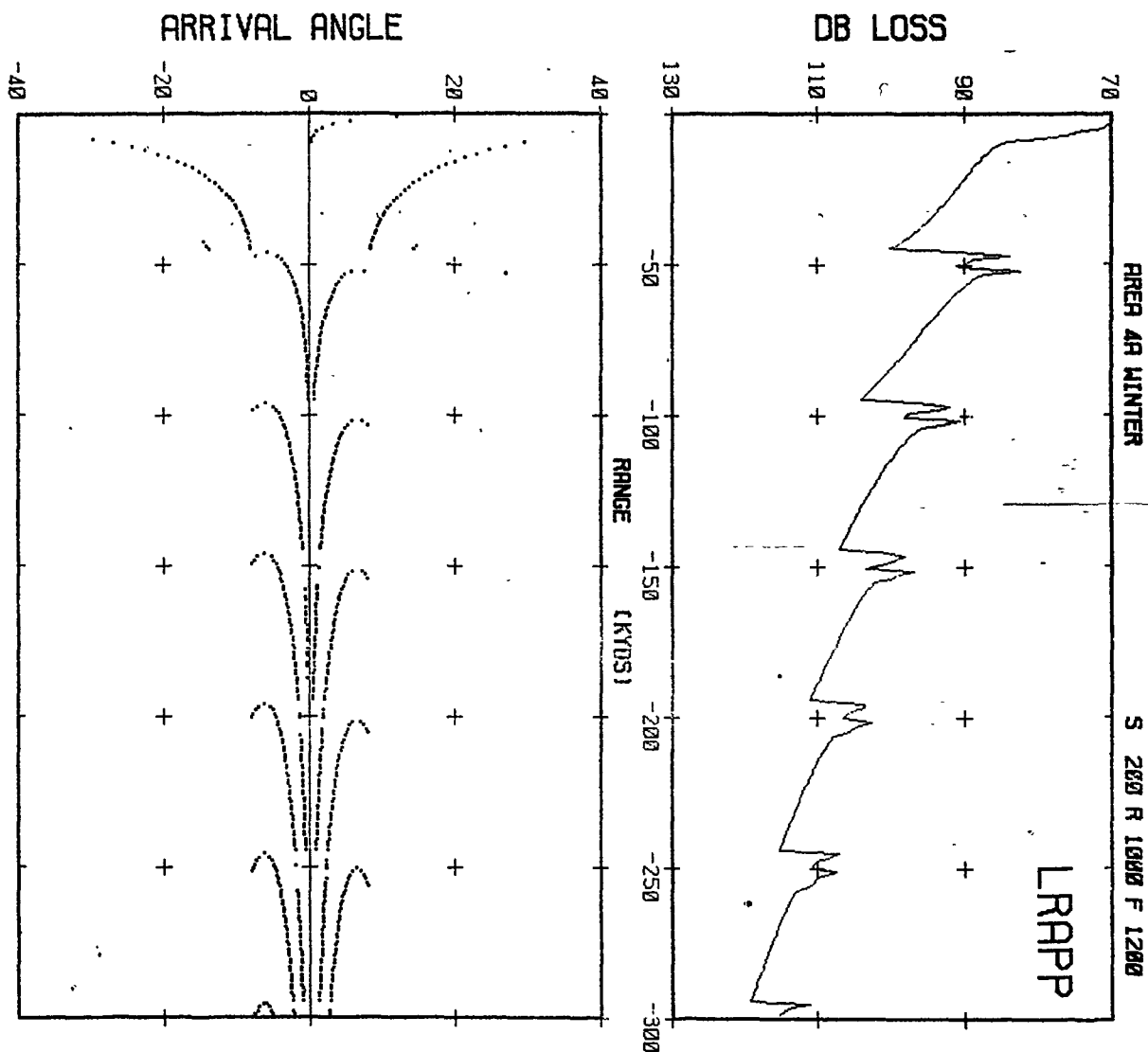
DEPTH IN METERS



NOISE (DB)





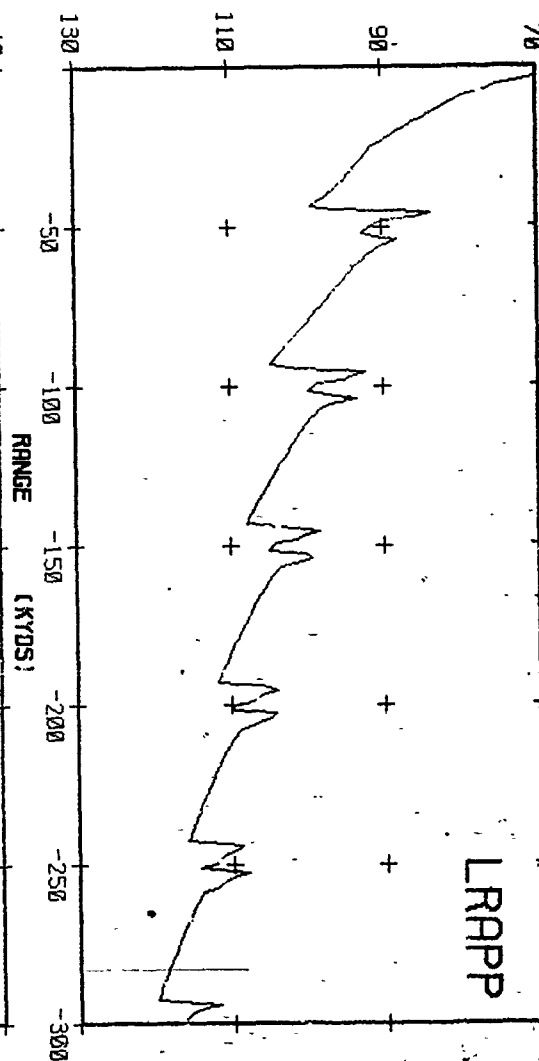


AREA 4R WINTER

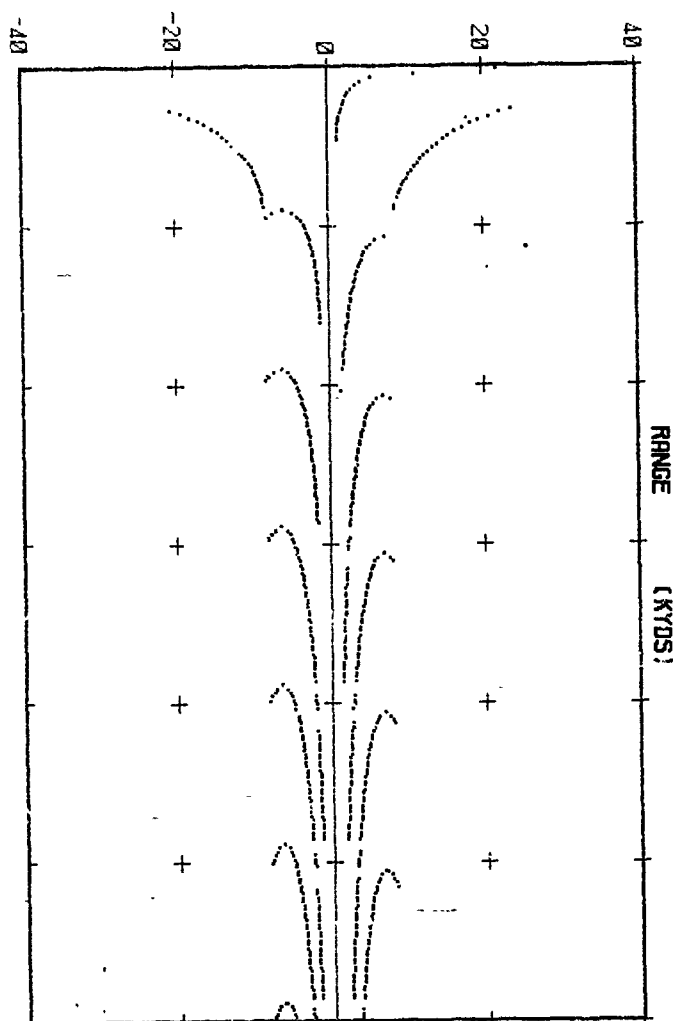
5 20 R 1500 + 1200

1450 H/S 1500

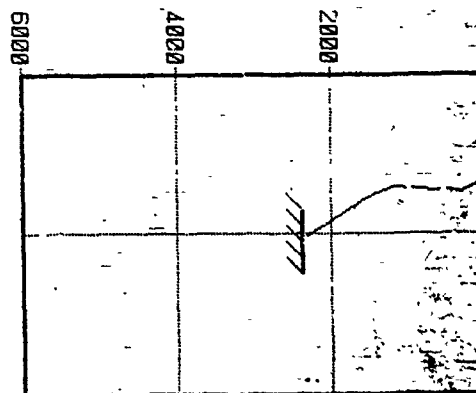
DB LOSS



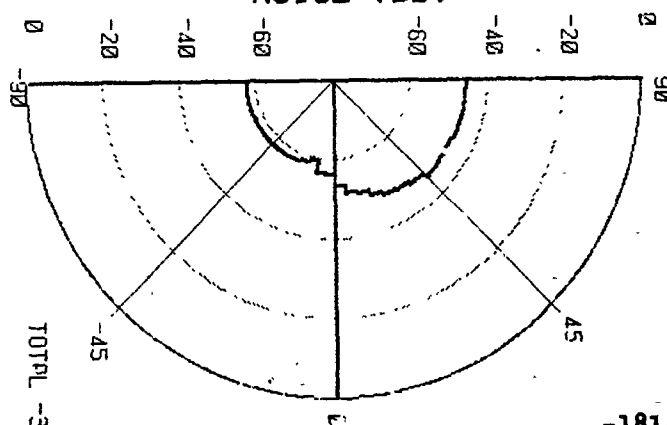
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTFL -39.7 DB

AREA 21 WINTER

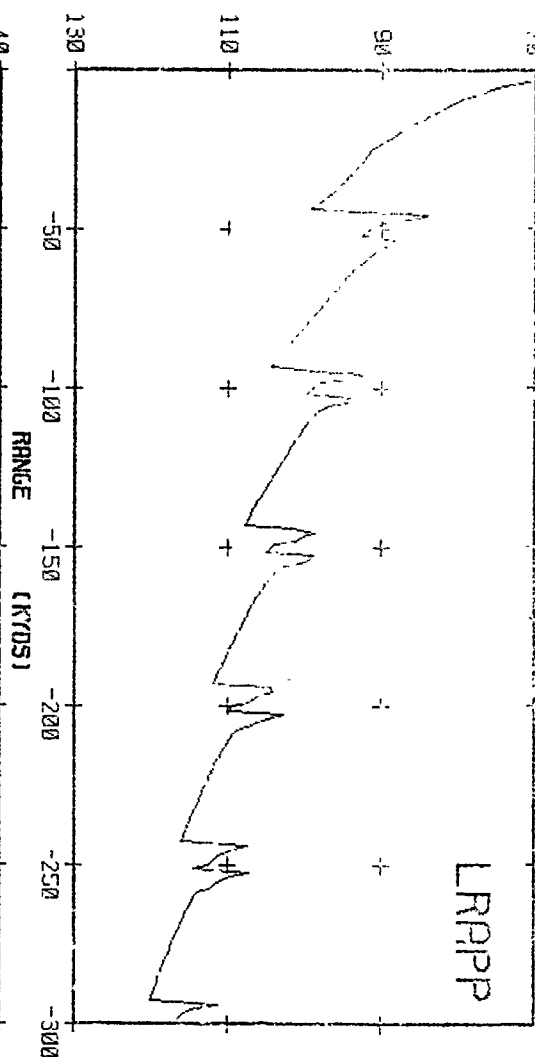
S 50 R 1505 F 1200

1452 N/S

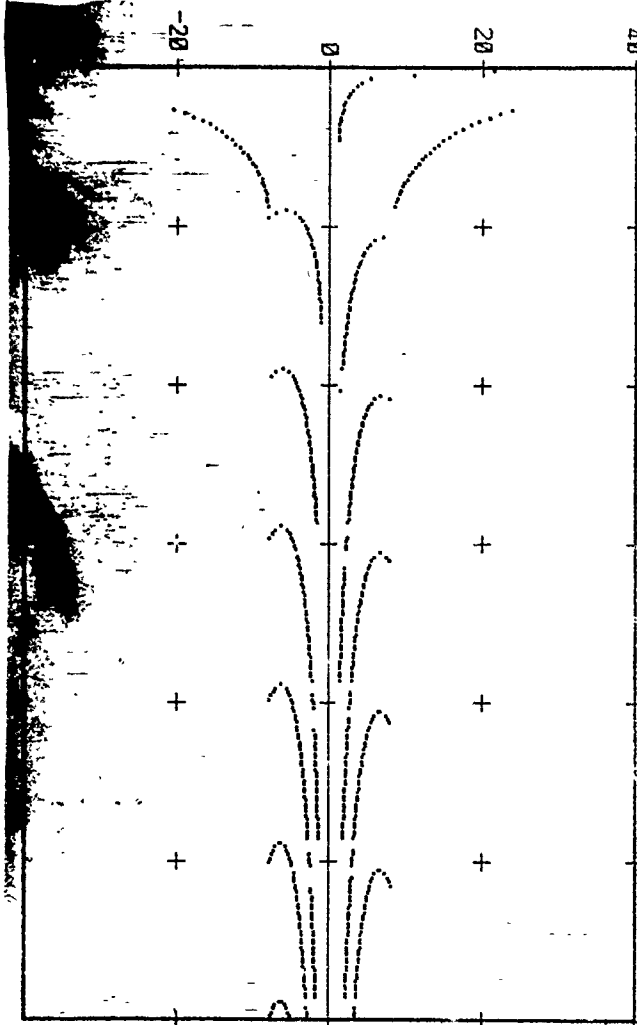
1500

1550

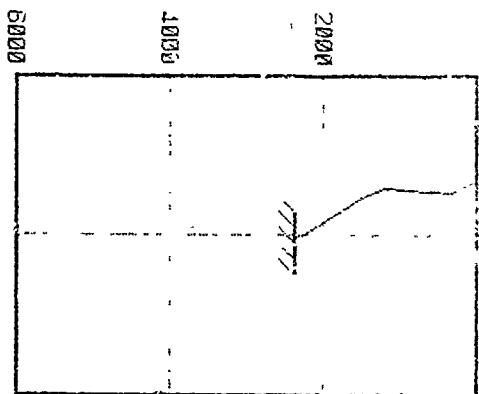
DB LOSS



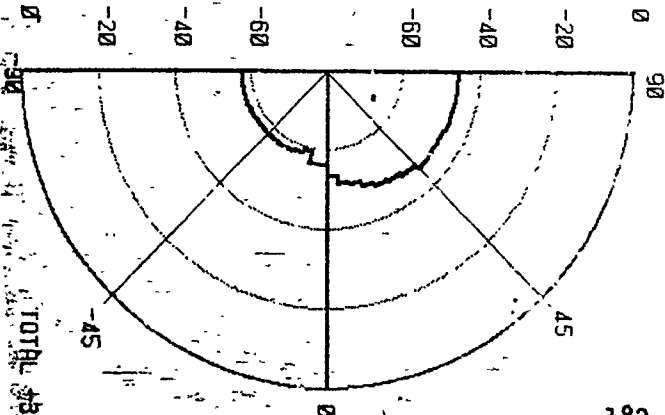
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



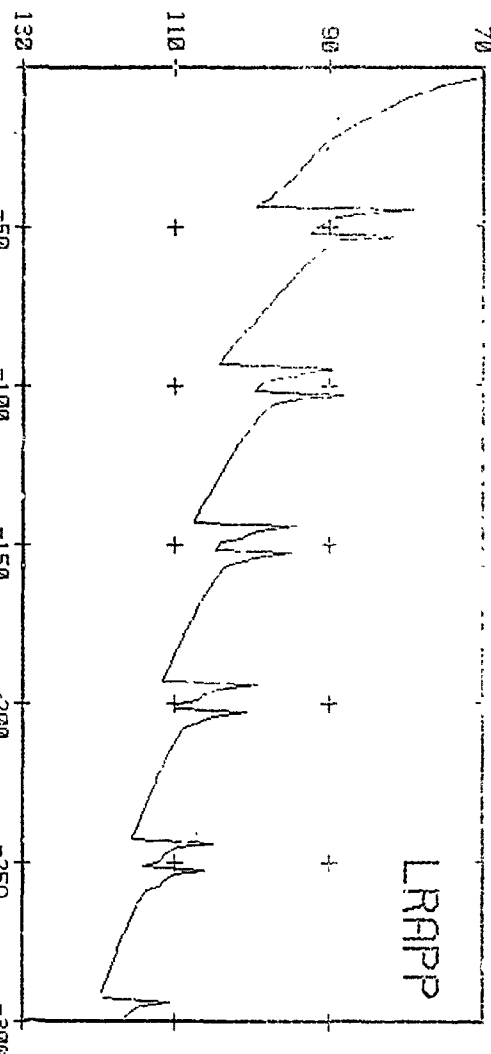
-182-

Page 401 M10101

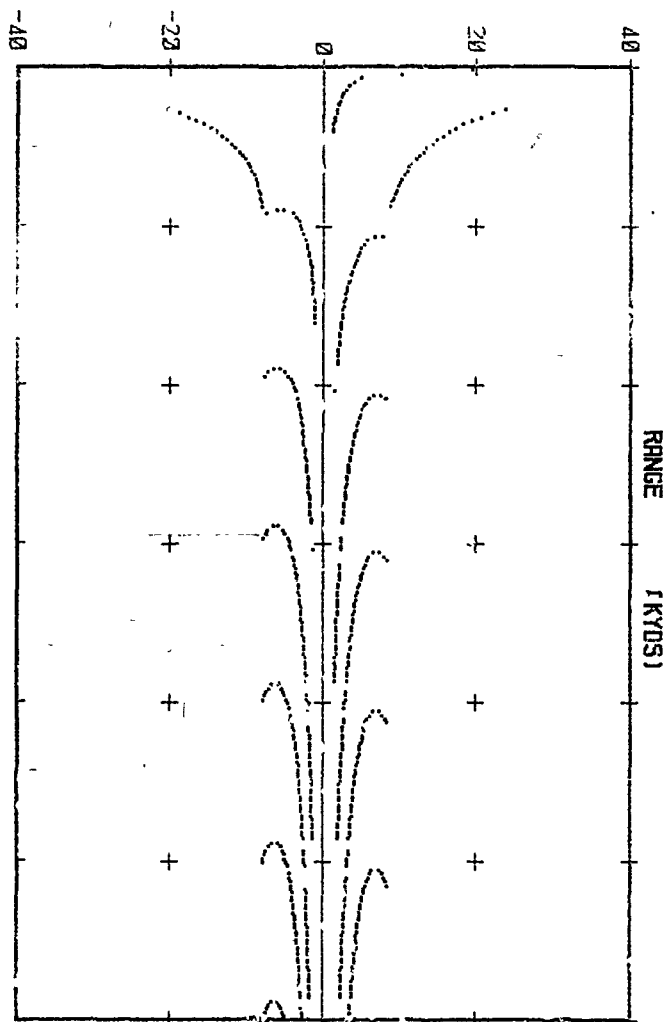
S 260 R 1503 F 1263

LRAPP

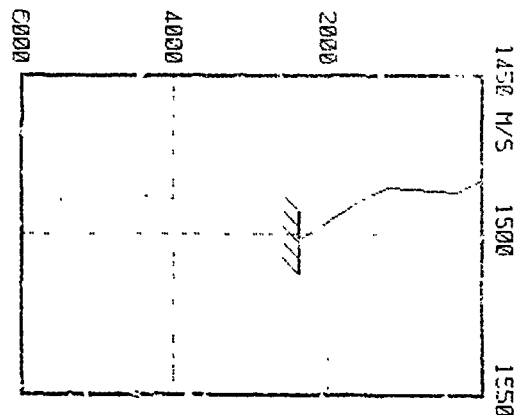
DB LOSS



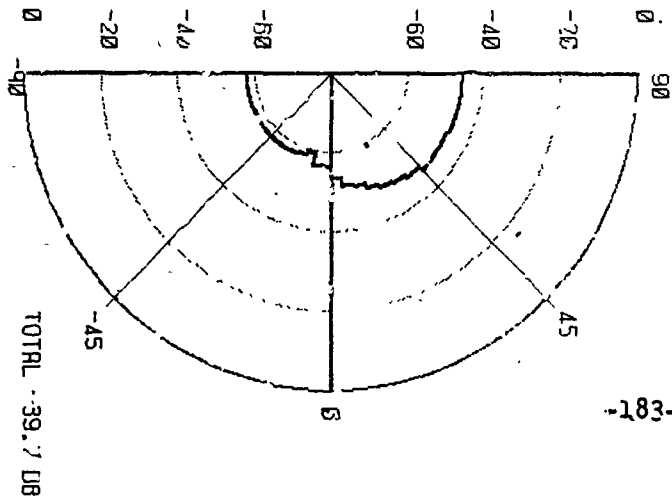
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

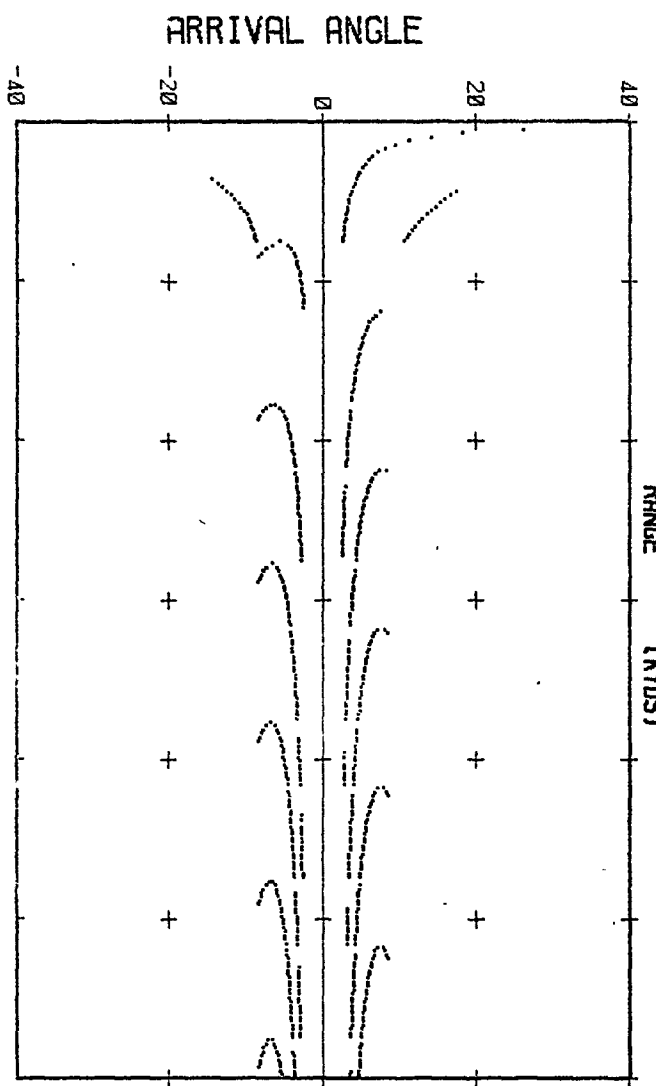
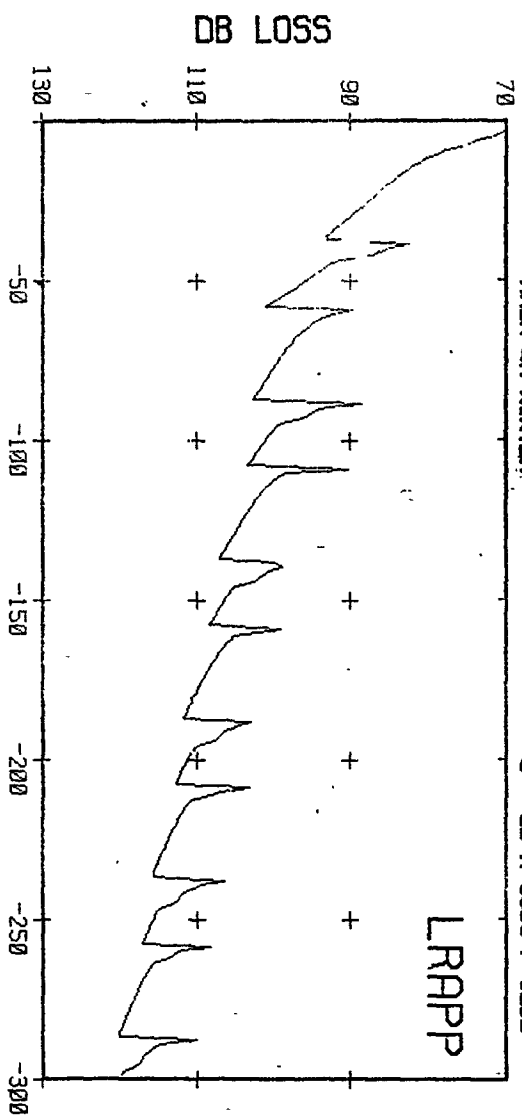


TOTAL -39.7 DB

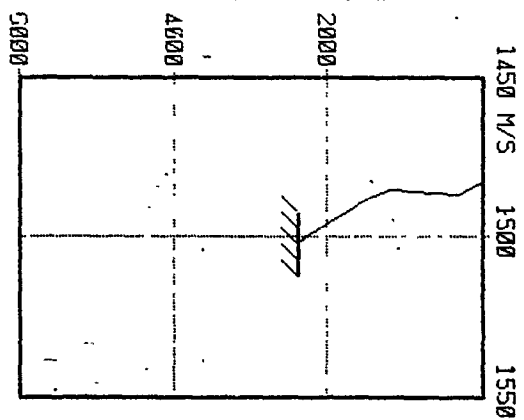
-183-

PRIER AIR WINTER S 20 R 3609 F 1200

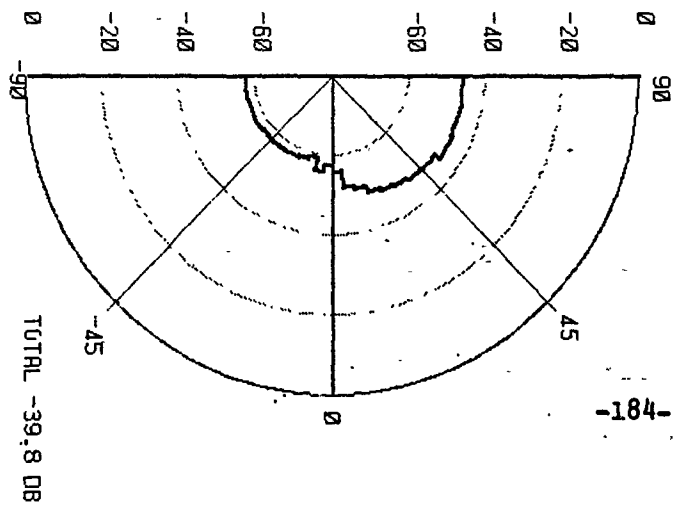
LRAPP

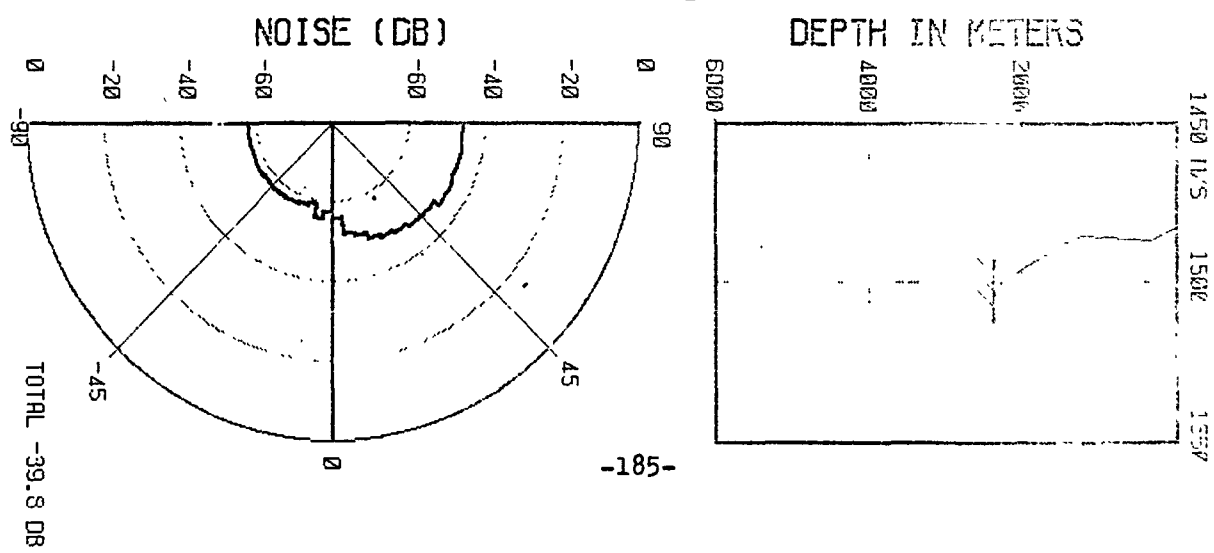
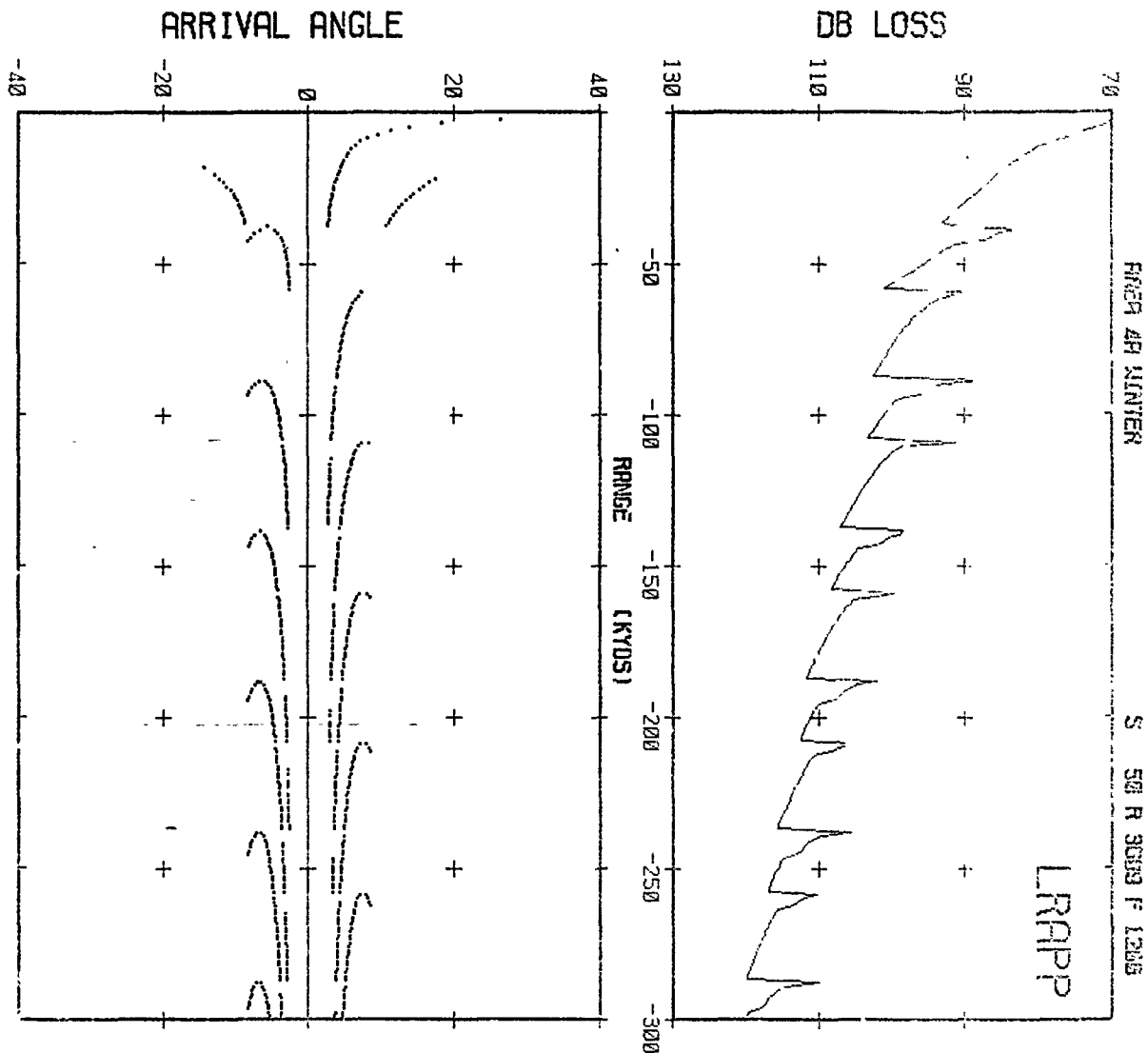


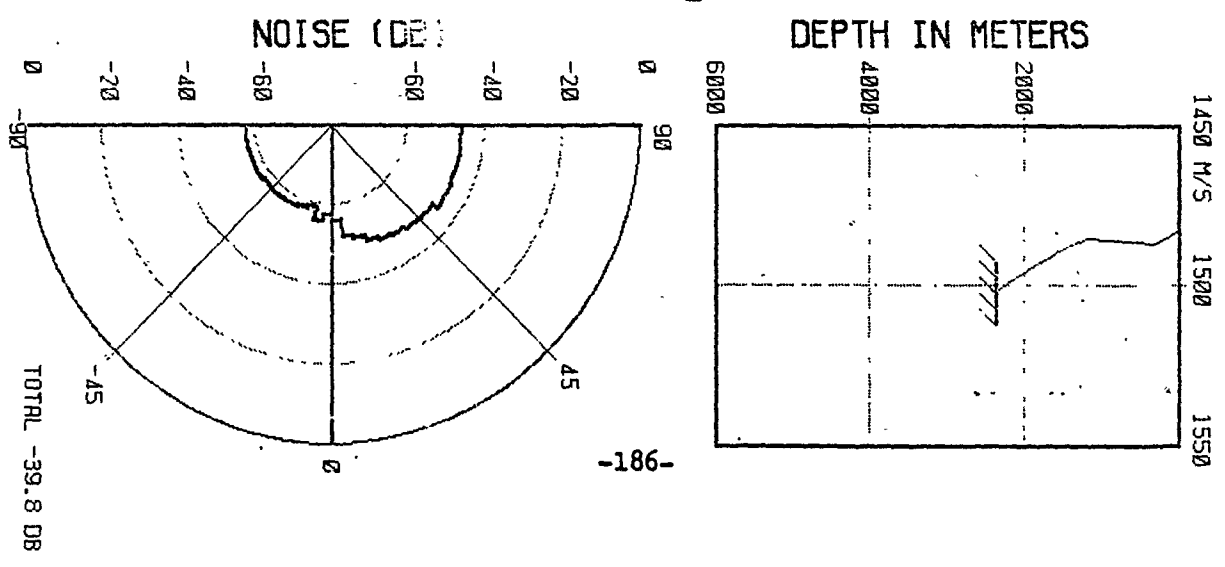
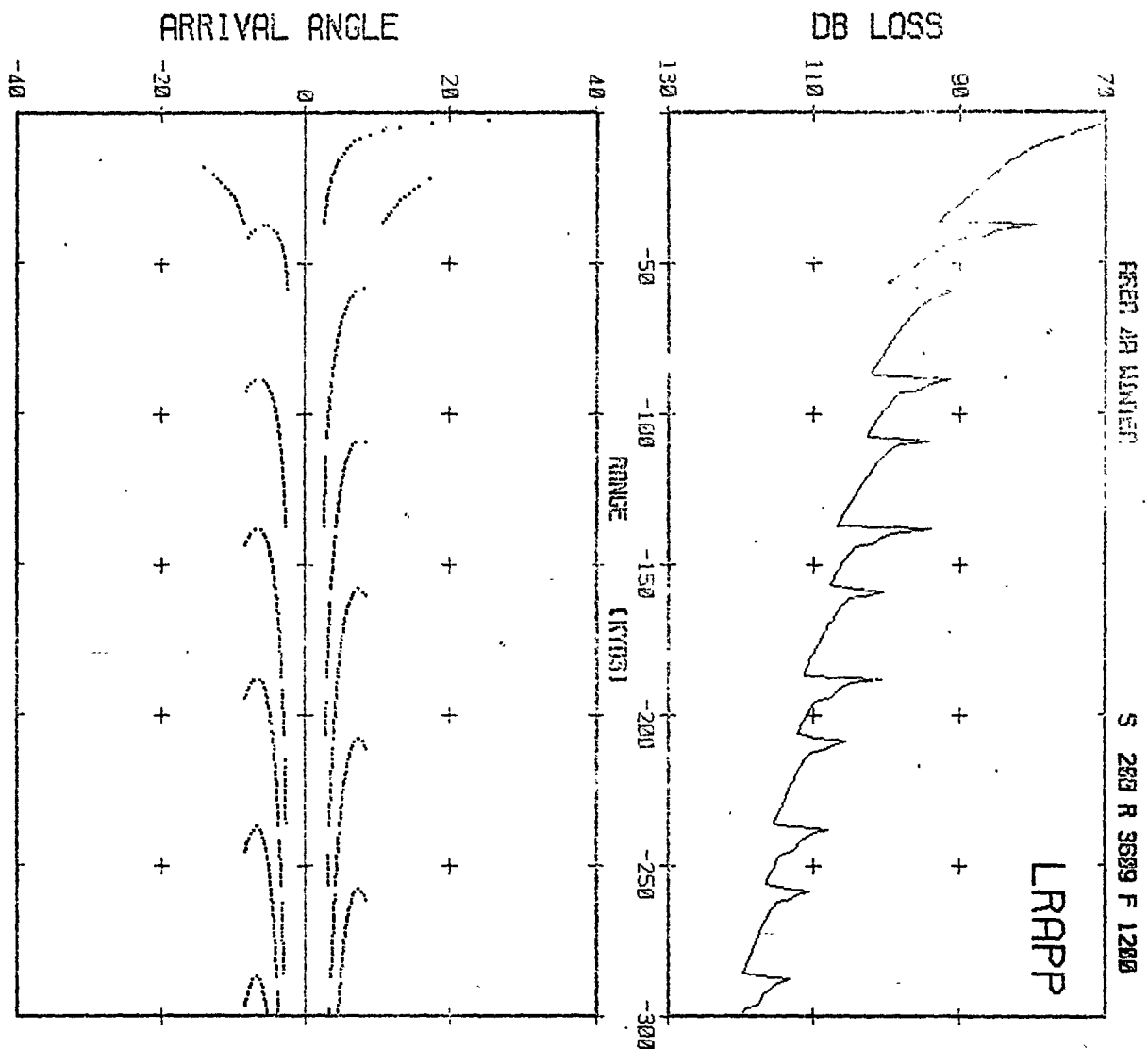
DEPTH IN METERS



NOISE (DB)





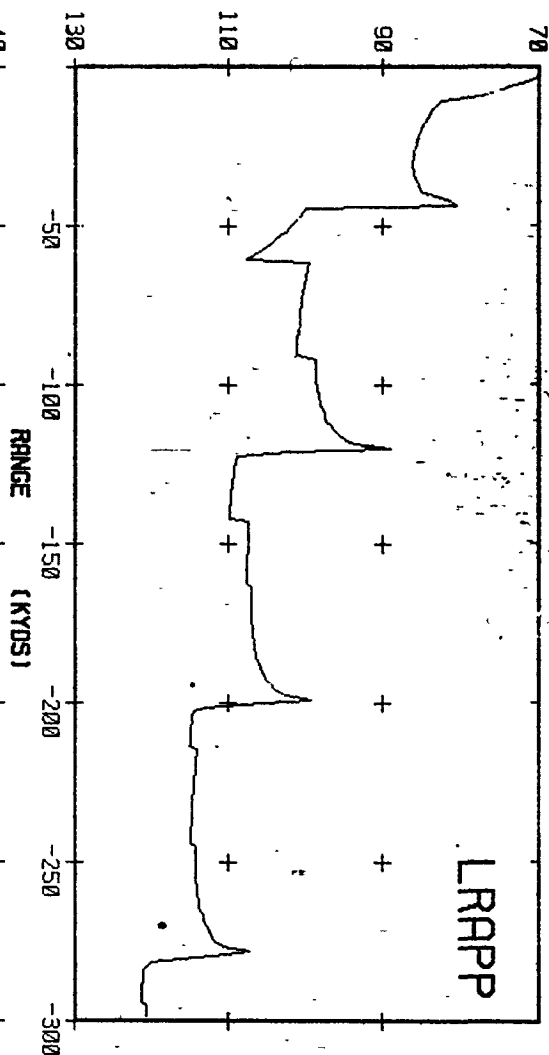


9000 AR NINTEN

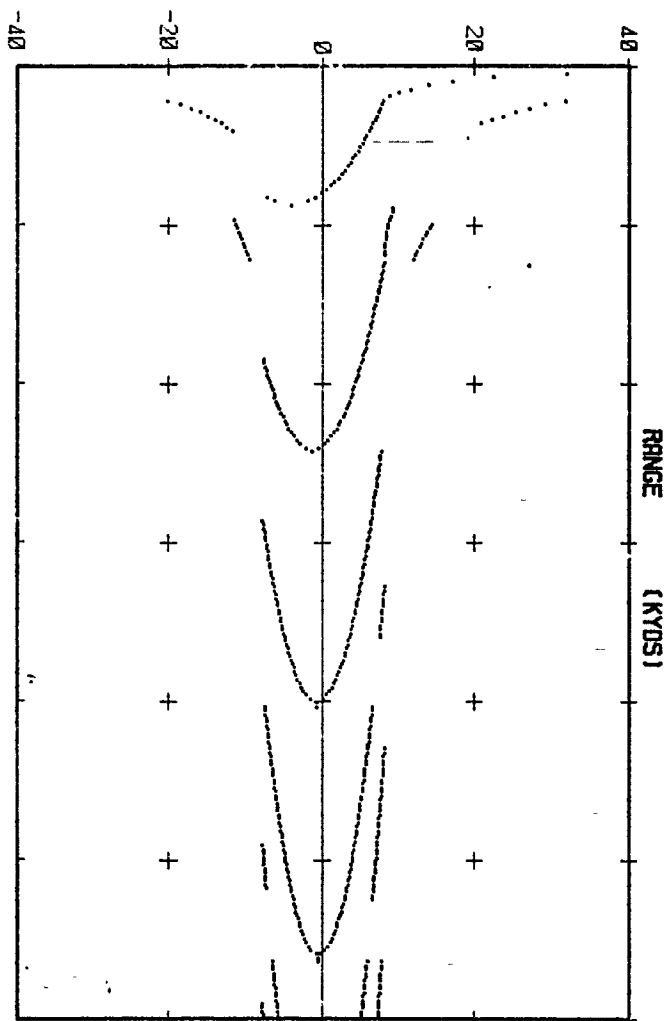
S 20 R 4593 F 1200

LRAPP

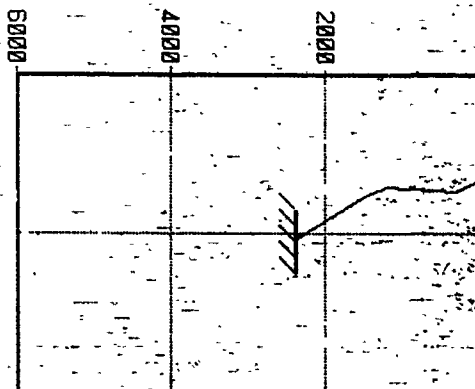
DB LOSS



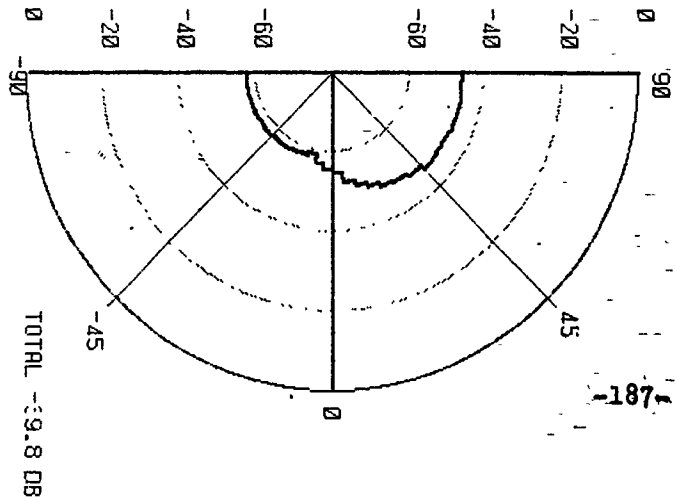
ARRIVAL ANGLE

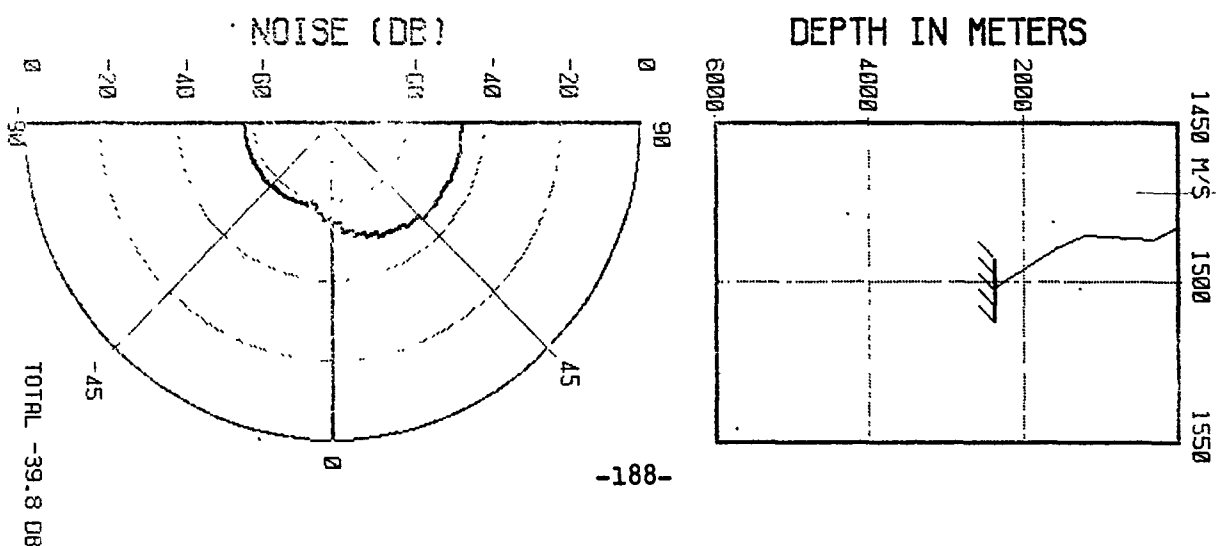
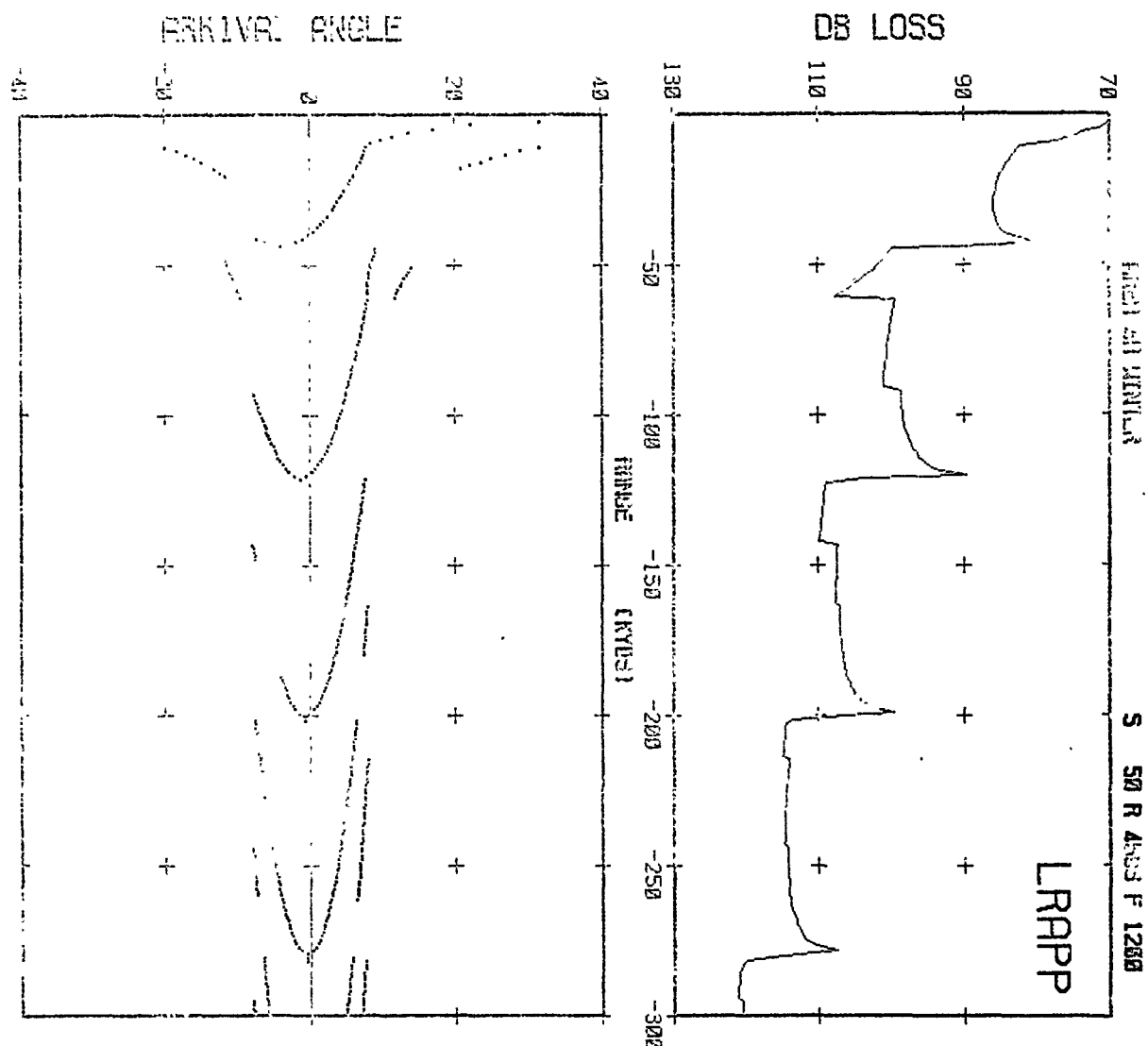


DEPTH IN METERS



NOISE (DB)



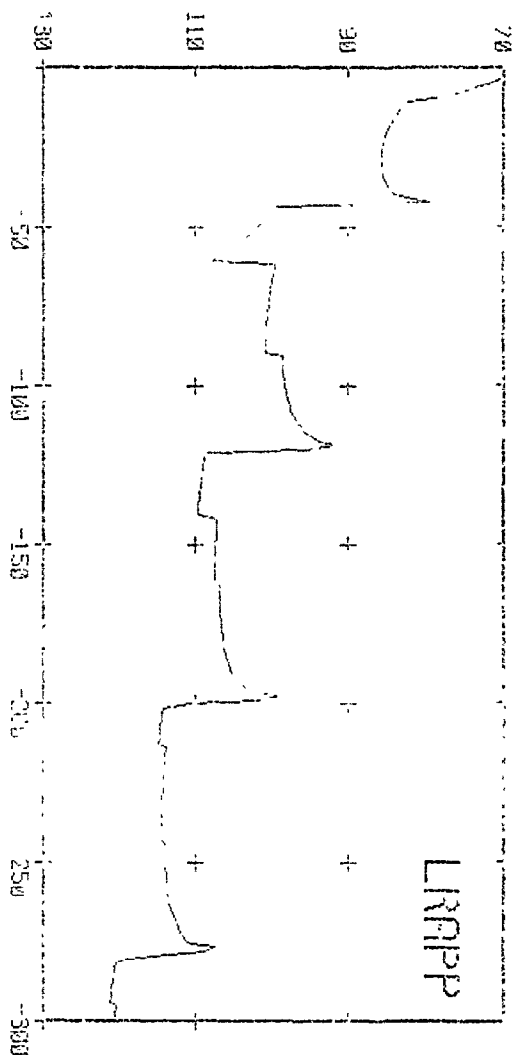


FROM AN UNDER

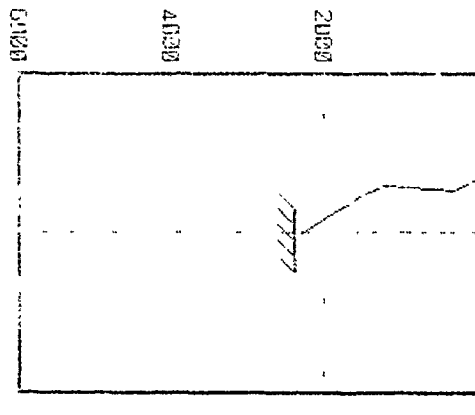
S 250 H 4503 F 1203

1150 M/S 1500 1550

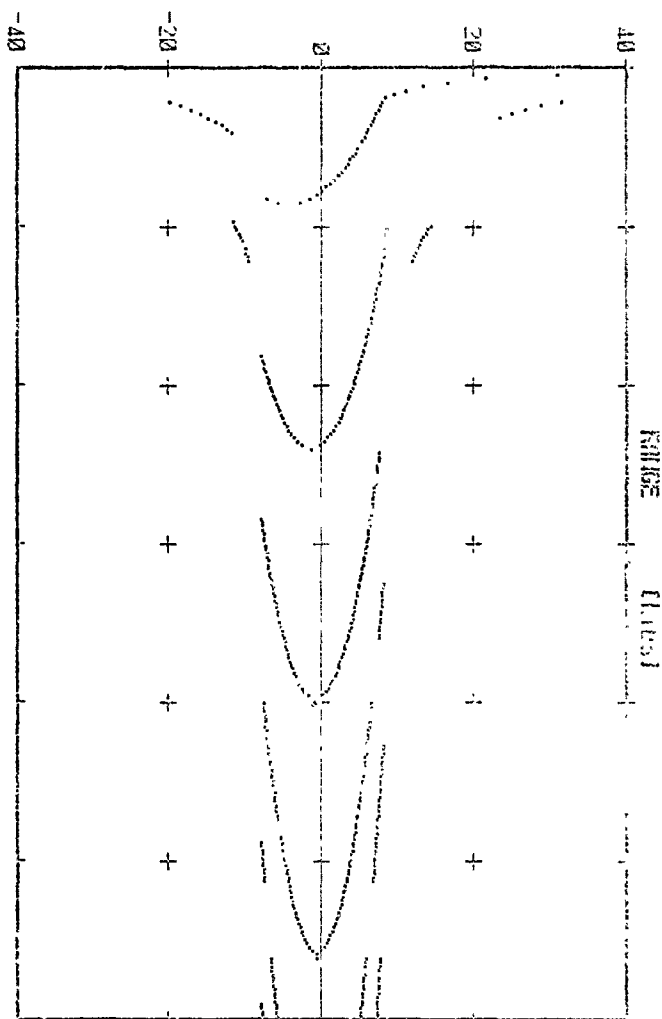
DB LOSS



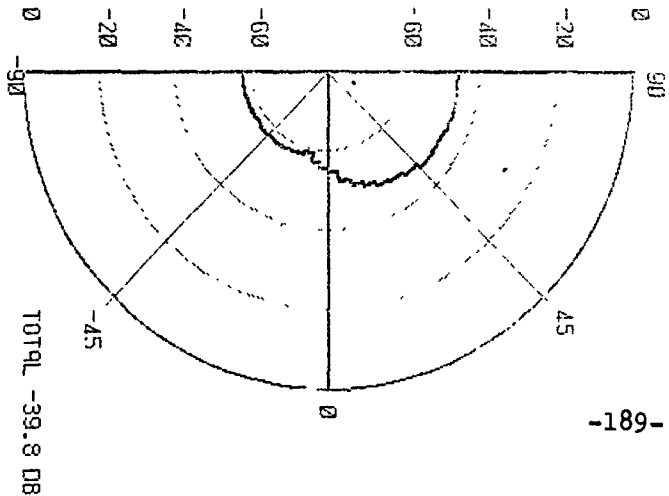
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

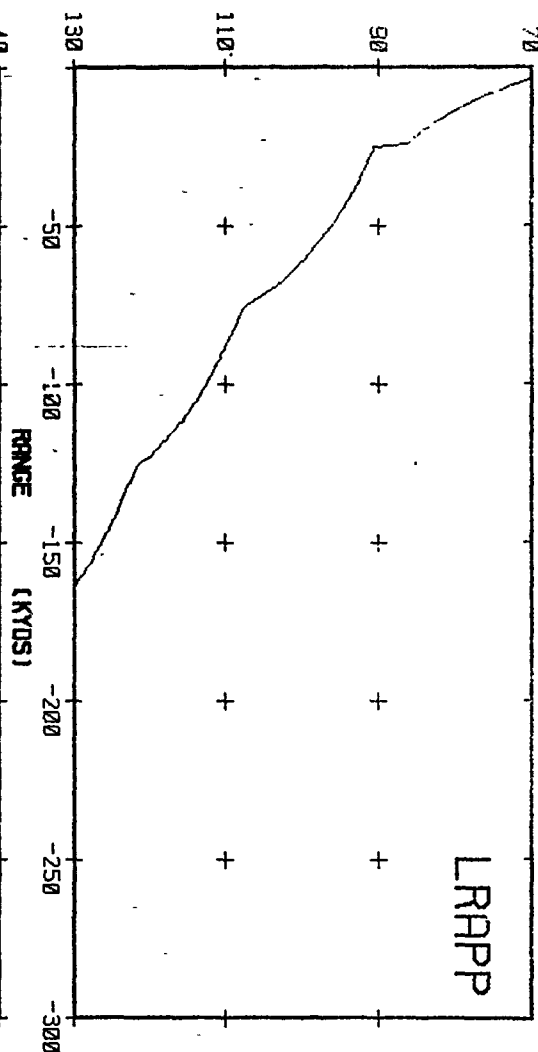


AREA 4R WINTER

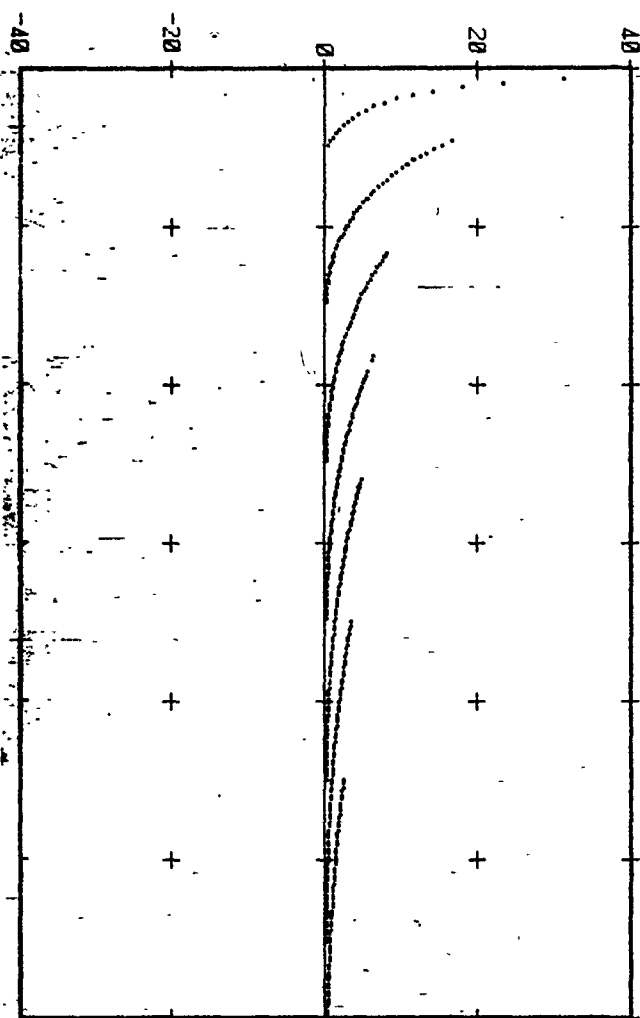
S 20 R 7798 F 1200

LRAPP

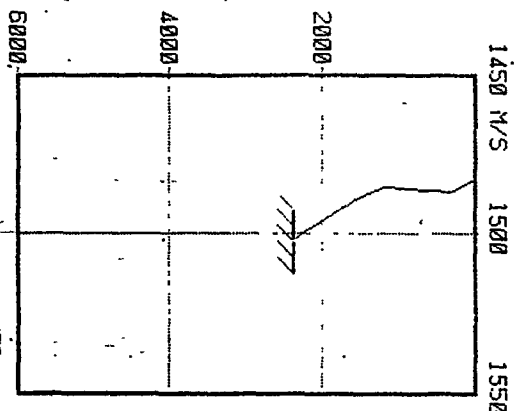
DB LOSS



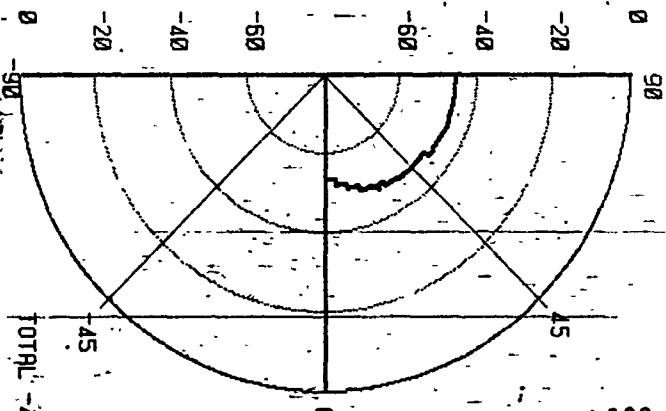
ARRIVAL ANGLE



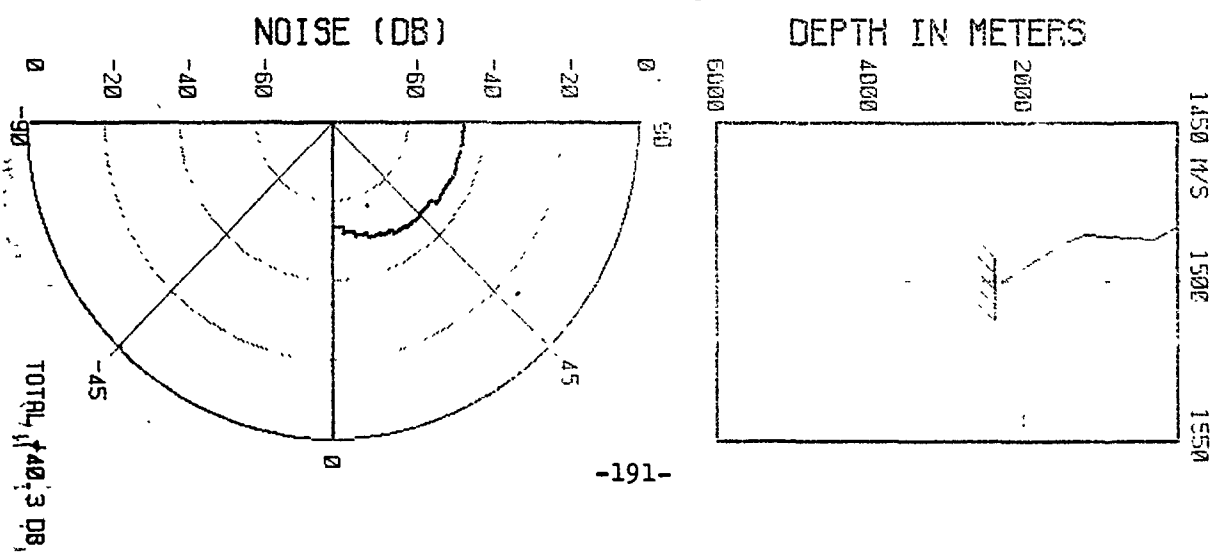
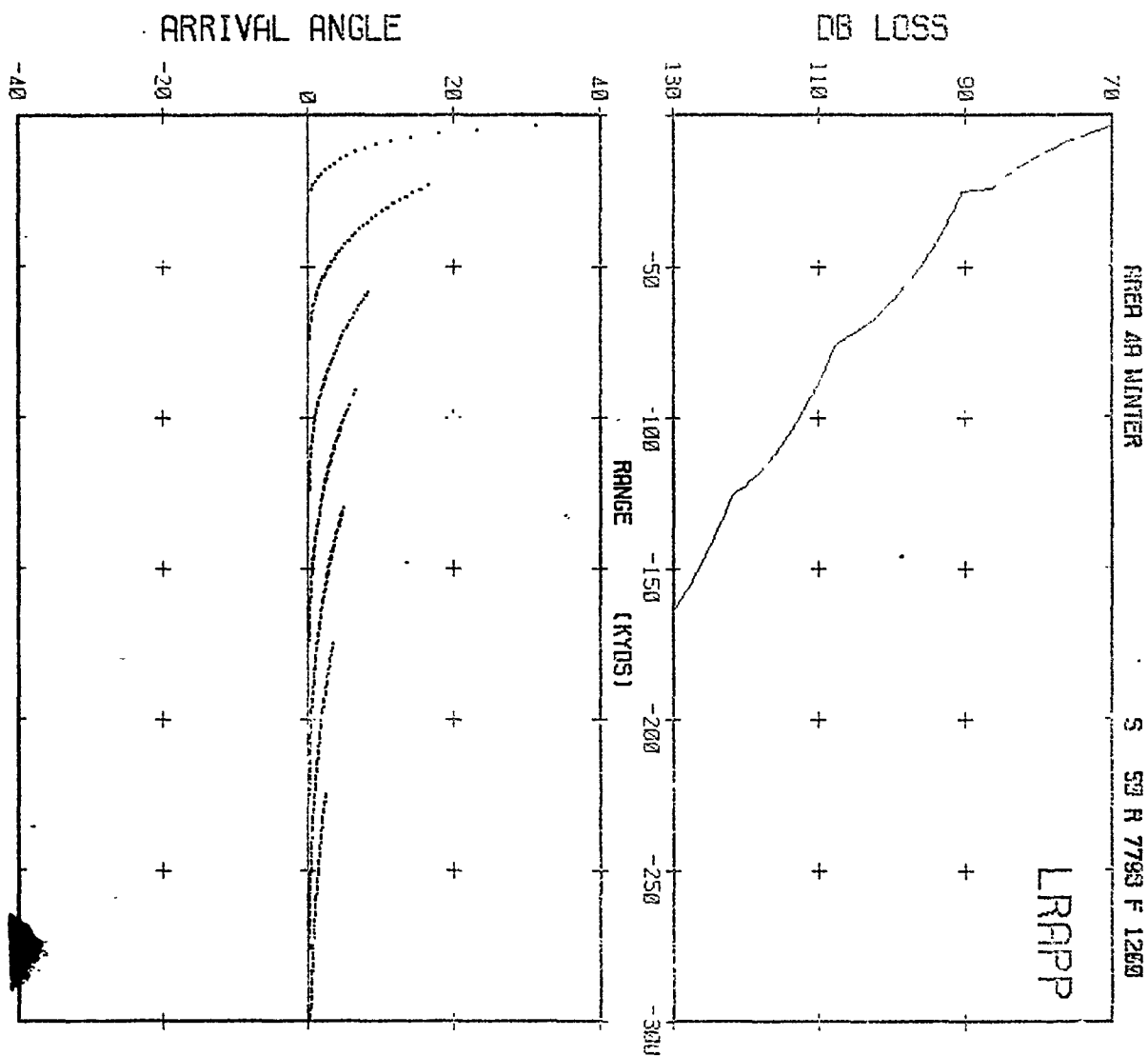
DEPTH IN METERS

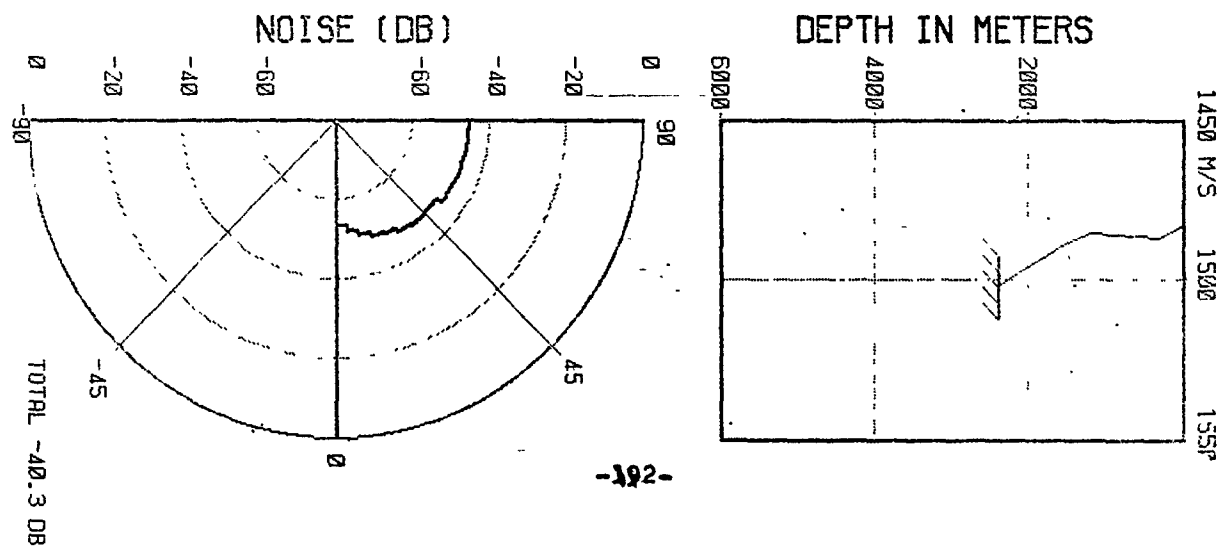
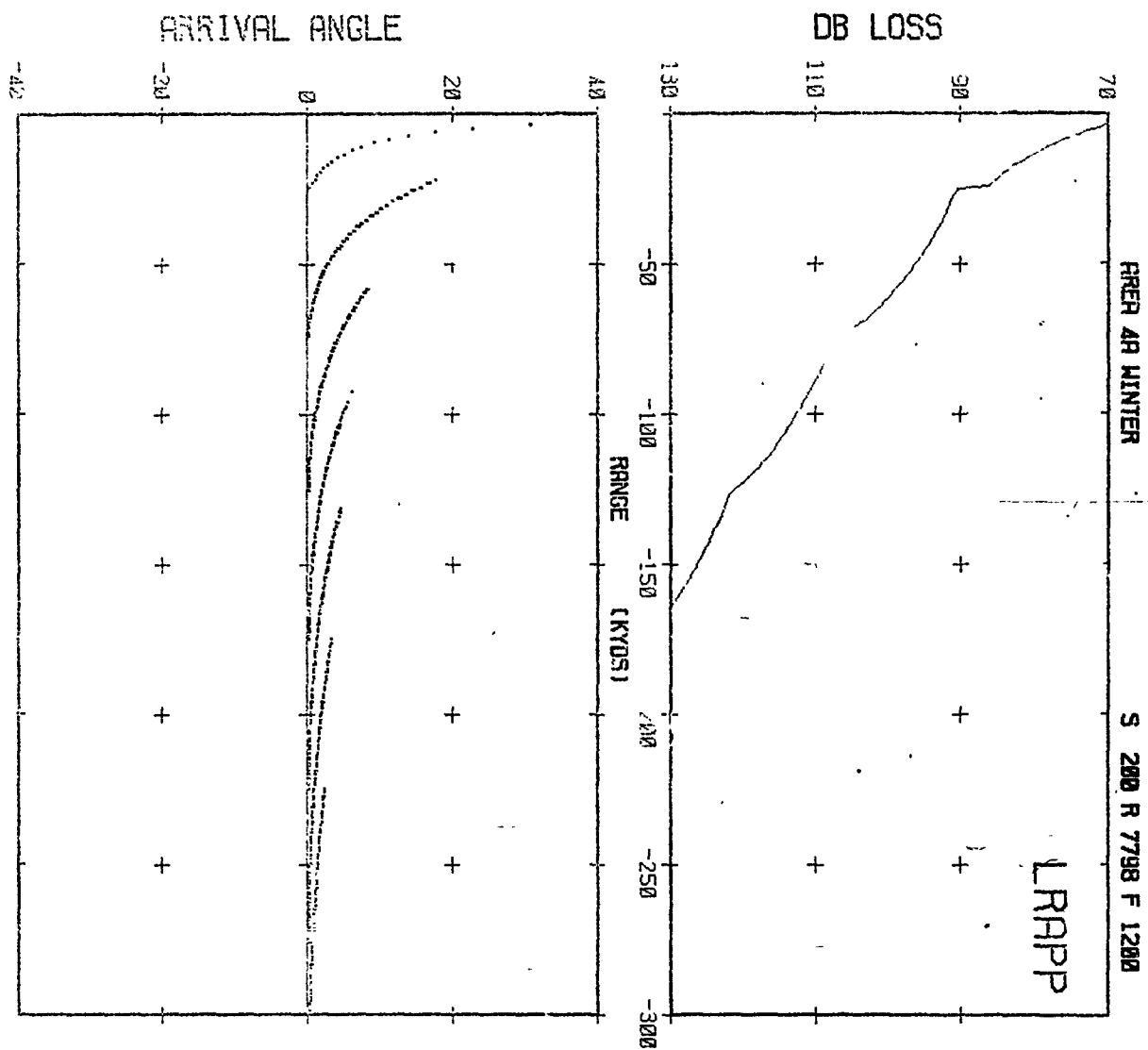


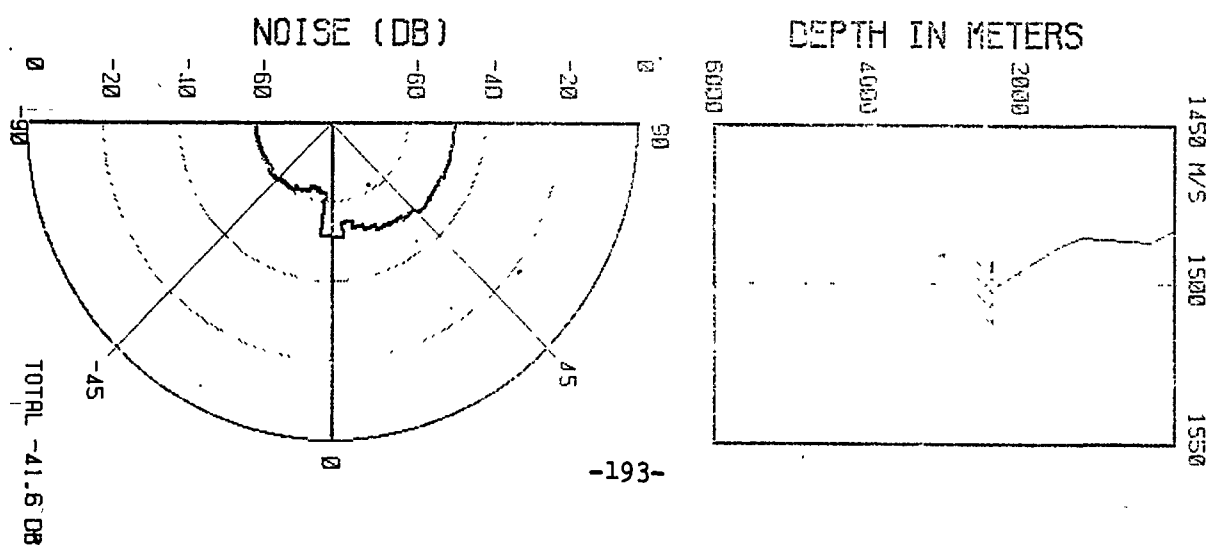
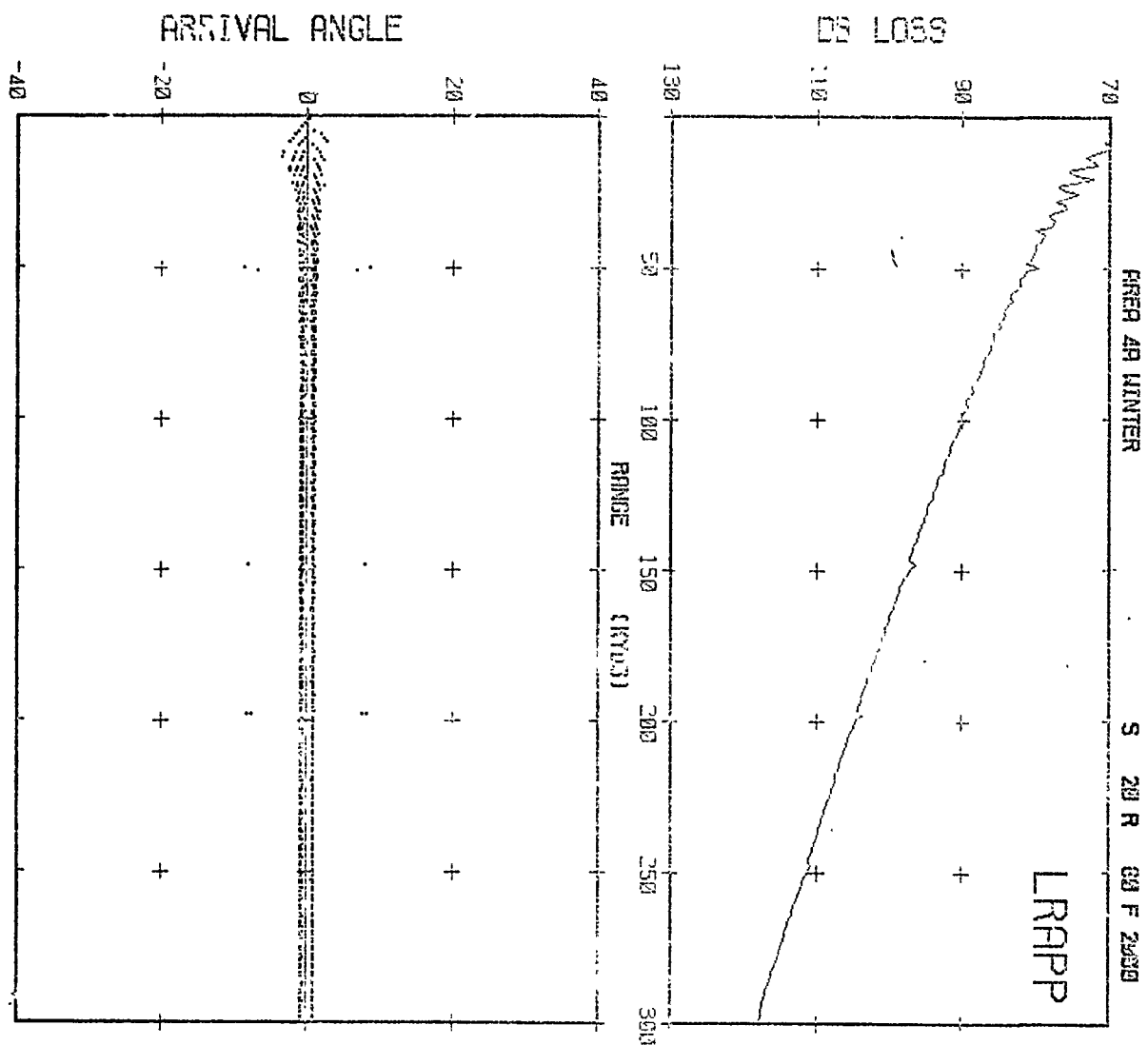
NOISE (DB)

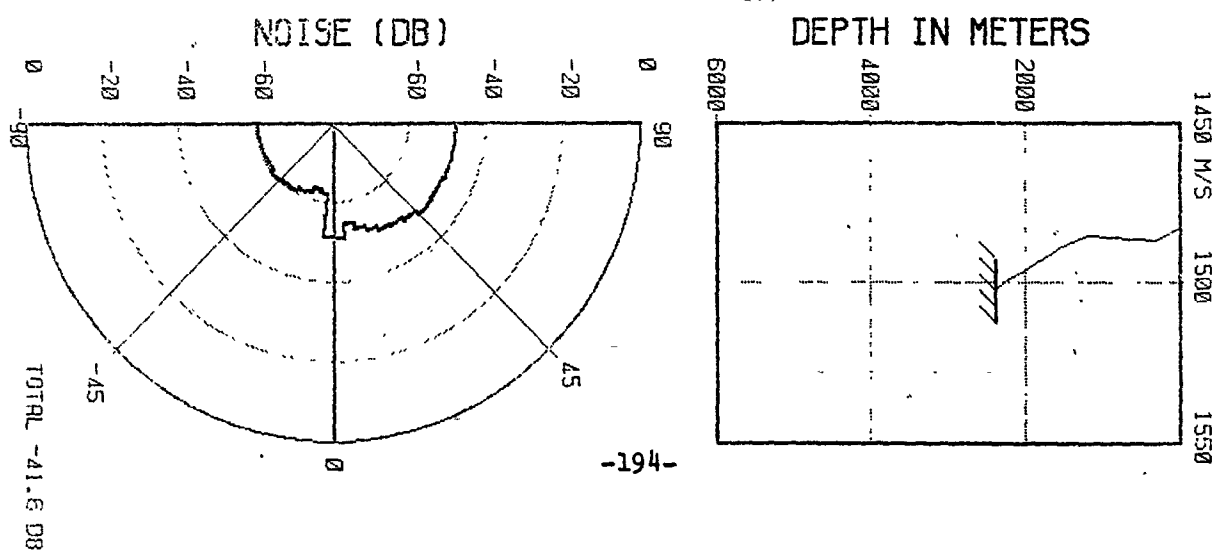
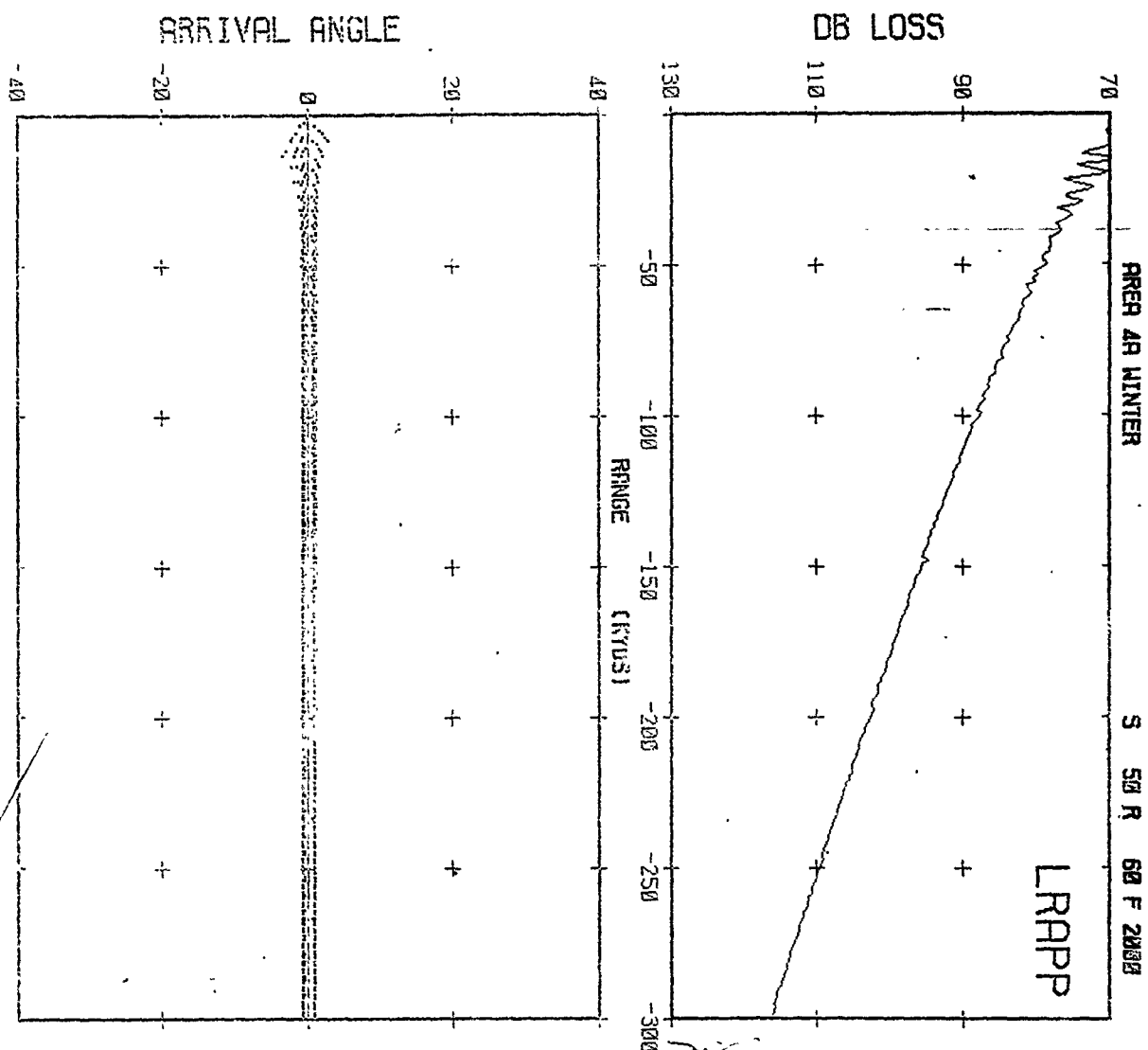


TOTAL -40.3 DB







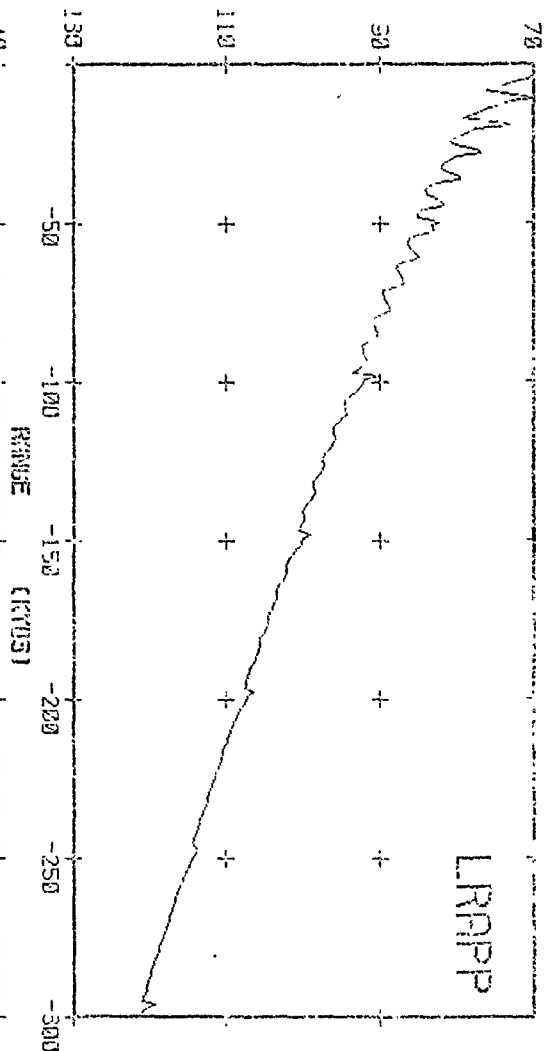


AREA 40 LITERS

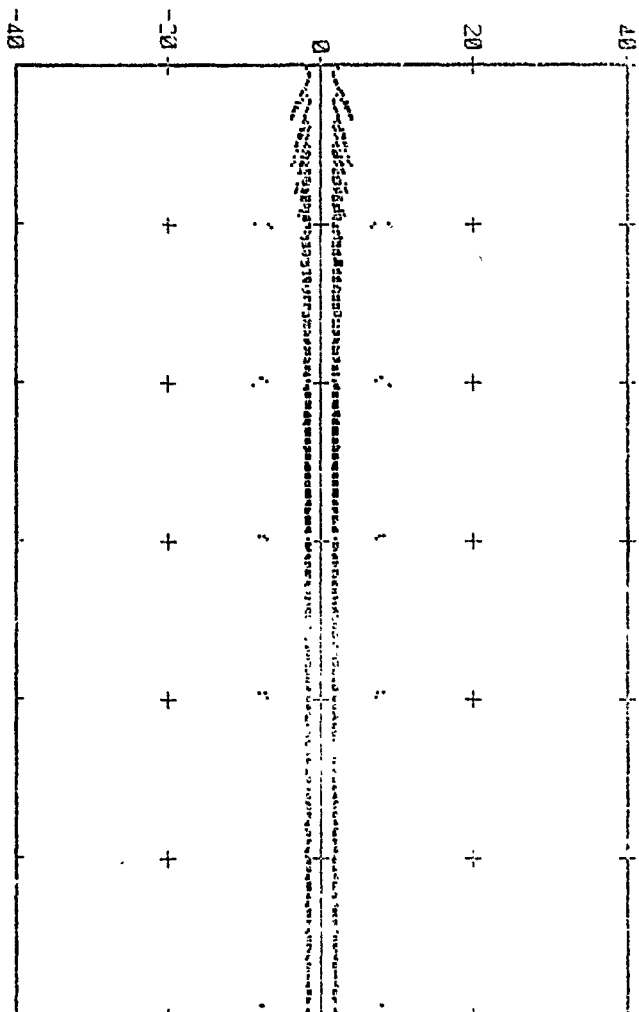
S 241 R C.F. 2020

1452 N/S 1502 1550

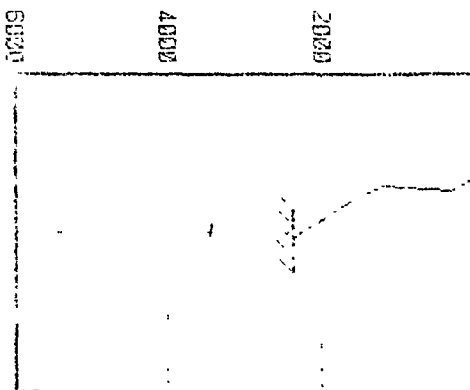
DB LOSS



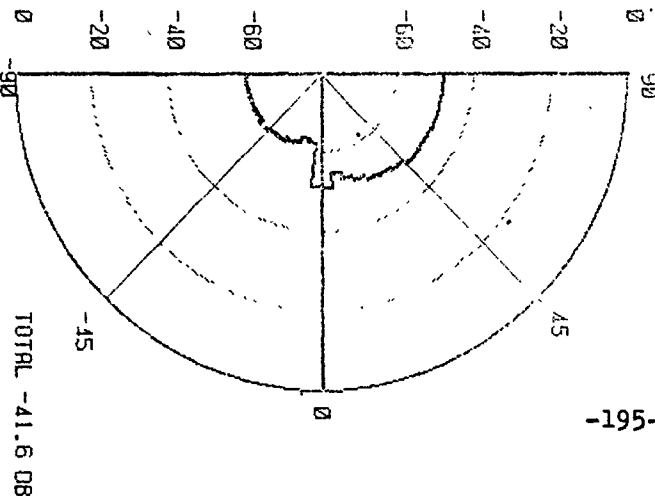
ARRIVAL ANGLE

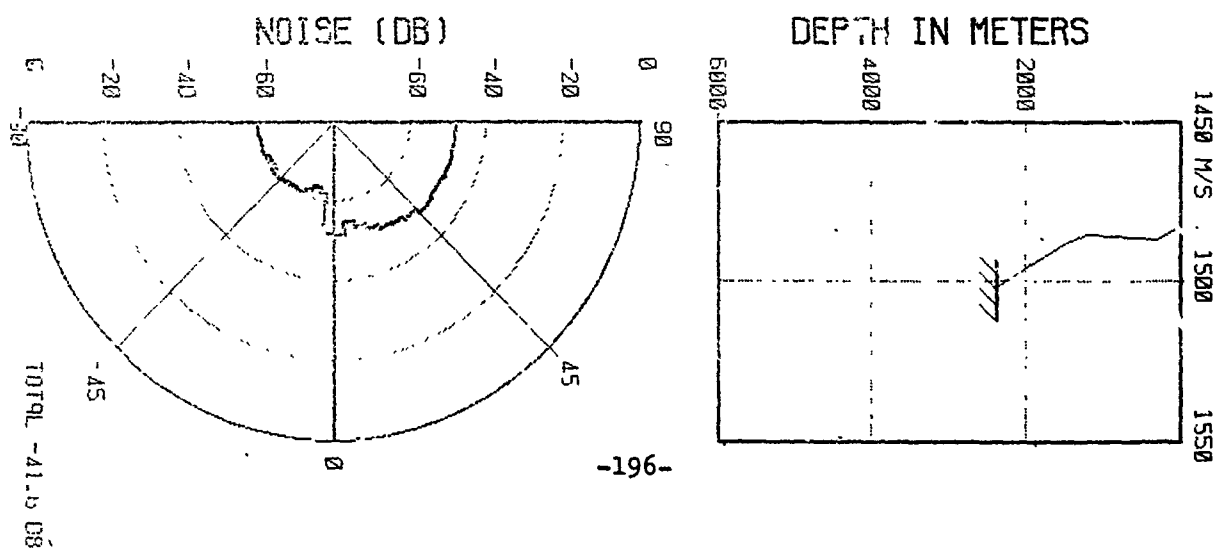
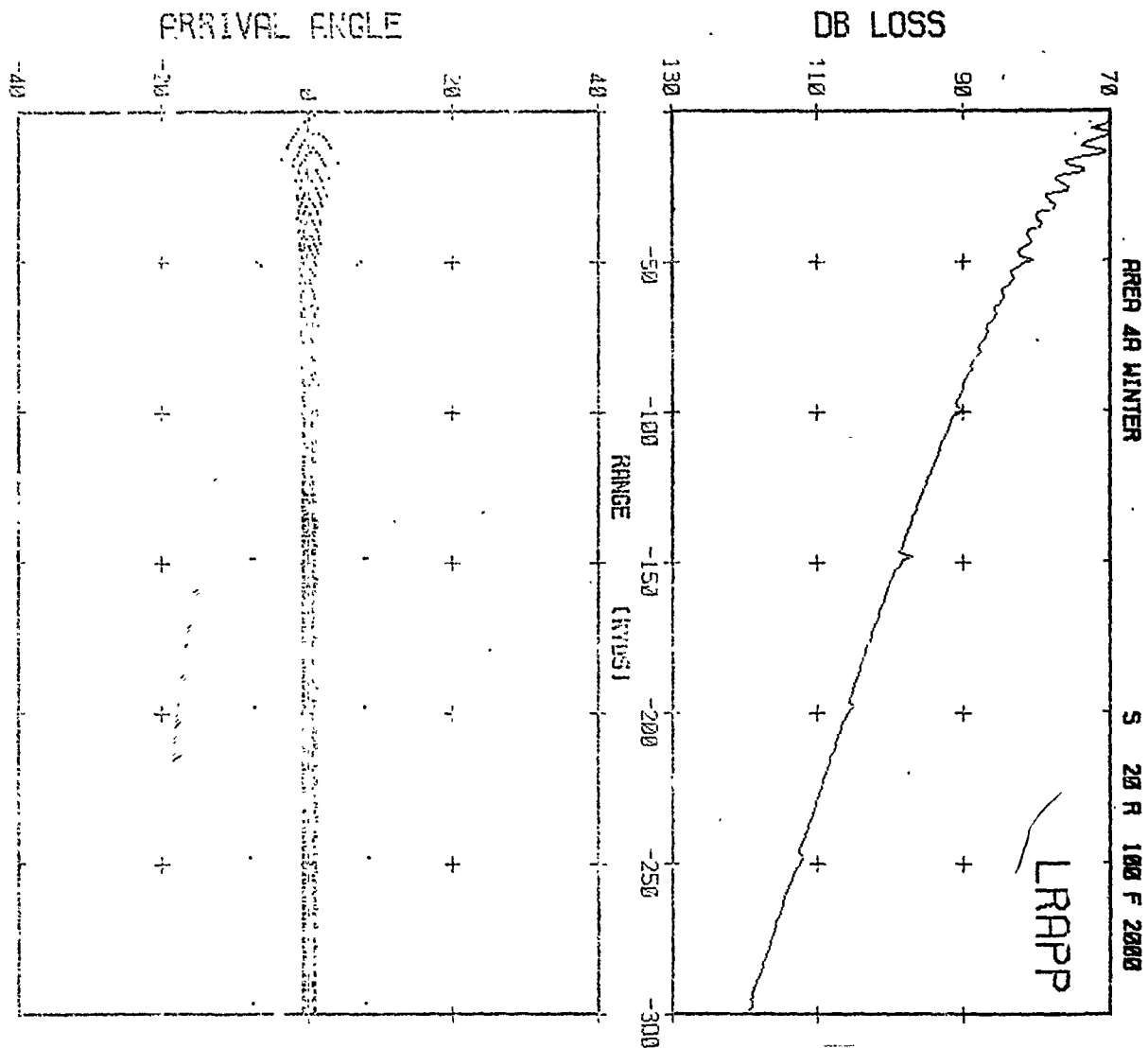


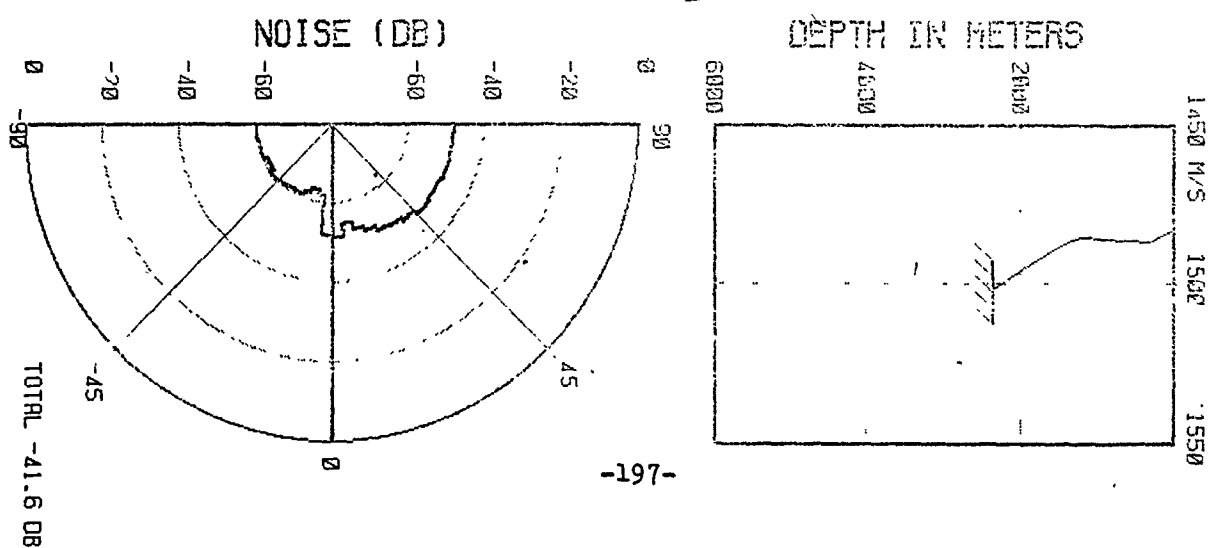
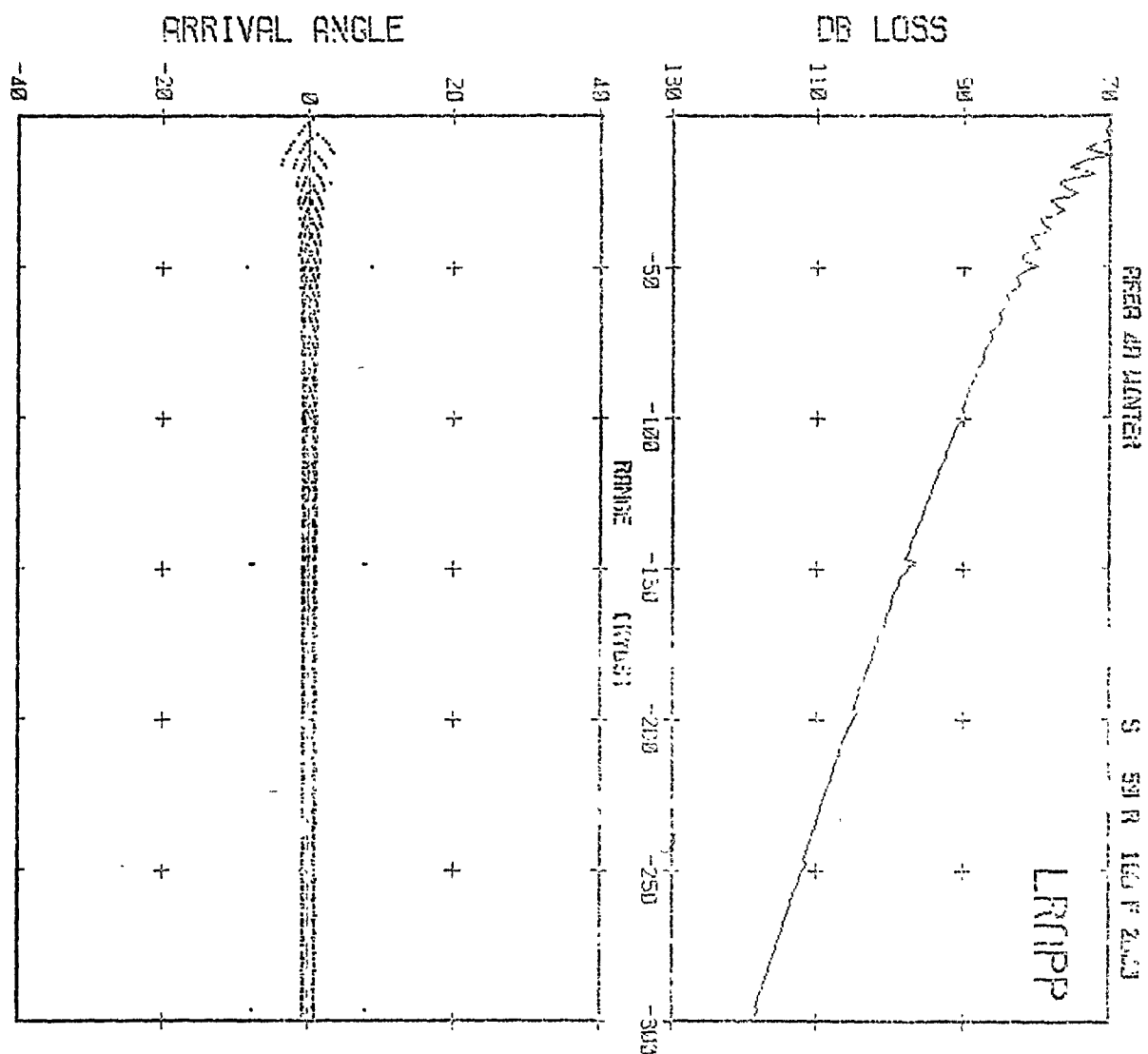
DEPTH IN METERS

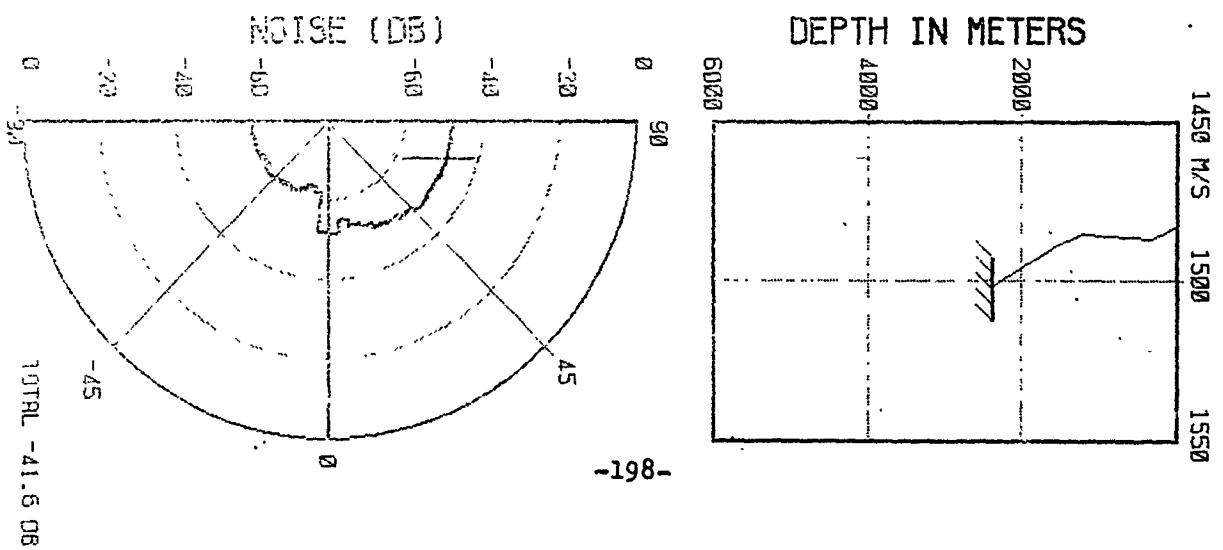
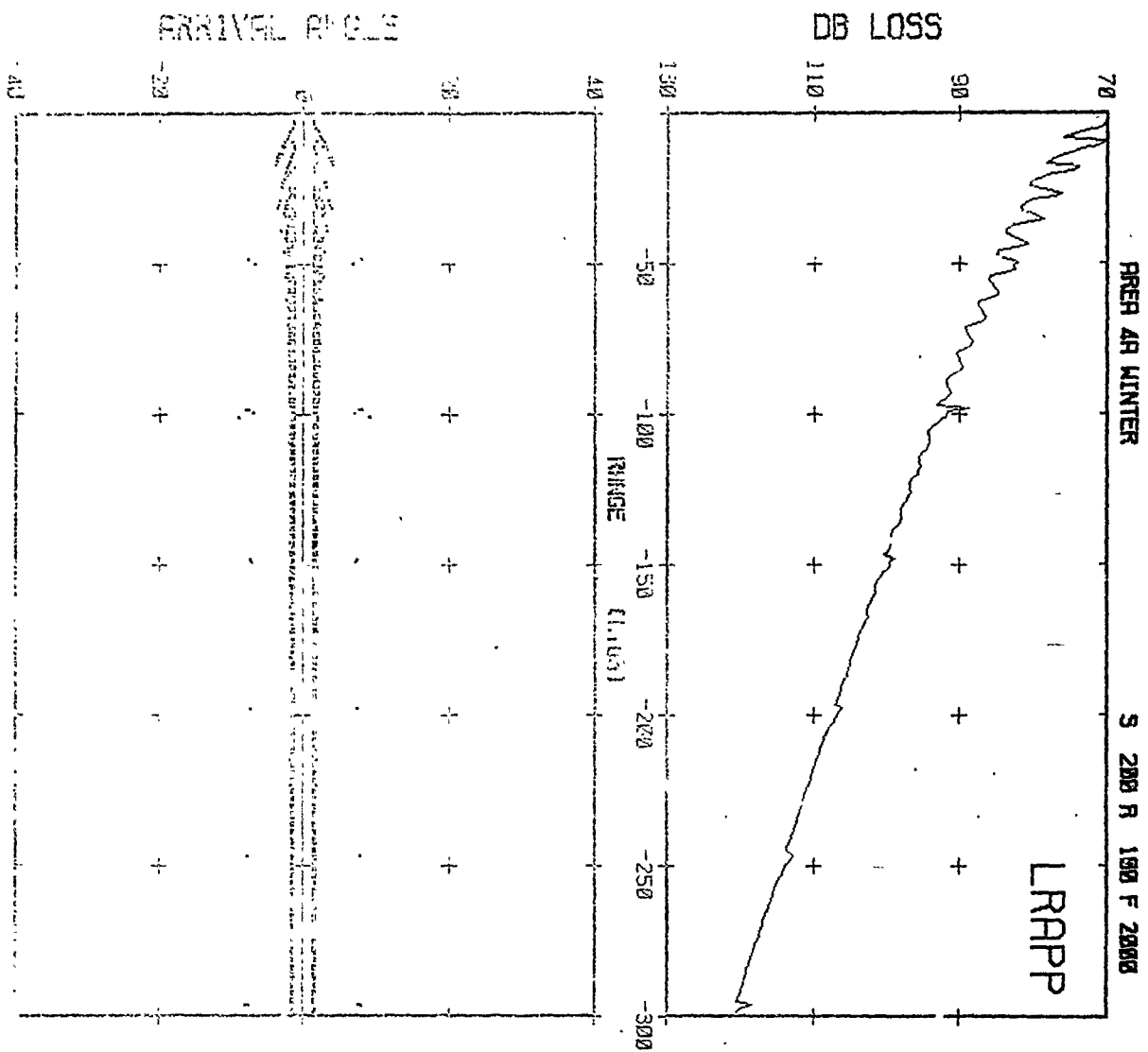


NOISE (DB)







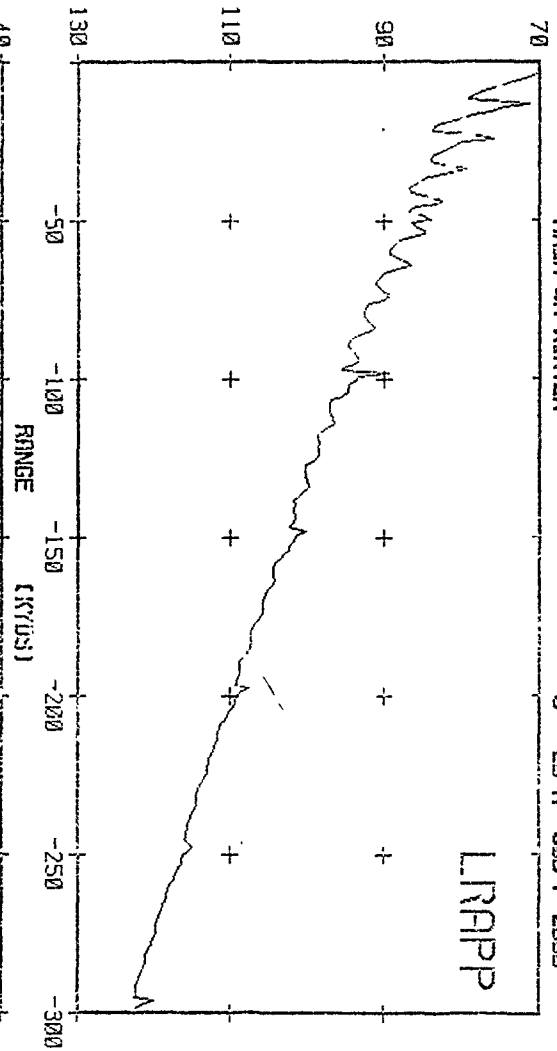


AREA AIR HINTER

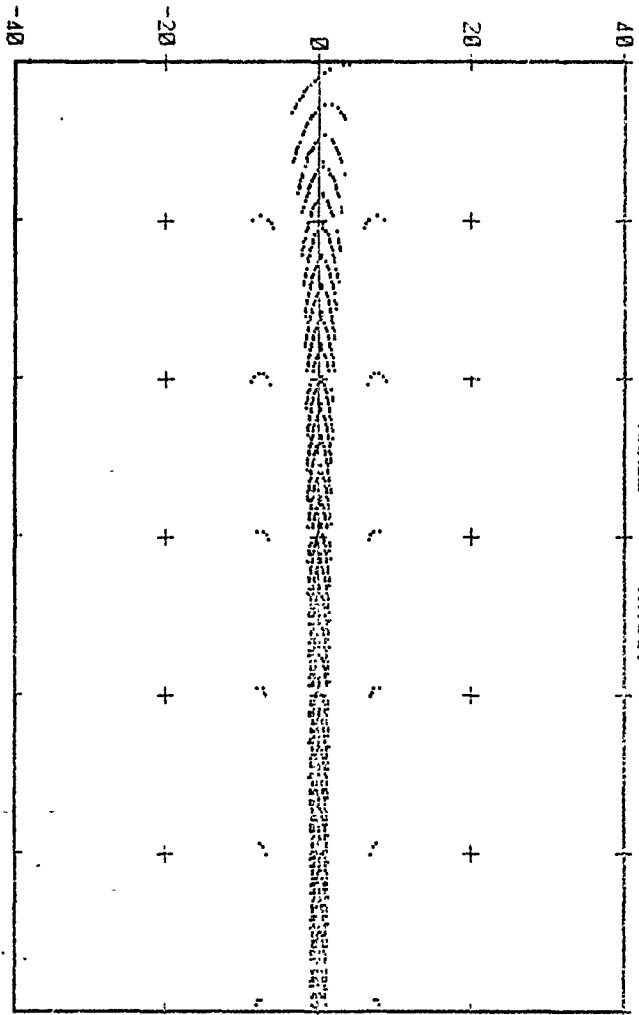
S 20 R 300 F 2030

1450 M/S 1500 1550

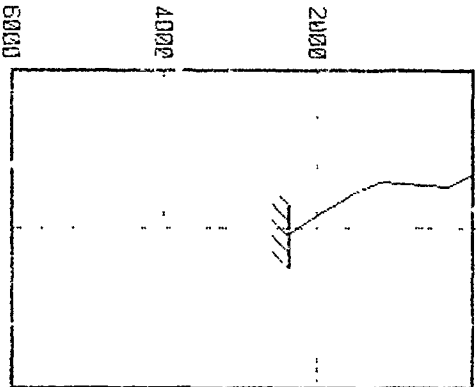
DB LOSS



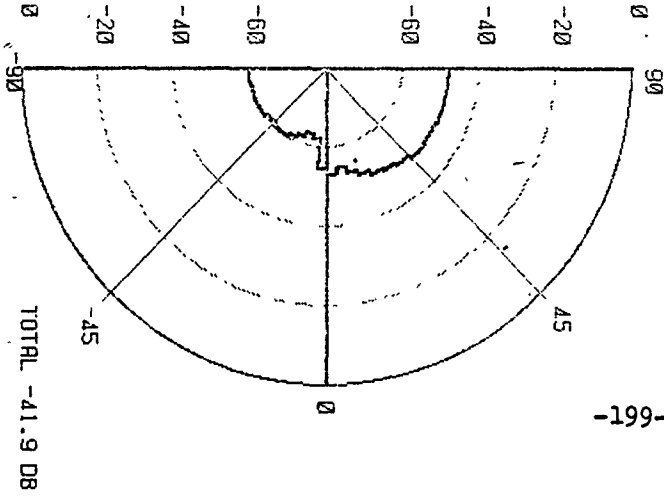
ARRIVAL ANGLE

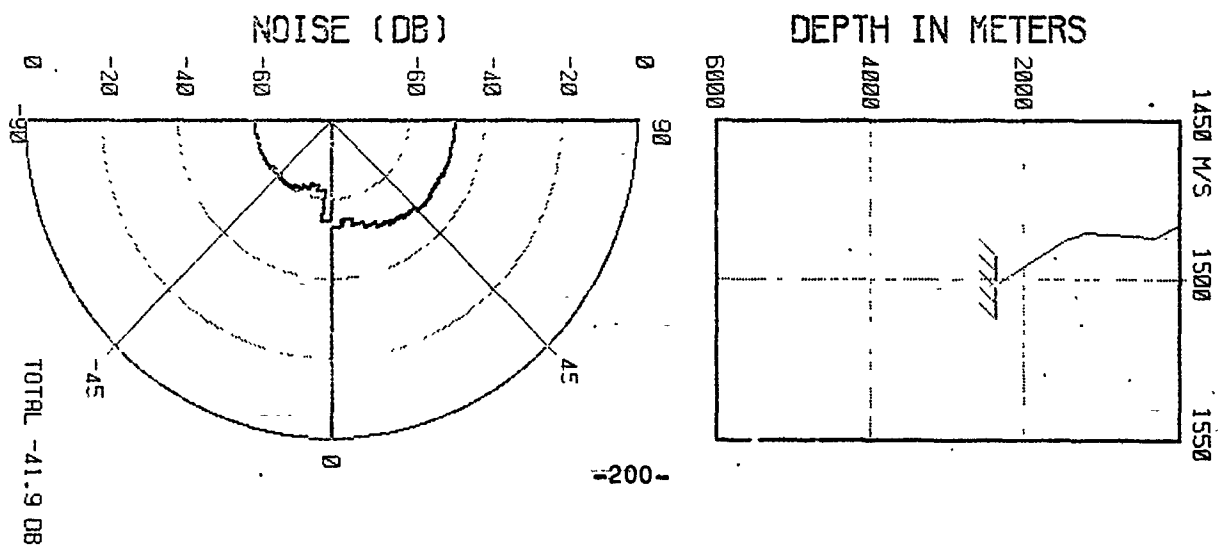
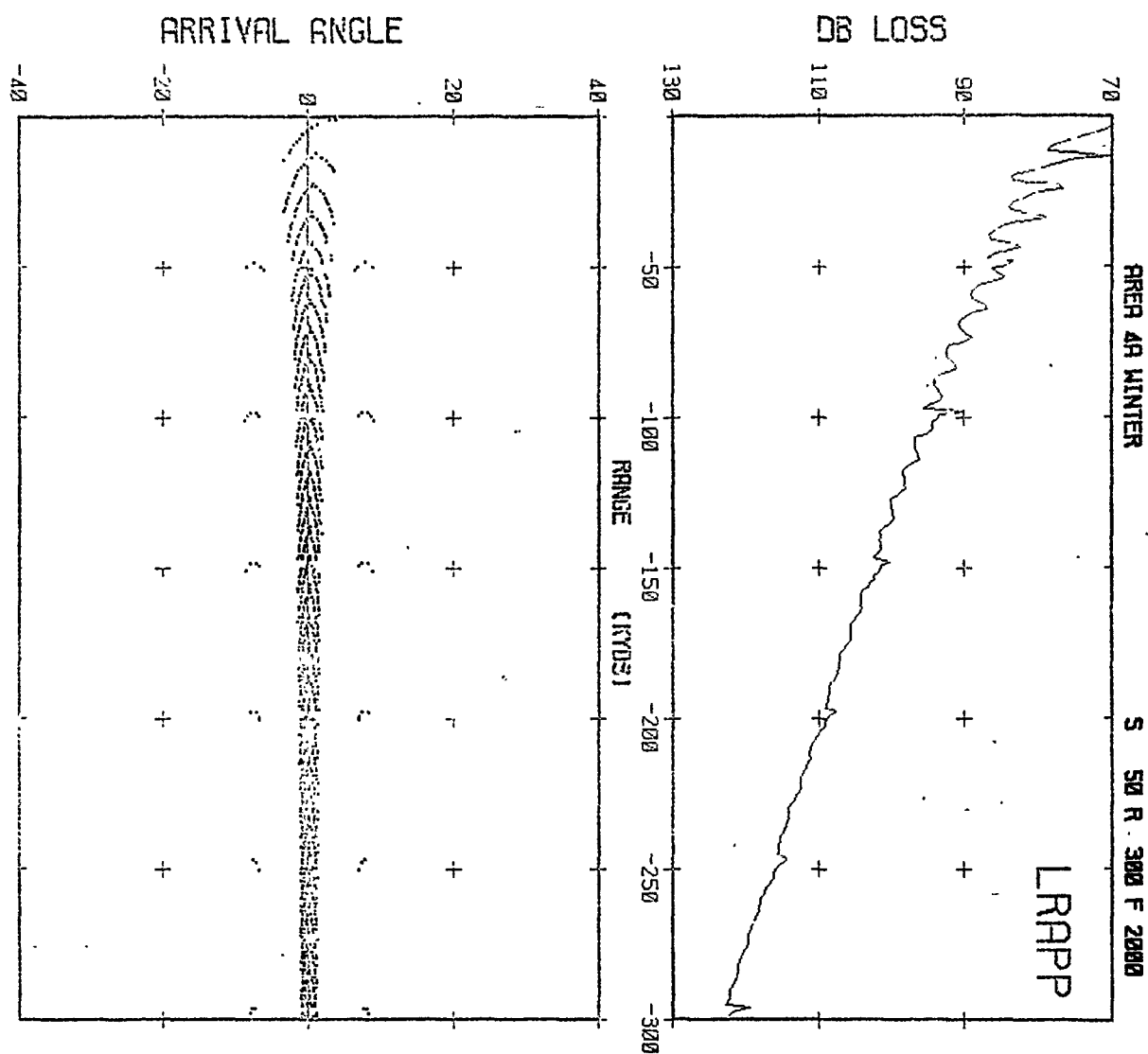


DEPTH IN METERS



NOISE (DB)





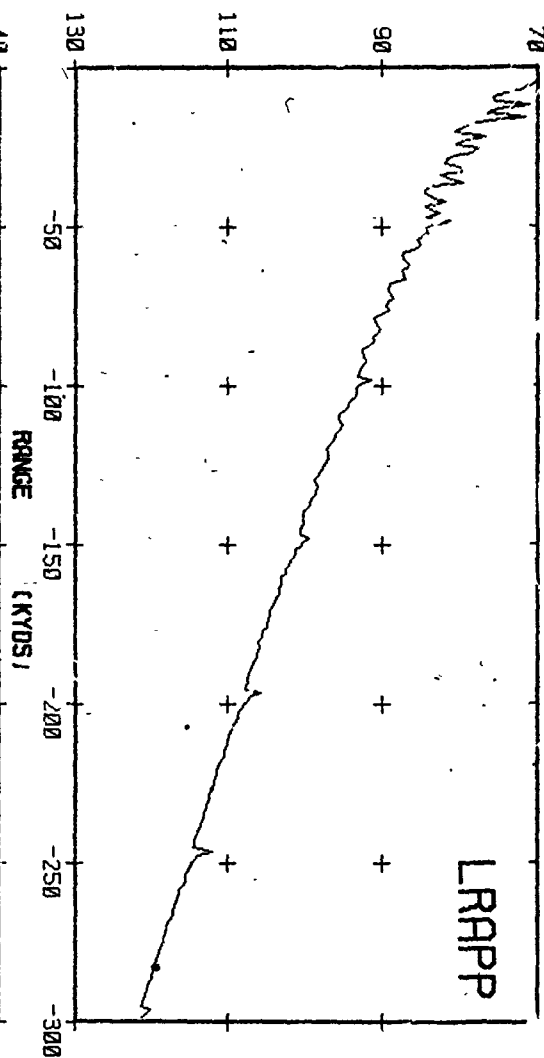
AREA 4A WINTER

S 2800 R 3000 F 2000

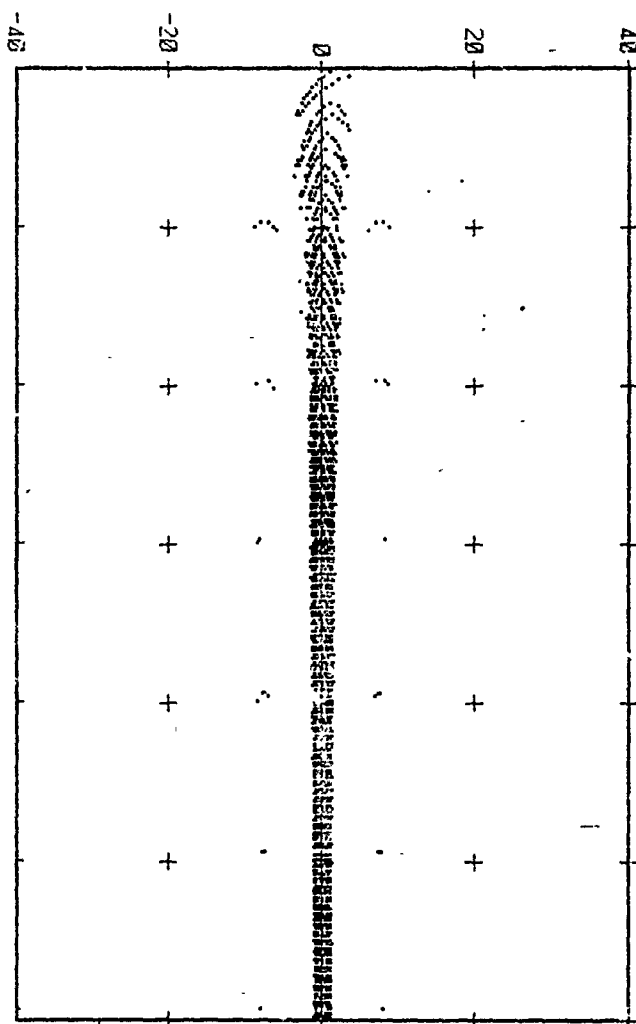
1450 M/S 1500

1550

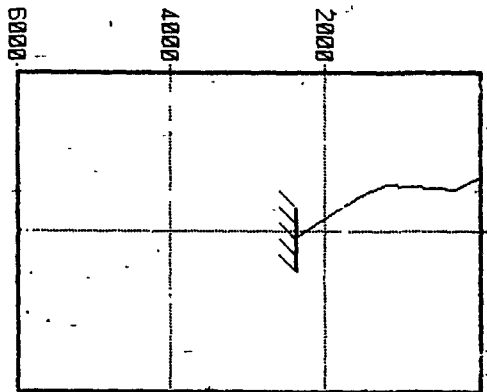
DB LOSS



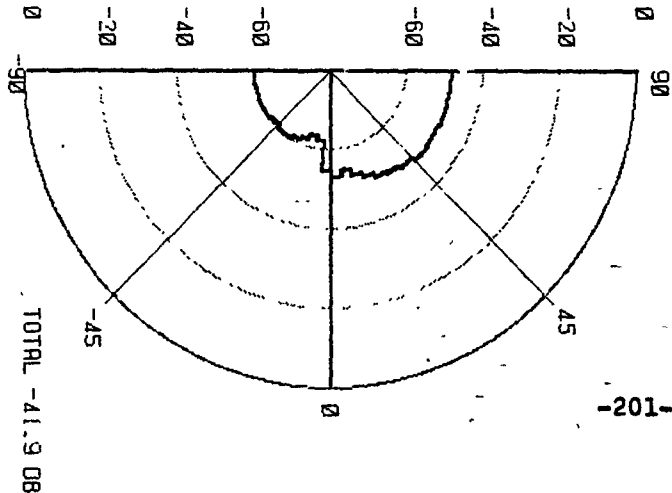
ARRIVAL ANGLE

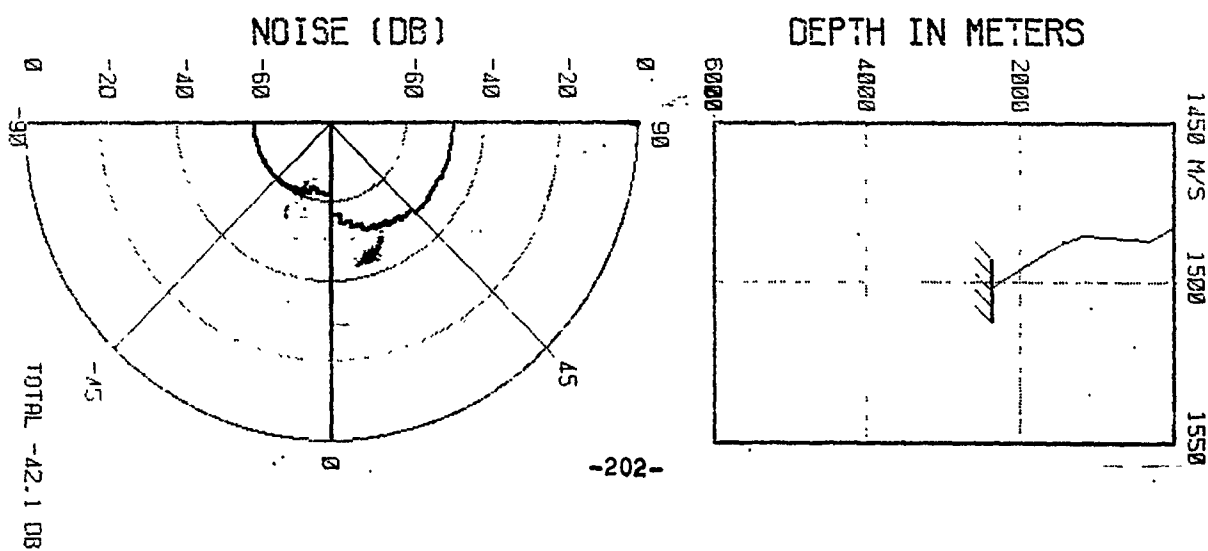
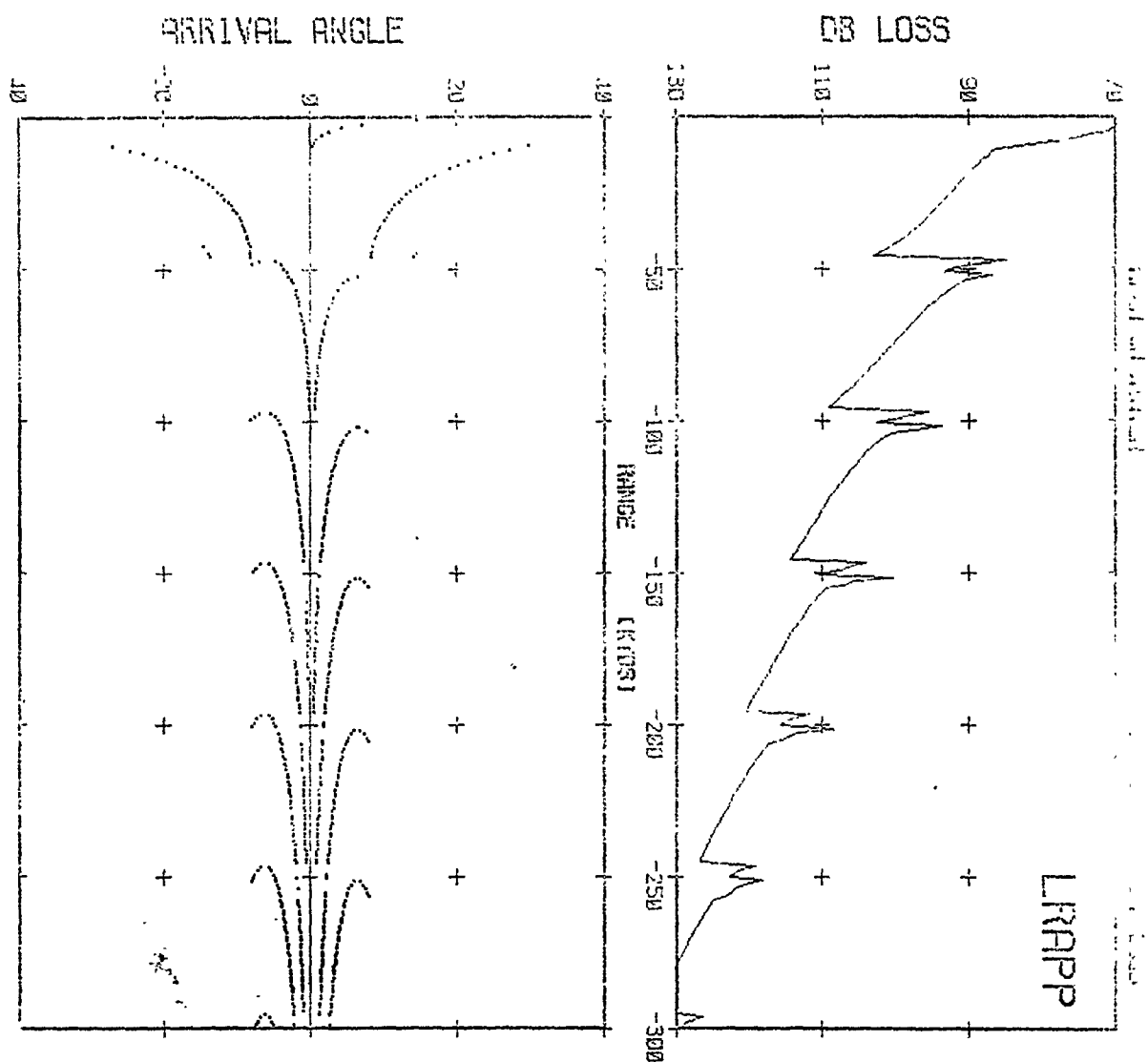


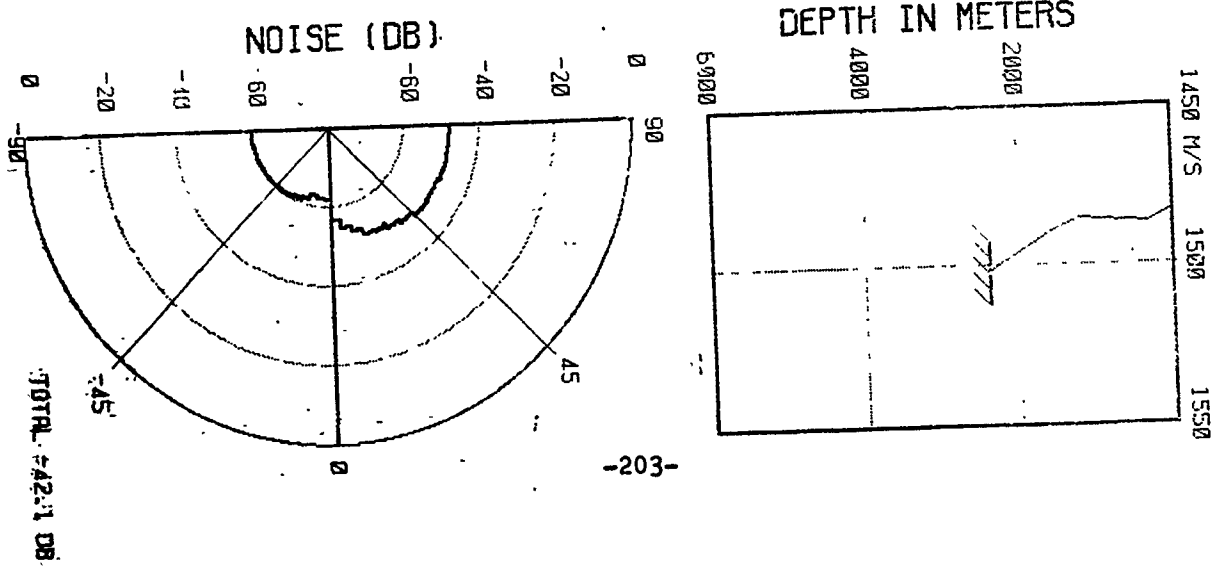
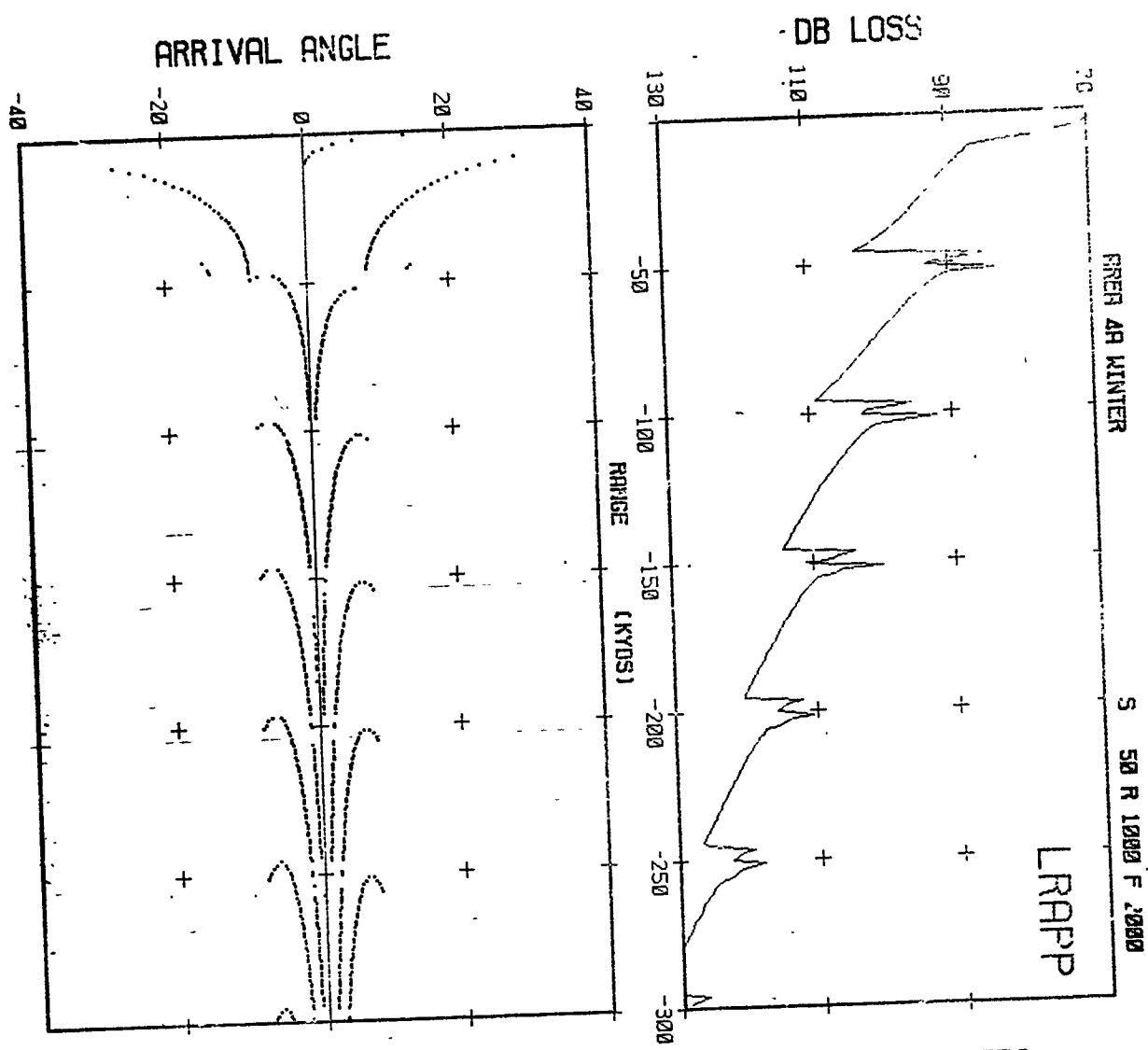
DEPTH IN METERS

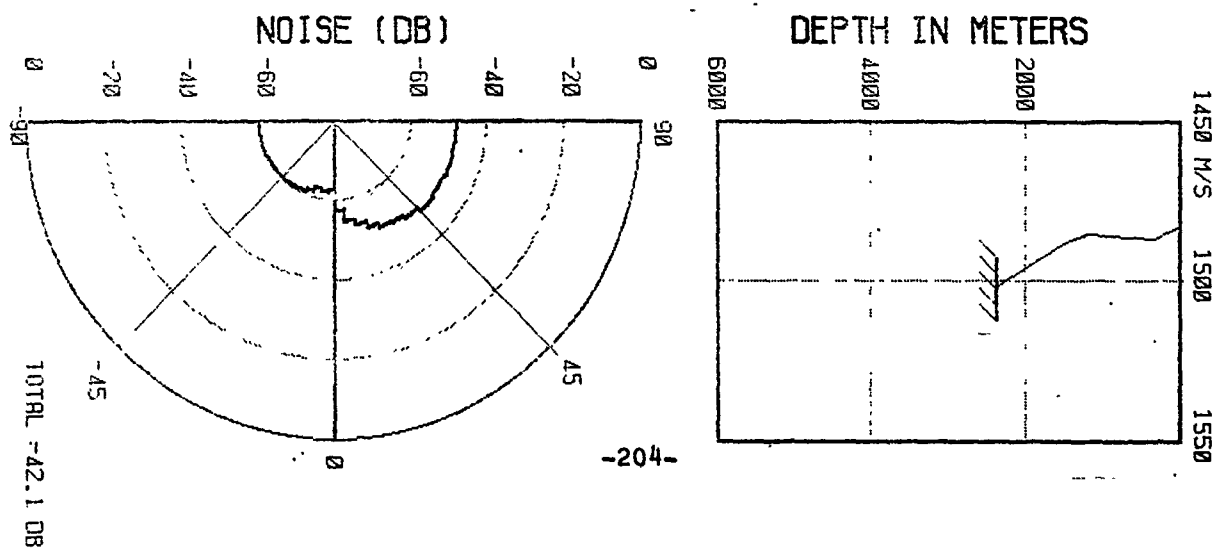
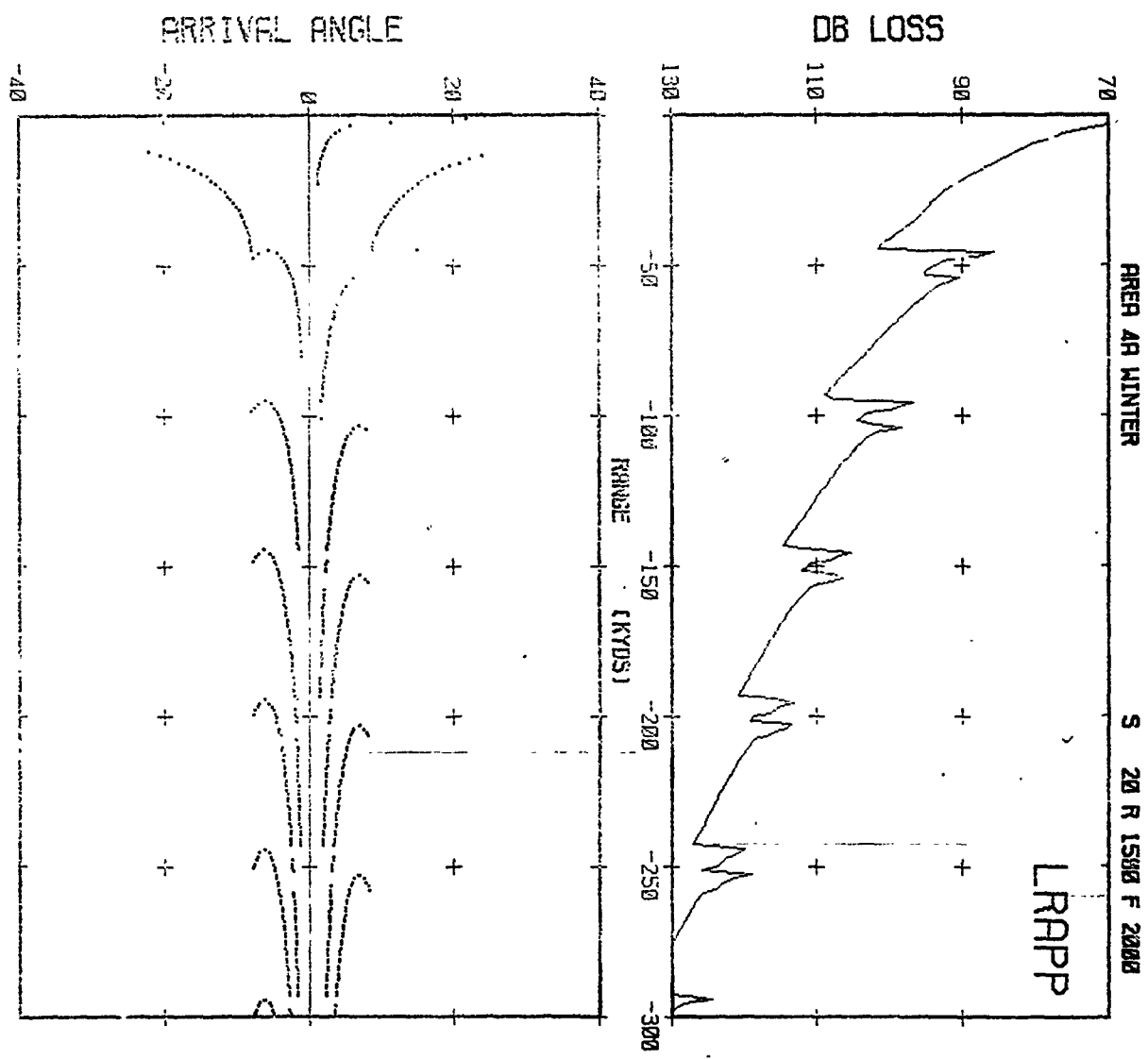


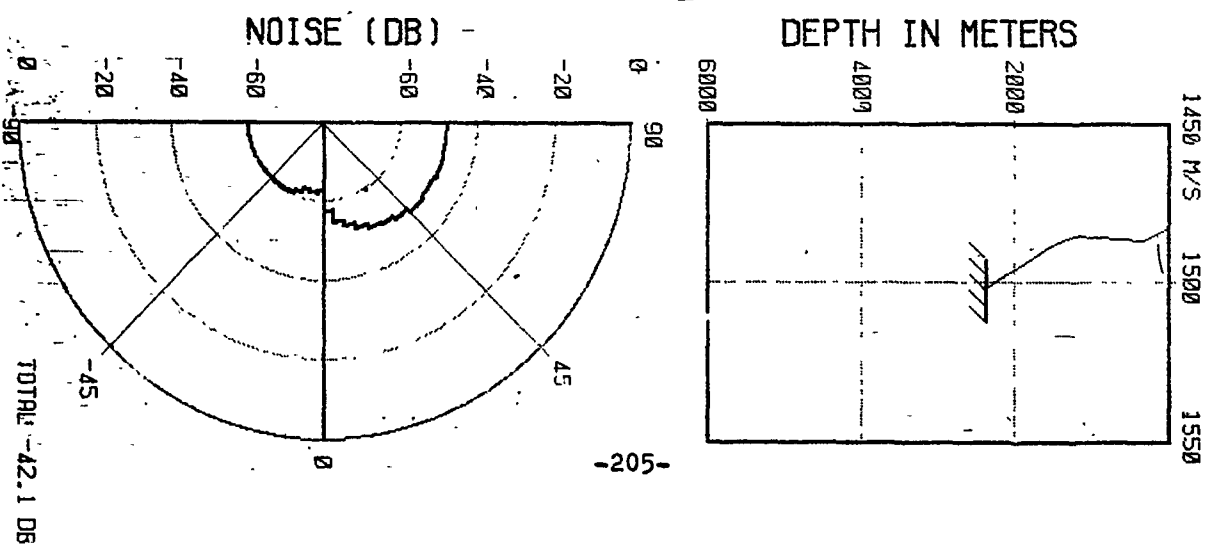
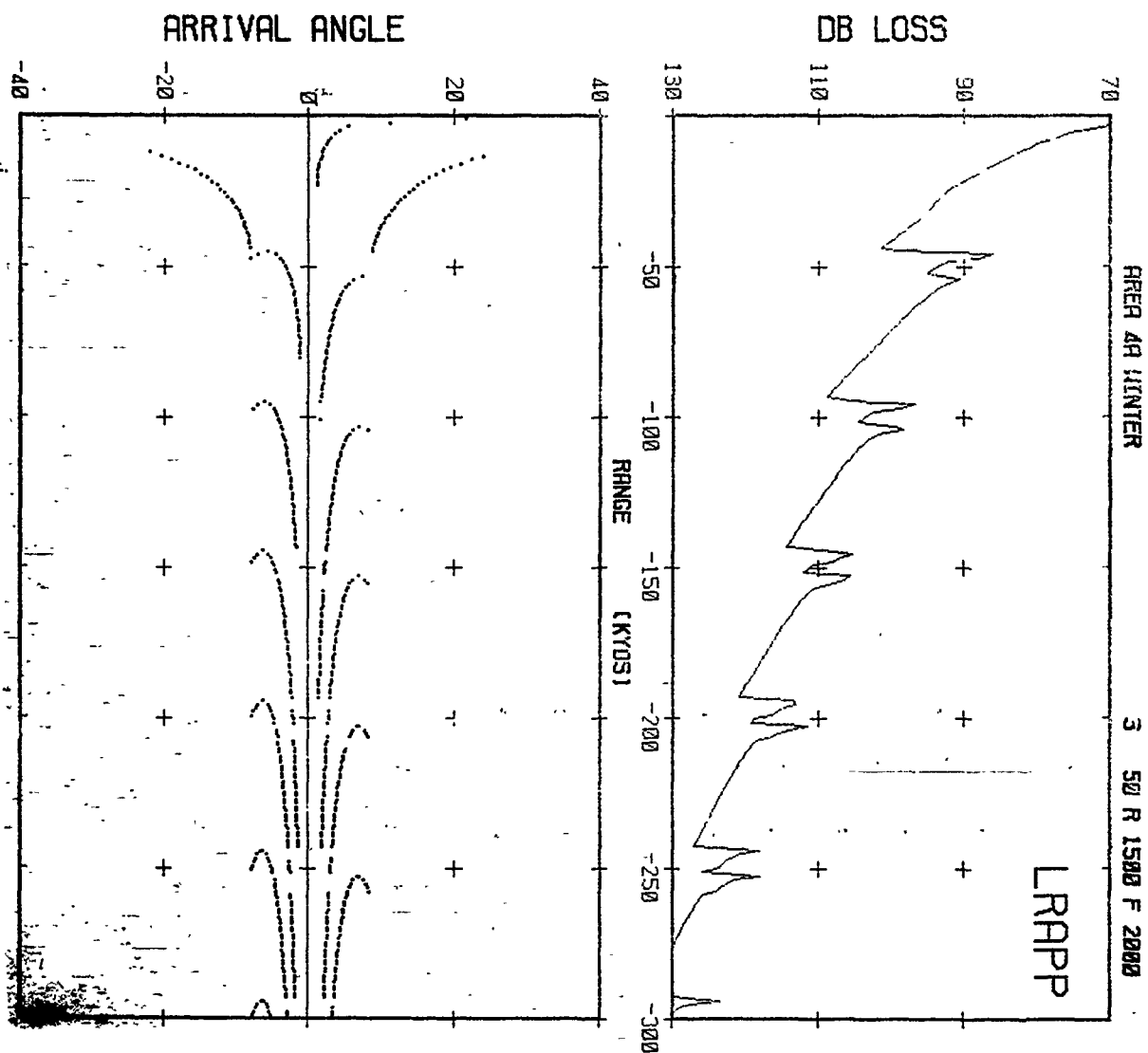
NOISE (DB)

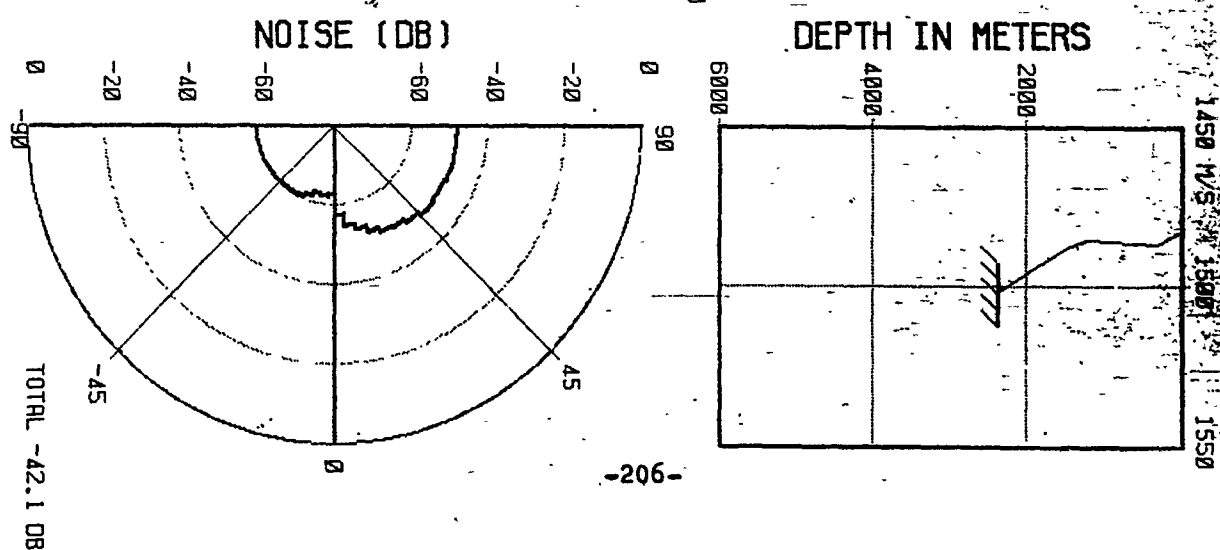
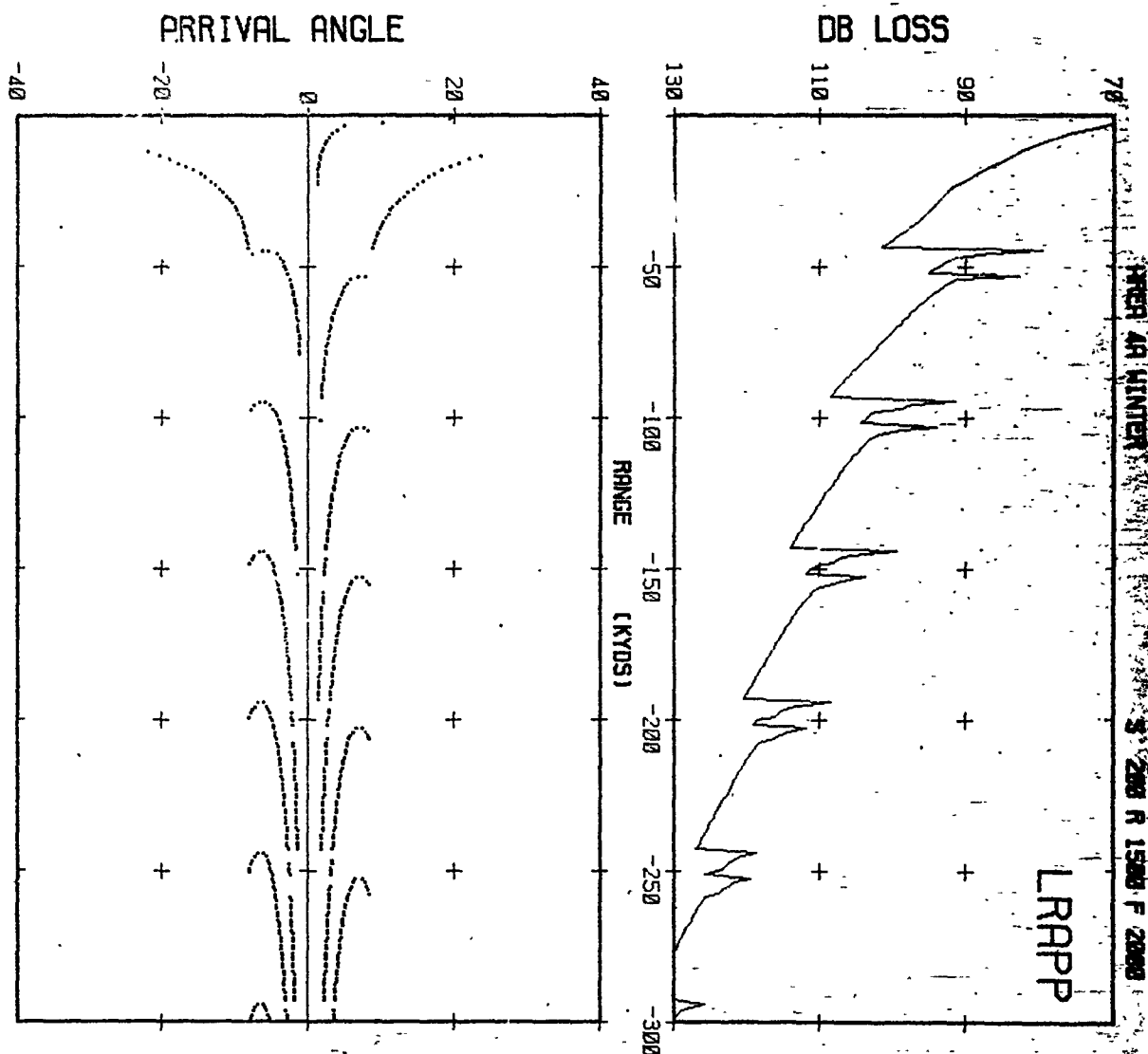


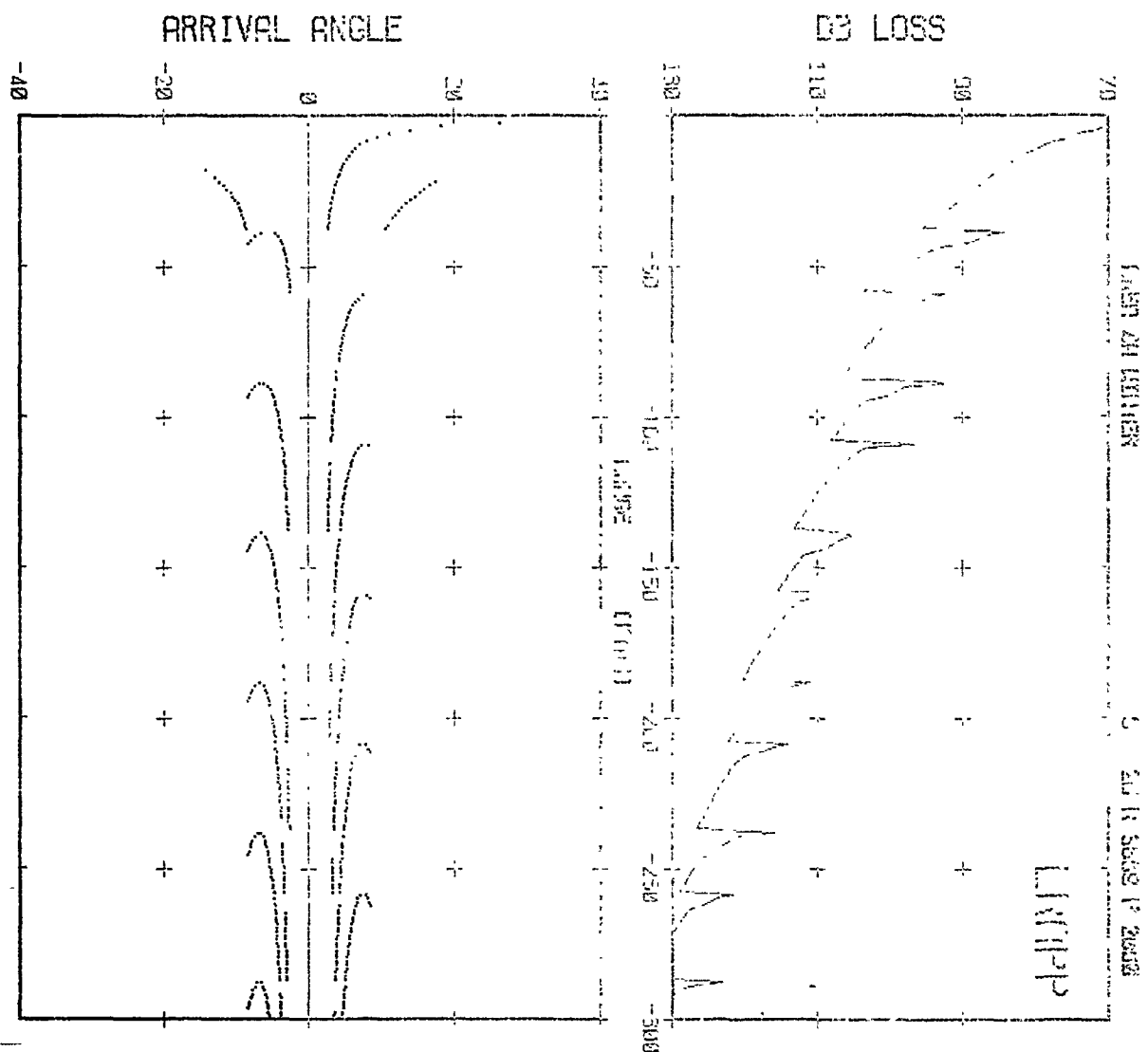










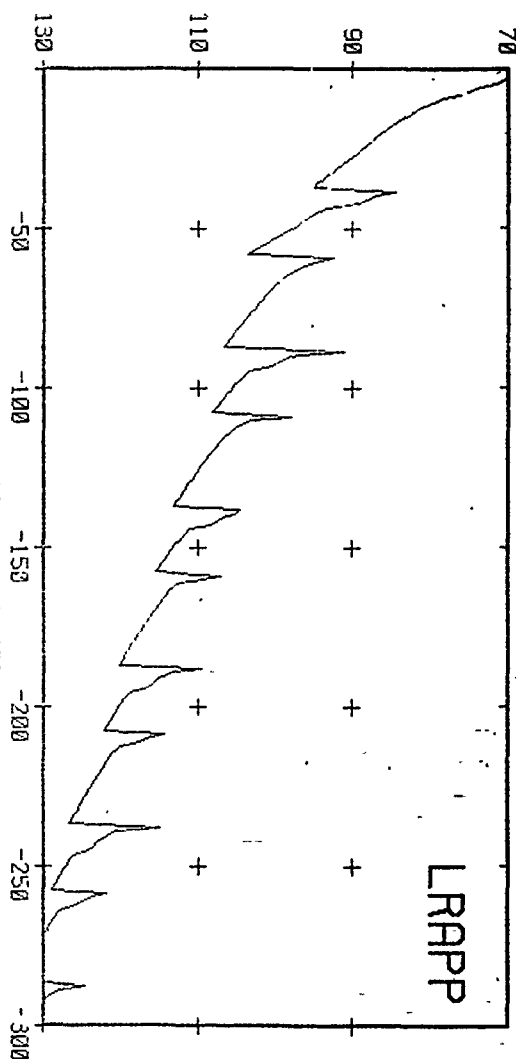


AREA 4R WINTER

S 50 R 3609 F 2000

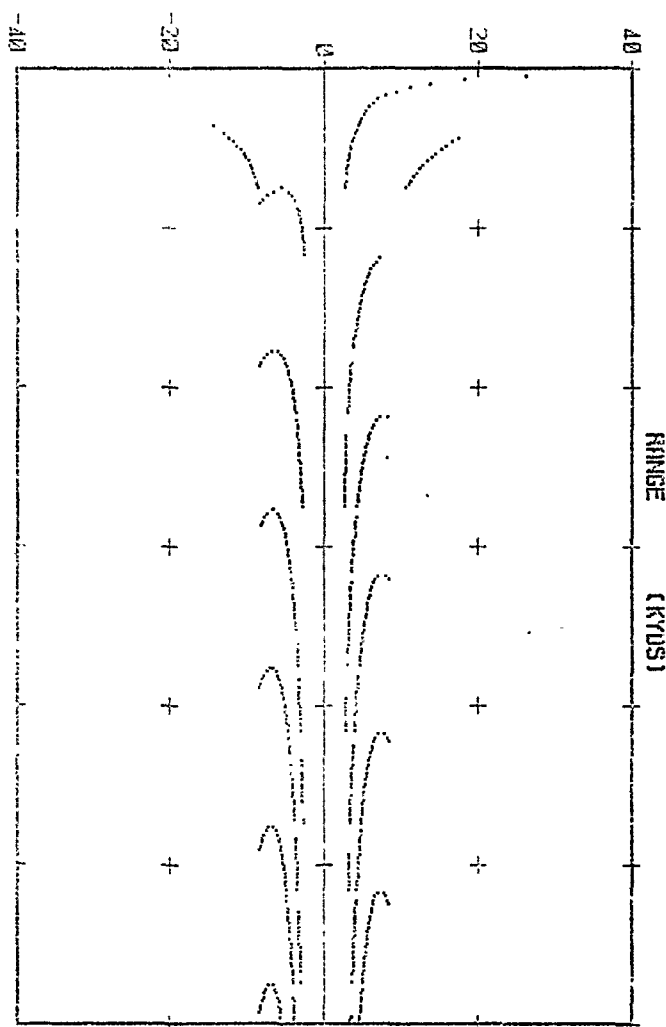
1450 M/S

DB LOSS

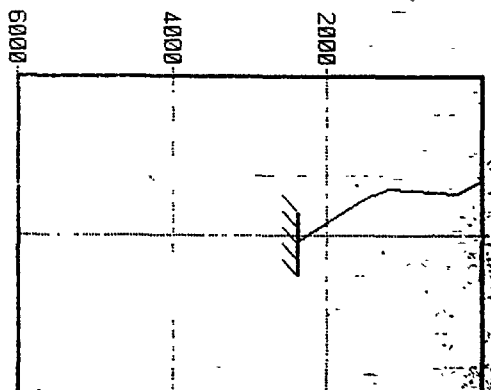


LRAPP

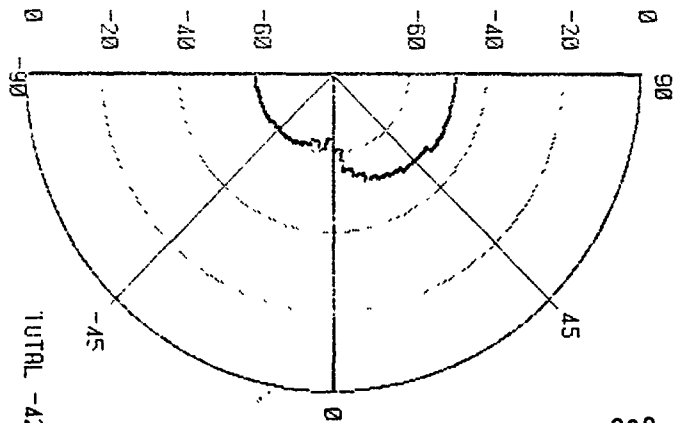
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

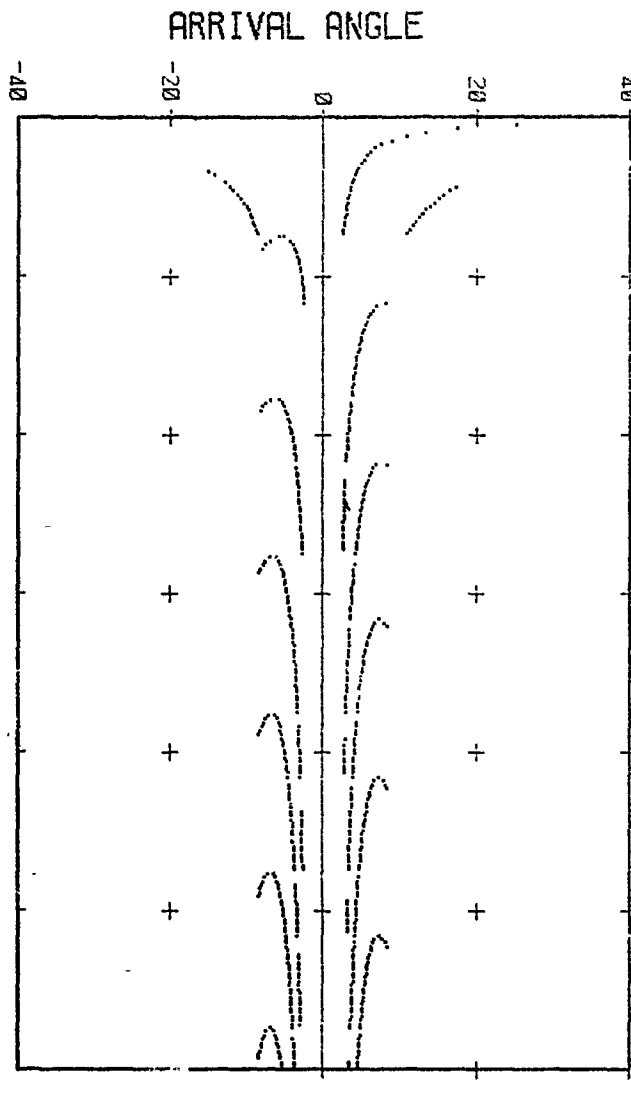
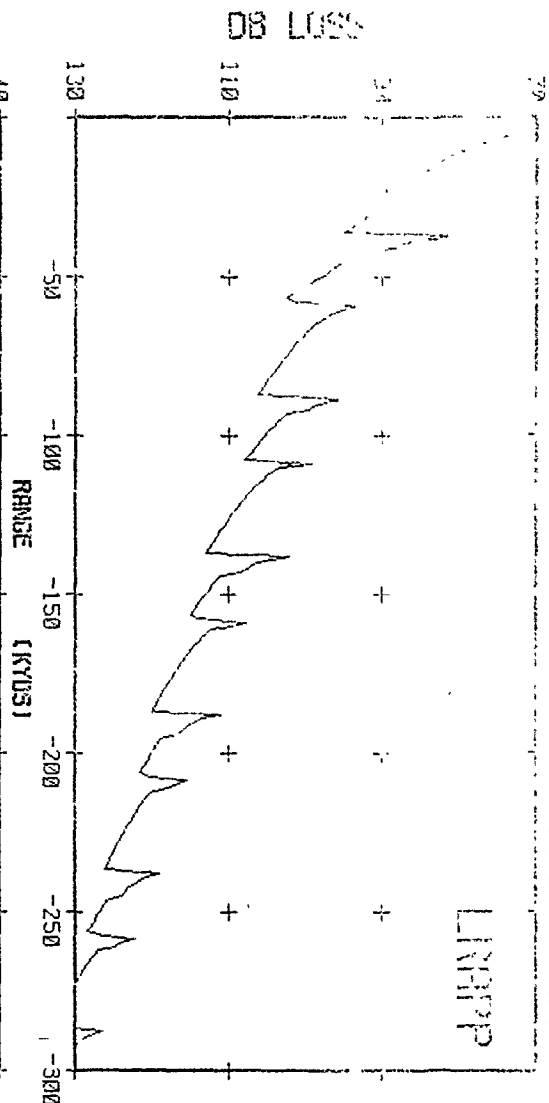


TOTRL -42.3 DB

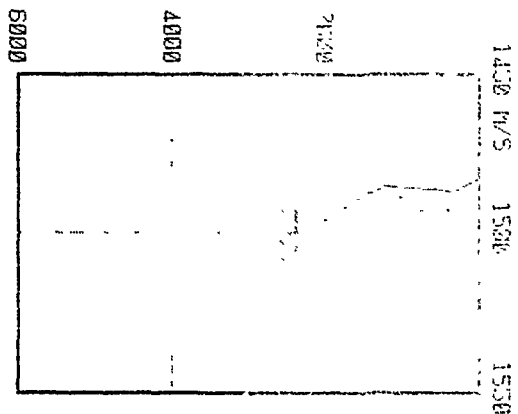
AREA 43 UNIDENT

S 2nd M 500 F 7000

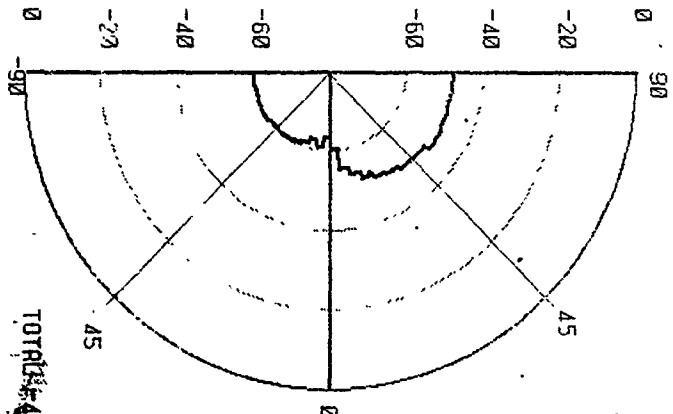
LRPP



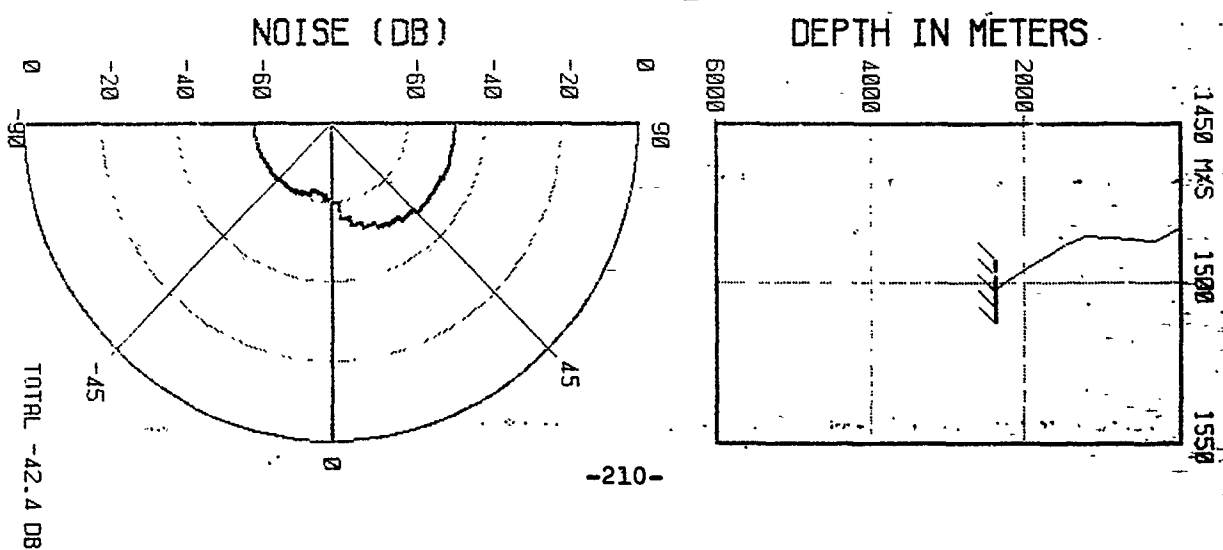
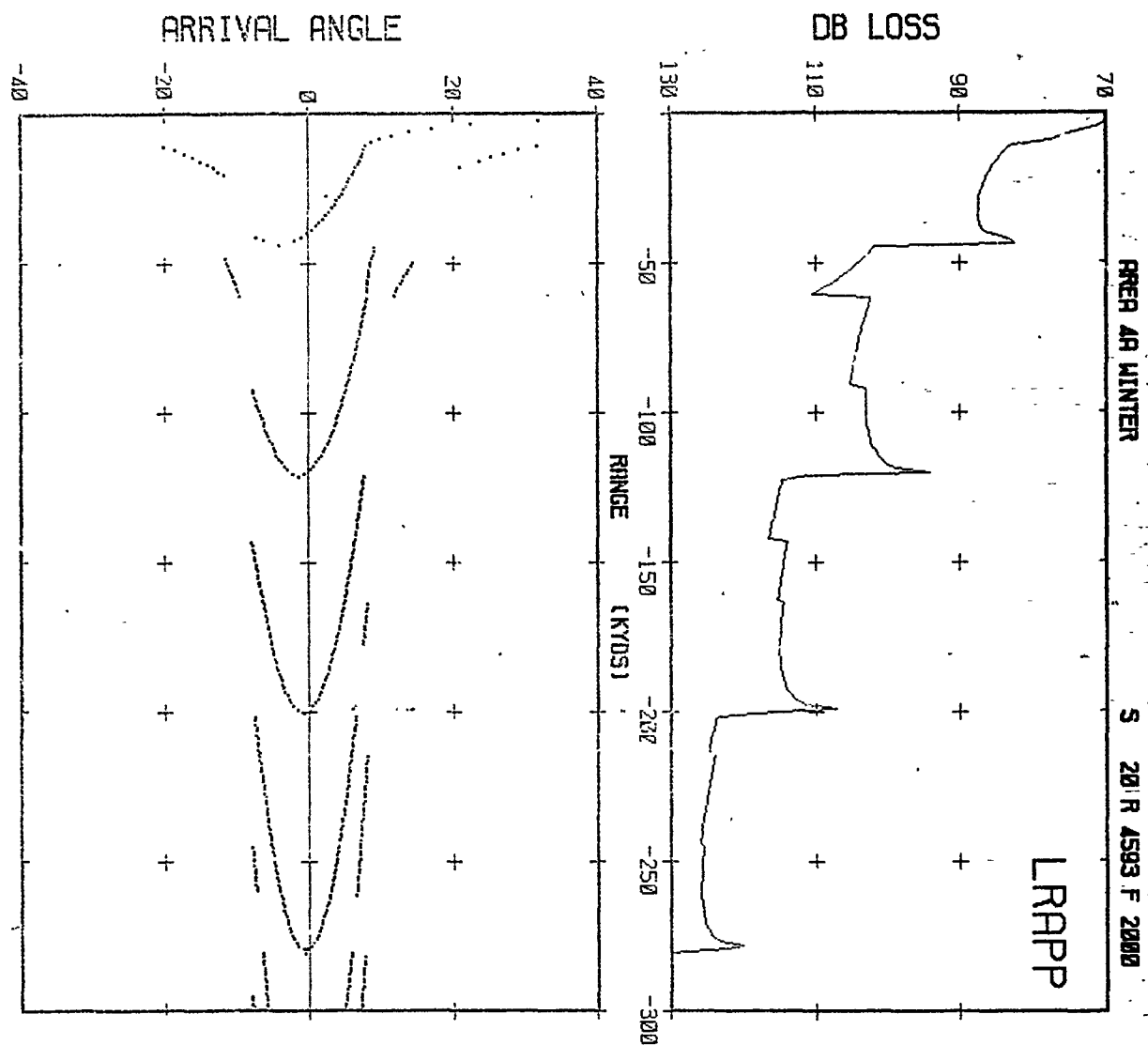
DEPTH IN METERS



NOISE (DB)



TOTAL 42.3 DB

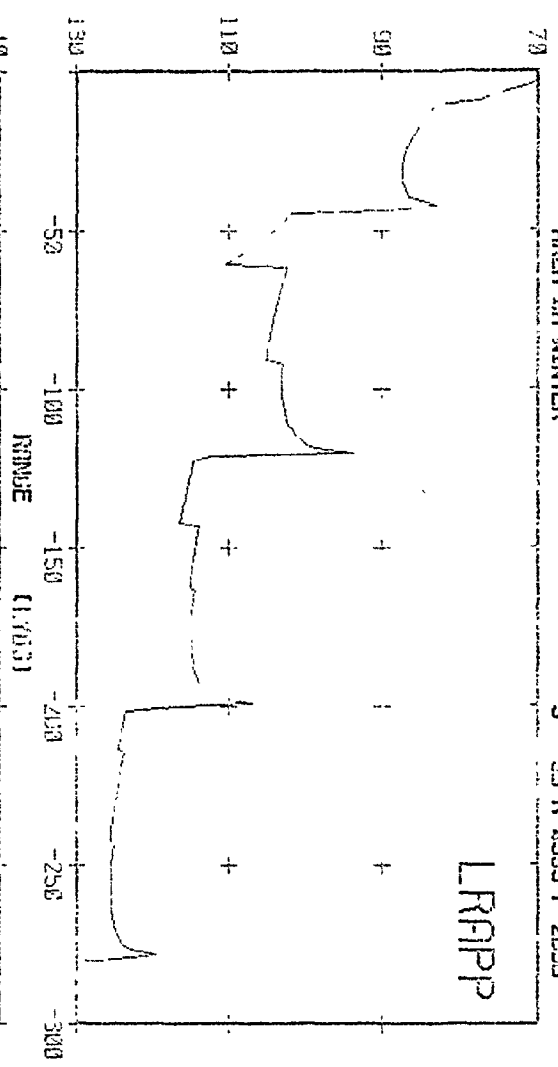


RIER AN UNIER

S SJ R ASUS F 2.00

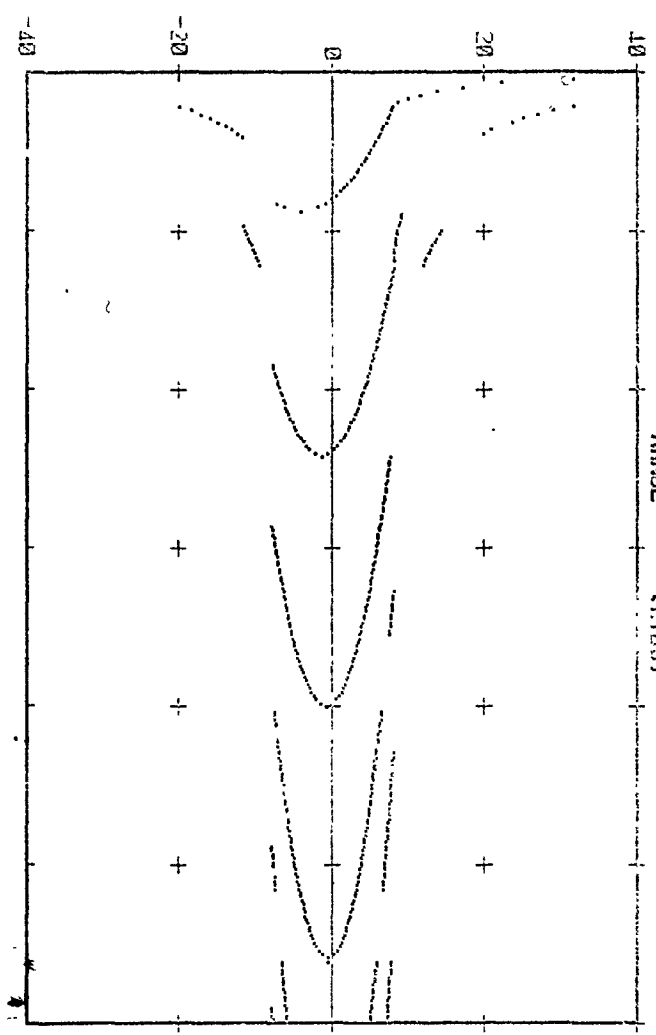
1450 M/S 1500 1550

DB LOSS

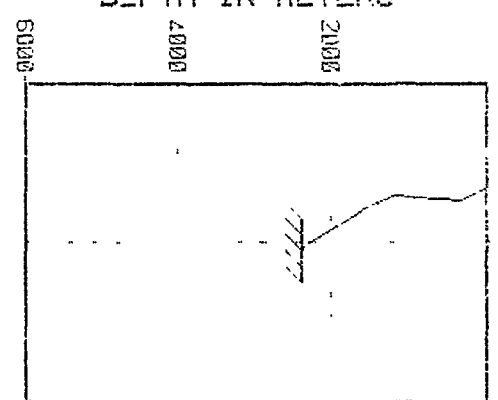


LR-PP

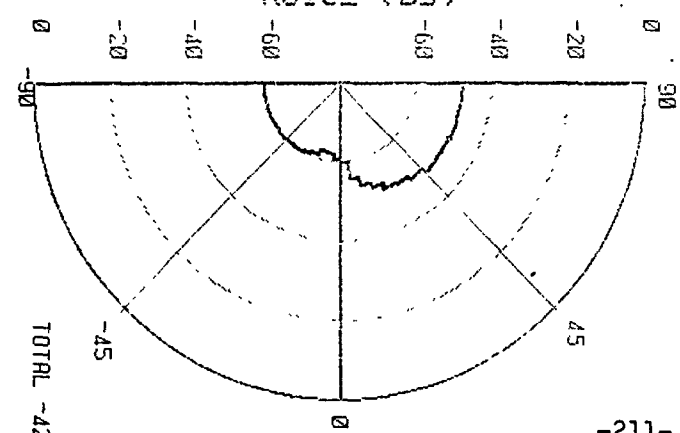
ARRIVAL ANGLE



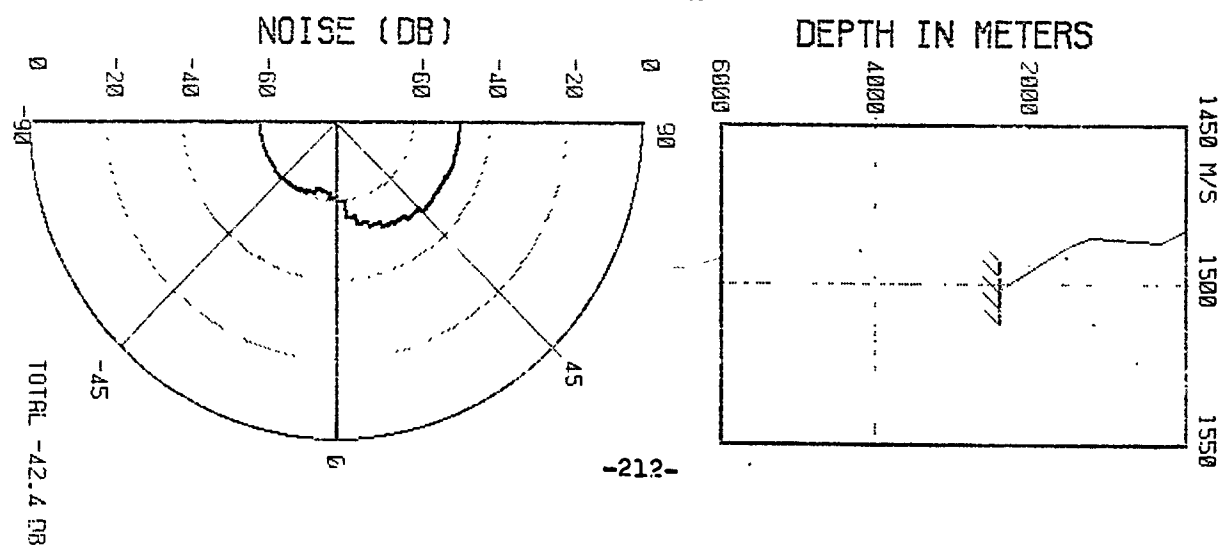
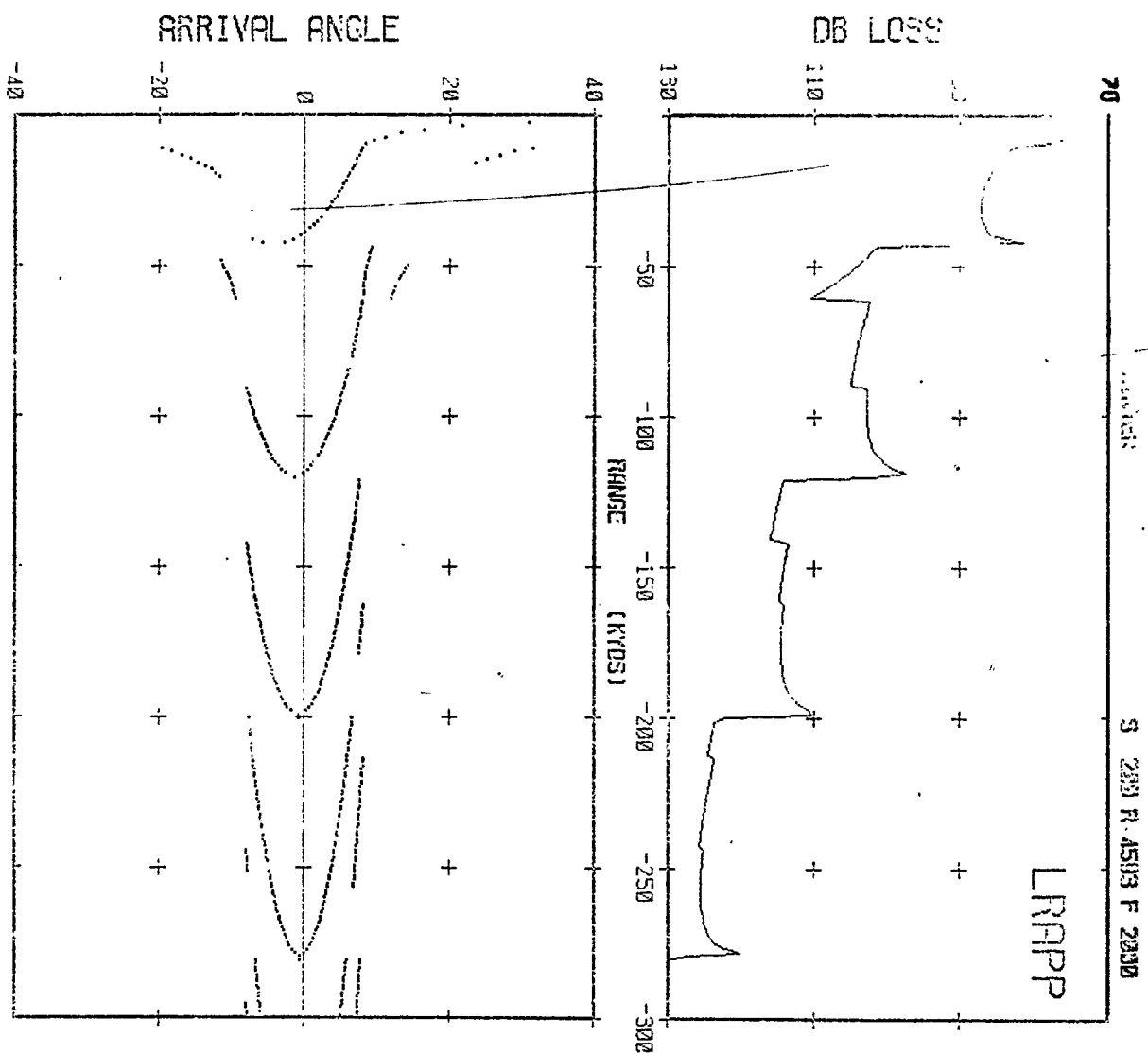
DEPTH IN METERS



NOISE (DB)



TOTAL -42.4 DB

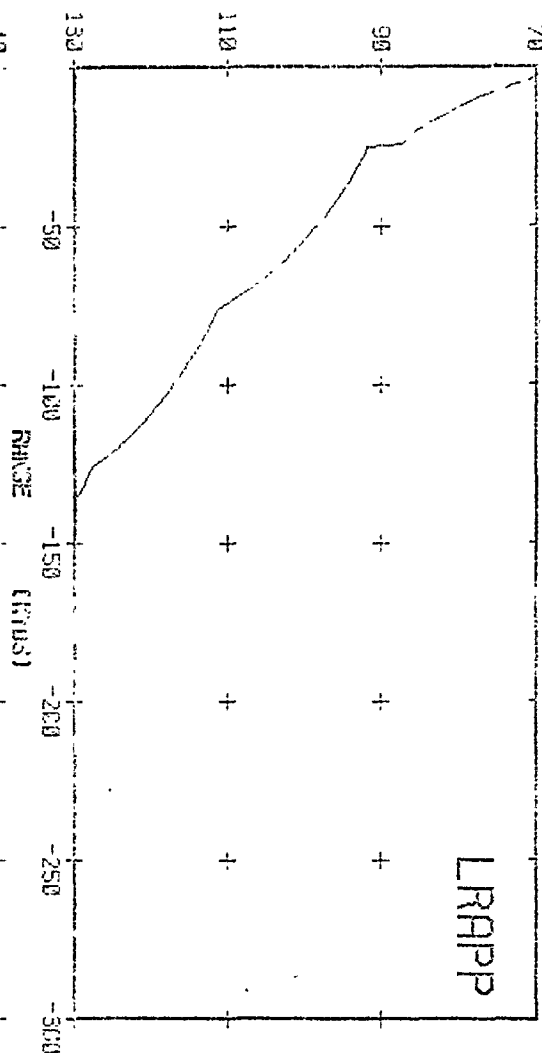


PREN 40 MENTER

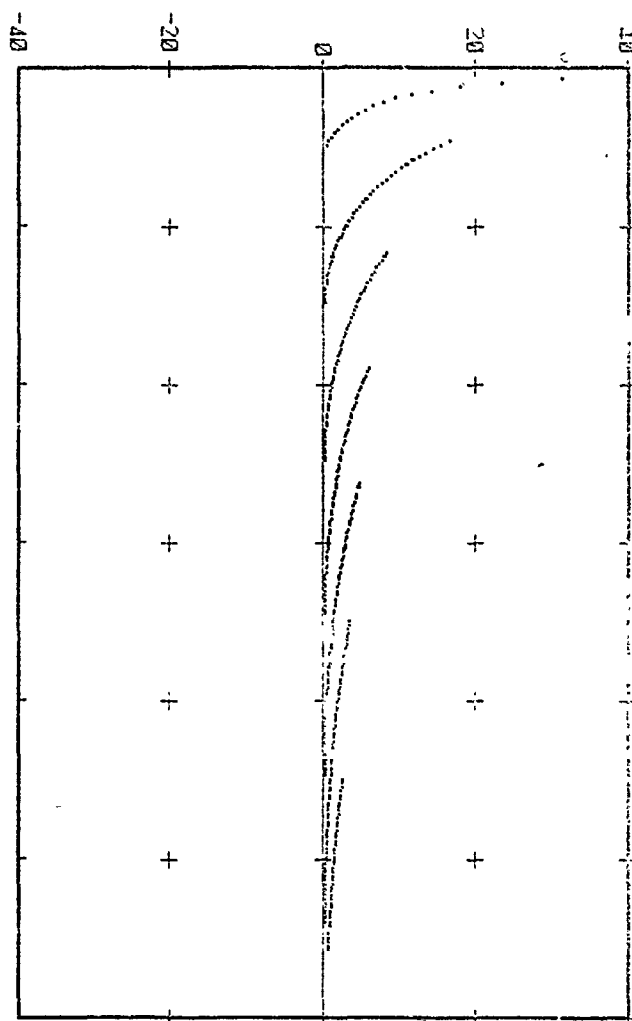
S 20 R 7750 P 2030

1450 M/S 1500 1550

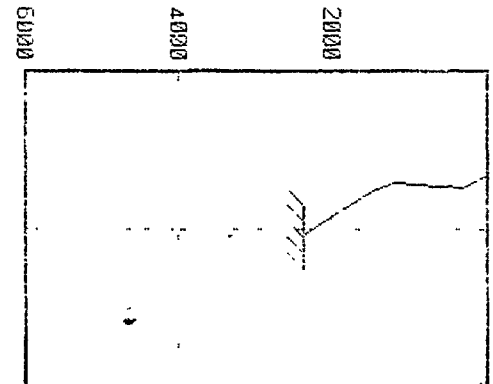
DB LOSS



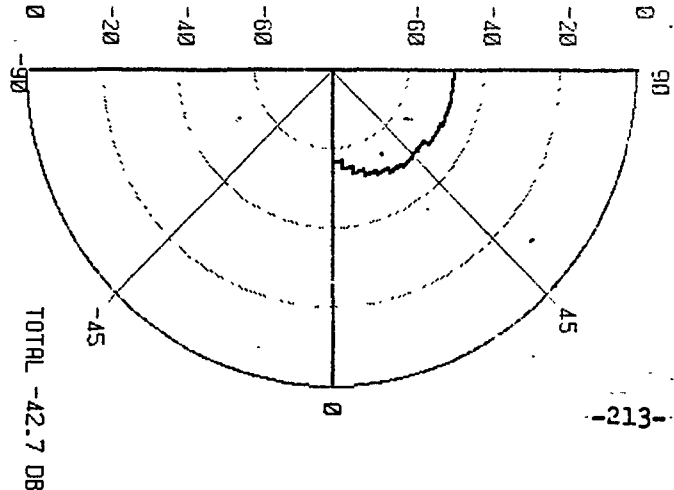
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

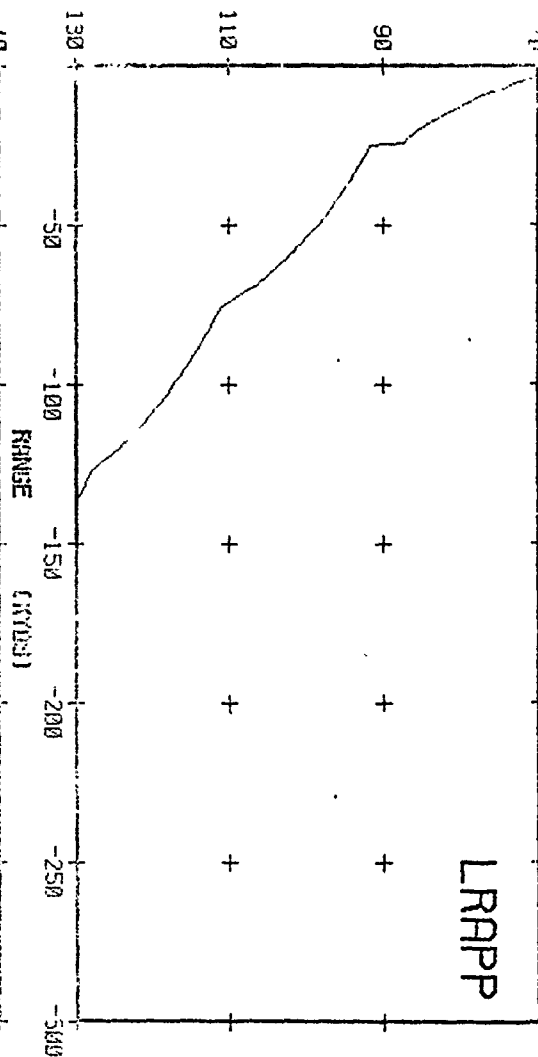


AREA AIR WINTER

S SQ R 7798 F 2690

1450 M/S 1500 1550

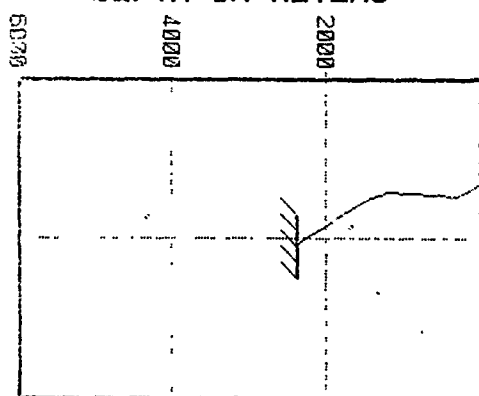
DB LOSS



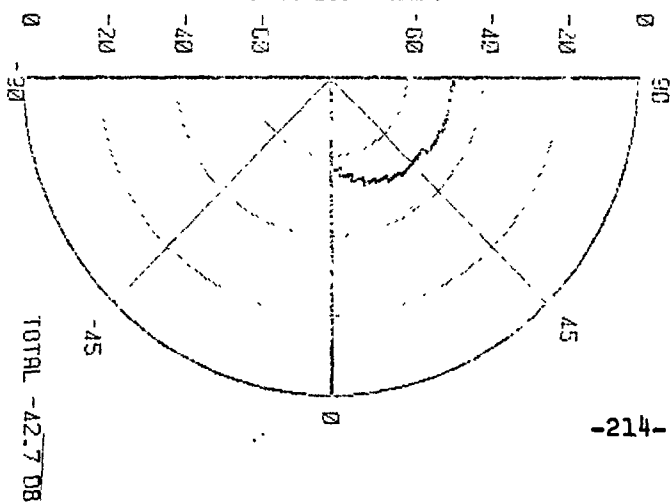
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



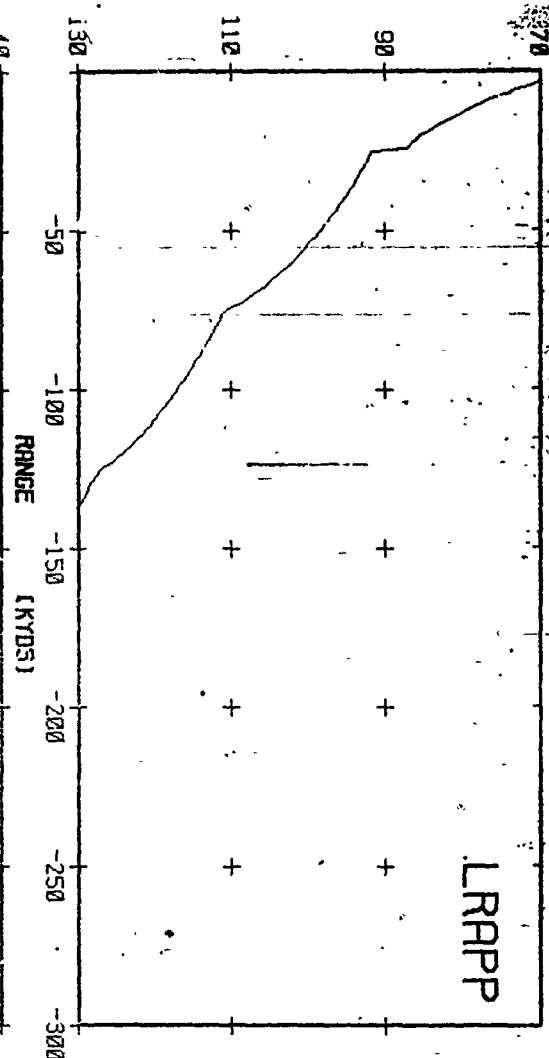
POWER AR HUNTER

S 200 R 7700 F 2000

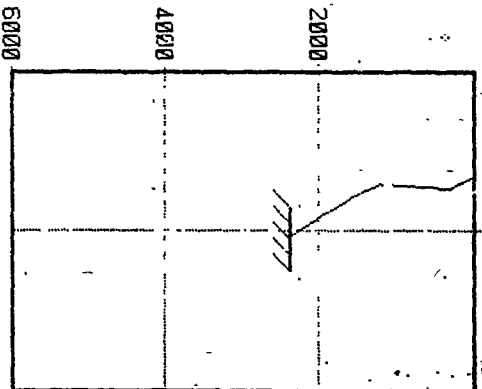
1450 M/S 1500

1530

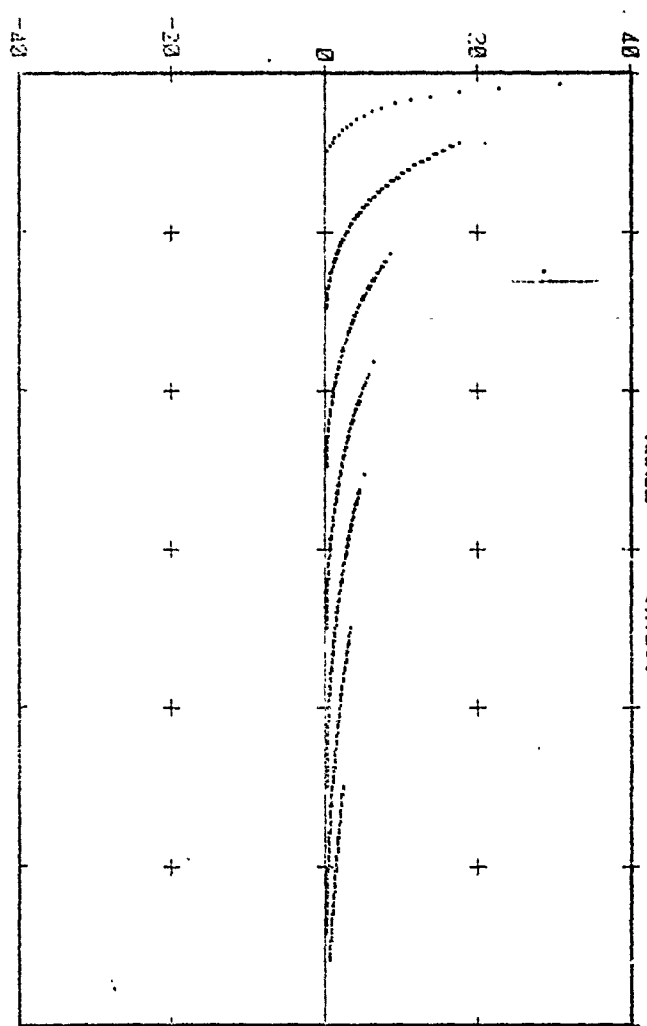
DB LOSS



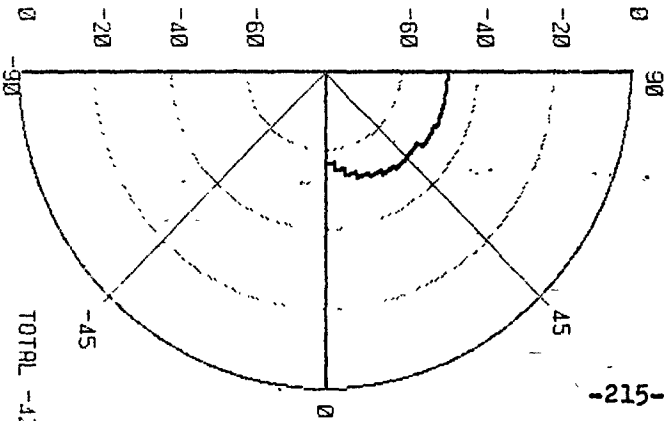
DEPTH IN METERS



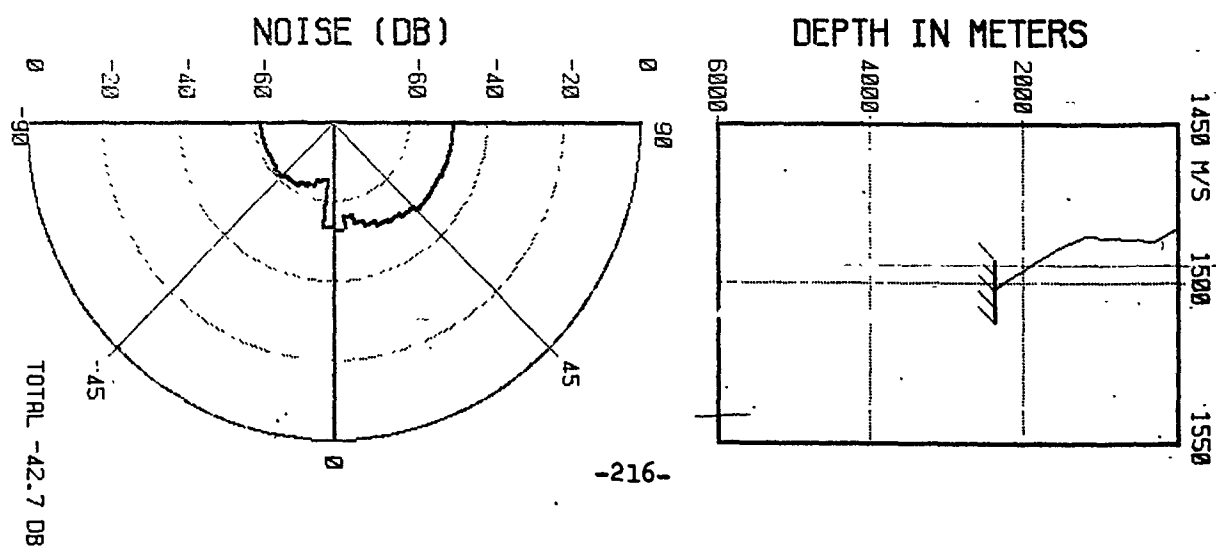
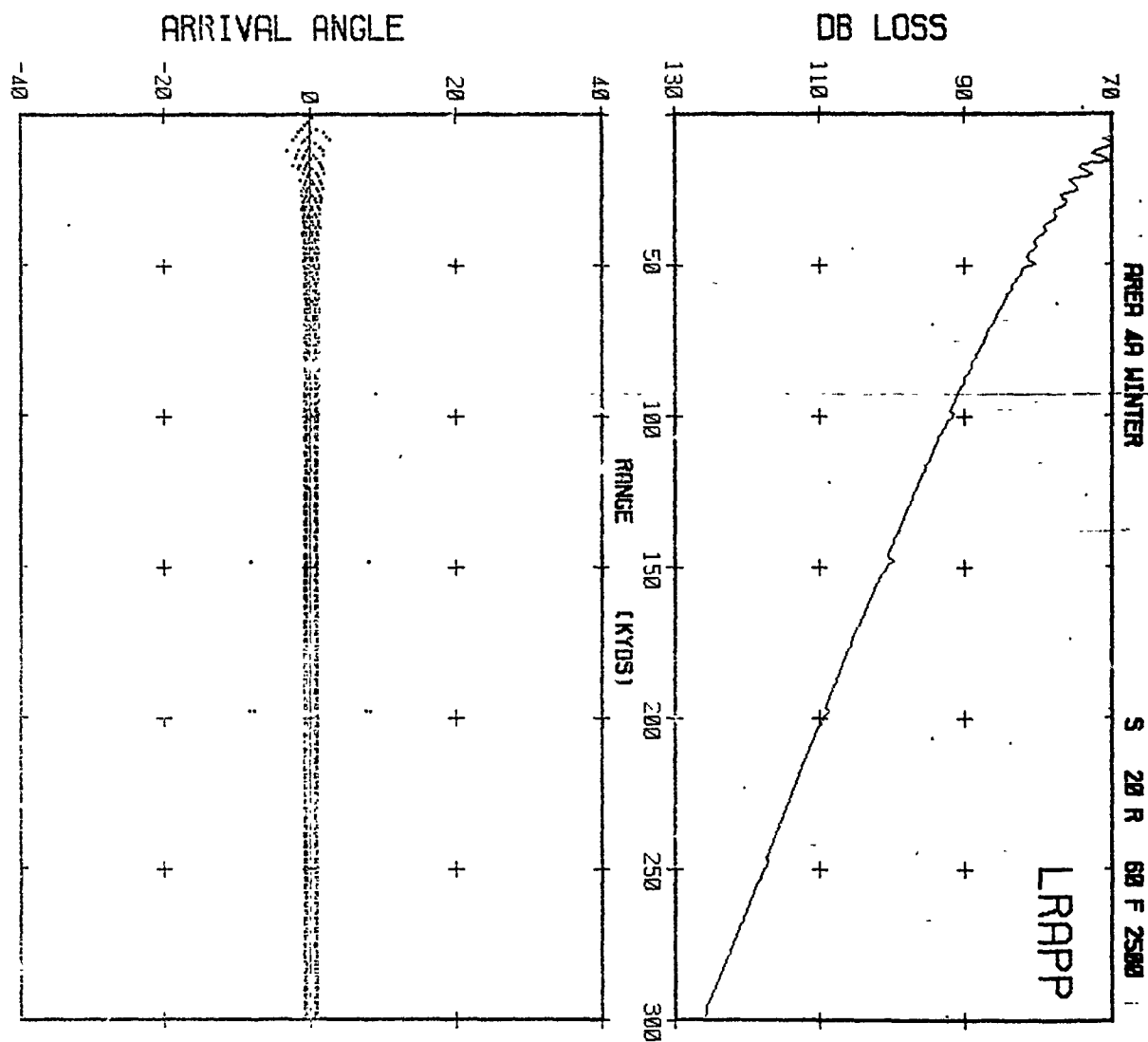
ARRIVAL ANGLE

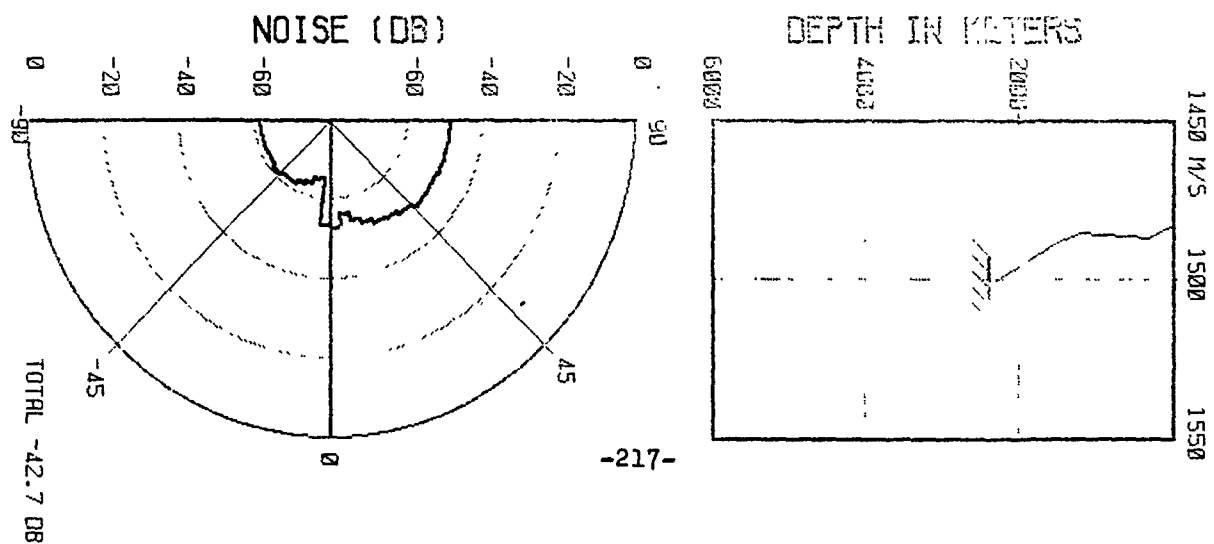
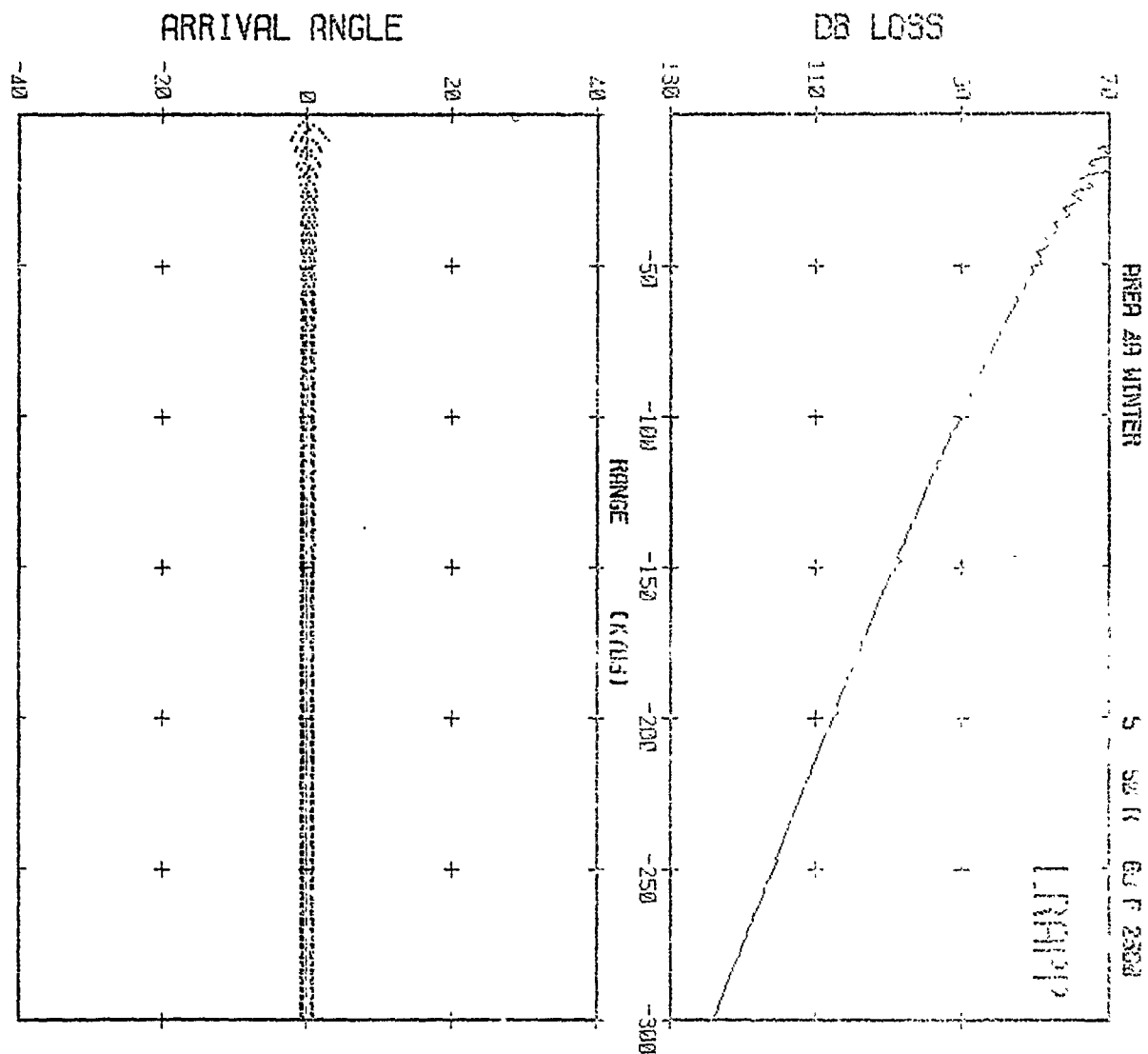


NOISE (DB)



TOTRL -42.7 DB



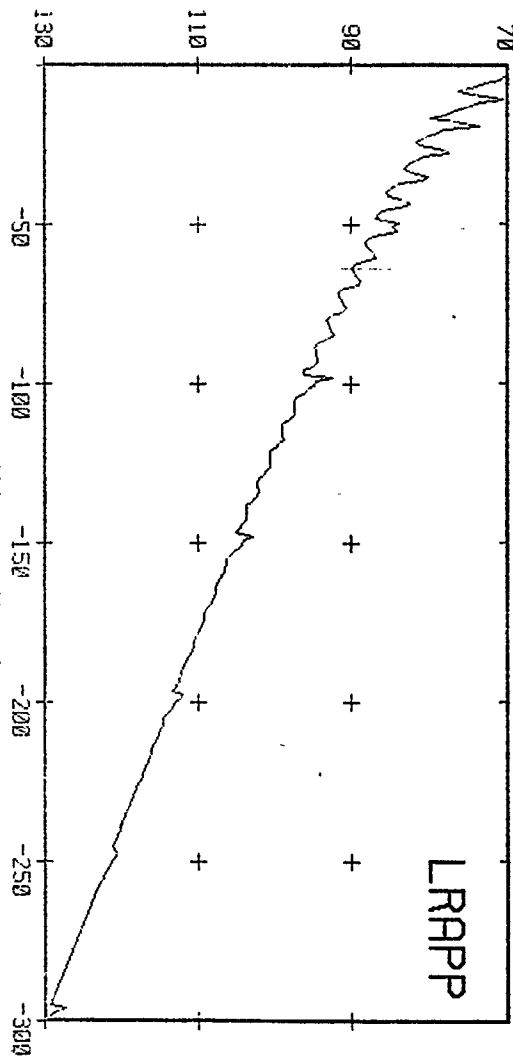


AREA 4A WINTER

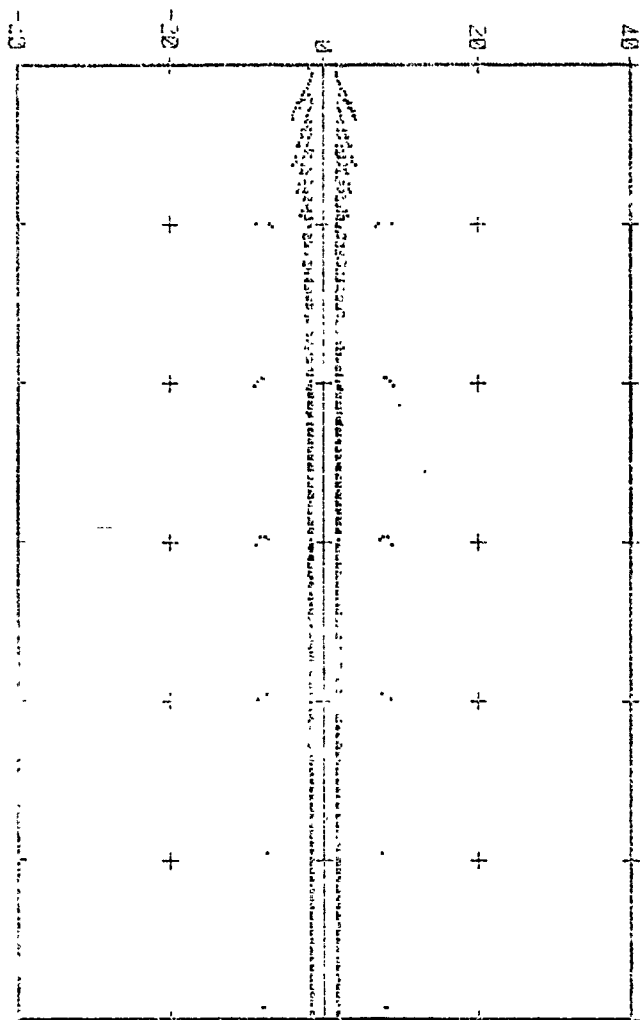
S 200 R 60 F 2500

1450 M/S 1500 1550

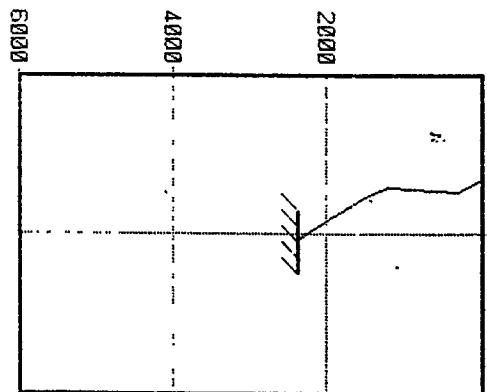
DB LOSS



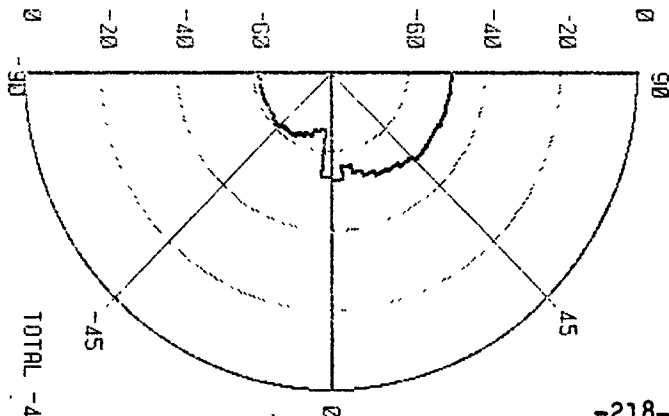
ARRIVAL ANGLE

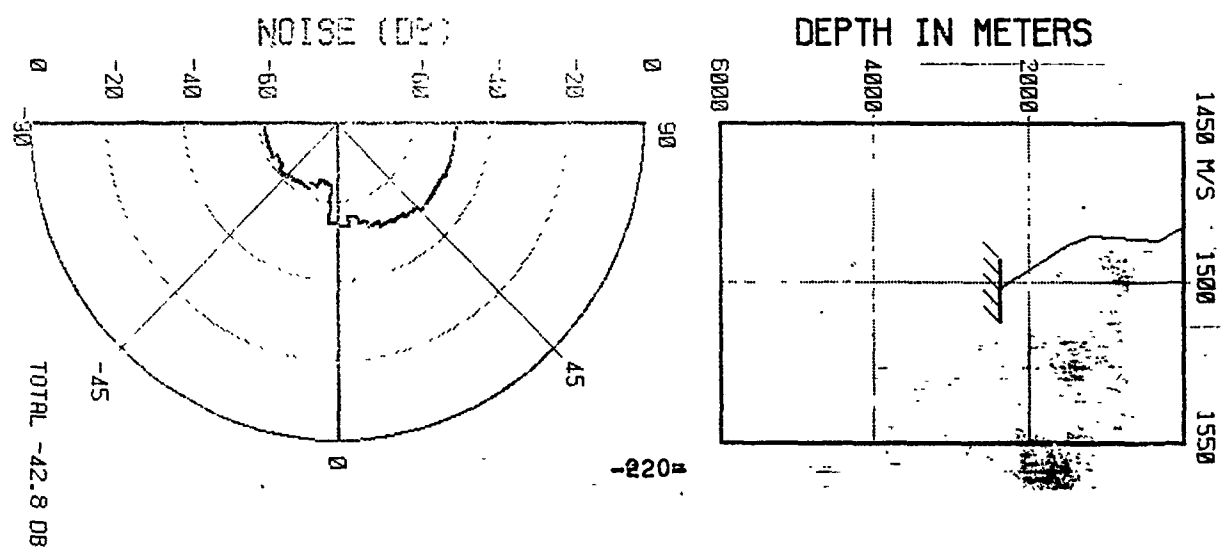
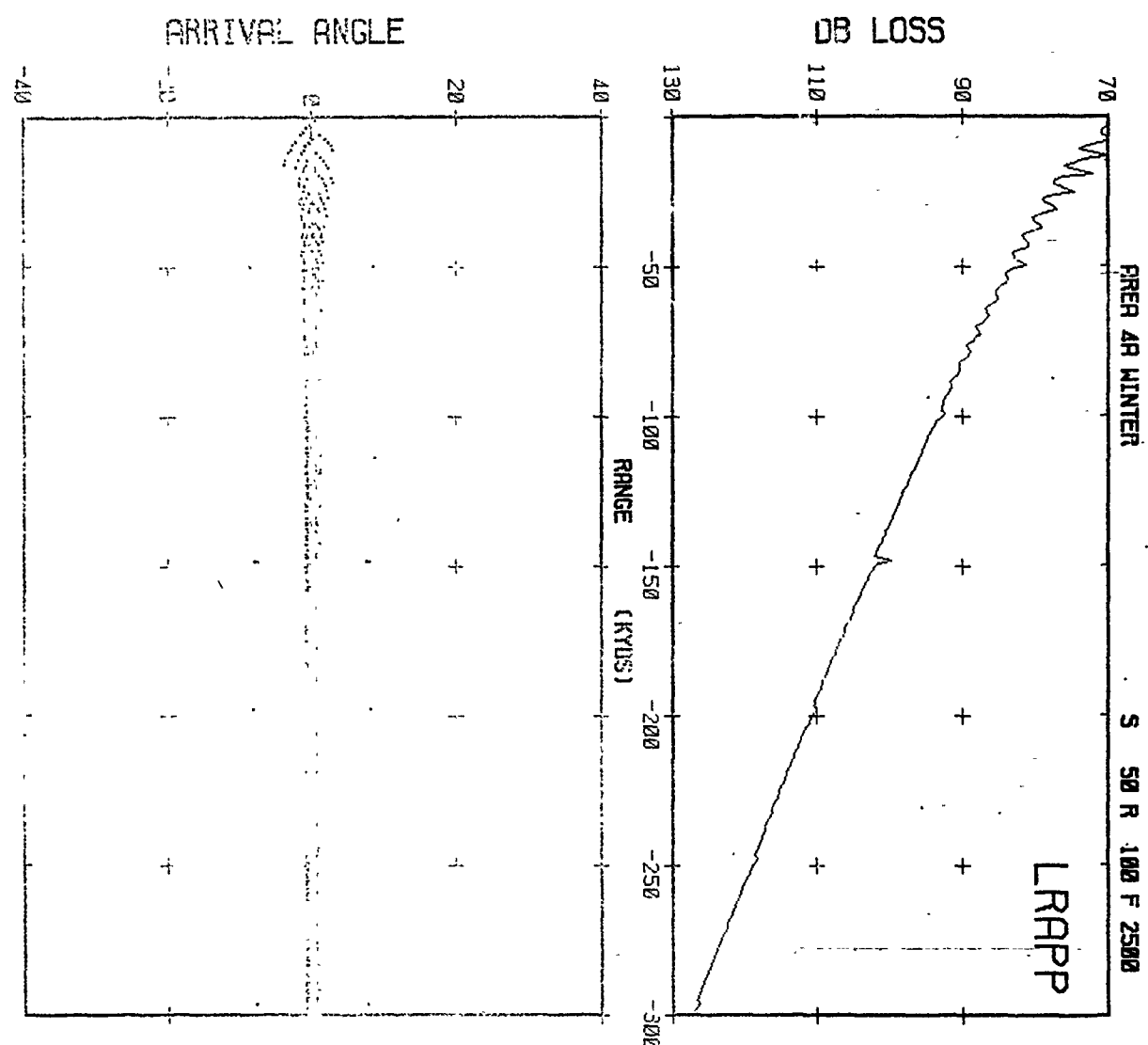


DEPTH IN METERS



NOISE (DB)

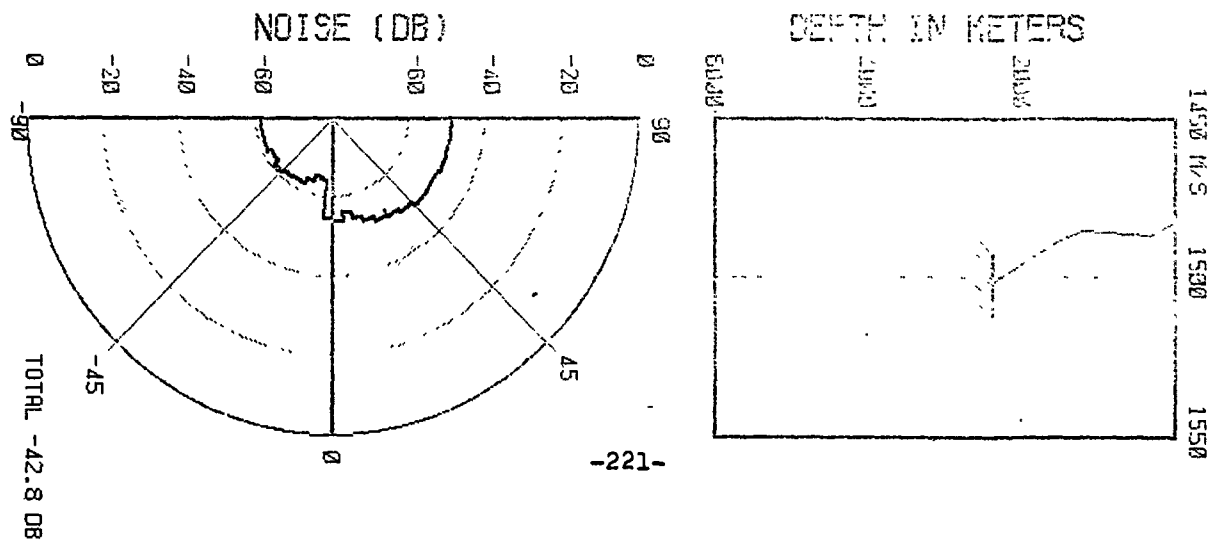
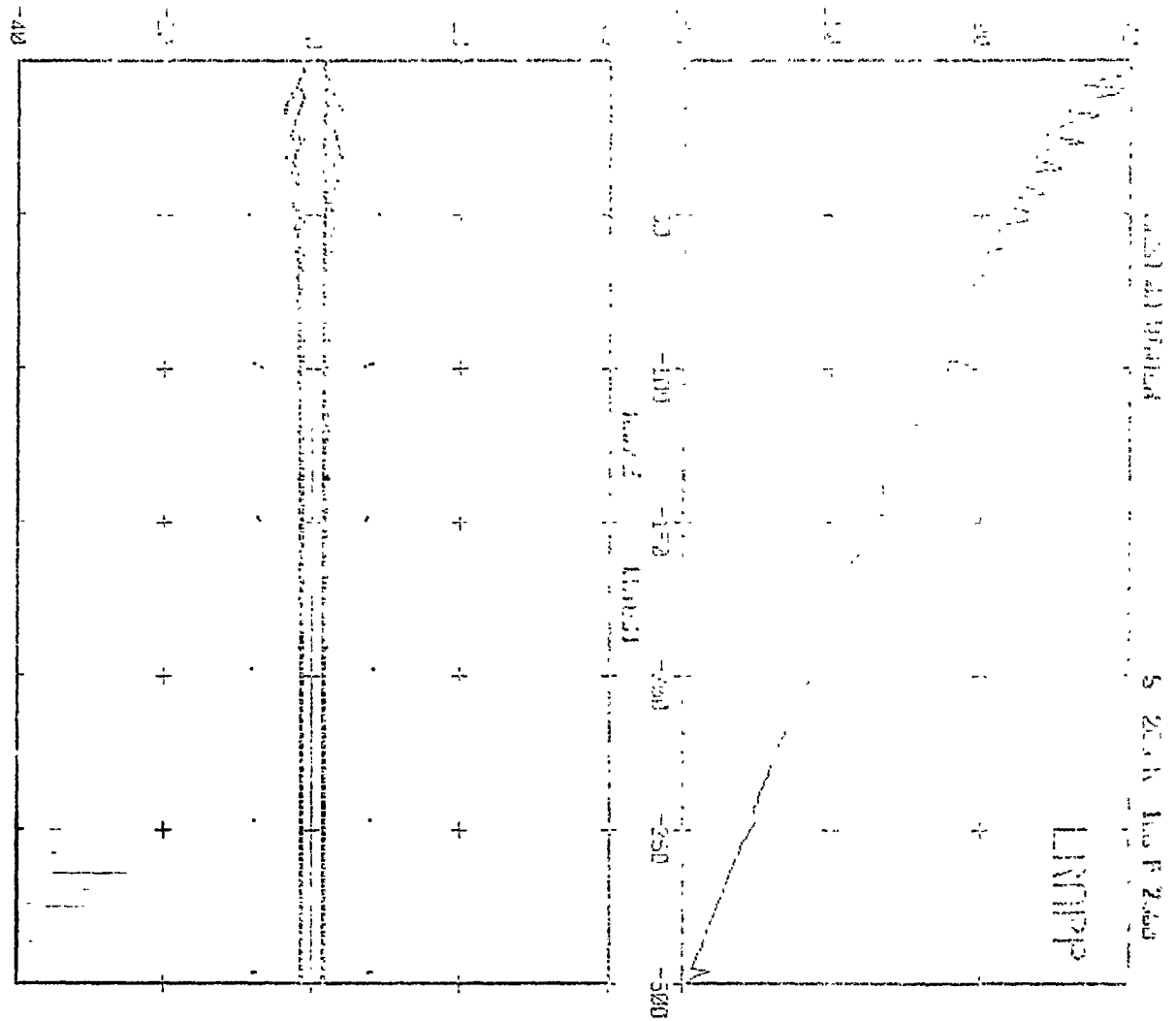




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 permit fully legible reproduction

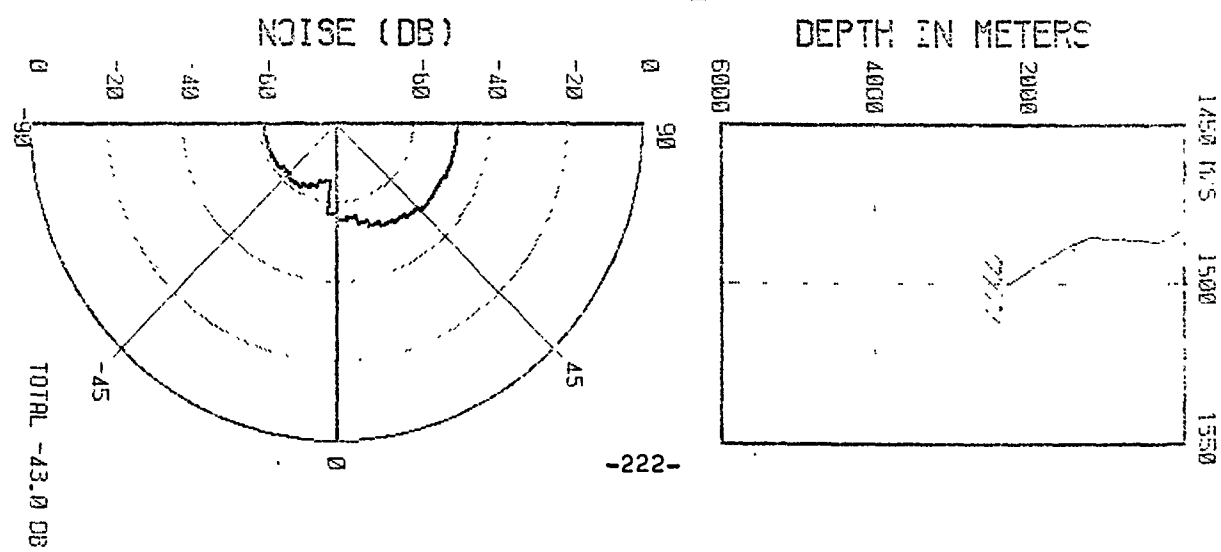
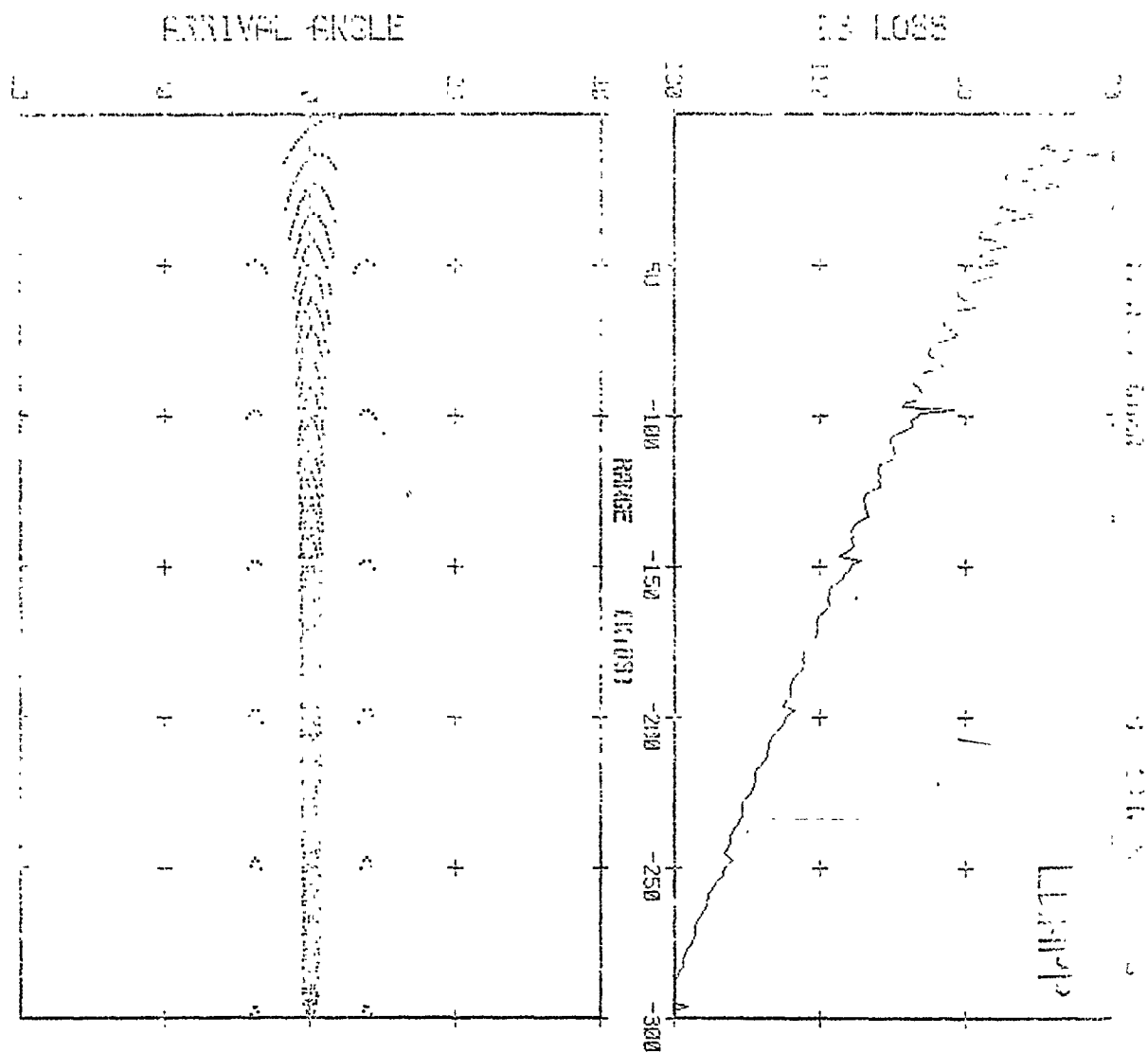
ORIGINAL DATA

15 10 19



TOTAL -42.8 DB

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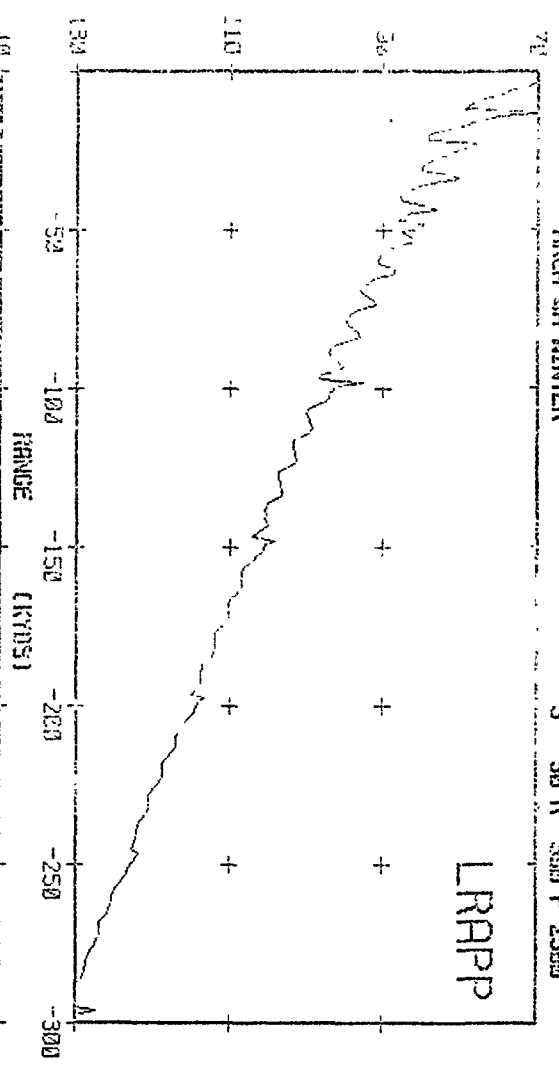


AREA 48 HINTER

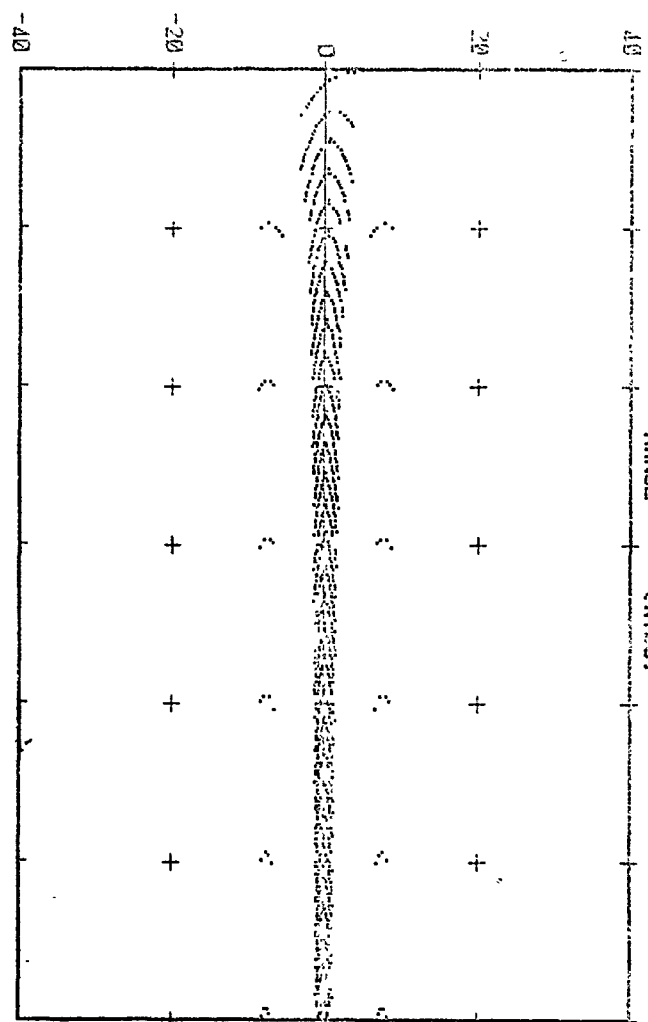
S 50 R 300 F 2560

1450 M/S 1500 1550

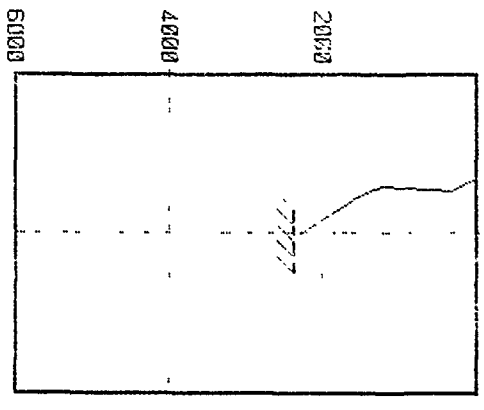
DB LOSS



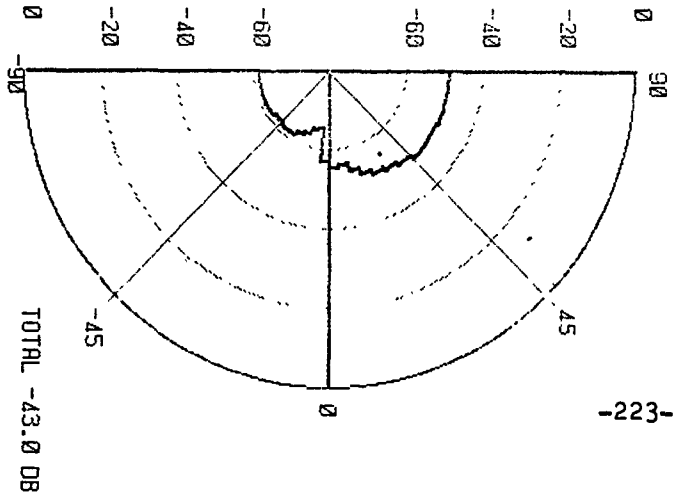
ARRIVAL ANGLE



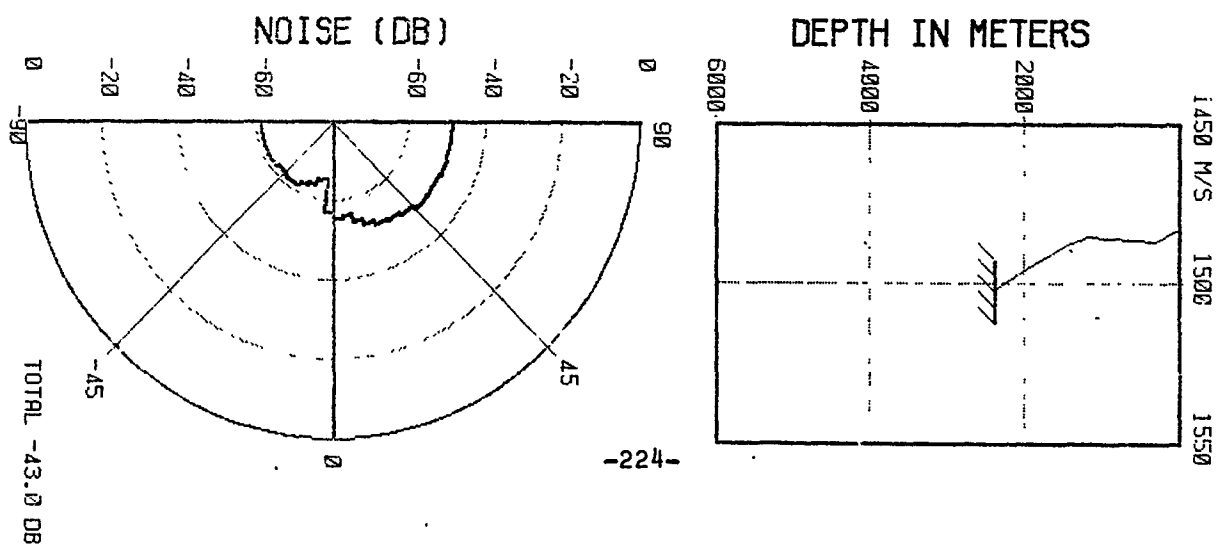
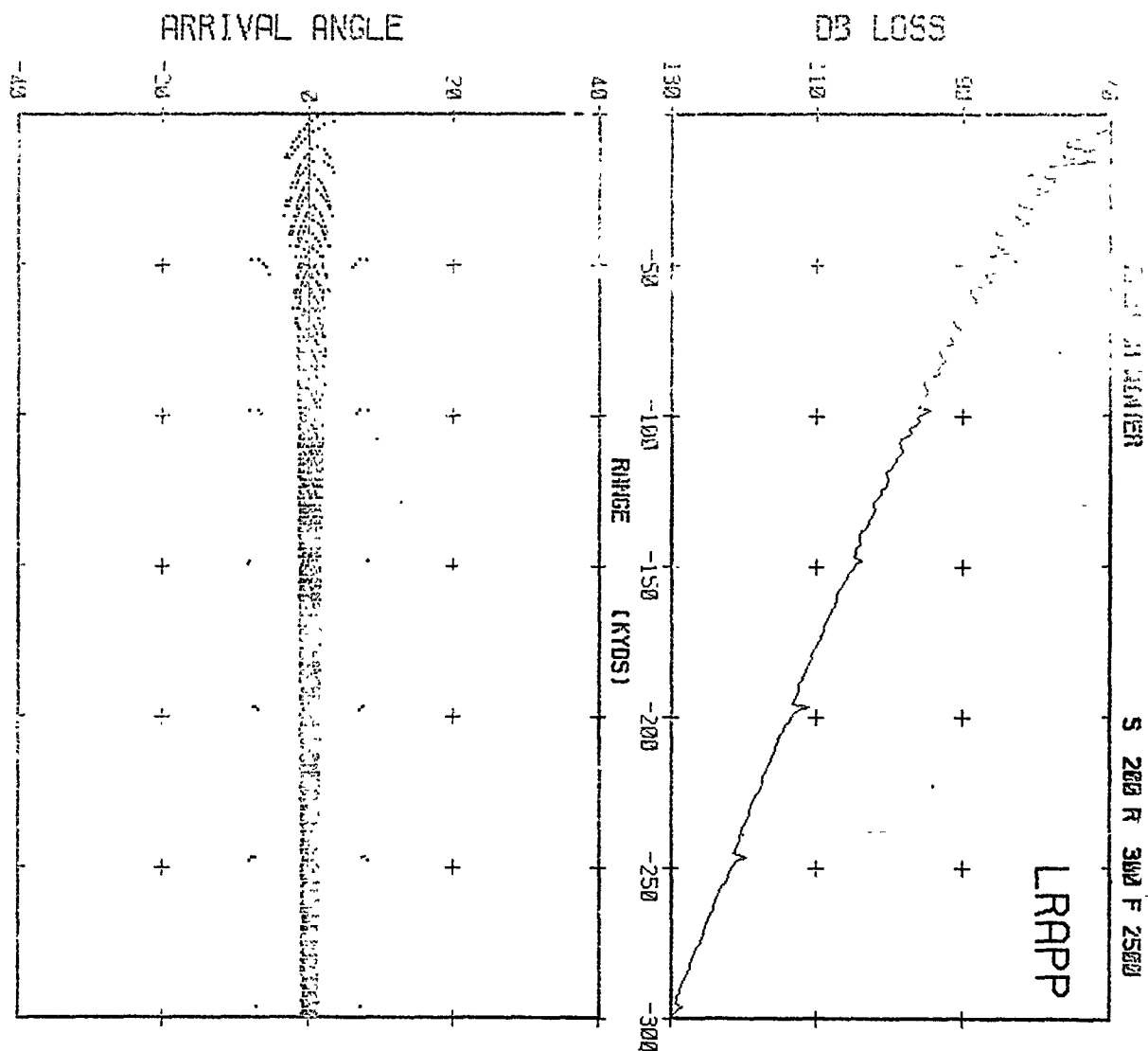
DEPTH IN METERS



NOISE (DB)



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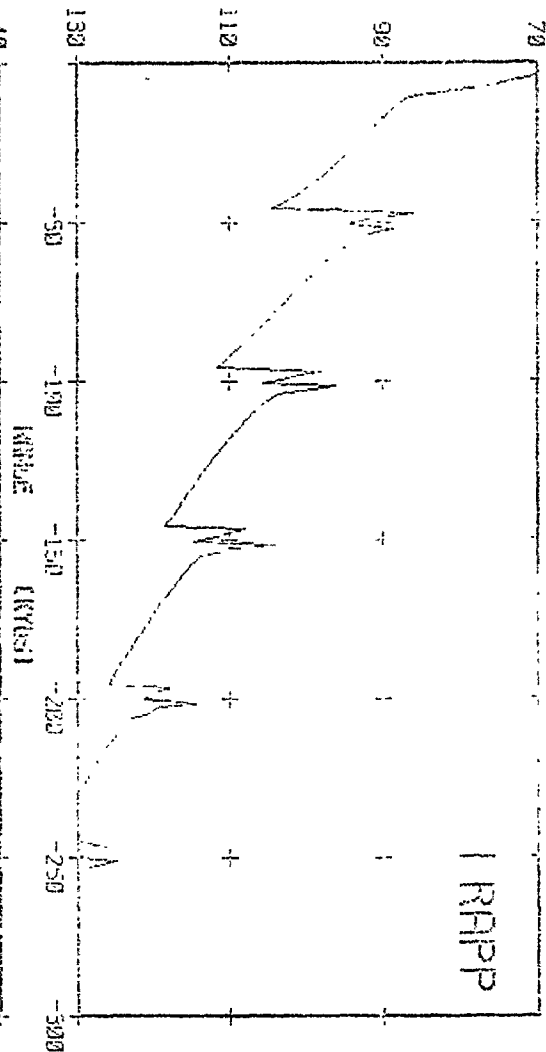
FREE AIR WINTER

S 24 N 15.50 F 2500

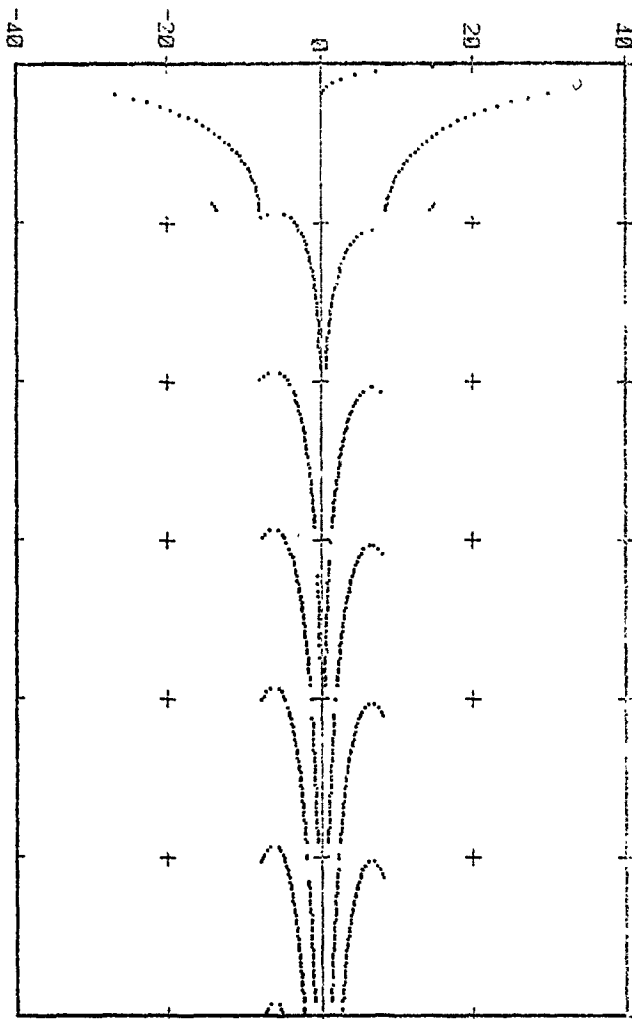
1450 M/S 1500

1550

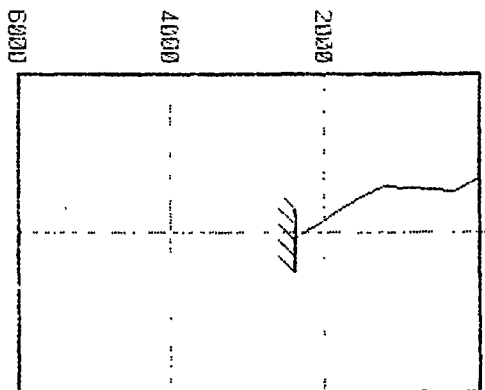
DB LOSS



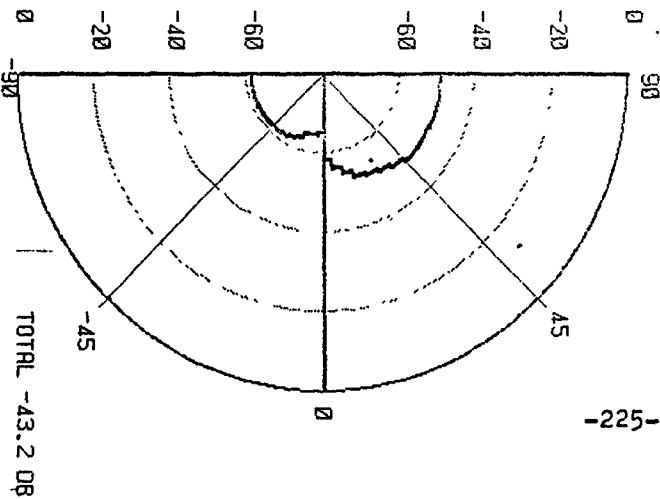
ARRIVAL ANGLE

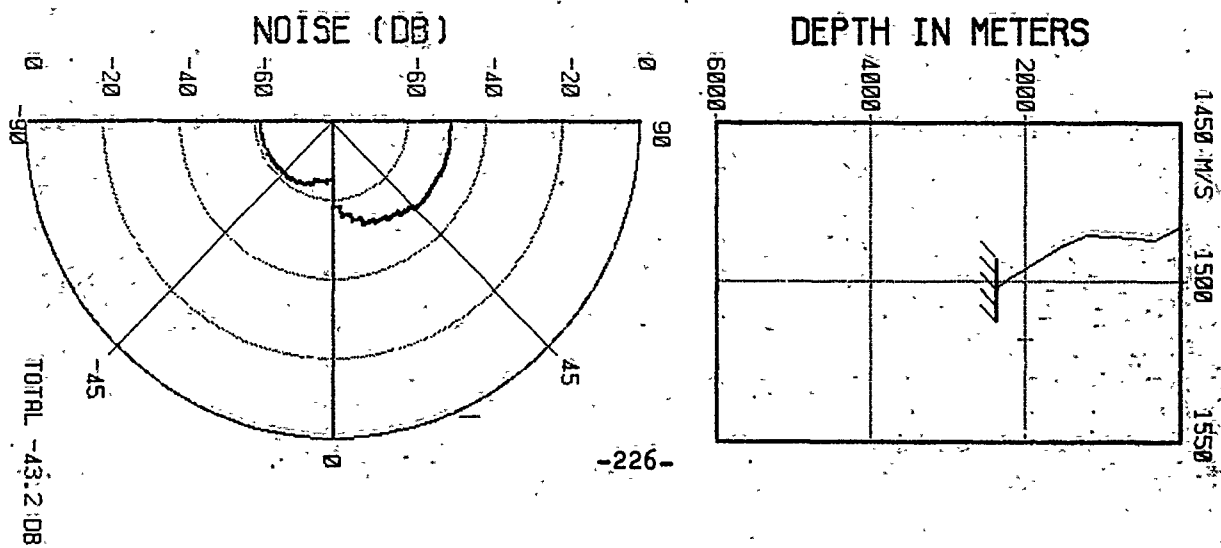
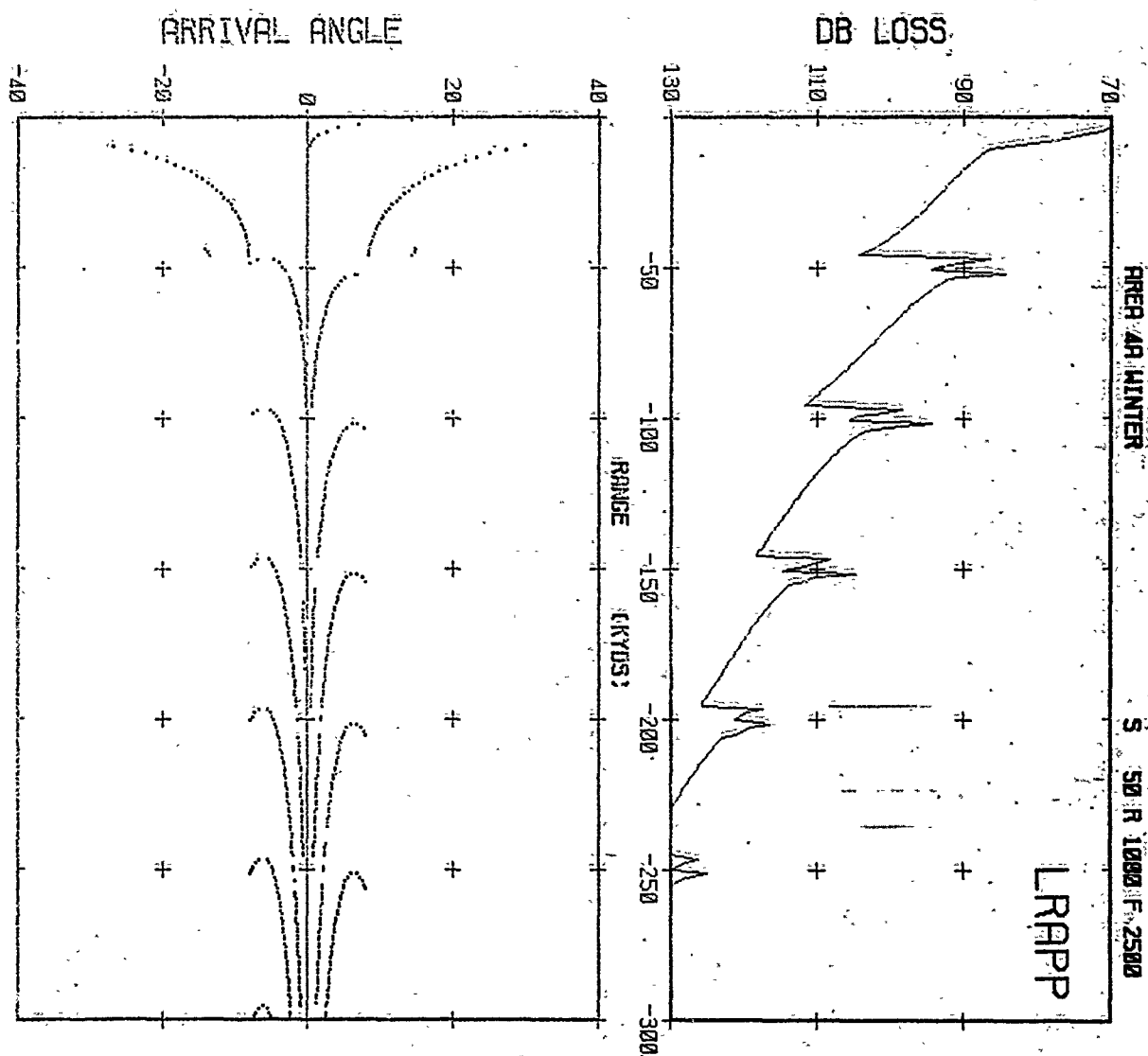


DEPTH IN METERS



NOISE (DB)



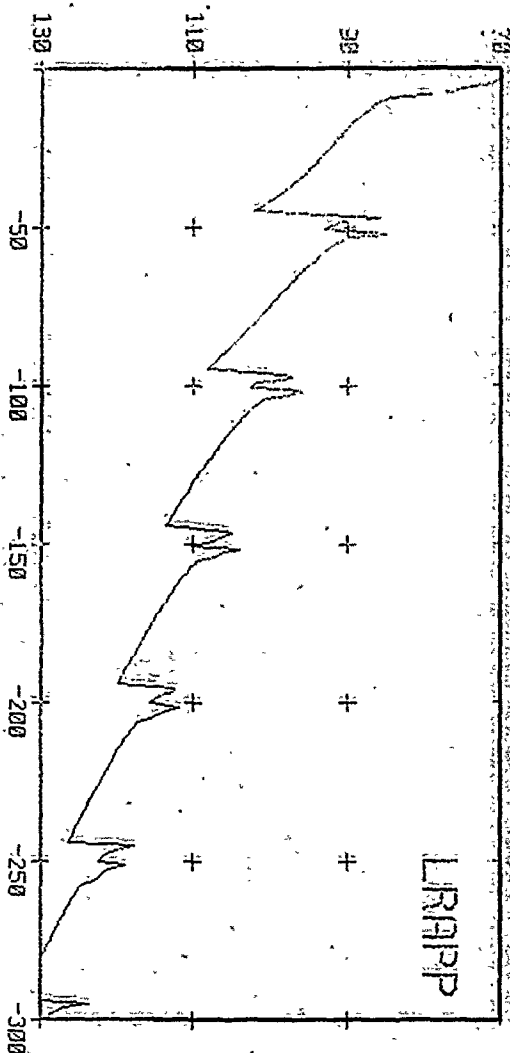


PREP 4H JUMPER

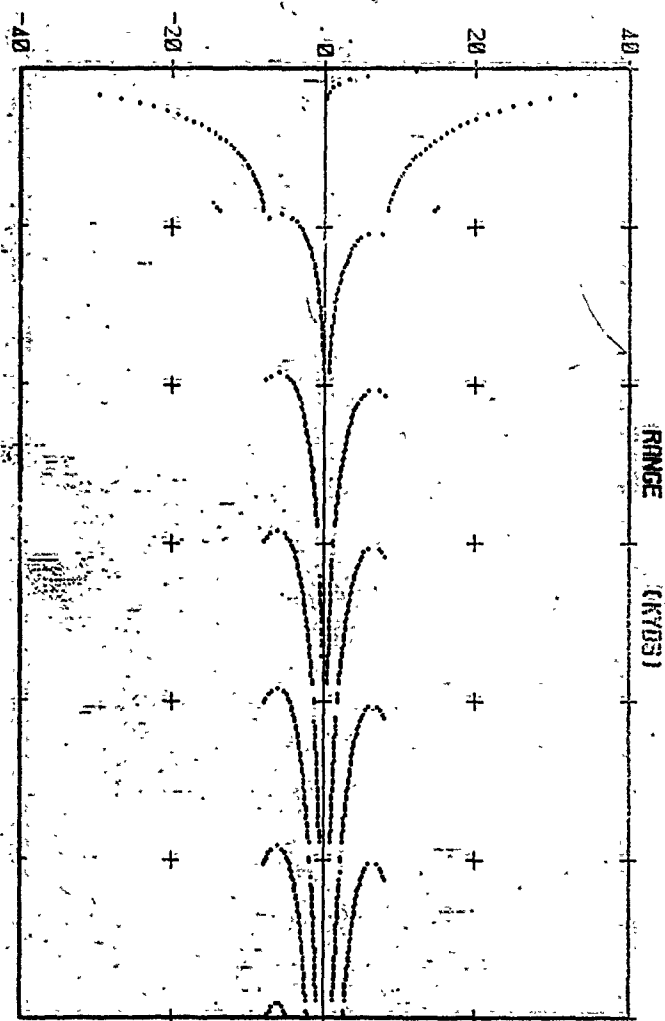
S 200 R 1000 F 2000

1450 11/5 1500 1550

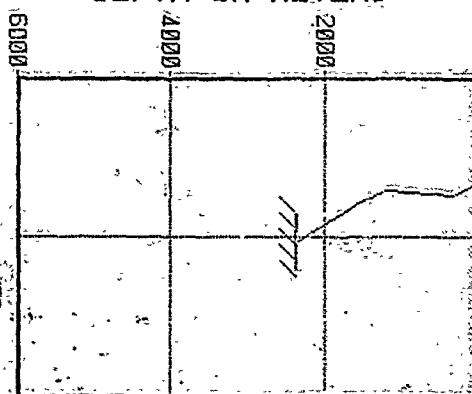
DB LOSS



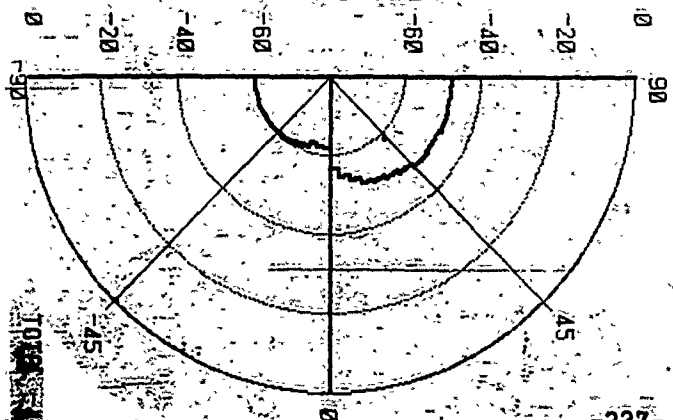
ARRIVAL ANGLE

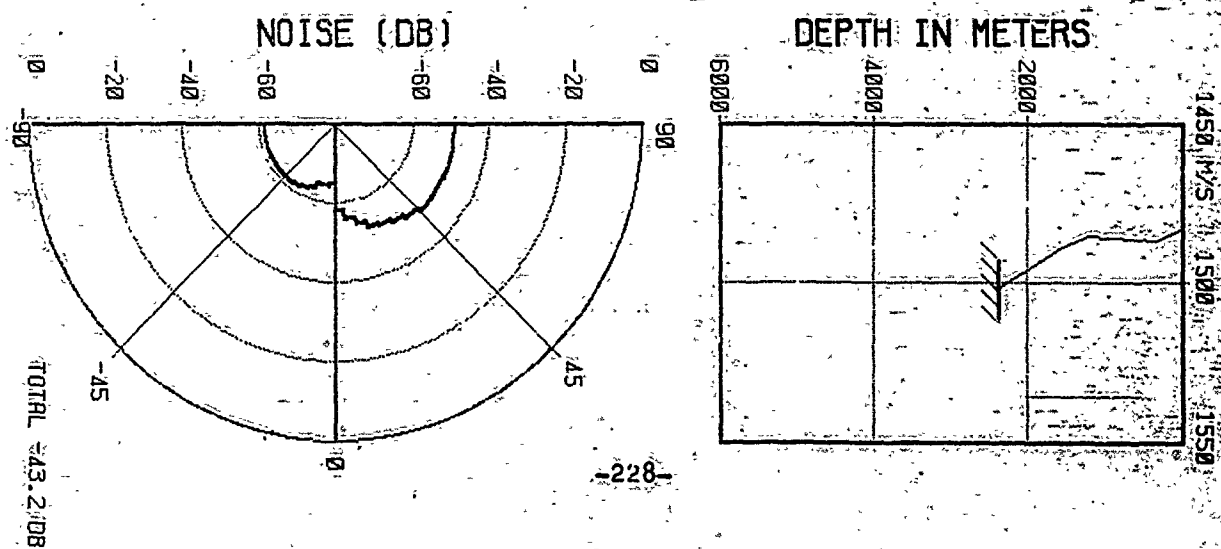
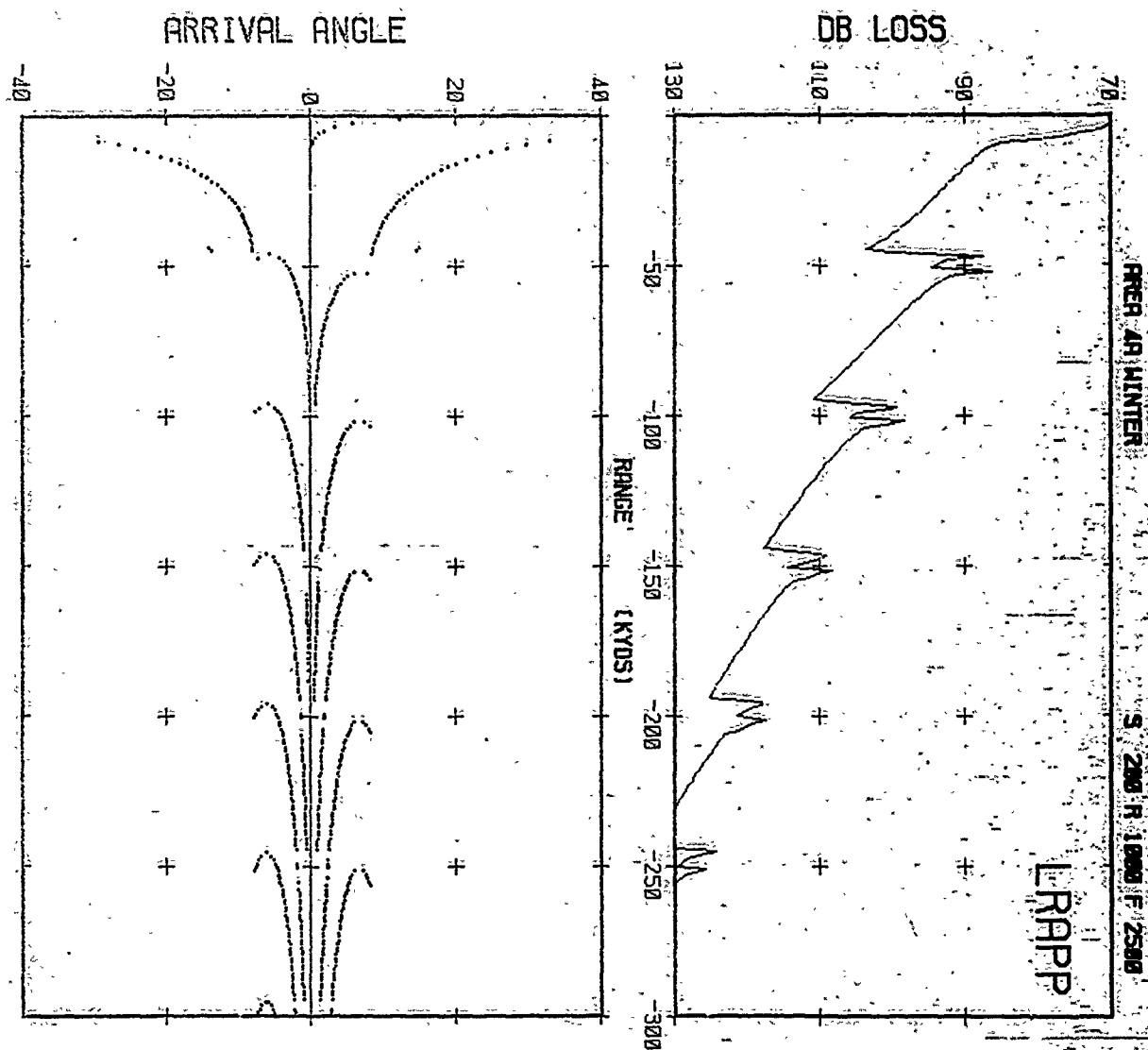


DEPTH IN METERS



NOISE (DB)





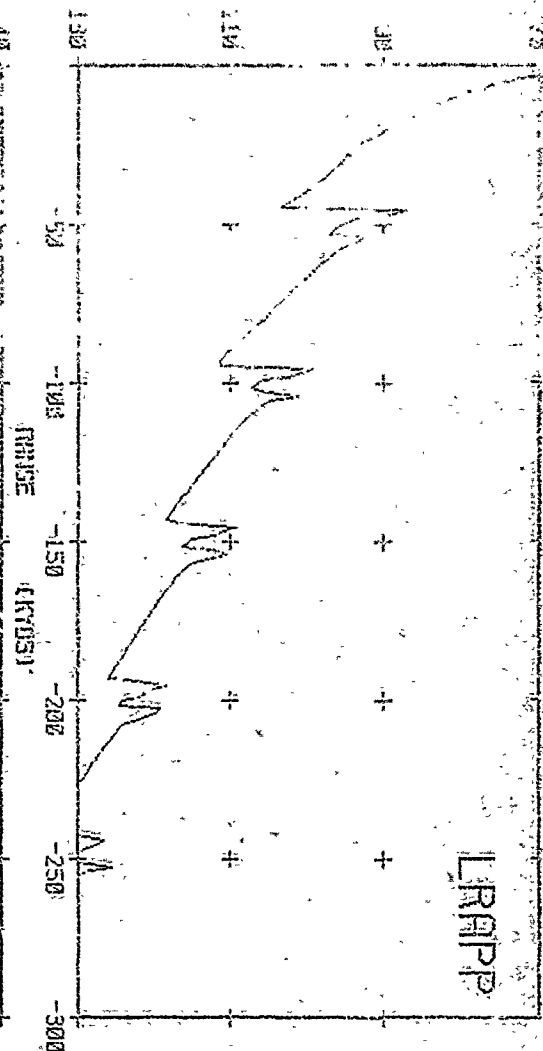
GREEN JAN WINTER

S 120 R 1500 F 2500

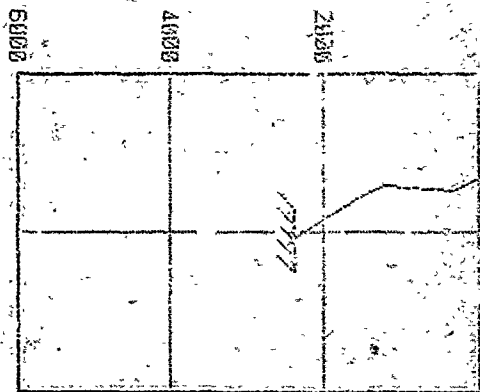
14 30 (14.5) 1500 1550

DE L035

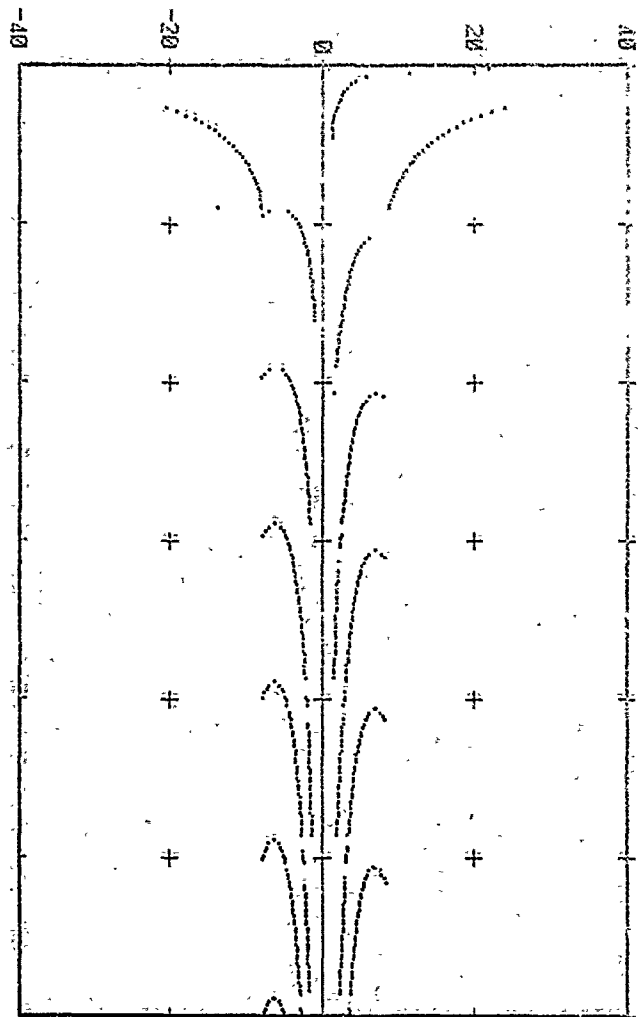
LRAPP



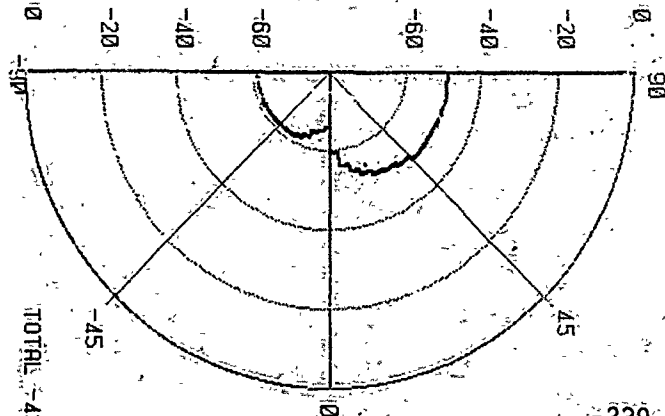
DEPTH IN METERS

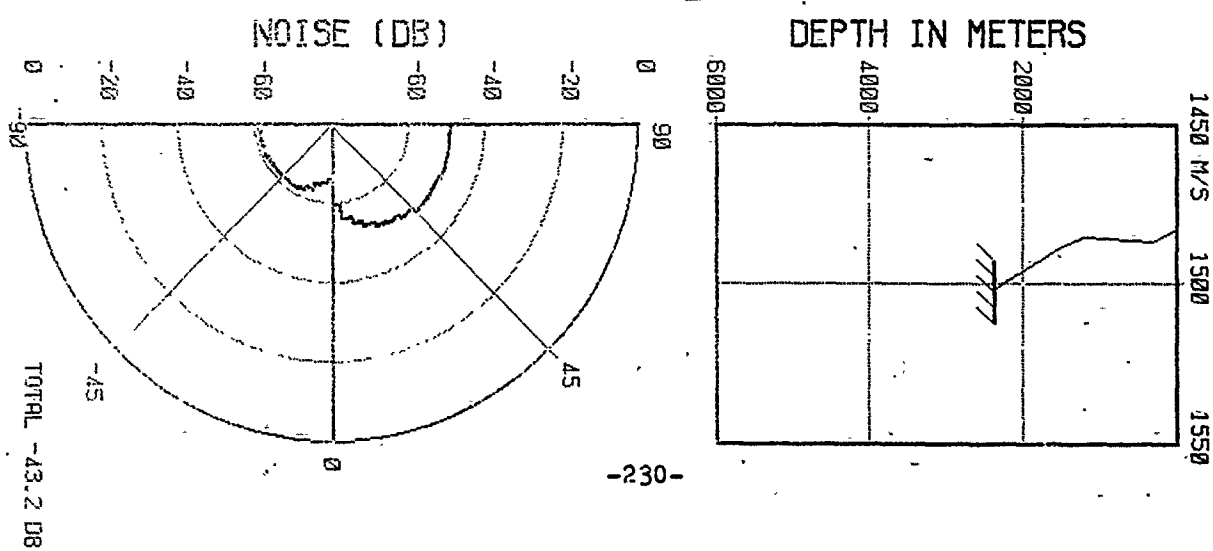
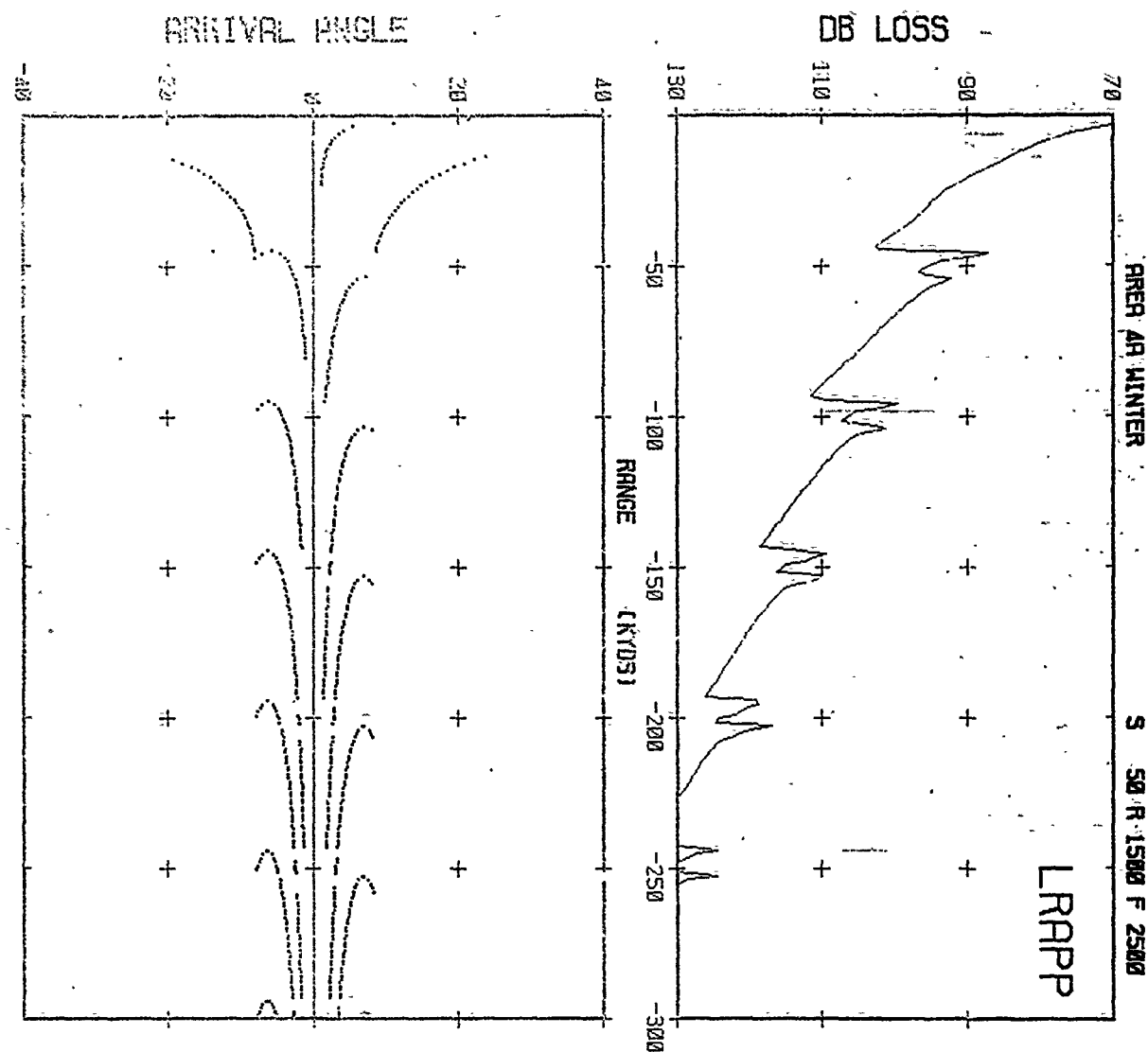


ARRIVAL ANGLE



NOISE (DB)



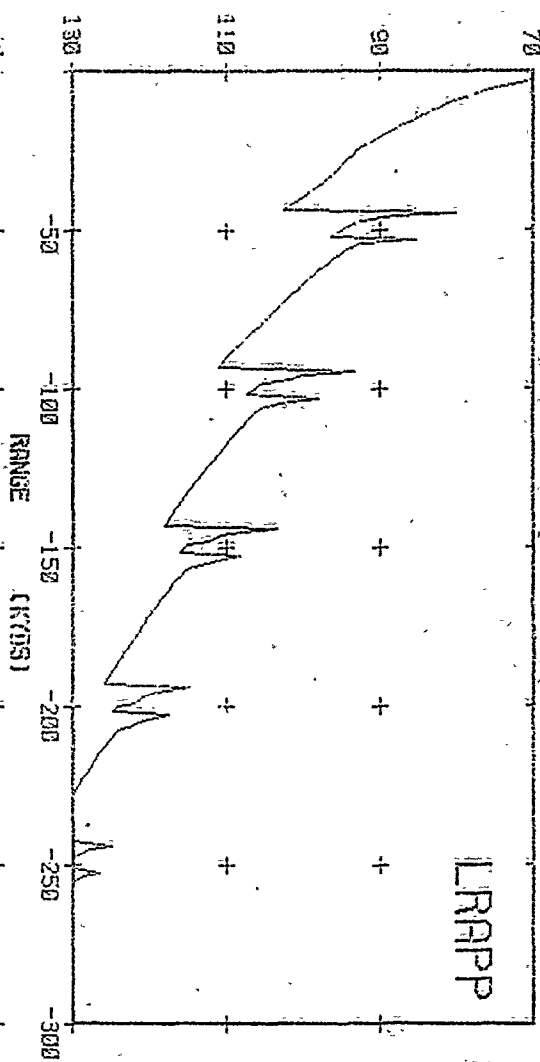


PREF 49 HINTER

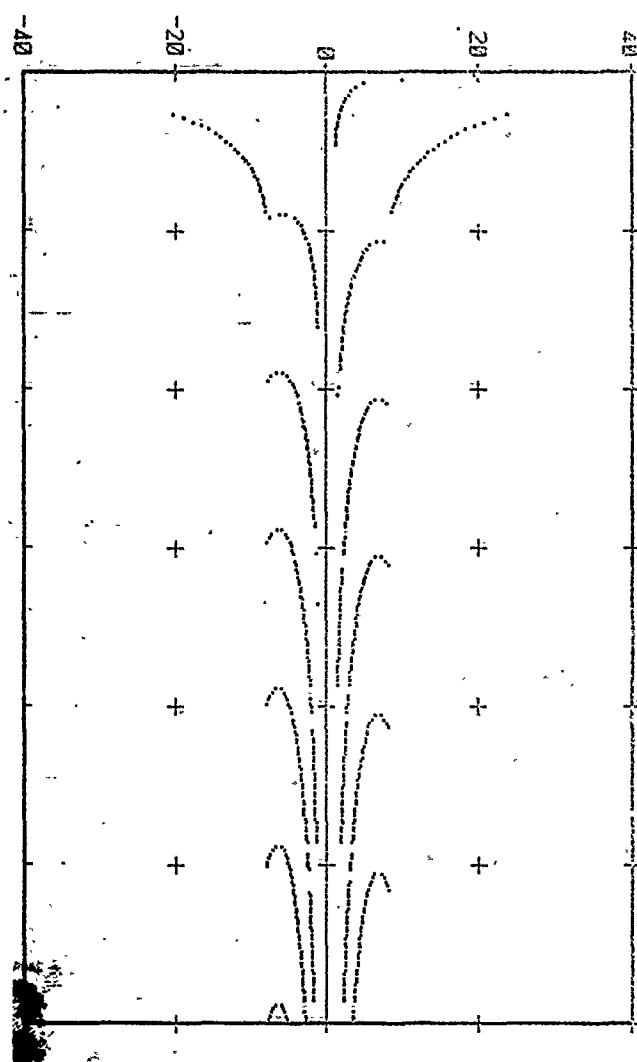
S 260 IR 1500 F 2500

1450 M/S 1500 1550

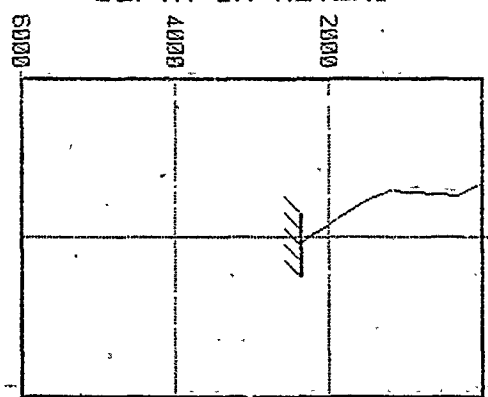
DB LOSS



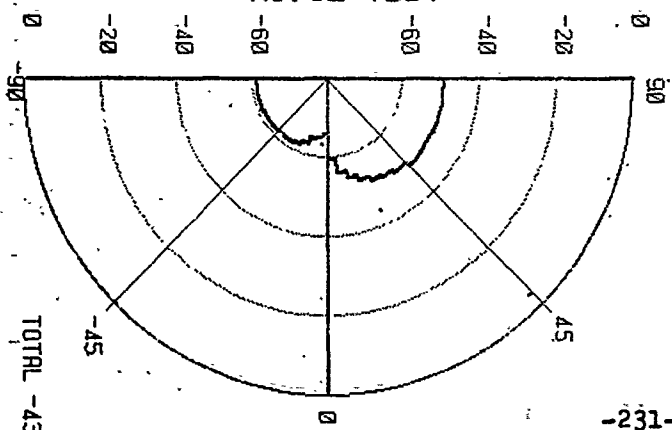
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



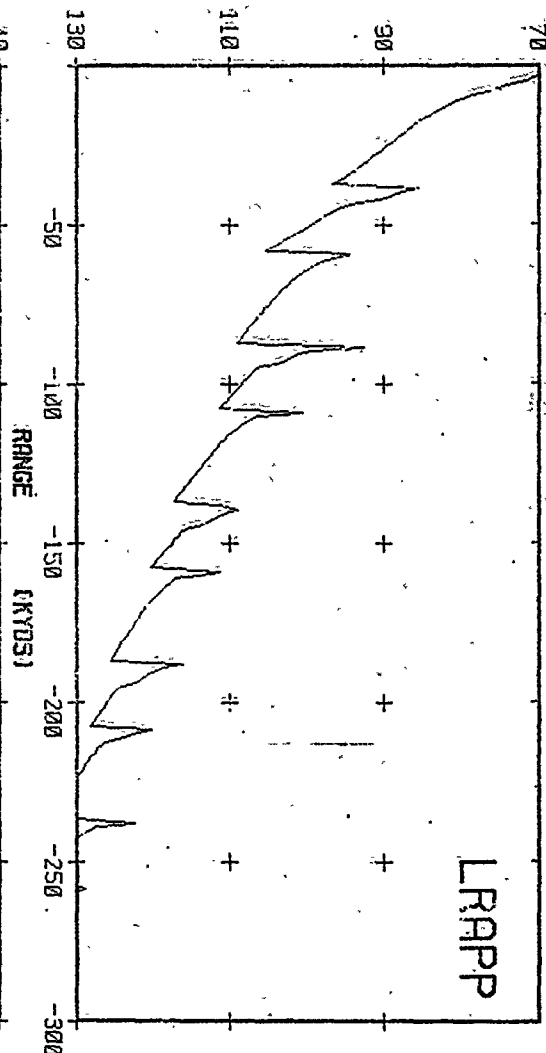
TOTAL -43.2 DB

AREA 49 WINTER

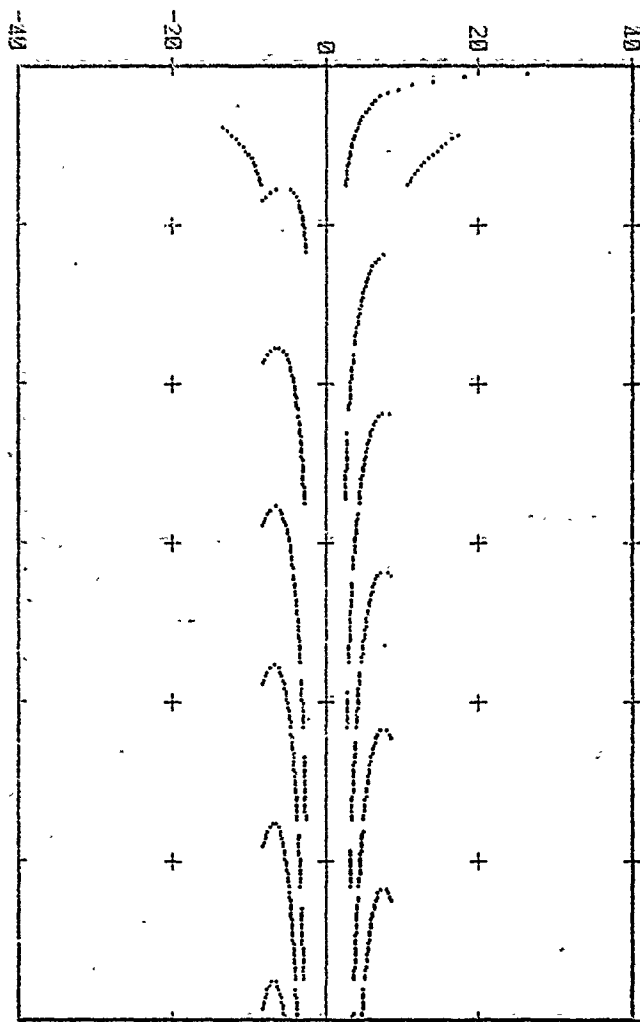
S 20 R 3609 F 2500

LRAPP

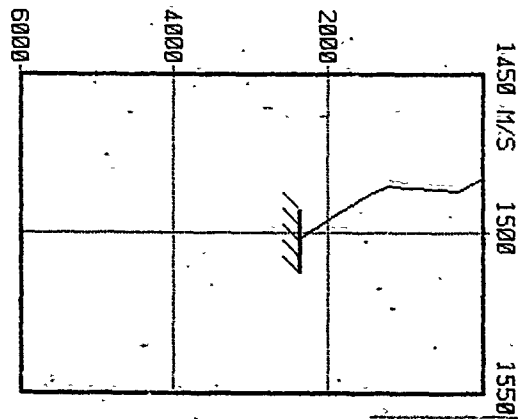
DB LOSS



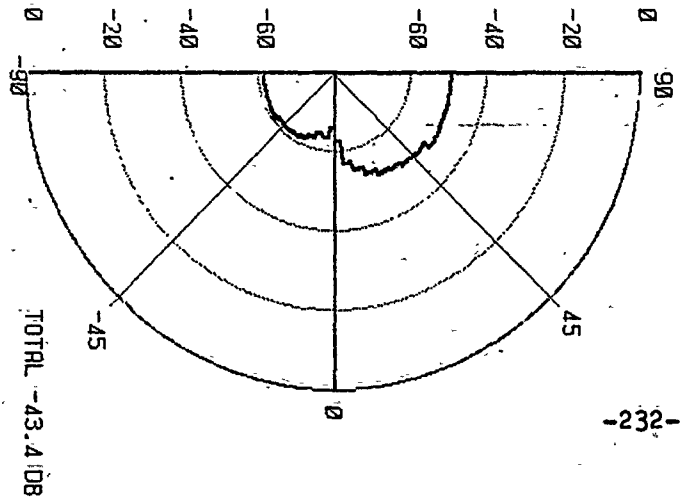
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



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TOTAL -43.4 DB

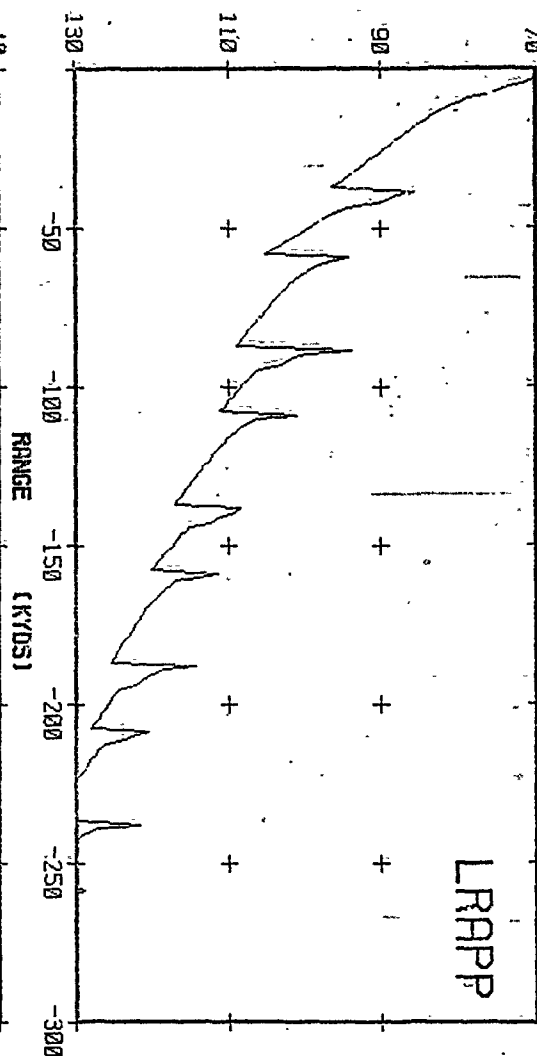
AREA 4A WINTER

S 50 R 3609 F 2500

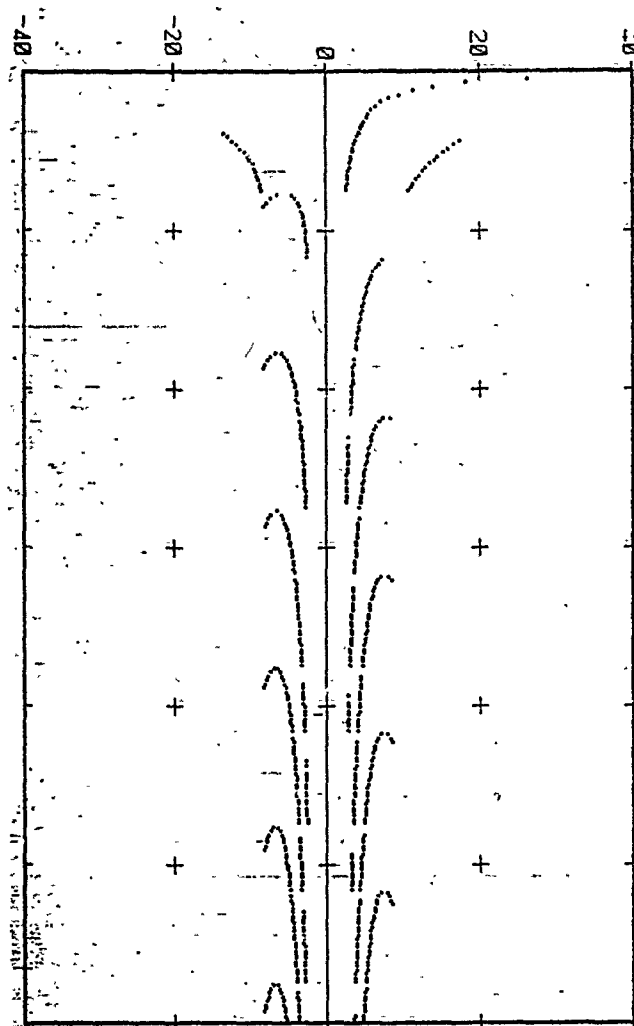
1450 M/S 1500 1550

LRAPP

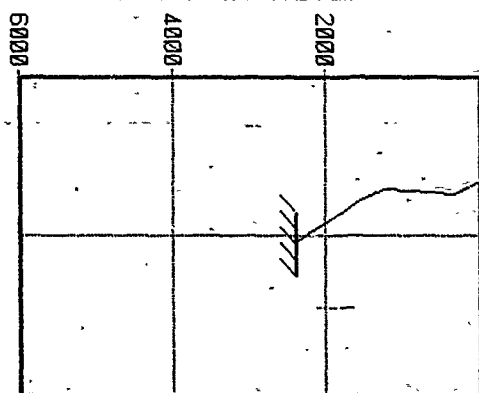
DB LOSS



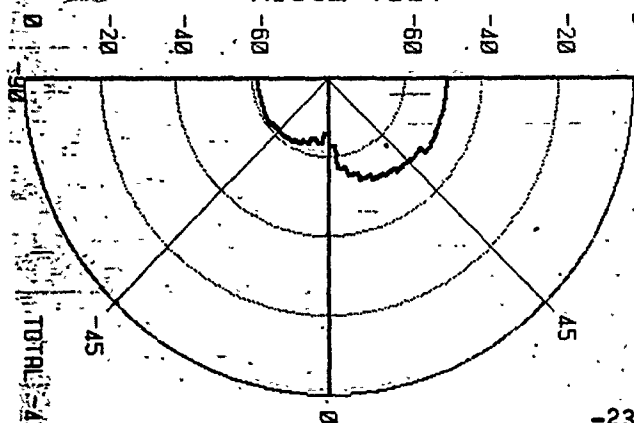
ARRIVAL ANGLE



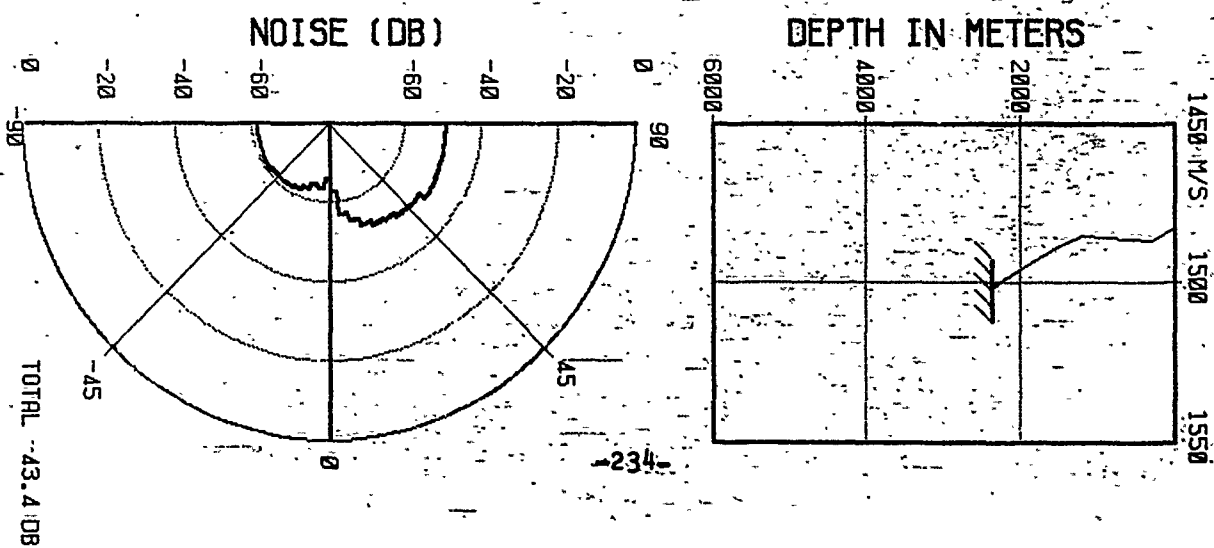
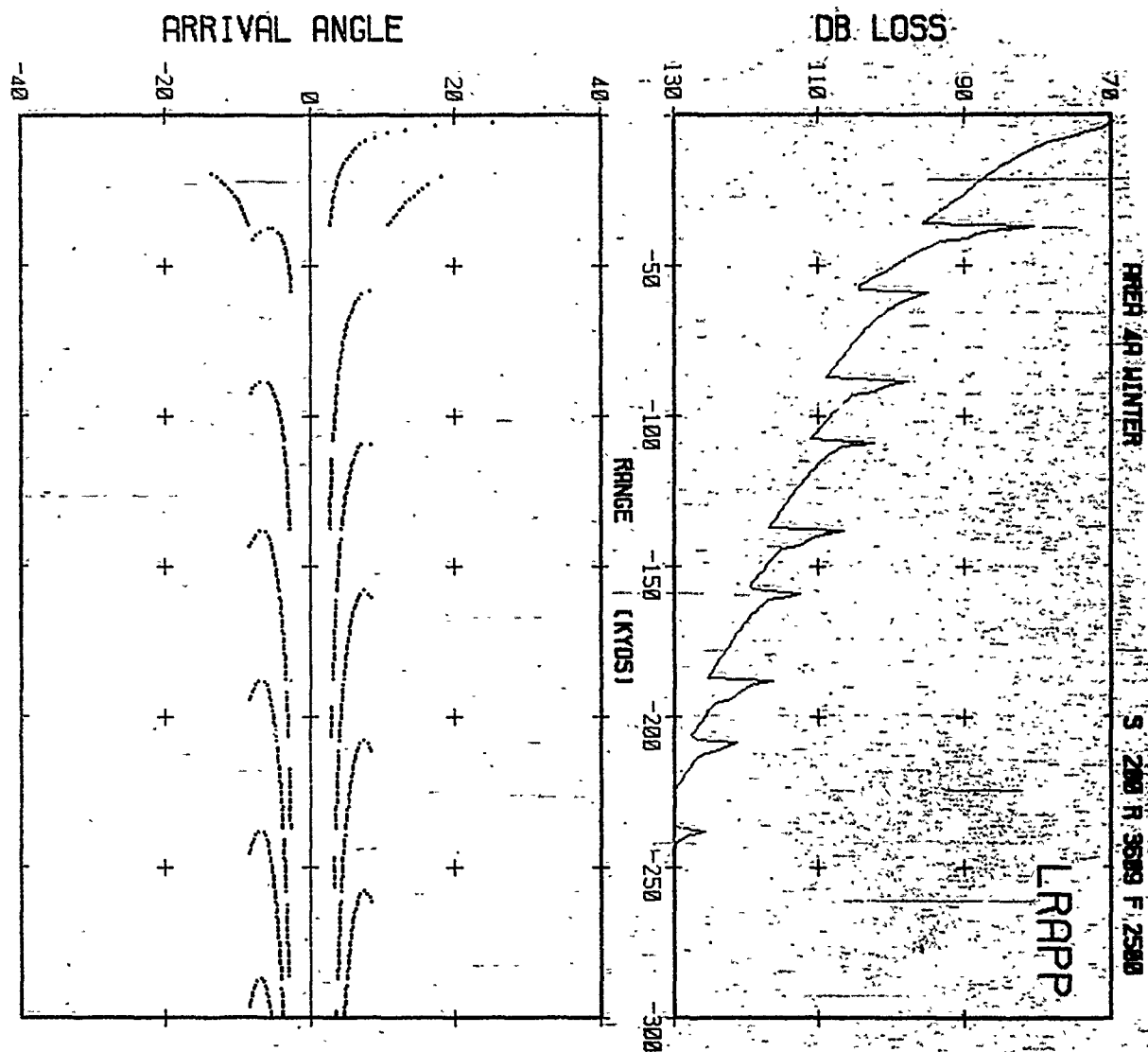
DEPTH IN METERS

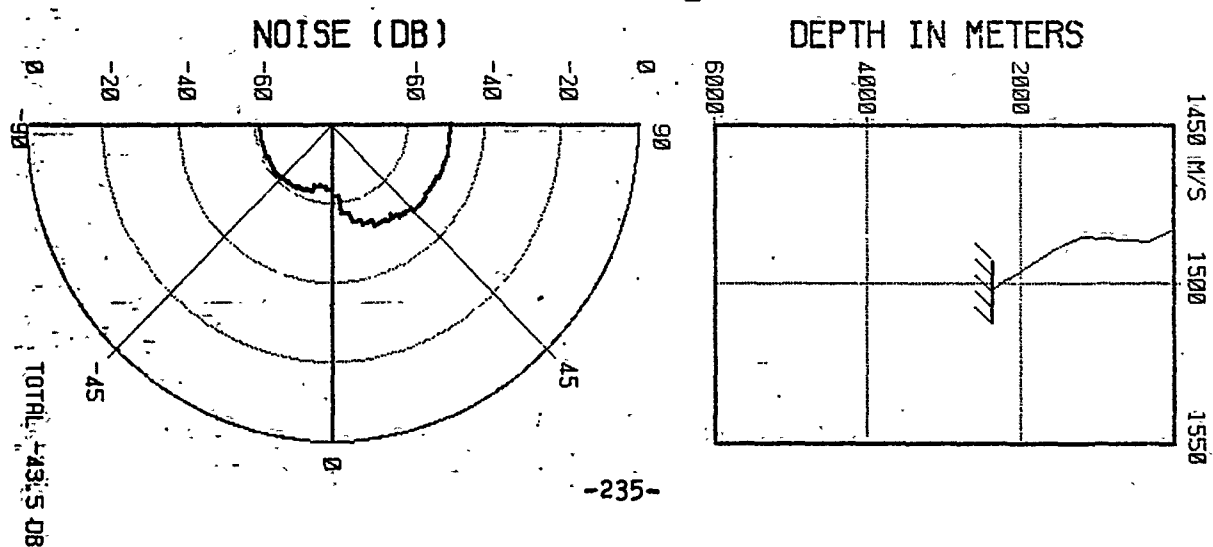
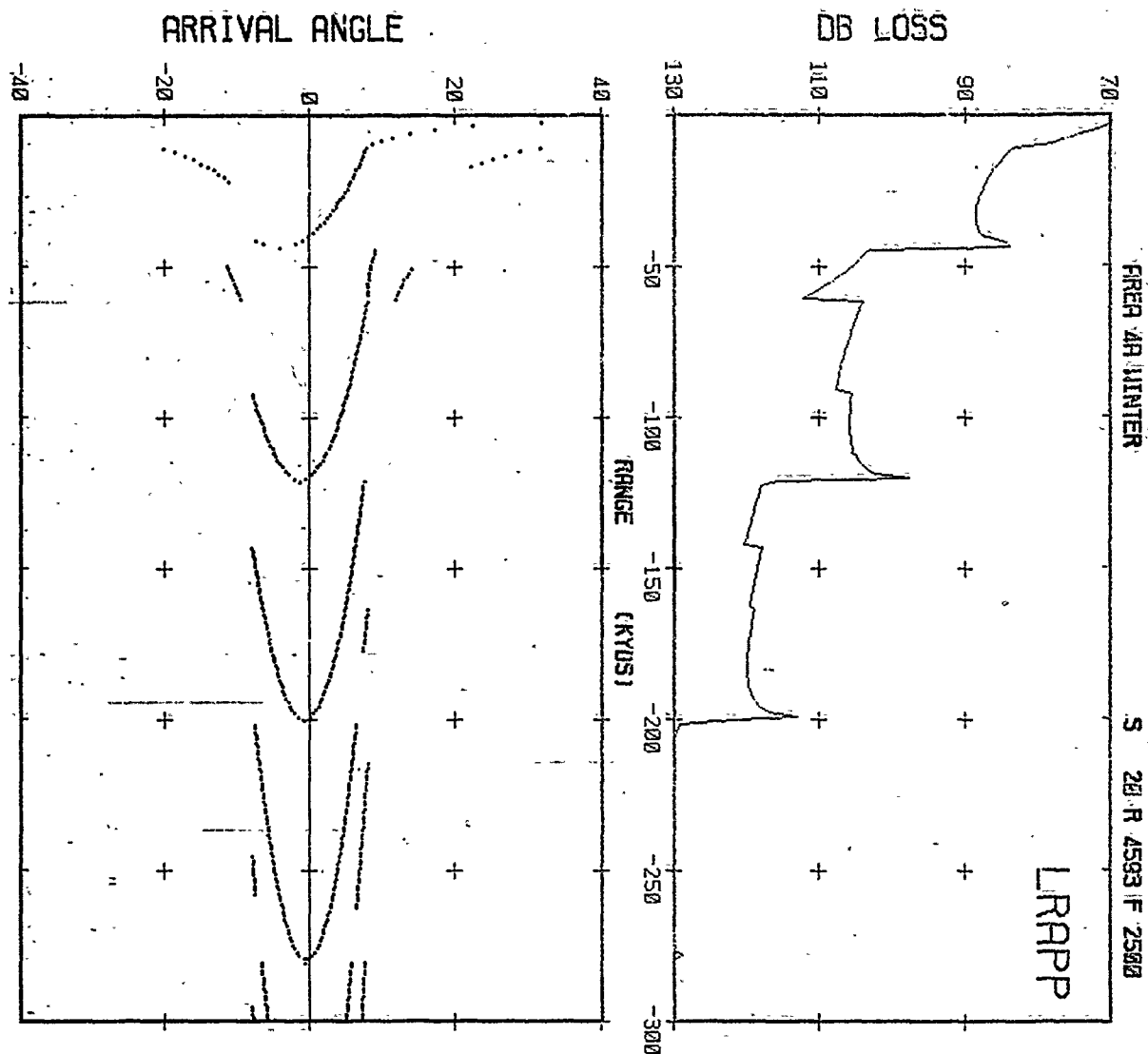


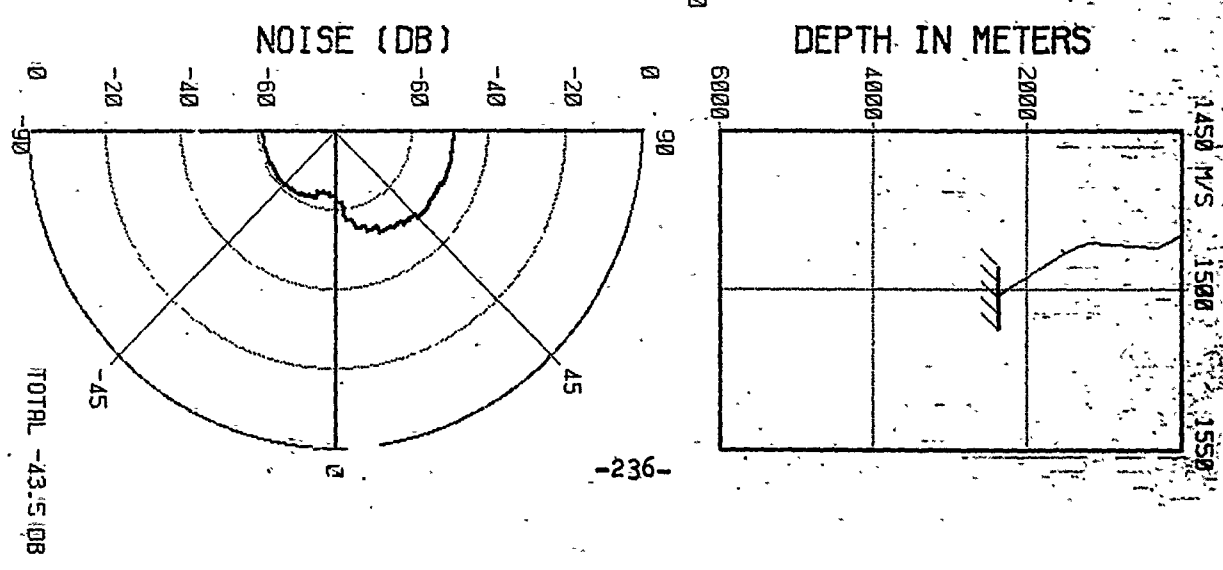
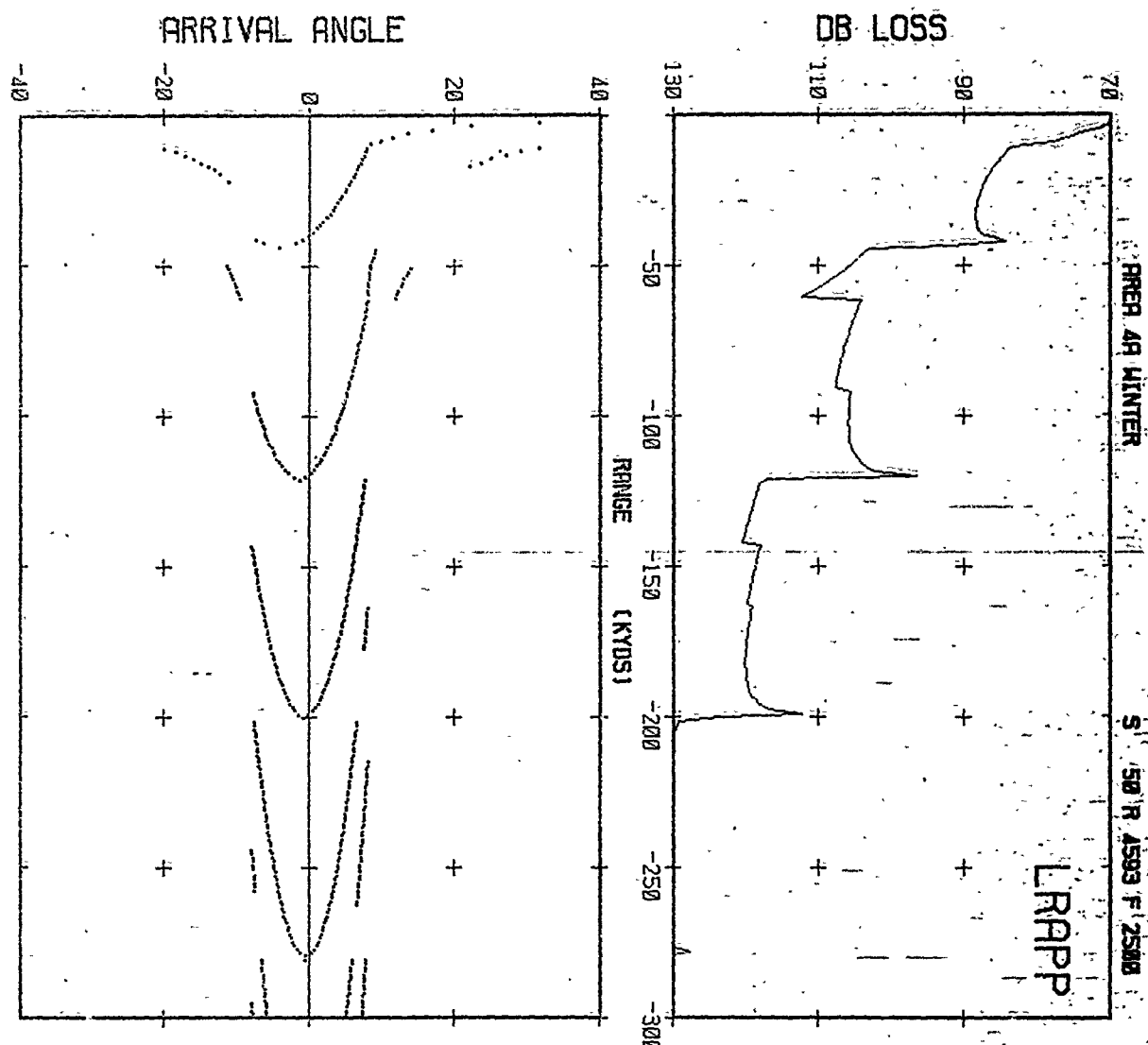
NOISE (DB)

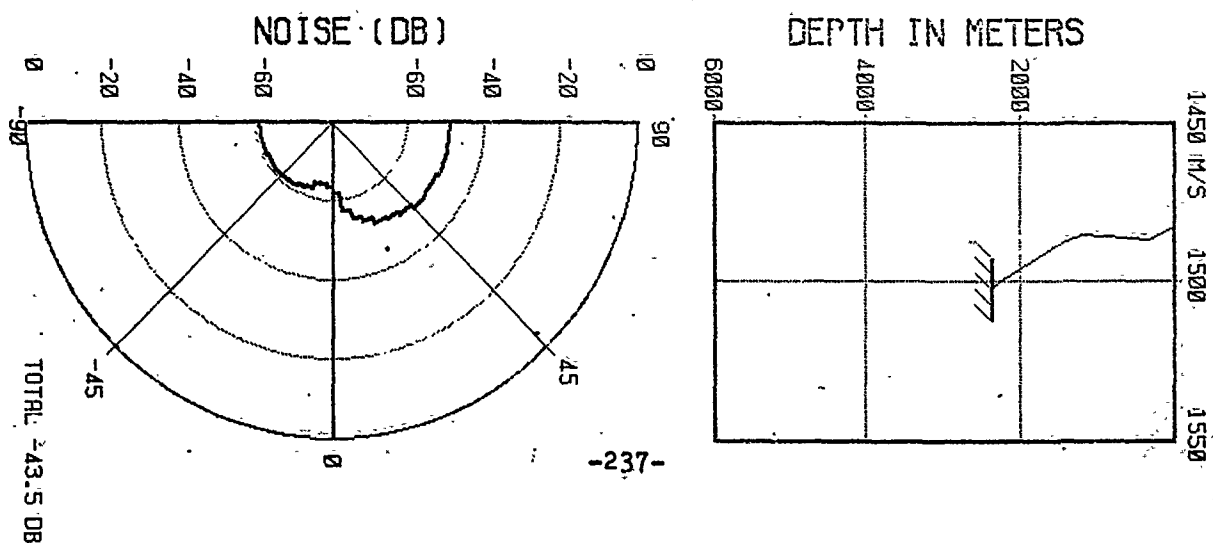
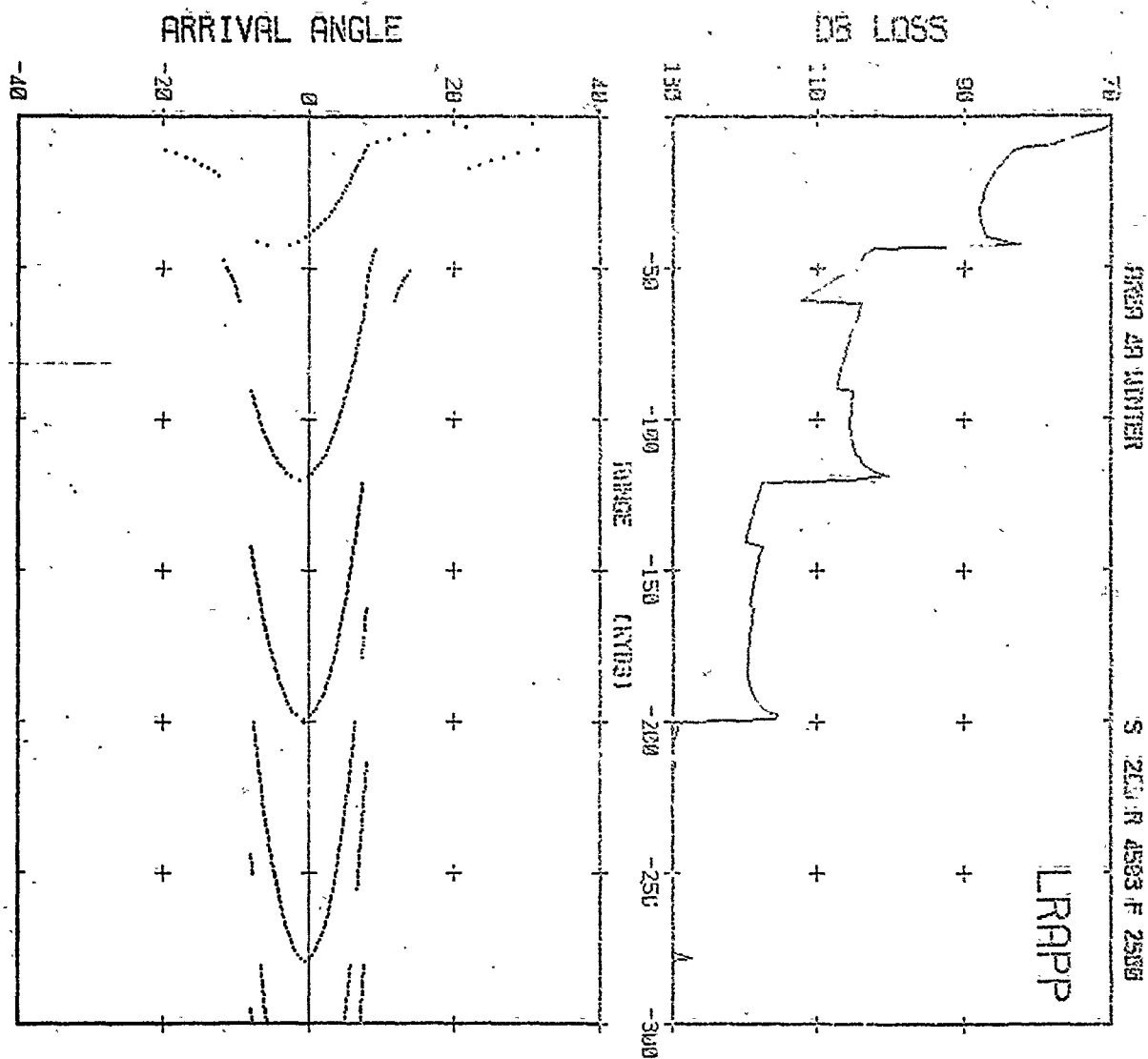


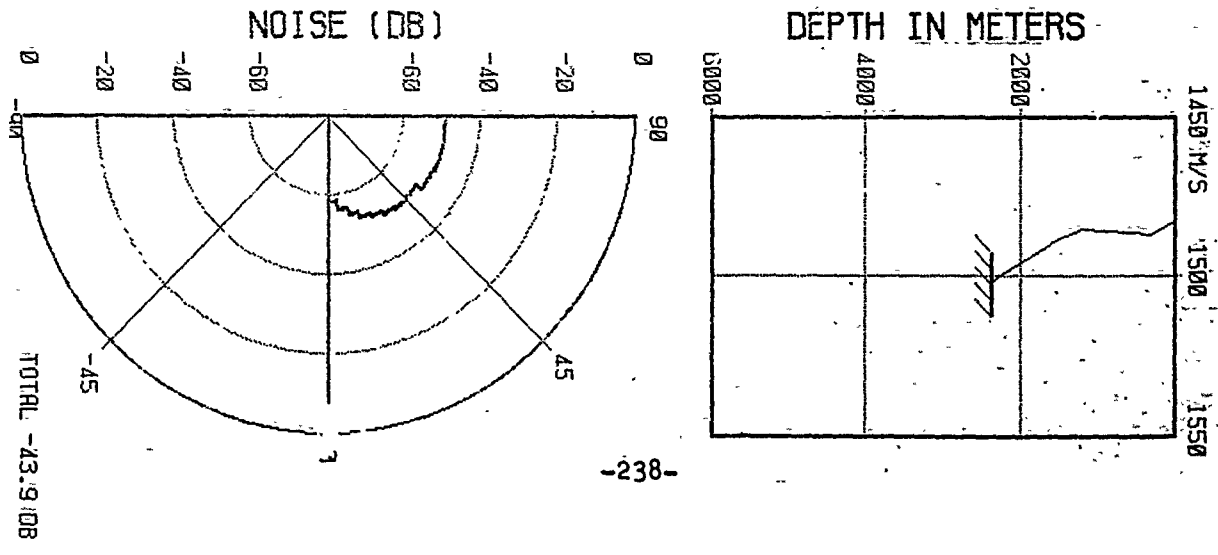
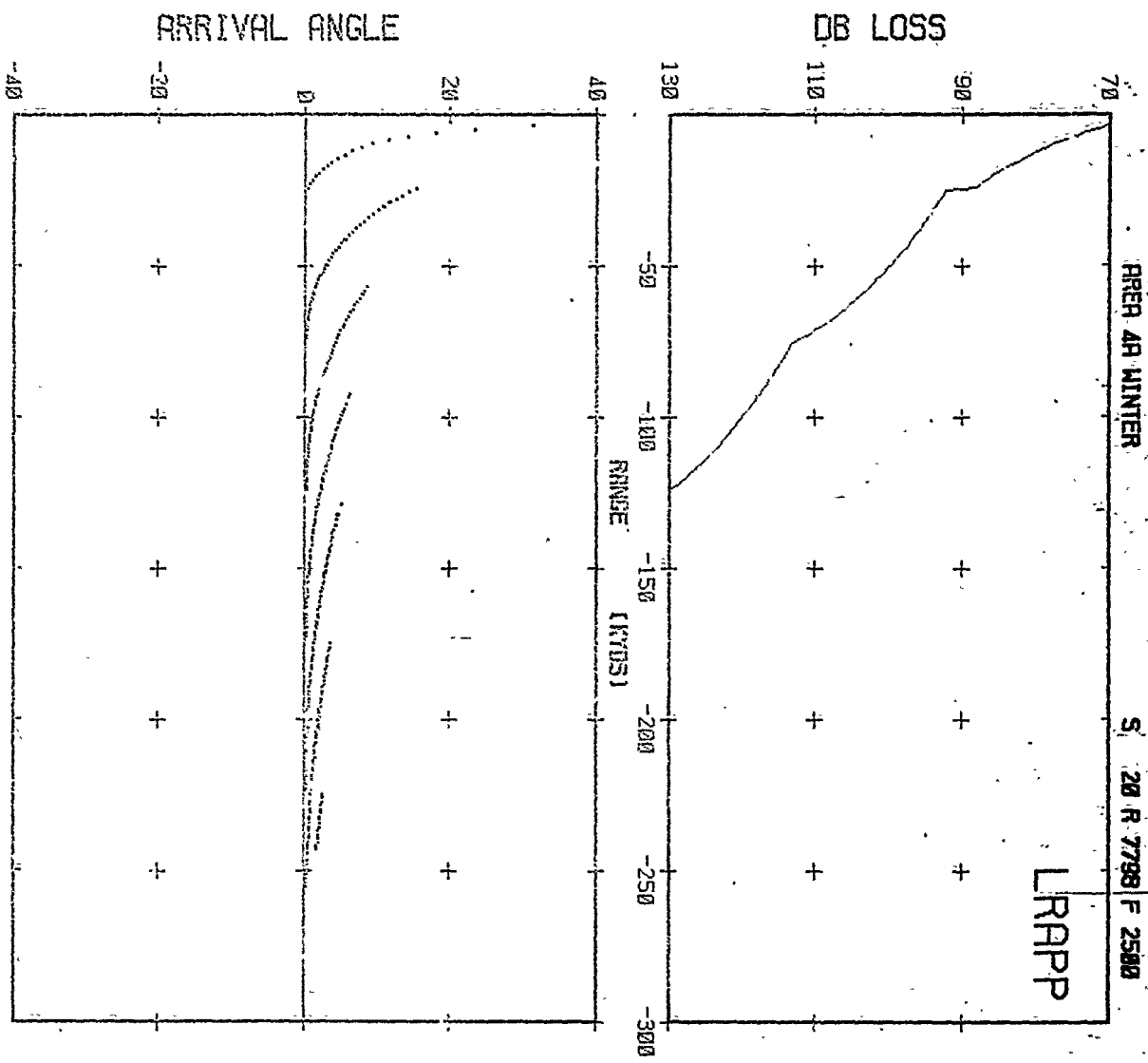
TOTAL 43.2 DB

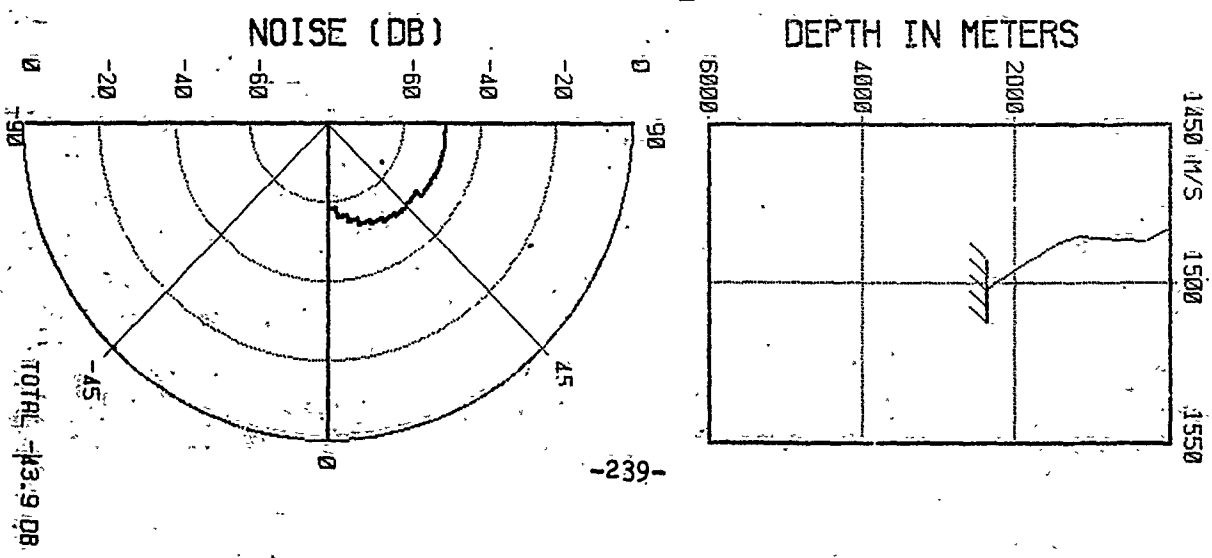
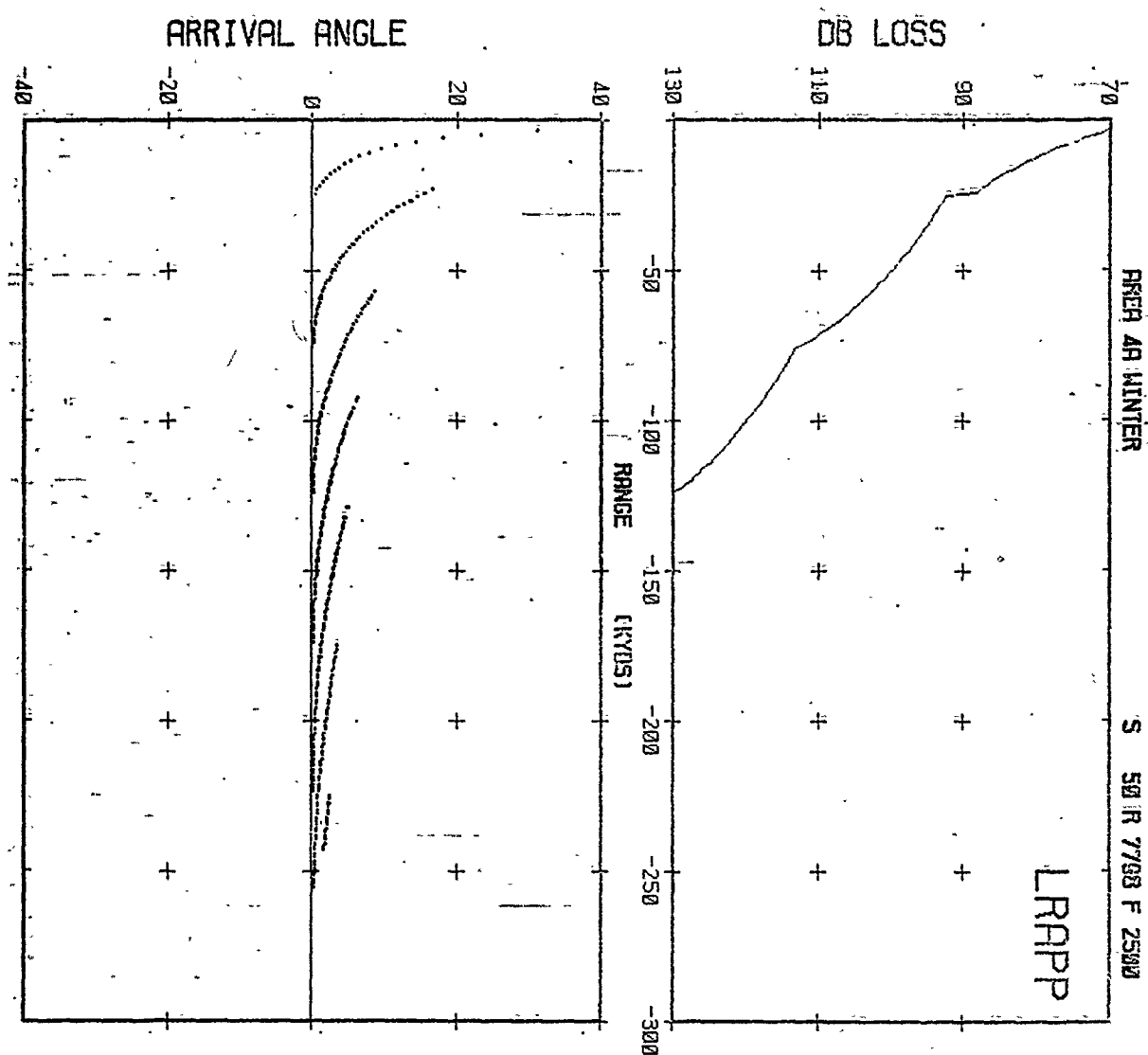










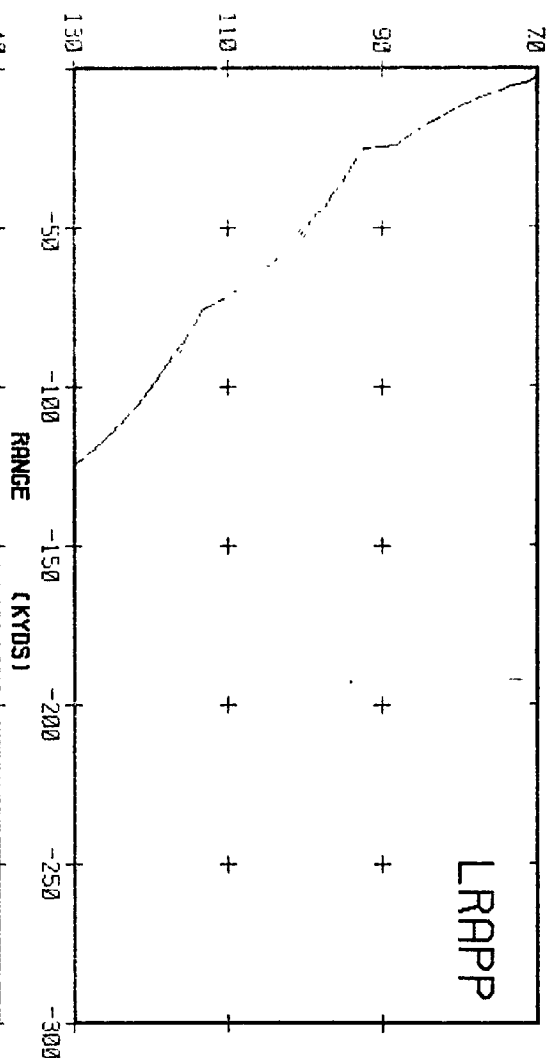


GREEN AR WINTER

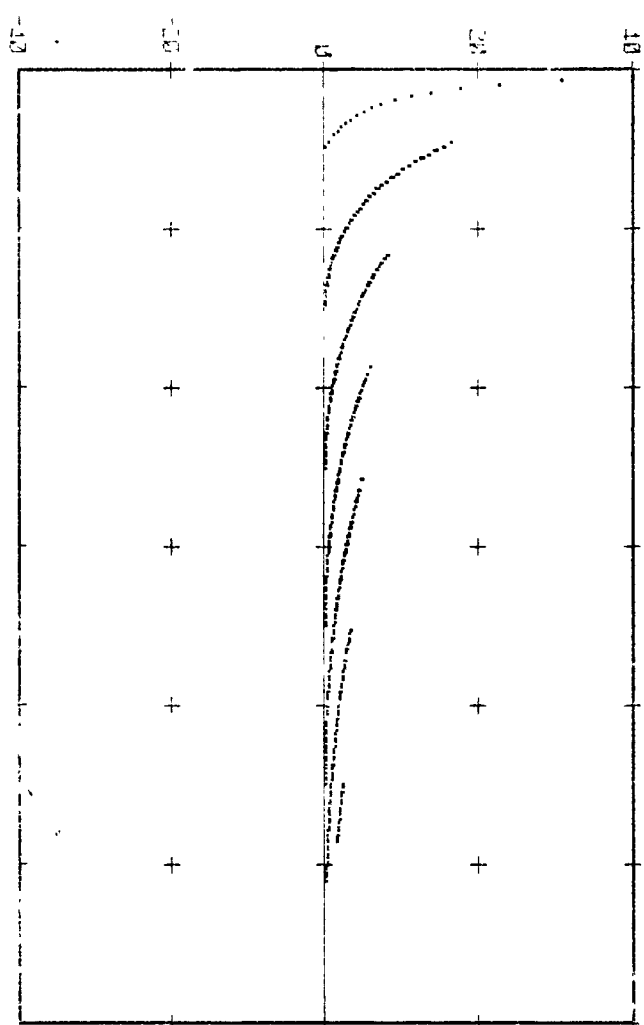
S 200 R 7798 F 2500

1450 M/S 1500

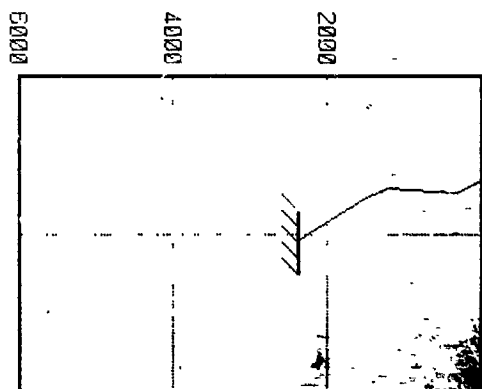
DB LOSS



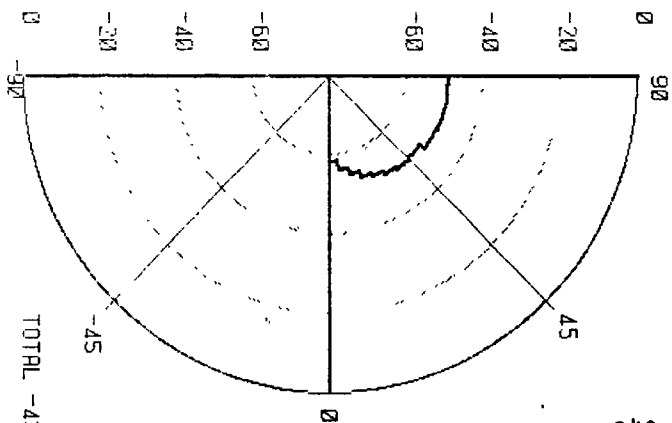
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.9 DB



DEPARTMENT OF THE NAVY

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IN REPLY REFER TO:

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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.

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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
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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 ~~AD0910344~~ ; 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 52-3374~~	U