

KAIREI CRUISE (KR00-08)

Seismic Survey

near Kozu and Miyake islands

(2000 年 神津島・三宅島近海調査)

Cruise Report

(November 21, 2000 - November 27, 2000)

November 30, 2000

Tetsuro TSURU

Frontier Research Program for Subduction Dynamics

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Summary

The KR00-08 cruise was conducted, as an urgent study in the sea near Miyake island where volcanic activity still continues, by Deep Sea Research Department and Frontier research program for subduction dynamics.

Main objective of the cruise is to reveal existence of a magma chamber and tectonic movements caused by a volcanic activity in the study area.

During the cruise we used the R/V "KAIREI" of JAMSTEC to conduct a multichannel reflection seismic (MCS) survey near the Miyake island from 21 November to 27 November, 2000.

Even though bad weather during the survey, we acquired approximately 200 km of MCS data by a 156-channel digital streamer cable. Eight 1500 cubic inch air-guns were used as the seismic energy source. The survey line is shown in Figure 1. An onboard-processing result of the Line KR101 was shown in Figure 2.

Finally, thanks are due to Captain Ishida, Seismic Party Chief Katayama, and the crew and technical staff of the R/V KAIREI for their support, especially advance investigation of wave and current strength, which makes observations possible in a short and seasonally unsuitable time-window.

1. Survey outline

1.1 Survey area

The survey area of KR00-08 cruise is located southern off the Kanagawa prefecture, as shown in Figure 1. During the survey, the following seven survey lines were planned and four of these were observed.

Line Name	Direction	Length planed	Length observed
KR101	NW-SE	80 km	53.30 km
KR102(KR102-R)	NE-SW	50 km	48.35 km
KR103	NE-SW	50 km	54.50 km
KR104(R104-R)	NE-SW(N-S)	50 km	36.10 km
KR105	NE-SW	50 km	0.0 km
KR106	NE-SW	50 km	0.0 km
KR107	NW-SE	40 km	0.0 km
Total	Line Length	370 km	192.25 km

1.2 Time schedule

The R/V KAIREI has left the JAMSTEC Natsushima port on 21 November 2000, and has come back to the Yokosuka-Shinko port on 27 November 2000 in this cruise.

During the cruise, we conducted some examinations of an MCS data acquisition system such as a streamer-cable balancing modification, data telemetry testing of a recording system and a navigation system.

A detailed time schedule is shown in Table 1.

1.3 Weather and sea status

A seasonal wind frequently blows from the north in the survey area in November. Therefore, weather in the area was almost bad through the survey, so that sea status was mostly unstable excluding two days, November 24 and 25, when seismic data of four lines were obtained on.

1.4 Participants

Participant researchers on KR00-08 cruise are as follows:

Tetsuro TSURU, Frontier research program of subduction dynamics, JAMSTEC (Chief scientist)
Gou Fujie, Deep Sea Research Department, JAMSTEC

Participants who operate the vessel as officers, engineers and crews are shown in Table 2.

2. Observation system

The observation systems for the MCS survey are as follows:

- Streamer cable: Syntron 24-bit digital streamer
- Air gun: Bolt par airgun Model 1500
- Recording system: Syntron SYNTRAK 960
- Navigation system: Concept SPECTRA
- Processing software: JGI iXL

Detailed information of the above systems are shown in the Attachment 1.

Furthermore, we used the following systems for observing geoscience data.

- Shipboard three component magnetometer: Tierra Technica, SFG-11214
- Proton precession magnet meter: Kawasaki Geological Engineering Co., LTD,
PRT10 magnetometer
- Gravity meter: BODENSEEWERK, KSS31 marine gravity meter
- Multi-narrow beam : SeaBeam Instruments, SEA BEAM 2112

3. Survey specifications

The specifications of MCS reflection data acquisition are shown in Table 3.

4. MCS onboard-processing result

We have carried out onboard processing of MCS data by the iXL software. Figure 2 shows a CDP stacked section of the line KR101. From this figure, we can recognize continuous reflectors with strong amplitudes and low frequencies north of the Kozu island, while there are

no remarkable reflections with such amplitudes and frequencies near the Miyake island at this moment.

Table 1. 調査日程表

月日	時刻	作業項目	備考
11/21	07:30	センター出港	
		調査海域の北端で8の時走行実施	
	14:30 ~21:15	ストリーマー浮力調整作業	ケーブル1本当たりに、約700gの鉛を4個ずつ付ける
11/22		荒天待機中に調査海域内の波浪および潮流調査を実施(Figure 3)	15~20m/sの北風
11/23	午前中	荒天待機中に調査海域内の波浪および潮流調査を実施(Figure 3)	15~20m/sの北風
	16:00	エアガン投入開始	15~20m/sの北風
	23:30	ストリーマー巻出し開始	15m/sの北風
11/24	02:10	KR101 測線観測開始	北西端から開始
	11:00	観測終了	
	12:35	KR104-R 測線観測開始	南端から開始
	16:25	観測終了	
	17:45	KR102-R 測線観測開始	北東端から開始
	22:15	突如、本船が360m西に引きずられた。ストリーマーケーブルも急に800mまでドリフトした。大きな曳航ノイズが混入した。	渦潮の影響か？
	22:45	通常の曳航状態に戻る	
11/25	01:40	観測終了	
	03:10	KR103 測線観測開始	南西端から開始
	09:50	観測終了	
		8の字走行実施	
	09:50	ストリーマー巻き取り開始	
	13:00	エアガン揚収開始	
	15:10	作業終了	
	15:30	SeaBeamによる海底地形調査を実施	三宅島の西側と南側の海域
11/26	12:00	海底地形調査終了	
		回航	
11/27	09:00	横須賀新港に入港	

Table 2. Participants in KR00-08 Cruise

(1/2)

船端艇部署表 LIFEBOAT STATION							
1号艇 (右舷) No.1 lifeboat (starb'd)				2号艇 (左舷) No.2 lifeboat (port)			
乗組員 Crew							
職名 Rank		任務 Duty	携行品 Goods	職名 Rank		任務 Duty	携行品 Goods
船長 Captain	石田 貞夫 Ishida	総指揮 General Commander	重要書類、双眼鏡、時計 Important Brief, Binocular, Clock	次席船長 Assist. Capt.	請藏 栄孝 Ukekura	艇指揮 Boat Commander	重要書類、双眼鏡、時計 Important Brief, Binocular, Clock
二航士 2/O	吉田 力太 Yoshida	艇長 Skipper	トランシーバ、海図、遭難信号類 Transceiver, Chart, Distress signals	一航士 C/O	折田 行徳 Orita	艇長 Skipper	トランシーバ、海図、航海用具 Transceiver, Chart, Nav' Equip.
機関長 C/E	木村 敏廣 Kimura	船長補佐 Assistant Capt.	重要書類 Important Brief	三航士 3/O	井澤 光太 Izawa	艇指揮補佐 Assist. Com.	EPERB、航海日誌、遭難信号類 EPERB, Logbook, Distress Signals
二機士 2/E	金田 和彦 Kaneda	艇機関始動 Starting Eng.	重要書類 Important Brief	一機士 1/E	梶西喜代徳 Kajinishi	艇指揮補佐 Assist. Com.	応急工具、医薬品 Emergency tools, Medical goods
電士長 C/Op	那須東輝登 Nasu	通信連絡 Radio Operation	重要書類、双方向無線電話、SART Important Brief, Transceiver, SART	三機士 3/E	間谷 宏宏 Matani	艇機関始動 Starting Eng.	機関日誌、応急工具 Eng logbook, Emergency tools
三電士 3/Op	服部 岳人 Hattori	通信伝令 Messenger	医薬品 Medical goods	二電士 2/Op	齋竹 弘恭 Saitake	通信連絡 Radio Operation	重要書類、双方向無線電話、SART Important Brief, Transceiver, SART
甲板長 Boatswain	中村 金吾 Nakamura	降下準備指揮(ウインチ操作) S/B Lowering Boat Leader	遭難信号類 Distress signals	甲板手 Able Seaman	佐々木 栄 Sasaki	降下準備指揮(ウインチ操作) S/B Lowering Boat Leader	毛布 2枚 2 Blankets
甲板手 Sailor	田中 英徳 Tanaka	降下準備(もやい索準備、スッパ-外し) S/B Lowering Boat	毛布 2枚 2 Blankets	甲板手 Able Seaman	濱岡 正継 Hamaoka	降下準備(もやい索準備、スッパ-外し) S/B Lowering Boat	毛布 2枚 2 Blankets
甲板手 Able Seaman	清水 克己 Shimizu	降下準備(もやい索準備、スッパ-外し) S/B Lowering Boat	毛布 2枚 2 Blankets	甲板員 Ord. Seaman	鹿摩 敬二 Shikama	降下準備(もやい索準備、スッパ-外し) S/B Lowering Boat	毛布 2枚 2 Blankets
甲板手 Able Seaman	副島 隆史 Soejima	降下準備(もやい索準備) S/B Lowering Boat	毛布 2枚 2 Blankets	操機手 Oiler	福原 猛 Fukubara	艇機関始動補助 Starting Eng. Assistant	艇機関燃料、毛布 2枚 F.O, 2 blankets
操機長 No1 Oiler	益永 政幸 Masunaga	艇機関始動補助 Starting Eng. Assistant	艇機関燃料、毛布 2枚 F.O, 2 blankets	機関員 Oiler	橋本 知幸 Hashimoto	降下準備 S/B Lowering Boat	艇機関燃料、毛布 2枚 F.O, 2 blankets
操機手 Oiler	張本 恒雄 Harimoto	降下準備 S/B Lowering Boat	艇機関燃料、毛布 2枚 F.O, 2 blankets	機関員 Oiler	井町 欣司 Imachi	降下準備(もやい索準備) S/B Lowering Boat	毛布 2枚 2 Blankets
司厨長 C/S	高島 香 Takashima	食料積込指揮 Loading Foods Leader.	食料、毛布 2枚 Foods, 2 blankets	司厨手 Cook	平山 恭一 Hirayama	食料積込 Loading Foods	食料、毛布 2枚 Foods, 2 blankets
司厨手 Cook	波佐谷吉信 Hasatani	食料積込 Loading Foods	食料、毛布 2枚 Foods, 2 blankets	司厨手 Cook	竹馬 幸秀 Chikuba	食料積込 Loading Foods	食料、毛布 2枚 Foods, 2 blankets
司厨員 Steward	大野 友也 Ono	食料積込 Loading Foods	食料、毛布 2枚 Foods, 2 blankets				

KR00-08 21st Nov. ~ 27th Nov. 2000

乗組員 29名 Amount 29 crews

21st Nov. 2000

総端艇部署表 LIFEBOAT STATION

1号艇 (右舷) No.1 lifeboat (starb'd)				2号艇 (左舷) No.2 lifeboat (port)			
研究者等 Scientists							
所属 Org.	職名 Rank	氏名 Name	携行品 Goods	所属 Org.	職名 Rank	氏名 Name	携行品 Goods
JAMSTEC	首席研究員 Chief Scientist	鶴 哲郎 Tsuru	重要書類、毛布 2 枚 Important Brief, 2 blankets	JAMSTEC	研究員 Scientist	藤江 剛 Fujie	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	片山 健 Katayama	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	伊藤 誠 Itou	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	野 徹雄 No	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	佃 薫 Tsukuda	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	馬場 和美 Baba	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	今村 牧子 Imamura	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	石井 利枝 Ishii	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	橋本 結 Hashimoto	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	前澤 優子 Maezawa	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	菅野 真人 Sugano	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	細谷 慎一 Hosoya	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	田中 仁氏 Tanaka	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	清水 賢 Shimizu	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	観測技術員 Marin technician	寺田 育正 Terada	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	観測技術員 Marin technician	柴田 英紀 Shibata	重要書類、毛布 2 枚 Important Brief, 2 blankets	NME	一機士 I/E	阿部 正 Abe	重要書類、毛布 2 枚 Important Brief, 2 blankets
NME	甲板長 Boatswain	中村 真喜男 Nakamura	重要書類、毛布 2 枚 Important Brief, 2 blankets	JGI	観測技術員 Marin technician	伊藤 康光 Itou	重要書類、毛布 2 枚 Important Brief, 2 blankets
EARTH TEC.	観測技術員 Marin technician	清水 洋芳 Shimizu	重要書類、毛布 2 枚 Important Brief, 2 blankets	EARTH TEC.	観測技術員 Marin technician	山野辺 仁 Yamanobe	重要書類、毛布 2 枚 Important Brief, 2 blankets
研究者等 22 名 Scientists 22per.							

KR00-08 21st Nov. ~ 27th Nov., 2000

1号艇 No.1 lifeboat 26per.

2号艇 No.2 lifeboat 25per

総員 51 名 Amount: 51 per.

21st Nov. 2000

Master

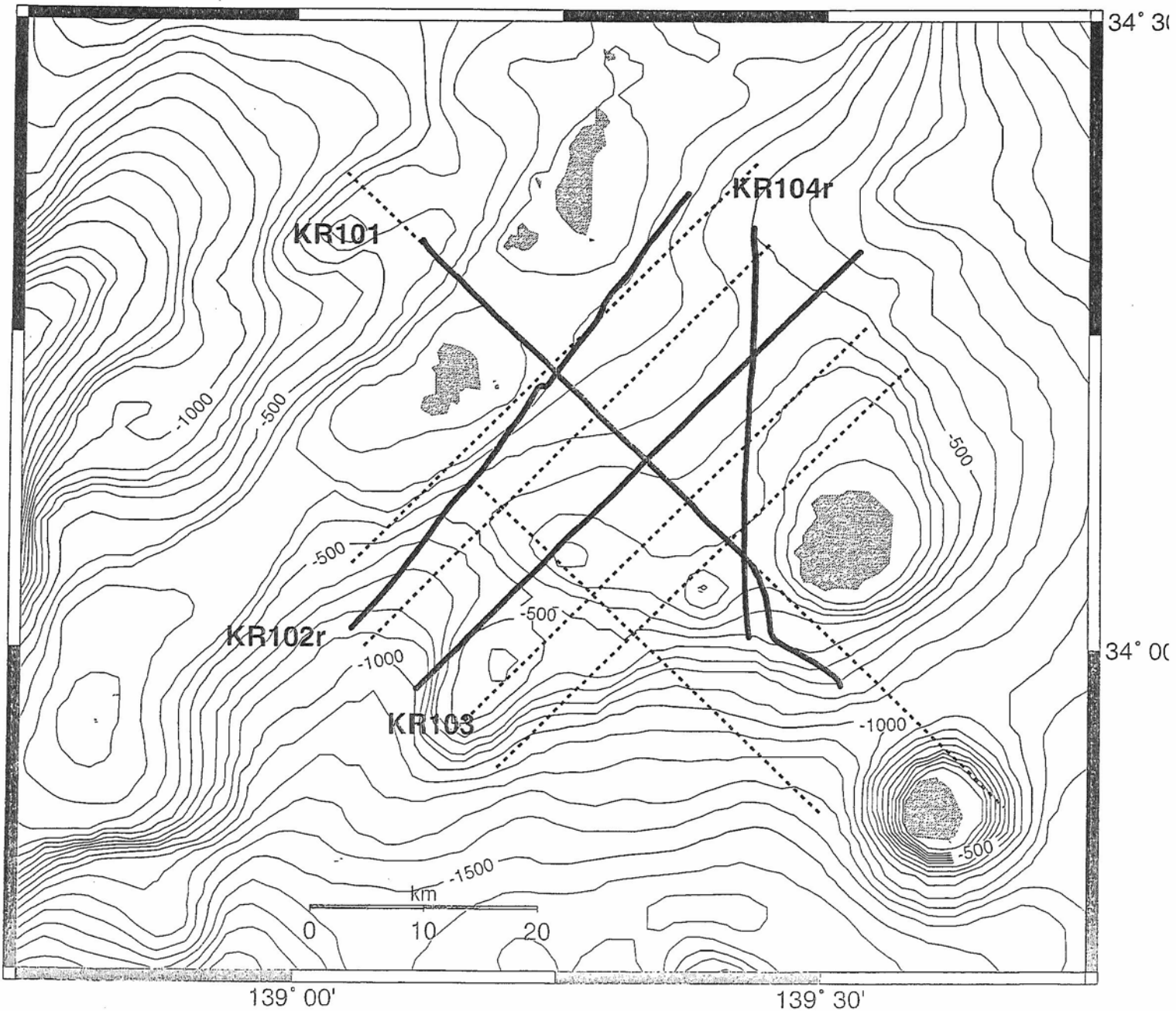


Table 3. Specification of MCS data acquisition

Shot interval	50 m
Group interval	25 m
Total channel number	156 ch
Minimum offset	270 m (standard)
Maximum offset	4250 m (standard)
Source type	Airgun, 8×1500 cu.in., 2000 psi
Receiver type	Hydrophone, 24 bit digital streamer
Source depth	10 m (standard)
Receiver depth	20 m (standard)
Record length	15.36 sec
Sampling interval	4 msec
Water delay	0 sec (なし)
Recording system	Syntrak 960
Filter @ recording	Low cut 3 Hz (6dB/Oct.), High cut 102 Hz (209 dB/Oct.)
Output tape format	SEG-D
Navigation	Differential GPS

Fig.1 Survey area and seismic lines

KR0008



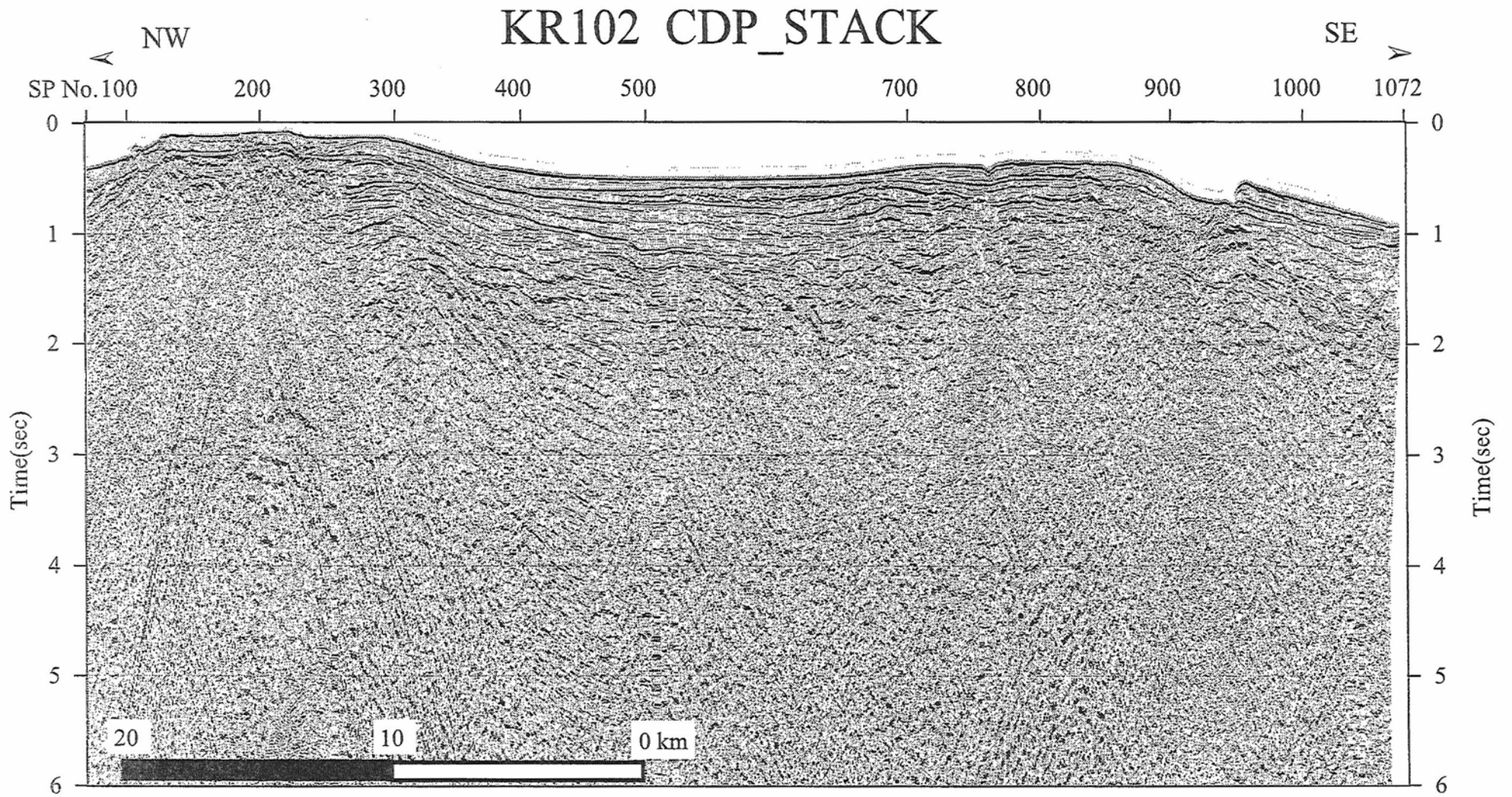
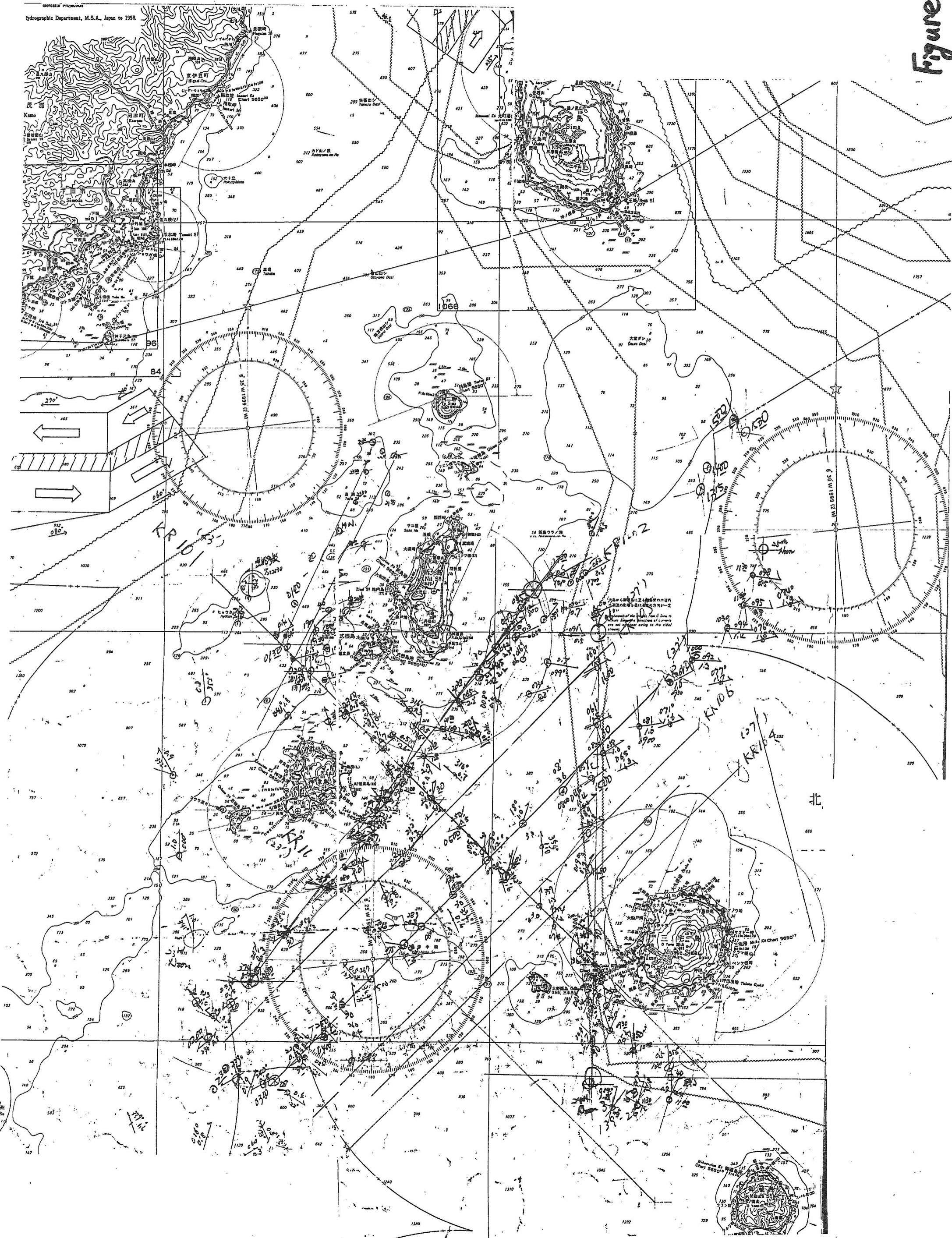


Fig. 2



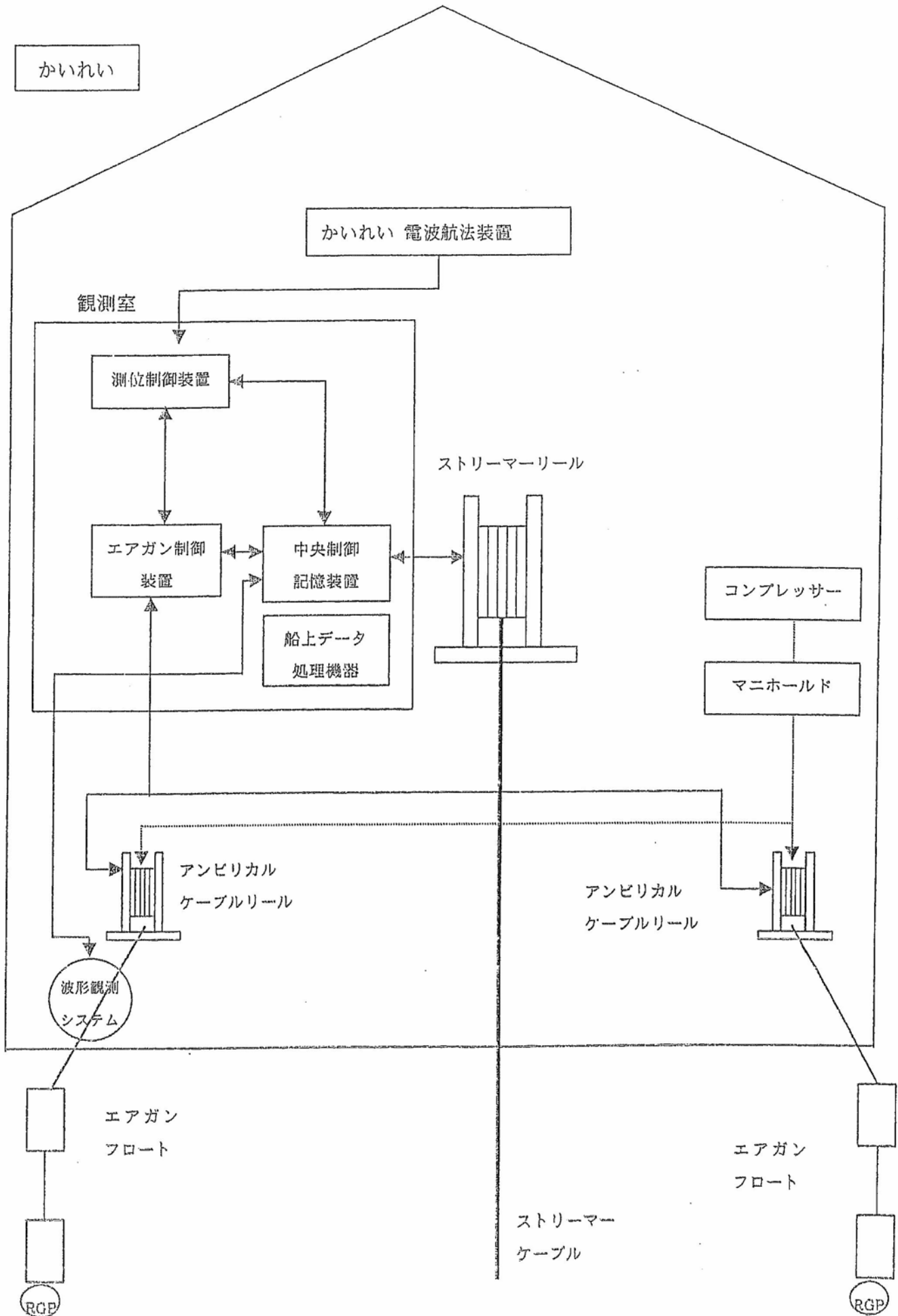
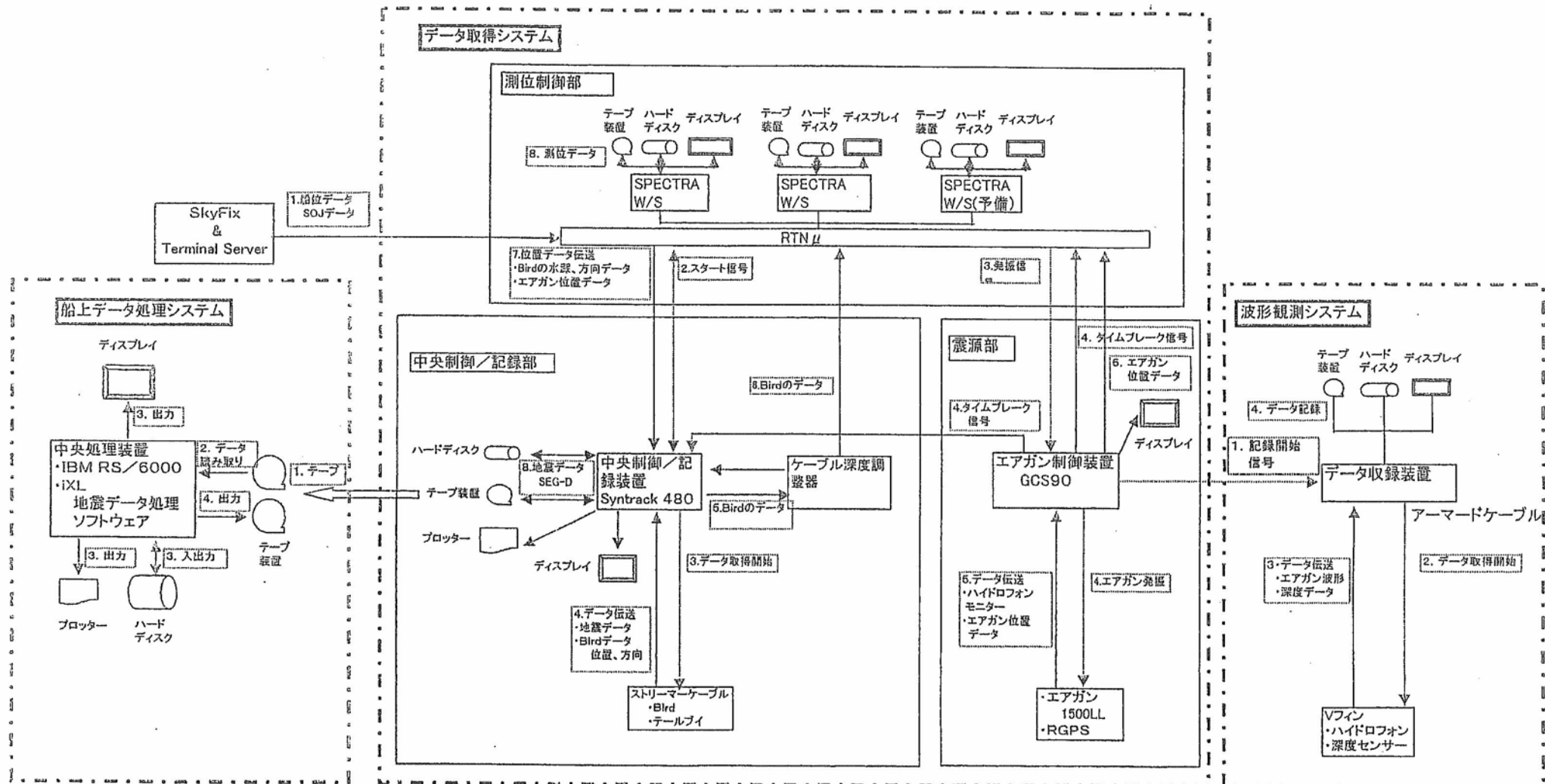


図-1 機器接続図 (かいれい)



入力データ

- 1) データ取得システムのテープ
- 2) 測位システムのテープ

注-1) 番号は流れの順番

注-2) データフォーマット

SEG-D 別紙-1参照

SOJ 別紙-2参照

----- コマンドの流れ

----- データの流れ

図-2 システム構成図(かいいい)

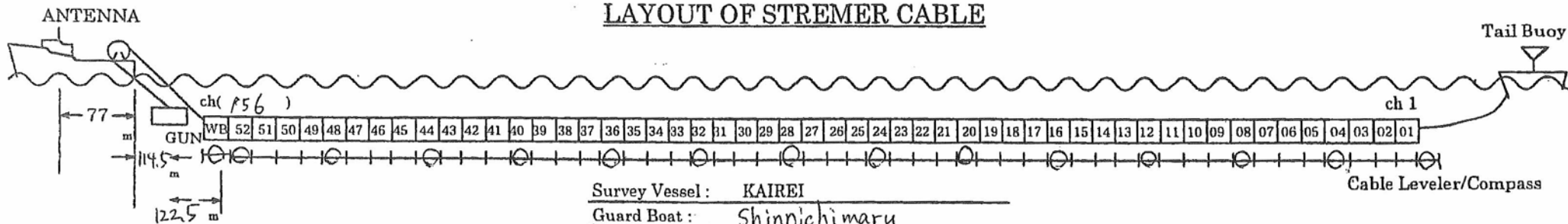
KROO-08 測線名 KR101

測地系	WGS84 U.T.M54
Shot Mode	DAlong Track
Shot Interval	50m
観測開始位置	34° 19' 22.263" N 139° 07' 13.608" E
観測開始時刻	2000.11.24 1:32(JST)
観測終了位置	33° 58' 19.122" N 139° 30' 55.914" E
観測終了時刻	2000.11.24 10:43(JST)
観測総時間数	9h09m
測線長	53314.43m
測線方向	136.77682
予定観測開始点	34° 22.75' N 139° 02.82' E
予定観測終了点	33° 52.66' N 139° 40.21' E
予定測線方向	133.885°
総Shot数	1065
F.S.P	Sp.1185
F.G.S.P	Sp.1250
L.S.P	Sp.2250
L.G.S.P	Sp.2247
Lost Shot No.	
備考	
F.G.S.P	
JST 02:03:12	34° 18' 04.850" N 139° 08' 40.173" E

MARINE SURVEY GENERAL INFORMATION

GENERAL		RECORDING	NAVIGATION
CLIENT PROSPECT AREA	JAMSTEC KR00-08 三宅島	INSTRUMENTS SYNTRAK 480 Digital Streamer System MultiTRAK Streamer Cable Utility System GCS 90 GUN Controller System GS-624 Thermal Plotter	PRIMARY BACK-UP SHOT MODE
LINE DIRECTION DATE	KR101 NW → SE (136°) 00.11.24 ~ 00.11.24		D-GPS DISTANCE, TIME: _____ sec
WEATHER WIND SEA CONDITION	cloudy NNE 3 slight	RECORDING SAMPLE RATE 1 2 4 msec RECORD LENGTH 15.0 sec WATER DELAY 0 msec DIGITAL LOW CUT FILTER 3 Hz 6 dB/oct. ANALOG LOW CUT FILTER 3 Hz 6 dB/oct. ANALOG HIGH CUT FILTER 102 Hz 209 dB/oct. PRE-AMPLIFIER GAIN 12 dB GAIN CONTROL 24bit Fixed 84 dB, 12 dB step	REMARKS CABLE NOISE _____ μ Bar SOL. TAPE No. 1 FILE No. 1 EOL. TAPE No. 16 FILE No. 1073 DEAD TRACE _____ WILD TRACE _____ WEAK TRACE _____
FIRST SP No. 1185 TIME LAST SP No. 2250 TIME	FILE No. 7 1 H 34 M 05 FILE No. 1072 10 H 42 M 51		
Number of Channels Channel Interval Shot Point Interval CDP Fold Cable Depth	156 6.25, 12.5, 25 m 50 m 3900 % 20 m	TAPE FORMAT DIGITAL TAPE FORMAT 8048 SEG-D 4 Byte Hexadecimal RECORDING FORMAT Double Density, GCR DATA DENSITY 37871 BPI AUX. CH CONTENTS AUX. 1: SYS TB AUX. 2: GCS TB AUX. 3: WB AUX. 4: Gun port 1,2 Hyd. AUX. 5: Gun port 3,4 Hyd. AUX. 6: Gun starboard 1,2 Hyd. AUX. 7: Gun starboard 3,4 Hyd.	STREAMER ACTIVE STREAMER 75m x 52 HYDROPHONE TYPE BENTONHS Reduced Diameter Array hydrophone SENSITIVITY -194dB re 1V / μ Pa (20 μ V / μ Bar) No. of HYDROPHONE in GROUP 8, 16, 32 FRONT STRETCH SECTION 50m x 2 TAIL STRETCH SECTION 50m x 2
SOURCE		MONITOR PLAYBACK GAIN ACG, PCG, FIXED (60 dB) SINGLE TRACE PLOT CHANNEL TRACE No. 156	
GUN Type SHOT Type No. of Strings Configuration Total Volume GUN Depth GUN Separation Air Pressure	Par AIR GUN FLIP-FLOP, SIMULATE 1, 2, 3, 4, 5, 6, 7, 8 1500 cu. in. x 8 12000 cu. in. 10 m 72 m 2000 PSIG		

LAYOUT OF STREAMER CABLE



OBSERVER: NME = KATAYAMA, TSUKUDA, MAEZAWA, SHIMIZU, SUGANO
JGI = ITO

FIELD TAPE No. OF THIS LINE:

1 ~ 16

マルチチャンネル反射法地震探査測線 観測仕様「かいいい」

Line	KR101
	2000/11/24
FSP	1185
FGSP	1250
LSP	2250
Cours	136°
CH数	156ch
受信点間隔	25m
発信点間隔	50m
ケーブル深度	20m
サンプルレート	4ms
記録長	15秒
Low Cut Filter	3Hz
High Cut Filter	102Hz
Delay Time	0msec

測線長 53.25km

Noise Record File#1
File#1091

Noise

Remarks

測線名

KR101

Reel#	File No.	SP No.	FF/LF	REMARKS
1	1		FF	NOISE RECORD
	7	1185		First Shot Point
	68	1246	LF	
2	69	1247	FF	
	72	1250		First Good Shot Point
	136	1314	LF	
3	137	1315	FF	
	204	1382	LF	
4	205	1383	FF	
	272	1450	LF	
5	273	1451	FF	
	340	1518	LF	
6	341	1519	FF	
	408	1586	LF	
7	409	1587	FF	
	476	1654	LF	
8	477	1655	FF	
	544	1722	LF	
9	545	1723	FF	
	612	1790	LF	
10	613	1791	FF	
	680	1858	LF	
11	681	1859	FF	
	748	1926	LF	
12	749	1927	FF	
	816	1994	LF	
13	817	1995	FF	
	884	2062	LF	
14	885	2063	FF	
	952	2130	LF	
15	953	2131	FF	
	1020	2198	LF	
16	1021	2199	FF	
	1072	2250		Last Shot Point
	1073		LF	NOISE RECORD

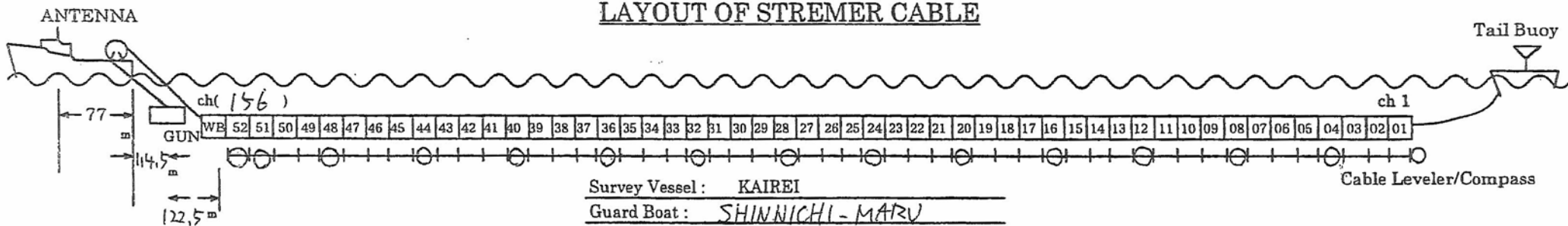
KROO-08 測線名 KR102-R

測地系	WGS84 U.T.M54
Shot Mode	DAlong Track
Shot Interval	50m
観測開始位置	34° 21' 48.401" N 139° 22' 13.305" E
観測開始時刻	2000.11.24 17:45(JST)
観測終了位置	34° 00' 59.817" N 139° 03' 12.597" E
観測終了時刻	2000.11.25 1:42(JST)
観測総時間数	7h57m
測線長	48303.38m
測線方向	217.29477
予定観測開始点	34° 03.00' N 139° 05.40' E
予定観測終了点	34° 22.00' N 139° 22.40' E
予定測線方向	216.705°
総Shot数	966
F.S.P	Sp.1010
F.G.S.P	Sp.1082
L.S.P	Sp.1976
L.G.S.P	
Lost Shot No.	
備考	
F.G.S.P	
JST 18:26:27	34° 20' 16.033" N 139° 20' 47.132" E

MARINE SURVEY GENERAL INFORMATION

GENERAL		RECORDING	NAVIGATION
CLIENT PROSPECT AREA LINE DIRECTION DATE WEATHER WIND SEA CONDITION	JAMSTEC KR 00-08 三宅島 KR 102-R NE → SW (217°) 00. 11. 24 ~ 00. 11. 25 cloudy NVE - 3 slight	INSTRUMENTS SYNTRAK 480 Digital Streamer System MultiTRAK Streamer Cable Utility System GCS 90 GUN Controller System GS-624 Thermal Plotter	PRIMARY BACK-UP SHOT MODE D-GPS DISTANCE, TIME: _____ sec
FIRST SP No. 1010 TIME LAST SP No. 1976 TIME Number of Channels Channel Interval Shot Point Interval CDP Fold Cable Depth	FILE No. 1 7 H 44 M FILE No. 967 01 H 41 M 156 6.25, 12.5, 25) m 50 m 3900 1/2 20 m	RECORDING SAMPLE RATE RECORD LENGTH WATER DELAY DIGITAL LOW CUT FILTER ANALOG LOW CUT FILTER ANALOG HIGH CUT FILTER PRE-AMPLIFIER GAIN GAIN CONTROL	REMARKS CABLE NOISE DEAD TRACE WILD TRACE WEAK TRACE SP 1086-1109 SP 1111 SP 1432 SP 1444 SP 1467 SP 1480 SP 1500 SP 1513 SP 1576
SOURCE	GUN Type SHOT Type No. of Strings Configuration Total Volume GUN Depth GUN Separation Air Pressure	TAPE FORMAT DIGITAL TAPE FORMAT RECORDING FORMAT DATA DENSITY AUX. CH CONTENTS MONITOR PLAYBACK GAIN ACG, PCG SINGLE TRACE PLOT CHANNEL TRACE No.	REMARKS SOL TAPE No. 29 FILE No. 0 EOL TAPE No. 43 FILE No. 968 Ship Noise ch 50-60 ch 140-156 ch 65-156 ch 61-140 ch 35-105 ch 35-65 ch 22 ch 133-150, sp 1584 ch 115-130
Par AIR GUN FLIP-FLOP, SIMULATE 1, 2, 3, 4, 5, 6, 7, 8 1500 cu. in. x 8 12000 cu. in. 10 m 72 m 2000 PSIG	AUX. 1: SYS TB AUX. 2: GCS TB AUX. 3: WB AUX. 4: GUN Port 1.2 Hyd AUX. 5: GUN Port 3.4 Hyd AUX. 6: GUN Sib'd 1.2 Hyd AUX. 7: GUN Sib'd 3.4 Hyd 60 dB 156	ACTIVE STREAMER HYDROPHONE TYPE SENSITIVITY No. of HYDROPHONE in GROUP FRONT STRETCH SECTION TAIL STRETCH SECTION	75m x 52 BENTONS Reduced Diameter Array hydrophone -194dB re 1V / μPa (20μV / μBar) 8, 16, 32 50m x 2 50m x 2

LAYOUT OF STREAMER CABLE



OBSERVER: NME: KATAYAMA, SHIMIZU, TSUKUDA, SUGANO, MAEZAWA
JGI: ITO

FIELD TAPE No. OF THIS LINE: 29-43

マルチチャンネル反射法地震探査測線 観測仕様「かいいい」

Line KR102-R
2000/11/24~2000/11/25
FSP 1010
FGSP 1082
LSP 1976
Cours 217°
CH数 156ch
受信点間隔 25m
発信点間隔 50m
ケーブル深度 20m
サンプルレート 4ms
記録長 15秒
Low Cut Filter 3Hz
High Cut Filter 102Hz
Delay Time 0msec

測線長 48.30km

Noise Record File#0
File#968

Noise SP#1086~SP#1109 Ship Noise
SP#1111 ch50~ch60
SP#1432 ch140~ch156
SP#1444 ch65~ch156
SP#1467 ch61-140
SP#1480 ch35-105
SP#1500 ch35-65
SP#1513 ch22
SP#1576 ch133~ch150
SP#1584 ch115~ch130

Remarks 潮流によるStreamerの蛇行
SP#1432~SP#1513 , SP#1576~SP#1584

All Shot Bird#10 No response

測線名

KR102-R

Reel#	File No.	SP No.	FF/LF	REMARKS
29	0		FF	NOISE RECORD
	1	1010		First Shot Point
	67	1076	LF	
30	68	1077	FF	
	73	1082		First Good Shot Point
	135	1144	LF	
31	136	1145	FF	
	203	1212	LF	
32	204	1213	FF	
	271	1280	LF	
33	272	1281	FF	
	339	1348	LF	
34	340	1349	FF	
	407	1416	LF	
35	408	1417	FF	
	475	1484	LF	
36	476	1485	FF	
	543	1522	LF	
37	544	1523	FF	
	611	1620	LF	
38	612	1621	FF	
	679	1688	LF	
39	680	1689	FF	
	747	1756	LF	
40	745	1757	FF	
	815	1824	LF	
41	816	1825	FF	
	883	1892	LF	
42	884	1893	FF	
	951	1960	LF	
43	952	1961	FF	
	967	1976		Last Shot Point
	968		LF	NOISE RECORD

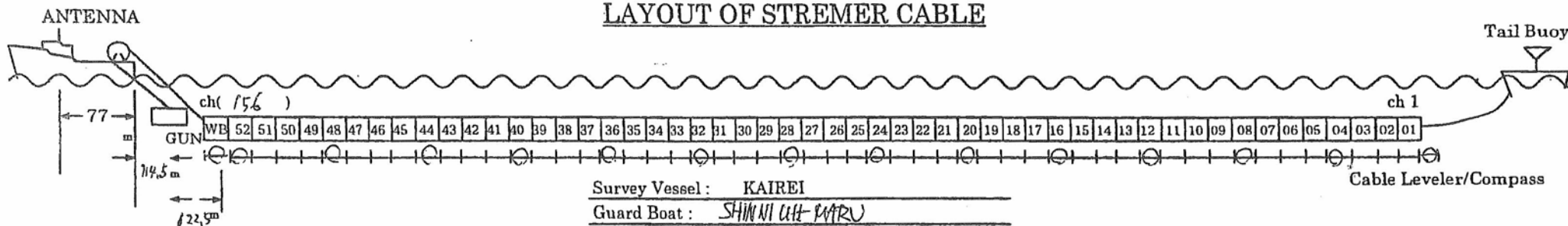
KR00-08 測線名 KR103

測地系	WGS84 U. T. M54
Shot Mode	DAlong Track
Shot Interval	50m
観測開始位置	33° 58' 06.448" N 139° 06' 55.568" E
観測開始時刻	2000.11.25 3:08(JST)
観測終了位置	34° 18' 59.691" N 139° 31' 54.500" E
観測終了時刻	2000.11.25 9:50(JST)
観測総時間数	6h42m
測線長	54448.69m
測線方向	44.7358°
予定観測開始点	33° 58.07' N 139° 06.98' E
予定観測終了点	34° 17.32' N 139° 29.81' E
予定測線方向	44.71°
総Shot数	1089
F. S. P	Sp. 1001
F. G. S. P	Sp. 1045
L. S. P	Sp. 2090
L. G. S. P	
Lost Shot No.	
備考	
F. G. S. P	
JST 03:27:20	33° 58' 56.683" N 139° 07' 56.963" E

MARINE SURVEY GENERAL INFORMATION

GENERAL	RECORDING	NAVIGATION
CLIENT <u>JAMSTEC</u> PROSPECT AREA <u>KROO-08</u> <u>三宅沖</u> LINE <u>KR103</u> DIRECTION <u>SW → NE (44.5°)</u> DATE <u>00.11.24 ~ 00.11.28</u> WEATHER <u>Cloudy</u> WIND <u>NNE 3</u> SEA CONDITION <u>slight</u> FIRST SP No. <u>1001</u> FILE No. <u>1</u> TIME <u>3 H 07 M 36</u> LAST SP No. <u>2090</u> FILE No. <u>1091</u> TIME <u>9 H 51 M 10</u> Number of Channels <u>156</u> Channel Interval <u>6.25, 12.5, 25</u> m Shot Point Interval <u>50</u> m CDP Fold <u>3900</u> 1/2 Cable Depth <u>20</u> m	INSTRUMENTS SYNTRAK 480 Digital Streamer System MultiTRAK Streamer Cable Utility System GCS 90 GUN Controller System GS-624 Thermal Plotter RECORDING SAMPLE RATE <u>1, 2, ④</u> msec RECORD LENGTH <u>15.0</u> sec WATER DELAY <u>6</u> msec DIGITAL LOW CUT FILTER <u>3</u> Hz, <u>6</u> dB/oct. ANALOG LOW CUT FILTER <u>3</u> Hz, <u>6</u> dB/oct. ANALOG HIGH CUT FILTER <u>102</u> Hz, <u>209</u> dB/oct. PRE-AMPLIFIER GAIN <u>12</u> dB GAIN CONTROL <u>24bit Fixed</u> <u>84 dB, 12 dB step</u> TAPE FORMAT DIGITAL TAPE FORMAT <u>8048 SEG-D</u> <u>4 Byte Hexadacimal</u> RECORDING FORMAT <u>Double Density, GCR</u> DATA DENSITY <u>37871 BPI</u> AUX. CH CONTENTS AUX. 1: <u>SYS TB</u> AUX. 2: <u>GCS TB</u> AUX. 3: <u>WB</u> AUX. 4: <u>Gun port 1, 2 Hyd</u> AUX. 5: <u>Gun port 3, 4 Hyd</u> AUX. 6: <u>Gun starboard 1, 2 Hyd</u> AUX. 7: <u>Gun starboard 3, 4 Hyd</u> MONITOR PLAYBACK GAIN ACG, PCG, <u>FIXED</u> (<u>60</u> dB) SINGLE TRACE PLOT CHANNEL TRACE No. <u>156</u>	PRIMARY BACK-UP SHOT MODE <u>D-GPS</u> <u>DISTANCE, TIME:</u> _____ sec REMARKS CABLE NOISE _____ μ Bar SOL. TAPE No. <u>44</u> FILE No. <u>0</u> EOL. TAPE No. <u>60</u> FILE No. <u>1091</u> DEAD TRACE _____ WILD TRACE _____ WEAK TRACE _____ Sp#1001~1013 ch100~150 noise Sp#1453~1470 ch1~10 ship noise Sp#1691~1710 ch1~40 ship noise Sp#1776~1778 Allch Seismic noise All shot Bird#10 No response STREAMER ACTIVE STREAMER <u>75m x 52</u> HYDROPHONE TYPE <u>BENTONHS Reduced Diameter Array hydrophone</u> SENSITIVITY <u>-194dB re 1V / μPa (20 μV / μBar)</u> No. of HYDROPHONE in GROUP <u>- 8, 16, 32</u> FRONT STRETCH SECTION <u>50m x 2</u> TAIL STRETCH SECTION <u>50m x 2</u>
SOURCE GUN Type <u>Par AIR GUN</u> SHOT Type <u>FLIP-FLOP, SIMULATE</u> No. of Strings <u>1, 2, 3, 4, 5, 6, 7, ⑧</u> Configuration <u>1500 cu. in. x 8</u> Total Volume <u>12000</u> cu. in. GUN Depth <u>10</u> m GUN Separation <u>72</u> m Air Pressure <u>2000</u> PSIG		

LAYOUT OF STREAMER CABLE



OBSERVER: NME: KATAYAMA, SHIMIZU, TSUKUDA, SUGANO, MAEZAWA
JGI: ITO

FIELD TAPE No. OF THIS LINE:

44 ~ 60

マルチチャンネル反射法地震探査測線 観測仕様「かいいい」

Line	KR103
	2000/11/24
FSP	1001
FGSP	1045
LSP	2090
Cours	44.5°
CH数	156ch
受信点間隔	25m
発信点間隔	50m
ケーブル深度	20m
サンプルレート	4ms
記録長	15秒
Low Cut Filter	3Hz
High Cut Filter	102Hz
Delay Time	0msec
測線長	54.45km
Noise Record	File#0
	File#1091
Noise	SP#1001~1013 ch100~150
	SP#1453~1490 ch1~10 Ship noise
	SP#1691~1710 ch1~40 Ship noise
	SP#1796~1798 Allch Seismic noise
Remarks	All Shot Bird#10 No response

測線名

KR103

Reel#	File No.	SP No.	FF/LF	REMARKS
44	0		FF	NOISE RECORD
	1	1001		First Shot Point
	45	1045		First Good Shot Point
	67	1067	LF	
45	68	1068	FF	
	135	1135	LF	
46	136	1136	FF	
	203	1203	LF	
47	204	1204	FF	
	271	1271	LF	
48	272	1272	FF	
	339	1339	LF	
49	340	1340	FF	
	407	1407	LF	
50	408	1408	FF	
	475	1475	LF	
51	476	1476	FF	
	543	1543	LF	
52	544	1544	FF	
	611	1611	LF	
53	612	1612	FF	
	679	1679	LF	
54	680	1680	FF	
	747	1747	LF	
55	748	1748	FF	
	815	1815	LF	
56	816	1816	FF	
	883	1883	LF	
57	884	1884	FF	
	951	1951	LF	
58	952	1952	FF	
	1019	2019	LF	
59	1020	2020	FF	
	1087	2087	LF	
60	1088	2088	FF	
	1090	2090		Last Shot Point
	1091		LF	NOISE RECORD

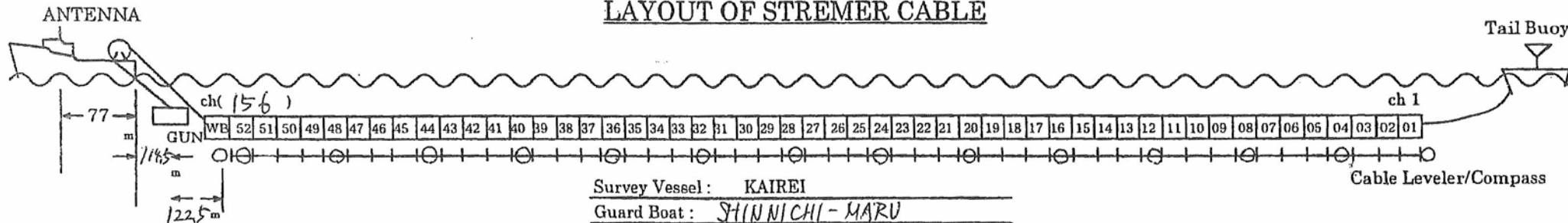
KR00-08 測線名 KR104-R

測地系	WGS84 U. T. M54
Shot Mode	DAlong Track
Shot Interval	50m
観測開始位置	34° 00' 39.035N 139° 25' 48.825E
観測開始時刻	2000.11.24 12:33(JST)
観測終了位置	34° 20' 09.007N 139° 25' 55.732E
観測終了時刻	2000.11.24 16:23(JST)
観測総時間数	3h50m
測線長	36050.37m
測線方向	2.806
予定観測開始点	33° 58.00' N 139° 26.00' E
予定観測終了点	34° 20.00' N 139° 26.00' E
予定測線方向	0°
総Shot数	721
F. S. P	Sp. 1099
F. G. S. P	Sp. 1207
L. S. P	Sp. 1820
L. G. S. P	
Lost Shot No.	Sp. 1193
備考	
F. G. S. P	
JST 13:06:32	34° 03' 34.285" N 139° 25' 33.275" E

MARINE SURVEY GENERAL INFORMATION

GENERAL	RECORDING	NAVIGATION
CLIENT <u>JAMSTEC</u> PROSPECT AREA <u>KR00-08</u> <u>三ヶ島</u> LINE <u>KR104-R</u> DIRECTION <u>S → N (2.8°)</u> DATE <u>00. 11. 24 ~ 00. 11. 24</u> WEATHER <u>cloudy</u> WIND <u>NNE 3</u> SEA CONDITION <u>slight</u> FIRST SP No. <u>1099</u> FILE No. <u>1</u> TIME <u>12 H 32 M</u> LAST SP No. <u>1820</u> FILE No. <u>721</u> TIME <u>16 H 22 M</u> Number of Channels <u>156</u> Channel Interval <u>6.25, 12.5, 25</u> m Shot Point Interval <u>50</u> m CDP Fold <u>3900</u> 1/2 Cable Depth <u>20</u> m	INSTRUMENTS SYNTRAK 480 Digital Streamer System MultiTRAK Streamer Cable Utility System GCS 90 GUN Controller System GS-624 Thermal Plotter RECORDING SAMPLE RATE <u>1, 2, 4</u> msec RECORD LENGTH <u>15.0</u> sec WATER DELAY <u>0</u> msec DEGITAL LOW CUT FILTER <u>3</u> Hz, <u>6</u> dB/oct. ANALOG LOW CUT FILTER <u>3</u> Hz, <u>6</u> dB/oct. ANALOG HIGH CUT FILTER <u>102</u> Hz, <u>209</u> dB/oct. PRE-AMPLIFIER GAIN <u>12</u> dB GAIN CONTROL <u>24bit Fixed</u> <u>84 dB, 12 dB step</u> TAPE FORMAT DIGITAL TAPE FORMAT <u>8048 SEG-D</u> <u>4 Byte Hexadacimal</u> RECORDING FORMAT <u>Double Density, GCR</u> DATA DENSITY <u>37871 BPI</u> AUX. CH CONTENTS AUX. 1: <u>SYS TB</u> AUX. 2: <u>GCS TB</u> AUX. 3: <u>WB</u> AUX. 4: <u>GUN Port 1.2 Hyd</u> AUX. 5: <u>GUN Port 3.4 Hyd</u> AUX. 6: <u>GUN Stbd 1.2 Hyd</u> AUX. 7: <u>GUN Stbd 3.4 Hyd</u> MONITOR PLAYBACK GAIN ACG, PCG, FIXED (<u>60</u> dB) SINGLE TRACE PLOT CHANNEL <u>TRACE No. 156</u>	PRIMARY <u>D-GPS</u> BACK-UP _____ SHOT MODE <u>DISTANCE, TIME:</u> _____ sec REMARKS CABLE NOISE _____ μ Bar SOL. TAPE No. <u>18</u> FILE No. <u>0</u> EOL. TAPE No. <u>28</u> FILE No. <u>722</u> DEAD TRACE _____ WILD TRACE _____ WEAK TRACE _____ <u>SP1193 Lost Shot, No Fire</u> <u>Bird 10 No Response</u> STREAMER ACTIVE STREAMER <u>75m × 52</u> HYDROPHONE TYPE <u>BENTOHS Reduced Diameter Array hydrophone</u> SENSITIVITY <u>-194dB re 1V / μ Pa (20 μ V / μ Bar)</u> No. of HYDROPHONE in GROUP <u>8, 16, 32</u> FRONT STRETCH SECTION <u>50m × 2</u> TAIL STRETCH SECTION <u>50m × 2</u>
SOURCE GUN Type <u>Par AIR GUN</u> SHOT Type <u>FLIP-FLOP, SIMULATE</u> No. of Strings <u>1, 2, 3, 4, 5, 6, 7, 8</u> Configuration <u>1500</u> cu. in. × <u>8</u> Total Volume <u>12000</u> cu. in. GUN Depth <u>10</u> m GUN Separation <u>12</u> m Air Pressure <u>2000</u> PSIG		

LAYOUT OF STREAMER CABLE



OBSERVER: NME: KATAYAMA, SHIMIZU, TSUTUDA, SUGANO, MAEZAWA
JGI: ITO

FIELD TAPE No. OF THIS LINE: 18-28

マルチチャンネル反射法地震探査測線 観測仕様「かいいい」

Line	KR104-R
	2000/11/24
FSP	1099
FGSP	1207
LSP	1820
Cours	2.8°
CH数	156ch
受信点間隔	25m
発信点間隔	50m
ケーブル深度	20m
サンプルレート	4ms
記録長	15秒
Low Cut Filter	3Hz
High Cut Filter	102Hz
Delay Time	0msec

測線長 36.05km

Noise Record File#0
File#722

Noise

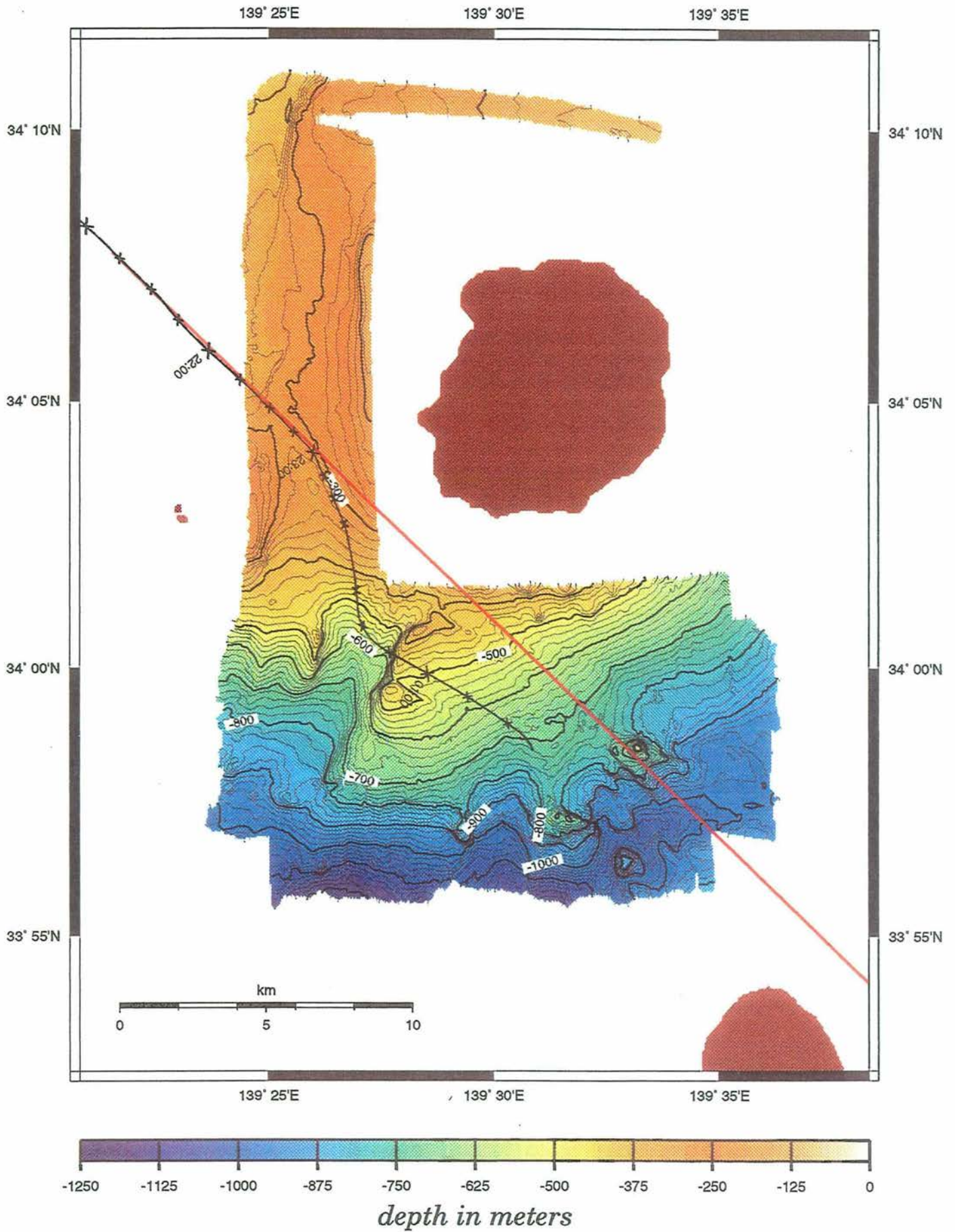
Remarks SP#1193 Lost Shot, No Fire
All Shot Bird#10 No response

測線名

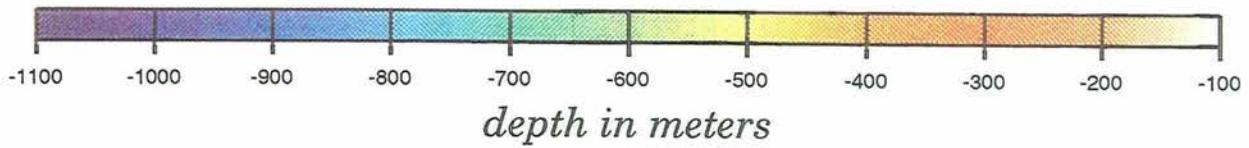
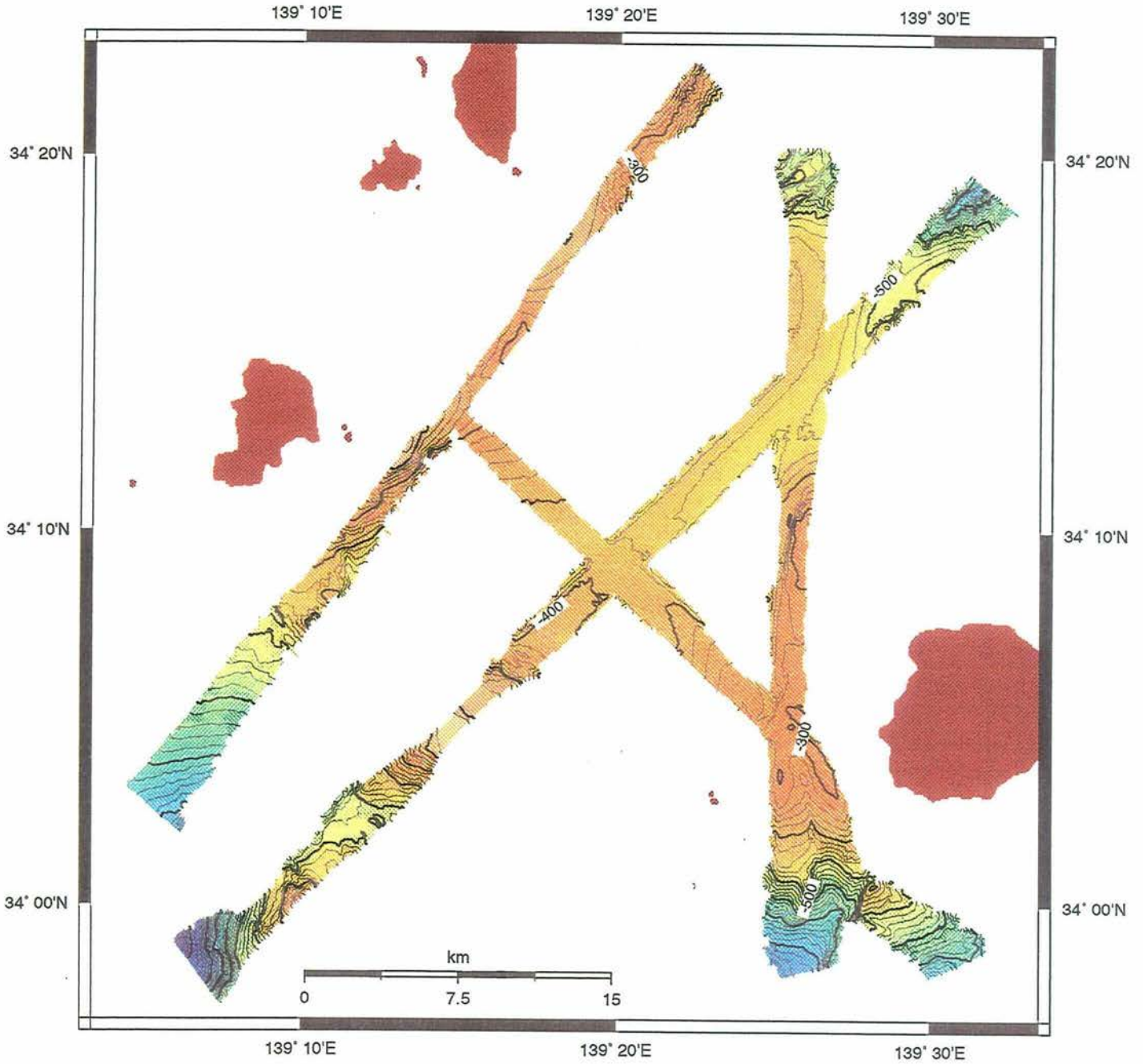
KR104-R

Reel#	File No.	SP No.	FF/LF	REMARKS
18	0		FF	NOISE RECORD
	1	1099		First Shot Point
	68	1166	LF	
19	69	1167	FF	
	95	1193		Lost Shot, No Fire
	108	1207		First Good Shot Point
	136	1235	LF	
20	137	1236	FF	
	204	1303	LF	
21	205	1304	FF	
	272	1371	LF	
22	273	1372	FF	
	340	1439	LF	
23	341	1440	FF	
	408	1507	LF	
24	409	1508	FF	
	476	1575	LF	
25	477	1576	FF	
	544	1643	LF	
26	545	1644	FF	
	612	1711	LF	
27	613	1712	FF	
	681	1780	LF	
28	682	1781	FF	
		1820		Last Shot Point
	722		LF	NOISE RECORD

KR0008 MNBES



KR0008 Multi_Channel



KR0008 SideScan

