

海洋調査報告一覽

(CRUISE SUMMARY REPORT)

(国内海洋調査機関の調査報告)

1996年 実施分
(1994, 1995年実施分を一部含む)

1997年3月

日本海洋データセンター

(海上保安庁水路部)

まえがき

海洋の調査には多大な労力と時間、経費を要します。我々を取り巻く広大な海洋について一層の理解を深め、各種活動を行うためには、関係者がお互いに情報・データを交換することによって、作業の重複を避け、調査を効率的に進めることが必要です。また、ひとたび得られた調査データは共通の財産として、広く一般の利用に供されることが望ましいことです。

海洋調査報告一覧は、海洋データ交換を迅速・確実にを行い、かつ調査終了後データ公表までの空白を埋めるため、どこの機関が、いつ、どこで、どのような調査活動を行ったかを、国際的に統一された書式（航海概要報告）でデータ名、数量、海域、データ保管場所等の概要について記述した調査機関からの報告をとりまとめたものです。この調査目録が、データ流通の円滑化を通じて、海洋調査活動の効率化と海洋科学の進歩に寄与できれば幸いです。

1997年 3月

日本海洋データセンター
所長 辰野 忠夫

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付 録 1 MSQ 海域番号図（全世界、西太平洋）	付1-1
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1. 航海概要報告 (CRUISE SUMMARY REPORT) について

この報告書式は、1991年1月のユネスコ政府間海洋学委員会 (IOC) 国際海洋データ・情報交換システム (IODE) 技術委員会第13回会議の決議に基づき、従来から使用してきた「海洋調査報告 (ROSCOP: 第2版)」に替わるもので我が国では1992年1月1日以降に終了した航海から使用しています。

航海概要報告は、海洋における観測成果の概要を記すための統一された書式で、海洋データの全世界にわたる収集目録であり、調査・研究者、計画立案者、データ管理者等にとって、誰が、いつ、どこで、どのような調査をしたかのタイムリーな情報についてアクセスを可能にするものです。

このグローバルな観測成果の概要は、世界データセンター (WDC) および各国の海洋データセンターを通じて、国際的プログラムの計画機関の調査担当者、計画立案者に利用されることとなります。このため、日本海洋データセンター (JODC) ではIOCおよび各国の海洋データセンターへは我が国の主要な海洋調査計画を、また世界データセンターへは各海洋調査実施機関に提出して頂いた航海概要報告を編集した、この「海洋調査報告一覧」を送付しています。

海洋データの迅速な収集と円滑な流通を図るため、海洋調査実施機関におかれましては海洋調査航海終了後は、速やかにJODCあて航海概要報告を送付くださるようお願いいたします。

なお、本調査報告一覧には1996年中にJODCが受領した1994年、1995年分も掲載しています。

また、インターネットを通じてJODCが保有する海洋データ・情報を検索・抽出できるシステム、J-DOSS (JODC Data Online Service System) でも本報告一覧と同じ情報を見ることができます。

国内外の各海洋調査機関より提出していただいたCSRは、受領次第 J-DOSS上へ登録されます。これにより、本報告一覧の刊行時期まで待つことなく常に新しい情報を見ることができるようになり、また、J-DOSS上では、国別、機関別、船名別、海域別等の条件での検索が可能です。

J-DOSSのアドレスは <http://www.jodc.jhd.go.jp/cgi-bin/csr> です。

みなさんの、ご利用をお待ちしています。

2. 調査報告の項目説明

海洋調査報告一覧は、JODCで受領した航海概要報告（CSR）を整理、編集したもので、報告に使用されている各項目の概略は次のとおりです。

Reference No.	:	CSR情報のJODCにおける照会番号
Restriction of Data	:	データ交換に制限がある（Yes）か、否（No）か条件付き（In part）かを示す
Ship Name	:	データを収集した船舶のフルネーム
Ship Type	:	データを収集した船舶の種類
Cruise No./Name	:	航海の固有番号、名称又は略称
Cruise Period	:	出港日と入港日
Port of Departure	:	出港した港の名称
Port of Return	:	帰港した港の名称
Responsible Laboratory	:	航海の観測計画を作成した調査機関の名称
Chief Scientist(s)	:	航海中観測調査を担当した者（観測班長）の名前と所属機関
General Ocean Area(s)	:	航海中にデータを収集した海洋または海域の名称
Specific Areas	:	調査が或る海域の特定区域に集中した場合、その区域のローカルな海域名、海底地名、または地理座標
Geographic Coverage	:	MSQ海域番号図による
Project Name	:	航海が共同プロジェクト（または調査、計画）の一部であるならば、その名称
Coordinating Body	:	上記プロジェクトの調整機関名
Principal Investigators	:	航海で収集されたデータについて責任を持っている筆頭の調査者

Objectives and Brief Narrative of Cruise : 航海の目的と性格についての情報

Moorings, Bottom Mounted Gear and Drifting Systems : 係留、海底設置機器、漂流機器システム

PI	:	Principal Investigators 欄を参照
Lat. Lon.	:	観測地点の経緯度
Data Type	:	データリストのコード
Description	:	機器の種類、測定のパラメータ、機器数とその深度、設置または回収の日付と位置

Summary of Measurements and Samples Taken : 測定とサンプル採取の概要

PI	:	Principal Investigators 欄を参照
No Units	:	収集されたデータの量、または推定量
Data Type	:	データリストのコード
Description	:	データ、使用機器／装置の種類・特性等を記入

3. データタイプのコードリスト

航海概要報告の、「Moorings, Bottom Mounted Gear and Drifting Systems」、および「Summary of Measurements and Samples Taken」のなかのデータタイプは、下記のリストから記入します。

A : 海洋物理学

- H71 航走中表層測定
- H13 BT
- H09 各層観測
- H10 CTD
- H11 航走中表面下測定
- H72 サーミスタチェーン
- H16 透明度 (Transmissometerなど)
- H17 海洋光学 (水面下の照度など)
- H73 地球化学的トレーサー (フロンなど)
- D01 流速計による観測
- D71 カレントプロファイラー (ADCPなど)
- D03 船の偏流による海流測定
- D04 GEK
- D05 漂流ブイ
- D06 中立ブイ
- D09 水位測定 (水圧計や底置型音響測深器含む)
- D72 機器による波浪観測
- D90 その他の海洋物理学観測

B : 海洋化学

- H21 溶存酸素
- H74 二酸化炭素
- H33 その他の溶存ガス
- H22 リン酸塩
- H23 全りん
- H24 硝酸塩
- H25 亜硝酸塩
- H75 全窒素
- H76 アンモニア
- H26 けい酸塩
- H27 アルカリ度
- H28 pH
- H30 微量元素
- H31 放射能
- H32 同位元素
- H90 その他の海洋化学観測

C : 汚染

- P01 懸濁物
- P02 微量金属
- P03 石油残渣
- P04 塩素化炭化水素
- P05 その他の溶存物質
- P12 海底沈殿物
- P13 汚染生物 (生物体内汚染物質)
- P90 その他の汚染観測

D : 生物学と漁業

- B01 基礎生産力
- B02 植物プランクトン色素
- B71 粒状有機物
- B06 溶存有機物
- B72 生化学測定 (脂質、アミノ酸)
- B73 セジメントトラップ
- B08 植物プランクトン
- B09 動物プランクトン
- B03 固形浮遊物 (セストン)
- B10 水表生物
- B11 遊泳動物
- B13 卵/稚仔
- B07 浮遊バクテリア/微生物
- B16 底生バクテリア/微生物
- B17 底生植物
- B18 底生動物
- B25 鳥類
- B26 哺乳類と爬虫類
- B14 浮魚
- B19 底魚
- B20 軟体生物
- B21 甲殻類
- B28 海洋生物による音響反射
- B37 標識放流
- B64 漁具測定
- B65 試験漁業
- B90 その他の生物学/漁業観測

E : 気象

- M01 高層気象観測
- M02 入射放射
- M05 臨時標準観測
- M06 定常標準観測
- M71 大気化学
- M90 その他の気象観測

F : 地質と地球物理

- G01 採泥 (曳航)
- G02 グラブ型採泥
- G03 岩石柱状資料採取
- G04 堆積物柱状資料採取
- G08 海底写真
- G71 海底現場観測
- G72 地球物理学観測 (海底まで)
- G73 音響測深 (シングルビーム)
- G74 音響測深 (マルチビーム)
- G24 サイドスキャンソナー
- G75 反射式音波探査 (シングルチャンネル)
- G76 反射式音波探査 (マルチチャンネル)
- G26 屈折式音波探査
- G27 重力測定
- G28 地磁気測定
- G90 その他の物質/地球物理観測

4. 調査航海一覧表

担当機関 ^{*1}	船名	調査海域	航海期間	調査項目 ^{*2}	照会番号	ページ
ORI, UT	TANSEI MARU	North Pacific	10/05/1994 - 17/05/1994	A,D,F	94075	7
ORI, UT	HAKUHO MARU	Indian Ocean South Pacific	22/11/1994 - 14/02/1995	A,B,D,F	94076	8
ORI, UT	TANSEI MARU	North Pacific	22/05/1995 - 28/05/1995	A,D	95054	10
ORI, UT	TANSEI MARU	North Pacific	28/11/1995 - 06/12/1995	A,D,F	95055	11
ORI, UT	TANSEI MARU	Philippine Sea	09/12/1995 - 15/12/1995	D,F	95056	12
MMO, JMA	SEIFU MARU	Japan Sea	02/10/1995 - 02/11/1995	A,B,C,D,E,F	95057	13
HMO, JMA	KOFU MARU	North Pacific	21/11/1995 - 20/12/1995	A,B,D,E,F	95058	14
MD, JMA	RYOFU MARU	Philippine Sea	30/08/1995 - 21/09/1995	A,B,C,D,E,F	95059	15
MD, JMA	RYOFU MARU	Philippine Sea	08/11/1995 - 12/12/1995	A,B,E	95060	16
NU	NAGASAKI MARU	E China Sea North Pacific	07/11/1995 - 30/11/1995	A,E	95061	17
NU	NAGASAKI MARU	E China Sea	11/12/1995 - 20/12/1995	A,D	95062	19
MMO, JMA	SEIFU MARU	Japan Sea	24/11/1995 - 21/12/1995	A,B,C,D,E,F	95063	19
Hokkaido, Univ.	TANSEI MARU	Sea of Okhotsk	14/09/1995 - 18/09/1995	A,D,F	95064	20
HD, MSA	TENYO	North Pacific	11/11/1995 - 11/14/1995	A	95065	21
ORI, UT	TANSEI MARU	North Pacific	19/01/1996 - 27/01/1996	A,D	96001	22
HMO, JMA	KOFU MARU	North Pacific	19/01/1996 - 01/03/1996	A,B,C,D,E,F	96002	22
KMO, JMA	SHUMPU MARU	Inland Sea Philippine Sea	19/01/1996 - 23/02/1996	A,B,C,D,E,F	96003	23
NMO, JMA	CHOFU MARU	E China Sea Philippine Sea	17/01/1996 - 02/03/1996	A,B,C,D,E,F	96004	25
MD, JMA	RYOFU MARU	North Pacific	17/01/1996 - 14/03/1996	A,B,C,D,E,F	96005	26
MD, JMA	KEIFU MARU	North Pacific Philippine Sea	26/01/1996 - 29/02/1996	A,B,C	96006	27
TSFHS	WAKATORI MARU	Japan Sea	11/04/1996 - 27/04/1996	A,D,E	96007	27
NMO, JMA	CHOFU MARU	E China Sea Philippine Sea	23/04/1996 - 21/05/1996	A,B,C,D,E	96008	28
KMO, JMA	SHUMPU MARU	Inland Sea Philippine Sea	23/04/1996 - 21/05/1996	A,B,C,D,E,F	96009	29
HMO, JMA	KOFU MARU	North Pacific	26/04/1996 - 29/05/1996	A,B,C,D,E	96010	30
MD, JMA	RYOFU MARU	North Pacific	23/04/1996 - 03/06/1996	A,B,C,D,E,F	96011	31
NU	NAGASAKI MARU	E China Sea	02/04/1996 - 22/04/1996	A,D	96012	32
NU	NAGASAKI MARU	E China Sea Yellow Sea	09/05/1996 - 04/06/1996	A,D,F	96013	33
MMO, JMA	SEIFU MARU	Japan Sea	19/01/1996 - 01/03/1996	A,B,C,D,E,F	96014	35
MMO, JMA	SEIFU MARU	Japan Sea	22/04/1996 - 23/05/1996	A,B,C,D,E,F	96015	36
Ehime Univ.	KAKUYO MARU	E China Sea	25/05/1996 - 03/06/1996	A	96016	37
Kyushu Univ.	KAKUYO MARU	Japan Sea	08/06/1996 - 20/06/1996	A	96017	38
NU	KAKUYO MARU	E China Sea	24/06/1996 - 03/07/1996	C,D	96018	39

*1 末尾の付録3 参照

*2 p3データタイプのコードリスト参照

担当機関 ^{*1}	船名	調査海域	航海期間	調査項目 ^{*2}	照会番号	ページ
ORI, UT	TANSEI MARU	North Pacific Philippine Sea	11/04/1996 - 17/04/1996	A,D	96019	39
ORI, UT	TANSEI MARU	Western pacific	20/04/1996 - 26/04/1996	A,D	96020	40
ORI, UT	TANSEI MARU	North Pacific	18/05/1996 - 22/05/1996	A,D	96021	41
ORI, UT	TANSEI MARU	Philippine Sea	25/05/1996 - 31/05/1996	A,B	96022	42
ORI, UT	TANSEI MARU	North Pacific	11/06/1996 - 19/06/1996	A,B,D	96023	43
NAGOYA Univ. MD, JMA	TANSEI MARU KEIFU MARU	North Pacific	16/06/1996 - 19/06/1996	A,D	96024	44
		North Pacific Philippine Sea	23/04/1996 - 02/05/1996	A,B,C,E,F	96025	45
TSFHS	WAKATORI MARU	North Pacific	24/05/1996 - 22/07/1996	A,D,E,F	96026	46
NU	KAKUYO MARU	North Pacific	12/07/1996 - 11/08/1996	A	96027	48
CMD, JMA	KEIFU MARU	North Pacific	21/05/1996 - 10/07/1996	A,B,E,F	96028	48
		Philippine Sea				
NMO, JMA	CHOFU MARU	E China Sea Philippine Sea	21/06/1996 - 06/08/1996	A,B,C,D,E	96029	49
KMO, JMA	SHUMPU MARU	Inland Sea Philippine Sea	17/06/1996 - 25/07/1996	A,B,C,D,E,F	96030	51
CMD, JMA	RYOFU MARU	North Pacific Philippine Sea	18/07/1996 - 19/08/1996	A,B,C,D,E,F	96031	52
CMD, JMA	RYOFU MARU	North Pacific	03/09/1996 - 09/09/1996	A,E	96032	53
HMO, JMA	KOFU MARU	North Pacific Sea of Okhotsk	13/06/1996 - 13/07/1996	A,B,C,D,E	96033	54
HMO, JMA	KOFU MARU	North Pacific	19/07/1996 - 04/08/1996	A,B,C,D,E	96034	55
CMD, JMA	KEIFU MARU	E China Sea North Pacific Philippine Sea	09/08/1996 - 17/09/1996	A,E,F	96035	55
KMO, JMA	SHUMPU MARU	Philippine Sea	17/08/1996 - 12/09/1996	A,B,D,E	96036	56
MMO, JMA	SEIFU MARU	Japan Sea	27/06/1996 - 12/08/1996	A,B,C,D,E,F	96037	57
MMO, JMA	SEIFU MARU	Japan Sea	04/10/1996 - 03/11/1996	A,B,C,D,E	96038	58
KMO, JMA	SHUMPU MARU	Philippine Sea	04/10/1996 - 07/11/1996	A,B,C,D,E,F	96039	59
NMO, JMA	CHOFU MARU	E China Sea Philippine Sea	02/10/1996 - 30/10/1996	A,B,C,D,E	96040	60
CMD, JMA	RYOFU MARU	North Pacific South Pacific	09/10/1996 - 06/12/1996	A,B,C,D,E,F	96041	61
CMD, JMA	KEIFU MARU	E China Sea North Pacific Philippine Sea	09/10/1996 - 18/11/1996	A,B,E	96042	63
NU	KAKUYO MARU	North Pacific	24/10/1996 - 21/12/1996	A	96043	63
HD, MSA	KAIYO	North Pacific Philippine Sea	10/01/1996 - 29/01/1996	A	96044	64
HD, MSA	SHOYO	E China Sea Philippine Sea	10/01/1996 - 08/02/1996	A,B	96045	65
HD, MSA	MEIYO	Philippine Sea	11/01/1996 - 03/02/1996	A	96046	66
HD, MSA	TAKUYO	E China Sea Philippine Sea	16/02/1996 - 15/03/1996	A,B,F	96047	67

*1 末尾の付録3参照

*2 p3データタイプのコードリスト参照

担当機関 ^{*1}	船名	調査海域	航海期間	調査項目 ^{*2}	照会番号	ページ
HD, MSA	TENYO	North Pacific	29/02/1996 - 11/03/1996	A	96048	68
HD, MSA	SHOYO	North Pacific	18/04/1996 - 07/05/1996	A,B	96049	68
		Philippine Sea				
HD, MSA	SHOYO	Philippine Sea	12/07/1996 - 10/08/1996	A,B	96050	69
HD, MSA	SHOYO	North Pacific	08/10/1996 - 13/10/1996	A	96051	71
HD, MSA	SHOYO	North Pacific	29/10/1996 - 12/11/1996	A,B	96052	71
		Philippine Sea				
HD, MSA	KAIYO	North Pacific	10/01/1996 - 24/01/1996	F	96053	72
HD, MSA	MEIYO	North Pacific	11/01/1996 - 28/01/1996	F	96054	72
HD, MSA	MEIYO	North Pacific	31/05/1996 - 10/06/1996	F	96055	73
HD, MSA	MEIYO	Japan Sea	16/07/1996 - 08/08/1996	F	96056	74
HD, MSA	MEIYO	North Pacific	30/09/1996 - 28/10/1996	F	96057	75
HD, MSA	TAKUYO	North Pacific	18/04/1996 - 07/05/1996	F	96058	76
HD, MSA	TAKUYO	North Pacific	10/01/1996 - 28/01/1996	F	96059	77

*1 末尾の付録3 参照

*2 p3データタイプのコードリスト参照

5. 海洋調査報告 (航海概要報告) 一覽

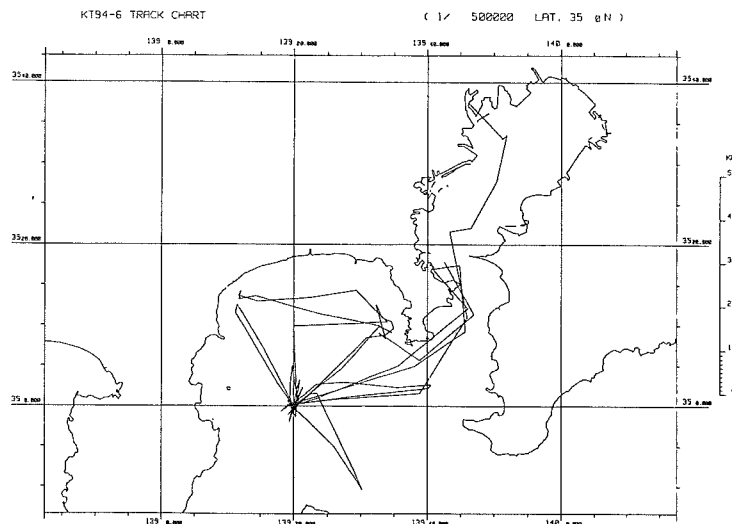
Reference No. : 94075
Ship Name : TANSEI MARU
Ship Type : Research Vessel
Cruise No./Name : KT-94-6
Cruise Period : 10/05/1994 to 17/05/1994
Port of Departure : Tokyo
Port of Return : Yokosuka
Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
Chief Scientist(s) : K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
General Ocean Area(s) : North Pacific Ocean
Specific Areas : Sagami Bay, Tokyo Bay
Geographic Coverage : 130
Project Name : WESTPAC
Principal Investigators :
 A; Dr. K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
 B; Dr. M. Terazaki Ocean Research Inst., Univ. of Tokyo
 C; Dr. S. Nishida Ocean Research Inst., Univ. of Tokyo
 D; Dr. T. Saino Ocean Research Inst., Univ. of Tokyo
 E; Dr. S. Noriki Hokkaido Univ.
 F; Dr. H. Kitazato Shizuoka Univ.

Objectives and Brief Narrative of Cruise :

In the 1st leg, we carried out measurements of vertical flux by mooring system and CTD casts with water sampling at the mouth of the Tokyo Bay.

The purpose of this observation was to study the organic matter from the eutrophicated bay to open ocean. We also carried out some net sampling of jellyfish at the inner part of the Bay.

In the 2nd leg, we carried out various kind of plankton net sampling (Norpac, ORI, IKMT, VMPS) with CTD cast in the Sagami Bay to the vertical distribution and migration of lantern fish and zooplankton.



Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	35.02N	139.40E	B37	Deployed five sediment traps, May 11, 1994.
A	35.02N	139.40E	B37	Recovered sediment traps, May 12, 1994.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	9	stations	H10	CTD cast down to near bottom.1
A	2	stations	G04	Multiple corer sampling for organic matter analysis.
A	20	stations	B10, B11, B20	ORI net sampling at the sea surface for analysis for species composition and abundance.
A	12	stations	B09, B11	Oblique tow with ORI net for analysis of species composition and abundance.
A	22	stations	B09	Vertical tow of Norpac twin net for analysis of species composition.
A	8	stations	B71	Water sampling with a van Dorn sampler for organic matter analysis.
A	2	stations	B09	Zooplankton sampling with VMPS net for a study of vertical distribution and migration.
A	10	stations	B09, B11	Zooplankton and micronecton sampling with IKMT net for species composition and abundance.
A	1	station	B10	Neuston net sampling for collection of fish larvae.

Reference No. : 94076
Ship Name : HAKUHO MARU
Ship Type : Research Vessel
Cruise No./Name : KH-94-4
Cruise Period : 22/11/1994 to 14/02/1995
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
Chief Scientist(s) : K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
General Ocean Area(s) : Indian Ocean, South Pacific Ocean
Specific Areas : 45 to 65 south on 140 west.
Geographic Coverage : 130, 94, 58, 22, 320, 356, 392, 428, 464, 465, 501, 502, 537, 538
Principal Investigators :

A; Dr. K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
 B; Dr. K. Taira Ocean Research Inst., Univ. of Tokyo
 C; Dr. K. Tamaki Ocean Research Inst., Univ. of Tokyo
 D; Dr. Y. Shirayama Ocean Research Inst., Univ. of Tokyo
 E; Dr. K. Furuya Mie Univ.
 F; Dr. H. Fukuchi Polar Research Inst.

Objectives and Brief Narrative of Cruise :

The main purposes of this cruise are follows,

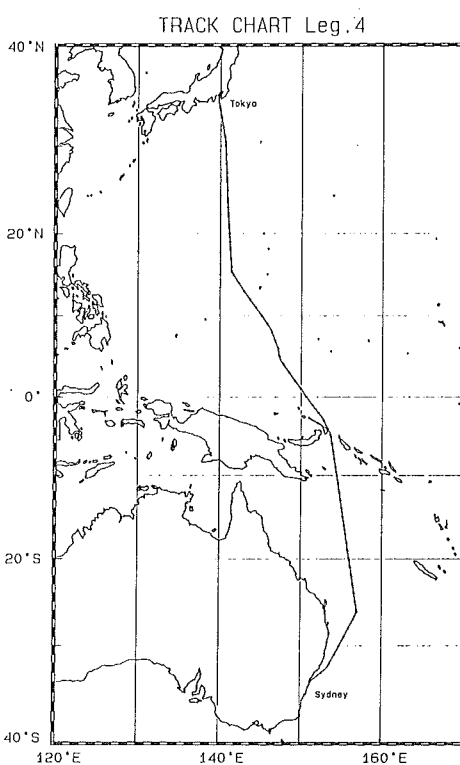
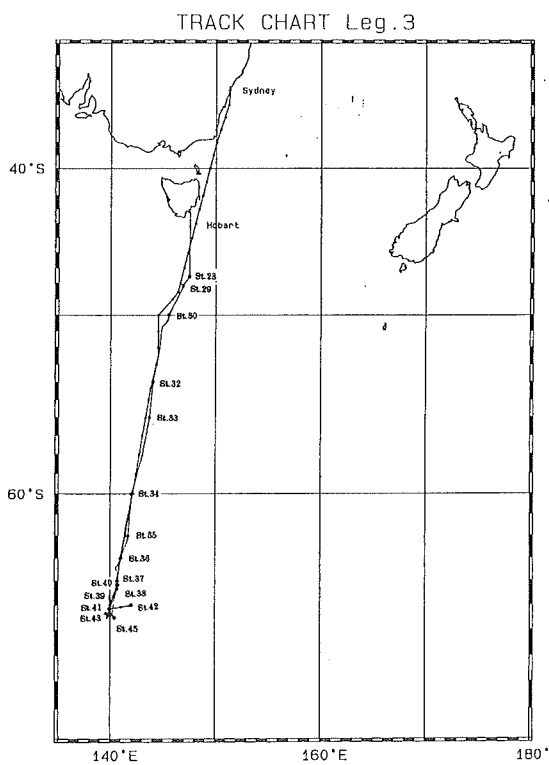
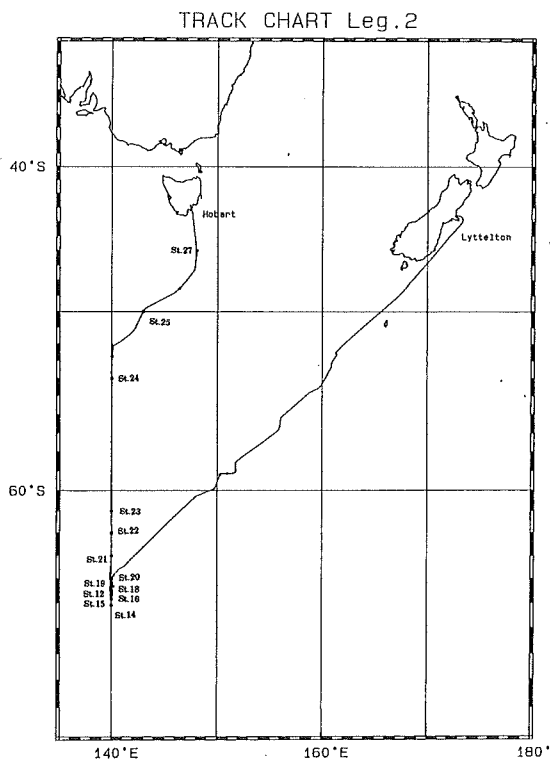
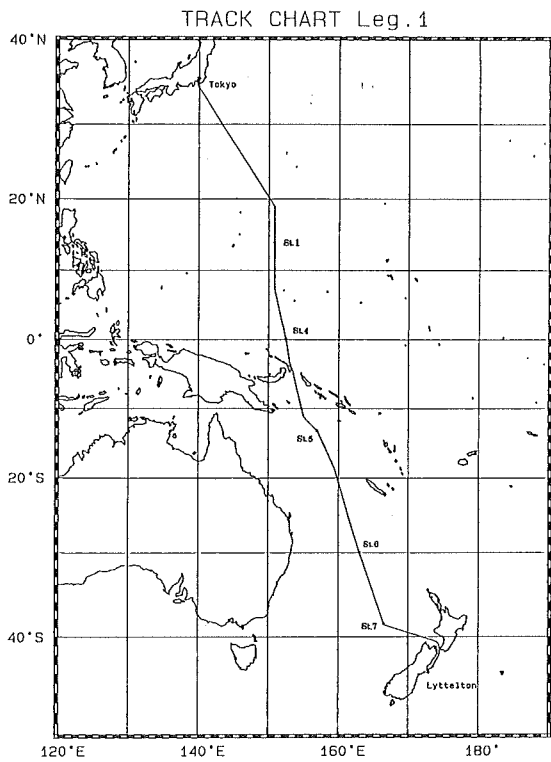
1. Dynamics of primary production and grazers.
2. Structure and function of zooplankton and micronekton communities.
3. Production and decomposition processes of DOC.
4. Physiology and ecology of meio-benthos.
5. Mechanisms of eddy formation and up welling at the Antarctic divergence.
6. Material fluxes between the sea surface and atmosphere.
7. Ocean physics of Southern Ocean.

Moorings, Bottom Mounted Gear and Drifting Systems:

<i>PI</i>	<i>LAT.</i>	<i>LON.</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
E	64.40S	140.00E	B01, B02, D05	Released a drifting system (200m) with in situ incubation bottles. Dec. 20, 1994.
F	64.40S	140.00E	B02, B73, D05	Released a drifting system (160m) with in vivo fluorometer and 2 sediment traps. Dec. 24, 1994.
E	64.40S	140.00E	B02, B73	Deployed 2 sediment traps (55, 155m) and fluorometer (35m). Dec. 24, 1994. Recovered the system on Jan. 21, 1995.
E	64.41S	140.00E	B01, B02	Released a drifting system (200m) with in situ incubation bottles. Jan. 15, 1995.
F	64.41S	140.00E	B02, B73	Released a drifting system with a fluorometer and 2 sediment traps. Jan. 24, 1995.
E	65.21S	140.00E	B01, B02	Released a drifting system (200m) with in situ incubation bottles. Jan. 19, 1995.
E	65.23S	139.47E	B01, B02	Released a drifting system (200m) with in situ incubation bottles. Jan. 21, 1995.
B	64.40S	140.20E	D01	Deployed a current meter (3000m), 14 Jan. 1995. Water depth: 3260m.
B	65.01S	140.20E	D01	Deployed 3 current meters (2920, 1910, 1200m) 17, Jan. 1995. Water depth: 2958m.
B	65.10S	139.58E	D01	Deployed 3 current meters (2635, 1570, 870m) 17, Jan. 1995. Water depth: 2665m.

Summary of Measurements and Samples Taken :

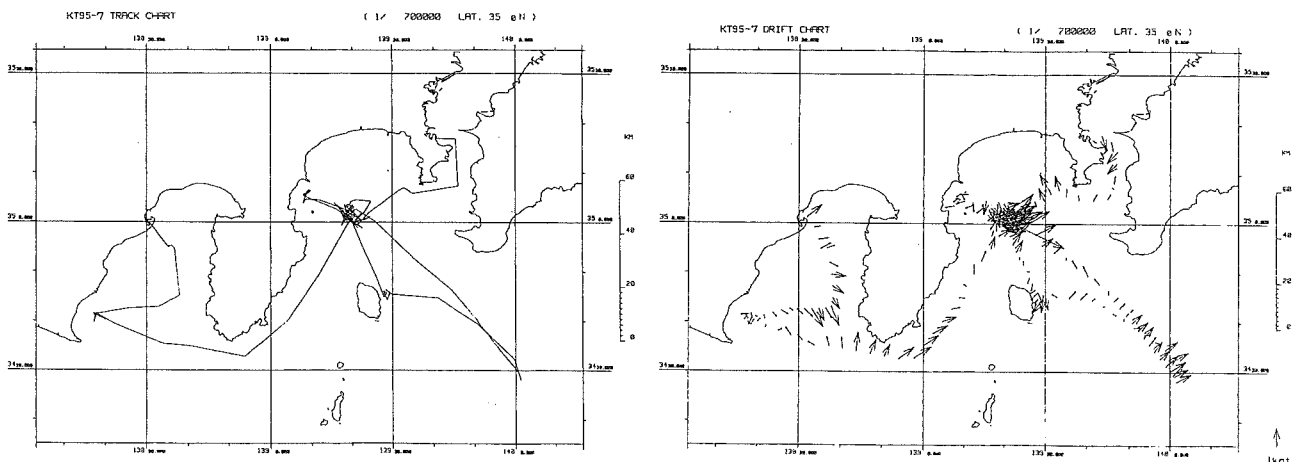
<i>PI</i>	<i>NO</i>	<i>UNITS</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	15000	NM	D71	Current velocity measurement at 20, 50 and 100m depths using shipboard ADCP.
B	51	stations	H10	CTD casts using a Sea-Bird CTD system.
B	113	drops	H13	XBT drops of T7 and T6 type probes.
A	3300	NM	B28	Acoustic survey of zooplankton and nekton with 4 frequencies.



- | | | | |
|---|-------------|--|--|
| A | 27 stations | B07 | Measurements of bacterial abundance and heterotrophic flagellates from carousel multi sampler. |
| A | 15 stations | B01, B02, B08
H21, H22, H24
H27, H28, H30
H33, H74, H76 | Chemical and biological measurement of seawater from the Carousel multi sampler system. (Fe III, pH, Alkalinity, pCO ₂ , CFS, DMS, DMSP, nutrients, salinity, DO, phytoplankton pigments species composition of phytoplankton). |
| D | 12 stations | B17, G04, H32 | Multiple Corer samplings for studies of meiobenthos ecology and palae-oceanography. |
| D | 8 stations | B17, G04, H32 | Piston core sampling with 5 to 20m length for palae-oceanography. |
| C | 6900 NM | G74 | Detailed bathymetric survey with a Sea-Beam System. |

C	6900	NM	G28	Geomagnetic survey with an ORI proton magnetic meter and an ORI 3 components magnetic meter.
C	15000	NM	G27	Gravity measurement with a shipboard gravity meter.
A	3	stations	B09	Time series sampling by a VMPS net to study the vertical migration and grazing rates of zooplankton.
A	20	cast	B09, B11	Day and night sampling by ORI net and IKMT net for food web analysis.

Reference No. : 95054
Ship Name : TANSEI MARU
Ship Type : Research Vessel
Cruise No./Name : KT-95-7
Cruise Period : 22/05/1995 to 28/05/1995
Port of Departure : Shimizu
Port of Return : Yokosuka
Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
Chief Scientist(s) : K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
General Ocean Area(s) : North Pacific Ocean
Specific Areas : Sagami Bay
Geographic Coverage : 130
Principal Investigators :
 A; Dr. K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
 B; Dr. S. Nishida Ocean Research Inst., Univ. of Tokyo
 C; Dr. A. Tsuda Ocean Research Inst., Univ. of Tokyo
 D; Dr. J. Nishikawa Ocean Research Inst., Univ. of Tokyo



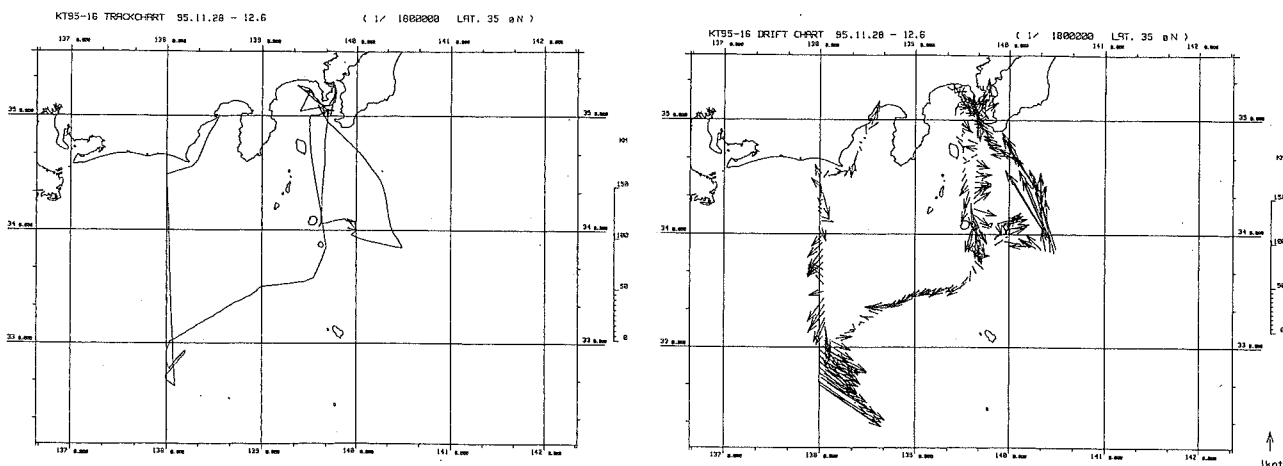
Objectives and Brief Narrative of Cruise :

This cruise focused on the food web dynamics of pelagic ecosystem at Sagami Bay. Many types of net (Norpac, VMPS, ORI, IKMT) were towed to collect a wide size range of zooplankton and micronekton. Samples collected were used for determination of species composition, abundance and stable isotope ratios for trophic level analysis.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA	TYPE DESCRIPTION
A	7	casts	H10	CTD cast to near bottom or 300m.
A	4		B10, B11, B20	ORI net sampling at the sea surface for species composition and abundance.
D	3		B09	Oblique tow with ORI net to collect animals for experiments.
C	4		B09	Vertical tow of VMPS net for vertical distribution of cope pods.
A	5		B11, B09	IKMT net sampling from 1000m depth to collect animals for experiments.
B	12		B09	MTD net sampling from 20 layer down to 1000m for vertical distribution and migration.

Reference No. : 95055
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-95-16
 Cruise Period : 28/11/1995 to 06/12/1995
 Port of Departure : Yokosuka
 Port of Return : Shimizu
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : K. Taira Ocean Research Inst., Univ. of Tokyo
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 130, 131
 Project Name : GOOS
 Coordinating Body : Ocean Research Inst., Univ. of Tokyo
 Principal Investigators :
 A; K. Taira Ocean Research Inst., Univ. of Tokyo
 B; T. Takeuchi Dept. Electric Eng., Univ. of Electro-Communications.
 C; M. Tsuchihashi Environmental Earth Science, Dept. of Earth Science, Kumamoto Univ.
 D; T. Saino Inst. Hydro-Atmos Science, Nagoya Univ.



Objectives and Brief Narrative of Cruise :

Research on physical, chemical and biological oceanography in the vicinity of Izu Ridge.

1. Measurement of volume transport and heat transport of Kuroshio.
Recovery of inverted echo sounders and current meters. Engineering test of moored temperature profiler, and GPS drop sonde.
2. Study of living planktonic foraminifera in the Kuroshio Region.
3. Deployment and Recovery of a sediment trap.

Moorings, Bottom Mounted Gear and Drifting Systems :

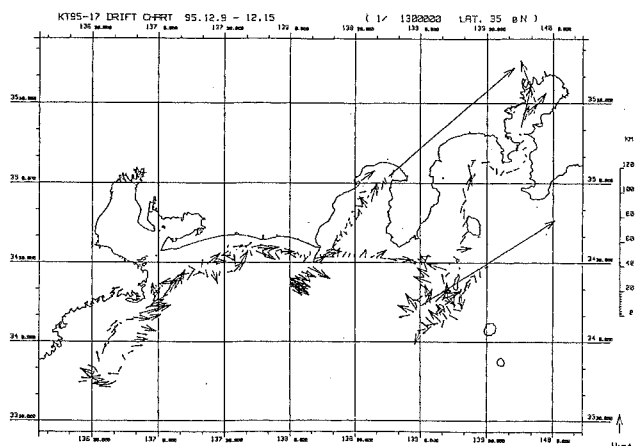
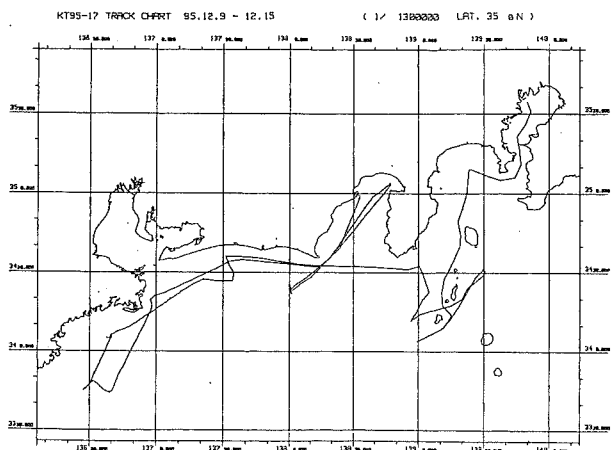
PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	34.06N	139.53E	D01, D09	Current meter 1100m, M-IES 1120m 28/5/1995-29/11/1995.
A	34.05N	139.59E	D01, D09	Current meter 1170m, M-IES 1190m 28/5/1995-29/11/1995.
A	34.00N	140.00E	D01, D09	Current meter 1050m, M-IES 1170m 28/5/1995-29/11/1995.
A	34.02N	139.54E	D01, D09	Current meter 1150m, M-IES 1170m 28/5/1995-29/11/1995.
D	34.03N	139.40E	B73, D01, G72	Sediment trap 750m, current meter 750m, Nephrometer 750m, 3/Jan/1995-30/Nov/1995.
D	35.03N	139.40E	B73, D01, G72	Sediment trap 750m, current meter 750m, Nephrometer 750m, 3/Dec./1995.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	4	cast	H10	CTD cast. (34-06N, 139-53E), (34-05N, 139-59E), (34N, 140E), (34-02N, 139-54E), on 29 Nov. 1995, Down to 1050db.

D	1 cast	H10	(35-04N, 139-40E) on 30 Nov.1995, 800db.Neil Brown.
D	1 cast	H10	(35-04N, 139-40E) on 3 Dec.1995, 820db. Neil Brown.
D	3 cast	G02	Okean grab sampler. (35-02.8N, 139-40E), (35-00.7N, 139-35E), (35N, 139-29E), on 3 Dec.1995. Organic content, Heavy metals, C & N Isotopes to analyzed.
C	Net towing	B19	MTD net, 0-800m, 8 layers.(33-59N, 140E), (33-30N, 139E), (32-41N, 138E), foraminifera to be counted.

Reference No. : 95056
 Restrict Data : No
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-95-17
 Cruise Period : 09/12/1995 to 15/12/1995
 Port of Departure : Shimizu
 Port of Return : Tokyo
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : S. Ohta Ocean Research Inst., Univ. of Tokyo
 General Ocean Area(s) : Philippine Sea
 Specific Areas : Sagami Bay, Suruga Bay, Izu Ridge, Enshu Nada, Kumano Nada.
 Principal Investigators :
 A; Prof. S. Ohta Ocean Research Inst., Univ. of Tokyo



Objectives and Brief Narrative of Cruise :

Ecological and paleontological studies of deep-sea benthic organisms along the Pacific coasts of central of Japan.

- A. Sampling deep-sea megabenthos, macrobenthos and meiobenthos by means of trawls, dredges and core-samplers for ecological studies.
- B. Observations of the behaviors of deep-sea megabenthos using suspended under-water camera system and bottom-moored time-lapse camera.
- C. Calibration of catch efficiency of various types of beam trawls for deep-sea bottom fish.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	34.40N	138.24E	G08	Bottom-moored time-lapse camera, 480 deep. Dec. 09, 16:50-Dec.11, 07:45, 1995. 7min 30sec interval exp.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	12	stations	B64, B65	Deep-sea trawls and dredges covering 60-2000m.
A	4	stations	G04	Sediment core sampling using Multiple-cover for ecological studies. 300-2000m.
A	6	stations	G08	Continuous bottom photographing by suspended camera system covering depth range of 480-2060m.

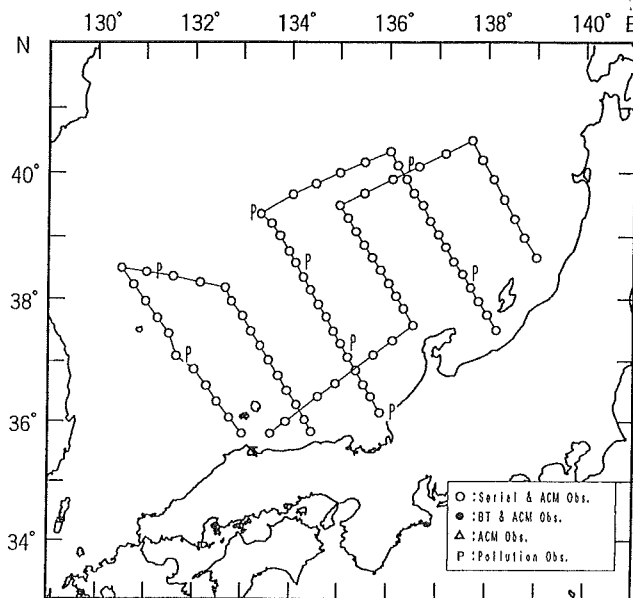
Reference No. : 95057
Restrict Data : No
Ship Name : SEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 95-10
Cruise Period : 02/10/1995 to 02/11/1995
Port of Departure : Maizuru
Port of Return : Maizuru
Responsible Laboratory : Maizuru Marine Observatory, JMA
Chief Scientist(s) : Mr. T. Segawa Maizuru Marine Observatory, JMA
General Ocean Area(s) : Japan Sea
Geographic Coverage : 131, 167
Project Name : IGOSS, MARPOLMON, WESTPAC
Coordinating Body : IOC
Principal Investigators :
 A; Mr. T. Segawa Maizuru Marine Observatory, JMA
 B; Mr. N. Sato Maizuru Marine Observatory, JMA
 C; Mr. H. Jobashi Marine Dept., Japan Meteorological Agency
 D; Mr. T. Miyao Meteorological Research Inst., JMA

Objectives and Brief Narrative of Cruise :

Seasonal observation of marine condition and monitoring the background marine pollutions, especially radioactive substances.

< Main Task >

1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues).
2. Hydrographic observation (physical, chemical and biological).
3. Water sampling for the radioactive substances measurement.
4. Inspection of ocean data buoy.



Track Chart
Seifu Maru(Oct.2~Nov.2)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2000	NM	H11	Measurements near-surface temperature and salinity with a thermosalinograph (F.S.I).
A	17	stations	B02, H09, H21, H22, H24, H25	Using Neil-Brown CTD with Rosette.

A	86	stations	H10	Using Neil-Brown CTD.
A	39	stations	H16	Using Secchi Disk.
A	2000	NM	D71	Using Acoustic Current Meter(FURUNO).
A	140	stations	D72	Using microwave or Tucker wave gauge.
B	3	stations	H28	Using Neil-Brown CTD with Rosette sampler system.
D	5	stations	H31	A large amount of surface water samples for measurement of radioactive substance were taken with pump.
C	2	samples	P02	Using Neil-Brown CTD with Rosette sampler system.
C	2	samples	P03	Surface water for petroleum hydrocarbons concentrations.
B	6	samples	P03	Using Neuston Net(particulate petroleum residues).
B	2000	NM	P90	Watch out for floating pollutants, oil slicks, etc.
B	7	stations	B08	Using surface water sampling.
B	8	stations	B09	Collected by using Norpac Net.
A	8	ascents	M01	Using VAISALA Digcoda MW2 System and VAISALA RS80-15N Radio Sondes.
A	147	stations	M06	According to WMO International codes.
A	86	stations	G73	Using KAIJO Echo sounder.

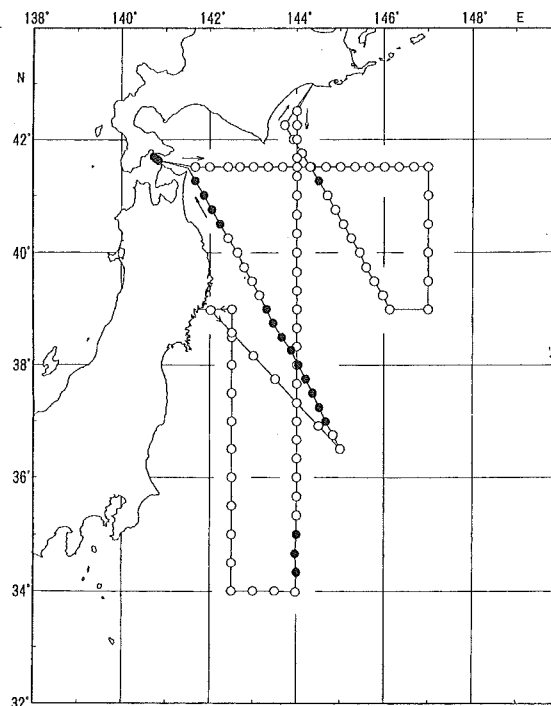
Reference No. : 95058
Restrict Data : No
Ship Name : KOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 95-11
Cruise Period : 21/11/1995 to 20/12/1995
Port of Departure : Hakodate
Port of Return : Hakodate
Responsible Laboratory : Hakodate Marine Observatory, JMA
Chief Scientist(s) : T. Iwao Hakodate Marine Observatory, JMA
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 166, 130
Project Name : IGOSS, TOPEX/POSEIDON, WESTPAC
Coordinating Body : IOC, WMO

Principal Investigators :

- A; Oceanographical Division, Hakodate Marine Observatory, JMA
- B; Marine Meteorological Division, Hakodate Marine Observatory, JMA
- C; Pollutants Chemical Analysis Center, Oceanographical Division, Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Regular observation of oceanography, marine meteorology.



Station Map of The "KOFU MARU" 21 Nov. ~ 20 Dec., 1995
 ○ CTD & ACM Obs.
 ● BT & ACM Obs.
 △ ACM Obs.

Summary of Measurements and Samples Taken :

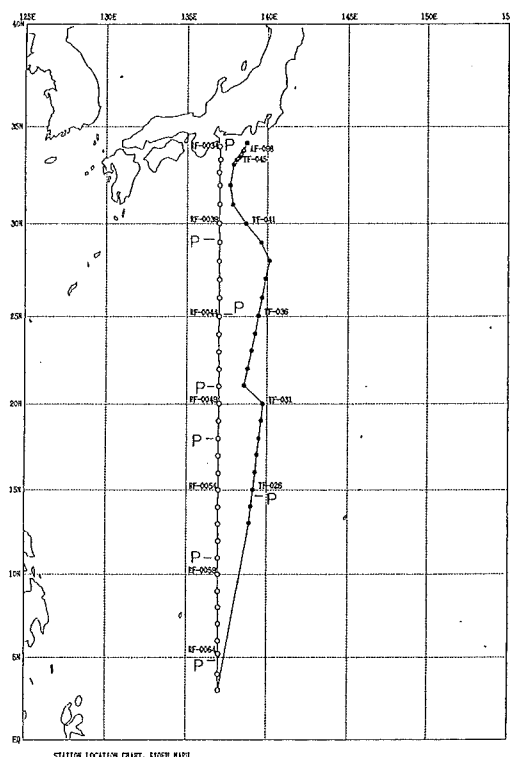
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2532	NM	H71	Continuous sea surface temperature and salinity recording.
A	85	stations	H10	Using Neil-Brown CTD.
A	17	stations	B02, H09, H21, H22, H24, H25	Using Neil-Brown CTD with Niskin bottles.
A	91	stations	G73	Using KAIJO-DENKI echo sounder.
A	28	stations	H16	Using Secchi Disk(day time only).
A	20	drops	H13	XBT drops with T6 type probes.
A	105	stations	D71	Using FURUNO acoustic doppler currentmeter at 0, 50, 100m in depth.
A	9	stations	H28	Using Neil-Brown CTD with Niskin bottles.
A	6	stations	B08	Using Neil-Brown CTD with Niskin bottles.
A	6	stations	B09	Using Norpac net.
B	123	times	M06	Observed every three hours.
B	13	times	M01	Using VAISALA system.
B	123	times	D72	Using microwave and Tucker wave gauge.

Reference No. : 95059
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 95-08
Cruise Period : 30/08/1995 to 21/09/1995
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : S. Takatani Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : Philippine Sea
Project Name : IGOSS, WESTPAC
Coordinating Body : IOC

Principal Investigators :
 A; K. Ishikawa Marine Dept., Japan Meteorological Agency
 B; I. Terashima Marine Dept., Japan Meteorological Agency
 C; H. Johashi Marine Dept., Japan Meteorological Agency
 D; H. Tanabe Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

- A routine oceanographical observation (physical, chemical, biological).
 - a. Seasonal observation of marine condition.
 - b. Monitoring the background marine pollution.
- Sea water sampling for radioactivity measurement.



Summary of Measurements and Samples Taken :

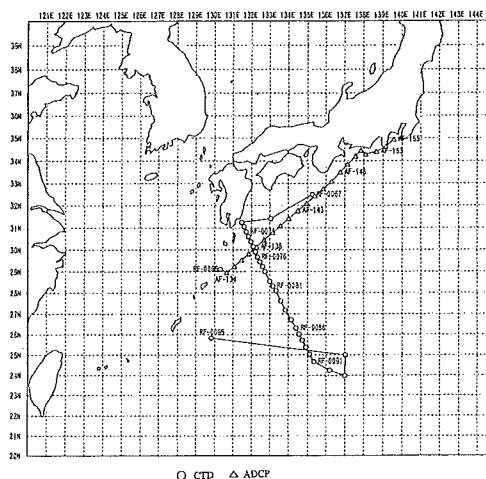
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3213	NM	H11	Continuous sea surface temperature recording.
A	33	stations	H10	Using FSI ICTD and NBIS Mark 3.
A	60	stations	D71	Using R.D. Instrument Acoustic Doppler Current Profiler.
A	58	stations	G73	Using NEC Echo sounder.
A	13	stations	H16	Using Secchi Disk.
A	25	drops	H13	XBT drops with T-6 type probes.
B	13	stations	H09, H21, H22, H24, H25, H26	Using Rosette Sampler.
B	7	stations	H23	Using Rosette Sampler.
B	7	stations	H28	Using Rosette Sampler.
B	13	stations	B02	Using Rosette Sampler.
B	7	stations	B08, B09	Using bucket (B08), NORPAC net (B09).
B	5	stations	H31	Using Niskin Bottle and buckets.
C	7	stations	P02, P03	Heavy metals (P02), Dissolved Hydrocarbons (P03).
C	7	stations	P03	Using neuston net.
C	7	stations	H27, H33, H71, H74	CFC-11, -12, -113 and N ₂ O concentrations in air (M71) CFC-11, -12, -113, N ₂ O total inorganic carbon concentrations in sea mater (H33, H74, H27).
C	494	stations	M71	CO ₂ and CH ₄ concentrations in air.
C	3	stations	B06, H75	Dissolved organic carbon (B06) Dissolved organic nitrogen (H75).
D	190	times	M06	Observed every 3 hours.
D	38	ascents	M01	Using Shipboard Automatic Radio-Sonde System.

Reference No. : 95060
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 95-11
Cruise Period : 08/11/1995 to 12/12/1995
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : M.Fujimura Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : Philippine Sea
Project Name : IGOSS, WESTPAC, WOCE
Coordinating Body : IOC WOCE IPO
Principal Investigators :

A; K. Ishikawa Marine Dept., Japan Meteorological Agency
 B; I. Terashima Marine Dept., Japan Meteorological Agency
 C; H. Johashi Marine Dept., Japan Meteorological Agency
 D; H. Tanabe Marine Dept., Japan Meteorological Agency
 E; K. Hirose Meteorological Research Inst., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Hydrographic observations in the south east off kyushu as WOCE Hydrographic Program one time survey Field experiment on Advanced Buoy system Recover and deploy mooring current meter system.



Moorings, Bottom Mounted Gear and Drifting Systems :

<i>PI</i>	<i>LAT.</i>	<i>LON.</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	34.15	137.57	D71	Deployed Advanced Buoy System on Nov.10.1995 and recovered them on Dec.10.1995.
A	28.56	130.10	D01	Recovered four recording current meters (AANDERAA Instruments RCM-8) on Dec.6.1995 setting depth are about 250, 350, 500, 700m.
A	29.11	130.22	D01	Deployed four same type instruments on Dec.5.1995 setting depth are about 250, 350, 500, 700m.
A	28.58	130.12	D01	Deployed four same type instruments on Dec.6.1995 setting depth are about 250, 350, 500, 700m.

Summary of Measurements and Samples Taken :

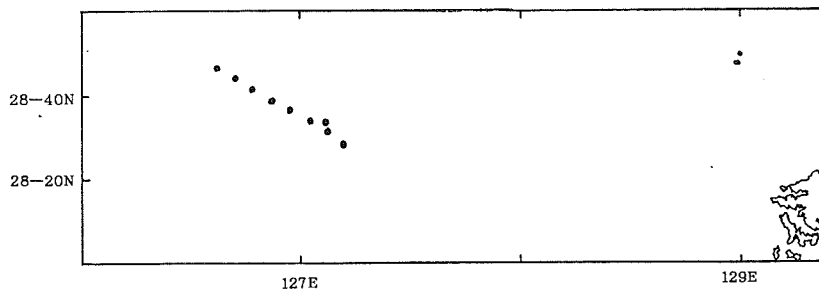
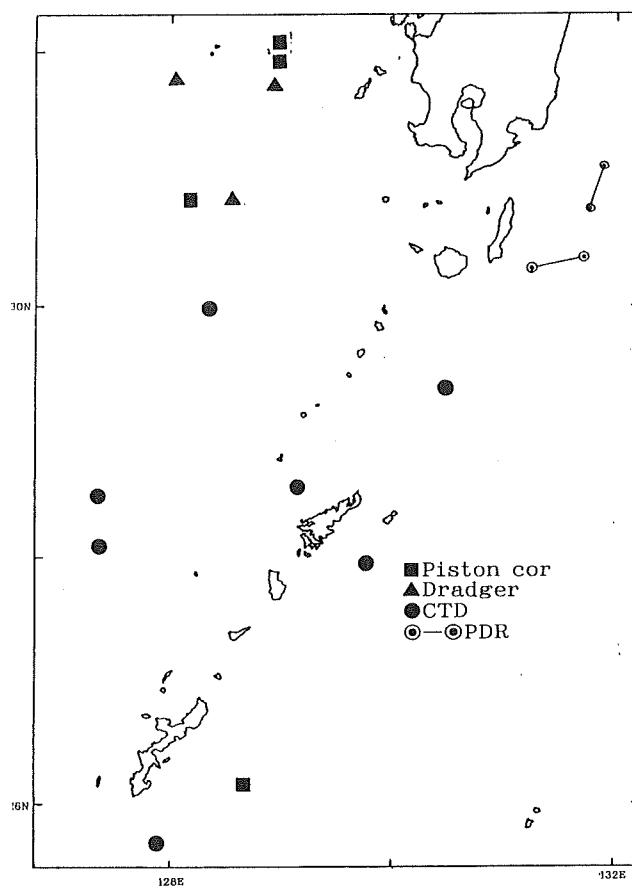
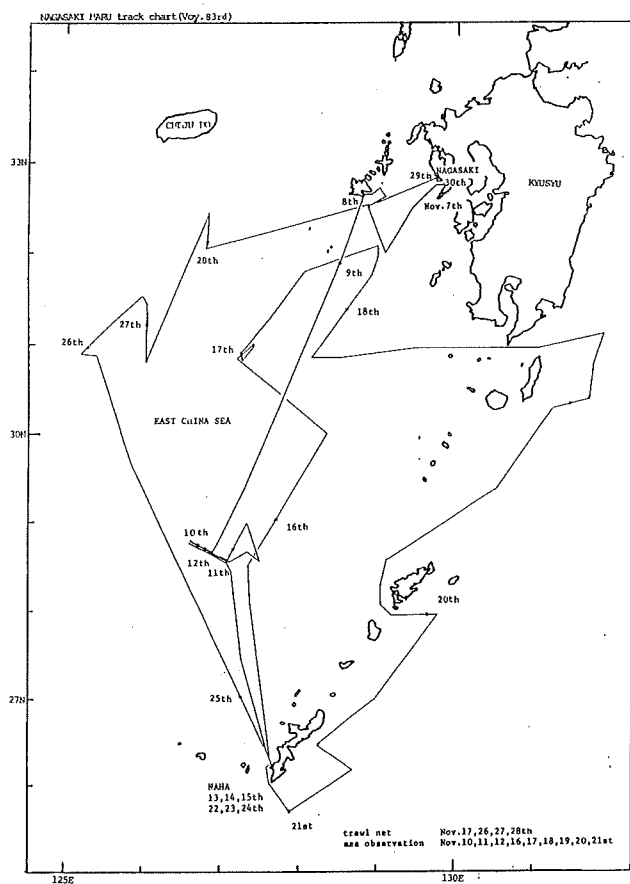
<i>PI</i>	<i>NO</i>	<i>UNITS</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	3213	NM	H11	Measurements of near-surface temperature and Salinity with a thermosalinograph (F, S, I).
A	30	stations	H10	Using F, S, I Integrated CTD.
A	51	stations	D71	Using R.D. Instrument Acoustic Doppler Current Profiler.
A	30	stations	G73	Using NEC Co. Echo sounder.
B	26	stations	H09, H21, H22, H24 H25, H26	Using Secchi Disk.
A	16	stations	H16	CFC-11, -12, -13 and N ₂ O concentrations in air (M71) CFC-11, -12, -113 N ₂ O, CH _x and total inorganic carbon concentrations in sea water (H33, H74, H27).
C	400	stations	M71	CO ₂ and CH ₄ concentrations in air.
D	167	times	M06	Observed every 3 hours.
E	7	stations	D90	△ ¹⁴ C Sampling.
E	6	stations	D90	Helium and Tritium Sampling.

Reference No. : 95061
Restrict Data : No
Ship Name : NAGASAKI MARU
Ship Type : Training Ship
Cruise No./Name : Voy 83
Cruise Period : 07/11/1995 to 30/11/1995
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Faculty of Fisheries, Nagasaki Univ.
Chief Scientist(s) : S. Yoda Faculty of Fisheries, Nagasaki Univ.
General Ocean Area(s) : East China Sea, North Pacific Ocean
Geographic Coverage : 132, 96, 95
Principal Investigators :
A; H. Kanehara Faculty of Fisheries, Nagasaki Univ.
B; T. Matuno Faculty of Fisheries, Nagasaki Univ.
C; H. Ujiie Dept. of Marine Science, Ryukyus Univ.

Objectives and Brief Narrative of Cruise :

Main task

1. Training of Navigation.
2. Oceanographic observation.
3. Training operations of bottom trawl.



Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
B	28.39N	126.52E	D01	Set current meter 10th Nov.1995 time(0828).
B	28.39N	126.52E	D01	Took in it 12th Nov.1995 time (1452).
B	28.37N	126.07E	H72	Send out thermister chain 10th Nov.1995 time(1658).
B	28.37N	126.07E	H72	Took in it 10th Nov.1995 time(1834)
B	28.47N	126.37E	H72	Send out thermister chain 12th Nov.1995 time(0725).
B	28.47N	126.37E	H72	Took in it 12th Nov.1995 time(1014).
B	28.39N	126.52E	H72	Send out thermister chain 12th Nov.1995 time(1244).
B	28.39N	126.52E	H72	Took in it 12th Nov.1995 time(1427).

Summary of Measurements and Samples Taken :

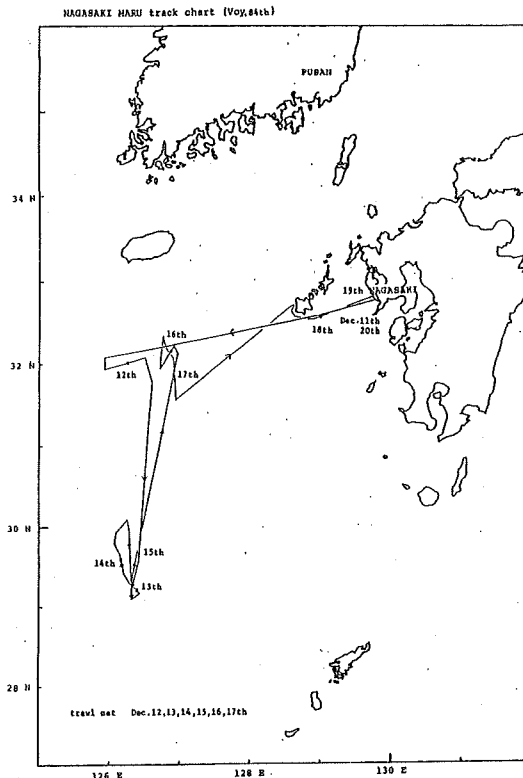
PI	NO	UNITS	DATA TYPE	DESCRIPTION
B	23	stations	H10	Using Neil-Brown Mark-3B CTD.
B	4	stations	D01	Streamed MSP.
C	7	points	H10	Using neil-Brown Mark-3B CTD.
C	4	samples	G04	Using piston core sampling.
C	5	samples	G01	Using dredger sampling.
A	13	samples	B65	Sampling of fish by bottom trawl net.
C	2	data	G75	Using correlation echo sounder processor.

Reference No. : 95062
 Restrict Data : No
 Ship Name : NAGASAKI MARU
 Ship Type : Training Ship
 Cruise No./Name : Voy 84
 Cruise Period : 11/12/1995 to 20/12/1995
 Port of Departure : Nagasaki
 Port of Return : Nagasaki
 Responsible Laboratory : Faculty of Fisheries, Nagasaki Univ.
 Chief Scientist(s) : S.Yoda Faculty of Fisheries, Nagasaki Univ.
 General Ocean Area(s) : East China Sea
 Geographic Coverage : 132, 96
 Principal Investigators :
 A; H. Kanehara Faculty of Fisheries, Nagasaki Univ.

Objectives and Brief Narrative of Cruise :

Main task

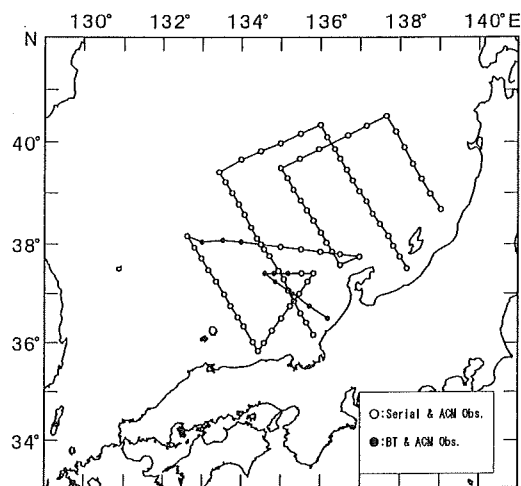
1. Training of Navigation.
2. Oceanographic observation.
3. Training operations of bottom trawl.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	24	samples	B65	Sampling of fish by bottom trawl net.
A	12	drops	H13	XBT Drops with T6 type probes.

Reference No. : 95063
 Restrict Data : No
 Ship Name : SEIFU MARU
 Ship Type : Research Vessel
 Cruise Period : 24/11/1995 to 21/12/1995
 Port of Departure : Maizuru
 Port of Return : Maizuru
 Responsible Laboratory : Maizuru Marine Observatory, JMA
 Chief Scientist(s) : Mr. N. Sato Maizuru Marine Observatory, JMA
 Project Name : IGOSS, MARPOLMON, WESTPAC
 Coordinating Body : IOC
 Principal Investigators :
 A; Mr. N. Sato Maizuru Marine Observatory, JMA
 B; Mr. T. Segawa Maizuru Marine Observatory, JMA



Track Chart

Seifu Maru (Nov.24~Dec.21)

Objectives and Brief Narrative of Cruise :

Seasonal observation of marine condition and monitoring the background marine pollutions.

(Main task)

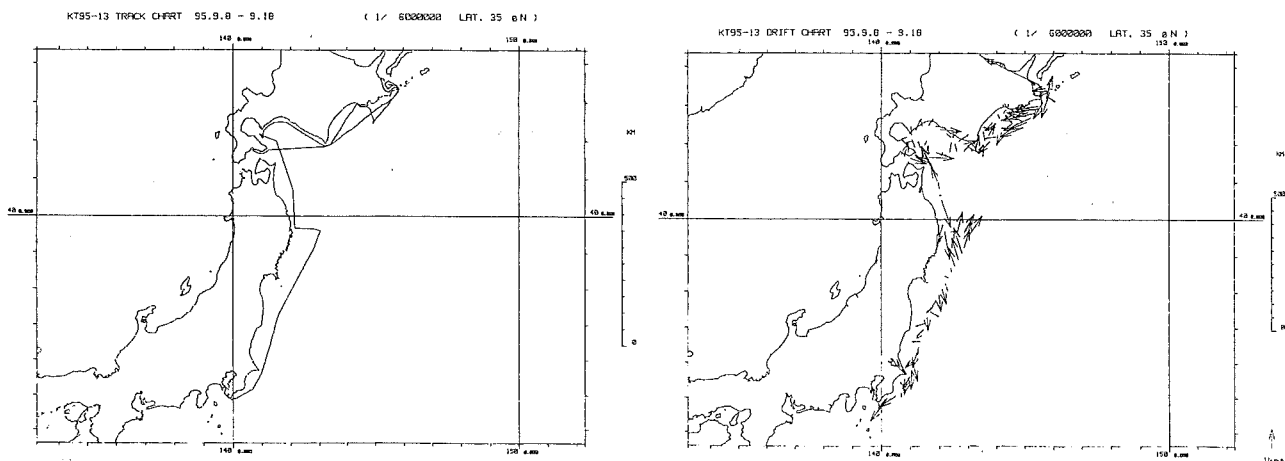
1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues).
2. Hydrographic observation (physical, chemical and biological).
3. Inspection of ocean data buoy.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2000	NM	H71	Measurements of near-surface temperature and salinity using T.S.G.
A, B	17	stations	H09, H21	Using Neil-Brown CTD with Rosette Sampler System.
A	63	stations	H10	Using Neil-Brown CTD.
B	30	stations	H16	Using Secchi Disk.
A	2000	NM	D71	Using Acoustic Current Meter(FURUNO).
A	116	stations	D72	Using microwave or Tucker wave gauge.
A	17	stations	B02, H22, H24, H25	Using Neil-Brown CTD with Rosette Sampler System.
A	3	stations	H28	Using Neil-Brown CTD with Rosette Sampler System.
		stations	H31	Measurement of total-beta.
		samples	P02	Using Neil-Brown CTD with Rosette Sampler System.
		samples	P03	Using Surface water sampling.
		samples	P03	Using Neuston Net.
		NM	P90	Watch out for Floating pollutants, oil slicks, etc.
A	9	stations	B08	Using Surface water sampling.
A	9	stations	B09	Collected by using Norpac Net.
B	10	drops	H31	X-BT Drop with T6 type probe.
A	11	ascents	M01	Using VAISALA Digcoda MW II system and VAISALA RS80-15N Radio Sondes.
A	116	stations	M06	According to "WMO International Codes".
B	90	stations	G73	Using echo sounder (KAIJO).

Reference No. : 95064
Restrict Data : No
Ship Name : TANSEI MARU
Ship Type : Research Ship
Cruise No./Name : KT-95-13
Cruise Period : 14/09/1995 to 18/09/1995
Port of Departure : Kushiro
Port of Return : Hakodate
Responsible Laboratory : Akkeshi Marine Biological Station, Hokkaido, Univ.
Chief Scientist(s) : H. Mukai Akkeshi Marine Biological Station, Hokkaido, Univ.
Specific Areas : Nemuro Bay
Geographic Coverage : 166
Principal Investigators :

A; H. Mukai Akkeshi Marine Biological Station, Hokkaido, Univ.



Objectives and Brief Narrative of Cruise :

Objections:

Taxonomics and Ecology of benthos in littoral area of cold waters and Searching of habitats for young fish of *Hypomesus* spp.

Brief narrative of cruise: In 9 stations of Nemuro Bay intensive collection of benthos and STD measurements were conducted.

Vertical and horizontal structure of sea water temperature and salinity was clarified. Much benthic invertebrates were obtained.

No specimen of *Hypomesus* was caught in this cruise.

Summary of Measurements and Samples Taken :

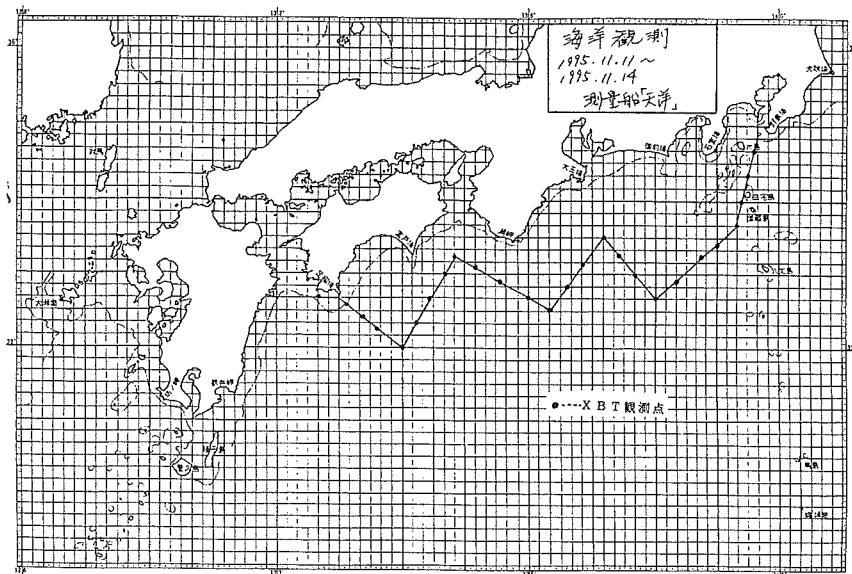
PI	NO	UNITS	DATA TYPE	DESCRIPTION
	9	stations		STD vertical profile (temp. salinity every 1m).
	6	stations		IKPT-net surface horizontal tow (collection of young fish of <i>Hypomesus</i> sp.).
	11	stations		ORI net surface horizontal tow (collection of drifting algae and associated animals).
	6	stations		dredge 10 min. tow (collection of benthos).
	5	stations		2m beam trawl 10 min. tow (collection of benthos).

Reference No. : 95065
 Restrict Data : No
 Ship Name : TENYO
 Ship Type : Survey Vessel
 Cruise No./Name : 950031
 Cruise Period : 11/11/1995 to 14/11/1995
 Port of Departure : Moji
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
 Chief Scientist(s) : Mr. T. Nishikawa Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 130, 131
 Principal Investigators :

A; Mr. K. Oka
 Hydrographic Department,
 Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

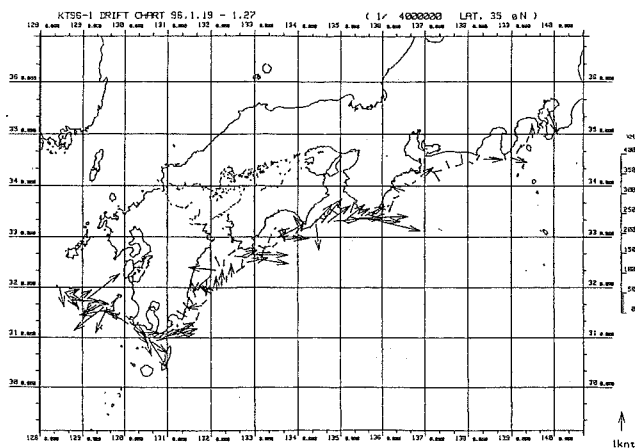
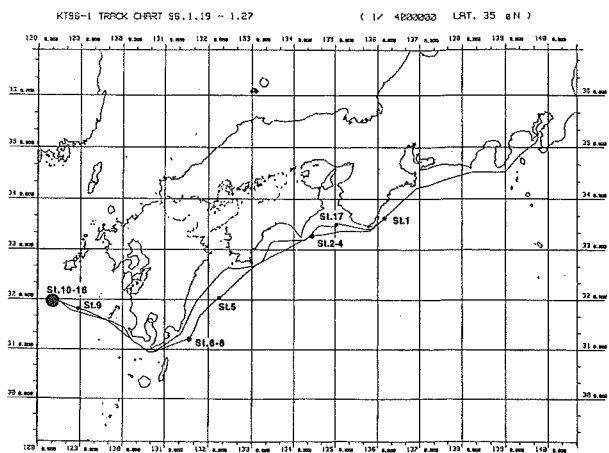
To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	26	drops	H13	XBT drops with T6 type probes.

Reference No. : 96001
 Restrict Data : No
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-96-1
 Cruise Period : 19/01/1996 to 27/01/1996
 Port of Departure : Tokyo
 Port of Return : Shingu
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : K. Tsukamoto Ocean Research Inst., Univ. of Tokyo
 Specific Areas : Danjo Islands, Kuroshio Current
 Geographic Coverage : 131, 132
 Principal Investigators :
 A; Dr.K.Tsukamoto Ocean Research Inst., Univ. of Tokyo



Objectives and Brief Narrative of Cruise :

The object of this cruise was to collect the silver eel, *Anguilla japonica*, in the East China Sea, migrating to the spawning area.

Sampling the eel larvae, leptocephali was also another focus of this survey. These samples were to be used for understanding the migratory process and mechanism of this diadromous species. Eel trap operation, CTD observation and net sampling by IKMT were made around the Danjo Islands and along the Japanese coast.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3	stations	H10	Using Sea-Bird CTD.
A	8	stations	B18	Eel Trap.
A	7	stations	B09	IKMT Net, ORI Net.

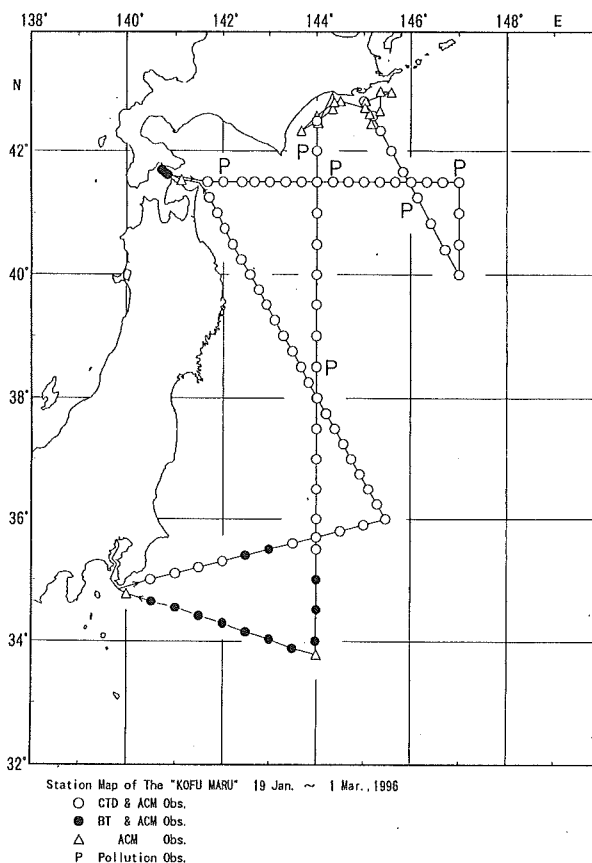
Reference No. : 96002
 Restrict Data : No
 Ship Name : KOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-01
 Cruise Period : 19/01/1996 to 01/03/1996
 Port of Departure : Hakodate
 Port of Return : Hakodate
 Responsible Laboratory : Hakodate Marine Observatory, JMA
 Chief Scientist(s) : M. Inagawa Hakodate Marine Observatory, JMA
 General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 166, 130
 Project Name : IGOSS, MARPOLMON,
 TOPEX/POSEIDON,
 WESTPAC
 Coordinating Body : IOC, WMO

Principal Investigators :
 A; Oceanographical Division. Hakodate Marine Observatory,
 JMA
 B; Marine Meteorological Division, HMO, JMA
 C; Pollutants Chemical Analysis Center, Marine Dept., Japan
 Meteorological Agency

Objectives and Brief Narrative of Cruise :

Regular observation of oceanography, marine meteorology.
 Background marine-pollution monitoring. Seawater sampling for
 radioactivity measurement. Ocean-wave observation.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2757	NM	H71	Continuous sea surface temperature & salinity recording.
A	73	stations	H10	Using Neil-Brown CTD.
A	31	stations	B02, H09, H21, H22, H24, H25	Using Neil-Brown CTD with Niskin bottles.
A	80	stations	G73	Using KAIJO-DENKI echo sounder.
A	30	stations	H16	Using Secchi Disk (Daytime only).
A	12	drops	H13	XBT Drops with T6 type probes.
A	3	stations	H13	DBT using TSURUMI-SEIKI digital BT.
A	105	stations	D71	Using FURUNO acoustic doppler currentmeter at 0, 50, 100 meters in depth.
A	6	stations	B08, H28	Using Neil-Brown CTD with Niskin bottles.
A	6	stations	B09	Using NORPAC net.
B	174	times	M06	Observed every 3 hours.
B	13	times	M01	Using VAISALA system.
B	174	times	D72	Using micro-wave & Tucker wave gage.
C	2	samples	P02	Sampling for analysis of heavy metals.
C	2	samples	H31	Sampling for measurement of total beta radioactivity.
C	2	samples	P90	Sampling for measurement of petroleum residues.
C	4	samples	P03	Using Neuston net.
C	1888	NM	P90	Floating pollutant observed visually (Daytime only).

Reference No. : 96003
 Restrict Data : No
 Ship Name : SHUMPURU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-01
 Cruise Period : 19/01/1996 to 23/02/1996

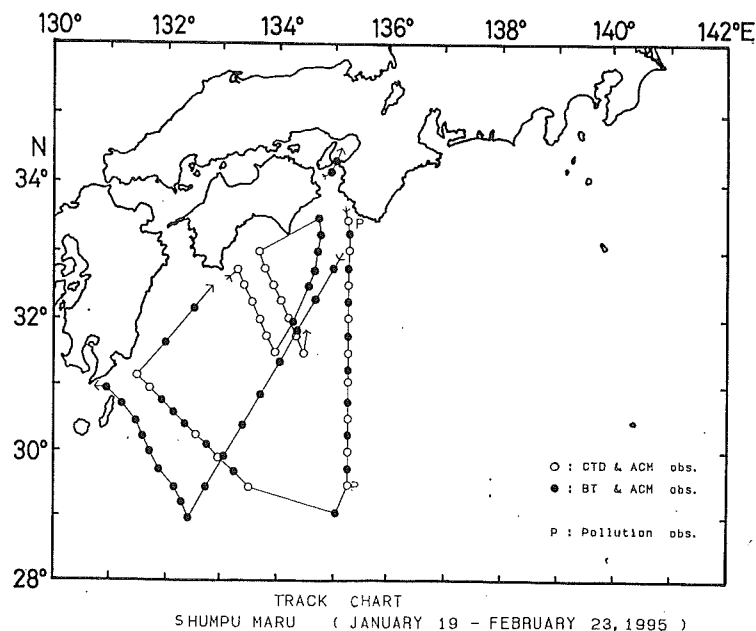
Port of Departure : Kobe
 Port of Return : Kobe
 Responsible Laboratory : Kobe Marine Observatory, JMA
 Chief Scientist(s) : T. Utsunomiya Kobe Marine Observatory, JMA
 General Ocean Area(s) : Inland Sea, Philippine Sea
 Specific Areas : South of Honshu and Kii Channel
 Geographic Coverage : 131, 95
 Project Name : IGOSS, MARPOLMON, WESTPAC, WOCE
 Principal Investigators :

- A; Oceanographical Division, Kobe Marine Observatory, JMA
- B; Maritime Meteorological Division, Kobe Marine Observatory, JMA
- C; Oceanographical Division, Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Regular Oceanographical (physical, chemical, biological) and maritime meteorological observations in the South of Honshu.

The observations along the TOPEX/POSEIDON altimetry satellite tracks in order to contribute to the development of oceanographical data assimilation system.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2444	NM	H71	Continuous sea surface temperature recording.
A	68	stations	D71	Using Furuno Co. Acoustic Doppler Current Meter.
A	27	stations	H10	Using Neil-Brown Mark3B CTD (only upper 1200m except 4 stations).
A	14	stations	H09, H21, H22, H24, H25	Using Rosette sampler.
A	2	stations	H23	Using Rosette sampler.
A	5	stations	H28	Using Rosette sampler.
C	3	stations	H31	Gross beta-radio activity, Using bucket.
C	2	stations	P02, P90	Dissolved Hydrocarbons and Heavy metals.
A	2	stations	P03	Using neuston net.
A	14	stations	B02	Using Rosette sampler.
A	9	stations	B08	Using bucket.
A	9	stations	B09	Using NORPAC net.
A	11	stations	H16	Using Secchi disk.
A	41	stations	H13	7 stations using XBT drops with T-5 type probes. 15 stations using XBT drops with T-6 type probes. 6 stations using XBT drops with T-7 type probes. 13 stations using TSURUMI-SEIKI Co. MICON-BT.
A	68	stations	G73	Using KAIJO Co. Echo sounder.
B	119	times	M06	Observed every 3 hours.
B	22	times	D72	Using wave recorder, OKI-DENKI Co. WX-1008.

Reference No. : 96004
Restrict Data : No
Ship Name : CHOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-01
Cruise Period : 17/01/1996 to 02/03/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Nagasaki Marine Observatory, JMA
Chief Scientist(s) : S. Wakaki Nagasaki Marine Observatory, JMA
General Ocean Area(s) : East China Sea, Philippine Sea
Geographic Coverage : 132, 131, 96, 95, 60, 59
Project Name : IGOSS, KER, MARPOLMON, WESTPAC

Principal Investigators :

A; Mr. S. Wakaki Nagasaki Marine Observatory, JMA
 B; Mr. K. Kimura Nagasaki Marine Observatory, JMA
 C; Mr. J. Jifuku Nagasaki Marine Observatory, JMA
 D; Mr. Y. Tomiyama Nagasaki Marine Observatory, JMA

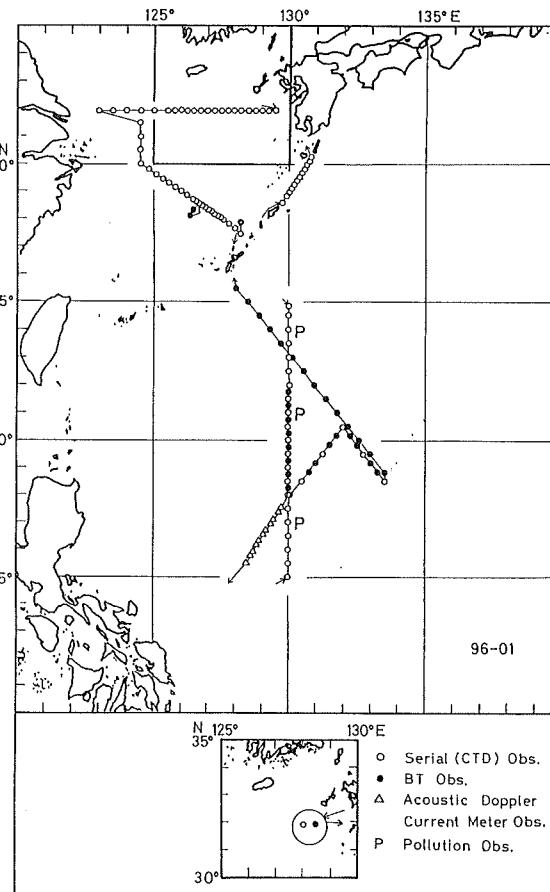
Objectives and Brief Narrative of Cruise :

A seasonal oceanographical observation (physical, chemical and biology) in the East China Sea and the Philippine Sea in winter.

An observation of marine pollutant to monitor background of marine pollution.

Oceanographical and maritime meteorological observations for the verification of buoy robot observation.

Improvement of the quality on the forecast of precipitation in winter season.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	87	stations	H10	Using Neil-Brown MK-3B CTD.
A	35	days	H71	Using Tsurumi-Seiki Co. thermosalinograph.
A	33	days	D71	Using Furuno Co. ADCM.
A	32	drops	H31	XBT drops with T6 type probes.
B	40	stations	H21, H22, H24	Using Rosette sampler.
B	39	stations	H25	Using Rosette sampler.
B	3	stations	H23, H28	Using Rosette sampler.
B	2	stations	P02	Using Rosette sampler.
B	2	stations	P03	Using glass jar.
B	3	stations	P90	Using Neuston net.
B	2	stations	H31	Using Rosette sampler.
C	11	stations	B02	Using Rosette sampler.
C	11	stations	B08	Using stainless steel water bucket.
C	9	stations	B09	Using Norpac net.
D	36	days	M06	Using cylindrical resonator digital barometer, platinum resistance thermometer, Lithium chloride dew-point hygrometer and wind vane and fan-anemograph.
D	34	times	M01	Automated shipboard aerological observation system by VAISALA.
D	291	stations	D72	Micro-wave wavemeter.

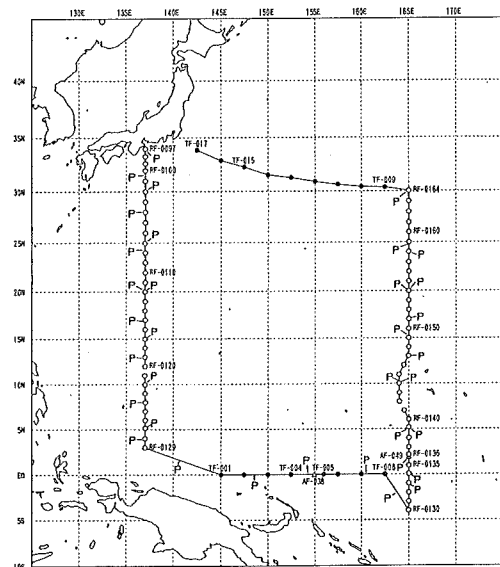
Reference No. : 96005
 Restrict Data : No
 Ship Name : RYOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-01
 Cruise Period : 17/01/1996 to 14/03/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Marine Dept., Japan Meteorological Agency
 Chief Scientist(s) : M. Imai Marine Dept., Japan Meteorological Agency
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 130, 129, 95, 59, 23, 22,
 320, 319, 20, 56, 92

Principal Investigators :

A; K.Ishikawa Marine Dept., Japan Meteorological Agency
 B; I.Terashima Marine Dept., Japan Meteorological Agency
 C; H.Johashi Marine Dept., Japan Meteorological Agency
 D; H.Tanabe Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

- A routine oceanographical observation (physical, chemical and biological).
 a. Seasonal observation of marine condition.
 b. Monitoring the background marine pollution.
 Seawater sampling for radioactivity measurement.



Track Chart
 Ryofu Maru (January 17 ~ March 14,1996)

○ CTD & ACM Obs.
 ● XBT & ACM Obs.
 △ ACM Obs.
 P Pollution Obs.

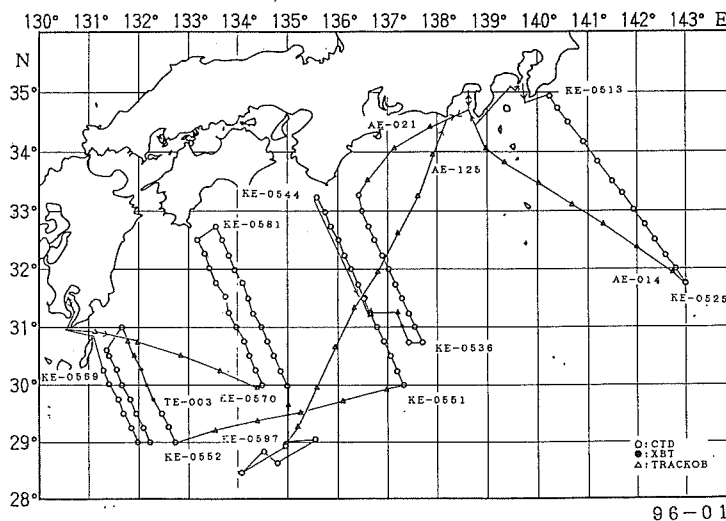
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	10151	NM	H11	Continuous sea surface temperature recording.
A	68	stations	H10	Using FSI-ICTD and NBIS Mark3B.
A	87	stations	D71	Using R.D. Instruments Acoustic Doppler Current Profiler.
A	28	stations	H16	Using Secchi Disk.
A	17	drops	H13	XBT drops with T-6 type probes.
B	55	stations	H09, H21, H22 H24, H25, H26	Using Rosette Sampler.
B	41	stations	H28	Using Rosette Sampler.
B	55	stations	B02	Using Rosette Sampler.
B	43	stations	B08	Using bucket.
B	23	stations	B09	Using NORPAC net.
B	9	stations	H31	Using Niskin Bottle and buckets.
C	14	stations	P02, P03	Mercury concentrations in seawater(P02) Dissolved Hydrocarbons in seawater (P03).
C	14	stations	P02	Cadmium concentrations in seawater.
C	34	stations	H74	Total inorganic carbon concentration in seawater.
C	34	Stations	H27	Alkalinity in seawater.
A	75	stations	G73	Using NEC Echo sounder.
C	21	stations	P03	Using Neuston net.
C	850	stations	M71	CO ₂ and CH ₄ concentrations in air.
C	34	Stations	H33, M71	N ₂ O concentrations in air (M71) and in seawater (H33).
D	223	times	M06	Observed every 3 hours.
D	32	times	M01	Using shipboard Automatic Radio-Sonde-System.

Reference No. : 96006
 Restrict Data : No
 Ship Name : KEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-01
 Cruise Period : 26/01/1996 to 29/02/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Marine Dept., Japan Meteorological Agency
 Chief Scientist(s) : T. Maehira Marine Dept., Japan Meteorological Agency
 General Ocean Area(s) : North Pacific Ocean, Philippine Sea
 Geographic Coverage : 131, 130, 95
 Principal Investigators :
 A; K. Ishikawa Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Routine Oceanographic observation.
 An observation of marine pollutant to monitor background of marine pollution.
 Oceanographical and maritime meteorological observations for verification of buoy robot observation.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	85	stations	H10	Using Neil-Brown Mark3B CTD.
A	1	drops	H13	XBT Drops with T5 type probes.
A	2	drops	H13	XBT Drops with T6 type probes.
A	4	drops	H13	XBT Drops with T7 type probes.
A	125	stations	D71	Using R.D. Instrument Acoustic Doppler Current Profiler.
A	2	stations	H09, H21, H22 H24, H25	Using Rosette Sampler.
A	2	stations	P02	Using polyethylene bottle or Rosette Sampler, Heavy metals(Hg, Cd).
A	2	stations	P03	Using glass jar.
A	2	stations	H31	Using stainless steel water bucket.
A	47	stations	H16	Using Secchi Disk.

Reference No. : 96007
 Restrict Data : Yes
 Ship Name : WAKATORI MARU
 Ship Type : Training Vessel
 Cruise Period : 11/04/1996 to 27/04/1996
 Port of Departure : Sakai Tottori
 Port of Return : Sakai Tottori
 Responsible Laboratory : Tottori Prefectural Sakai Fishery High School
 Chief Scientist(s) : T. Ishikura

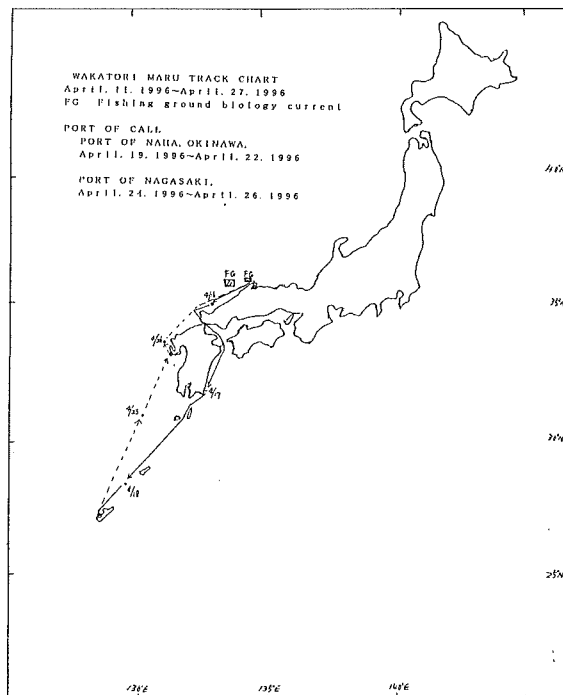
General Ocean Area(s) : Japan Sea
Specific Areas : Main area 35°-6'N to 35°-6'N, 131°-2'E to 132°-1'E squid fisheries.
Geographic Coverage : 131
Coordinating Body : National Research Inst. of Far Seas Fisheries.
Principal Investigators :

A; Mr. T. Ishikura
 B; Mr. M. Iwata
 D; Mr. T. Ishikura

Objectives and Brief Narrative of Cruise :

Training for squid fisheries accompanied with oceanographic observation and biological research.

1. Oceanographic and meteorologic observation in squid fishing ground once a day.
2. To body weight of all the caught squid (contain quantity).
3. Precise observation of fifty squids.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION.
A	6	stations	H10, D90, M90	STD (upper--standard layer(until necessity depth)).
A	5		H16	Squid fishing ground. Alec electronics.
D	6		B90	Squid weight and quantity.
D	2		B90	Precise observation of fifty squids.

Reference No. : 96008
Restrict Data : No
Ship Name : CHOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-04
Cruise Period : 23/04/1996 to 21/05/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Nagasaki Marine Observatory, JMA
Chief Scientist(s) : S. Wakaki Nagasaki Marine Observatory, JMA
General Ocean Area(s) : East China Sea, Philippine Sea
Geographic Coverage : 132, 96, 95
Project Name : IGOSS, KER, MARPOLMON, WESTPAC
Coordinating Body :
Principal Investigators :
 A; Mr. S. Wakaki Nagasaki Marine Observatory, JMA
 B; Mr. K. Kimura Nagasaki Marine Observatory, JMA
 C; Mr. M. Iwamoto Nagasaki Marine Observatory, JMA
 D; Mr. K. Ashimine Nagasaki Marine Observatory, JMA

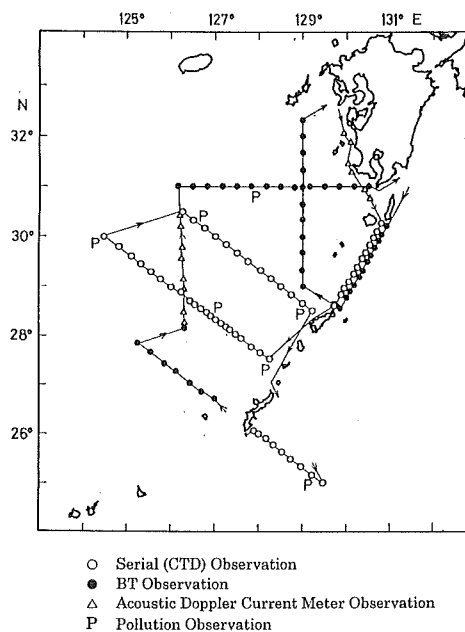
Objectives and Brief Narrative of Cruise :

A seasonal oceanographical observation (physical, chemical and biology) in the East China Sea and the Philippine Sea in spring.

An observation of marine pollutant to monitor background of marine pollution. Oceanographical and maritime meteorological observations for the verification of buoy robot observation.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	56	stations	H10	Using Neil-Brown MK-3B CTD.
A	17	days	H71	Using Tsurumi-seiki Co. thermosalinograph.
A	17	days	D71	Using Furuno Co. ADCM.
A	32	stations	H13	Using Tsurumi-seiki Co. Seamate BT.
A	13	drops	H13	XBT Drops with T6 Type probes.
B	20	stations	H21, H22, H24, H25	Using Rosette sampler.
B	3	stations	H28	Using Rosette sampler.
B	2	stations	P02	Using Rosette sampler.
B	2	stations	P03	Using glass jar.
B	4	stations	P90	Using Neuston Net.
C	11	stations	B02	Using Rosette sampler.
C	11	stations	B08	Using stainless steel water bucket.
C	11	stations	B09	Using Norpac Net.
D	17	days	M06	Using cylindrical resonator digital barometer, platinum resistance thermometer, Lithium chloride dew-point hygrometer and wind vane and fan-anemograph.
D	10	times	M01	Automated shipboard aerological observation system by VAISALA.
D	127	stations	D72	Micro-wave wavemeter.



Reference No. : 96009
 Restrict Data : No
 Ship Name : SHUMPU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-04
 Cruise Period : 23/04/1996 to 21/05/1996
 Port of Departure : Kobe
 Port of Return : Kobe
 Responsible Laboratory : Kobe Marine Observatory, JMA
 Chief Scientist(s) : K. Kadono Kobe Marine Observatory, JMA
 General Ocean Area(s) : Inland Sea, Philippine Sea
 Specific Areas : South of Honshu, Bisan-seto
 Geographic Coverage : 131, 95
 Project Name : IGOSS, MARPOLMON, WESTPAC, WOCE
 Principal Investigators :

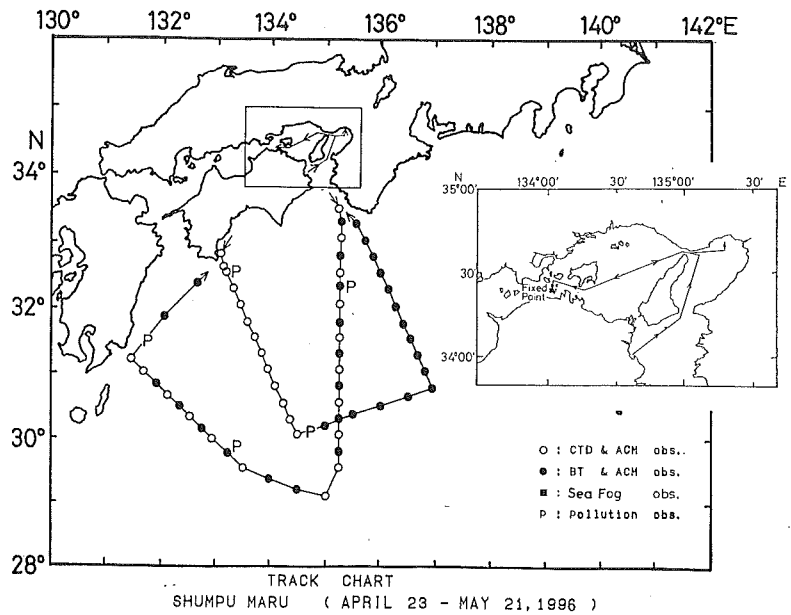
- A; Oceanographical Division, Kobe Marine Observatory, JMA
- B; Maritime Meteorological Division, Kobe Marine Observatory, JMA
- C; Oceanographical Division, Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Regular Oceanographical (physical, chemical and biological) and maritime meteorological observations in the South of Honshu.

The observations along the TOPEX/POSEIDON altimetry satellite tracks in order to contribute to the development of oceanographical data assimilation system.

Sea fog observations in the Bisan-seto.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1638	NM	H71	Continuous sea surface temperature recording.
A	60	stations	D71	Using Furuno Co. Acoustic Doppler Current Meter.
A	29	stations	H10	Using Neil-Brown Mark3B CTD (only upper 1200m except 3 stations).
A	15	stations	H09, H21, H22 H24, H25	Using Rosette sampler.
A	5	stations	H28	Using Rosette sampler.
C	2	stations	P02, P90	Dissolved Hydrocarbons and Heavy metals.
A	5	stations	P03	Using neuston net.
A	15	stations	B02	Using Rosette sampler.
A	9	stations	B08	Using bucket.
A	9	stations	B09	Using NORPAC net.
A	17	stations	H16	Using Secchi disk.
A	31	stations	H13	8 stations using XBT drops with T-6 type probe, 11 stations using XBT drops with T-7 type probe, 12 stations using TSURUMI-SEIKI Co. MICON-BT.
A	60	stations	G73	Using KAIJO Co. Echo sounder.
B	97	times	M06	Observed every 3 hours.
B	18	times	M90	Using A.I.R. Co. TETHER SONDE MODEL TS-3A-SP and ADAS TETHER SONDE BALOON.
B	8	stations	D72	Using wave recorder, OKI-DENKI Co. WX-1008.

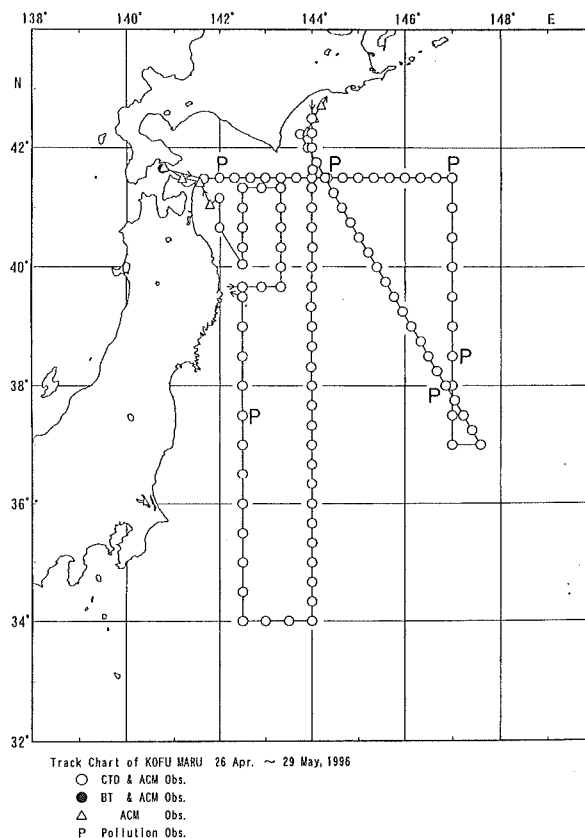
Reference No. : 96010
 Restrict Data : No
 Ship Name : KOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-04
 Cruise Period : 26/04/1996 to 29/05/1996
 Port of Departure : Hakodate
 Port of Return : Hakodate
 Responsible Laboratory : Hakodate Marine Observatory, JMA
 Chief Scientist(s) : M. Inagawa Hakodate Marine Observatory, JMA
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 166, 130

Project Name : IGOSS, MARPOLMON, WESTPAC
Coordinating Body : IOC, WMO
Principal Investigators :

- A; Oceanographical Division, Hakodate Marine Observatory, JMA
- B; Marine Meteorological Division, Hakodate Marine Observatory, JMA
- C; Pollutants Chemical Analysis Center, Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

1. Regular observation of oceanography and marine meteorology.
2. Background marine pollution monitoring.

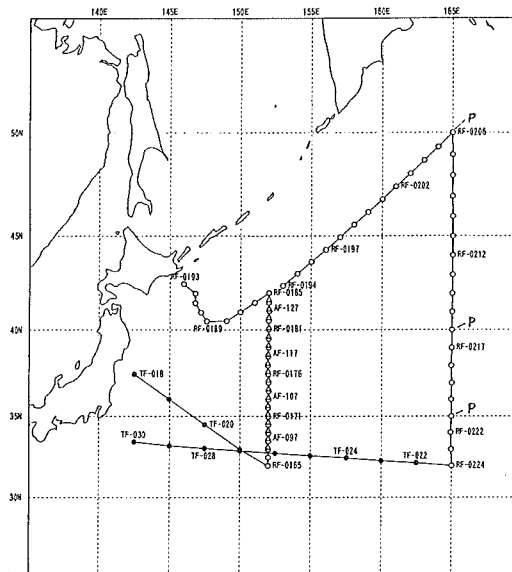


Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2486	NM	H71	Continuous sea surface temperature & salinity recording.
A	103	stations	H10	Using Neil-brown CTD.
A	41	stations	B02, H09, H21 H22, H24, H25	Using Neil-Brown CTD with Rosette samples.
A	57	stations	H16	Using Secchi disk (Daytime only).
A	2	stations	H13	Using TSURUMI-SEIKI Co. MICON-BT.
A	1	drop	H13	XBT drops with T6 type probes.
A	113	stations	D71	Using FURUNO Co. Acoustic Meter at 0, 50, 100m in depth.
A	41	stations	B08, H28	Using Neil-Brown CTD with Rosette sampler.
A	6	stations	B09	Using NORPAC net.
B	131	times	M06	Observed every 3 hours.
B	17	times	M01	Using VAISALA system.
B	131	times	D72	Using micro wave & Tucker wave gauge.
C	2	samples	P02	Sampling for analysis of heavy metals.
C	2	samples	P90	Sampling for measurement of petroleum residues.
C	4	samples	P03	Using Neuston net.
C	2486	NM	P90	Floating pollutants observed visually (Daytime only).

Reference No. : 96011
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-04
Cruise Period : 23/04/1996 to 03/06/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Marine Dept., Japan Meteorological Agency

Chief Scientist(s) : K. Nemoto Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 166, 165, 164, 128, 129, 130
Project Name : IGOSS, MARPOLMON, WESTPAC
Principal Investigators :
 A; I. Terashima Marine Dept., Japan Meteorological Agency
 B; I. Terashima Marine Dept., Japan Meteorological Agency
 C; H. Jobashi Marine Dept., Japan Meteorological Agency
 D; H. Tanabe Marine Dept., Japan Meteorological Agency



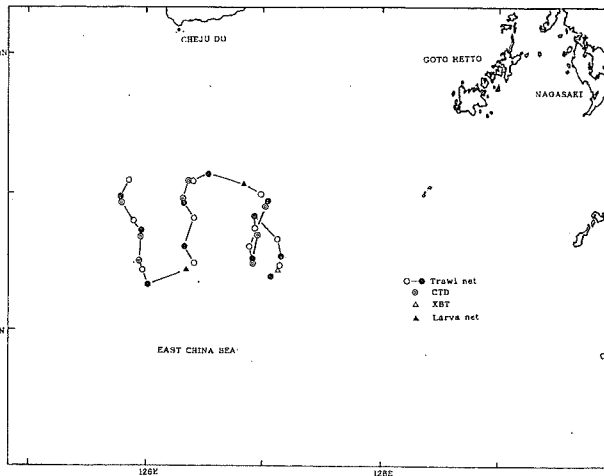
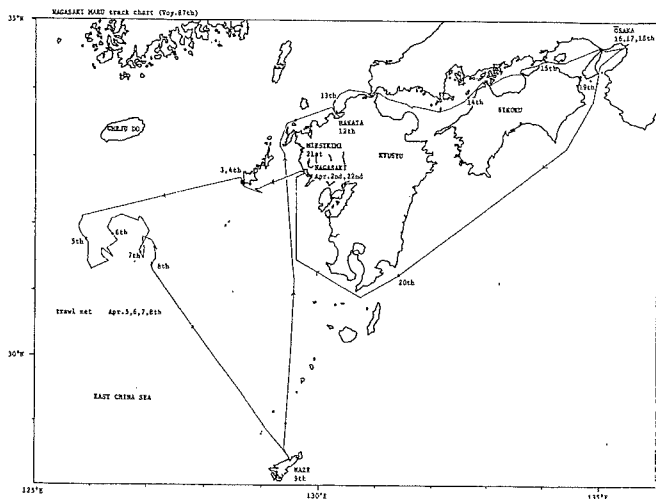
Objectives and Brief Narrative of Cruise :

- A routine oceanographical observation (physical, chemical, biological).
1. Seasonal observation of marine condition.
 2. Monitoring the background marine pollution.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	6066	NM	H11	Continuous sea surface temperature recording.
A	60	stations	H10	Using FSI-ICTD AND SBE 911plus.
A	87	stations	D71	Using R.D. Instrument Acoustic Doppler Current Profiler.
A	70	stations	G73	Using NEC Echo sounder.
A	34	stations	H16	Using Secchi Disk.
A	13	drops	H13	XBT drops with T-6 type probes.
B	40	stations	H09, H21, H22 H24, H25, H26	Using Rosette Sampler.
B	16	stations	H28	Using Rosette Sampler.
B	40	stations	B02	Using Rosette Sampler.
B	23	stations	B08, B09	Using bucket (B08) NORPAC net (B09).
C	3	stations	P02, P03	Heavy metals (P02) Dissolved Hydrocarbons (P03).
C	3	stations	P03	Using Neuston Net.
C	18	stations	H27, H33, H74, M71	CFC-11, -12, -113 and N ₂ O concentrations in air (M71) CFC-11, -12, -113, N ₂ O, CH ₄ and total inorganic carbon concentrations in sea water (H33, H74, H27).
C	580	stations	M71	CO ₂ and CH ₄ concentrations in air.
D	224	times	M06	Observed every 3 hours.
D	13	times	M01	Using Shipboard Automatic Radio-Sonde System.

Reference No. : 96012
Restrict Data : No
Ship Name : NAGASAKI MARU
Ship Type : Training Ship
Cruise No./Name : Voy.87
Cruise Period : 02/04/1996 to 22/04/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Faculty of fisheries, Nagasaki Univ.
Chief Scientist(s) : Y.Tasaki Faculty of Fisheries, Nagasaki Univ.
General Ocean Area(s) : East China Sea
Geographic Coverage : 132
Principal Investigators :
 A; H. Kanehara Faculty of Fisheries, Nagasaki Univ.
 B; N. Oikawa Kyushu Univ.



Objectives and Brief Narrative of Cruise :

Main

1. Training of Navigation.
2. Oceanographic observation.
3. Training operations of bottom trawl.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	11	samples	B65	Sampling of fish by bottom trawl.
A	9	stations	H10	Using neil Brown Mark-3B CTD.
B	2	samples	B09	Trawl a Larva net.
A	1	drops	H13	XBT drops with T-10 type probes.

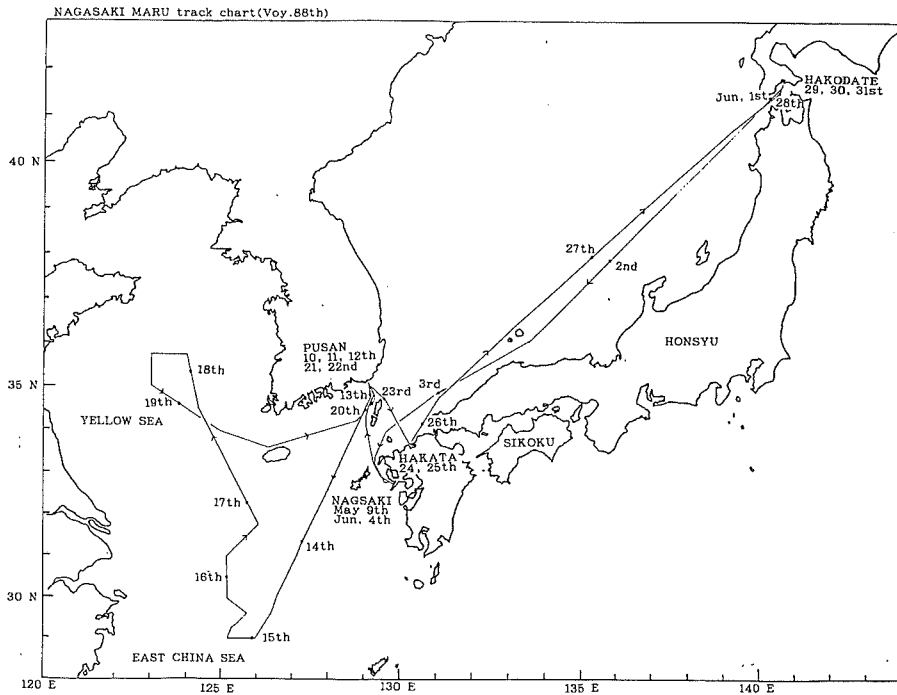
Reference No. : 96013
Ship Name : NAGASAKI MARU
Ship Type : Training Ship
Cruise No./Name : Voy.88
Cruise Period : 09/05/1996 to 04/06/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Faculty of fisheries, Nagasaki Univ.
Chief Scientist(s) : Y. Takaki Nagasaki Univ.
General Ocean Area(s) : East China Sea, Yellow Sea
Geographic Coverage : 132, 96
Project Name : The NU NFUP international cooperative marine science studies in the East China sea and the Yellow sea
Coordinating Body : National Fisheries University of Pusan.
Principal Investigators :
 A; H. Kanehara Nagasaki Univ.
 B; H. Kondo Nagasaki Univ.
 C; Lee Dae Jae Univ. of Pusan

Objectives and Brief Narrative of Cruise :

The Nagasaki Univ. and National Fisheries Univ. of Pusan international cooperative marine science studies in the East China Sea and Yellow Sea Cooperative studies will be carried out from 1994 to 1997.

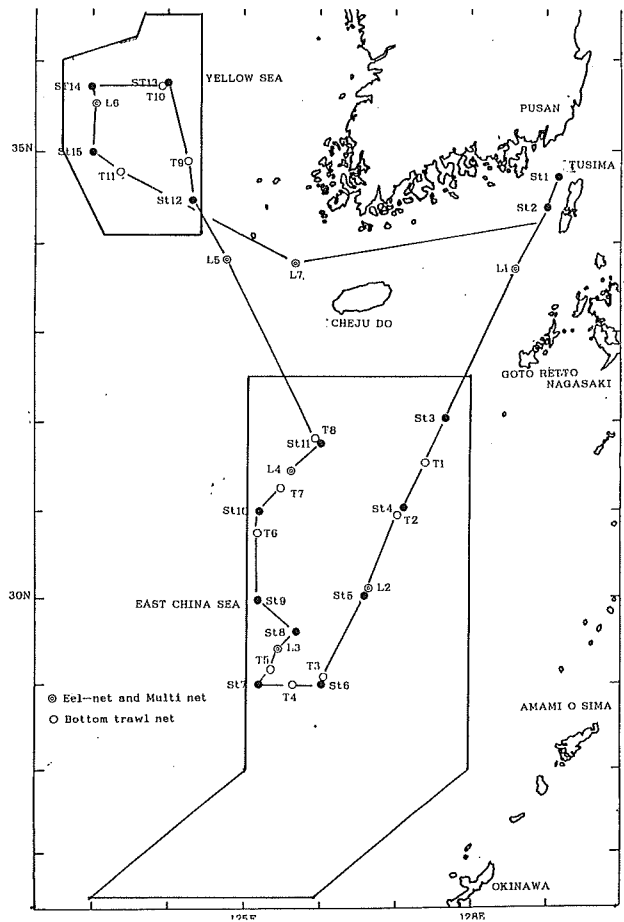
Main task

1. Oceanographic observation.
2. Trawl the Eel net and Larva net.
3. Sampling of fish by bottom trawl.



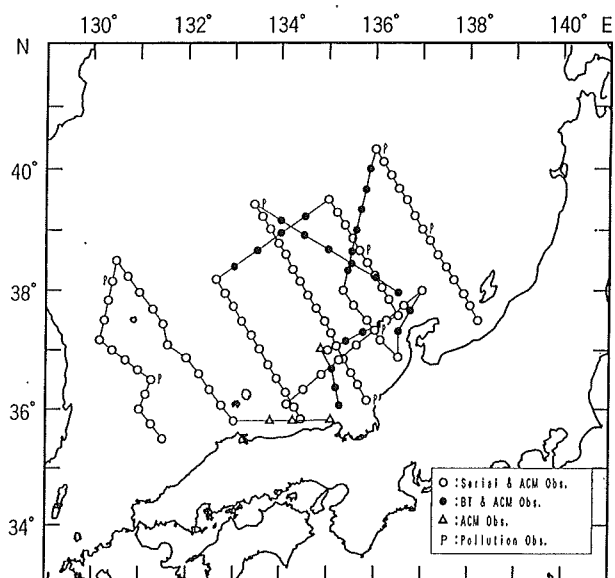
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	15	stations	H09, H10	Using Neil-Brown Mark-3B CTD.
C	12	stations	B09	Using Bongo net sampling.
B	3	stations	G04	Using Piston core sampling.
B	13	stations	G02	Sampling of mud by Smith McIntyre.
A	11	samples	B65	Sampling of fish by bottom trawl.
A	14	samples	B11	Trawl an Eel net.
A	7	samples	B09	Trawl a Larva net.



Reference No. : 96014
 Restrict Data : No
 Ship Name : SEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-01
 Cruise Period : 19/01/1996 to 01/03/1996
 Port of Departure : Maizuru
 Port of Return : Maizuru
 Responsible Laboratory : Maizuru Marine Observatory, JMA
 Chief Scientist(s) : Mr. Y. Konishi Maizuru Marine Observatory, JMA
 General Ocean Area(s) : Japan Sea
 Geographic Coverage : 167, 131
 Project Name : IGOSS, MARPOLMON,
 WESTPAC

Coordinating Body : IOC
 Principal Investigators :
 A; Mr. T. Segawa Maizuru Marine Observatory,
 JMA
 B; Mr. N. Nagai Maizuru Marine Observatory,
 JMA
 C; Mr. Y. Konishi Marine Dept., Japan
 Meteorological Agency
 D; Mr. H. Jobashi Maizuru Marine Observatory,
 JMA



Track Chart
 Seifu Maru (Jan. 19-Mar. 1)

Objectives and Brief Narrative of Cruise :

Seasonal observation of marine condition and monitoring the background marine pollutions.

Main task

1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues and total-beta).
2. Hydrographic observation (physical, chemical and biological).
3. Inspection of ocean data buoy.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2900	NM	H11	Measurements of near-surface temperature and salinity with a thermosalinograph (F.S.I).
A	24	drops	H13	XBT drops with T6 type probes.
A	9	stations	H09, H21	Using Neil-Brown CTD with Rosette Sampler System.
A	80	stations	H10	Using Neil-Brown CTD.
A	38	stations	H16	Using Secchi Disk.
A	2900	NM	D71	Using Acoustic Current Meter (FURUNO).
D	161	stations	D72	Using microwave or Tucker Wave gauge.
B	9	stations	B02, H22, H24, H25	Using Neil-Brown CTD with Rosette Sampler System.
B	3	stations	H23, H28	Using Neil-Brown CTD with Rosette Sampler System.
B	6	samples	H31	Using Neil-Brown CTD with Rosette Sampler System.
C	3	samples	P02	Using Neil-Brown CTD with Rosette Sampler System.
C	2	samples	P03	Surface water for petroleum hydrocarbons concentrations.
B	4	samples	P03	Using Neuston Net (particulate petroleum residues).
B	2900	NM	P90	Watch out for floating pollutants, oil slicks, etc.
B	9	stations	B08	Using Surface water sampling.
B	9	stations	B09	Collected by using Norpac Net.

D 24 ascents M01
 D 161 stations M06
 A 117 stations G73

Using VAISALA Digcoda MW2 system and VAISALA RS 80-15N Radio
 Sondes:
 According to "WMO International Codes".
 Using echo sounder (KAIJO).

Reference No. : 96015
 Restrict Data : No
 Ship Name : SEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-04
 Cruise Period : 22/04/1996 to 23/05/1996
 Port of Departure : Maizuru
 Port of Return : Maizuru
 Responsible Laboratory : Maizuru Marine Observatory, JMA
 Chief Scientist(s) : Mr. N. Nagai Maizuru Marine Observatory, JMA
 General Ocean Area(s) : Japan Sea
 Geographic Coverage : 167, 131
 Project Name : IGOSS, MARPOLMON, WESTPAC
 Coordinating Body : IOC
 Principal Investigators :

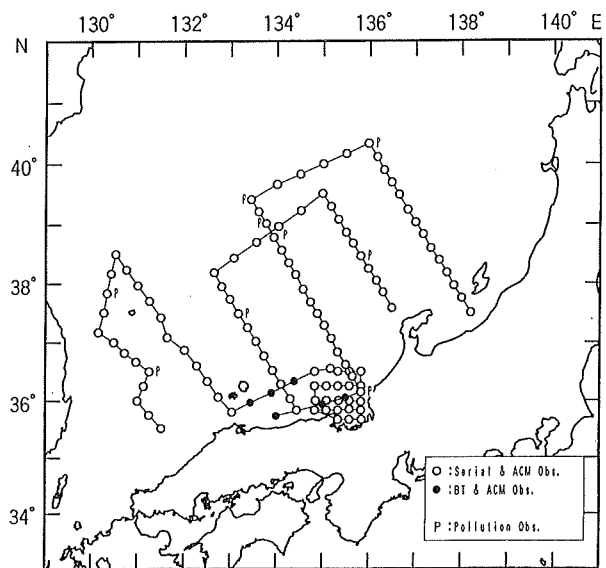
A; Mr. T. Segawa Maizuru Marine Observatory,
 JMA
 B; Mr. N. Nagai Maizuru Marine Observatory,
 JMA
 C; Mr. H. Jobashi Marine Dept., Japan
 Meteorological Agency

Objectives and Brief Narrative of Cruise :

Seasonal observation of marine condition and monitoring the background marine pollutions.

Main task

1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues)
2. Hydrographic observation (physical, chemical and biological)
3. Inspection of ocean data buoy



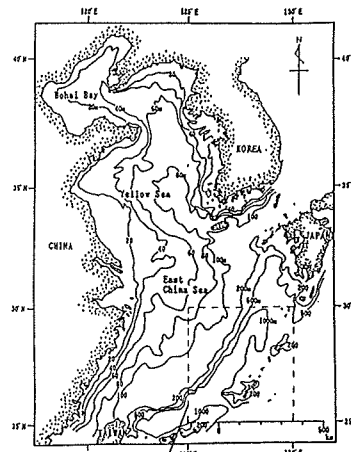
Track Chart
 Seifu Maru (Apr. 22-May 23)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2500	NM	H71	Measurements of near-surface temperature and salinity with a thermosalinograph (F.S.I).
A	6	drops	H13	XBT drops with T6 type probes.
A	22	stations	H09, H21	Using Neil-Brown CTD with Rosette Sampler System.
A	83	stations	H10	Using Neil-Brown CTD.
A	56	stations	H16	Using Secchi Disk.
A	2500	NM	D71	Using Acoustic Current Meter (FURUNO).
B	151	stations	D72	Using microwave or Tucker wave gauge.
B	22	stations	B02, H22, H24, H25	Using Neil-Brown CTD with Rosette Sampler System.
B	3	stations	H28	Using Neil-Brown CTD with Rosette Sampler System.
C	3	samples	P02	Using Neil-Brown CTD with Rosette Sampler System.

C	2	samples	P03	Surface water for petroleum hydrocarbons concentrations.
C	7	samples	P03	Using Neuston Net (particulate petroleum residues).
C	2500	NM	P90	Water out for floating pollutants, oil slicks, etc.
B	9	stations	B08	Using Surface water sampling.
B	9	stations	B09	Collected by using Norpac Net.
B	20	ascents	M01	Using VAISALA Digcoda MW2 system and VAISALA RS 80-15N Radio Sondes.
B	151	stations	M06	According to "WMO International Codes".
A	111	stations	G73	Using echo Sounder (KAJO).

Reference No. : 96016
Restrict Data : In Part
Ship Name : KAKUYO MARU
Ship Type : Training Ship
Cruise No./Name : Voyage No.115
Cruise Period : 25/05/1996 to 03/06/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Faculty of Engineering, Ehime Univ.
Chief Scientist(s) : T. Yanagi Faculty of Engineering, Ehime Univ.
General Ocean Area(s) : East China Sea
Geographic Coverage : 96
Principal Investigators :
 A; T. Yanagi Faculty of Engineering, Ehime Univ.
 B; T. Suzuki Faculty of Fisheries, Nagasaki Univ.
 C; Ha Woong LEE Physical Oceanography Div., KORDI



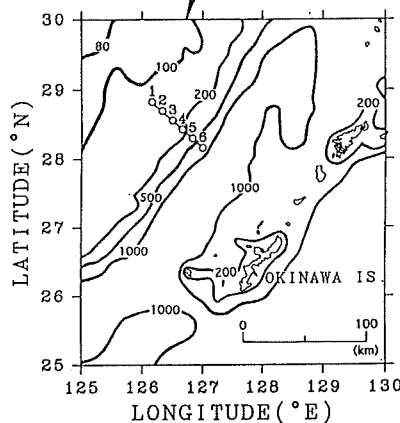
Objectives and Brief Narrative of Cruise :

The objective of this interdisciplinary observation is to investigate the day-to-day variation in the material exchange between the Kuroshio water and the East China Sea Shelf water.

We carried out the CTD observation with turbidity sensor and the water sampling for the analysis of nutrient and hytoplankton.

Our observation results showed that the frontal eddy passed by the observation area and the cold and nutrient-rich slope water up welled onto the shelf accompanied with the passing of frontal eddy.

The frontal eddy plays a very important role in the material exchange across the shelf edge.



Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
C	28.18N	126.50E	D05	Deployed Argos Buoy, May 28th 1996.
C	28.34N	126.30E	D05	Deployed Argos Buoy, May 28th 1996.
C	28.50N	126.10E	D05	Deployed Argos Buoy, May 28th 1996.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	6	stations	H10	Using Neil-Brown Mark 3B CTD.
B	6	stations	H09	Using Niskin bottles.

Reference No. : 96017
 Restrict Data : In Part
 Ship Name : KAKUYO MARU
 Ship Type : Training Ship
 Cruise No./Name : Voyage No.116
 Cruise Period : 08/06/1996 to 20/06/1996
 Port of Departure : Nagasaki
 Port of Return : Nagasaki
 Responsible Laboratory : Research Institute for Applied Mechanics, Kyushu Univ.
 Chief Scientist(s) : J. H. Yoon Research Institute for Applied Mechanics, Kyushu Univ.
 General Ocean Area(s) : Japan Sea
 Geographic Coverage : 131
 Principal Investigators :
 A; Prof. J. H. Yoon Research Institute for Applied Mechanics Kyushu Univ.
 B; Prof. W. Koterayama Research Institute for Applied Mechanics Kyushu Univ.
 C; Prof. A. Isobe Research Institute for Applied Mechanics Kyushu Univ.

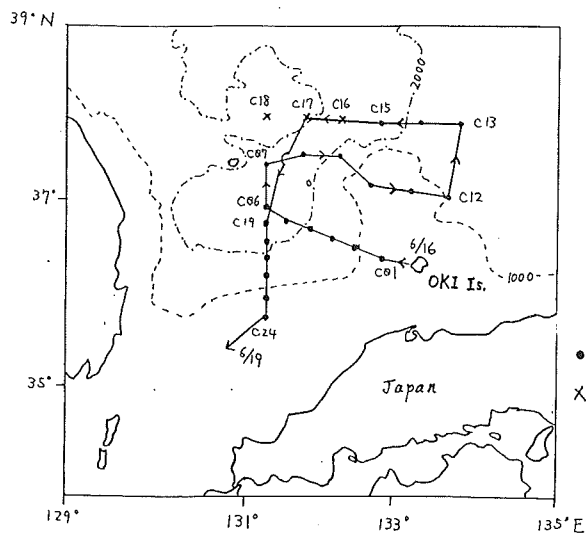
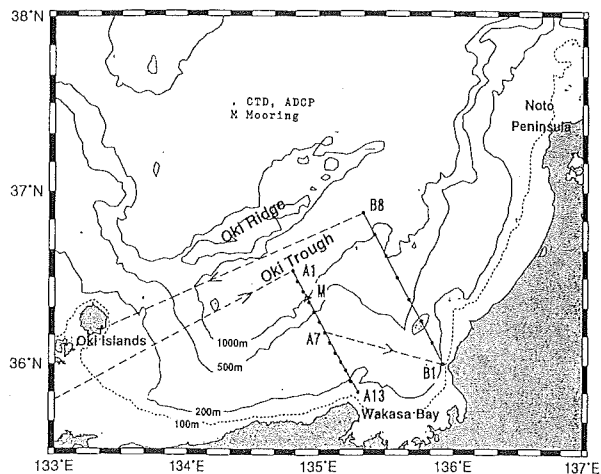


Fig. 1b Location of CTD stations and bottom topography



Objectives and Brief Narrative of Cruise :

1. One of CREAMS (Circulation Research of the East Asian Marginal Seas) Cruises in 1996.
2. The purpose of this cruises is to measure the horizontal and vertical structure of the velocity field of the nearshore branch of the Tsushima current with ADCP and CTD.
3. A mooring system was deployed to measure the long term variation of the current at 600m and 800m depth in the region between OKI Islands and NOTO pen..

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	36.23N	134.55E	D01	Retrieve moored current meters, 2600m, 800m, 6/10.
A	36.23N	134.55E	D01	Deploy moored current meters, 2630m, 930m, 6/10.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	13	stations	H10	Neil-Brown Mark 3B CTD (Down to 1000m).
A	8	stations	H10	Neil-Brown Mark 3B CTD (Down to 1000m).
B	60	NM	D01	Towed ADCP.
C	24	stations	H10	Neil-Brown Mark 3B CTD (Down to 1000m).

Reference No. : 96018
 Restrict Data : No
 Ship Name : KAKUYO MARU
 Ship Type : Training Ship
 Cruise No./Name : Voyage No.117
 Cruise Period : 24/06/1996 to 03/07/1996
 Port of Departure : Nagasaki
 Port of Return : Nagasaki
 Responsible Laboratory : Faculty of Fisheries, Nagasaki Univ.
 Chief Scientist(s) : Y. Akishige Faculty of Fisheries, Nagasaki Univ.
 General Ocean Area(s) : East China Sea, Nansei Syoto
 Geographic Coverage : 96
 Principal Investigators :
 A; K. Tachibana Faculty of Fisheries, Nagasaki Univ.
 B; H. Akaeda Faculty of Fisheries, Nagasaki Univ.

Objectives and Brief Narrative of Cruise :

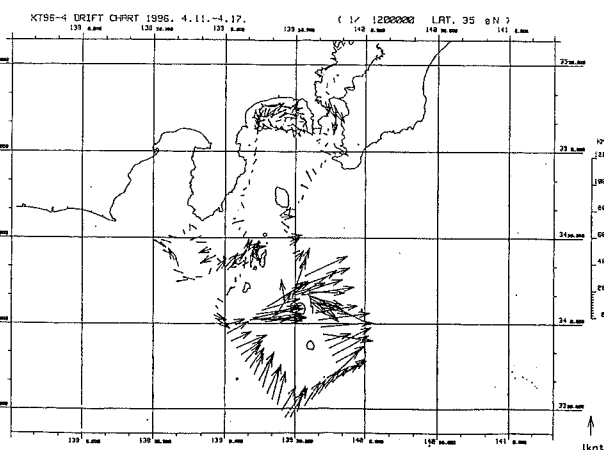
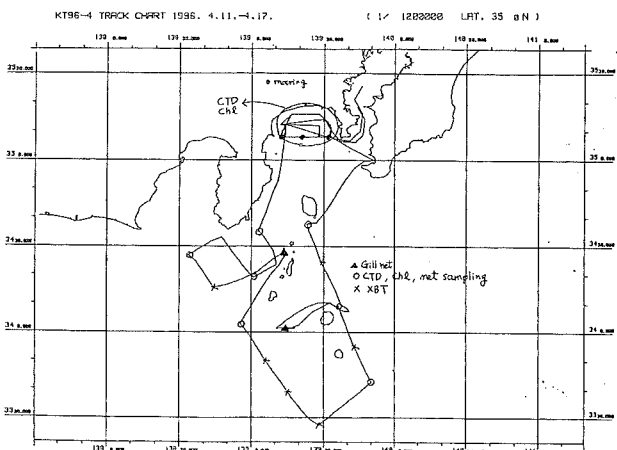
Main task

1. Training of Navigation.
2. Sampling of fish.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3	Days	B72	Samples of fish by fishing (ATP related compound in fish muscle by HPLC).
B	3	Days	P13	Samples of fish by fishing and nets (Triphenyltin and tributyltin in fish by HPLC)

Reference No. : 96019
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-96-4
 Cruise Period : 11/04/1996 to 17/04/1996
 Port of Departure : Tokyo
 Port of Return : Yokosuka
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : I. Aoki Ocean Research Inst., Univ. of Tokyo
 General Ocean Area(s) : North Pacific Ocean, Philippine Sea
 Specific Areas : Sea area of Izu Islands, Sagami Bay
 Geographic Coverage : 130, 131



Principal Investigators :

A; I. Aoki Ocean Research Inst., Univ. of Tokyo
B; Y. Fujimori Hokkaido Univ.
C; Y. Furushima JAMSTEC

Objectives and Brief Narrative of Cruise :

1. Acoustic measurements of distribution and abundance of fish & zooplankton.
2. Sampling method of spawning pelagic fish.
3. Physical & chemical environments for fish reproduction.
4. Fishing efficiency of mid-water gill net.
5. Water exchange and primary production measurements by mooring systems.

Moorings, Bottom Mounted Gear and Drifting Systems:

<i>PI</i>	<i>LAT.</i>	<i>LON.</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
C	35.08N	139.13E	D01	Set current meter, April 12.1996.
C	35.08N	139.21E	D01	Set current meter, April 12.1996.
C	35.08N	139.31E	D01	Set current meter, April 12.1996.

Summary of Measurements and Samples Taken :

<i>PI</i>	<i>NO</i>	<i>UNITS</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	32	stations	H10	Vertical profiles using Neil-Brown CTD.
A	19	stations	B02	Chl. measurement.
A	7	stations	B09	Zooplankton sampling by ORI net.
A	6	drops	H13	XBT drops with T6 type probes.
A	2	stations	B14	Sardine sampling by gill net.
C	2	stations	B16	Fishing gear experiment of gill net.
A	300	NM	H71	Continuous surface temp. and Sal.
A	300	NM	B28	Acoustic measurement of marine organisms.

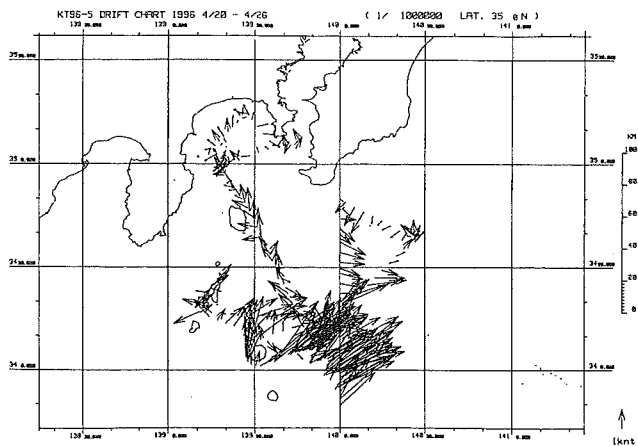
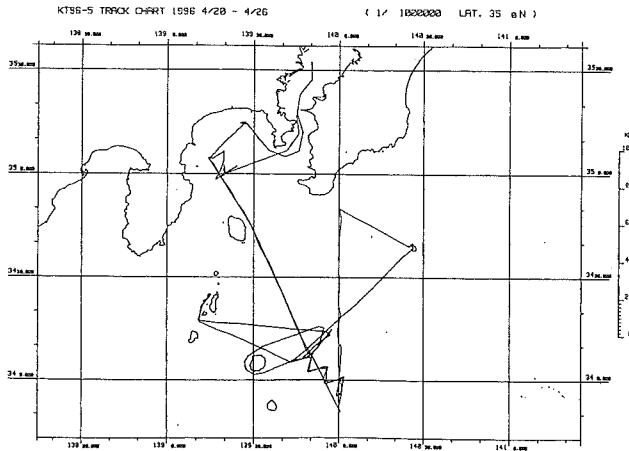
Reference No. : 96020
Restrict Data : Yes
Ship Name : TANSEI MARU
Ship Type : Research Vessel
Cruise No./Name : KT-96-5
Cruise Period : 20/04/1996 to 26/04/1996
Port of Departure : Yokosuka
Port of Return : Tokyo
Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
Chief Scientist(s) : K. Taira Ocean Research Inst., Univ. of Tokyo
General Ocean Area(s) : Western Pacific Ocean
Specific Areas : Main Area:Izu Ridge, Sagami Bay
Geographic Coverage : 131, 130
Principal Investigators :
A; Dr. K. Taira Ocean Research Inst., Univ. of Tokyo
B; Dr. J. Nishikawa Ocean Research Inst., Univ. of Tokyo
C; Dr. T. Takeuchi Univ. of Electro Communication

Objectives and Brief Narrative of Cruise :

- An oceanographic observation (Physical and biological) in Izu-Ridge and Sagami-Bay.
1. Observation of Kuroshio transport above Izu Ridge.
 2. Equipment test of pop-up XBT.
 3. Analysis of seasonal variation of micronecton and others.

Main task

1. Plankton sampling in Sagami Bay.
2. Hydrographic measurement on 140° E(K1-K7).
3. Deploy mooring systems with MIES and current meter.



Moorings, Bottom Mounted Gear and Drifting Systems:

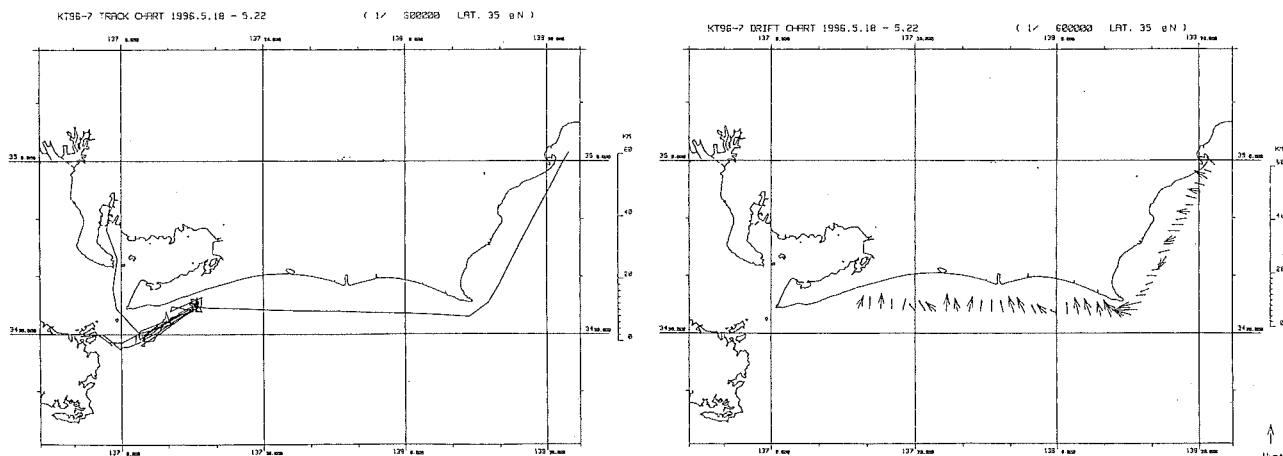
PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	34.06N	139.44E		Deployed mooring system with MIES-1.
A	34.07N	139.50E		Deployed mooring system with MIES-2.
A	34.02N	139.49E		Deployed mooring system with MIES-3.
A	34.03N	139.55E		Deployed mooring system with MIES-4.
A	33.59N	139.54E		Deployed mooring system with MIES-5.
A	34.00N	140.00E		Deployed mooring system with MIES-6.
A	33.55N	139.59E		Deployed mooring system with MIES-7.
C	35.04N	139.14E		Deployed pop-up XBT.
C	35.04N	139.14E		Recovered pop-up XBT.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
B	10	samples		10 samples of various plankton-nets.
A	2	stations		11 samples of seawater for salinity.
A	4	stations		Using Alec electronics CTD.
A	20	stations		Using Neil-Brown MK-3 CTD (to the bottom).

Reference No. : 96021
 Restrict Data : No
 Ship Name : TANSEI MARU
 Ship Type : Research Ship
 Cruise No./Name : KT-96-7
 Cruise Period : 18/05/1996 to 22/05/1996
 Port of Departure : Kinuura
 Port of Return : Shimizu
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : K. Kubokawa Ocean Research Inst., Univ. of Tokyo
 Specific Areas : around the Ise Bay and the Mikawa Bay, Fine sand
 Geographic Coverage : 131
 Principal Investigators :
 A; Dr. K. Kubokawa Ocean Research Inst., Univ. of Tokyo

B; Dr. N. Azuma Toyohashi Univ. of Tech.
 C; Dr. M. Watanabe Ocean Research Inst., Univ. of Tokyo
 D; Mr. K. Shimizu Ocean Research Inst., Univ. of Tokyo



Objectives and Brief Narrative of Cruise :

Survey of habitat of amphioxus and study on its biology.

1. Research on endocrine systems, reproductive system, fertilization and development in amphioxus.
2. Video and photographic recordings of amphioxus in its habitat.
3. Recording and analysis of the habitat environments.

Main task

1. Collection of amphioxus by dredging.
2. Survey of amphioxus population, other benthos and sea-bottom. Geology by a box corer.
3. Observation of amphioxus behavior by ROV and under-water camera.

Moorings, Bottom Mounted Gear and Drifting Systems:

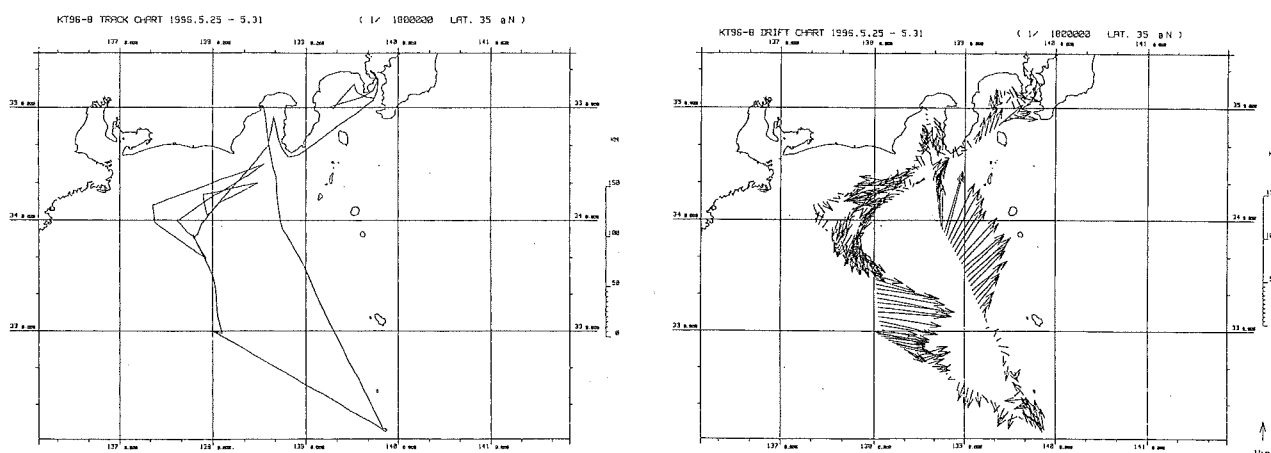
PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	34.36N	137.16E	B18	Under-water camera, 23m-27m depth deployed at 20:00 and recovered at 4:00 on next day.
D	34.35N	137.16E	B19	Under-water camera, 23m-27m depth deployed at 20:00 and recovered at 4:00 on next day.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	18	samples	B17, B18, B19 B20, B21	Soating of benthos collected by dredging.
A	28	stations	B17, B18, B19 B20, B21	Population of amphioxus and properties of sea-bottom soil by using a box corer.
A	28	stations	B08, B09, B13, B18, B19	Using Norpac net.
A	15	stations	H10	Using STD or CTD.
C	28	stations	B17, B18, B19 B20, B21	Using ROV.
A	28	stations	B02	Using Van Dorn water sampler.

Reference No. : 96022
 Restrict Data : In Part
 Ship Name : TANSEI MARU
 Ship Type : Research Ship

Cruise No./Name : KT-96-8
 Cruise Period : 25/05/1996 to 31/05/1996
 Port of Departure : Shimizu
 Port of Return : Yokosuka
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : T. Gamo Ocean Research Inst., Univ. of Tokyo
 General Ocean Area(s) : Philippine Sea
 Specific Areas : Kita-Bayonnaise Caldera (32-6'N, 139-1'E), Nankai Trough accretionary prism (33-0'-35-0'N, 137-0'-138-0'E) Sagami Bay (35-0'N, 139-0'E)
 Geographic Coverage : 131
 Project Name : KAIKO-TOKAI Project
 Coordinating Body : Ocean Research Inst., Univ. of Tokyo and Ecole Normal Saperieure
 Principal Investigators :
 A; Dr. T. Gamo Ocean Research Inst., Univ. of Tokyo



Objectives and Brief Narrative of Cruise :

Survey of hydrothermal plumes from Kita-Bayonnaise Caldera along the volcanic front of the Izu-Bonin Arc from water column observations.

Survey of cold seepage from the Nankai Trough accretionary prism from water column observations and core sampling.

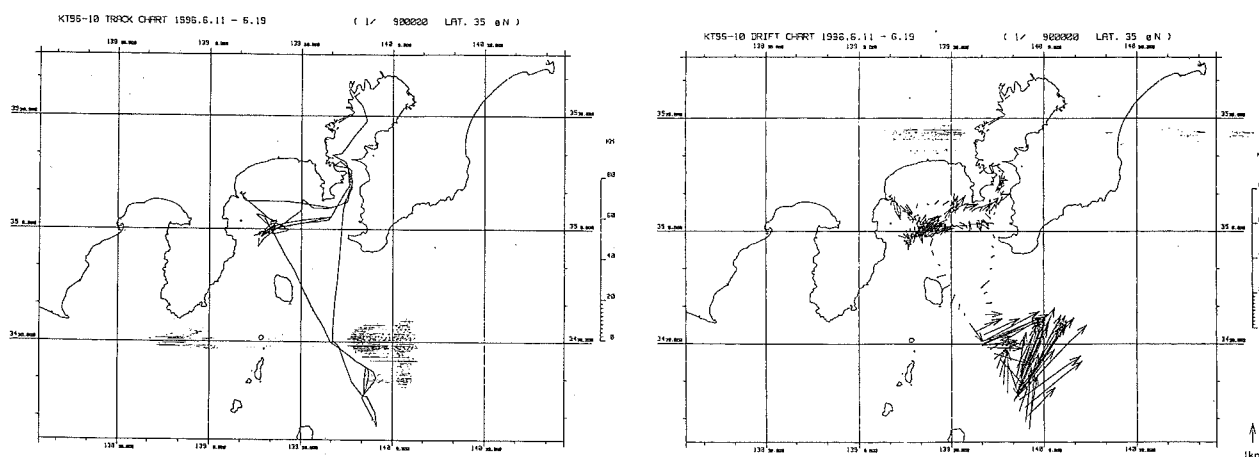
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	15	stations	H10, H21, H28 H30, H33	Neil-Brown Mark-3 CTD and Rosette Multi Sampling System (10l Niskin bottles × 10).
A	6	stations	G04	Piston corer and Multiple corer chemical analyses of pore water samples.

Reference No. : 96023
 Restrict Data : In Part
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-96-10
 Cruise Period : 11/06/1996 to 19/06/1996
 Port of Departure : Yokosuka
 Port of Return : Tokyo
 Responsible Laboratory : Ocean Research Inst., Univ. of Tokyo
 Chief Scientist(s) : K. Kawaguchi Ocean Research Inst., Univ. of Tokyo
 General Ocean Area(s) : Sagami Bay, Izu Region
 Geographic Coverage : 130

Principal Investigators :

A; Dr. K. Kawaguchi Ocean Research Inst., Univ. of Tokyo



Objectives and Brief Narrative of Cruise :

A research cruise for the studies on

1. The food-web structure in the pelagic communities in Sagami Bay.
2. Distribution and life history of mictophid fishes in Kuroshio.
3. Dynamics of plankton in Sagami Bay.
4. Seasonal variation of material flux from Tokyo Bay to the Pacific Ocean.

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	35.00N	139.20E	B73	Deployed a drifting buoy with sediment traps, June 13.1996.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	6	stations	H10	Using Neil-Brown CTD.
A	4	stations	B71, H32	Vertically stratified water samples for POC, PON and their stable isotopic ratios.
A	60	samples	B09, B11, B13, B20, B21, H32	MTD-net tows for vertical distributions of zooplankton and micronekton and for their stable-isotopic ratios.
A	3	samples	B09, B11	ORI-net tows for on-board experiment on zooplankton behavior and for immunochemical/stable-isotopic analysis of food-web structure.
A	3	samples	B09, B11	IKMT tows for on-board experiment on zooplankton behavior and for immunochemical/stable-isotopic analysis of food-web structure.
A	10	samples	B10, B13, B64	ORI-net surface tows, for investigation of horizontal distribution of young mictophid fishes.
A	15	samples	B10, B13, B64	Neuston-net tows, for comparison of collection efficiencies with larvanet.
A	15	samples	B10, B13, B64	Larva-net tows, for comparison of collection, efficiencies with neuston net.

Reference No. : 96024
 Restrict Data : In Part
 Ship Name : TANSEI MARU
 Ship Type : Research Vessel
 Cruise No./Name : KT-96-10/leg 2
 Cruise Period : 16/06/1996 to 19/06/1996
 Port of Departure : Yokosuka
 Port of Return : Tokyo
 Responsible Laboratory : IHAS, Nagoya Univ.

Chief Scientist(s) : T. Saino IHAS, Nagoya Univ.

Principal Investigators :

A; T. Saino IHAS, Nagoya Univ.
B; T. Kikuchi Yokohama National Univ.
C; T. Toda Soka Univ.

Objectives and Brief Narrative of Cruise :

Retrieval and Re-deployment of sediment trap at the mouth of Tokyo Bay.
Biological Oceanographic research in the Sagami Bay.

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	35.03N	139.39.8E	B73, D01 H10, H17	Sediment trap 770m with current meter deployed Dec.03.1995.
A	35.03N	139.39.8E	B73, D01 H10, H17	Same as above re-deployment 17 June 1996.
C	35.00N	139.20E	D05	Floating Buoy, 24hrs 03:30 17 June - 03:30 18 June 1996.

Summary of Measurements and Samples Taken :

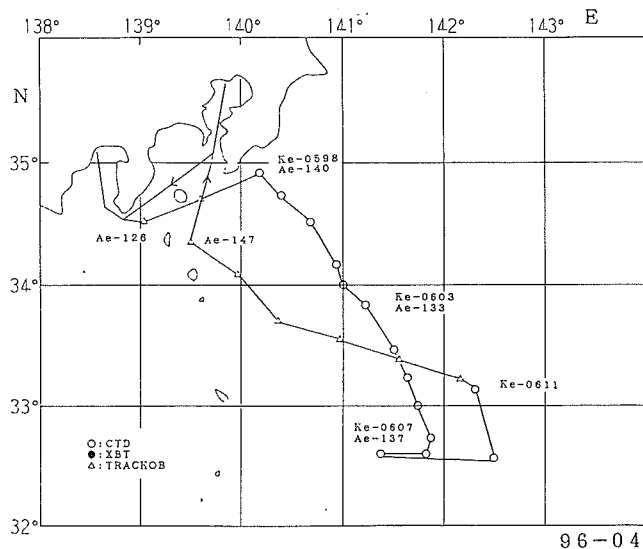
PI	NO	UNITS	DATA TYPE	DESCRIPTION
C	2	stations	H16	Transparency.
C	2	stations	H17	PUV measurement for PAR and UV intensity.
C	2	stations	H10	CTD.
C	12	samples	B01, B08, B09, B71	Water sampling w/Niskin bottle sampler.
C	80	samples	B09	5MPS Net sampling.
B	2	samples	B09	ORI-net sampling.
B	1	sample	B09, B14, B21	IKPT-net sampling.
B	20	samples	B09	5MPS net sampling.
B	5	samples	B08, B09	Hand net sampling.
B	4	samples	B08	MTD net sampling.

Reference No. : 96025
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-04
Cruise Period : 23/04/1996 to 02/05/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : T. Maehara Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : North Pacific Ocean, Philippine Sea
Geographic Coverage : 131, 130
Principal Investigators :
A; K. Ishikawa Marine Dept., Japan Meteorological Agency
B; H. Eguchi Marine Dept., Japan Meteorological Agency
C; H. Jobashi Marine Dept., Japan Meteorological Agency
D; M. Takada Marine Dept., Japan Meteorological Agency
E; K. Tanaka Seismological and Volcanological Dept., JMA

Objectives and Brief Narrative of Cruise :

A routine oceanographical observation (physical and chemical).

Monitoring the background marine pollution.



Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
E	34.34N	138.56E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 2560m, Apr. 24 (deployment).
E	34.34N	138.24E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 465m, Apr. 24 (deployment).
E	34.47N	138.37E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 1730m, Apr. 24 (deployment).
B	32.37N	141.49E	D72	Wave observation Buoy, Apr. 27.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	14	stations	H10	Using Neil-Brown Mark 3B CTD.
A	22	stations	D71	Using R.D. Instruments Acoustic Doppler Current Profiler.
A	2	stations	H09, H21, H22 H24, H25	Using Rosette Sampler.
A	8	stations	H16	Using Secchi Disk.
C	2	stations	P02	Mercury concentrations in seawater. Cadmium concentrations in seawater.
C	2	stations	P03	Dissolved Hydrocarbons in seawater.
D	54	times	M06	Observed every 3 hours.
D	4	times	M90	Weather Radar, observed every 3 hours.
D	7	times	M01	Using JMA-SD83 type Radio-sonde-system.
D	7	times	M01	Using JMA-RS2-91 type Radio-sonde.

Reference No. : 96026
 Restrict Data : Yes
 Ship Name : WAKATORI MARU
 Ship Type : Training Vessel
 Cruise Period : 24/05/1996 to 22/07/1996
 Port of Departure : Sakai, Tottori
 Port of Return : Sakai, Tottori
 Responsible Laboratory : Tottori Prefectural Sakai Fishery High School
 Chief Scientist(s) : T. Ishikura Tottori Prefectural Sakai Fishery High School
 General Ocean Area(s) : North Pacific Ocean
 Specific Areas : Main area 11-1'N to 14-2'N, 174-2'E to 160-3'W.
 Tuna long line fisheries and drifting buoy for surface current.
 Geographic Coverage : 55, 54, 53
 Principal Investigators :
 A; Mr. M. Mizuguchi and Mr. T. Ishikura Tottori Prefectural Sakai Fishery High School

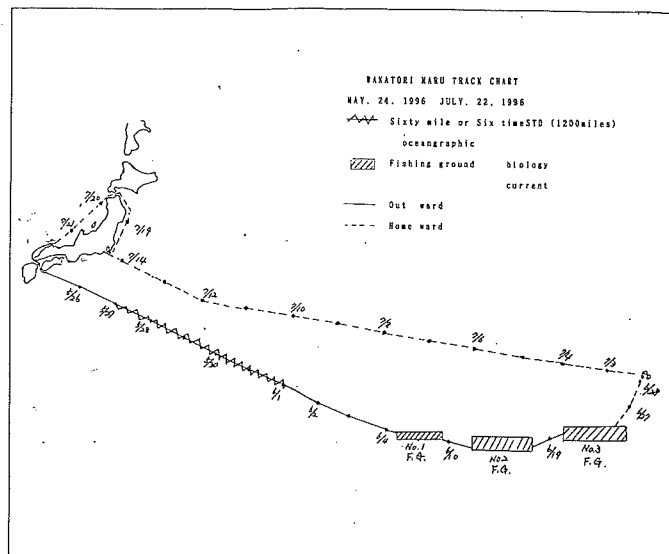
B; Mr. M. Iwasa
D; Mr. T. Ishikura

Tottori Prefectural Sakai Fishery High School
Tottori Prefectural Sakai Fishery High School

Objectives and Brief Narrative of Cruise :

Training for tuna long line fisheries accompanied with oceanographic observation and biological research.

1. To go sailing oceanographic observation at sixty-mile intervals (6 hours) in the section of 1200 miles.
2. Oceanographic and meteorologic observation in fishing ground once a day.
3. To measure body length of all the caught tuna to decide sex gonad weight.



Moorings, Bottom Mounted Gear and Drifting Systems:

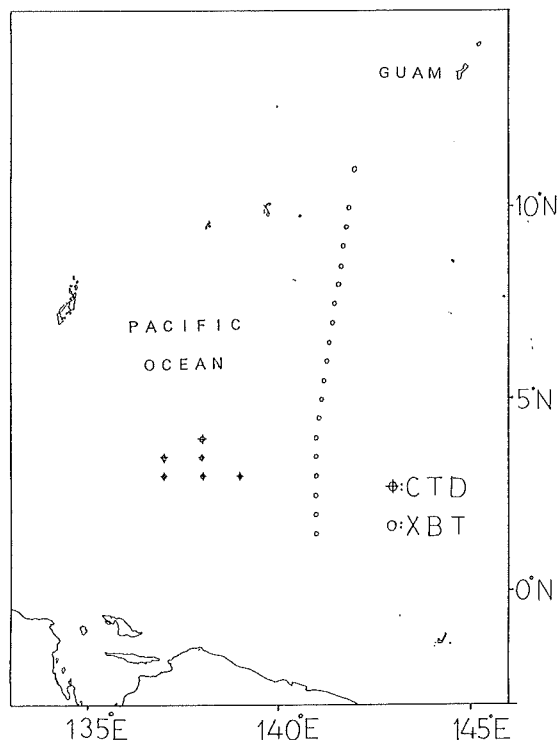
PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
	13.52N	174.12E	D03	Tuna long line first buoy June.05.1996.
	14.09N	174.31E	D03	Tuna long line first buoy June.06.1996.
	13.31N	175.47E	D03	Tuna long line first buoy June.07.1996.
	13.20N	175.59E	D03	Tuna long line first buoy June.08.1996.
	13.44N	177.09E	D03	Tuna long line first buoy June.09.1996.
	11.51N	177.46W	D03	Tuna long line first buoy June.11.1996.
	12.19N	176.36W	D03	Tuna long line first buoy June.12.1996.
	12.23N	175.26W	D03	Tuna long line first buoy June.13.1996.
	12.27N	174.58W	D03	Tuna long line first buoy June.14.1996.
	12.45N	173.46W	D03	Tuna long line first buoy June.15.1996.
	12.58N	174.09W	D03	Tuna long line first buoy June.16.1996.
	13.00N	172.58W	D03	Tuna long line first buoy June.17.1996.
	12.25N	171.22W	D03	Tuna long line first buoy June.18.1996.
	13.51N	166.44W	D03	Tuna long line first buoy June.20.1996.
	13.22N	165.33W	D03	Tuna long line first buoy June.21.1996.
	13.18N	164.12W	D03	Tuna long line first buoy June.22.1996.
	13.15N	163.20W	D03	Tuna long line first buoy June.23.1996.
	13.19N	162.26W	D03	Tuna long line first buoy June.24.1996.
	13.32N	160.43W	D03	Tuna long line first buoy June.25.1996.
	14.42N	161.36W	D03	Tuna long line first buoy June.26.1996.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	21	stations	H10, H90, M90	STD (upper--1000m) sixty-miles interval 1200miles and fishing grand.
A	26	stations	H16	AST-1000(STD) Alec electronics.
D	20		B13, B90	Measure body length. Decide sex.
A	20		H10, H90, M90	STD (upper--1000) tuna fishing ground area.

Reference No. : 96027
Restrict Data : No
Ship Name : KAKUYO MARU
Ship Type : Training Ship
Cruise No./Name : Voyage No. 118
Cruise Period : 12/07/1996 to 11/08/1996
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory : Faculty of Fisheries, Nagasaki Univ.
Chief Scientist(s) : Y. Akishige Faculty of Fisheries, Nagasaki Univ.

General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 22, 23, 58
Principal Investigators :
 A; Y. Akishige Faculty of Fisheries, Nagasaki Univ.



Objectives and Brief Narrative of Cruise :

Main task

1. Training of navigation.
2. Training operations of purse seine fishing.
3. Oceanographic observations.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	7	stations	H10	Using Neil-Brown Mark 3B CTD (upper 1000m).
A	19	stations	H13	XBT drops with T6 type probes.

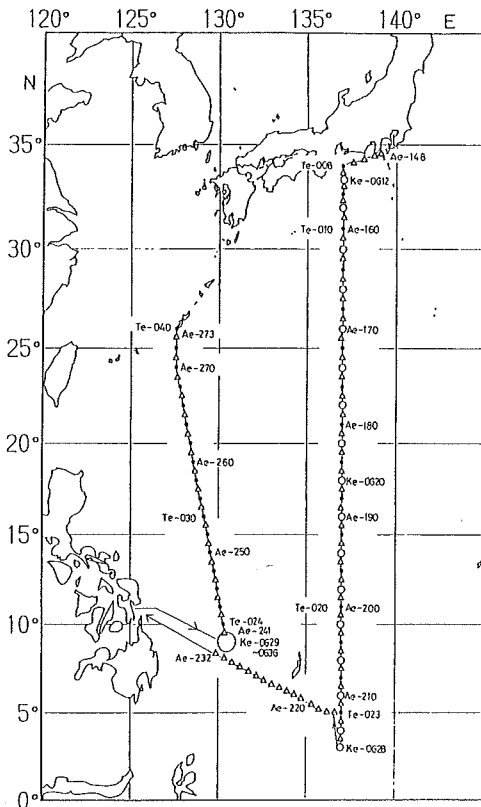
Reference No. : 96028
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-05
Cruise Period : 21/05/1996 to 10/07/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : M. Imai Climate and Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : North Pacific Ocean, Philippine Sea
Geographic Coverage : 24, 23, 59, 60, 95, 96, 131
Project Name : Torrential Rainfall Experiment (TREX)
Coordinating Body : Meteorological Research Institute, JMA
Principal Investigators :
 A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; M. Tanaka Climate and Marine Dept., Japan Meteorological Agency
 C; K. Tanaka Climate and Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

The oceanographical observations in order to grasp the change of the sea condition.

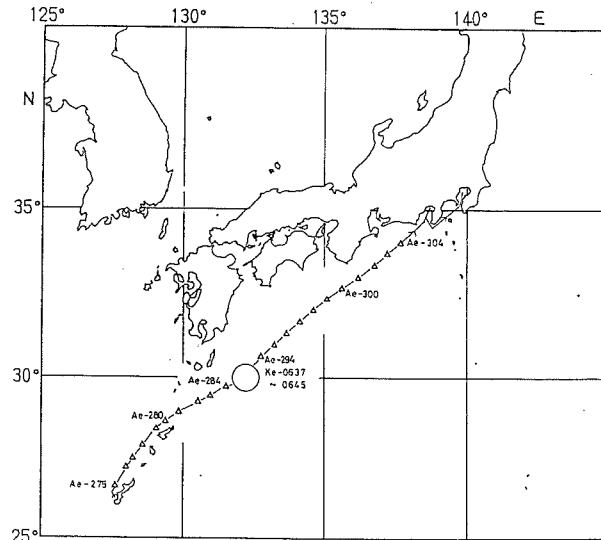
(the condition of the sea temperature, salinity and so on, on the observation line along meridian of 137E from the extra-tropical region to the tropical region.)

The marine meteorological observations, the radar meteorological observations, the upper air observations and the oceanographical observations in order to acquire the basic data for long range weather forecasts and climate change.



観測点図 (Leg 1・2)

○: 各層観測点 (Ke) と海潮流観測点 (Ae)
 ●: 表層水温観測点 (Te) と海潮流観測点 (Ae)
 △: 海潮流観測点 (Ae)



観測点図 (Leg 3)
 △: 海潮流観測点 (Ae)

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
C	34.34N	138.56E	G90	Pop up Ocean Bottom Seismograph, 1, 2560m, July 7. (recover)
C	34.34N	138.56E	G90	Pop up Ocean Bottom Seismograph, 1, 2560m, July 7. (deployment)
C	34.47N	138.37E	G90	Pop up Ocean Bottom Seismograph, 1, 1730m, July 7. (recover)
C	34.47N	138.37E	G90	Pop up Ocean Bottom Seismograph, 1, 1730m, July 7. (deployment)
C	34.34N	138.24E	G90	Pop up Ocean Bottom Seismograph, 1, 465m, July 8. (recover)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	34	stations	H10	Using Neil Brown Mark 3B CTD.
A	157	stations	D71	Using RD Instruments Acoustic Doppler Current Profiler.
A	17	stations	H09, H21, H22 H24, H25	Using Rosette sampler.
A	29	stations	H16	Using Secchi Disk.
A	33	drops	H13	XBT drops with T5 type Probes.
B	305	times	M06	Observed every 3 hours.
B	605	times	M90	Weather Radar.
B	79	times	M01	Using JMA-SD83 type Radio sonde system and JMA-RS2-91 type Radio-sonde.

Reference No. : 96029
 Restrict Data : No
 Ship Name : CHOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-06
 Cruise Period : 21/06/1996 to 06/08/1996

Port of Departure : Nagasaki
 Port of Return : Nagasaki
 Responsible Laboratory : Nagasaki Marine Observatory, JMA
 Chief Scientist(s) : K. Fujii Nagasaki Marine Observatory, JMA
 General Ocean Area(s) : East China Sea, Philippine Sea
 Geographic Coverage : 95, 96, 131, 132
 Project Name : IGOSS, KER,
 MARPOLMON,
 WESTPAC

Principal Investigators :

A; Mr. S. Wakaki Nagasaki Marine Observatory, JMA
 B; Mr. K. Kimura Nagasaki Marine Observatory, JMA
 C; Mr. M. Iwamoto Nagasaki Marine Observatory, JMA
 D; Mr. K. Ashimine Nagasaki Marine Observatory, JMA

Objectives and Brief Narrative of Cruise :

A seasonal oceanographical observation (physical, chemical and biology) in the East China Sea and the Philippine Sea in summer.

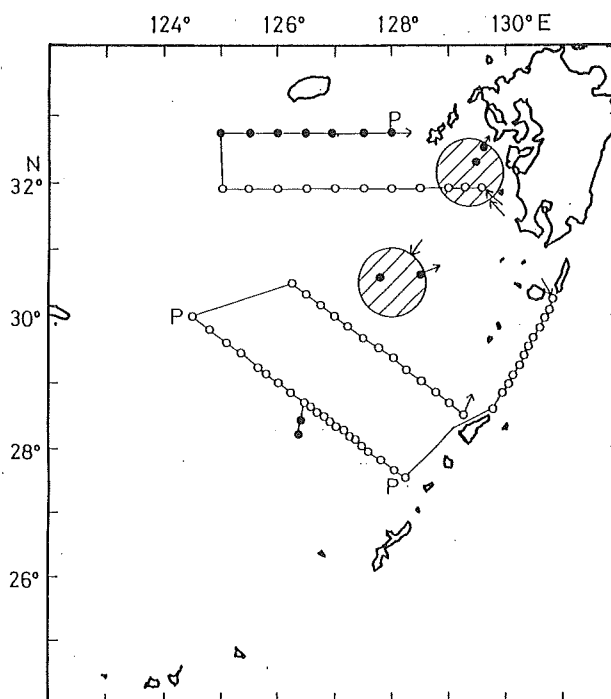
An observation of marine pollutant to monitor background of marine pollution.

Oceanographical and maritime meteorological observations for the verification of buoy robot observation.

Verification of ocean wave forecast.

Improvement of the quality on the sea condition forecast and warning.

Watch the heavy rain associated with BAIU front for forecast and warning.



○ Serial (CTD) Obs.
 ● BT Obs.
 P Pollution Obs.
 ⊘ Fixed Station

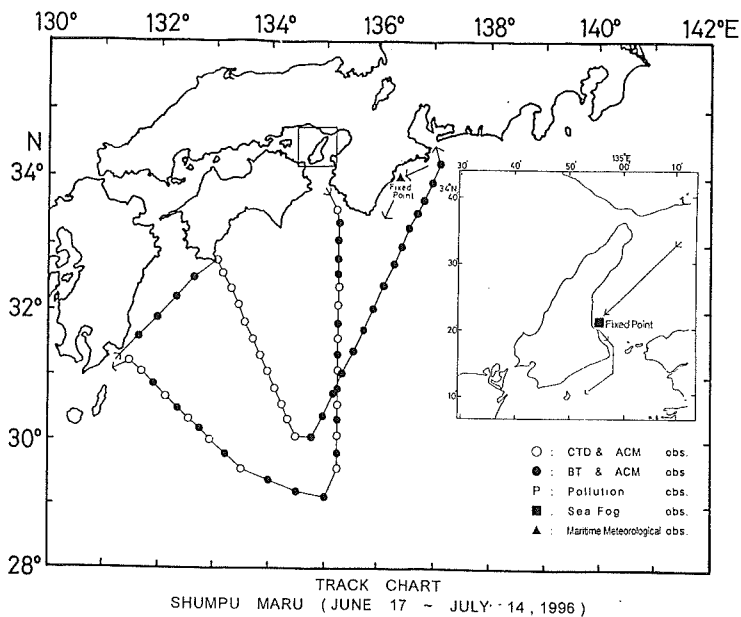
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	58	stations	H10	Using Neil-Brown MK 3B CTD.
A	16	days	H11	Using Tsurumi-Seiki Co. thermosalinograph.
A	37	days	D71	Using Furuno Co. ADCM.
A	10	stations	H13	Using Tsurumi-Seiki Co. Seamate BT.
A	6	drops	H13	XBT drops with T6 type probes.
B	11	stations	H21, H22, H24, H25	Using Rosette sampler.
B	3	stations	H23, H28	Using Rosette sampler.
B	2	stations	H31	Using Rosette sampler.
B	2	stations	P02	Using Rosette sampler.
B	2	stations	P03	Using glass jar.
B	2	stations	P90	Using Neuston net.
C	11	stations	B02	Using Rosette sampler.
C	11	stations	B08	Using stainless steel water bucket.
C	11	stations	B09	Using Norpac net.
D	38	days	M06	Using cylindrical resonator digital barometer, platinum resistance thermometer, Lithium chloride dew-point hygrometer and wind vane and fan-anemograph.
D	53	times	M01	Automated shipboard aerological observation system by VAISALA.
D	459	stations	D72	Micro-wave wavemeter.
D	36	days	M02	Pyranometer.
D	17	days	M02	Net exchange radiometer.

Reference No. : 96030
 Restrict Data : No
 Ship Name : SHUMPU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-06
 Cruise Period : 17/06/1996 to 25/07/1996
 Port of Departure : Kobe
 Port of Return : Kobe
 Responsible Laboratory : Kobe Marine Observatory, JMA
 Chief Scientist(s) : H. Honda and T. Imamura Kobe Marine Observatory, JMA
 General Ocean Area(s) : Inland Sea, Philippine Sea
 Specific Areas : South of Honshu, Bay of Osaka, Kumano-nada
 Geographic Coverage : 95, 131
 Project Name : IGOSS
 MARPOLMON
 WESTPAC
 WOCE

Principal Investigators :

- A; Oceanographical Div. Kobe Marine Observatory, JMA
- B; Marine Meteorological Div. Kobe Marine Observatory, JMA
- C; Oceanographical Div. Marine Dept., Japan Meteorological Agency



Objectives and Brief Narrative of Cruise :

- A. Regular Oceanographical (physical, chemical and biological) and maritime meteorological observations in the South of Honshu.
- B. Observations along the TOPEX/POSEIDON altimetry satellite tracks in order to contribute to the development of oceanographical data assimilation system.
- C. Sea fog observations in the bay of Osaka.
- D. Maritime meteorological hourly observation in the Kumano-Nada.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1871	NM	H71	Continuous sea surface temperature recording.
A	61	stations	D71	Using FURUNO ELECTRIC Co., LTD Acoustic Doppler Current Meter.
A	26	stations	H10	Using Neil-Brown Mark 3B CTD (upper 1200m and 4000m(one station)).
A	14	stations	H09, H21, H22 H24, H25	Using Rosette sampler.
A	6	stations	H28	Using Rosette sampler.
C	2	stations	P02, P90	Dissolved Hydrocarbons and heavy metals.
A	2	stations	P03	Using Neuston net.
C	3	stations	H31	Gross beta-activity, Using bucket.
A	14	stations	B02	Using Rosette sampler.
A	8	stations	B08, B09	Using bucket and NORPAC net.
A	14	stations	H16	Using Secchi disk.
A	49	drops	H13	1 station Using XBT with T-6 type probe. 8 stations Using XBT with T-7 type probe. 40 stations Using Tsurumi-Seiki Co., LTD MICON-BT.

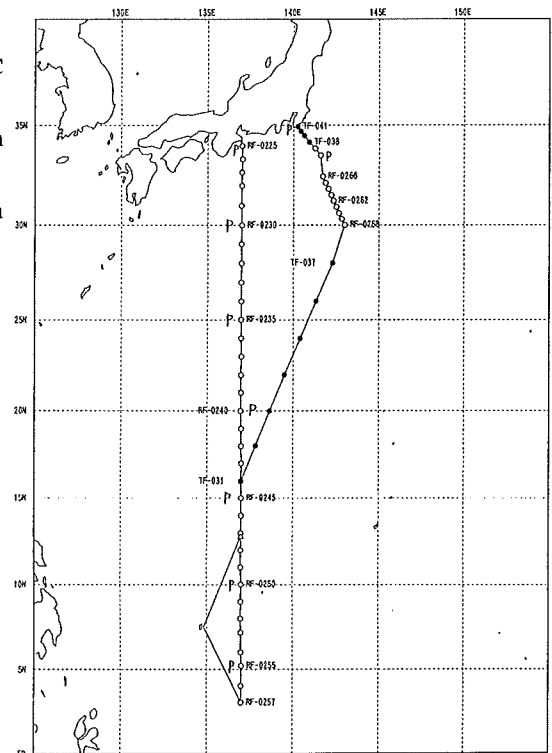
A 1 station G73
 B 139 times M06
 B 19 times M90
 B 35 station D72

Using KAIJO DENKI Co., LTD Echo sounder.
 123 times observed every three hours, and 16 times observed every one hour.
 Using A.I.R. Co., TETHER SONDE MODEL TS-3A-3P and ADAS TETHER SONDE BALOON.
 Using wave recorder, OKI DENKI Co., WX-1008.

Reference No. : 96031
 Restrict Data : No
 Ship Name : RYOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-07
 Cruise Period : 18/07/1996 to 19/08/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
 Chief Scientist(s) : Y. Takatsuki Climate and Marine Dept., Japan Meteorological Agency
 General Ocean Area(s) : North Pacific Ocean, Philippine Sea
 Geographic Coverage : 23, 59, 95, 131, 130
 Project Name : IGOSS, MARPOLMON, WESTPAC
 Principal Investigators :
 A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; H. Jobashi Climate and Marine Dept., Japan Meteorological Agency
 C; H. Tanabe RYOFU MARU

Objectives and Brief Narrative of Cruise :

- A routine oceanographic observation. (physical, chemical, biological)
- a, Seasonal observation of marine condition.
- b, Monitoring the background marine pollution.
- Sea water sampling for radioactivity measurement.
- Recovery and deployment of a mooring current meter system.



Track Chart
 Ryoufu Maru (July 18 ~ August 19, 1996)
 O CTD & ACM Obs.
 ● XBT & ACM Obs.
 P Pollution Obs.

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	12.50N	137.00E	D01	Recovered four recording current meters (AANDERAA Instrument RCM-,) on July 27, 1996. Setting depth are about 500, 700, 2500, 4500m.
A	12.50N	137.00E	D01	Deployment four same type instruments on Aug. 9, 1996. Setting depth are about 500, 700, 2500, 4500m.

Summary of Measurements and Samples Taken :

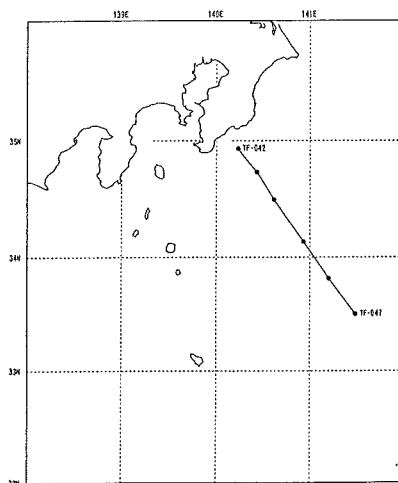
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	4576	NM	H11	Continuous sea surface temperature recording.
A	44	stations	H10	Using FSI-ICTD.

A	55	stations	D71	Using R.D Instrument Acoustic Doppler Current Profiler.
A	44	stations	G73	Using NEC Echo sounder.
A	24	stations	H16	Using Secchi Disk.
A	11	drops	H13	XBT drops with T-6 type probes.
A	20	stations	H09, H21, H22 H24, H25, H26	Using Rosette sampler.
A	16	stations	H28	Using Rosette sampler.
A	20	stations	B02	Using Rosette sampler.
A	8	stations	B08, B09	Using bucket (B08), Norpac net (B09).
B	9	stations	P02, P03	Heavy metals (P02), Dissolved Hydrocarbons (P03).
B	11	stations	P03	Using Neuston Net.
B	11	stations	H27, H33, H74, M71	CFC-11, -12, -113 and N ₂ O concentrations in air (M71). CFC -11, -12, -113, N ₂ O, CH ₄ and total inorganic carbon concentrations in seawater (H33, H74, H27).
B	600	stations	M71	CO ₂ and CH ₄ concentrations in air.
C	188	times	M06	Observed every 3 hours.
C	29	times	M01	Using Shipboard Automatic Radio-Sonde System.

Reference No. : 96032
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-09
Cruise Period : 03/09/1996 to 09/09/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency

General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 130
Principal Investigators :
 A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; H. Tanabe RYOFU MARU

Objectives and Brief Narrative of Cruise :
 Oceanographical observations practice for the Meteorological college.



Track Chart
Ryoufu Maru (September 3 ~ 9, 1996)

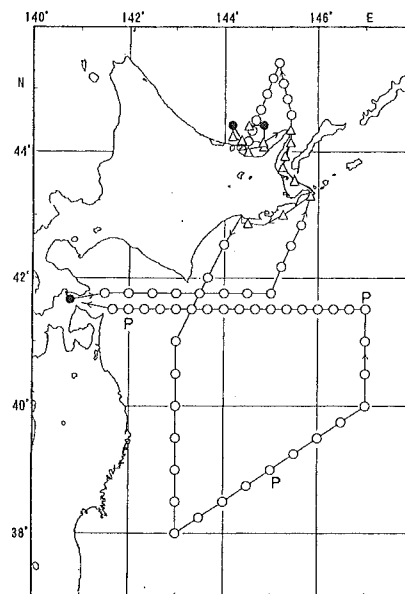
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	493	NM	H11	Continuous sea surface temperature recording.
A	6	drops	H13	XBT drops with T-6 type probes.
B	26	times	M06	Observed every 3 hours.
B	1	time	M01	Using shipboard Automatic Radio-Sonde System.

Reference No. : 96033
 Restrict Data : No
 Ship Name : KOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-06
 Cruise Period : 13/06/1996 to 13/07/1996
 Port of Departure : Hakodate
 Port of Return : Hakodate
 Responsible Laboratory : Hakodate Marine Observatory, JMA
 Chief Scientist(s) : T. Aizawa Hakodate Marine Observatory, JMA
 General Ocean Area(s) : North Pacific Ocean, Sea of Okhotsk
 Geographic Coverage : 130, 166
 Project Name : IGOSS, MARPOLMON, WESTPAC
 Coordinating Body : IOC, WMO
 Principal Investigators :
 A; Oceanographical Div. Hakodate Marine Observatory, JMA
 B; Marine Meteorological Div. Hakodate Marine Observatory, JMA
 C; Pollutants Chemical Analysis Center, Oceanographical Div., Climate and Marine Dept., JMA

Objectives and Brief Narrative of Cruise :

1. Regular observation of oceanography and marine meteorology.
2. Background marine pollution monitoring.
3. Sea water sampling for measurement of radioactivity.
4. Observation of sea fog.



Track Chart of KOFU MARU 13 Jun. ~ 13 Jul., 1996

○ CTD & ACM Obs.
 ● BT & ACM Obs.
 △ ACM Obs.
 P Pollution Obs.

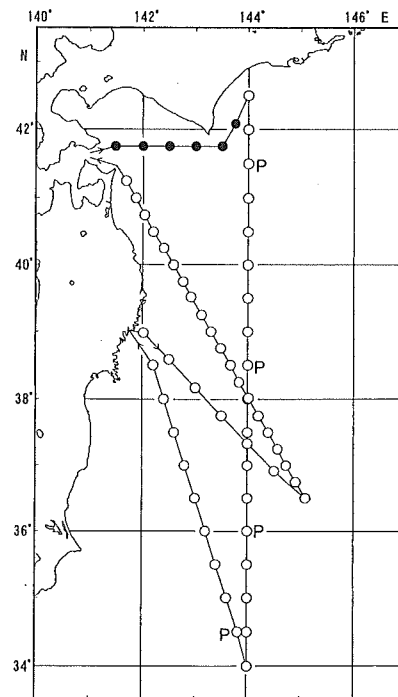
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1884	NM	H71	Continuous sea surface temperature and salinity recording.
A	58	stations	H10	Using Neil-Brown CTD.
A	10	stations	B02, H09, H21 H22, H24, H25	Using Neil-Brown CTD with Rosette sampler.
A	3	stations	H23	Using Neil-Brown CTD with Rosette sampler.
A	29	stations	H16	Using Secchi disk (daytime only).
A	3	drops	H13	XBT drops with T-6 type probes.
A	78	stations	D71	Using FURUNO Co. Acoustic Current Meter at 0, 50, 100m in depth.
A	6	stations	B08, H28	Using Neil-Brown CTD with Rosette sampler.
A	6	stations	B09	Using Norpac net.
B	129	times	M06	Observed every 3 hours.
B	129	times	D72	Observed every 3 hours by micro-wave and tucker wave gauge.
B	16	times	M05	Observed every hours.
B	16	times	D72	Observed every hour by micro-wave and tucker wave gauge.
B	33	times	M01	Using VAISALA system.
B	5	times	M90	Using AIR Co. ADAS model AIR-3B.
C	2	stations	P02	Sampling for analysis of heavy metals.
C	2	stations	P90	Sampling for measurement of petroleum residues.
C	2	stations	P90	Sampling for measurement of Total β radioactivity.
C	1	stations	P03	Using Neuston net.
C	957	NM	P90	Floating pollutants observed visually (daytime only).

Reference No. : 96034
 Restrict Data : No
 Ship Name : KOFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-07
 Cruise Period : 19/07/1996 to 04/08/1996
 Port of Departure : Hakodate
 Port of Return : Hakodate
 Responsible Laboratory : Hakodate Marine Observatory, JMA
 Chief Scientist(s) : J. Nakagawa Hakodate Marine Observatory, JMA
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 130, 166
 Project Name : IGOSS, MARPOLMON, WESTPAC
 Coordinating Body : IOC, WMO
 Principal Investigators :
 A; Oceanographical Div., Hakodate Marine Observatory, JMA
 B; Marine Meteorological Div., Hakodate Marine Observatory, JMA
 C; Pollutants Chemical Analysis Center, Oceanographical Div., Climate and Marine Dept., JMA

Objectives and Brief Narrative of Cruise :

1. Regular observation of oceanography and marine meteorology.
2. Background marine pollution monitoring.



Track Chart of KOFU MARU 19 Jul. ~ 4 Aug., 1996
 ○ CTD & ACU Obs.
 ● BT & ACU Obs.
 P Pollution Obs.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1687	NM	H71	Continuous sea surface temperature and salinity recording.
A	53	stations	H10	Using Neil-Brown CTD.
A	10	stations	B02, H09, H21 H22, H24, H25	Using Neil-Brown CTD with Rosette sampler.
A	31	stations	H16	Using Secchi disk (daytime only).
A	6	drops	H13	XBT drops with T-6 type probes.
A	59	stations	D71	Using FURUNO Co. Acoustic Current Meter at 0, 50, 100m in depth.
B	68	times	M06	Observed every 3 hours.
B	68	times	D72	Observed 3 hours by micro-wave and tucker wave gauge.
B	9	times	M01	Using VAISALA system.
C	4	stations	P03	Using Neuston net.
C	1055	NM	P90	Floating pollutants observed visually (daytime only).

Reference No. : 96035
 Restrict Data : No
 Ship Name : KEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-08
 Cruise Period : 09/08/1996 to 17/09/1996
 Port of Departure : Tokyo

Port of Return : Tokyo
Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : M. Imai and T. Maehira Climate and Marine Dept., Japan Meteorological Agency
General Ocean Area(s) : East China Sea, North Pacific Ocean, Philippine Sea
Geographic Coverage : 59, 60, 95, 96, 131
Principal Investigators :
 A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; M. Takada Climate and Marine Dept., Japan Meteorological Agency
 C; K. Tanaka Climate and Marine Dept., Japan Meteorological Agency

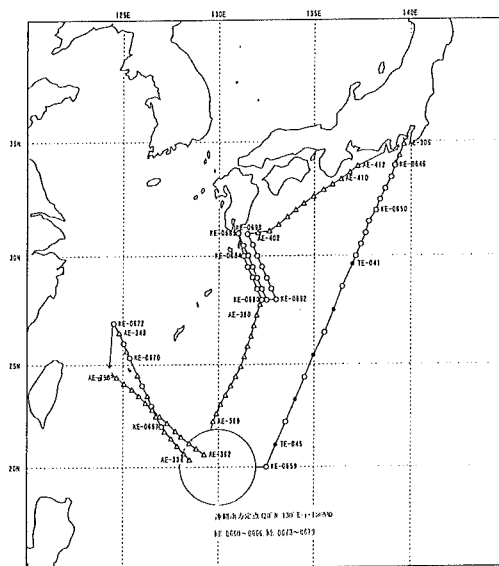
Objectives and Brief Narrative of Cruise :

The marine meteorological observations, the radar meteorological observations and the upper air observations in order to watch and observe the typhoon.

The marine meteorological observations, the radar meteorological observations, the upper air observations and the oceanographical observations in order to acquire the data for "KUROSHIO Exploitation Research".

The oceanographical observations in order to acquire the data for Comprehensive Ocean Modeling, Prediction, Analysis and Synthesis System in the Kuroshio region. (COMPASS-K)

Setting up and withdrawing the Ocean Bottom Seismograph floating automatically in the Suruga Bay.



Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
C	34.47N	138.37E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 1730m, Sep. 14. (recover)
C	34.47N	138.37E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 1730m, Sep. 15. (deployment)
C	34.47N	138.56E	G90	Pop-up-Ocean-Bottom Seismograph, 1, 2560m, Sep. 15. (recover)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	53	stations	H10	Using Neil-Brown mark 3B CTD.
A	108	stations	D71	Using RD Instruments Acoustic Doppler Current Profiler.
A	33	stations	H16	Using Secchi Disk.
A	5	stations	H13	XBT drops with T-6 type probes.
B	245	times	M06	Observed every 3 hours.
B	381	times	M90	Weather Radar.
B	70	times	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91 type Radio-sonde.

Reference No. : 96036
Restrict Data : No
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-08
Cruise Period : 17/08/1996 to 12/09/1996
Port of Departure : Kobe
Port of Return : Kobe
Responsible Laboratory : Kobe Marine Observatory, JMA

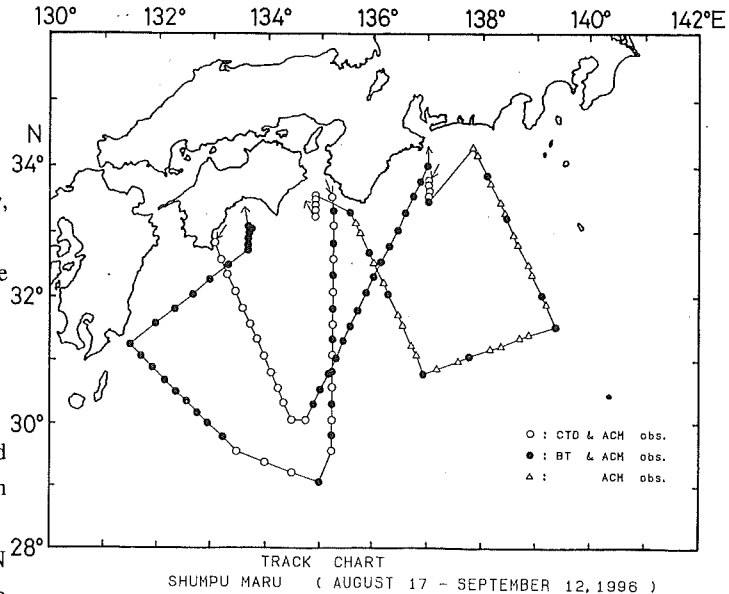
Chief Scientist(s) : K. Hayashi Kobe Marine Observatory, JMA
 General Ocean Area(s) : Philippine Sea
 Specific Areas : South of Honshu
 Geographic Coverage : 95, 131
 Project Name : IGOSS, KER
 WESTPAC

Principal Investigators :
 A; Oceanographical Div., Kobe Marine Observatory, JMA
 B; Maritime Meteorological Div., Kobe Marine Observatory, JMA

Objectives and Brief Narrative of Cruise :

Regular Oceanographic (physical, chemical and biological) and maritime meteorological observations in the South of Honshu.

The observations along the TOPEX/POSEIDON altimetry satellite tracks in order to contribute to the development of oceanographical data assimilation system.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2334	NM	H71	Continuous sea surface temperature recording.
A	85	stations	D71	Using FURUNO ELECTRIC Co. LTD Acoustic Doppler Current Meter.
A	34	stations	H10	Using Neil-Brown Mark 3B CTD (only upper 1200m except 1 station).
A	10	stations	H09, H15, H21 H22, H24	Using Rosette sampler.
A	3	stations	H28	Using Rosette sampler.
A	10	stations	B02	Using Rosette sampler.
A	9	stations	B08	Using bucket.
A	9	stations	B09	Using neuston net.
A	19	stations	H16	Using Secchi disk.
A	56	drops	H13	9 stations using XBT with T6 type probe. 7 stations using XBT with T7 type probe. 40 stations using TSURUMI-SEIKI Co.LTD. MICON-BT.
B	135	stations	M06	Observed every three hours.
B	19	stations	D72	Using wave recorder, OKI DENKI Co. WX-1008.

Reference No. : 96037
 Restrict Data : No
 Ship Name : SEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-06
 Cruise Period : 27/06/1996 to 12/08/1996
 Port of Departure : Maizuru
 Port of Return : Maizuru
 Responsible Laboratory : Maizuru Marine Observatory, JMA
 Chief Scientist(s) : Mr. A. Kamikawa and Mr. S. Kawae Maizuru Marine Observatory, JMA
 General Ocean Area(s) : Japan Sea
 Geographic Coverage : 167, 131
 Project Name : IGOSS, MARPOLMON, WESTPAC

Coordinating Body : IOC

Principal Investigators :

A; Mr. T. Segawa Maizuru Marine Observatory, JMA
B; Mr. N. Nagai Maizuru Marine Observatory, JMA
C; Mr. H. Jobashi Marine Dept., Japan Meteorological Agency
D; Mr. A. Kamikawa Maizuru Marine Observatory, JMA
E; Mr. S. Kawae Maizuru Marine Observatory, JMA

Objectives and Brief Narrative of Cruise :

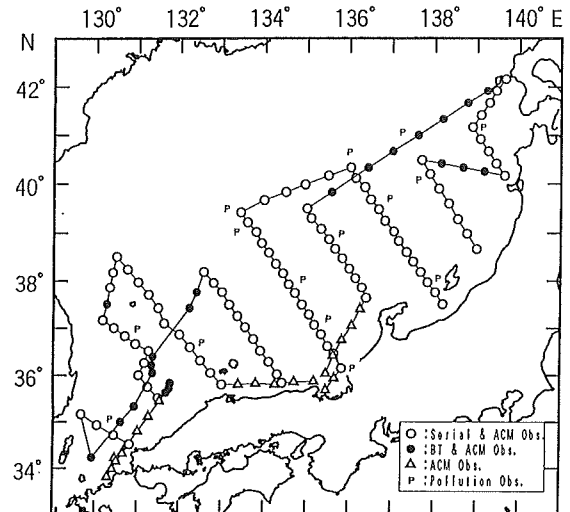
Seasonal observation of marine condition and monitoring the background marine pollutions.

Main Task

1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues and total β).
2. Hydrographic observation (physical, chemical and biological).
3. Inspection of ocean data buoy.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	
DESCRIPTION				
A	3300	NM	H11	Measurements of near-surface temperature and salinity with a thermosalinograph (F.S.I).
A	22	drops	H13	X-BT drops with T6 type probe.
A, B	17	stations	H09, H21	Using Neil-Brown CTD with Rosette Sampler System.
A	80	stations	H10	Using Neil-Brown CTD.
A	51	stations	H16	Using Secchi Disk
A	3300	NM	D71	Using Acoustic Current Meter (FURUNO).
E	226	stations	D72	Using Microwave or Tucker wave gauge.
B	17	stations	B02, H22, H24, H25	Using Neil-Brown CTD with Rosette Sampler System.
B	3	stations	H23, H28	Using Neil-Brown CTD with Rosette Sampler System.
B	6	samples	H31	Using Neil-Brown CTD with Rosette Sampler System.
B	9	stations	B08	Surface water sampling.
B	9	stations	B09	Collected by Norpac Net.
C	3	samples	P02	Using Neil-Brown CTD with Rosette Sampler System.
C	2	samples	P03	Surface water for petroleum Hydrocarbons concentrations.
B, C	13	samples	P03	Using Neuston Net (particulate petroleum residues).
B, C3300	NM	P90		Watch out for bloating pollutants, oil slicks, etc.
D	34	ascents	M01	Using VAISALA Digcoda MW II system and VAISALA RS80-15N radio sondes
D	226	stations	M06	According to "WMO International Codes".
A	140	stations	G73	Using echo sounder (KAIJO)



Reference No. : 96038
Restrict Data : No
Ship Name : SEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-10
Cruise Period : 04/10/1996 to 03/11/1996
Port of Departure : Maizuru
Port of Return : Maizuru

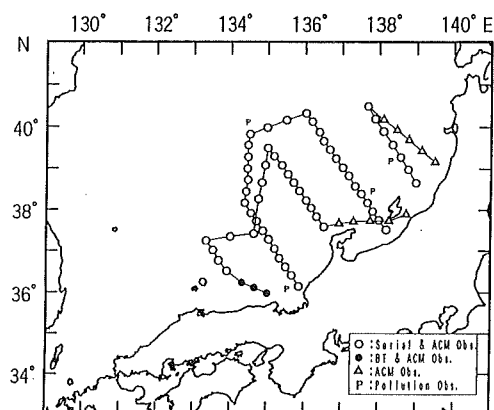
Responsible Laboratory : Maizuru Marine Observatory, JMA
Chief Scientist(s) : Mr. K. Sakurai Maizuru Marine Observatory, JMA
General Ocean Area(s) : Japan Sea
Geographic Coverage : 131, 167
Project Name : IGOSS, MARPOLMON, WESTPAC
Coordinating Body : IOC
Principal Investigators :
 A; Mr. K. Sakurai Maizuru Marine Observatory, JMA
 B; Mr. N. Nagai Maizuru Marine Observatory, JMA
 C; Mr. H. Jobashi Climate and Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

Seasonal observation of marine condition and monitoring the background marine pollutions.

Main Task

1. Water sampling for marine pollution analysis (for mercury, cadmium and petroleum residues).
2. Hydrographic observation (physical, chemical and biological).
3. Inspection of ocean data buoy.



Summary of Measurements and Samples Taken :

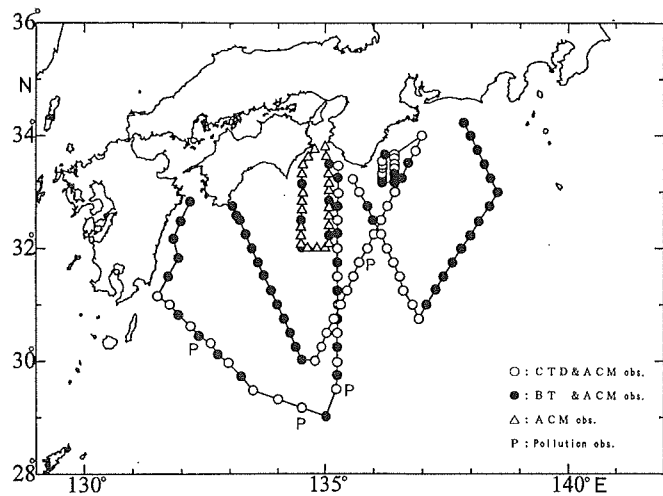
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2000	NM	H71	Measurements of near-surface temperature and salinity with a thermosalinograph (F.S.I).
A	3	drops	H13	XBT drops with T6 type probe.
A,B	17	stations	B02, H09, H21 H22, H24, H25	Using Neil-Brown CTD with Rosette Sample System.
A	41	stations	H10	Using Neil-Brown CTD.
A	24	stations	H16	Using Secchi Disk.
A	2000	NM	D71	Using Acoustic Current Meter (FURUNO).
A	151	stations	D72	Using Microwave or Tucker wave gauge.
B	3	stations	H09, H28	Using Neil-Brown CTD with Rosette Sample System.
B	9	stations	B08	Surface water sampling.
B	9	stations	B09	Collected by Norpac Net.
C	6	samples	P02	Using Neil-Brown CTD with Rosette Sample System.
C	2	samples	P03	Surface water for petroleum Hydrocarbons concentrations.
B,C	2	samples	P03	Using Neuston Net(particulate petroleum residues).
B,C	2000	NM	P90	Watch out for floating pollutants, oil slicks, etc.
A	8	ascents	M01	Using VAISALA Digicoda MW II System and VAISALA RS80-15 Radio sondes.
A	151	stations	M06	According to "WMO International Codes".
A	71	stations	G73	Using echo sounder(KAIJO).

Reference No. : 96039
Restrict Data : No
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-10
Cruise Period : 04/10/1996 to 07/11/1996

Port of Departure : Kobe
Port of Return : Kobe
Responsible Laboratory : Kobe Marine Observatory, JMA
Chief Scientist(s) : T. Shiga Kobe Marine Observatory, JMA
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95, 131
Project Name : IGOSS
 MARPOLMON
 WESTPAC, WOCE

Principal Investigators :

- A; Oceanographical Div. Kobe Marine Observatory, JMA
- B; Marine Meteorological Div. Kobe Marine Observatory, JMA
- C; Oceanographical Div. Climate and Marine Dept., Japan Meteorological Agency



TRACK CHART
SHUMPU MARU (October 4 ~ November 7)

Objectives and Brief Narrative of Cruise :

Objectives :

1. Regular Oceanographical (physical, chemical and biological) and maritime meteorological observations in the South of Honshu.
2. Observations along the TOPEX/POSEIDON altimetry satellite tracks in order to contribute to the development of oceanographical data assimilation system.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2462	NM	H71	Continuous sea surface temperature recording.
A	121	stations	D71	Using FURUNO ELECTRIC Co., LTD Acoustic Doppler Current Meter.
A	50	stations	H10	Using Neil-Brown Mark 3B CTD (upper 1200m except 5 stations).
A	15	stations	H09, H21, H22 H24, H25	Using Rosette sampler.
A	6	stations	H28	Using Rosette sampler.
C	2	stations	P02, P90	Dissolved Hydrocarbons and heavy metals (Cd, Hg).
A	4	stations	P03	Using Neuston net.
A	15	stations	B02	Using Rosette sampler.
A	9	stations	B08, B09	Using bucket and NORPAC net.
A	20	stations	H16	Using Secchi disk.
A	60	drops	H13	13 stations using XBT with T-6 type probe. 29 stations using XBT with T-7 type probe and 18 stations using Tsurumi-Seiki Co., LTD MICON-BT.
A	80	station	G73	Using KAIJO DENKI Co., LTD Echo sounder.
B	100	times	M06	Observed every three hours.
B	17	station	D72	Using wave recorder, OKI DENKI Co., WX-1008.

Reference No. : 96040
Restrict Data : No
Ship Name : CHOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-10
Cruise Period : 02/10/1996 to 30/10/1996
Port of Departure : Nagasaki

Port of Return : Nagasaki
Responsible Laboratory : Nagasaki Marine Observatory, JMA
Chief Scientist(s) : S. Wakaki Nagasaki Marine Observatory, JMA
General Ocean Area(s) : East China Sea, Philippine Sea
Geographic Coverage : 132, 131, 96, 95
Project Name : IGOSS, KER, MARPOLMON, WESTPAC

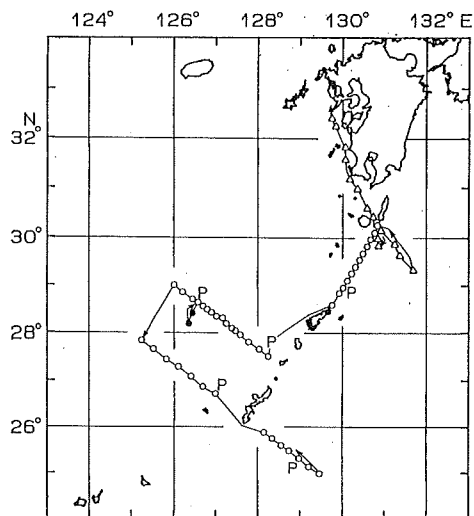
Principal Investigators :
 A; Mr. S Wakaki Nagasaki Marine Observatory, JMA
 B; Mr. K. Kimura Nagasaki Marine Observatory, JMA
 C; Mr. M. Iwamoto Nagasaki Marine Observatory, JMA
 D; Mr. K. Ashimine Nagasaki Marine Observatory, JMA

Objectives and Brief Narrative of Cruise :

A seasonal oceanographical observation (physical, chemical and biology) in the East China Sea and the Philippine Sea in autumn.

An observation of marine pollutant to monitor background of marine pollution.

Oceanographical and maritime meteorological observations for the verification of buoy robot observation.



○ Serial (CTD) Observation
 ● BT Observation
 △ Acoustic Doppler Current Meter Observation
 P Pollution Observation

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	42	stations	H10	Using Neil-Brown MK-3B CTD.
A	24	days	H11	Using Tsurumi-Seiki Co. thermosalinograph.
A	21	days	D71	Using Furuno Co.ADCM.
A	2	drops	H31	XBT drops with T6 type probes.
B	22	stations	H21, H22, H24, H25	Using Rosette sampler.
B	3	stations	H28	Using Rosette sampler.
B	2	stations	P02	Using Rosette sampler.
B	2	stations	P03	Using glass jar.
B	5	stations	P90	Using Neuston net.
C	8	stations	B02	Using Rosette sampler.
C	8	stations	B08	Using stainless steel water becket.
C	8	stations	B09	Using Norpac net.
D	24	days	M06	Using cylindrical resonator digital barometer, platinum resistance thermometer, Lithium chloride dew-point hygrometer and wind vane and fan-anemograph.
D	5	times	M01	Automated shipboard aerological observation system by VAISALA.
D	142	stations	D72	Micro-wave wavemeter.

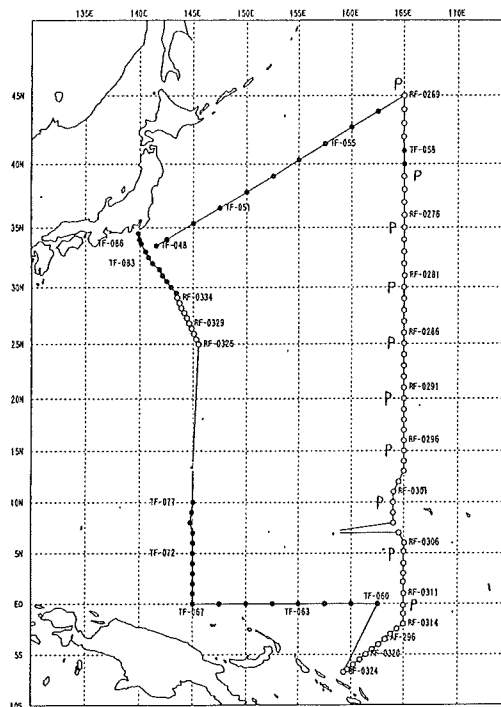
Reference No. : 96041
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 96-10
Cruise Period : 09/10/1996 to 06/12/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
Chief Scientist(s) : S. Takatani Climate and Marine Dept., Japan Meteorological Agency

General Ocean Area(s) : North Pacific Ocean, South Pacific Ocean
 Geographic Coverage : 20, 21, 22, 56, 58, 92, 94, 128, 129, 130, 164, 319
 Project Name : IGOSS, WESTPAC, MARPOLMON
 Principal Investigators :

A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; H. Jobashi Climate and Marine Dept., Japan Meteorological Agency
 C; H. Tanabe Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

- A routine oceanographical observation (physical, chemical, biological).
 a. Seasonal observation of marine condition.
 b. Monitoring the background marine pollution.



Track Chart
 Ryofu Maru (October 9 ~ December 6, 1996)

○ CTD & ACM Obs.
 ● XBT & ACM Obs.
 P Pollution Obs.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	9726	NM	H11	Continuous sea surface temperature recording.
A	66	stations	H10	Using FSI ICTD.
A	108	stations	D71	Using R.D. Instrument Acoustic Doppler Current Profiler.
A	106	stations	G73	Using NEC Echo sounder.
A	31	stations	H16	Using Secchi Disk.
A	41	drops	H13	XBT drops with T-6 type probes.
A	32	stations	H09, H21, H22 H24, H25, H26	Using Rosette Sampler.
A	27	stations	H28	Using Rosette Sampler.
A	14	stations	B02	Using Rosette Sampler.
A	6	stations	B08, B09	Using bucket (B08), NORPAC net (B09).
A	5	stations	H31	Using Niskin Bottle and buckets.
B	12	stations	P02, P03	Heavy metals (P02), Dissolved Hydrocarbons (P03).
B	13	stations	P03	Using neuston net.
B	38	stations	H27, H33, H71, H74	CFC-11, -12, -113 and N ₂ O concentrations in air (M71) CFC-11, -12, -113, N ₂ O total inorganic carbon concentrations in sea water (H33, H74, H27).
B	900	stations	M71	CO ₂ and CH ₄ concentrations in air.
C	373	times	M06	Observed every 3 hours.
C	70	times	M01	Using Shipboard Automatic Radio-Sonde System.

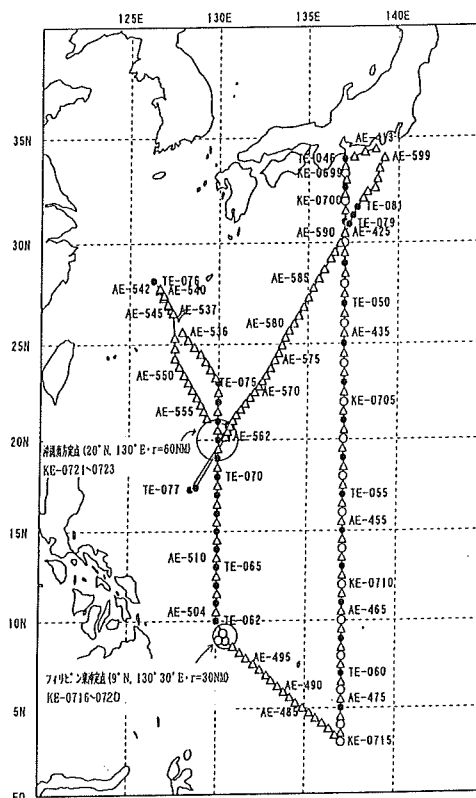
Reference No. : 96042
 Restrict Data : No
 Ship Name : KEIFU MARU
 Ship Type : Research Vessel
 Cruise No./Name : 96-10
 Cruise Period : 09/10/1996 to 18/11/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Climate and Marine Dept., Japan Meteorological Agency
 Chief Scientist(s) : T. Maehira Climate and Marine Dept., Japan Meteorological Agency
 General Ocean Area(s) : East China Sea, North Pacific Ocean, Philippine Sea
 Geographic Coverage : 23, 24, 59, 60, 95, 96, 131

Principal Investigators :
 A; K. Ishikawa Climate and Marine Dept., Japan Meteorological Agency
 B; M. Takada Climate and Marine Dept., Japan Meteorological Agency

Objectives and Brief Narrative of Cruise :

In oceanographical observations in order to grasp the change of the sea condition (The condition of the sea temperature, salinity and so on, on the observation line along meridian of 137E and 130E from the extra-tropical region).

The marine meteorological observations, the radar meteorological observations, the upper air observations and the oceanographical observations in order to acquire the data for "KUROSHIO Exploitation Research".



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	25	stations	H10	Using Neil-Brown mark 3B CTD.
A	187	stations	D71	Using RD Instruments Acoustic Doppler Current Profiler.
A	17	stations	H09, H21, H22 H24, H25	Using Rosette Sampler.
A	18	stations	H16	Using Secchi Disk.
A	16	drops	H13	XBT drops with T-5 type probes.
A	18	drops	H13	XBT drops with T-6 type probes.
A	2	drops	H13	XBT drops with T-7 type probes.
B	262	times	M06	Observed every 3 hours.
B	482	times	M90	Weather Radar.
B	60	times	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91 type Radio-sonde.

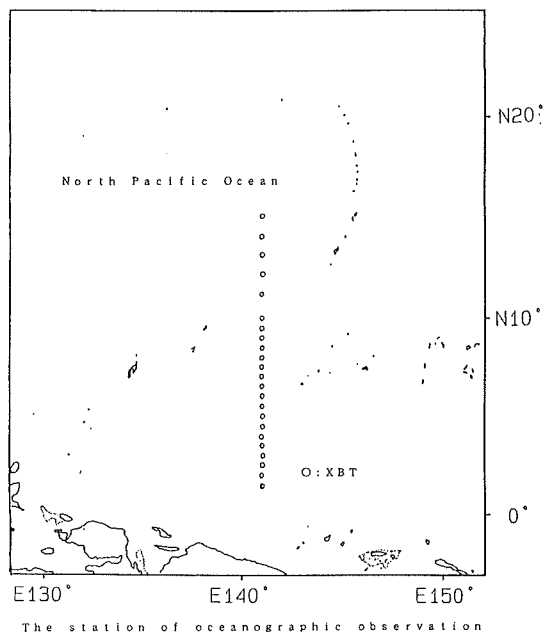
Reference No. : 96043
 Restrict Data : No
 Ship Name : KAKUYO MARU
 Ship Type : Training Ship

Cruise No./Name : Voyage No.120
 Cruise Period : 24/10/1996 to 21/12/1996
 Port of Departure : Nagasaki
 Port of Return : Nagasaki
 Responsible Laboratory : Faculty of fisheries, Nagasaki Univ.
 Chief Scientist(s) : Y. Akishige Faculty of fisheries, Nagasaki Univ.
 General Ocean Area(s) : North Pacific Ocean
 Geographic Coverage : 22, 58
 Principal Investigators :
 A; Y. Akishige Faculty of fisheries, Nagasaki Univ.

Objectives and Brief Narrative of Cruise :

Main task

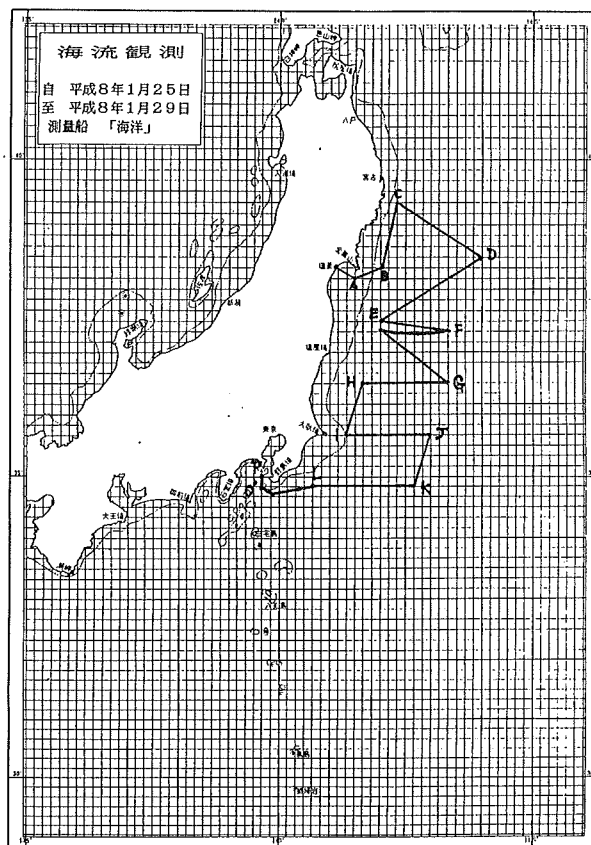
1. Training of Navigation.
2. Training operation of purse seine fishing.
3. Oceanographic observation.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	26	drops	H13	XBT drops with T6 type probes.

Reference No. : 96044
 Restrict Data : No
 Ship Name : KAIYO
 Ship Type : Survey Vessel
 Cruise No./Name : 960002
 Cruise Period : 10/01/1996 to 29/01/1996
 Port of Departure : Shiogama
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department,
 Maritime Safety Agency
 Chief Scientist(s) : Mr. Y. Murase Hydrographic
 Department, Maritime Safety
 Agency
 General Ocean Area(s) : North Pacific Ocean
 Philippine Sea
 Geographic Coverage : 130
 Principal Investigators :
 A; Mr. K. Oka Hydrographic Department,
 Maritime Safety Agency



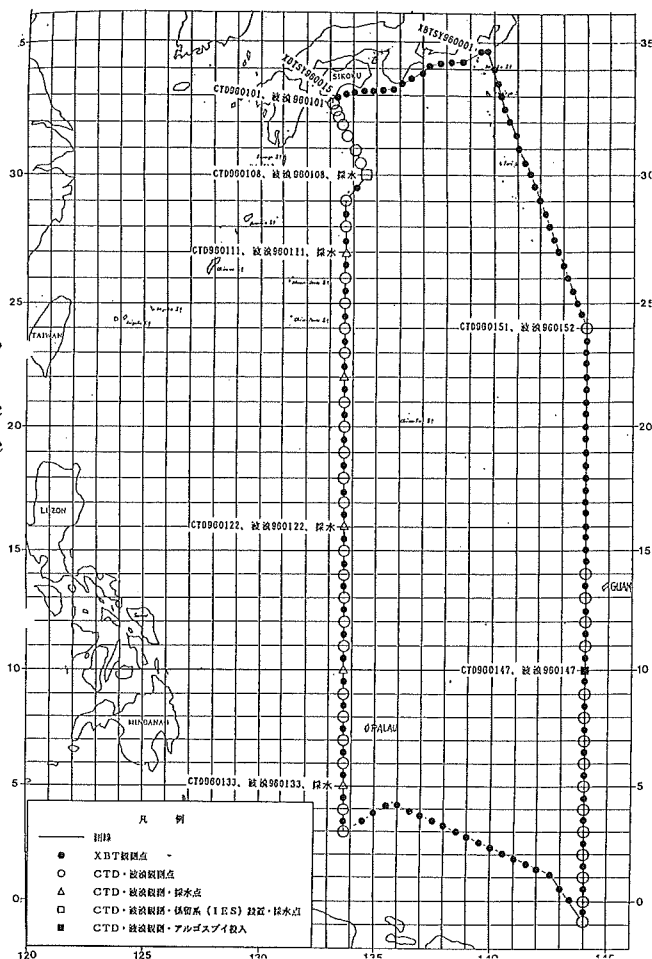
Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature.

Summary of Measurements and Samples Taken

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	51	drops	H13	XBT drops with T6 type probes.

Reference No. : 96045
 Ship Name : SHOYO
 Ship Type : Survey Vessel
 Cruise No./Name : 960003
 Cruise Period : 10/01/1996 to 08/02/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department,
 Maritime Safety Agency
 Chief Scientist(s) : Mr. S. Ikeda Hydrographic
 Department, Maritime
 Safety Agency
 General Ocean Area(s) : East China Sea
 Philippine Sea
 Geographic Coverage : 22, 23, 58, 59, 94, 95
 130, 131, 132
 Principal Investigators :
 A; Mr. S. Ikeda Hydrographic Department,
 Maritime Safety Agency
 B; Mr. K. Oka Hydrographic Department,
 Maritime Safety Agency



Objectives and Brief Narrative of Cruise :

Object : As a part of Kuroshio EXPLOITATION AND UTILIZATION RESEARCH (KER), this observation aims to investigate the structure of ocean circulation at the subtropical region in the western pacific ocean.

- (A) Surface current observation by ADCP.
- (B) Measurement of the density of CO₂.
- (C) Measurement of water temperature at surface layer by XBT.
- (D) Measurement of water temperature and salinity by using CTD system and chemical analysis of sea water for nutrients.
- (E) Wave observation by ship borne analyzer.
- (F) Mooring system deployment of under water.
- (G) Deployment of ARGOS buoys (Drifting buoys).

Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	25.04	133.40	D05	Deployed a drifting buoy Jan. 27, 1996.

Summary of Measurements and Samples Taken :

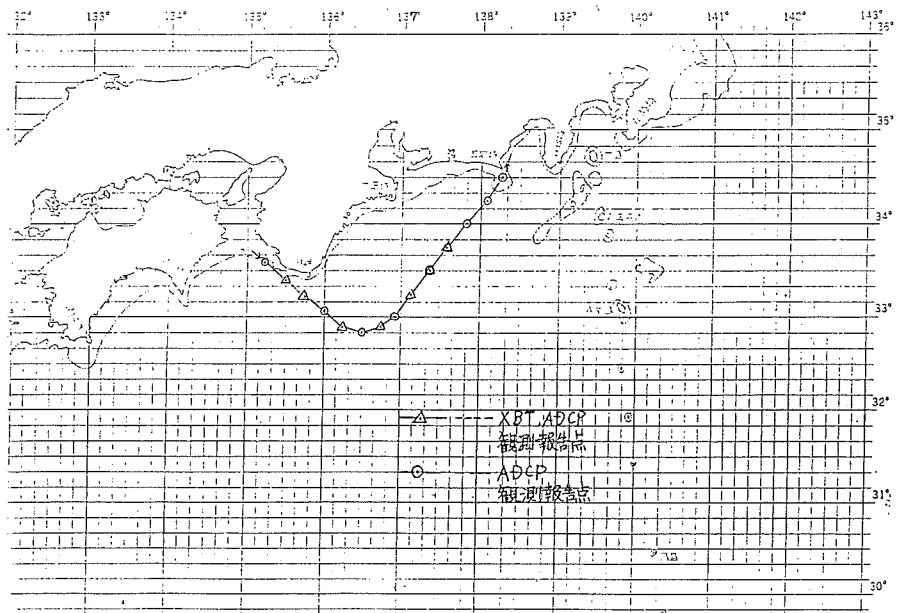
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A		continuous	H74	Measurement of the density of CO ₂ by using Beckman-Industrial Model 880.
A	117	drops	H13	XBT drops with T6 type probes.
A	52	stations	H09, H21, H22 H26, H28	Deep cast using Rosette Sampler with reversing thermometers partly.

A	26	stations	H10	Using Sea Bird SBE 9plus CTD (upper6500db).
A	26	stations	H21, H22, H26, H28	Surface temperature measurement and surface water sampling for chemical analysis.
A	26	stations	D72	Wave observation using shipborne wave analyzer.
B	2		D02, D03, D04	All samples of surface for trace metals (Cadmium, Mercury, Copper and Zinc) petroleum oil.

Reference No. : 96046
 Ship Name : MEIYO
 Ship Type : Survey Vessel
 Cruise No./Name : 960005
 Cruise Period : 11/01/1996 to 03/02/1996
 Port of Departure : Komatsushima
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
 Chief Scientist(s) : Mr. N. Ozono Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : Philippine Sea
 Geographic Coverage : 131
 Principal Investigators :
 A; Mr. K. Oka Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature.



Summary of Measurements and

Samples Taken :

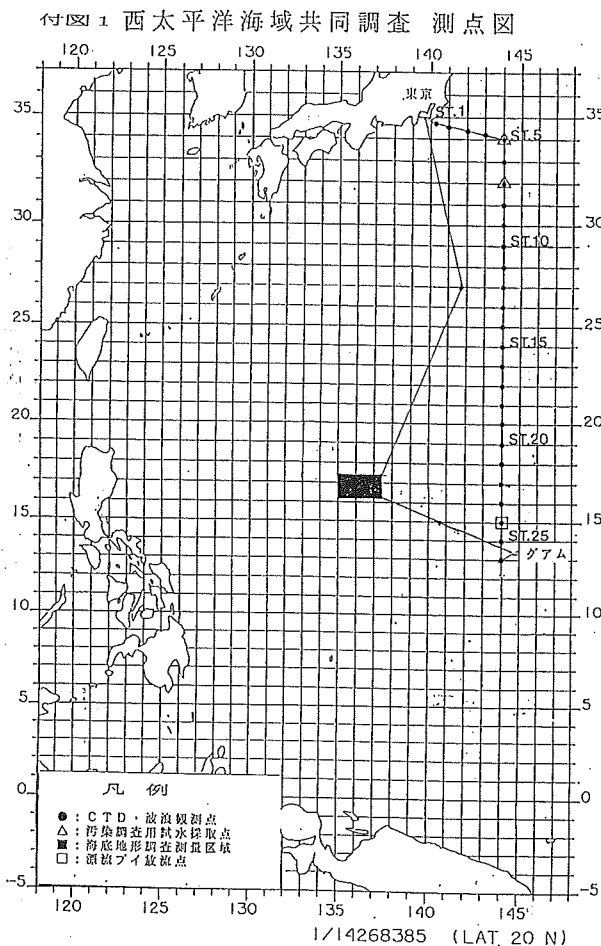
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	15	drops	H13	XBT drops with T6 type probes.

Reference No. : 96047
 Ship Name : TAKUYO
 Ship Type : Survey Vessel
 Cruise No./Name : 960006/WESTPAC
 Cruise Period : 16/02/1996 to 15/03/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
 Chief Scientist(s) : Mr. K. Oka Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : East China Sea, Philippine Sea
 Geographic Coverage : 22, 23, 58, 59, 94, 95, 130, 131, 132
 Project Name : WESTPAC
 Coordinating Body : IOC
 Principal Investigators :
 A; Mr. K. Oka Hydrographic Department, Maritime Safety Agency
 B; Mr. K. Oda Hydrographic Department, Maritime Safety Agency
 C; Mr. T. Omori Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Under the WESTPAC program of the Intergovernmental Oceanographic Commission (IOC), this observation aims to investigate the variations of ocean structure in the western pacific.

- (A) Surface current observation by ADCP.
- (B) Measurement of water temperature at surface layer by XBT.
- (C) Measurement of water temperature and salinity by using CTD system and chemical analysis of sea water for nutrients.
- (D) Wave observation by ship borne analyzer.
- (E) Deployment of ARGOS buoys (Drifting buoys).



Moorings, Bottom Mounted Gear and Drifting Systems:

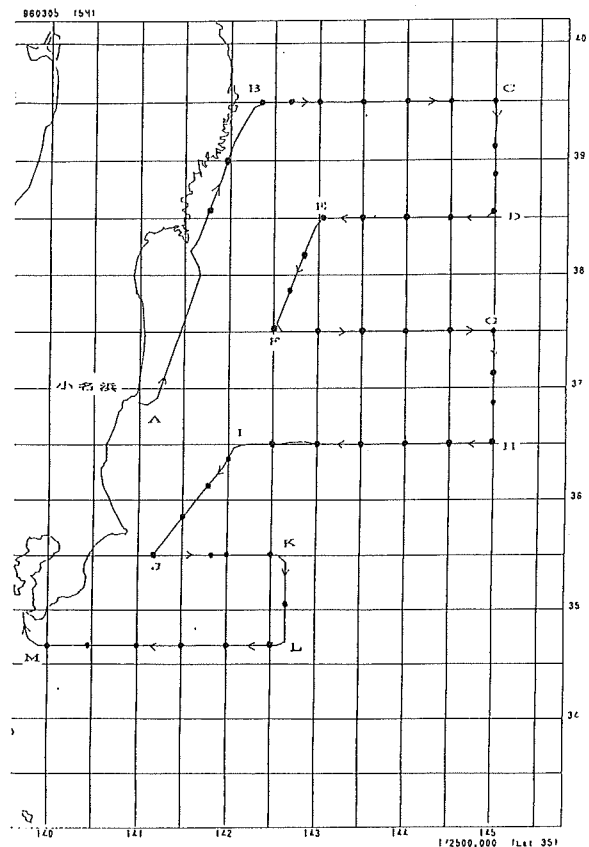
PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	14.57N	143.58E	D05	Deployed a drifting buoy Feb. 24, 1996.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	94	drops	H13	XBT drops with T6 type probes.

A	26 stations	H09, H21, H22 H26, H28	Deep cast using Rosette Sampler with reversing thermometers partly.
A	26 stations	H10	Using Sea Bird SBE 9plus CTD (upper6500db).
A	26 stations	H21, H22, H26, H28	Surface temperature measurement and surface water sampling for chemical analysis.
A	26 stations	D72	Wave observation using ship borne wave analyzer.
B	2 samples	D02, D03, D04	All samples of surface for trace metals (Cadmium, Mercury, Copper and Zinc) petroleum oil.
C	continuous	G74	Submarine topographic survey along the cruise line.
C	continuous	G27	Gravity measurement along the cruise line.

Reference No. : 96048
Ship Name : TENYO
Ship Type : Survey Vessel
Cruise No./Name : 960008
Cruise Period : 29/02/1996 to 11/03/1996
Port of Departure : Onahama
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department,
Maritime Safety Agency
Chief Scientist(s) : Mr. T. Nishikawa
Hydrographic Department,
Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 130
Principal Investigators :
A; Mr. K. Oka Hydrographic Department,
Maritime Safety Agency



Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature.

Summary of Measurements and Samples Taken

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	47	drops	H13	XBT drops with T6 type probes.

Reference No. : 96049
Ship Name : SHOYO
Ship Type : Survey Vessel
Cruise No./Name : 960010
Cruise Period : 18/04/1996 to 07/05/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency

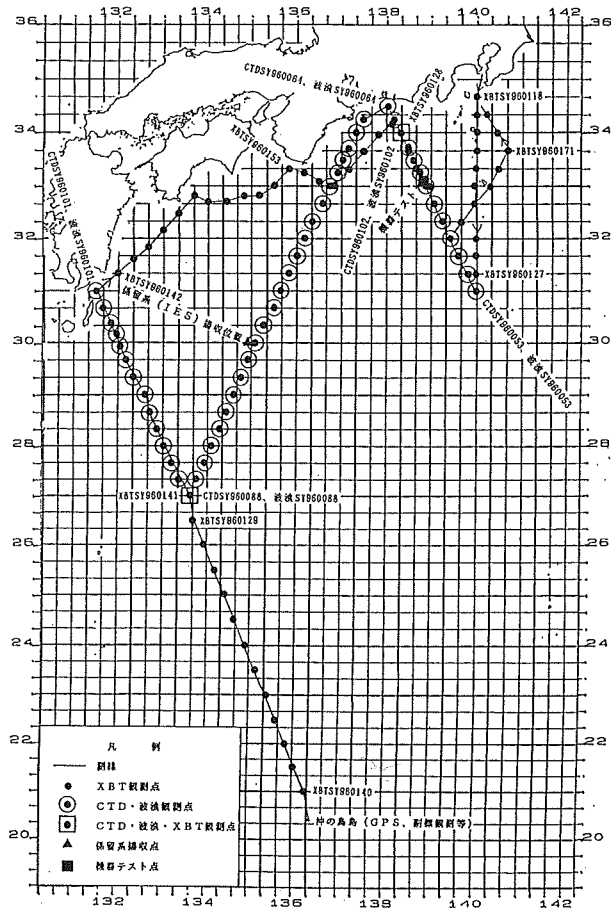
Chief Scientist(s) : Mr. Y. Shimohira Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : North Pacific Ocean, Philippine Sea
 Geographic Coverage : 95, 130, 131
 Principal Investigators :
 A; Mr. Y. Shimohira Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature .

Oceanographic observation data on the spot for oceanographic research advancement by valid utilization of a micro wavy altimeter are collected and Data transmission experiment of multipurpose drifting buoy is performed.

- (A) Surface current observation by ADCP.
- (B) Measurement of the density of CO₂.
- (C) Measurement of water temperature at surface layer by XBT.
- (D) Measurement of water temperature and salinity by using CTD system and chemical analysis of sea water for nutrients.
- (E) Wave observation by ship borne analyzer.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A		continuous	H74	Measurement of the density of CO ₂ by using Beckman-Industrial Model 880.
A	56	drops	H13	XBT drops with T6 type probes.
A	52	stations	H09, H21, H22 H26, H28	Deep cast using Rosette Sampler with reversing thermometers partly.
A	52	stations	H10	Using Sea Bird SBE 9plus CTD (upper6500db).
A	52	stations	H21, H22, H26, H28	Surface temperature measurement and surface water sampling for chemical analysis.
A	52	stations	D72	Wave observation using shipborne wave analyzer.

Reference No. : 96050
 Ship Name : SHOYO
 Ship Type : Survey Vessel
 Cruise No./Name : 960021
 Cruise Period : 12/07/1996 to 10/08/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department, Maritime Safety Agency

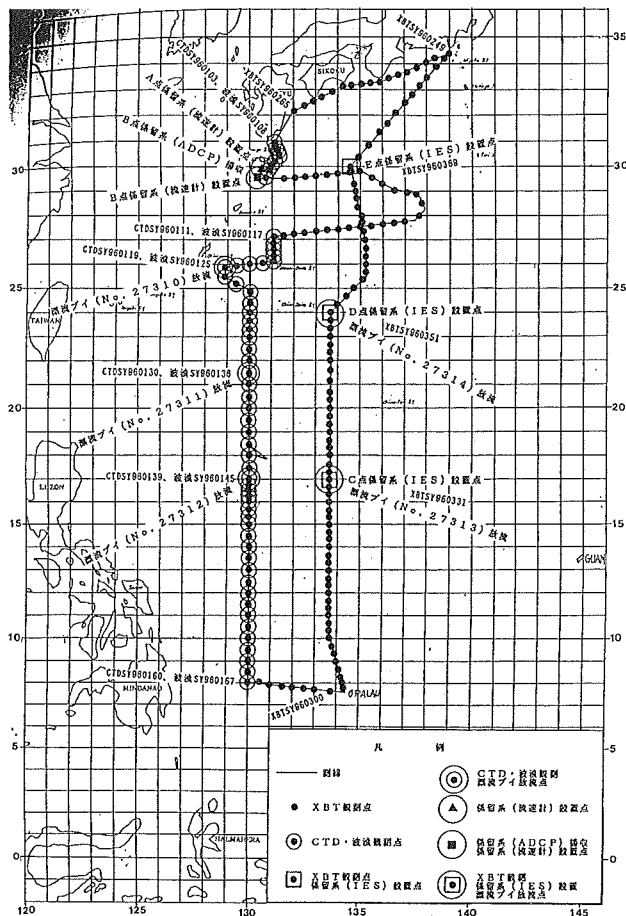
Chief Scientist(s) : Mr. S. Ikeda Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : Philippine Sea
 Geographic Coverage : 23, 59, 95, 96, 131
 Project Name : KER
 Coordinating Body : Science and Technology Agency

Principal Investigators :
 A; Mr. S. Ikeda Hydrographic Department,
 Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Object : As a part of Kuroshio EXPLOITATION AND UTILIZATION RESEARCH (KER), this observation aims to investigate the structure of ocean circulation at the subtropical region in the western pacific ocean.

- (A) Surface current observation by ADCP.
- (B) Measurement of the density of CO₂.
- (C) Measurement of water temperature at surface layer by XBT.
- (D) Measurement of water temperature and salinity by using CTD system and chemical analysis of sea water for nutrients.
- (E) Wave observation by ship borne analyzer.
- (F) Mooring system deployment of under water.
- (G) Deployment of ARGOS buoys (Drifting buoys).



Moorings, Bottom Mounted Gear and Drifting Systems:

PI	LAT.	Lon.	DATA TYPE	DESCRIPTION
A	29.50N	130.52E	D01	Mooring system deployment. (Set ADCP and 3 current meters(700m layer from the bottom)) July 15.
A	29.36N	130.37E	D01	Mooring system deployment. (Set 3 current meters(600m layer from the bottom)) July 15.
A	29.36N	130.36E	D71	Mooring system recovery, July 15.
A	25.50N	128.49E	D05	Deployed a drifting buoy, July 20.
A	21.28N	130.00E	D05	Deployed a drifting buoy, July 23.
A	16.59N	130.00E	D05	Deployed a drifting buoy, July 24.
A	17.00N	133.40E	D09	Mooring system deployment . (Set a IES(10m layer from the bottom))Aug. 5.
A	17.01N	133.40E	D05	Deployed a drifting buoy, Aug. 5.
A	24.00N	133.40E	D09	Mooring system deployment . (Set a IES(10m layer from the bottom))Aug. 6.
A	24.00N	133.40E	D05	Deployed a drifting buoy, Aug. 6.
A	30.00N	134.36E	D09	Mooring system deployment . (Set a IES(4m layer from the bottom))Aug. 8.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A		continuous	H74	Measurement of the density of CO ₂ by using Beckman-Industrial Model 880.
A	132	drops	H13	XBT drops with T6 type probes.
A	58	stations	H09, H21, H22, H26, H28	Deep cast using Rosette Sampler with reversing thermometers partly.
A	58	stations	H10	Using Sea Bird SBE 9plus CTD (upper6500db).
A	58	stations	H21, H22, H26, H28	Surface temperature measurement and surface water sampling for chemical analysis.
A	58	stations	D72	Wave observation using shipborne wave analyzer.

Reference No. : 96051
Ship Name : SHOYO
Ship Type : Survey Vessel
Cruise No./Name : 960030
Cruise Period : 08/10/1996 to 30/10/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
Chief Scientist(s) : Mr. K. Oka Hydrographic Department, Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 94, 95, 131
Principal Investigators :
 A; Mr. K. Oka Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature .

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.
A	38	drops	H13	XBT drops with T6 type probes.
A	3	stations	D72	Wave observation using shipborne wave analyzer.

Reference No. : 96052
Ship Name : SHOYO
Ship Type : Survey Vessel
Cruise No./Name : 960035
Cruise Period : 29/10/1996 to 12/11/1996
Port of Departure : Kobe
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
Chief Scientist(s) : Mr. S. Ikeda Hydrographic Department, Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean, Philippine Sea
Geographic Coverage : 95, 130, 131
Principal Investigators :
 A; Mr. S. Ikeda Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

To reflect in Quick Bulletin of Ocean Condition and Ocean Current Forecasting chart by obtaining data of surface current and water temperature .

Oceanographic observation data on the spot for oceanographic research advancement by valid utilization of a micro wave altimeter are collected and Data transmission experiment of multipurpose drifting buoy is performed.

- (A) Surface current observation by ADCP.
- (B) Measurement of the density of CO₂.
- (C) Measurement of water temperature at surface layer by XBT.
- (D) Measurement of water temperature and salinity by using CTD system and chemical analysis of sea water for nutrients.
- (E) Wave observation by ship borne analyzer.

Summary of Measurements and Samples Taken :

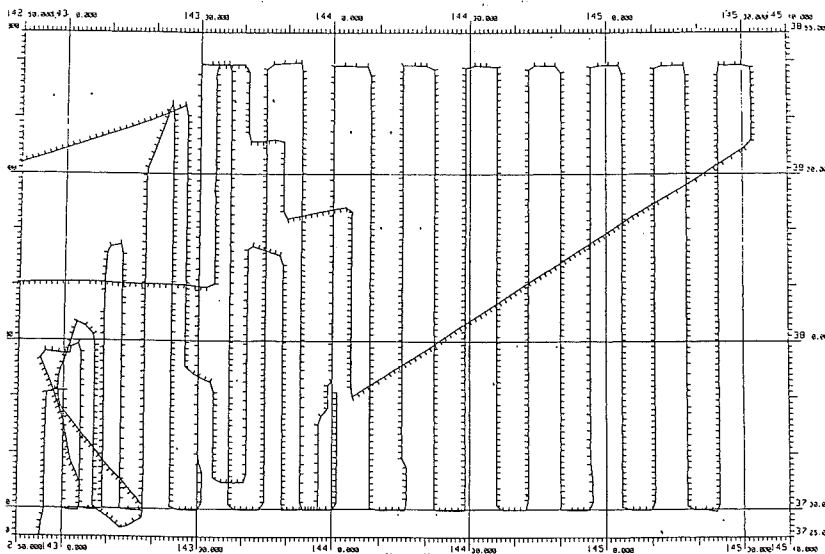
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A		continuous	D71	Surface current observation by ADCP.

A	continuous	H74	Measurement of the density of CO ₂ by using Beckman-Industrial Model 880.
A	58 drops	H13	XBT drops with T6 type probes.
A	44 stations	H09, H21	Deep cast using Rosette Sampler with reversing thermometers partly.
A	44 stations	H10	Using Sea Bird SBE 9plus CTD (upper6500db).
A	44 stations	H21, H22	Surface temperature measurement and surface water sampling for chemical analysis.
A	44 stations	D72	Wave observation using ship borne wave analyzer.

Reference No. : 96053
Ship Name : KAIYO
Ship Type : Survey Vessel
Cruise No./Name :
Cruise Period : 10/01/1996 to 24/01/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
Chief Scientist(s) : Mr. I. Okazaki Hydrographic Department, Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean
Specific Area(s) : East of Miyagi
Geographic Coverage : 130
Principal Investigators :
 A;Mr. I. Okazaki
 Hydrographic Department,
 Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

1. Production of Basic Maps of the sea.
 2. Participating in earthquake prediction programms.
- Bathymetric survey.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2290	NM	G74	Bathymetric data, Using Sea Beam 2000.

Reference No. : 96054
Ship Name : MEIYO
Ship Type : Survey Vessel
Cruise No./Name :
Cruise Period : 11/01/1996 to 28/01/1996

Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
Chief Scientist(s) : Mr. M. Uchida Hydrographic Department, Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean
Specific Area(s) : Off Tosa (Nankai Trough)
Geographic Coverage : 95, 130
Principal Investigators :

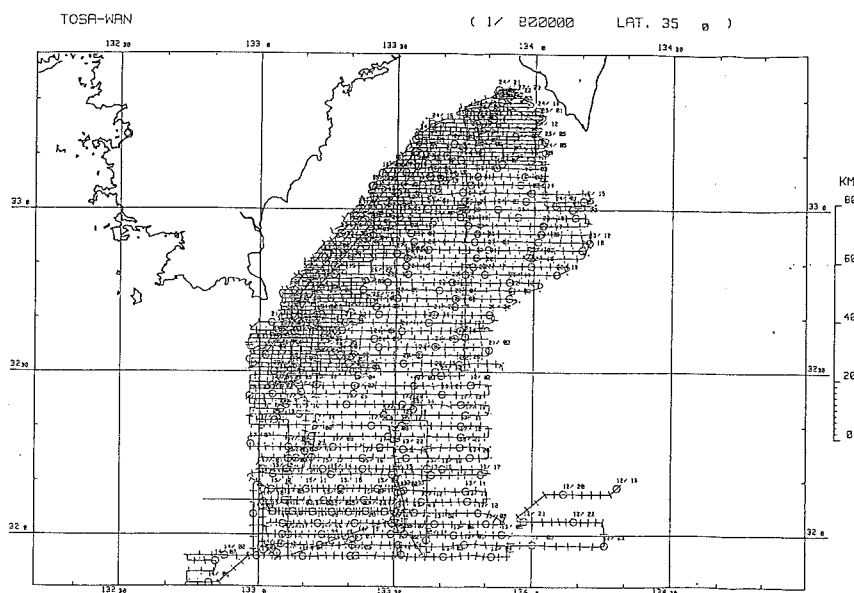
A; Mr. I. Okazaki
 Hydrographic Department,
 Maritime Safety Agency
 B; Mr. H. Nakagawa
 Hydrographic Department,
 Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Magnetic survey.
3. Gravity measurement at sea.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3391	NM	G74	Bathymetric data, Using Sea Beam 2000.
B	2557	NM	G28	Using Proton precession magnetometer.
B	3391	NM	G27	Using GDC-701 gravity meter.

Reference No. : 96055
Ship Name : MEIYO
Ship Type : Survey Vessel
Cruise No./Name :
Cruise Period : 31/05/1996 to 10/06/1996
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
Chief Scientist(s) : Mr. I. Okazaki Hydrographic Department, Maritime Safety Agency
General Ocean Area(s) : North Pacific Ocean
Specific Area(s) : Suruga Wan
Geographic Coverage : 94, 95, 130, 131
Principal Investigators :

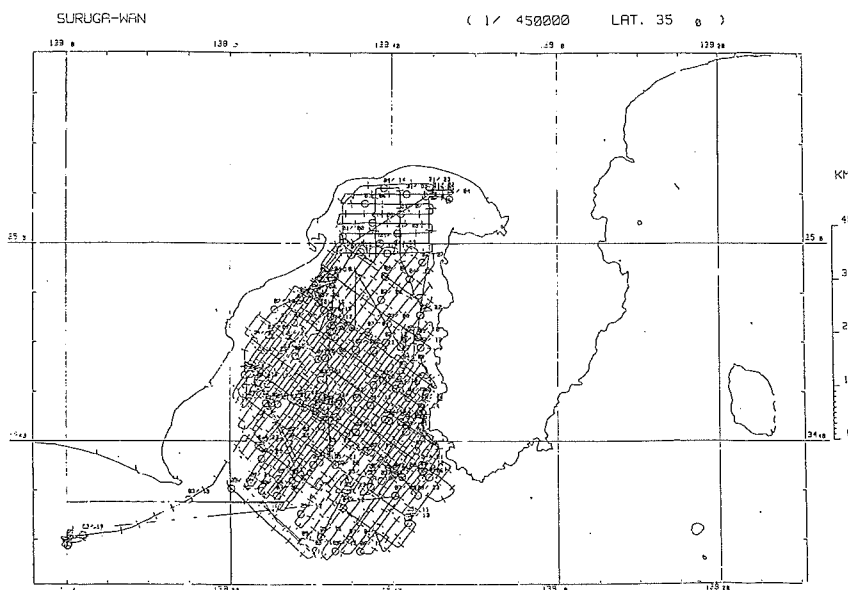
A; Mr. I. Okazaki Hydrographic Department, Maritime Safety Agency
 B; Mr. H. Nakagawa Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Seismic profiling.
3. Magnetic survey.
4. Gravity measurement at sea.



Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1254	NM	G74	Bathymetric data, Using Sea Beam 2000.
A	311	NM	G75	Using Air Gun.
B	311	NM	G28	Using Proton precession magnetometer.
B	1254	NM	G27	Using GDC-701 gravity meter.

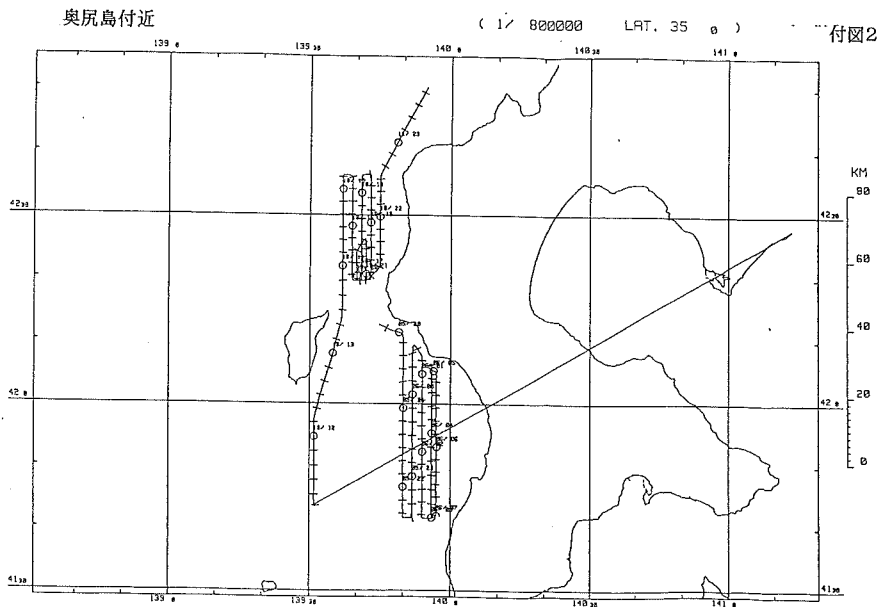
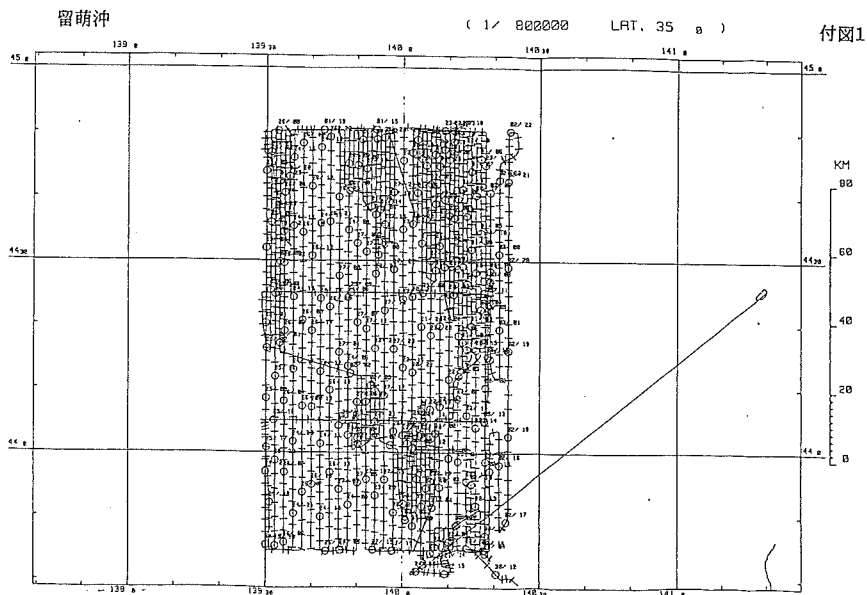
Reference No. : 96056
 Ship Name : MEIYO
 Ship Type : Survey Vessel
 Cruise No./Name :
 Cruise Period : 16/07/1996 to 08/08/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
 Chief Scientist(s) : Mr. T. Tomita Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : Japan Sea
 Specific Area(s) : Off Rumoi, Around Okushiri
 Geographic Coverage : 166, 167
 Principal Investigators :
 A; Mr. I. Okazaki Hydrographic Department, Maritime Safety Agency
 B; Mr. H. Nakagawa Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Seismic profiling.
3. Magnetic survey.
4. Gravity measurement at sea.



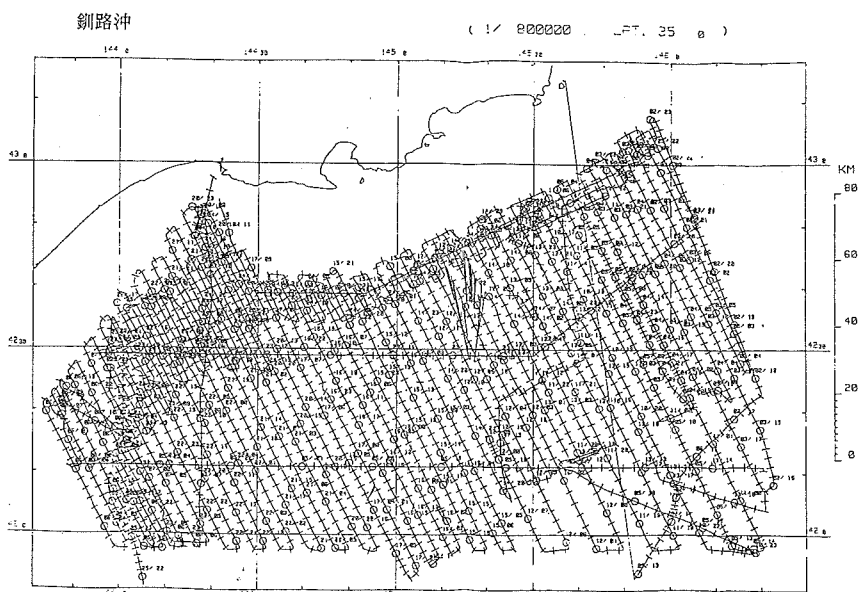
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2714	NM	G74	Bathymetric data, Using Sea Beam 2000.
A	615	NM	G75	Using Air Gun.
B	1725	NM	G28	Using Proton precession magnetometer.
B	2714	NM	G27	Using GDC-701 gravity meter.

Reference No. : 96057
 Ship Name : MEIYO
 Ship Type : Survey Vessel
 Cruise No./Name :
 Cruise Period : 30/09/1996 to 28/10/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo

Responsible Laboratory : Hydrographic Department, Maritime Safety Agency
 Chief Scientist(s) : Mr. T. Ohmori Hydrographic Department, Maritime Safety Agency
 General Ocean Area(s) : North Pacific Ocean
 Specific Area(s) : Off Kushiro
 Geographic Coverage : 130, 166
 Principal Investigators :

A; Mr. I. Okazaki
 Hydrographic Department,
 Maritime Safety Agency
 B; Mr. H. Nakagawa
 Hydrographic Department,
 Maritime Safety Agency



Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

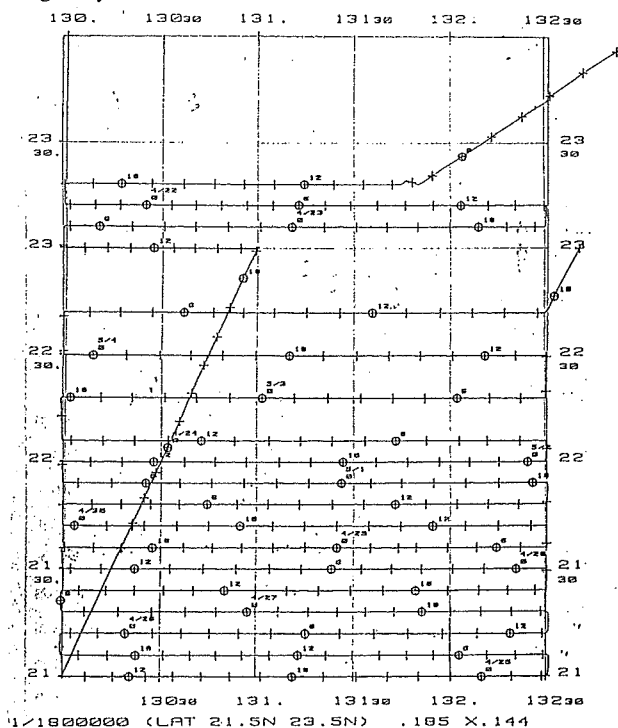
Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Magnetic survey.
3. Gravity measurement at sea.
4. Seismic profiling.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3728	NM	G74	Bathymetric data, Using Sea Beam 2000.
A	3251	NM	G75	Using Air Gun.
B	3251	NM	G28	Using Proton precession magnetometer.
B	3728	NM	G27	Using GDC-701 gravity meter.

Reference No. : 96058
 Ship Name : TAKUYO
 Ship Type : Survey Vessel
 Cruise No./Name :
 Cruise Period : 18/04/1996 to 07/05/1996
 Port of Departure : Tokyo
 Port of Return : Tokyo
 Responsible Laboratory : Hydrographic Department,
 Maritime Safety Agency
 Chief Scientist(s) : Mr. S. Kasuga
 Hydrographic Department,
 Maritime Safety Agency
 General Ocean Area(s) : North Pacific Ocean
 Specific Area(s) : Southern off Oki-Daito
 Sima
 Geographic Coverage : 95



Principal Investigators :

A; Mr. S. Kasuga Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Seismic profiling.
3. Magnetic survey.
4. Gravity measurement at sea.

Summary of Measurements and Samples Taken :

<i>PI</i>	<i>NO</i>	<i>UNITS</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	1924	NM	G74	Bathymetric data, Using Sea Beam 2100.
A	1757	NM	G75	Using Air Gun.
B	1757	NM	G28	Using Proton precession magnetometer PMM-100.
B	1924	NM	G27	Using gravity meter KSS-30.

Reference No. :

96059

Ship Name :

TAKUYO

Ship Type :

Survey Vessel

Cruise No./Name :

Cruise Period :

10/01/1996 to 28/01/1996

Port of Departure :

Tokyo

Port of Return :

Tokyo

Responsible Laboratory :

Hydrographic Department, Maritime Safety Agency

Chief Scientist(s) :

Mr. S. Kasuga Hydrographic Department, Maritime Safety Agency

General Ocean Area(s) :

North Pacific Ocean

Specific Area(s) :

Geographic Coverage :

95, 96

Principal Investigators :

A; Mr. S. Kasyga Hydrographic Department, Maritime Safety Agency

Objectives and Brief Narrative of Cruise :

Production of Basic Maps of the sea.

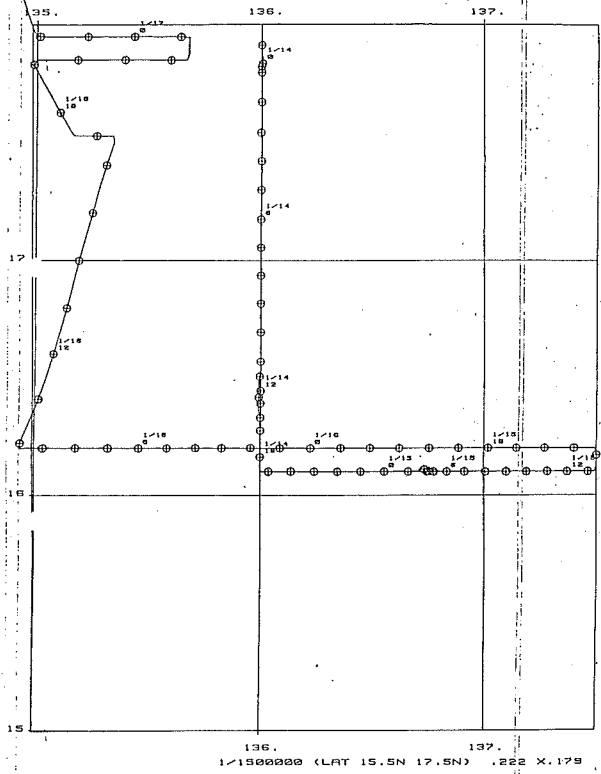
Participating in earthquake prediction programmes.

1. Bathymetric survey.
2. Magnetic survey.
3. Gravity measurement at sea.
4. Seismic profiling.

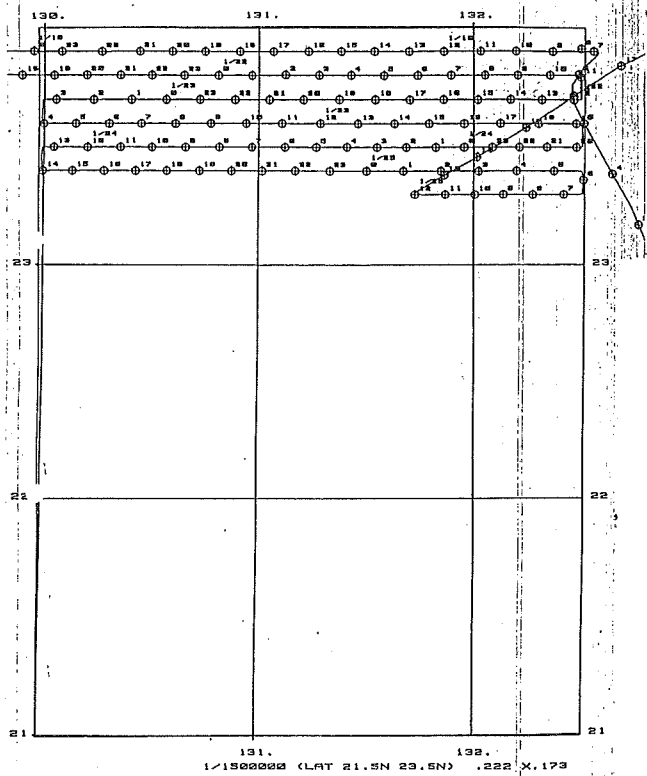
Summary of Measurements and Samples Taken :

<i>PI</i>	<i>NO</i>	<i>UNITS</i>	<i>DATA TYPE</i>	<i>DESCRIPTION</i>
A	2827	NM	G74	Bathymetric data, Using Sea Beam 2100.
A	2783	NM	G75	Using Air Gun.
B	2783	NM	G28	Using Proton precession magnetometer.
B	2209	NM	G27	Using gravity meter.

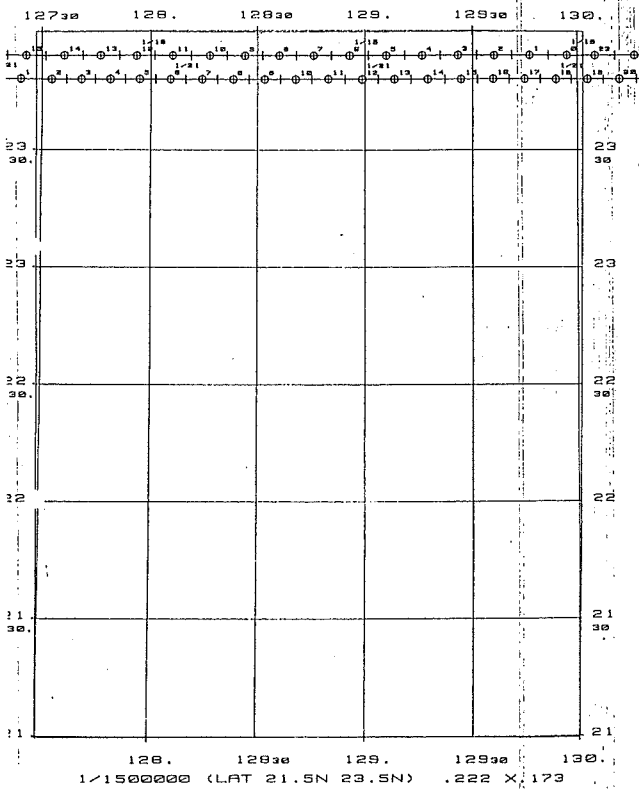
付図2 第34回大陸棚調査航跡図
(沖ノ島島南方)



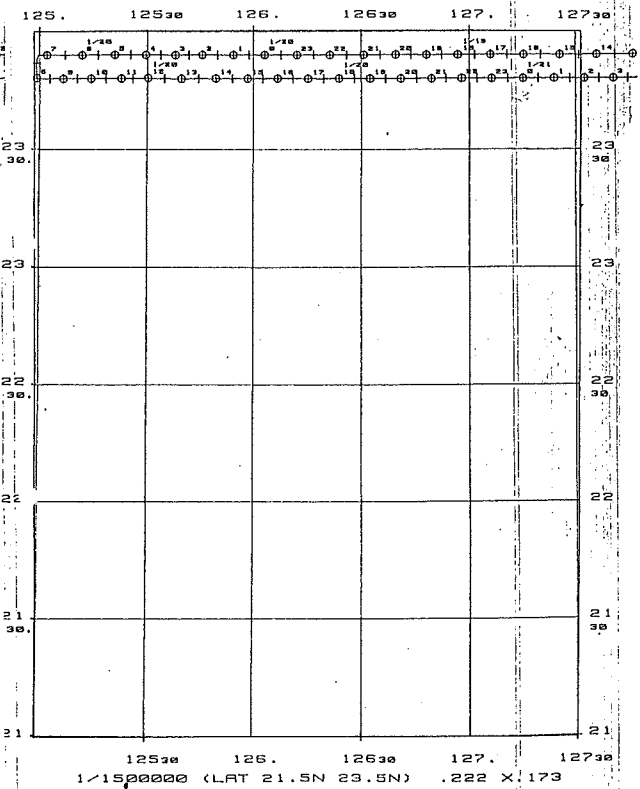
付図3 第36回大陸棚調査航跡図
(沖大東島島南方)



付図4 第37回大陸棚調査航跡図
(沖繩島南方)



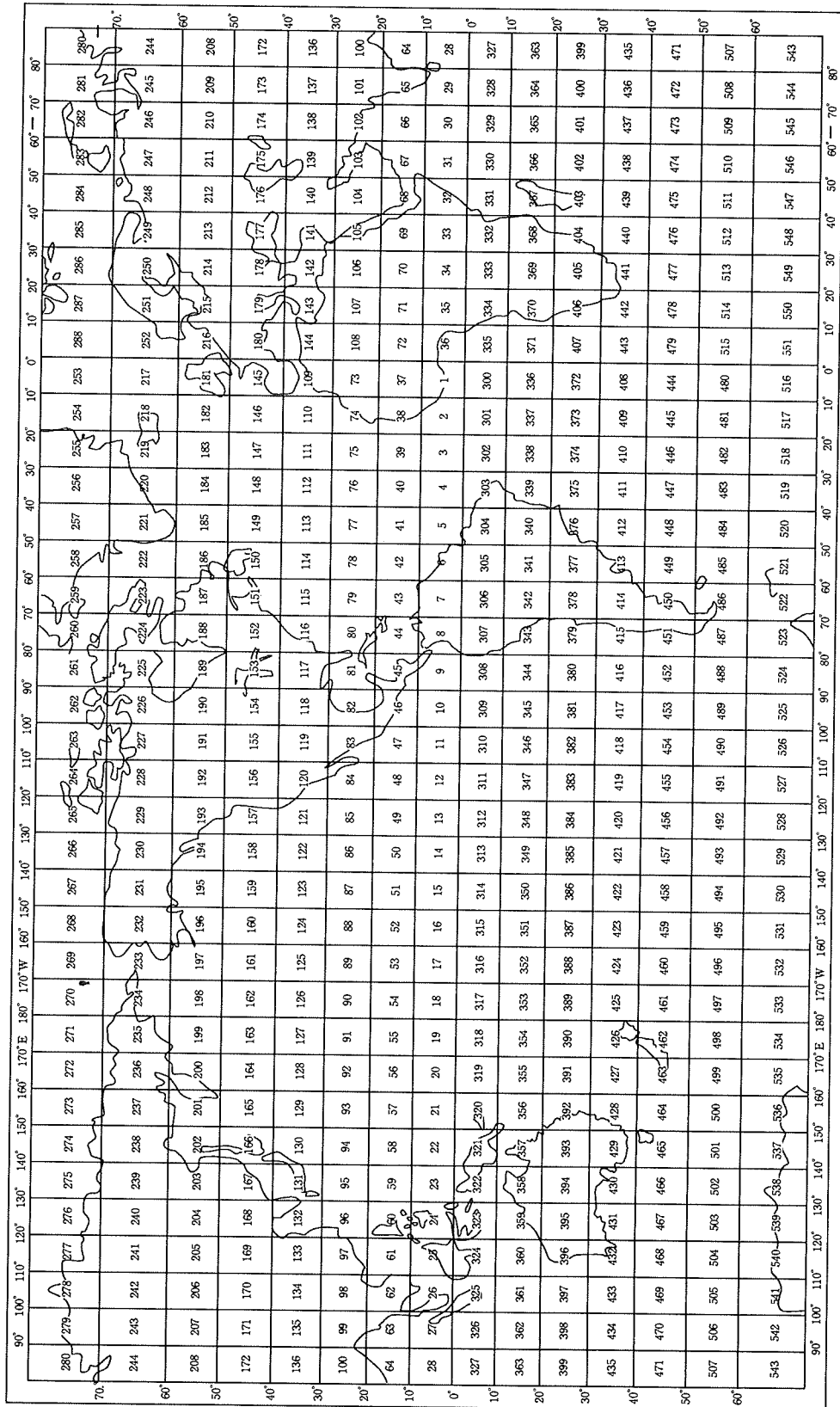
付図5 第38回大陸棚調査航跡図
(宮古島島南方)



付 録 目 次

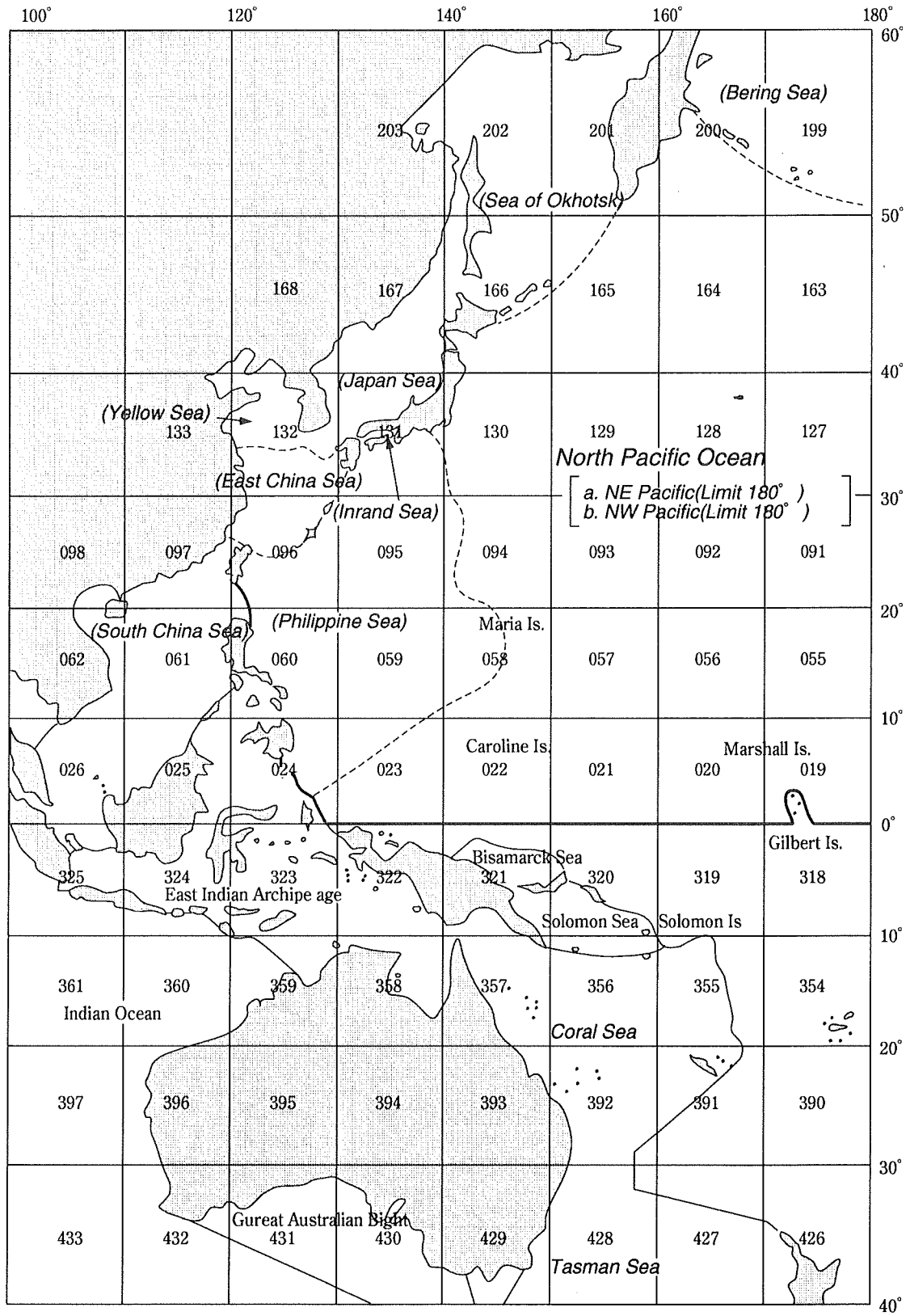
- 付録1 MSQ海域番号図（全世界、西太平洋）
- 付録2 航海概要報告記入要領（書式付き）
- 付録3 調査機関略語表

MSQ 海域番号図 (全世界)



MSQ 海域番号図 (西太平洋)

海域の境界はIHO分類による



CRUISE SUMMARY REPORT 航海概要報告		FOR COLLATING / CENTER USE (照会のためセンターで使用) Center: <i>JODC</i> Ref.No:.....
		Is data exchange restricted? <input type="checkbox"/> Yes <input type="checkbox"/> In part <input checked="" type="checkbox"/> No データ交換に制限があるか はい 条件付き いいえ
SHIP enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc. データを収集した船舶のフルネームと国際無線呼出符号を記入し、船舶の種類は、例えば、調査船、便宜供与船、海軍の調査船などを記入する。		
Name: <i>Shirase</i>		Call Sign:.....
Type of ship: <i>Icebreaker</i>		
CRUISE NO./NAME <i>JARE 33</i>		enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate). 航海(又は航海のレグ)の固有番号、名前又は略称を記入
CRUISE PERIOD start <input type="text" value="114"/> <input type="text" value="111"/> <input type="text" value="1991"/> to <input type="text" value="2004"/> <input type="text" value="1992"/> end 航海期間 (set sail) day month year (return to port) (出港) (入港)		
PORT OF DEPARTURE (enter name and country)..... <i>Tokyo, Japan</i>		
PORT OF RETURN (enter name and country)..... <i>Tokyo, Japan</i>		
RESPONSIBLE LABORATORY enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise. 担当機関 航海の観測計画を作成した担当調査機関の名称と住所を記入		
Name: <i>National Institute of Polar Research</i>		
Address: <i>1-9-10, Kaga, Itabashi-ku, Tokyo 173</i>		
Country: <i>Japan</i>		
CHIEF SCIENTIST(S) enter name and laboratory of the person(s) in charge of the scientific work(chief of mission) during the cruise. 観測責任者 航海中観測調査を担当した者(観測班長)の名前と所属機関を記入		
..... <i>T. Yamamoto, Hydrographic Department, Maritime Safety Agency</i>		
OBJECTIVES AND BRIEF NARRATIVE OF CRUISE enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the reported data were collected. 航海の目的と簡単な報告内容 収集されたデータの有効利用に供するため、航海の目的と性格について十分な情報を記入		
..... <i>One of a routine oceanographic observation (physical and chemical) on the 33rd summer mission of Japanese Antarctic Research Expedition</i>		
..... <i>A. Monitoring the position of Subtropical Convergence and Antarctic Convergence</i>		
..... <i>B. Trace of the Antarctic Circumpolar Current</i>		
..... <i>C. Marine pollution analysis</i>		
Main task <i>1. Deploy surface drifting buoy at 47° 35' S, 47° 10' E</i>		
..... <i>2. Surface water sampling for temperature measurement and chemical analysis</i>		
..... <i>3. Hydrographic measurement in Southern Ocean en route from Fremantle to Mauritius</i>		
PROJECT (IF APPLICABLE) if the cruise is designated as part of a larger scale cooperative project (or expedition or programme), then enter the name of the project, and of the organization responsible for coordinating the project. (該当する場合) 航海が共同プロジェクト(または調査、計画)の一部であるならば、そのプロジェクトの名称と調整機関名を記入		
Project Name:.....		
Coordinating body:.....		

PRINCIPAL INVESTIGATORS: enter the name and address of the principal investigators responsible for the data collected on the cruise, and who may be contacted for further information about the data. (the letter assigned below against each principal investigator is used on pages 2 and 3, under the column heading 'PI', to identify the data sets for which he/she is responsible)

主調査者：航海で収集されたデータについて責任を持っている筆頭の調査者とデータに関する詳細な情報照会に応じる者の名前とあて先を記入
(2ページ、3ページのPI欄には、A、B、C…で記入する。)

- A... *Dr. T. Yamamoto, Hydrographic Department, Maritime Safety Agency, 5-3-1, Tsukiji, Chuo-ku, Tokyo 104*.....
- B... *Mr. S. Suzuki, 2nd Regional Maritime Safety Headquarter, 3-4-1, Teizan-dori, Shiogama Miyagi 985*.....
- C.....
- D.....
- E.....
- F.....

MOORINGS, BOTTOM MOUNTED GEAR AND DRIFTING SYSTEMS

this section should be used for reporting moorings, bottom mounted gear and drifting systems (both surface and deep) deployed and/or recovered during the cruise. separate entries should be made for each location (only deployment positions need be given for drifting systems). this section may also be used to report data collected at fixed locations which are returned to routinely in order to construct 'long time series'.

係留、海底設置機器、漂流システム

係留、海底設置機器及び漂流システム(海面、海中とも)の設置と回収について記入する。各設置点ごとに記入のこと。(漂流システムについては投入した位置のみで可)

また、時系列をとるために定期的に測定される地点でのデータについてもこの欄に記入してよい。

PI <small>see top of page.</small>	APPROXIMATE POSITION						DATA TYPE <small>enter code(s) from list on cover page. リストのコードを記入</small>	DESCRIPTION <small>identify, as appropriate, the nature of the instrumentation, the parameters (to be) measured, the number of instruments and their depths, whether deployed and/or recovered, dates of deployment and/or recovery, and any identifiers given to the site. 機器の種類、測定のパラメータ、機器数とその深度、設置または回収の日付と位置</small>
	LATITUDE			LONGITUDE				
	deg	min	N/S	deg	min	E/W		
A	47	35	S	47	10	E	D05	Deployed a drifting buoy, March 7, 1991
A	69	00	S	39	34	E	D09	Set new tidegauge, January 14, 1992 (Meiseidenki Co. QWP-8-103D. straingauge)

Please continue on separate sheet if necessary.

書ききれない場合は別紙に続ける。

SUMMARY OF MEASUREMENTS AND SAMPLES TAKEN

except for the data already described on page 2 under 'moorings, bottom mounted gear and drifting systems', this section should include a summary of all data collected on the cruise, whether they be measurements (e.g. temperature, salinity values) or samples (e.g. cores, net hauls). separate entries should be made for each distinct and coherent set of measurements or samples. different modes of data collection (e.g. vertical profiles as opposed to underway measurements) should be clearly distinguished, as should measurement/sampling techniques that imply distinctly different accuracies or spatial/temporal resolutions. thus, for example, separate entries would be created for i) BT drops, ii) water bottle stations, iii) CTD casts, iv) towed CTD, v) towed undulating CTD profiler, vi) surface water intake measurements, etc. each data set entry should start on a new line - it's description may extend over several lines if necessary.

測定とサンプル採取の概要

2ページに記入する係留、海底設置機器、漂流システムを除く全ての測定（水温、塩分等）やサンプル（コア、ドレッジ等）によるデータに関する概要について記入のこと。

測定とサンプル毎に分けて記入のこと。データ収集の方法が異なる（例えば、航行しながらの測定と停船してセンサーを鉛直に降ろして行う測定）場合や精度や場所・時間の分解能が明らかに異なる測定／サンプリング手法の場合には区別して記入すること。例えば、BT投下、採水点、CTD投人、CTD曳航、CTD波形曳航、表面水取水口観測等は分けて記入することになる。記入はデータ毎に改行すること。必要ならば、一つのデータの記述が数行にわたっても構わない。

NO, UNITS: for each data set, enter the estimated amount of data collected expressed in terms of the number of; 'stations'; 'miles' of track; 'days' of recording; 'cores' taken; net 'hauls'; balloon 'ascents'; or whatever unit is most appropriate to the data. the amount should be entered under 'no' and the counting unit should be identified in plain text under 'units'.

数量、単位 各データセットごとに、収集されたデータの推定量を観測地点数、航跡距離（NM）、観測記録の日数、収集されたコア数、曳網数、揚げた気球数その他取得データにふさわしい単位を用いて記述すること。量はNOの項に、単位は平易な記述でUNITSの項に記入

PI	NO	UNITS	DATA TYPE	DESCRIPTION
see page 2	see above	see above	enter cpde(s) from list on cover page. リストのコードを記入	identify, as appropriate, the nature of the data and of the instrumentation/sampling gear and list the parameters measured. include any supplementary information that may be appropriate, e.g. vertical or horizontal profiles, depth horizons, continuous recording or discrete samples, etc. for samples taken for later analysis on shore, an indication should be given of the type of analysis planned, i.e. the purpose for which the samples were taken. データ、使用機器/装置の種類・特性を適宜明記し、測定されたデータ項目を列記する。水平/垂直プロファイルの別、測定層の深度、連続記録か間隔を開けたものか、等の適当な補足情報も含むこと。陸上での解析のために採取されたサンプルについては、どのような分析が行われる予定であるのか、即ちサンプルが採取された目的を記すこと。
A	13	Stations	H09, H21	Deep cast using Nansen bottles with reversing thermometers
			H22, H24 H25, H76	
			H26, H28	
A	13	Stations	H10	Using Neil-Brown Smart CTD (uper 1000m)
A	51	Drops	H13	XBT Drops with T6 type probes
B	198	Samples	H71, H21	Surface temperature measurement and surface water sampling for
			H22, H24 H25, H76	Chemical analysis were made twice or three times a day (once a day
			H26, H28	as Shirase stayed in ice-covered area).
B	29	Samples	P02, P03	9 samples of surface water for trace metals (Cadmium, Mercury, Copper
				and Zinc)
				20 samples of surface water for petroleum oil

Please continue on separate sheet if necessary.

書ききれない場合には別紙に続ける。

TRACK CHART: You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.
航跡図 なるべく航跡と測定点を示す注釈付き航跡図を本報告に添付すること。

Insert a tick (✓) in this box if a track chart is supplied.
 航跡図添付の場合はマーク(✓)する。



GENERAL OCEAN AREA(S): Enter the names of the oceans and/or seas in which data were collected during the cruise - please use commonly recognized names (see, for example, International hydrographic bureau special publication no. 23, "limits of oceans and seas").

調査海域 航海中にデータを収集した海洋または海域の名称を記入する。一般的な名称を使用のこと。(国際水路局(IHB)増刊23号 "Limits of Ocean and Seas" を参照)

Philippine sea, East Indian Archipelago

Indian Ocean, South China Sea

SPECIFIC AREAS: If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

特定海域 調査航海がある海域の特定区域に集中したならば、その区域について、ローカルな海域名、海底地形、または地理座標などを記載する。

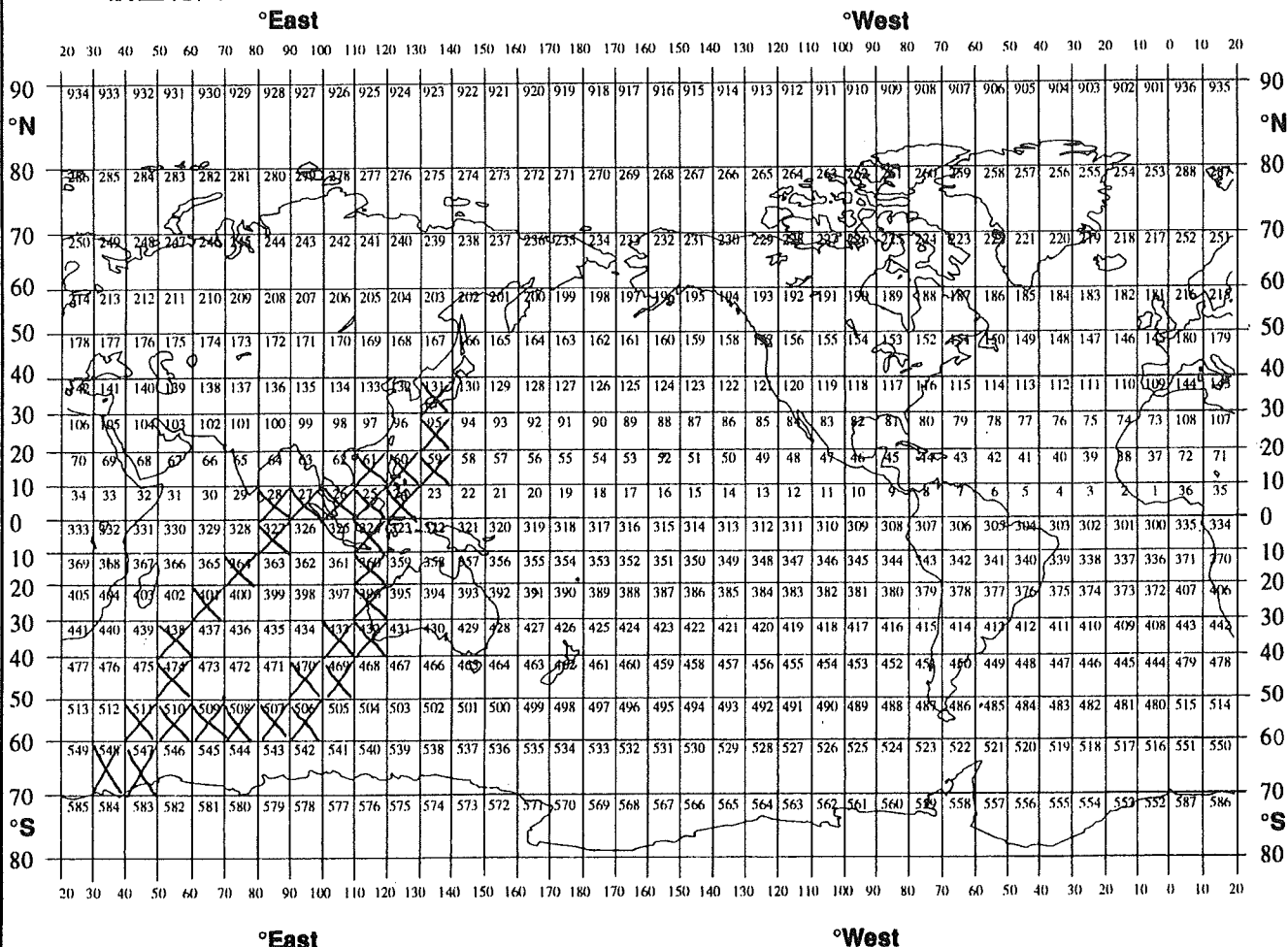
Main Area : Breid Bay (70° -15' S to 70° -10' S at latitude , 23° -45' E to 24° -30' E at longitude)

Long Section : Antarctic ice edge to the east off Madagascar

GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED

調査範囲

データを収集した場所に 'X' を記入



THANK YOU FOR YOUR COOPERATION

Please send your completed report without delay to the collating center indicated on the cover page

ご協力有難うございました。
 完成した報告は遅滞なく日本海洋データセンターまで送付願います。

航跡図の例

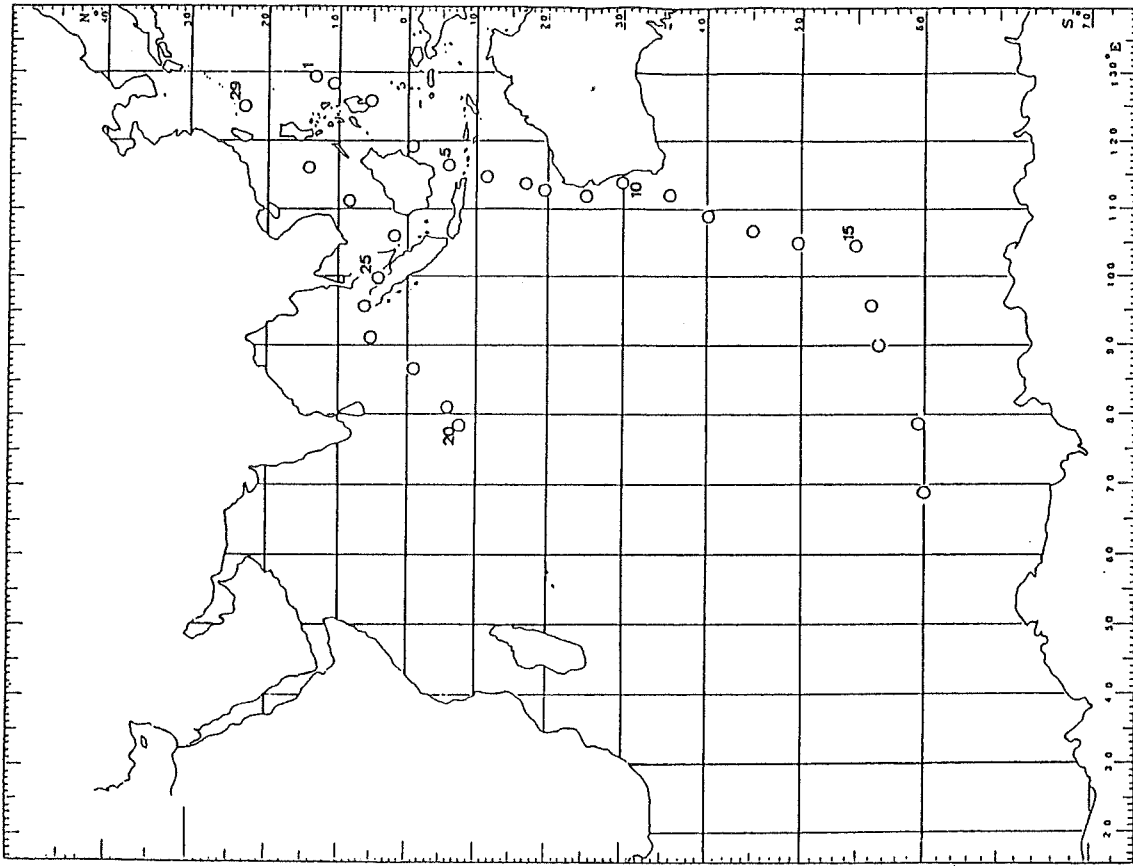


Fig. 2. The location of surface water sampling for marine pollution analysis (petroleum oil, Cd, Hg, Cu and Zn).

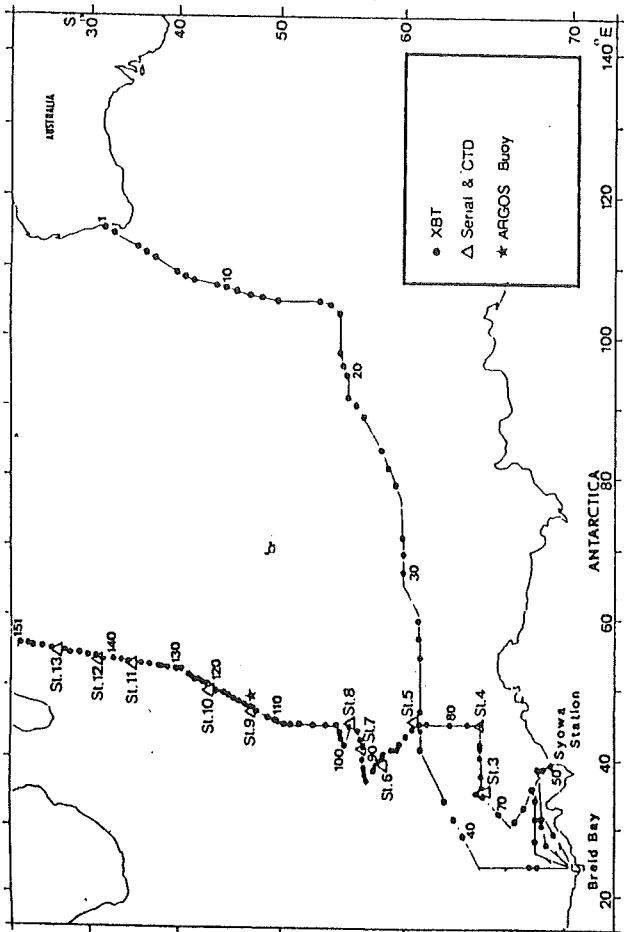
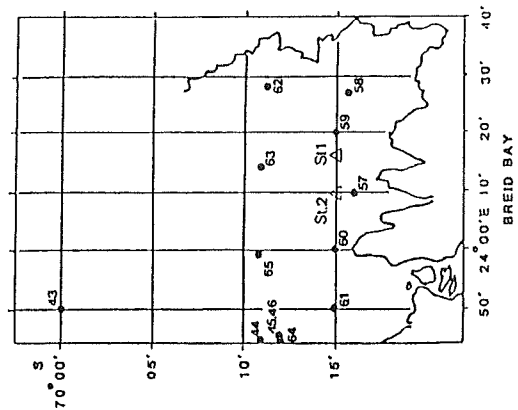


Fig. 1a. The track chart and the station location of oceanographic observations.



航海概要報告 (CRUISE SUMMARY REPORT) 書式

以下の4ページは記入用の書式です。今後、記入送付される方はこの書式を使用して下さい。

CRUISE SUMMARY REPORT

航海概要報告

FOR COLLATING / CENTER USE

(照合のためセンターで使用)

Center:..... Ref.No:.....

Is data exchange restricted?

データ交換に制限があるか Yes In part No
はい 条件付き いいえ

SHIP enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.
データを収集した船舶のフルネームと国際無線呼出符号を記入し、船舶の種類は、例えば、調査船、便宜供与船、海軍の調査船などを記入する。

Name:..... Call Sign:.....

Type of ship:.....

CRUISE NO./NAME..... enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).
航海(又は航海のレグ)の固有番号、名前又は略称を記入

CRUISE PERIOD start to end
航海期間 (set sail) day month year (return to port)
(出港) (入港)

PORT OF DEPARTURE (enter name and country).....

PORT OF RETURN (enter name and country).....

RESPONSIBLE LABORATORY enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise.
担当機関 航海の観測計画を作成した担当調査機関の名称と住所を記入

Name:.....

Address:.....

Country:.....

CHIEF SCIENTIST(S) enter name and laboratory of the person(s) in charge of the scientific work(chief of mission) during the cruise.
観測責任者 航海中観測調査を担当した者(観測班長)の名前と所属機関を記入

OBJECTIVES AND BRIEF NARRATIVE OF CRUISE enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the reported data were collected.
航海の目的と簡単な報告内容 収集されたデータの有効利用に供するため、航海の目的と性格について十分な情報を記入

PROJECT (IF APPLICABLE) if the cruise is designated as part of a larger scale cooperative project (or expedition or programme), then enter the name of the project, and of the organization responsible for coordinating the project.

(該当する場合) 航海が共同プロジェクト (または調査、計画) の一部であるならば、そのプロジェクトの名称と調整機関名を記入

Project Name:.....

Coordinating body:.....

PRINCIPAL INVESTIGATORS: enter the name and address of the principal investigators responsible for the data collected on the cruise, and who may be contacted for further information about the data. (the letter assigned below against each principal investigator is used on pages 2 and 3, under the column heading 'PI', to identify the data sets for which he/she is responsible)

主調査者: 航海で収集されたデータについて責任を持っている筆頭の調査者とデータに関する詳細な情報照会に応じる者の名前とあて先を記入。(2ページ、3ページのPI欄には、A、B、C...で記入する。)

- A.....
- B.....
- C.....
- D.....
- E.....
- F.....

MOORINGS, BOTTOM MOUNTED GEAR AND DRIFTING SYSTEMS

this section should be used for reporting moorings, bottom mounted gear and drifting systems (both surface and deep) deployed and/or recovered during the cruise. separate entries should be made for each location (only deployment positions need be given for drifting systems). this section may also be used to report data collected at fixed locations which are returned to routinely in order to construct 'long time series'.

係留、海底設置機器、漂流システム

係留、海底設置機器及び漂流システム(海面、海中とも)の設置と回収について記入する。各設置点ごとに記入のこと。(漂流システムについては投じた位置のみで可)また、時系列をとるために定期的に測定される地点でのデータについてもこの欄に記入してよい。

PI <small>see top of page.</small>	APPROXIMATE POSITION						DATA TYPE <small>enter code(s) from list on cover page. リストのコードを記入</small>	DESCRIPTION <small>identify, as appropriate, the nature of the instrumentation, the parameters (to be) measured, the number of instruments and their depths, whether deployed and/or recovered, dates of deployment and/or recovery, and any identifiers given to the site. 機器の種類、測定のパラメータ、機器数とその深度、設置または回収の日付と位置</small>
	LATITUDE			LONGITUDE				
	deg	min	N/S	deg	min	E/W		

Please continue on separate sheet if necessary.
書ききれない場合は別紙に続ける。

TRACK CHART:

You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.

航跡図

なるべく航跡と測定点を示す注釈付き航跡図を本報告に添付すること。

Insert a tick (✓) in this box if a track chart is supplied.

航跡図添付の場合はマーク(✓)する。

GENERAL OCEAN AREA(S):

Enter the names of the oceans and/or seas in which data were collected during the cruise - please use commonly recognized names (see, for example, international hydrographic bureau special publication no. 23, 'limits of oceans and seas').

調査海域

航海中にデータを収集した海洋または海域の名称を記入する。一般的な名称を使用のこと。(国際水路局(IHB)増刊23号 "Limits of Ocean and Seas" を参照)

SPECIFIC AREAS:

If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

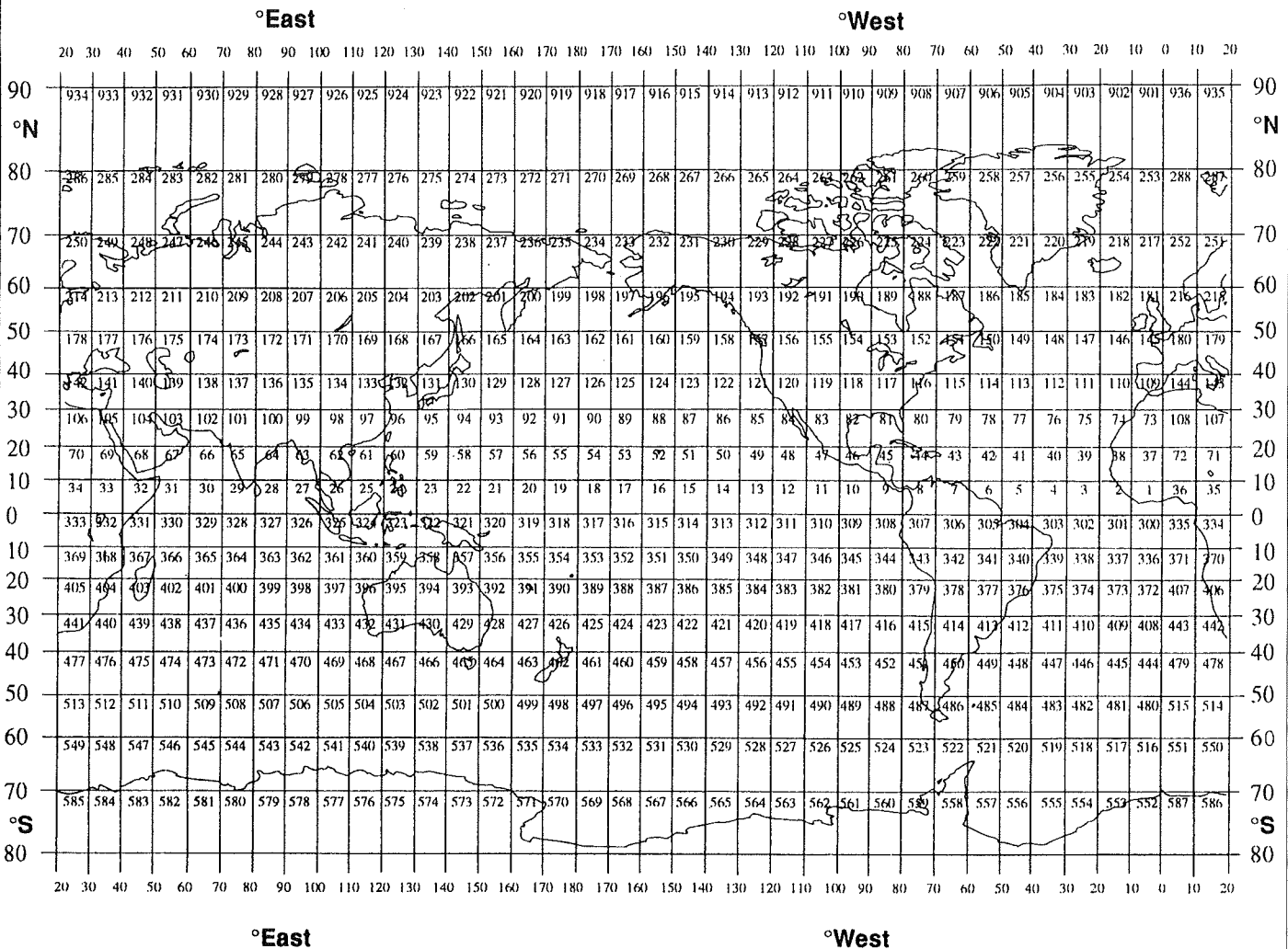
特定海域

調査航海がある海域の特定区域に集中したならば、その区域について、ローカルな海域名、海底地形、または地理座標などを記載する。

GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED

調査範囲

データを収集した場所に 'X' を記入



THANK YOU FOR YOUR COOPERATION

Please send your completed report without delay to the collating center indicated on the cover page

ご協力有難うございました。

完成した報告は遅滞なく日本海洋データセンターまで送付願います。

調査機関略語表

略語	調査機関名
HD, MSA	海上保安庁水路部 (Hydrographic Department, Maritime Safety Agency)
MD, JMA	気象庁海洋気象部 (Marine Department, Japan Meteorological Agency)
CMD, JMA	気象庁気候・海洋気象部 (Climate and Marine Department, Japan Meteorological Agency)
MRI, JMA	気象庁気象研究所 (Meteorological Research Institute, Japan Meteorological Agency)
HMO, JMA	函館海洋気象台 (Hakodate Marine Observatory, JMA)
KMO, JMA	神戸海洋気象台 (Kobe Marine Observatory, JMA)
MMO, JMA	舞鶴海洋気象台 (Maizuru Marine Observatory, JMA)
NMO, JMA	長崎海洋気象台 (Nagasaki Marine Observatory, JMA)
HU	北海道大学水産学部 (Faculty of Fisheries, Hokkaido University)
TU	東北大学 (Tohoku University)
CU	千葉大学 (Chiba University)
ORI, UT	東京大学海洋研究所 (Ocean Research Institute, The University of Tokyo)
ERI, UT	東京大学地震研究所 (Earthquake Research Institute, The University of Tokyo)
IHAS, NU	名古屋大学大気水圏科学研究所 (Inst. for Hydrospheric - Atmospheric Sciences, Nagoya University)

略 語	調 査 機 関 名
MU	三重大学生物資源学部 (Faculty of Bioresources, Mie University)
RIAM, KU	九州大学応用力学研究所 (Res. Inst. for Applied Mechanics, Kyushu University)
NU	長崎大学水産学部 (Faculty of Fisheries, Nagasaki University)
KU	鹿児島大学水産学部 (Faculty of Fisheries, Kagoshima University)
SFHS	鳥取県立境水産高等学校 (Tottori Prefectural Sakai Fishery High School)