海洋調査報告一覧

(CRUISE SUMMARY REPORT)

(国内海洋調査機関の調査報告)

2000年　実施分
(1993年、1994年、1996年、1998年、1999年実施分を一部含む)

2001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、各種活動を行なうためには、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・確実に行ない、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取りまとめたものです。

これらの情報の収集にあたり、ご協力いただいた関係調査機関に深謝いたします。

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。

２００１年 ３月

日本海洋データセンター
所長　　長井 俊夫

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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、計画立案者等に利用されることになります。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いただ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願いします。

なお、本報告一覧には1998年中にJODCが受領した1993年，1994年，1996年，1998年，1999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中のCSRのページのアドレスは、*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。

JODCでは、現在の書式のみによるCSR報告方式に加え、オンラインで報告できるシステムを現在開発中であり、近日中に公開することとしています。

なお、公開時期などについては、別途お知らせしたいと考えています。

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
Restrict 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、名称または略称
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）の氏名と所属機関
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	：	調査があ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）の一部であれば、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

Mooring, 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. LONG.	：	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、「Mooring, 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　サーミスターチェーン
- 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機含む）
- D72　機器による波浪観測
- D90　その他の海洋物理観測

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　りん酸塩
- 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
- 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　ほ乳類とは虫類
- 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
- M90　その他の気象観測

F．海洋化学
- 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

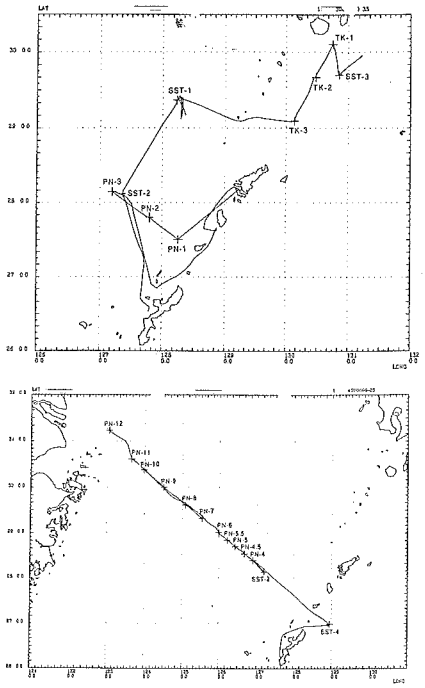
4．調査航海一覧表

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
JAMSTEC	KAIYO	East China Sea	1993/09/26-1993/11/03	B,D,H,G,P	93072	6
JAMSTEC	KAIYO	East China Sea	1994/07/20-1994/08/30	B,D,H,G,P	94077	7
JAMSTEC	KAIYO	East China Sea	1996/08/22-1996/09/30	B,D,H,P	96084	9
SFHS	WAKATORI MARU	North Pacific Ocean	1998/10/22-1998/12/15	B,D,H,M	98045	10
KMO, JMA	SHUMPU MARU	Philippine Sea	1998/01/22-1998/03/01	B,D,H,G,M,P	98046	11
KMO, JMA	SHUMPU MARU	Philippine Sea	1998/04/22-1998/05/28	B,D,H,G,M,P	98047	12
KMO, JMA	SHUMPU MARU	Philippine Sea	1998/06/26-1998/07/28	B,D,H,G,M,P	98048	14
KMO, JMA	SHUMPU MARU	Philippine Sea	1998/08/19-1998/09/17	B,D,H,G,M,P	98049	16
KMO, JMA	SHUMPU MARU	Philippine Sea	1998/10/07-1998/11/05	B,D,H,G,M,P	98050	17
JMA	KEIFU MARU	North Pacific Ocean Philippine Sea	1999/01/21-1999/02/18	D,H,G,M,P	99034	19
JMA	KEIFU MARU	North Pacific Ocean Philippine Sea	1999/04/27-1999/06/07	D,H,M	99035	20
JMA	KEIFU MARU	North Pacific Ocean Philippine Sea	1999/06/22-1999/07/28	D,H,G,M,P	99036	22
JMA	KEIFU MARU	North Pacific Ocean Philippine Sea	1999/08/17-1999/09/20	D,H,G,M	99037	23
JMA	KEIFU MARU	North Pacific Ocean Philippine Sea	1999/10/21-1999/11/25	D,H,M	99038	25
KMO, JMA	SHUMPU MARU	Philippine Sea	1999/01/21-1999/02/26	B,D,H,G,M,P	99039	26
KMO, JMA	SHUMPU MARU	Philippine Sea	1999/04/28-1999/05/27	B,D,H,G,M,P	99040	27
KMO, JMA	SHUMPU MARU	Philippine Sea	1999/06/15-1999/07/28	B,D,H,G,M,P	99041	29
KMO, JMA	SHUMPU MARU	Philippine Sea	1999/08/30-1999/09/17	B,D,H,G,M,P	99042	31
KMO, JMA	SHUMPU MARU	Philippine Sea	1999/10/06-1999/11/12	B,D,H,G,M,P	99043	32
HMO, JMA	KOFU MARU	North Pacific Ocean	2000/02/01-2000/03/03	B,D,H,M,P	00001	34
JMA	RYOFU MARU	North Pacific Ocean	2000/01/21-2000/02/28	B,D,H,G,M,P	00002	35
ILTS, HU	TANSEI MARU	North Pacific Ocean	2000/02/02-2000/02/07	B,D,H,P	00003	37
JMA	KEIFU MARU	North Pacific Ocean	2000/01/18-2000/02/10	D,H,G,M,P	00004	37
HMO, JMA	KOFU MARU	North Pacific Ocean	2000/04/28-2000/05/17	B,D,H,M,P	00005	39
FF, NU	KAKUYO MARU	East China Sea	2000/05/15-2000/05/24	B,D,H	00006	40
HD, JCG	KAIYO	North Pacific Ocean	2000/04/21-2000/05/01	D,H	00007	41
HD, JCG	TENYO	Japan Sea Sea of Okhotsk North Pacific Ocean	2000/04/24-2000/05/11	D,H,P,G	00008	42
HD, JCG	TENYO	Japan Sea	2000/05/24-2000/05/28	D	00009	43
RIAM, KU	KAKUYO MARU	Japan Sea	2000/06/05-2000/06/20	D,H	00010	43
FF, NU	KAKUYO MARU	East China Sea	2000/06/26-2000/07/04	B	00011	45

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
JMA	KEIFU MARU	North Pacific Ocean	2000/04/28-2000/06/20	D,H,G,M	00012	46
FF, NU	KAKUYO MARU	North Pacific Ocean	2000/07/14-2000/08/12	H	00013	47
HD, JCG	TAKUYO	North Pacific Ocean	2000/04/20-2000/05/12	G	00014	48
HD, JCG	TAKUYO	North Pacific Ocean	2000/06/05-2000/06/27	G	00015	49
HD, JCG	SYOYO	Philippine Sea	2000/05/11-2000/06/09	G	00016	49
FF, NU	KAKUYO MARU	North Pacific Ocean Tasman Sea	2000/10/24-2000/12/21	H	00017	50
HMO, JMA	KOFU MARU	North Pacific Ocean	2000/09/29-2000/10/23	B,D,H,M,P	00018	51
HMO, JMA	KOFU MARU	North Pacific Ocean	2000/11/07-2000/12/07	B,D,H,M	00019	52
KMO, JMA	SHUMPU MARU	Philippine Sea	2000/04/26-2000/06/05	B,D,H,G,M,P	00020	54
KMO, JMA	SHUMPU MARU	Philippine Sea	2000/01/21-2000/02/28	B,D,H,G,M,P	00021	55
KMO, JMA	SHUMPU MARU	Philippine Sea	2000/06/28-2000/07/27	B,D,H,G,M,P	00022	57
KMO, JMA	SHUMPU MARU	Philippine Sea	2000/08/17-2000/08/25	B,D,H,G,M	00023	58
KMO, JMA	SHUMPU MARU	Philippine Sea	2000/09/15-2000/11/09	B,D,H,G,M,P	00024	60
HMO, JMA	KOFU MARU	North Pacific Ocean	2000/06/24-2000/08/10	B,D,H,G,M,P	00025	61
SFHS	WAKATORI MARU	North Pacific Ocean	2000/11/10-2000/12/09	B,D,H,M	00026	63
HD, JCG	TAKUYO	North Pacific Ocean	2000/11/20-2000/12/12	G	00027	65
HD, JCG	TAKUYO	North Pacific Ocean	2000/11/20-2000/12/12	G	00028	65
HD, JCG	SYOYO	Philippine Sea	2000/05/11-2000/06/09	G	00029	66
HD, JCG	SYOYO	North Pacific Ocean	2000/10/16-2000/11/07	G	00030	67
HD, JCG	SYOYO	North Pacific Ocean	2000/11/25-2000/12/25	G	00031	68
HD, JCG	TAKUYO	North Pacific Ocean	2001/01/10-2001/02/01	G	00032	68
HD, JCG	SYOYO	North Pacific Ocean	2001/02/18-2001/03/12	G	00033	69

*1　末尾の付録３参照
*2　p３の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）一覧



Reference No. : 93072
Ship Name : KAIYO
Ship Type : Research Vessel
Cruise No./Name : K93-05
Cruise Period : 1993/09/26 to 1993/11/03
Responsible Laboratory : Japan Marine Science and Technology Center (JAMSTEC)
Chief Scientist(s) : M. Kusakabe / JAMSTEC
General Ocean Area(s) : East China Sea
Geographic Coverage : 96,131,132
Project Name : MASFLEX II
Coordinating Body : Science Technology Agency (STA), Japan
Principal Investigators : A; M.Kusakabe /JAMSTEC
B; K.Iseki / SNFRI
C; M.Yamada /National Institute of Radiological Siences
D; M.Minagawa / Hokkaido Univ.
E; Y.Tanaka / Geological Survey of Japan
F; A.Hoshi / Chugoku National Industrial Research Institute
G; J.Kanda / ORI
H; T.Hama / Nagoya Univ.
I ; N.Ohta / Tohoku Univ.
J ; K.Harada / Mie Univ.
K; A.Takahashi / Ehime Univ.
L; H.Yamamoto / Nippon Marine Enterprises Ltd.

Objectives and Brief Narrative of Cruise :

Purposes of the cruise are study for understand transport processes and cycling of carbon, and other biogenic and terrigenous materials in the East China Sea and to evaluate the role of the East China Sea to the adjacent open sea in autumn.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
	29.22N	128.14E	D01,P01,B08,B09,H32,H90	Deployed sediment trap at 02/10/1993
	28.09N	127.12E	D01,P01,B08,B09,H32,H90	Deployed sediment trap at 15/10/1993
	29.42N	130.53E	D01,P01,B08,B09,H32,H90	Deployed sediment trap at 28/09/1993
	26.59N	128.58E	D01,P01,B08,B09,H32,H90	Deployed sediment trap at 14/10/1993
	28.42N	126.25E	D01,P01,B08,B09,H32,H90	Deployed short-time sediment trap at 15/10/1993, recovery at 17/10/1993
	29.37N	125.06E	D01,P01,B08,B09,H32,H90	Deployed short-time sediment trap at 19/10/1993, recovery at 21/10/1993
	31.14N	123.03E	D01,P01,B08,B09,H32,H90	Deployed and recovery short-time sediment

trap at 23/10/1993

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
	19	Stations	H10	Using CTD-RMS
	3	Stations	G04	Using Multiple Corer

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Reference No. : 94077

Ship Name : KAIYO

Ship Type : Research Vessel

Cruise No./Name : K94-04

Cruise Period : 1994/07/20 to 1994/08/30

Responsible Laboratory :

Japan Marine Science and Technology Center (JAMSTEC)

Chief Scientist(s) : Leg1, 2: K. Iseki / SNFRI
Leg3: M. Kusakabe / JAMSTEC

General Ocean Area(s) : East China Sea

Geographic Coverage : 96,132

Project Name : MASFLEX III

Coordinating Body : Science Technology Agency (STA), Japan

Principal Investigators : A ; M.Kusakabe / JAMSTEC
B ; K.Iseki / SNFRI
C ; M.Yamada / National Institute of Radiological Siences
D ; H.Katayama / Geological Survey of Japan
E ; T.Tanimoto / Chugoku National Industrial Research Institute
F ; M.Minagawa / Hokkaido Univ.
G ; T.Hama / Nagoya Univ.
H ; J.Kanda / Shizuoka Univ.
I ; K.Furuta / Mie Univ.
J ; N.Ohta / Tohoku Univ.
K ; K.Nakamoto / Hiroshima Univ.
L ; K.Kimoto / Kumamoto Univ.
M; H.Yamamoto / Nippon Marine Enterprises Ltd.

Objectives and Brief Narrative of Cruise :

Purposes of the cruise are study for understand transport processes and cycling of carbon, and other biogenic and terrigenous materials in the East China Sea and to evaluate the role of the East China Sea to the adjacent open sea in summer.

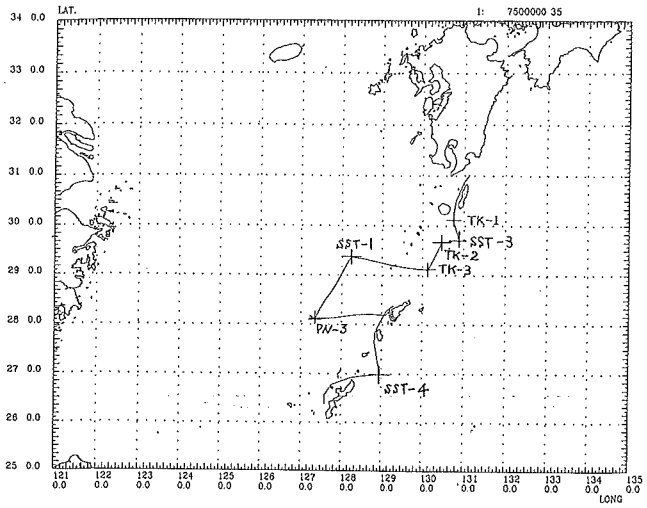
Moorings, Bottom Mounted Gear and Drifting Systems :

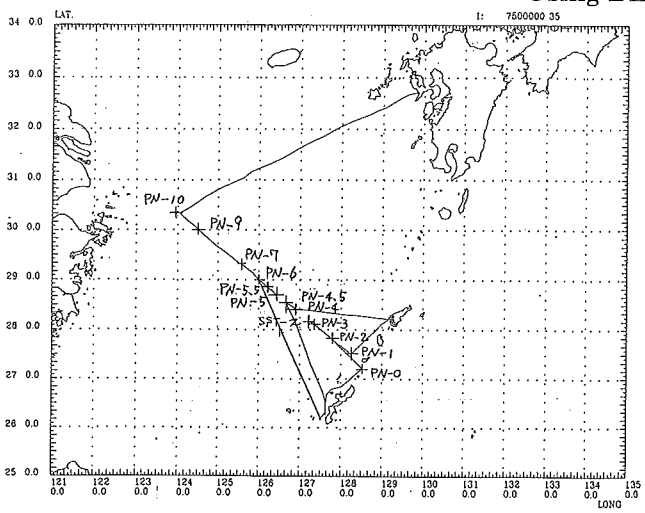
PI	LAT.	LON.	DATA TYPE	DESCRIPTION
G	28.09N	127.12E	D01,P01	Recovered Mooring system at 30/07/1994
G	29.42N	130.53E	D01,P01	Recovered Mooring system at 27/07/1994
G	26.59N	128.58E	D01,P01	Recovered Mooring system at 01/08/1994

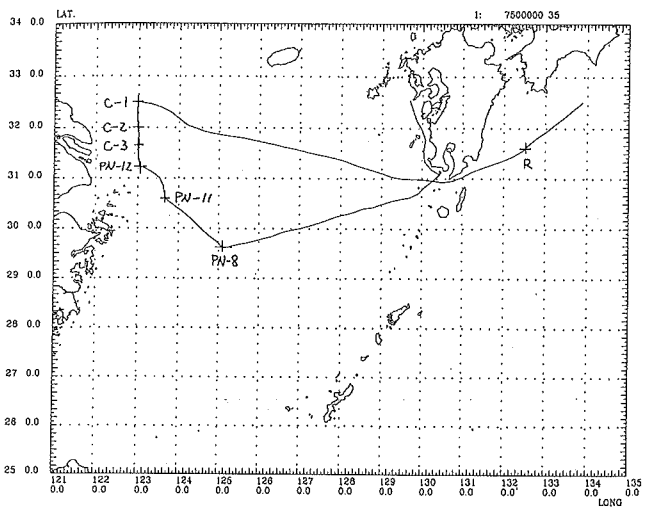
G	28.11N	127.13E	D01,P01	Deployed Mooring system at 06/08/1994
G	28.42N	126.27E	D01,P01	Deployed Mooring system at 15/08/1994, recovered at 16/08/1994
G	29.36N	125.07E	D01,P01	Deployed Mooring system at 23/08/1994, recovered at 24/08/1994

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
B	24	Stations	H22,H24,H25,	Using Niskin bottles attached to the Rosette sampler
			H26,H76	Using Go-flo water sampler
B	7	Stations	P02	Using Go-flo water sampler
G	6	Stations	H32	Using Go-flo water sampler
H	5	Stations	H32	Using Go-flo water sampler, CTD-RMS
I	15	Stations	B08	Using CTD-RMS
J	10	Stations	B09	Using NORPAC net.
K	13	Stations	B09	Using Go-flo water sampler
A	7	Stations	B08	Using Niskin bottles
F	25	Stations	H27,H28,H33	Using ADCP at 20, 50, 80m indepth
M			D71	Using CTD-rosette system
B	24	Stations	H90	
F	22	Stations	B06	Using multiple corer
D	8	Stations	G04	Take a picture of marine snow using underwater camera
A	13	Stations	B71	Using CTD-turbidity meter
				Using BECI







A 17 Stations H09,P01

A 4 Stations H09

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Reference No. : 96084

Ship Name : KAIYO

Ship Type : Research Vessel

Cruise No./Name : K96-08

Cruise Period : 1996/08/22 to 1996/09/30

Responsible Laboratory :

Japan Marine Science and Technology Center (JAMSTEC)

Chief Scientist(s) : Leg1: K. Iseki, SNFRI

Leg2: M. Kusakabe, JAMSTEC

Leg3: M. Yamada / National Institute of Radiological Siences

General Ocean Area(s) : East China Sea

Project Name : MASFLEX '96

Coordinating Body : Science Technology Agency (STA), Japan

Objectives and Brief Narrative of Cruise :

Purposes of the cruise is investigate the biogeochemical processes at and around the shelf edge area of the East China Sea.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
	29.21N	127.21E	D01,P01,B08,B09,H32,H90	Deployed time-series sediment trap at 10/05/1995, recovery at 26/08/1996
	29.17N	127.28E	D01,P01,B08,B09,H32,H90	Deployed time-series sediment trap at 31/10/1995, recovery at 26/08/1996
	29.15N	127.32E	D01,P01,B08,B09,H32,H90	Deployed time-series sediment trap at 31/10/1995, recovery at 26/08/1996
	28.43N	127.00E	D01,P01,B08,B09,H32,H90	Deployed time-series sediment trap at 09/05/1996 Deployed time-series sediment trap at 10/11/1996
	28.42N	127.05E	D01,P01,B08,B09,H32,H90	Deployed time-series sediment trap at 04/11/1995, recovery at 25/08/1996
	28.37N	127.13E	D01,P01,B08,B09,H32,H90	

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
	91	Stations	H10	Using CTD-RMS
	40		H22,H24,H25,H26	Using CTD-rosette system equipped Niskin bottles

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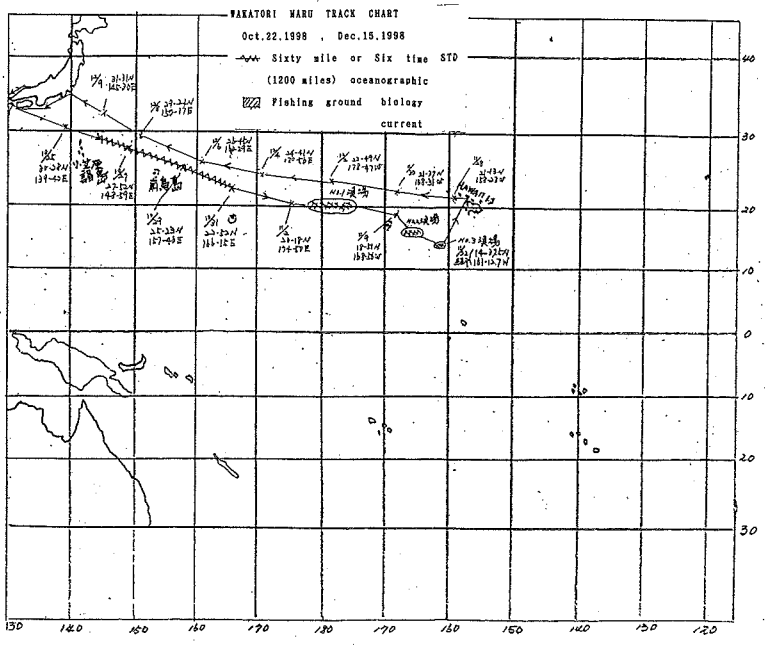

Reference No. : 98045

Restrict Data : Yes

Ship Name : WAKATORI MARU

Ship Type : Training Vessel

Cruise Period :

1998/10/22 to 1998/12/15

Port of Departure : Sakai, Tottori

Port of Return : Sakai, Tottori

Responsible Laboratory :

Tottori Prefectual Sakai Fishery High School (SFHS)

Chief Scientist(s) : T. Ishikura / SFHS

General Ocean Area(s) : North Pacific Ocean

Specific Areas : Main area (13-53N to 20-49N at lstitude, 177-25E to 161-11W at longitude)
Tuna long line fisheries and drifting buoy for surface current

Geographic Coverage : 53,90,91

Coordinating Body : National sresearch instiseute of for sea's fisheries

Principal Investigators : A; M.Mizuguchi and T.Ishikura / SFHS
B; M.Iwasa / SFHS
D; T.Ishikura / SFHS

Objectives and Brief Narrative of Cruise :

Training for tuna long line fisheries acconpanied 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. 2.Oceanographic and meteorologic observation in fishing ground once a day.
3. 3.To measures 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
	20.27N	177.42E	D03	Tuna long line first buoy, Nov.3, 1998
	20.82N	178.23E	D03	Tuna long line first buoy, Nov.4, 1998
	20.05N	176.55E	D03	Tuna long line first buoy, Nov.6, 1998
	20.95N	176.33E	D03	Tuna long line first buoy, Nov.7, 1998
	17.72N	165.58E	D03	Tuna long line first buoy, Nov.10, 1998
	16.70N	164.63E	D03	Tuna long line first buoy, Nov.11, 1998
	17.85N	164.78E	D03	Tuna long line first buoy, Nov.12, 1998
	14.38N	162.00E	D03	Tuna long line first buoy, Nov.14, 1998
	14.35N	161.87E	D03	Tuna long line first buoy, Nov.15, 1998

14.35N 161.75E	D03	Tuna long line first buoy, Nov.16, 1998
14.98N 162.08E	D03	Tuna long line first buoy, Nov.17, 1998
14.10N 161.64E	D03	Tuna long line first buoy, Nov.18, 1998
13.88N 161.18E	D03	Tuna long line first buoy, Nov.19, 1998
14.35N 161.85E	D03	Tuna long line first buoy, Nov.20, 1998
14.37N 161.65E	D03	Tuna long line first buoy, Nov.21, 1998
14.63N 161.62E	D03	Tuna long line first buoy, Nov.22, 1998

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	21	Stations	H10,H90,M90	STD (upper- 1000m) sixty miles interval 1200 miles and fishing grand.
A	22	Stations	H16	AST- 1000 (STD) Alec electronics.
A	16		H10,H90,M90	STD (upper- 1000m) tuna fishing ground area.

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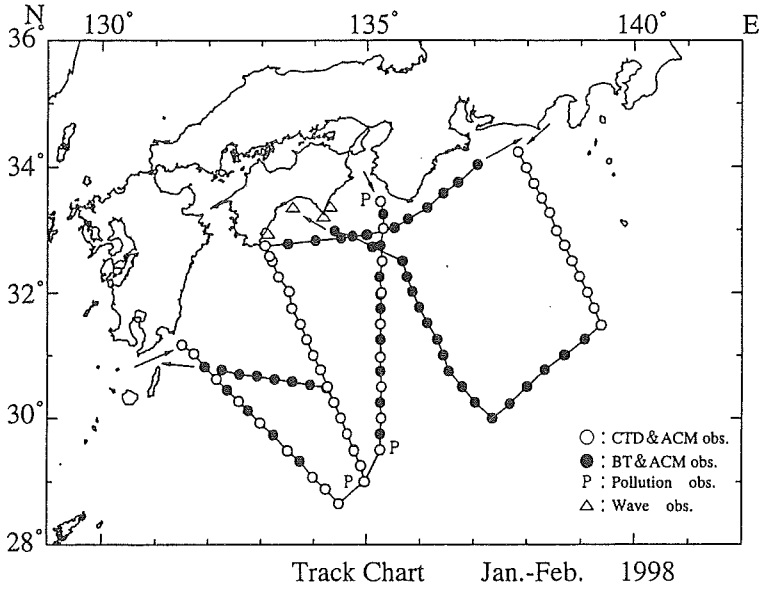
Reference No. : 98046
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 98-01
Cruise Period :

Leg 1: 1998/01/22 (Kobe) - 1998/01/30 (Kagoshima)
Leg 2: 1998/02/03 (Kagoshima) - 1998/02/10 (Shimizu)
Leg 3: 1998/02/14 (Shimizu) - 1998/02/20 (Kochi)
Leg 4: 1998/02/24 (Kochi) - 1998/03/01 (Kobe)



Track Chart Jan.-Feb. 1998

Responsible Laboratory :
Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : T. Shiga
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131
Project Name : IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC, WMO
Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; K.Hori / Marine Meteorological Division, KMO, JMA
C; E.Kamihira / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	54	Stations	H10	CTD Stations
A	8	Stations		Salinity
A	17	Stations	H21	Oxygen
A	13	Stations	H22	Phosphate
A	13	Stations	H24	Nitrate
A	13	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	7	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	2	Times	P03	Tar ball observation
A	14	Days	P90	Oil slick and floating pollutants
A	22	Stations	H16	Transparency by the secchi disk
A	22	Stations	D90	Color of the sea by the Forel
A	22	Stations	H13	D-BT
A	27	Stations	H13	X-BT
C	3	Stations	H31	Gross beta Radioactivity
A	109	Stations	D71	Current of 3 layers depth
A	103	Stations	G73	Single-beam echosounding
A	3	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	14	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2535	N.Miles	H71	Surface measurements underway(Temperature)
B	99	Times	M06	Routine standard measurements
B	126	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

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Reference No. : 98047
Ship Name : SHUMPU MARU
Ship Type : Research Vessel

Cruise No./Name : 98-04

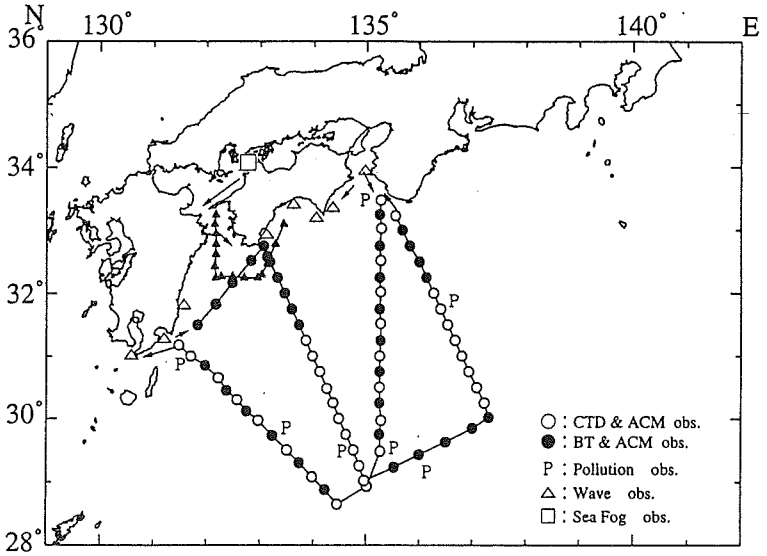
Cruise Period :

Leg 1: 1998/04/22 (Kobe) - 1998/04/30 (Kagoshima)

Leg 2: 1998/05/04 (Kagoshima) - 1998/05/11 (Komatsushima)

Leg 3: 1998/05/14 (Komatsushima) - 1998/05/20 (Oita)

Leg 4: 1998/05/23 (Oita) - 1998/05/28 (Kobe)



Track Chart Apr.-May 1998

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : T. Hinata (Kobe - Komatsushima),
S. Imamura (Komatsushima - Kobe)

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T.Uwai / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Observations for study on the seasonal variation of the CO2 concentrations in surface waters in Off the Shikoku subtropical surface.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	37	Stations	H10	CTD Stations
A	7	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate

A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	8	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	5	Times	P03	Tar ball observation
A	9	Days	P90	Oil slick and floating pollutants
A	20	Stations	H16	Transparency by the secchi disk
A	20	Stations	D90	Color of the sea by the Forel
A	22	Stations	H13	D-BT
A	12	Stations	H13	X-BT
C	0	Stations	H31	Gross beta Radioactivity
A	86	Stations	D71	Current of 3 layers depth
A	70	Stations	G73	Single-beam echosounding
A	5	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	9	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2496	N.Miles	H71	Surface measurements underway(Temperature)
B	169	Times	M06	Routine standard measurements
B	175	Times	D72	Wave measurements
B	19	Times	M90	Lower air observations(Using with the cative ballon)

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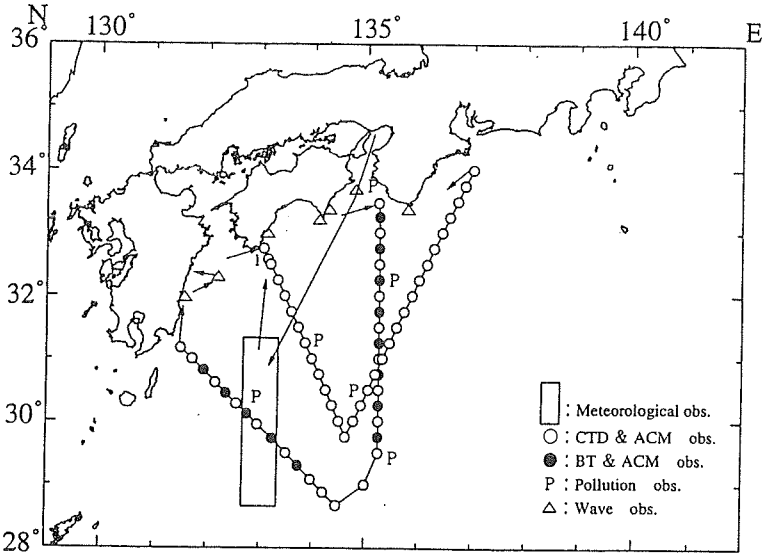
Reference No. : 98048
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 98-06

Leg 1: 1998/06/26 (Kobe) - 1998/07/05 (Kochi)

Leg 2: 1998/07/09 (Kochi) - 1998/07/17 (Hososhima)

Leg 3: 1998/07/21 (Hososhima) - 1998/07/28 (Kobe)



Track Chart Jun.-Jul. 1998

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : N. Obata (Kobe - Kochi),
S. Naito (Kochi - Kobe)

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; K.Hori, Marine Meteorological Division, KMO, JMA
C; T.Uwai / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
6. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	49	Stations	H10	CTD Stations
A	14	Stations		Salinity
A	21	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	4	Times	P03	Tar ball observation
A	11	Days	P90	Oil slick and floating pollutants
A	21	Stations	H16	Transparency by the secchi disk
A	22	Stations	D90	Color of the sea by the Forel
A	16	Stations	H13	D-BT
A	0	Stations	H13	X-BT
C	3	Stations	H31	Gross beta Radioactivity
A	93	Stations	D71	Current of 3 layers depth
A	65	Stations	G73	Single-beam echosounding

A	4	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	11	Days	P90	Oil slick and floating pollutants(Daytime only)
A	1986	N.Miles	H71	Surface measurements underway(Temperature)
B	168	Times	M06	Routine standard measurements
B	168	Times	D72	Wave measurements
B	9	Times	M90	Lower air observations(Using with the cative ballon)

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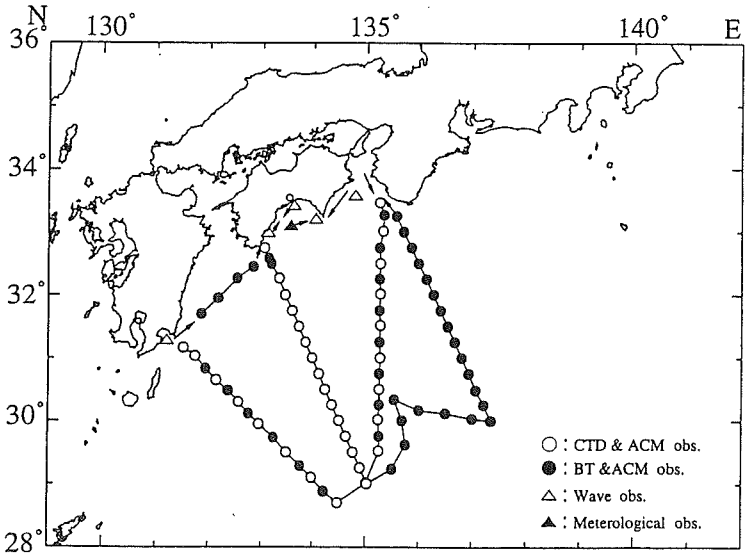
Reference No. : 98049
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 98-08
Cruise Period :

Leg 1: 1998/08/19 (Kobe) - 1998/08/27 (Kochi)

Leg 2: 1998/08/31 (Kochi) - 1998/09/07 (Komatsushima)

Leg 3: 1998/09/11 (Komatsushima) - 1998/09/17 (Kobe)



Track Chart Aug.-Sep. 1998

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : T. Nakamura
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131
Project Name : IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC, WMO
Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T.Uwai / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
2. Inspection of the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	33	Stations	H10	CTD Stations

A	8	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	0	Stations	P02	Heavy metals
D	0	Stations	P03	Dissolved hydrocarbons
A	0	Times	P03	Tar ball observation
A	0	Days	P90	Oil slick and floating pollutants
A	17	Stations	H16	Transparency by the secchi disk
A	17	Stations	D90	Color of the sea by the Forel
A	24	Stations	H13	D-BT
A	17	Stations	H13	X-BT
C	0	Stations	H31	Gross beta Radioactivity
A	74	Stations	D71	Current of 3 layers depth
A	74	Stations	G73	Single-beam echosounding
A	0	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	0	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2065	N.Miles	H71	Surface measurements underway(Temperature)
B	129	Times	M06	Routine standard measurements
B	151	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 98050

Ship Name : SHUMPU MARU

Ship Type : Research Vessel

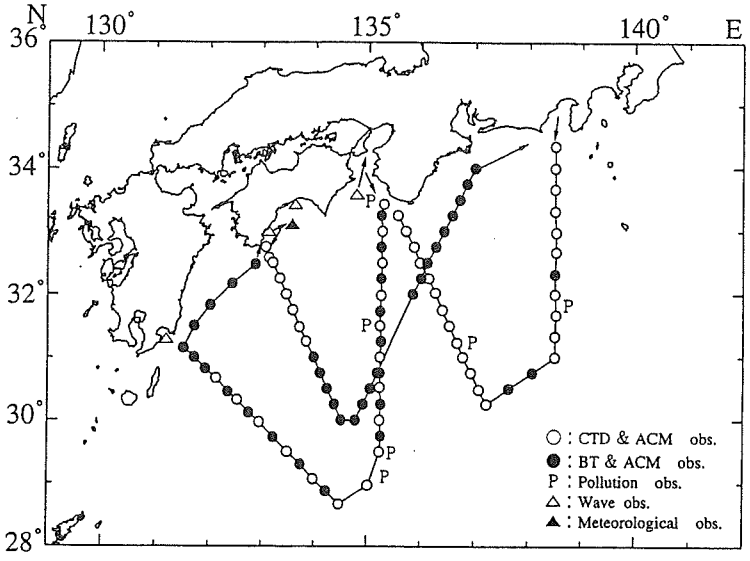
Cruise No./Name : 98-10

Cruise Period :

Leg 1: 1998/10/07 (Kobe) - 1998/10/15 (Kochi)

Leg 2: 1998/10/19 (Kochi) - 1998/10/26 (Shimizu)

Leg 3: 1998/10/30 (Shimizu) - 1998/11/05 (Kobe)



Track Chart Oct.-Nov. 1998

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s)	:	K. Hayashi
General Ocean Area(s)	:	Philippine Sea
Specific Areas	:	South Of Honshu
Geographic Coverage	:	95,131
Project Name	:	IGOSS, WESTPAC, MARPOLMON
Coordinating Body	:	IOC, WMO
Principal Investigators	:	A; T.Hinata / Oceanographical Division, KMO, JMA
		B; N.Obata / Marine Meteorological Division, KMO, JMA
		C; T.Uwai / Climate and Marine Department, JMA
		D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	47	Stations	H10	CTD Stations
A	8	Stations		Salinity
A	15	Stations	H21	Oxygen
A	15	Stations	H22	Phosphate
A	15	Stations	H24	Nitrate
A	15	Stations	H25	Nitrite
A	15	Stations	B02	Chlorophyll a and phaeopigments
A	8	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	4	Times	P03	Tar ball observation
A	12	Days	P90	Oil slick and floating pollutants
A	16	Stations	H16	Transparency by the secchi disk
A	16	Stations	D90	Color of the sea by the Forel
A	14	Stations	H13	D-BT
A	27	Stations	H13	X-BT
C	0	Stations	H31	Gross beta Radioactivity
A	88	Stations	D71	Current of 3 layers depth

A	88	Stations	G73	Single-beam echosounding
A	4	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	12	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2144	N.Miles	H71	Surface measurements underway(Temperature)
B	119	Times	M06	Routine standard measurements
B	127	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

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Reference No. : 99034
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-01
Cruise Period : 1999/01/21 to 1999/02/18
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Japan Meteorological Agency (JMA)

Chief Scientist(s) :

T. Maehira / Maritime Meteorological Division, CMD, JMA

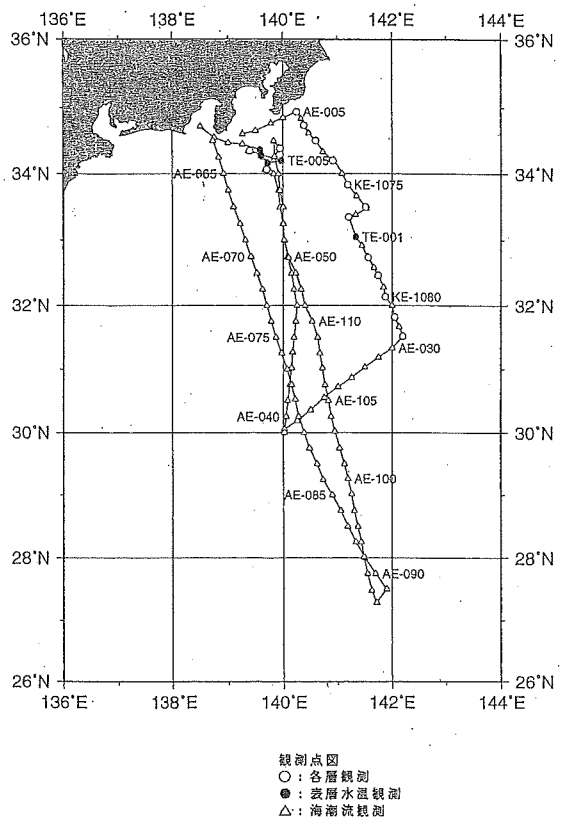
General Ocean Area(s) :

North Pacific Ocean, Philippine Sea

Geographic Coverage : 94,130,131
Project Name :

IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC
Principal Investigators : A; T.Maehira / CMD, JMA
B; T.Sakai / CMD, JMA
C; T.Manabe / CMD, JMA
D; S.Saito / SVD, JMA



Objectives and Brief Narrative of Cruise :

Marine meteorological, radar and aerological observations to understand the structure of a winter cyclone passing along the south coast of Japan and to explicate the mechanism of its strengthening and weakening.

The observation of the heights, direction and spectrums of wave using the wave direction buoy in order to verifythe outputs from the third generation wave model of JMA.

Surface current observation using the drifting buoy in order to verify the outputs from the marine pollution transport model.

Wave observation around Omae-Saki Point to compare with the coastal wave recorder.

Wave observation to understand the characteristics of wave around northrn part of Ize island.

Oceanographical observations to obtain data set which would be available for the assimilation data to models in mid-latitude area.

Seasonal oceanographic observations in the sea south-east of the Boso Peninsula.

The management of ocean bottom seismographes in the Suruga Bay.

Making the video which title is "How to make marine meteorological observation for the voluntary observing ships".

Testing of the new relative humidity measurements.

Wave observation around Habu Point to compare with a coastal wave recorder.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	34.47N	138.38E	G90	Pop-up-Ocean-Bottom Seismograph,1, 1730m,Jan,22(Deploy)
D	34.47N	138.38E	G90	Pop-up-Ocean-Bottom Seismograph,1, 1730m,Feb,16(Deploy)
D	34.47N	138.38E	G90	Pop-up-Ocean-Bottom Seismograph,1, 1730m,Feb,16(Recover)
C	30.00N	140.00E	D72	Wave direction buoy,1,0m,Jan,28(Deploy)
C	27.19N	141.45E	D72	Wave derection buoy,1,0m,Feb,07(Recover)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	15	Stations	H10	Using Nail-Brown Mark III B CTD.
A	126	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	7	Stations	H16	Using Secchi Disk.
A	12	Stations	H21,H22,H24,H25	Using Rosette Sampler.
A	1	Drop	H13	X-BT Drops with T-7 TYPE probe.
A	4	Drops	H13	X-BT Drops with T-5 TYPE probe.
A	2	Stations	G73	Using Single-beam echosounding.
B	21	Days	P90	Oil slicks and floating pollutants(Daytime only).
B	2	Stations	P02	Mercury concetrations in seawater.
				Cadmium concetrations in Seawater.
B	2	Stations	P03	Dissolved Hydorocarbons in seawater.
B	2	Stations	H31	Gross Bata Radioactivity in seawater.
C	489	Times	M06	Observed every 3 hours.
C	224	Times	M90	Weather Radar.
C	25	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

****

Reference No. : 99035

Restrict Data : No

Ship Name : KEIFU MARU

Ship Type : Research Vessel

Cruise No./Name : 99-04

Cruise Period : 1999/04/27 to 1999/06/07

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Japan Meteorological Agency (JMA)

Chief Scientist(s) :

T. Maehira / Maritime Meteorological Division, CMD, JMA

General Ocean Area(s) :

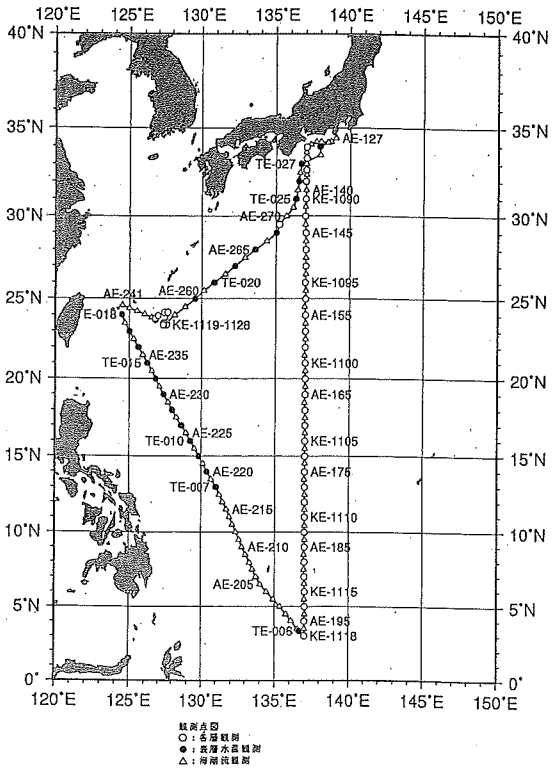
North Pacific Ocean, Philippine Sea

Geographic Coverage : 23,59,60,95,96,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC

Principal Investigators : A; T.Maehira / CMD, JMA
B; T.Sakai / CMD, JMA
C; T.Manabe / CMD, JMA
D; S.Saito / SVD, JMA



Objectives and Brief Narrative of Cruise :

Seasonal oceanographical observation along 137-00E

Maritime meteorological, Rader and Aerological and oceanographical observations for validation of the precipitation rader on TRMM.

Oceanographical observation for the research of seasonal change of total inorgnic carbon concentration.

Maritime meteorological, Rader and Aerological and oceanographical observations to understand the structure of the wind shear off the coast of the Tokai district.

Inspection of the Ocean Data Buoy system at south of the Shikoku island.

Wave observation around Habu Point to compare with a coastal wave recorder.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	44	Stations	H10	Using Nail-Brown Mark III B CTD.
A	153	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	31	Stations	H16	Using Secchi Disk.
A	7	Stations	H22,H24,H25	Using Rosette Sampler.
A	33	Stations	H21	Using Rosette Sampler.
A	10	Drops	H13	X-BT Drops with T-7 TYPE probe.
A	12	Drops	H13	X-BT Drops with T-5 TYPE probe.
C	806	Times	M06	Observed every 3 hours.
C	572	Times	M90	Weather Radar.
C	74	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-

91type Radio sonde.

****

Reference No. : 99036

Restrict Data : No

Ship Name : KEIFU MARU

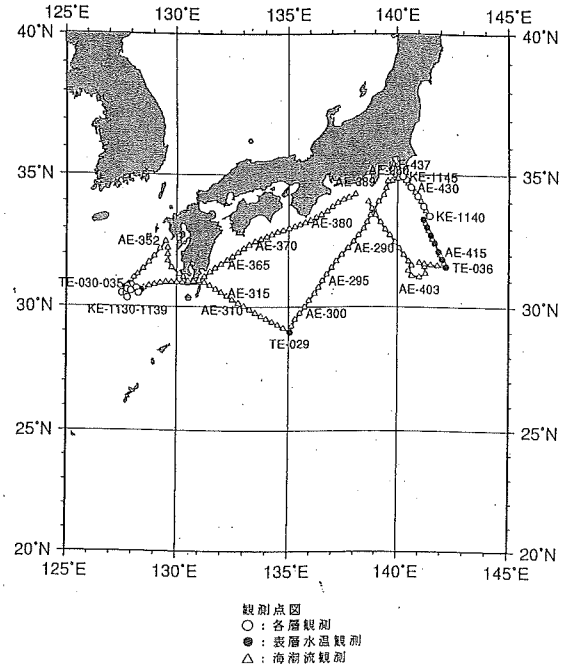
Ship Type : Research Vessel

Cruise No./Name : 99-06

Cruise Period : 1999/06/22 to 1999/07/28

Port of Departure : Tokyo

Port of Return : Tokyo



Responsible Laboratory :

Japan Meteorological Agency (JMA)

Chief Scientist(s) :

T. Maehira / Maritime Meteorological Division, CMD, JMA

General Ocean Area(s) :

North Pacific Ocean, Philippine Sea

Geographic Coverage : 95,130,131,132

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC

Principal Investigators : A; T.Maerira / CMD, JMA
B; T.Sakai / CMD, JMA
C; T.Manabe / CMD, JMA
D; S.Saito / SVD, JMA

Objectives and Brief Narrative of Cruise :

Marine meteorological, radar, aerological and oceanographical observations to understand the mechanism of precipitation system near the Kyushu island and to monitor the Baiu-front.

Seasonal oceangraphical observations in the sea south-east of the Boso Peninsula.

Oceanographical observations to obtain data set which would be available for the assimilation system in mid-latitude area.

Oceanographical observation for the research of seasonal change of total inorganic carbon concentration.

The managemant of ocean bottom seismographes in the Suruga Bay and near the Torishima island.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	34.47N	138.38E	G90	Pop-up Ocean-Bottom Seismograph,1,1740m,Jul,22(Recover)
D	34.47N	138.38E	G90	Pop-up Ocean-Bottom Seismograph,1,1740m,Jul,22(Deploy)
D	31.36N	140.39E	G90	Pop-up Ocean-Bottom Seismograph,1,2520m,Jul,23(Deploy)
D	31.24N	140.30E	G90	Pop-up Ocean-Bottom Seismograph,1,1930m,Jul,23(Deploy)
D	31.12N	140.39E	G90	Pop-up Ocean-Bottom Seismograph,1,2580m,Jul,23(Deploy)

D	31.09N 141.00E	G90	Pop-up Ocean-Bottom Seismograph,1,3220m,Jul,24(Deploy)
D	31.18N 141.18E	G90	Pop-up Ocean-Bottom Seismograph,1,3350m,Jul,24(Deploy)
D	31.34N 141.14E	G90	Pop-up Ocean-Bottom Seismograph,1,3730m,Jul,24(Deploy)
D	31.42N 140.58E	G90	Pop-up Ocean-Bottom Seismograph,1,3500m,Jul,25(Deploy)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	16	Stations	H10	Using Nail-Brown Mark III B CTD.
A	158	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	15	Stations	H16	Using Secchi Disk.
A	6	Stations	H21,H22,H24,H25	Using Rosetto Sampler.
A	9	Drops	H13	X-BT Drops with T-7 TYPE probe.
A	5	Drops	H13	X-BT Drops with T-6 TYPE probe.
A	10	Stations	G73	Using Single-beam echosounding.
B	24	Days	P90	Oil slicks and floating pollutants(Daytime only).
B	2	Stations	P02	Mercury concetrations in seawater Cadmium concetrations in Seawater.
B	2	Stations	P03	Dissolved Hydorocarbons in seawater.
B	2	Stations	H31	Gross Bata Radioactivity in seawater.
C	619	Times	M06	Observed every 3 hours.
C	423	Times	M90	Wearther Radar.
C	78	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

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Reference No. : 99037
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-08
Cruise Period : 1999/08/17 to 1999/09/20
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Japan Meteorological Agency (JMA)

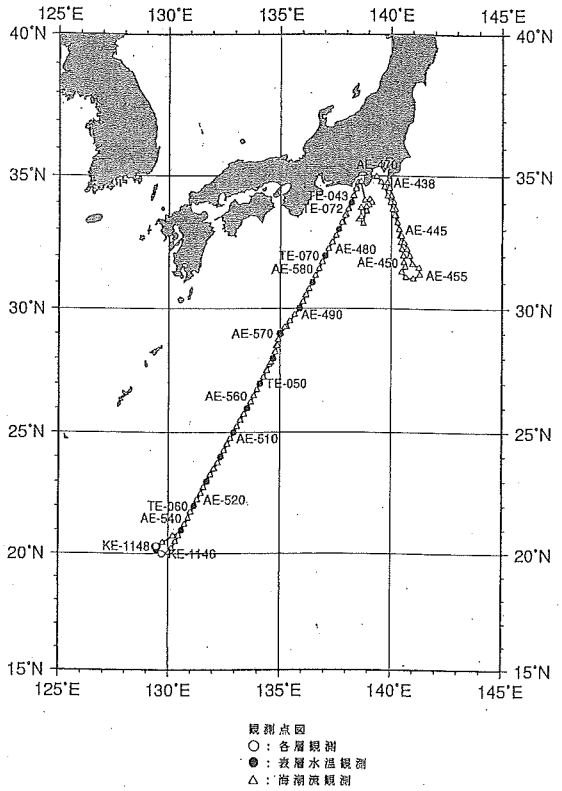
Chief Scientist(s) :

T. Maehira / Maritime Meteorological Division, CMD, JMA

General Ocean Area(s) :

North Pacific Ocean, Philippine Sea

Geographic Coverage : 95,96,130,131
Project Name : IGOSS, WESTPAC, MARPOLMON



Coordinating Body : IOC

Principal Investigators : A; T.Maehira / CMD, JMA
B; T.Sakai / CMD, JMA
C; T.Manabe / CMD, JMA
D; S.Saito / SVD, JMA

Objectives and Brief Narrative of Cruise :

Marine meteorological, rader, aerological and oceanographical observations for understand the process of the typoon genesis and to monitor typoon.

The managemant of ocean bottom seismographes in the Suruga Bay, at the Zenisu point and near the Torishima island.

Marine meteorological, rader, aerological and oceanographical observations for the study of generation and development of thunderstorms over Kanto district.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	31.36N	140.39E	G90	Pop-up-Ocean-Bottom Seismograph,1,2520m,Aug,18(Recover)
D	31.24N	140.30E	G90	Pop-up-Ocean-Bottom Seismograph,1,1930m,Aug,18(Recover)
D	31.12N	140.39E	G90	Pop-up-Ocean-Bottom Seismograph,1,2580m,Aug,19(Recover)
D	31.09N	141.00E	G90	Pop-up-Ocean-Bottom Seismograph,1,3220m,Aug,19(Recover)
D	31.18N	141.18E	G90	Pop-up-Ocean-Bottom Seismograph,1,3350m,Aug,19(Recover)
D	31.34N	141.14E	G90	Pop-up-Ocean-Bottom Seismograph,1,3730m,Aug,20(Recover)
D	31.42N	140.58E	G90	Pop-up-Ocean-Bottom Seismograph,1,3500m,Aug,20(Recover)
D	34.00N	138.08E	G90	Pop-up-Ocean-Bottom Seismograph,1,785m,Sep,13(Recover)
D	34.05N	138.51E	G90	Pop-up-Ocean-Bottom Seismograph,1,332m,Sep,14(Recover)
D	34.07N	139.02E	G90	Pop-up-Ocean-Bottom Seismograph,1,531m,Sep,14(Recover)
D	33.54N	138.00E	G90	Pop-up-Ocean-Bottom Seismograph,1,1183m,Sep,14(Recover)
D	33.51N	138.50E	G90	Pop-up-Ocean-Bottom Seismograph,1,336m,Sep,14(Recover)
D	33.12N	138.42E	G90	Pop-up-Ocean-Bottom Seismograph,1,1499m,Sep,16(Recover)
D	33.22N	138.31E	G90	Pop-up-Ocean-Bottom Seismograph,1,3593m,Sep,16(Recover)
D	33.29N	138.39E	G90	Pop-up-Ocean-Bottom Seismograph,1,3172m,Sep,16(Recover)
D	33.48N	138.38E	G90	Pop-up-Ocean-Bottom Seismograph,1,907m,Sep,16(Recover)
D	33.41N	138.54E	G90	Pop-up-Ocean-Bottom Seismograph,1,2237m,Sep,17(Recover)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3	Stations	H10	Using Nail-Brown Mark III B CTD.
A	167	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	3	Stations	H16	Using Secchi Disk.
A	30	Drops	H13	X-BT Drops with T-7 TYPE probe.
C	554	Times	M06	Observed every 3 hours.
C	297	Times	M90	Weather Radar.

C 45 Ascents M01 Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

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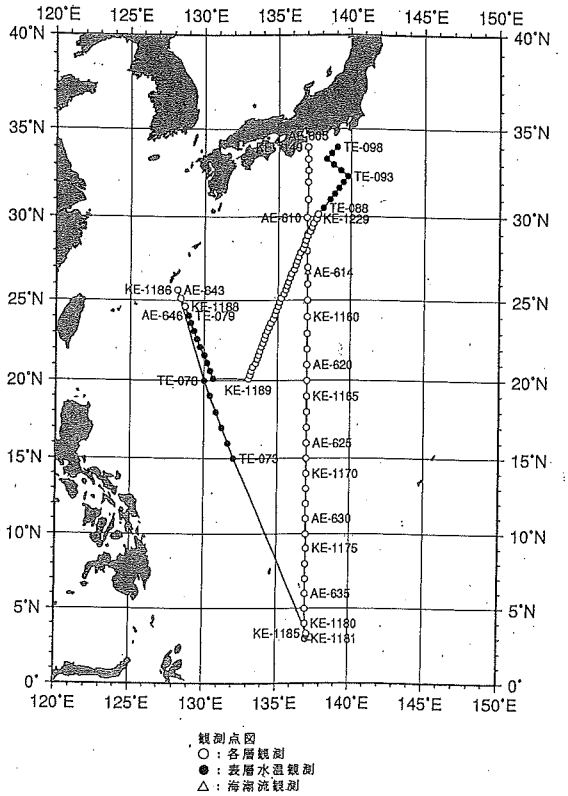
Reference No. : 99038
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-10
Cruise Period : 1999/10/21 to 1999/11/25
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :
Japan Meteorological Agency (JMA)
Chief Scientist(s) :
T. Maehira / Maritime Meteorological Division, CMD, JMA
General Ocean Area(s) :
North Pacific Ocean, Philippine Sea
Geographic Coverage : 23,59,95,96,131
Project Name : IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC
Principal Investigators : A; T.Maehira / CMD, JMA
B; T.Sakai / CMD, JMA
C; T.Manabe / CMD, JMA
D; S.Saito / SVD, JMA



Objectives and Brief Narrative of Cruise :

Seasonal oceanographical observation along 137-00E

Maritime meteorological, Rader and Aerological and oceanographical observations synchronized with TRMM, SSM/I and Quik SCAT in order to research the air-sea interaction over the equatrial western Pacific.

Maritime meteorological, Rader and Aerological observations for the research of precipitation systems over the tropical ocean.

Oceanograhical observation for the research of seasonal change of total inorgnic carbon concentration.

Maritime meteorological, Rader and Aerological observation to understand the structure of the wind shear off the coast of the Tokai district.

Oceanographical observations to obtain data set which would be available for the assimilation system in mid-latitude area.

Surface current observation using the drifting buoy in order to verify the outputs from the marine pollution transport model.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	81	Stations	H10	Using Nail-Brown Mark III B CTD.
A	82	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	39	Stations	H16	Using Secchi Disk.
A	6	Stations	H22,H24,H25	Using Rosetto Sampler.
A	33	Stations	H21	Using Rosetto Sampler.
A	26	Drops	H13	X-BT Drops with T-7 TYPE probe.
C	686	Times	M06	Observed every 3 hours.
C	363	Times	M90	Weather Radar.
C	32	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

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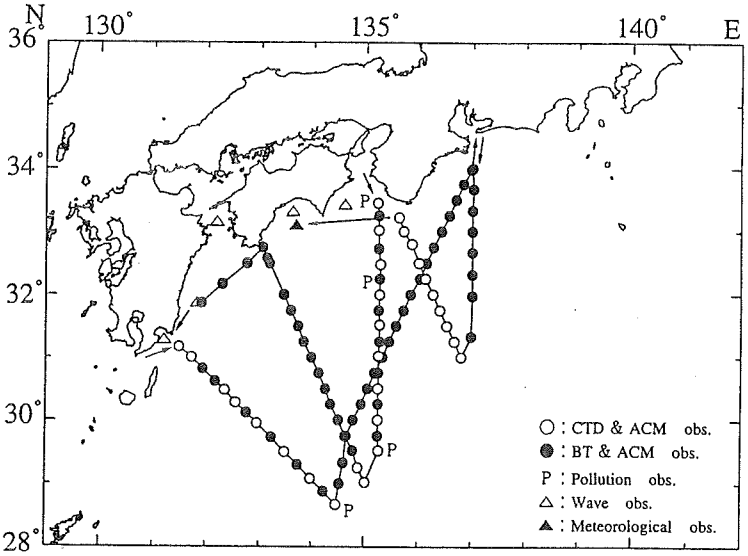
Reference No. : 99039
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-01
Cruise Period :

Leg 1: 1999/01/21 (Kobe) - 1999/01/28 (Kagoshima)
Leg 2: 1999/02/02 (Kagoshima) - 1999/02/07 (Gamagoori)
Leg 3: 1999/02/11 (Gamagoori) - 1999/02/16 (Kochi)
Leg 4: 1999/02/20 (Kochi) - 1999/02/26 (Kobe)



Track Chart Jan.-Feb. 1999

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : K. Kadono(Kobe- Kochi),
H. Nagai (Kochi - Kobe)
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131
Project Name : IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC, WMO
Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T.Uwai / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
6. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	29	Stations	H10	CTD Stations
A	11	Stations		Salinity
A	9	Stations	H21	Oxygen
A	9	Stations	H22	Phosphate
A	3	Stations	H23	Total-Phosphate
A	9	Stations	H24	Nitrate
A	9	Stations	H25	Nitrite
A	9	Stations	B02	Chlorophyll a and phaeopigments
A	5	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	12	Stations	H16	Transparency by the secchi disk
A	12	Stations	D90	Color of the sea by the Forel
A	11	Stations	H13	D-BT
A	10	Stations	H13	X-BT(T-6 probe)
A	38	Stations	H13	X-BT(T-7 probe)
C	3	Stations	H31	Gross beta Radioactivity
A	106	Stations	D71	Current of 3 layers depth
A	88	Stations	G73	Single-beam echosounding
A	2	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	13	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2706	N.Miles	H71	Surface measurements underway(Temperature)
B	74	Times	M06	Routine standard measurements
B	189	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

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Reference No. : 99040

Ship Name : SHUMPU MARU

Ship Type : Research Vessel

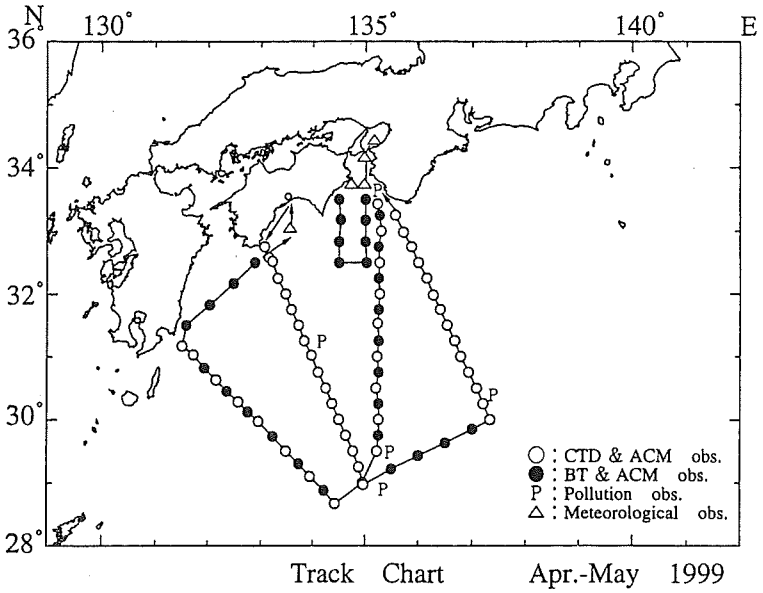
Cruise No./Name : 99-04

Cruise Period :

Leg 1: 1999/04/28 (Kobe) - 1999/05/06 (Kochi)

Leg 2: 1999/05/10 (Kochi) - 1999/05/17 (Komatsushima)

Leg 3: 1999/05/21 (Komatsushima) - 1999/05/27 (Kobe)



Track Chart Apr.-May 1999

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : T. Nakamura (Kobe - Komatsushima), N. Obata(Komatsushima - Kobe)

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T.Yano / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	49	Stations	H10	CTD Stations
A	14	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite

A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	22	Stations	H16	Transparency by the secchi disk
A	22	Stations	D90	Color of the sea by the Forel
A	30	Stations	H13	D-BT
A	79	Stations	D71	Current of 3 layers depth
A	79	Stations	G73	Single-beam echosounding
A	3	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	15	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2123	N.Miles	H71	Surface measurements underway(Temperature)
B	118	Times	M06	Routine standard measurements
B	126	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

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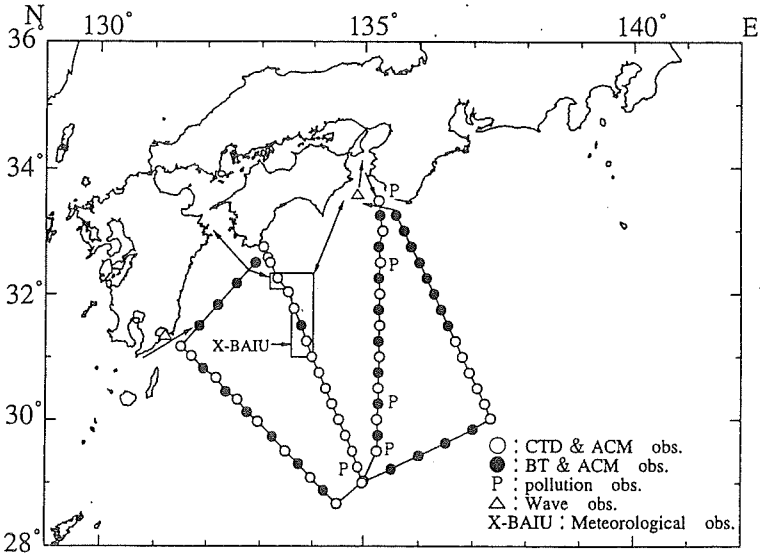
Reference No. : 99041
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-06
Cruise Period :

Leg 1: 1999/06/15 (Kobe) - 1999/06/23 (Ohita)
Leg 2: 1999/06/27 (Ohita) - 1999/07/05 (Kobe)
Leg 3: 1999/07/09 (Kobe) - 1999/07/17 (Kagoshima)
Leg 4: 1999/07/21 (Kagoshima) - 1999/07/28 (Kobe)



Track Chart Jun.-Jul. 1999

Port of Departure : Kobe
Port of Return : Kobe
Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : Leg1, 2: N. Obata
Leg3, 4: S. Naito
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA

B; N.Obata / Marine Meteorological Division, KMO, JMA

C; T.Yano / Climate and Marine Department, JMA

D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
6. Special observation of Baiu front over Kyushu and East China Sea in 1999(X-BAIU-99).
7. Ocean wave sampling for the data of coastal wave recorders.

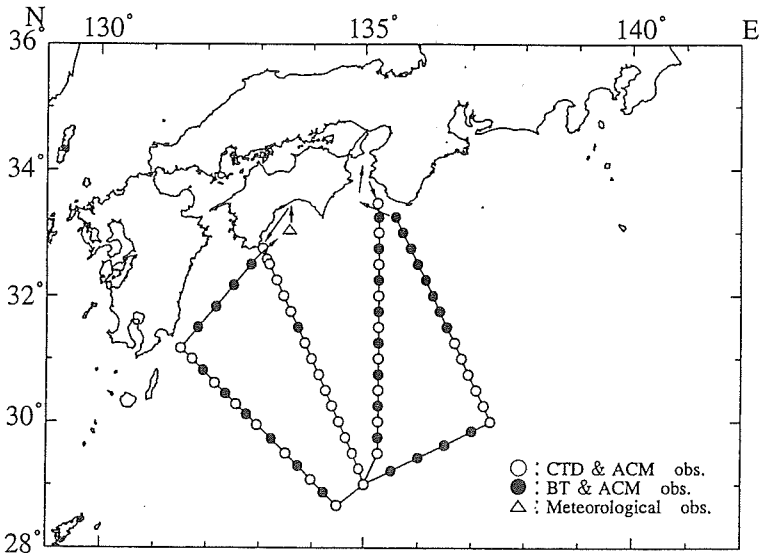
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	44	Stations	H10	CTD Stations
A	12	Stations		Salinity
A	16	Stations	H21	Oxygen
A	16	Stations	H22	Phosphate
A	3	Stations	H23	Total-Phosphate
A	16	Stations	H24	Nitrate
A	16	Stations	H25	Nitrite
A	16	Stations	B02	Chlorophyll a and phaeopigments
A	8	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	25	Stations	H16	Transparency by the secchi disk
A	25	Stations	D90	Color of the sea by the Forel
A	26	Stations	H13	D-BT
A	9	Stations	H13	X-BT(T-7 probe)
C	3	Stations	H31	Gross beta Radioactivity
A	111	Stations	D71	Current of 3 layers depth
A	76	Stations	G73	Single-beam echosounding
A	3	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	25	Days	P90	Oil slick and floating pollutants(Daytime only)

A	3075	N.Miles	H71	Surface measurements underway(Temperature)
B	186	Times	M06	Routine standard measurements
B	191	Times	D72	Wave measurements
B	55	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 99042
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-08
Cruise Period :
Leg 1: 1999/08/30 (Kobe) - 1999/09/06 (Kochi)
Leg 2: 1999/09/10 (Kochi) - 1999/09/17 (Kobe)
Port of Departure : Kobe
Port of Return : Kobe
Responsible Laboratory :



Track Chart Aug.-Sep. 1999

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : S. Tsubaki
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131
Project Name : IGOSS, WESTPAC
Coordinating Body : IOC, WMO
Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T. Yano / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
(a) Seasonal observation of marine condition.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

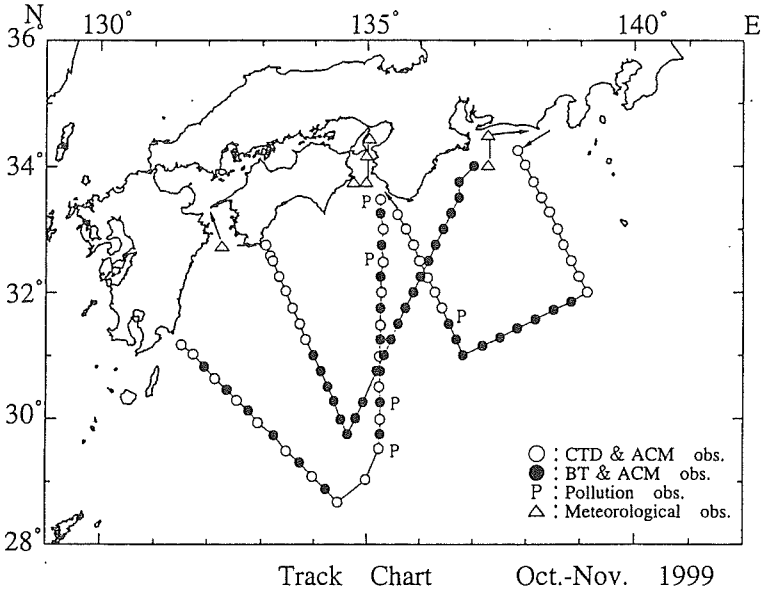
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	40	Stations	H10	CTD Stations
A	8	Stations		Salinity
A	17	Stations	H21	Oxygen

A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	0	Stations	P02	Heavy metals
D	0	Stations	P03	Dissolved hydrocarbons
A	19	Stations	H16	Transparency by the secchi disk
A	19	Stations	D90	Color of the sea by the Forel
A	22	Stations	H13	D-BT
A	9	Stations	H13	X-BT(T-7 probe)
A	71	Stations	D71	Current of 3 layers depth
A	71	Stations	G73	Single-beam echosounding
A	0	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	0	Days	P90	Oil slick and floating pollutants(Daytime only)
A	1643	N.Miles	H71	Surface measurements underway(Temperature)
B	77	Times	M06	Routine standard measurements
B	75	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 99043
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 99-10
Cruise Period :

Leg 1: 1999/10/06 (Kobe) - 1999/10/14 (Ohita)
Leg 2: 1999/10/18 (Ohita) - 1999/10/25 (Shimizu)
Leg 3: 1999/10/29 (Shimizu) - 1999/11/04 (Kochi)
Leg 4: 1999/11/07 (Kochi) - 1999/11/12 (Kobe)



Track Chart Oct.-Nov. 1999

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : H. Daimon (Kobe- Kochi)
N. Obata (Kochi - Kobe)

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA

B; N.Obata / Marine Meteorological Division, KMO, JMA

C; T.Yano / Climate and Marine Department, JMA

D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

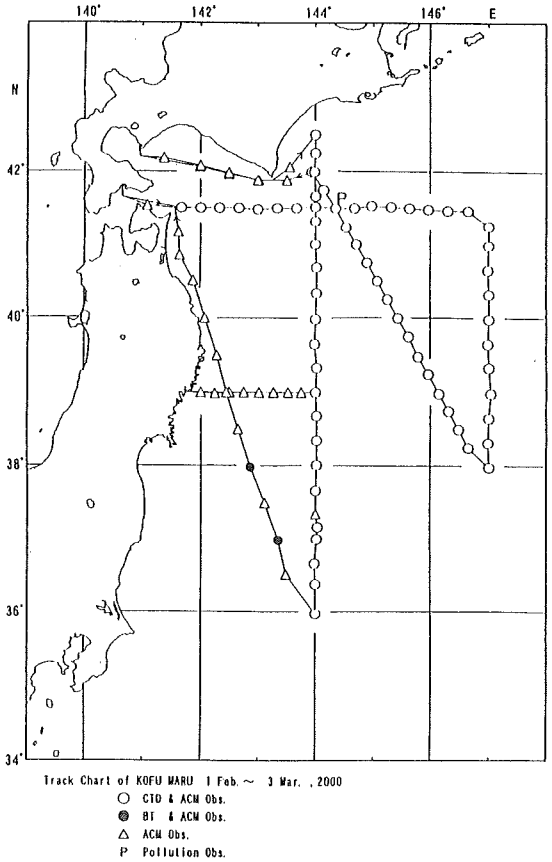
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	43	Stations	H10	CTD Stations
A	14	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	16	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	16	Stations	H16	Transparency by the secchi disk
A	17	Stations	D90	Color of the sea by the Forel
A	31	Stations	H13	D-BT
A	15	Stations	H13	X-BT(T-7 probe)
A	89	Stations	D71	Current of 3 layers depth
A	89	Stations	G73	Single-beam echosounding
A	3	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	16	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2683	N.Miles	H71	Surface measurements underway(Temperature)
B	132	Times	M06	Routine standard measurements

B	141	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 00001
Restrict Data : No
Ship Name : KOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-02
Cruise Period : 2000/02/01 to 2000/03/03
Port of Departure : Hakodate
Port of Return : Hakodate
Responsible Laboratory :
Hakodate Marine Observatory, Japan Meteorological Agency (HMO, JMA)
Chief Scientist(s) :
M. Inagawa / Oceanographic Division, HMO, JMA
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 130,166
Project Name :
IGOSS, WESTPAC, MARPOLMON, SAGE
Coordinating Body : IOC, WMO
Principal Investigators : A; Kamiya / Oceangraphic Division, HMO, JMA
B; T.Aizawa / Maritaime Meteorological Division, HMO, JMA
C; T.Sakai / Pollutants Chemical Analysis Center, ceanographic Division, CMD, JMA



Objectives and Brief Narrative of Cruise :

(1)Regular observation of oceangraphy and marine meteorology.
(2)Background marine pollution monitoring.
(3)Observations for the Subarctic Gyre Experient.
(4)Observations for development of the ocean data assimilation system(COMPASS-K).
(5)Ocean wave sampling for the data of coastal wave recorders.

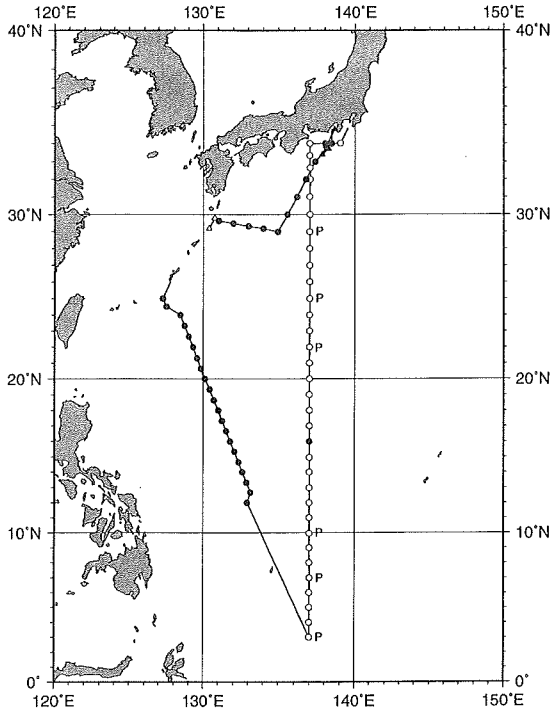
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2233	N.Miles	H71	Continuous sea surface temprature & salinity recording.
A	49	Stations	H10	Using Neil Brown CTD.
A	17	Stations	H09,H21,H22, H24,H25,B02	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	H28	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	B08	Using bucket.
A	6	Stations	B09	Using NORPAC net.

A	16	Drops	H10	Using Tsurumi-Seiki XCTD
A	2	Drops	H13	Using Tsurumi-Seiki Deep blue type XBT.
A	97	Stations	D71	Using FURUNO Co. Acoustic Current Meter at 0,50,100m in depth.
A	2	Samples	H31	Sampling for measurement of Total ß radioactivity.
A	2233	N.Miles	H74,H71	CO2 concentrations in air and sea serface water.
B	103	Times	M06	Observed every 3 hours
B	201	Times	M90	Hourly Weather report except M06.
B	14	Ascents	M01	Using VAISALA system.
B	113	Times	D72	Using Micro-wave & Tucker wave gauge.
C	10	Days	P90	Oil slicks and floating pollutants observed visually(Daytime only). Sampling for analysis of heavy metals.
C	2	Samples	P02	Sampling for measurement of dissolved hydrocarbons.
C	2	Samples	P03	Using Neuston net.
C	1	Station	P03	Sampling for analysis of total inorganic carbons.
C	33	Stations	H74	

****

Reference No. : 00002
Restrict Data : No
Ship Name : RYOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-01
Cruise Period : 2000/01/21 to 2000/02/28
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :
Japan Meteorological Agency (JMA)
Chief Scientist(s) :
K. Oikawa / Oceanographical Division, Climate and Marine Department, JMA
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 23,59,95,96,131
Project Name :
IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC
Principal Investigators :
A; T.Yano / Oceanographical Division, CMD, JMA
B; T.Sakai / Oceanographical Department, CMD, JMA
C; J.Kotani / Ryofu Maru, CMD, JMA
D; M.Amino / Oceanographical Division, CMA, JMA



Track chart of Ryofu Maru cruise 00-01

○ Serial and ACM obs.
◉ BT and ACM obs.
P Pollution obs.
△ Recovery point of current mooring system
▲ Recovery and deployment point of ocean bottom seismograph

E; M.Ogata / Earthquake and Tsunami Observations Division, Seismological and Volcanological Department, JMA

Objectives and Brief Narrative of Cruise :

(1)A routine oceanographical observations(physical,chemical and biological)

a.Seasonal observations of mrine condition

b.Monitoring background marine pollution

(2)Sea water sampling for radioactivity measurement

(3)Recovery of mooring current system

(4)Recovery and deployment of ocean bottom seismograph

Moorings, Bottom Mounted Gear and Drifting Systems :

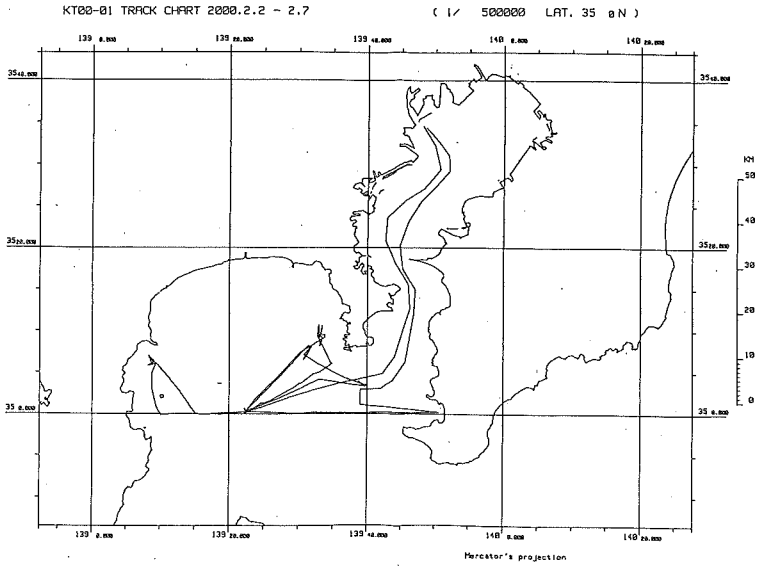
PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	29.47N	130.44E	D01	Recovery of mooring current system on 17 Feb. 2000
D	29.11N	130.23E	D01	Recovery of mooring current system on 17 Feb. 2000
E	34.47N	138.38E	G90	Deployment of ocean bottom seismograph on 24 Feb. 2000
E	33.24N	137.49E	G90	Recovery of ocean bottom seismograph on 26 Feb. 2000
E	33.43N	138.14E	G90	Recovery of ocean bottom seismograph on 26 Feb. 2000
E	33.51N	138.05E	G90	Recovery of ocean bottom seismograph on 26 Feb. 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	5443	N.Miles	H71	Continuous sea surface temprature recording.
A	34	Stations	H10	Using FSI-ICTD
A	67	Stations	D71	Using RD Instrument Acoustic Doppler Current Profiler
A	67	Stations	G73	Using NEC echosounder
A	15	Stations	H16	Using Secchi disk
A	33	Drops	H13	X-BT drops with T-7 type probe
A	14	Stations	H09,H21	Using Rosette sampler
A	14	Stations	H09,H22,H24,H25, H26	Using Rosette sampler
A	8	Stations	H09,B02	Using Rosette sampler
A	8	Stations	B08,B09	Using bucket(B08) and Norpac net(B09)
A	5	Stations	H31	Sampling for measurement of Gross Beta Radioactivity
B	17	Stations	H74	Total inorganic carbon concentration
B	8	Stations	P03	Dissolved hydrocarbons
B	8	Stations	P02	Heavy metals
B	5443	N.Miles	H74,H71	CO2 and CH4 concentration in air and sea surface water
B	6	Stations	P03	Floating tar balls sampling(Using Neuston net)
B	15	Days	P90	Oil slicks and floating pollutants(Daytime only)
C	230	Times	M06	Observed every 3 hours
C	22	Ascents	M01	Using shipboard automatic radio-sonde observation system

****

Reference No. : 00003
Restrict Data : In Part
Ship Name : TANSEI MARU
Ship Type : Research Vessel
Cruise No./Name : KT-00-1
Cruise Period :
2000/02/02 to 2000/02/07
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :
Institute of Low Temperature Science
Hokkaido Univ. (ILTS, HU)



Chief Scientist(s) :
T. Nakatsuka / ILTS, HU
General Ocean Area(s) : North Pacific Ocean
Specific Areas : Tokyo Wan, Sagami Wan
Geographic Coverage : 131
Principal Investigators : A; T.Nakatsuka / ILTS, HU
B; S.Noriki / Graduate School of Environmental Earth Science Hokkaido Univ.
C; H.Kitazato / Faculty of Science, Shizuoka Univ.

Objectives and Brief Narrative of Cruise :
Observations for study on the Particulate Matter transport mechanism.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
B	35.03N	139.39E	D01,P01,B73	Recovery of current meter, sediment trap and turbidimeter on 3 Feb. 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	16	Stations	H09,P01,	Sampling for temprature, salinity, turbidity, nutrient(CiO2)
C	6	Stations	B18	and Chl-a
				Using Multiple Corer

****

Reference No. : 00004
Restrict Data : No
Ship Name : KEIFU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-01
Cruise Period : 2000/01/18 to 2000/02/10
Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Japan Meteorological Agency (JMA)

Chief Scientist(s) :

T. Maehira / Maritime Meteorological Division, CMD, JMA

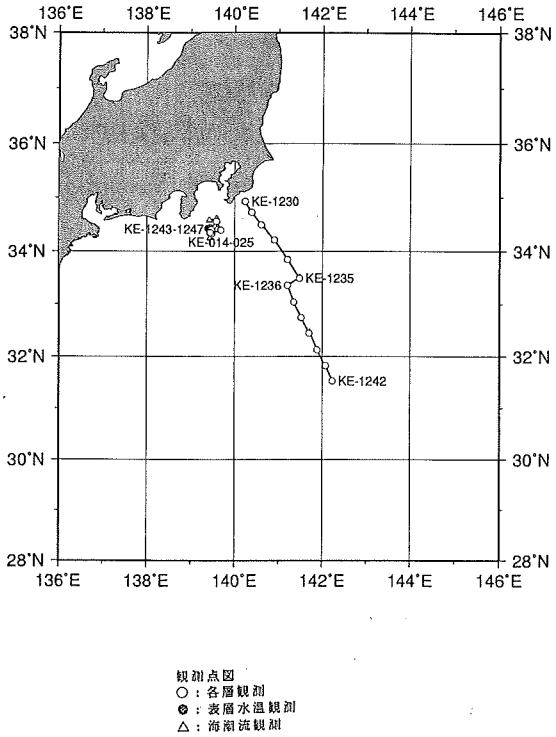
General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 130,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC

Principal Investigators : A ; T.Maehira / CMD, JMA
B ; T.Sakai / CMD, JMA
C ; M.Takada / CMD, JMA



Objectives and Brief Narrative of Cruise :

Marine meteorological, radar and aerological and observations to understand the structure of winter cyclone passing along the south coast of Japan.

Seasonal oceanographic observations at the south-east of the Boso Peninsula.

Oceanogarphic observations to obtain data set which would be available for the assimilation data to models in mid-latitude area.

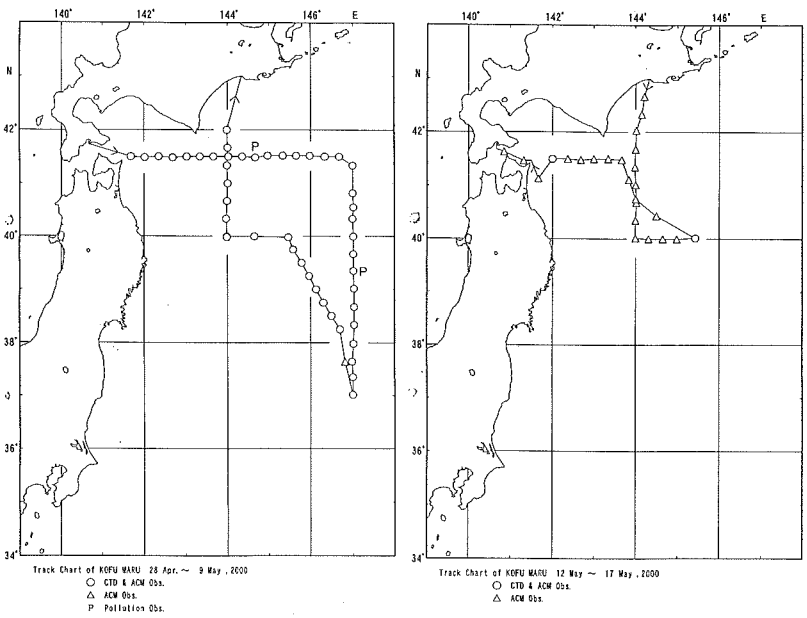
Wave observation around Habu Point to compare with a coastal wave meter.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	18	Stations	H10	Using Nail-Brown Mark III B CTD.
A	25	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	9	Stations	H16	Using Secchi disk
A	12	Stations	H21,H22,H24, H25	Using Rosette sampler
B	2	Stations	P02	Mercury concentrations in seawater. Cadmium concentrations in seawater.
B	2	Stations	P03	Dissolved Hydrocarbons in seawater.
B	2	Stations	H31	Gross Bata Radioactivity in seawater.
A	2	Drops	H13	X-BT drops with T-6 type probe
A	4	Stations	G73	Using Single-beam echosounding.
C	404	Times	M06	Observed every 3 hours
C	73	Times	M90	Weather Radar.
C	29	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

****

Reference No. : 00005
Restrict Data : No
Ship Name : KOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-04
Cruise Period :
2000/04/28 to 2000/05/17
Port of Departure : Hakodate
Port of Return : Hakodate
Responsible Laboratory :
Hakodate Marine Observatory,
Japan Meteorological Agency (HMO, JMA)



Chief Scientist(s) :
M. Inagawa / Oceanographical Division, HMO, JMA
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 130,166
Project Name : IGOSS, WESTPAC, MARPOLMON, SAGE
Coordinating Body : IOC, WMO
Principal Investigators : A ; T.Miyao / Oceanographical Division, HMO, JMA
B ; T.Aizawa / Maritime Meteorological Division, HMO, JMA
C ; J.Oyama / Pollutants Chemical Analysis Center, Oceanographical Division, CMD, JMA

Objectives and Brief Narrative of Cruise :

(1)Regular observation of oceangraphy and marine meteorology.
(2)Background marine pollution monitoring.
(3)Observations for the Subarctic Gyre Experient.
3-1.Observations for the study of North Pacific Intermediate Water.
3-2.Observations of the pCO2 in air and sea surface water in the Western Subarctic North Pacific.
(4)Observations for development of the ocean data assimilation system(COMPASS-K).
(5)Ocean wave sampling for data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1680	N.Miles	H71	Continuous sea surface temprature & Salinity recording.
A	49	Stations	H10	Using Neil Brown CTD.
A	9	Stations	H09,H21,H22, H24,H25,B02	Using Neil Brown CTD with Rosette sampler.
A	8	Stations	H28	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	B08	Using bucket.

A	6	Stations	B09	Using NORPAC net.
A	72	Stations	D71	Using FURUNO Co. Acoustic Current Meter at 0,50,100m in depth.
A	1680	N.Miles	H74,H71	CO2 concentrations in air and sea serface water.
B	81	Times	M06	Observed every 3 hours
B	158	Times	M90	Hourly Weather report except M06.
B	14	Ascents	M01	Using VAISALA system.
B	81	Times	D72	Using Micro-wave & Tucker wave gauge.
C	7	Days	P90	Oil slicks and floating pollutants observed visually(Daytime only).
C	2	Samples	P02	Sampling for analysis of heavy metals.
C	2	Samples	P03	Sampling for measurement of dissolved hydrocarbons.
C	2	Stations	P03	Using Neuston net.
C	53	Stations	H74	Sampling for analysis of total inorganic carbons.

****

Reference No. : 00006
Restrict Data : In Part
Ship Name : KAKUYO MARU
Ship Type : Training Ship
Cruise No./Name : Voy.No.146
Cruise Period : 2000/05/15 to 2000/05/24
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory :

Faculty of Fisheries, Nagasaki Univ. (FF, NU)

Chief Scientist(s) : T. Matsuno / RIAM, KU
General Ocean Area(s) : East China Sea
Specific Areas :

Faculty of Fisheries, Nagasaki Univ. (FF, NU)

Geographic Coverage : 96
Principal Investigators : A; T.MATSUNO / RIAM, KU
B; J.Ishizaka / FF, NU
C; A.Vall-Levinson / Center for Coastal Physical Oceanography, Old Dominion University

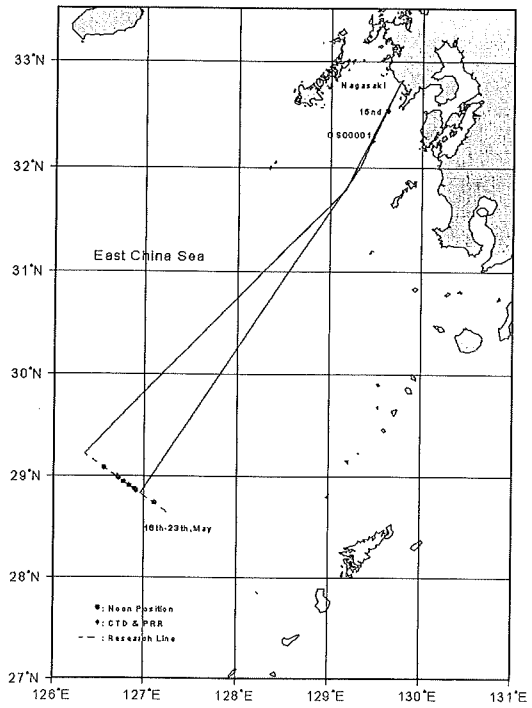


Fig.1. Track of Cruise 146 , 2000 & oceanographic stations in the East China Sea

Objectives and Brief Narrative of Cruise :

(1) Training of navigation.

(2) Oceanogarphic observation.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI LAT. LON. DATA TYPE DESCRIPTION

A	28.83N 126.98E	D01	Aanderaa RCM8(48,88,124,136,148,160,172m), Electro-magnetic current meter(208m) Moored on May 16, 2000 Recovered on May 23, 2000
A	28.83N 126.99E	D01	Aanderaa RCM8(159m), Acoustic Doppler Current Profiler(Upward at 204m), Electro-magnetic current meter (219m) Moored on May 16, 2000 Recovered on May 23, 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	81	Stations	H10	Using Sea-bird 11PLUS CTD(Upper 1000m)
B	9	Stations	H17	Using Radio-spectrometerUUpper 100m)
B	39	Stations	H22,H24,B02	Water sampling with Rosset-sampler
C	465	N.Miles	D71	Towing ADCP

****

Reference No. : 00007
Restrict Data : No
Ship Name : KAIYO
Ship Type : Survey Vessel
Cruise Period : 2000/04/21 to 2000/05/01
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory : Hydrographic Department, Japan Coast Guard (HD,JCG)
Chief Scientist(s) : M. Nanba / Hydrographic Department, JCG
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 95
Principal Investigators : A; H.Yoritaka / HD, JCG
B; M.Nanba / HD, JCG

Objectives and Brief Narrative of Cruise :

Replace a pressure gauge (tidal equipment) at OKI-no-tori-shima Island.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	30.00N	138.23E	D05	Deployed a drifting buoy.
A	29.24N	138.15E	D05	do.
A	28.48N	138.05E	D05	do.
A	28.12N	137.56E	D05	do.
A	25.42N	137.20E	D05	do.
A	24.17N	137.00E	D05	do.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
B	34	Stations	H13	XBT drops with TSK T-6 probes.
B	1780	N.Miles	D71	Using a ADCP(FURUNO).

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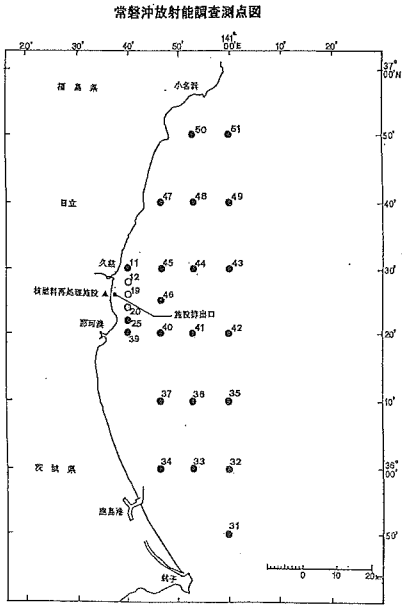
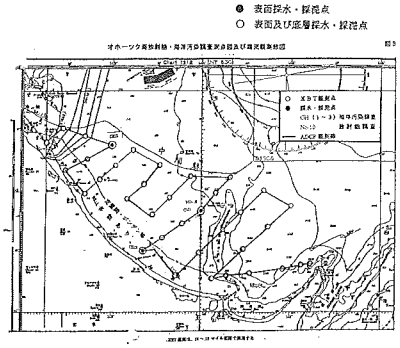




Reference No. : 00008

Restrict Data : Yes

Ship Name : TENYO

Ship Type : Survey Vessel

Cruise No./Name : Marine Pollution Survey, Radioactivity Survey

Cruise Period : 2000/04/24 to 2000/05/11

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : M. Nobukuni / HD, JCG

General Ocean Area(s) :

Japan Sea, Sea of Okhotsk, North Pacific Ocean

Specific Areas : Off the coast of Japan

Geographic Coverage : 130,131,166

Principal Investigators : M.Nobukuni / HD, JCG

Objectives and Brief Narrative of Cruise :

Purposes of the cruise are

(1) Observation of radioactive substance for background of marine pollution monitoring.

(2) Observation for prevent of marine pollution and marine environmental preservation.

(3) Oceanogaraphic observations of southern part of the Sea of Okhotsk.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	35	Drops	H13	XBT drops with T-6 type probes.
A	3	Samples	P02	Sampling for analysis of heavy metals.
A	3	Samples	P03	Sampling for measurement of dissolved hydrocarbons.
A	3	Samples	P04	Sampling for measurement of PCB.
A	3	Samples	G02	Sampling for measurement of heavy metals, dissolved hydrocarbons and PCB.
A	54	Samples	H31	Sampling for measurement of Radioactivity.
A	27	Samples	G02	Sampling for measurement of Radioactivity.
A	460	N.Miles	D71	Using FURUNO Co. ADCP at 10,30,50m in depth.

****

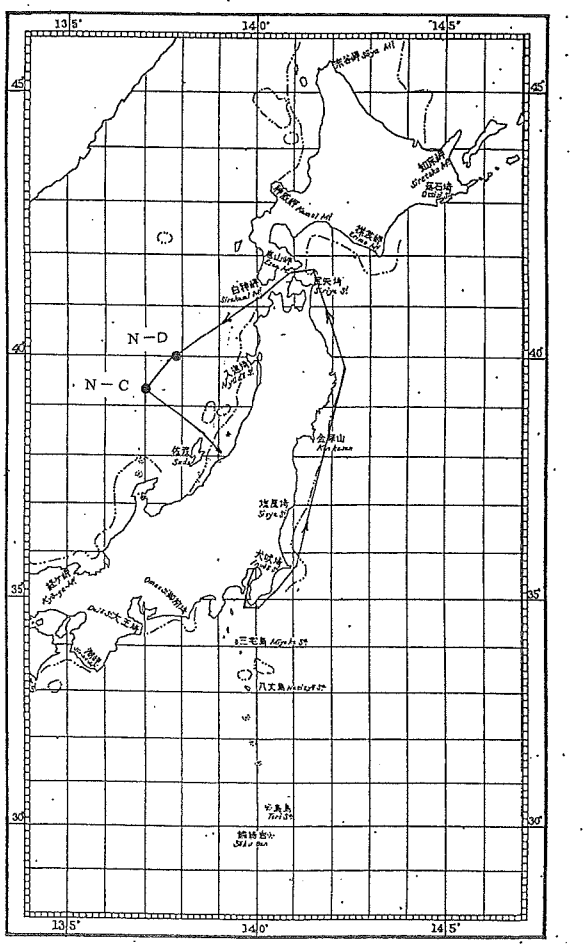
Reference No. : 00009
Restrict Data : Yes
Ship Name : TENYO
Ship Type : Survey Vessel
Cruise No./Name : Radioactivity Survey
Cruise Period : 2000/05/24 to 2000/05/28
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : M. Nobukuni / HD, JCG
General Ocean Area(s) : Japan Sea
Geographic Coverage : 131
Principal Investigators : S.Nobukuni / HD, JCG
Objectives and Brief Narrative of Cruise :

Purpose of the cruise is deep sea water current measurement at Japan Sea.

深海流速計揚収　図



Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
A	39.30N	137.00E	D01	Aandera type current meter(2650m, 2700m) recovered on 27 May, 2000.
A	40.00N	137.84E	D01	Aandera type current meter (2600m, 2650m) recovered on 27 May, 2000.

****

Reference No. : 00010
Restrict Data : In Part
Ship Name : KAKUYO MARU
Ship Type : Training Ship
Cruise No./Name : Voy.No.148
Cruise Period : 2000/06/05 to 2000/06/20
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory :

Research Institute for Applied Mechanics, Kyusyu Univ. (RIAM, KU)

Chief Scientist(s) : T. Matsuno / RIAM, KU
W. Koterayama / RIAM, KU
General Ocean Area(s) : Japan Sea

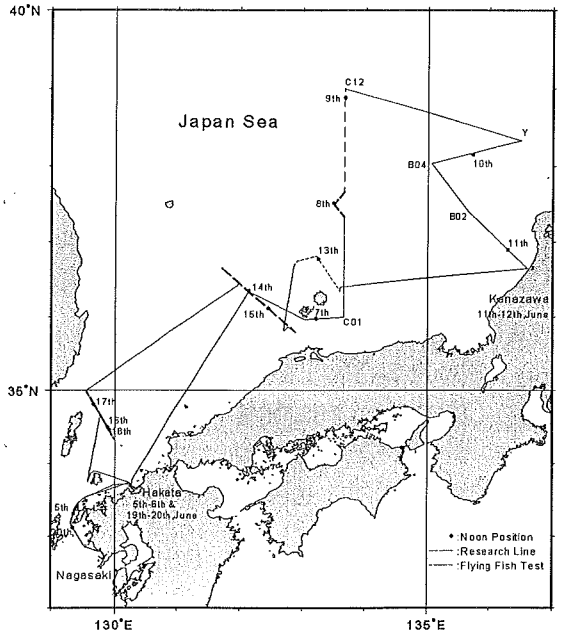


Fig.1. Track of Cruise 148, 2000 in the Japan Sea

Specific Areas : The Tsushima Straits and southern part of the Japan Sea.

Geographic Coverage : 131,132

Project Name : CREAMS(Circulation Research of the East Asian Marginal Seas)

Coordinating Body : RIAM, KU

Principal Investigators : A; T.Matsuno / RIAM, KU
B; W.Koterayama / RIAM, KU
C; T.Senjyu / National Fisheries University
D; H.S.An / Seoul National University
E; H.Kagemoto / Tokyo University

Objectives and Brief Narrative of Cruise :

Purposes of the cruise are described below

(1)To clarify the water exchange between the Yamato Basin and Ulleung/Tsushima Basin.

(2)To clarify the circulation in the Yamato and Tsushima/Ulleung Basin with a special emphasis on the intermediate and deep circulation.

(3)To measure the turbulent dissipation rate in the Japan Sea.

(4)To estimate the heat transport and current structure through the Tsushima/Korea Straits.

(5)To measure the particle concentration in the atmosphere on the Japan Sea.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	36.35N	132.13E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1400m below the surface/moored on 19 June, 1999 and recovered on 7 June, 2000.
C	37.33N	133.67E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1300m below the surface/moored on 17 June, 1999 and recovered on 8 June, 2000.
C	37.50N	133.50E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1200m below the surface/moored on 8 June, 2000
C	38.67N	133.67E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1300m below the surface/moored on 17 June, 1999 and recovered on 9 June, 2000
C	38.33N	136.50E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1900m below the surface/moored on 10 June, 2000
C	38.04N	135.06E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 2000m below the surface/moored on 13 June, 1999 and recovered on 10 June, 2000
C	37.41N	135.66E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 2000m below the surface/moored on 13 June, 1999 and recovered on 11 June, 2000

D	36.35N	132.13E	D01	Aandera type current meter/current velocity and temprature/two:1000m and 1400m below the surface/moored on 14 June, 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
C	15	Stations	H10	CTD(SBE9/11plus)[Sta.CO1-12], [Sta.Y,B04,B02]
D	9	Stations	H10	CTD(SBE9/11plus) [Sta.D01-D09]
A	9	Stations	H10	CTD(SBE9/11 plus) [Sta.A01-09]
A	8	Stations	D90	Turbulent dissipation rate with micro structure profiler (Alec Electronics, AMSP) [Sta. C03, C06, C08, C10, C12, Y, B04, B02]
B	16	Times	D71	Repeated observation between Sta.A01 and A09 with ADCP mounted on flying Fish.
C	5	Stations	H09	Water samples with Niskin bottles on a rosette sampler 10 to 12 samples at each station will be analyzed for salinity and Dissolved oxygen.
B	2	Times		Control experiment of flying Fish kinematics.
E	7	Days	H 71	Marine aerosol measurement with optical particle counter.

****

Reference No. : 00011
Restrict Data : In Part
Ship Name : KAKUYO MARU
Ship Type : Training Ship
Cruise No./Name : Voy.No.149
Cruise Period : 2000/06/26 to 2000/07/04
Port of Departure : Nagasaki
Port of Return : Nagasaki
Responsible Laboratory :

Faculty of Fisheries, Nagasaki Univ. (FF, NU)

Chief Scientist(s) : M. Tsuchimoto / FF, NU
General Ocean Area(s) : East China Sea
Geographic Coverage : 96
Principal Investigators :

A; Dr.M.TSUCHIMOTO / FF, NU
B; Dr.K.TACHIBANA / FF, NU
C; Dr.O.ARAKAWA / FF, NU
D; Dr.S.NISHIO / Laboratory of Food Chemistry, Faculty of Junior College, Shikoku University.
E; Dr.T.MATSUI / Graduate School of Agricultural Life Science, Tokyo Univ.
F; Dr.K.YAMAMORI / School of Fisheries Science, Kitasato University.
G; Dr.M.AMANO /

H; Mr.N.KOMATSU / Graduate School of Marine Science and Engineering Nagasaki University.

Objectives and Brief Narrative of Cruise :

(1) Training of navigation.

(2) Sampling of toxic crabs, puffer fish and goby in subtropical island.

(3) Sampling of fish for study on muscle types.

(4) Sampling of shellfish for effects of toxic plankton on cultured pearl oyster and oyster.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A,B	33	Samples	B19	Samples of fish for study on muscle types.
H	2	Samples	B20	Samples of shellfish (Hippopus hippopus)
C,D,E,F,G	2	Samples	B21	Samles of toxic crab.
C,D,E,F,G	3	Samples	B19	2 samples of toxic puffer fish and 1 sample toxic goby.

****

Reference No. : 00012

Restrict Data : No

Ship Name : KEIFU MARU

Ship Type : Research Vessel

Cruise No./Name : 00-04

Cruise Period : 2000/04/28 to 2000/06/20

Port of Departure : Toky

Port of Return : Toky

Responsible Laboratory :

Japan Meteorological Agency (JMA)

Chief Scientist(s) :

A. Okano / Maritime Meteorological Division, CMD, JMA

General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 23,59,95,96,131

Project Name :

IGOSS, WESTPAC, MARPOLMON

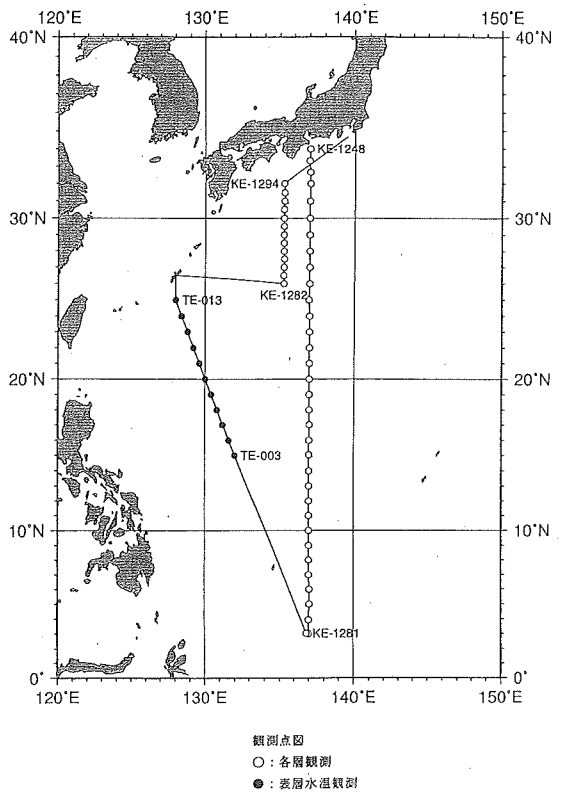
Coordinating Body : IOC

Principal Investigators : A; A.Okano / CMD, JMA

B; J.Oyama / CMD, JMA

C; N.Obata / CMD, JMA

D; S.matsuda / SVD, JMA



Objectives and Brief Narrative of Cruise :

Seasonal oceanogaraphic observations along 137-00E.

Marine meteorological and aerological observations to understand the structure of the Wind shear off the coast of the Tokai district.

Marine meteorological, radar and aerological observations for the research of precipitation systems of over the tropical ocean.

Wave observation around Habu Point to compare with a coastal wave recorder.

Recovery of ocean bottom seismographe in the Suruga Bay.

Inspection of ocean data buoy.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	34.47N	138.37E	G90	Pop-up-Ocean-Bottom Seismograph,1, 1733m,Apr.29(recover)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	47	Stations	H10	Using Nail-Brown Mark III B CTD.
A	47	Stations	D71	Using RDInstruments Acoustic Doppler Current Profiler.
A	24	Stations	H16	Using Secchi Disk.
A	21	Stations	H21,H22,H24,H25	Using Rosette Sampler.
A	11	Drops	H13	X-BT Drops with T-7 TYPE probe.
C	668	Times	M06	Observed every 3 hours
C	557	Times	M90	Weather Radar.
C	52	Ascents	M01	Using JMA-SD83 type Radio-sonde-system and JMA-RS2-91type Radio sonde.

****

Reference No. : 00013

Restrict Data : In Part

Ship Name : KAKUYO MARU

Ship Type : Training Ship

Cruise No./Name : Voy.No.150

Cruise Period : 2000/07/14 to 2000/08/12

Port of Departure : Nagasaki

Port of Return : Nagasaki

Responsible Laboratory :

Faculty of Fisheries, Nagasaki Univ. (FF, NU)

Chief Scientist(s) : Y. AKISHIGE / FF, NU

General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 23,58,94

Principal Investigators : A; Y.AKISHIGE / FF, NU

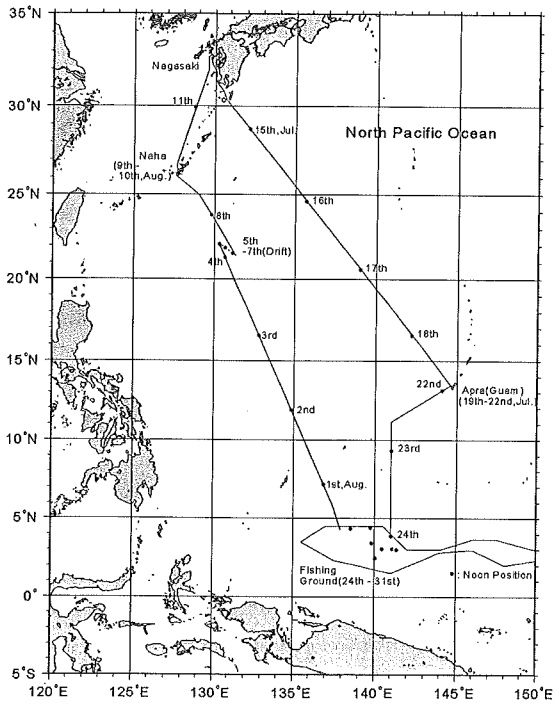


Fig.1. Track of Cruise 150 , 2000 in the North Pacific Ocean.

Objectives and Brief Narrative of Cruise :

(1) Training of Navigation.

(2) Training operations of purse seine fishing.

(3) Oceanographic observation.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION

A	1	Station	H10	Using Sea-Bird SBE 9Plus CTD with DO Sensor, Wet Labs Transmissiometer, Seapoint Chlorophyll Fluorometer(Upper 1000m)
A	19	Stations	H13	XBT(T6 Type probes)

****

Reference No. : 00014

Restrict Data : Yes

Ship Name : TAKUYO

Ship Type : Survey Vessel

Cruise No./Name :

1st. Continental Shelf Survey

Cruise Period : 2000/04/20 to 2000/05/12

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

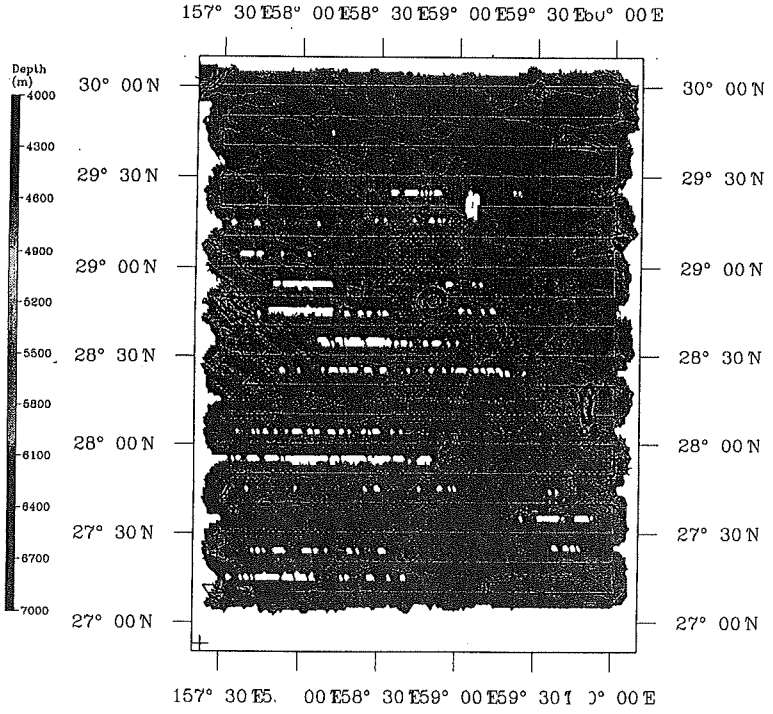
Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : K. Miki / HD, JCG

General Ocean Area(s) : North Pacific Ocean

Specific Areas :

Southern part of NW Pacific Rise



Geographic Coverage : 93

Principal Investigators : A; M.Hayashida / HD, JCG

Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey.

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2379	N.Miles	G74	Bathymetric and intensity data Using sea Beam.
A	2379	N.Miles	G75	Using Air Gun.
A	2379	N.Miles	G27	Using KSS-30 Grarity Meter.
A	2379	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00015

Restrict Data : Yes

Ship Name : TAKUYO

Ship Type : Survey Vessel

Cruise No./Name :

3rd. Continental Shelf Survey

Cruise Period : 2000/06/05 to 2000/06/27

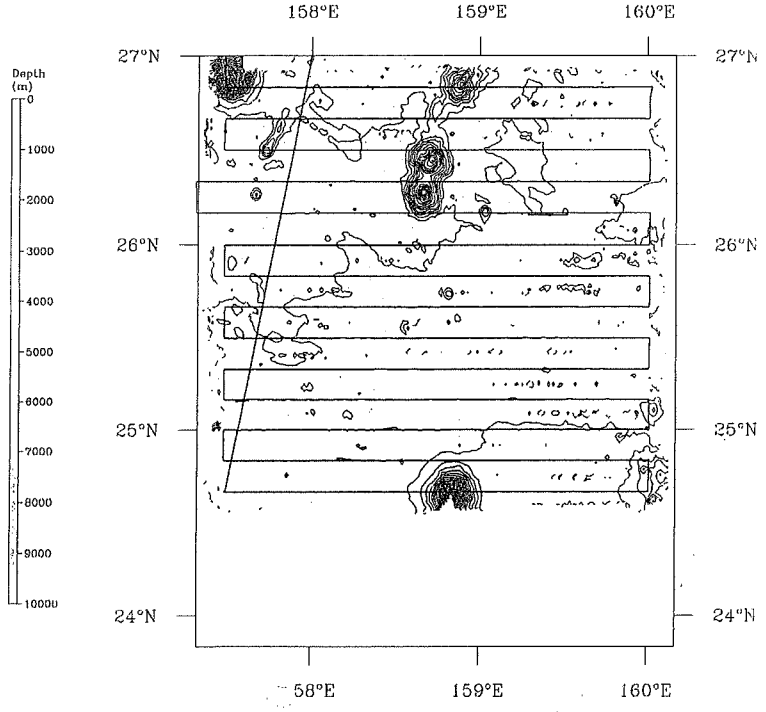
Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : K. Miki / HD, JCG



General Ocean Area(s) :

North Pacific Ocean

Geographic Coverage : 93

Principal Investigators : A; H.Kumasaka / HD, JCG

Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey.

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2775	N.Miles	G74	Bathymetric and intensity data Using sea beam.
A	2525	N.Miles	G75	Using Air Gun.
A	2775	N.Miles	G27	Using KSS-30 Gravity Meter.
A	2665	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00016

Restrict Data : Yes

Ship Name : SYOYO

Ship Type : Survey Vessel

Cruise No./Name :

No.55 Continental Shelf Survey

Cruise Period :

2000/05/11 to 2000/06/09

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

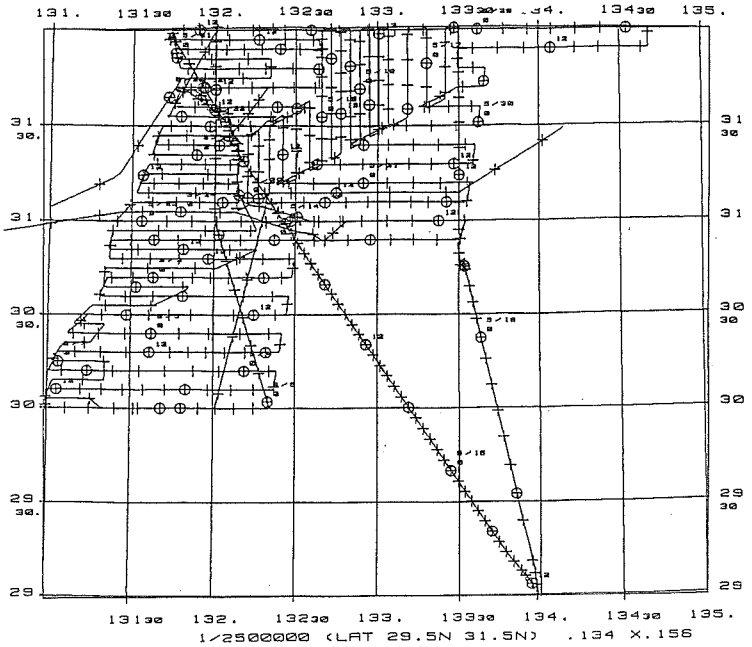
Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : H. Shimizu / HD, JCG

General Ocean Area(s) : Philippine Sea

Geographic Coverage : 95,131

Principal Investigators : A; O.Yokoo / HD, JCG



Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey.

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3428	N.Miles	G74	Bathymetric and intensity data Using sea Beam.
A	3341	N.Miles	G75	Using Air Gun.
A	3428	N.Miles	G27	Using KSS-31 Gravity Meter.
A	2861	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00017

Restrict Data : In Part

Ship Name : KAKUYO MARU

Ship Type : Training Ship

Cruise No./Name : Voy.No.153

Cruise Period : 2000/10/24 to 2000/12/21

Port of Departure : Nagasaki

Port of Return : Nagasaki

Responsible Laboratory :

Faculty of Fisheries, Nagasaki Univ. (FF, NU)

Chief Scientist(s) : Y. AKISHIGE / FF, NU

General Ocean Area(s) : North Pacific Ocean, Tasman Sea

Geographic Coverage : 59,23,391

Principal Investigators : Y.AKISHIGE / FF, NU

Objectives and Brief Narrative of Cruise :

(1)Training of navigation.

(2)Training operations of purse seine fishing.

(3)Oceanographic observation.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	7	Stations	H10	Using SBE 9Plus CTD with DO Sensor by Sea-Bird, Transmissometer by Wet Labs, Chlorophyll Fluorometer by Seapoint (Upper 1000m)
A	27	Stations	H13	XBT(T6 Type probes)

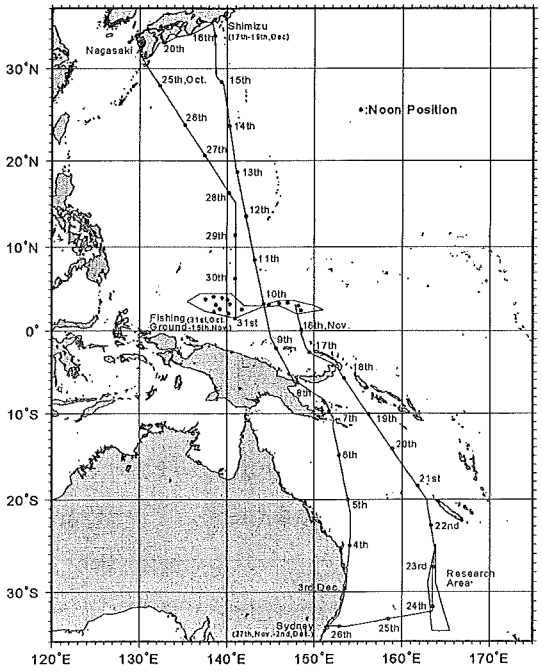


Fig.1. Track of Cruise 153 , 2000 in the Pacific Ocean.

****

Reference No. : 00018

Restrict Data : No

Ship Name : KOFU MARU

Ship Type : Research Vessel

Cruise No./Name : 00-09

Cruise Period : 2000/09/29 to 2000/10/23

Port of Departure : Hakodate

Port of Return : Hakodate

Responsible Laboratory :

Hakodate Marine Observatory, Japan Meteorological Agency (HMO, JMA)

Chief Scientist(s) :

M. Inagawa / Oceanographical Division, HMO, JMA

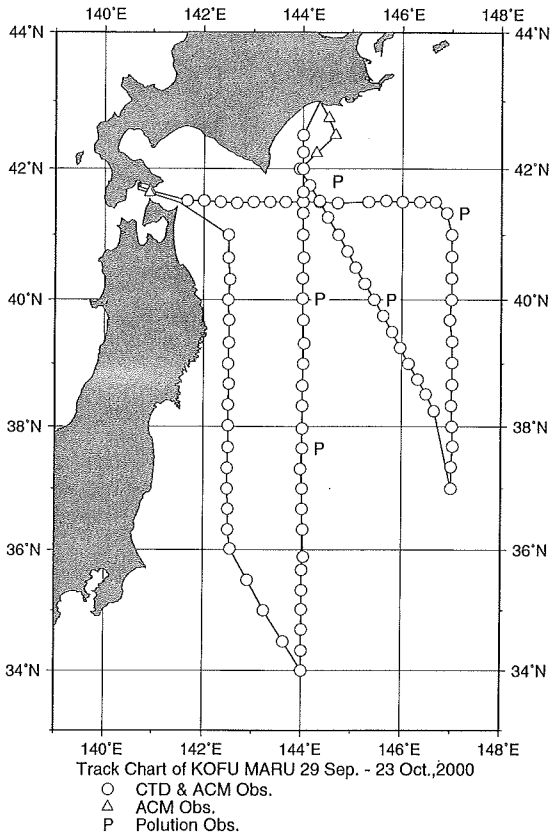
General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 130,166

Project Name :

IGOSS, WESTPAC, MARPOLMON, SAGE

Coordinating Body : IOC, WMO



Track Chart of KOFU MARU 29 Sep. - 23 Oct.,2000
○ CTD & ACM Obs.
△ ACM Obs.
P Polution Obs.

Principal Investigators : A; T.Miyao / Oceanographical Division, HMO, JMA

B; T.Aizawa / Maritime Meteorological Division, HMO

C; J.Oyama / Pollutants Chemical Analysis Center, Oceanographical Division, CMD, JMA

Objectives and Brief Narrative of Cruise :

1.Regular observation of oceanography and marine meteorology.

2.Background marine pollution monitoring.

3.Observatrions for the Subarctic Gyre Experiment.

3-1. Observations for the study of North Pacific Intermediate Water.

3-2. Observations of the pCO2 in air and sea surface water in the Western Subarctic North Pacific.

4.Observations for development of the ocean data assimilation system(COMPASS-K).

5.Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2196	N.Miles	H71	Continuous sea surface temprature & salinity recording.
A	91	Stations	H10	Using Neil Brown CTD.
A	21	Stations	H09,H21,H22,H24, H25,B02	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	H28	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	B08	Using bucket.
A	6	Stations	B09	Using NORPAC net.
A	96	Stations	D71	Using FURUNO Co. Acoustic Current Meter at 0,50,100m in depth.
A	2196	N.Miles	H74,H71	CO2 concentrations in air and sea surface water.
B	113	Times	M06	Observed every three hours.
B	238	Times	M90	Hourly Weather report except M06.
B	21	Ascents	M01	Using VAISALA system.
B	126	Times	D72	Using Micro-wave & Tucker wave gauge.
C	13	Days	P90	Oil slicks and floating pollutants observed visually(Daytime only)
C	2	Samples	P02	Sampling for analysis of heavy metals.
C	2	Samples	P03	Sampling for measurement of dissolved hydrocarbons.
C	5	Stations	P03	Using Neuston net.
C	49	Stations	H74	Sampling for analysis of total inorganic carbons.

****

Reference No. : 00019

Restrict Data : No

Ship Name : KOFU MARU

Ship Type : Research Vessel

Cruise No./Name : 00-11

Cruise Period : 2000/11/07 to 2000/12/07

Port of Departure : Hakodate

Port of Return : Hakodate

Responsible Laboratory : Hakodate Marine Observatory, Japan Meteorological Agency (HMO, JMA)

Chief Scientist(s) : T. Miyao / Oceanographical Diviion, HMO, JMA

General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 130,166

Project Name : IGOSS, WESTPAC, SAGE

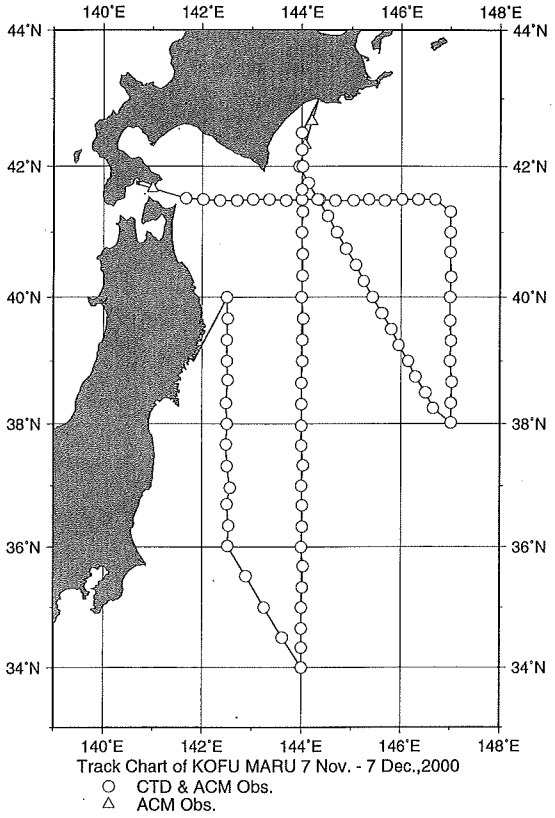
Coordinating Body : IOC, WMO

Principal Investigators :

A; T.Miyao / Oceanographic Division, HMO, JMA

B; T.Aizawa / Maritime Meteorological Division, HMO

C; J.Oyama / Pollutants Chemical Analysis Center, Oceanographical Division, CMD, JMA



Objectives and Brief Narrative of Cruise :

1.Regular observation of oceanography and marine meteorology.

2.Observations for the Subarctic Gyre Experiment.

2-1.Observations for the study of North Pacific Intermediate Water.

2-2.Observations of the pCO2 in air and sea surface water in the Western Subarctic North Pacific.

3.Observations for development of the ocean data assimilation system(COMPASS-K)

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1936	N.Miles	H71	Continuous sea surface temprature & salinity recording.
A	70	Stations	H10	Using Neil Brown CTD.
A	16	Stations	H09,H21,H22, H24,H25,B02	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	H28	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	B08	Using bucket.
A	6	Stations	B09	Using NORPAC net.
A	16	Drops	H10	Using Tsurumi-Seiki XCTD.
A	89	Stations	D71	Using FURUNO Co. Acoustic Current Meter at 0,50,100m in depth.
A	1936	N.Miles	H74,H71	CO2 concentrations in air and sea surface water.
B	96	Times	M06	Observed every three hours.
B	192	Times	M90	Hourly Weather report except M06.
B	14	Ascents	M01	Using VAISALA system.
B	192	Times	D72	Using Micro-wave & Tucker wave gauge.
C	46	Stations	H74	Sampling for analysis of total inorganic carbons.

****

Reference No. : 00020

Restrict Data :

Ship Name : SHUMPU MARU

Ship Type : Research Vessel

Cruise No./Name : 00-04

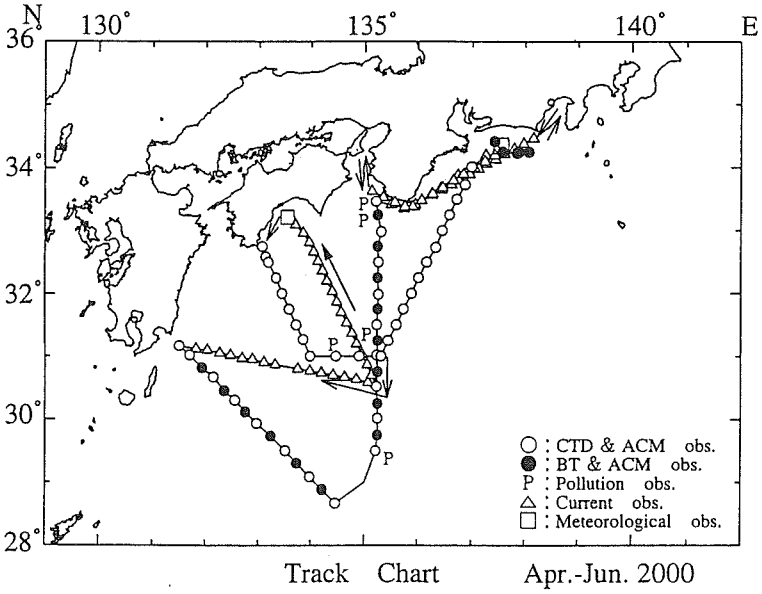
Cruise Period :

Leg 1: 2000/04/26 (Kobe) - 2000/05/03 (Shimizu)

Leg 2: 2000/05/07 (Shimizu) - 2000/05/15 (Kochi)

Leg 3: 2000/05/19 (Kochi) - 2000/05/26 (Gamagori)

Leg 4: 2000/05/30 (Gamagori)- 2000/06/05 (Kobe)



Track Chart Apr.-Jun. 2000

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : K. Shutta(Kobe - Shimizu)
T. Nakamura(Shimizu - Gamagori)
N. Ishikawa (Gamagori - Kobe)

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; K.Kimura / Oceanographical Division, KMO, JMA
B; N.Ishikawa / Marine Meteorological Division, KMO, JMA
C; J.Ooyama / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. The compared observation and watched with the ocean meteorological buoy.
3. Development of data assimilation system of ocean observation.
4. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
5. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

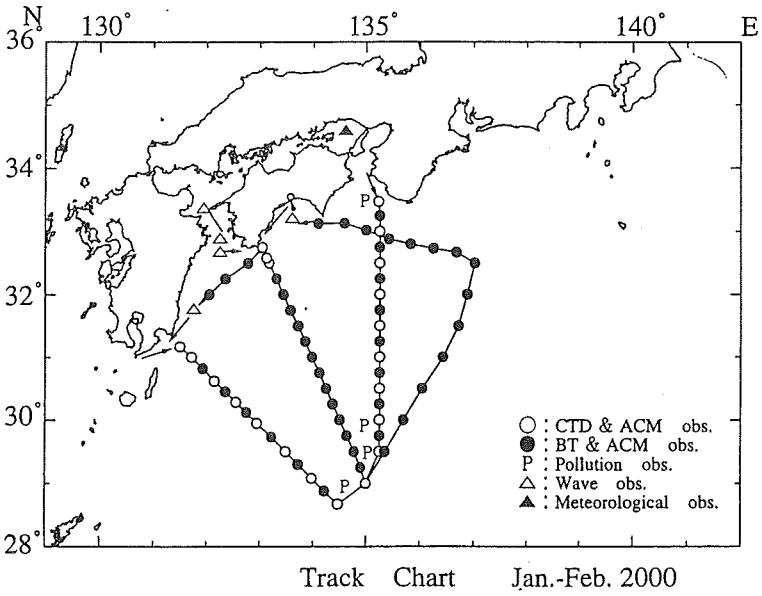
PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	41	Stations	H10	CTD Stations
A	16	Stations		Salinity
A	17	Stations	H21	Oxygen

A	17	Stations	H22	Phosphate
A	0	Stations	H23	Total-Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Zooplankton
A	9	Stations	B09	Phytoplankton
C	2	Stations	P02	Heavy metals
C	2	Stations	P03	Dissolved hydrocarbons
A	20	Stations	H16	Transparency by the secchi disk
A	20	Stations	D90	Color of the sea by the Forel
A	14	Stations	H13	D-BT
A	5	Stations	H13	X-BT(T-6 probe)
A	127	Stations	D71	Current of 3 layers depth
A	60	Stations	G73	Single-beam echosounding
A	3	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	16	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2776	N.Miles	H71	Surface measurements underway(Temperature)
B	162	Times	M06	Routine standard measurements
B	159	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 00021
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-01
Cruise Period :

Leg 1: 2000/01/21 (Kobe) - 2000/01/28 (Kagoshima)
Leg 2: 2000/02/01 (Kagoshima) - 2000/02/08 (Kochi)
Leg 3: 2000/02/12 (Kochi) - 2000/02/18 (Komatsushima)
Leg 4: 2000/02/22 (Komatsushima) - 2000/02/28 (Kobe)



Track Chart Jan.-Feb. 2000

Responsible Laboratory : Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)
Chief Scientist(s) : H. Nagai (Kobe - Kochi)
K. Hando (Kochi - Kobe)
General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; T.Hinata / Oceanographical Division, KMO, JMA
B; N.Obata / Marine Meteorological Division, KMO, JMA
C; T.Yano / Climate and Marine Department, JMA
D; T.Sakai / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
6. Ocean wave sampling for the data of coastal wave recorders.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	21	Stations	H10	CTD Stations
A	8	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	3	Stations	H23	Total-Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	6	Stations	H16	Transparency by the secchi disk
A	6	Stations	D90	Color of the sea by the Forel
A	11	Stations	H13	D-BT
A	11	Stations	H13	X-BT(T-5 probe)
A	22	Stations	H13	X-BT(T-7 probe, 20kt)
C	3	Stations	H31	Gross beta Radioactivity
A	95	Stations	D71	Current of 3 layers depth
A	63	Stations	G73	Single-beam echosounding

A	2	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	7	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2294	N.Miles	H71	Surface measurements underway(Temperature)
B	152	Times	M06	Routine standard measurements
B	152	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

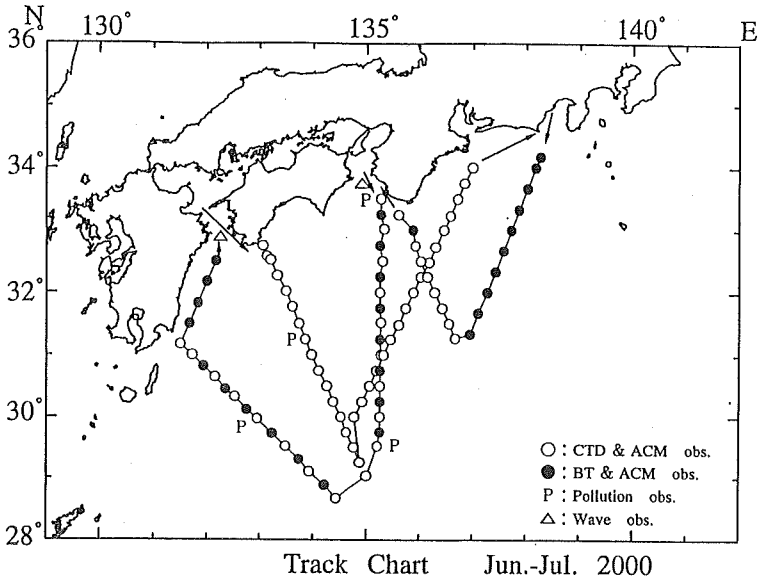
****

Reference No. : 00022
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-06
Cruise Period :

Leg 1: 2000/06/28 (Kobe) - 2000/07/06 (Ohita)

Leg 2: 2000/07/10 (Ohita) - 2000/07/17 (Shimizu)

Leg 3: 2000/07/21 (Shimizu) - 2000/07/27 (Kobe)



Track Chart Jun.-Jul. 2000

Responsible Laboratory :

Kobe Marine Observatory, Japan
Meteorological Agency (KMO, JMA)

Chief Scientist(s) : K. Kimura (Kobe - Kobe)
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu
Geographic Coverage : 95,131
Project Name : IGOSS, WESTPAC, MARPOLMON
Coordinating Body : IOC, WMO
Principal Investigators : A; K.Kimura / Oceanographical Division, KMO, JMA
B; N.Ishikawa / Marine Meteorological Division, KMO, JMA
C; T.Yano / Climate and Marine Department, JMA
D; J.Ohyama / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Sea water sampling for radioactivity measurements.
3. The compared observation and watched with the ocean meteorological buoy.
4. Development of data assimilation system of ocean observation.
5. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
6. Ocean wave sampling for the data of coastal wave recorders.

7. Deployed a drifting buoy at 28-40N 134-28E

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	59	Stations	H10	CTD Stations
A	18	Stations		Salinity
A	33	Stations	H21	Oxygen
A	33	Stations	H22	Phosphate
A	3	Stations	H23	Total-Phosphate
A	33	Stations	H24	Nitrate
A	33	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
D	2	Stations	P02	Heavy metals
D	2	Stations	P03	Dissolved hydrocarbons
A	33	Stations	H16	Transparency by the secchi disk
A	33	Stations	D90	Color of the sea by the Forel
A	24	Stations	H13	D-BT
A	5	Stations	H13	X-BT(T-7 probe, 20kt)
C	3	Stations	H31	Gross beta Radioactivity
A	88	Stations	D71	Current of 3 layers depth
A	88	Stations	G73	Single-beam echosounding
A	2	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	14	Days	P90	Oil slick and floating pollutants(Daytime only)
A	2245	N.Miles	H71	Surface measurements underway(Temperature)
B	114	Times	M06	Routine standard measurements
B	111	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 00023
Ship Name : SHUMPU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-08
Cruise Period : Leg 1: 2000/08/17 (Kobe) - 2000/08/25 (Kobe)
Responsible Laboratory : Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)
Chief Scientist(s) : Shunta Naito (Kobe - Kobe)
General Ocean Area(s) : Philippine Sea
Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC

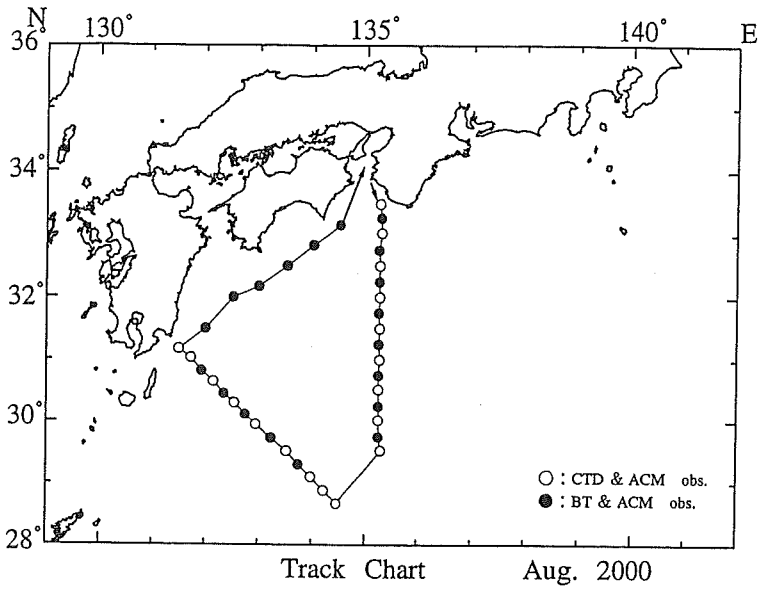
Coordinating Body : IOC, WMO

Principal Investigators :

A; K.Kimura / Oceanographical Division, KMO, JMA

N.Ishikawa / Marine Meteorological

B; Division, KMO, JMA



Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological). Seasonal observation of marine condition.
2. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
3. Ocean wave sampling for the data of coastal wave recorders.
4. Deployed a drifting buoy at 28-51N 134-38E

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	18	Stations	H10	CTD Stations
A	9	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
A	8	Stations	H16	Transparency by the secchi disk
A	8	Stations	D90	Color of the sea by the Forel
A	13	Stations	H13	D-BT
A	6	Stations	H13	X-BT(T-7 probe)
A	37	Stations	D71	Current of 3 layers depth
A	37	Stations	G73	Single-beam echosounding
A	980	N.Miles	H71	Surface measurements underway(Temperature)
B	48	Times	M06	Routine standard measurements
B	47	Times	D72	Wave measurements
B	0	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 00024

Ship Name : SHUMPU MARU

Ship Type : Research Vessel

Cruise No./Name : 00-09

Cruise Period :

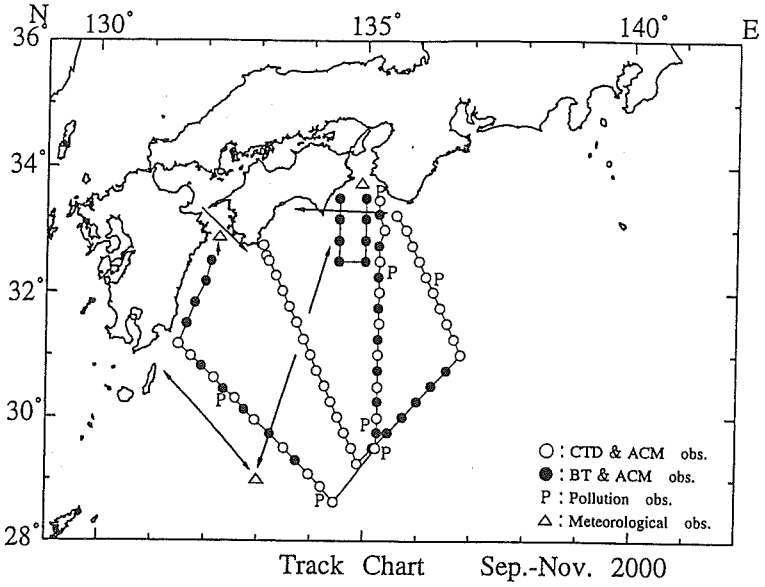
Leg 1: 2000/09/15 (Kobe) - 2000/09/22 (Kagoshima)

Leg 2: 2000/09/26 (Kagoshima) - 2000/10/04 (Kobe)

Leg 3: 2000/10/11 (Kobe) - 2000/10/19 (Ohita)

Leg 4: 2000/10/23 (Ohita) - 2000/10/30 (Kochi)

Leg 5: 2000/11/03 (Kochi) - 2000/11/09 (Kobe)



Track Chart Sep.-Nov. 2000

Port of Departure : Kobe

Port of Return : Kobe

Responsible Laboratory :

Kobe Marine Observatory, Japan Meteorological Agency (KMO, JMA)

Chief Scientist(s) : Leg 1, 2: N. Ishikawa
Leg 3, 4, 5: H. Daimon

General Ocean Area(s) : Philippine Sea

Specific Areas : South of Honshu

Geographic Coverage : 95,131

Project Name : IGOSS, WESTPAC, MARPOLMON

Coordinating Body : IOC, WMO

Principal Investigators : A; K.Kimura / Oceanographical Division, KMO, JMA
B; N.Ishikawa / Marine Meteorological Division, KMO, JMA
C; J.Ohyama / Climate and Marine Department, JMA

Objectives and Brief Narrative of Cruise :

1. A routine oceanographic observation (physical, chemical and biological).
   (a) Seasonal observation of marine condition.
   (b) Monitoring background marine pollution.
2. Development of data assimilation system of ocean observation.
3. Seasonal variation in the oceanic CO2 in the subtropical western North Pacific off Shikoku.
4. Ocean wave sampling for the data of coastal wave recorders.
5. Deployed a drifting buoy at 28-35N,134-23E
6. Observational plan for Typhoon over west north pacific using aerosonde (TYPHOONHUNTER 2000)

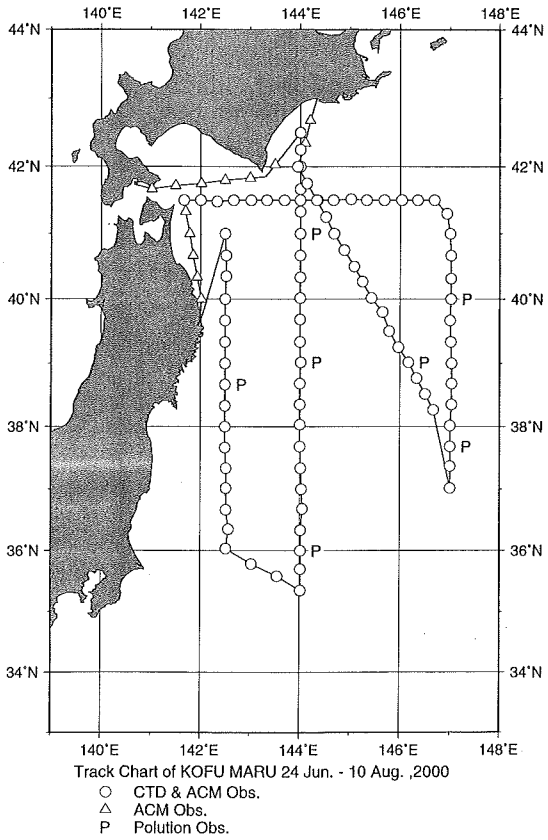
Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	44	Stations	H10	CTD Stations
A	8	Stations		Salinity
A	17	Stations	H21	Oxygen
A	17	Stations	H22	Phosphate
A	17	Stations	H24	Nitrate
A	17	Stations	H25	Nitrite
A	17	Stations	B02	Chlorophyll a and phaeopigments
A	9	Stations	H28	pH
A	9	Stations	B08	Phytoplankton
A	9	Stations	B09	Zooplankton
C	2	Stations	P02	Heavy metals
C	2	Stations	P03	Dissolved hydrocarbons
A	20	Stations	H16	Transparency by the secchi disk
A	20	Stations	D90	Color of the sea by the Forel
A	31	Stations	H13	D-BT
A	5	Stations	H13	X-BT(T-7 probe)
A	114	Stations	D71	Current of 3 layers depth
A	80	Stations	G73	Single-beam echosounding
A	5	Times	P03	Floating Tar balls sampling(Using with the Neuston Net)
A	8	Days	P90	Oil slick and floating pollutants(Daytime only)
A	3622	N.Miles	H71	Surface measurements underway(Temperature)
B	199	Times	M06	Routine standard measurements
B	194	Times	D72	Wave measurements
B	27	Times	M90	Lower air observations(Using with the cative ballon)

****

Reference No. : 00025
Restrict Data : No
Ship Name : KOFU MARU
Ship Type : Research Vessel
Cruise No./Name : 00-06
Cruise Period : 2000/06/24 to 2000/08/10
Port of Departure : Hakodate
Port of Return : Hakodate
Responsible Laboratory : Hakodate Marine Observatory, Japan Meteorological Agency (HMO, JMA)
Chief Scientist(s) : T. Miyao / Oceanographical Diviion, HMO, JMA
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 130,166
Project Name : IGOSS, WESTPAC, MARPOLMON, SAGE
Coordinating Body : IOC, WMO

Principal Investigators : A; T.Miyao / Oceanographic Division, HMO, JMA
B; T.Aizawa / Maritime Meteorological Division, HMO
C; J.Oyama / Pollutants Chemical Analysis Center, Oceanographical Division, CMD, JMA



Track Chart of KOFU MARU 24 Jun. - 10 Aug. ,2000
○ CTD & ACM Obs.
△ ACM Obs.
P Polution Obs.

Objectives and Brief Narrative of Cruise :

1.Regular observation of oceanography and marine meteorology.

2.Background marine pollution monitoring.

3.Observations for the Subarctic Gyre Experiment.

3-1.Observations for the study of North Pacific Intermediate Water.

3-2.Observations of the pCO2 in air and sea surface water in the Western Subartic North Pacific.

4.Observations for development of the ocean data assimilation system(COMPASS-K)

5.Deployment ocean bottom seismographs.

Moorings, Bottom Mounted Gear and Drifting Systems :

PI	LAT.	LON.	DATA TYPE	DESCRIPTION
D	42.35N	144.15E	G90	Deployed Ocean bottom seismograph on 21 July 2000
D	42.14N	144.30E	G90	Deployed Ocean bottom seismograph on 21 July 2000
D	41.52N	144.30E	G90	Deployed Ocean bottom seismograph on 21 July 2000
D	41.46N	144.15E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.23N	144.42E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.43N	145.05E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.25N	145.09E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.06N	145.35E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	40.45N	145.10E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	40.55N	144.25E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.17N	144.10E	G90	Deployed Ocean bottom seismograph on 22 July 2000
D	41.20N	143.43E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.00N	143.14E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.26N	143.12E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.24N	142.48E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.24N	142.29E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.24N	142.09E	G90	Deployed Ocean bottom seismograph on 23 July 2000

D	41.37N	141.52E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	41.47N	141.38E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	42.11N	141.34E	G90	Deployed Ocean bottom seismograph on 23 July 2000
D	42.08N	142.05E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	42.01N	142.22E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	41.50N	142.07E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	41.46N	142.26E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	41.47N	142.46E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	41.46N	143.49E	G90	Deployed Ocean bottom seismograph on 24 July 2000
D	42.14N	143.55E	G90	Deployed Ocean bottom seismograph on 24 July 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
C	46	Stations	H74	Sampling for analysis of total inorganic carbons.
C	2	Stations	H31	Sampling for measurement of Total β radioactivity.
A	2330	N.Miles	H71	Continuous sea surface temprature & salinity recording.
A	87	Stations	H10	Using Neil Brown CTD.
A	19	Stations	H09,H21,H22, H24,H25,B02	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	H28	Using Neil Brown CTD with Rosette sampler.
A	6	Stations	B08	Using bucket.
A	6	Stations	B09	Using NORPAC net.
A	72	Stations	D71	Using FURUNO Co. Acoustic Current Meter at 0,50,100m in depth.
A	2330	N.Miles	H74,H71	CO2 concentrations in air and sea surface water.
B	209	Times	M06	Observed every three hours.
B	415	Times	M90	Hourly Weather report except M06.
B	71	Ascents	M01	Using VAISALA system.
B	209	Times	D72	Using Micro-wave & Tucker wave gauge.
C	12	Days	P90	Oil slicks and floating pollutants observed visually(Daytime only)
C	2	Samples	P02	Sampling for analysis of heavy metals.
C	2	Samples	P03	Sampling for measurement of dissolved hydrocarbons.
C	7	Stations	P03	Using Neuston net.

****

Reference No. : 00026
Restrict Data : Yes
Ship Name : WAKATORI MARU
Ship Type : Training Vessel
Cruise Period : 2000/11/10 to 2000/12/09
Port of Departure : Sakai, Tottori

Port of Return : Sakai, Tottori

Responsible Laboratory :

Tottori Prefectual Sakai Fishery High School (SFHS)

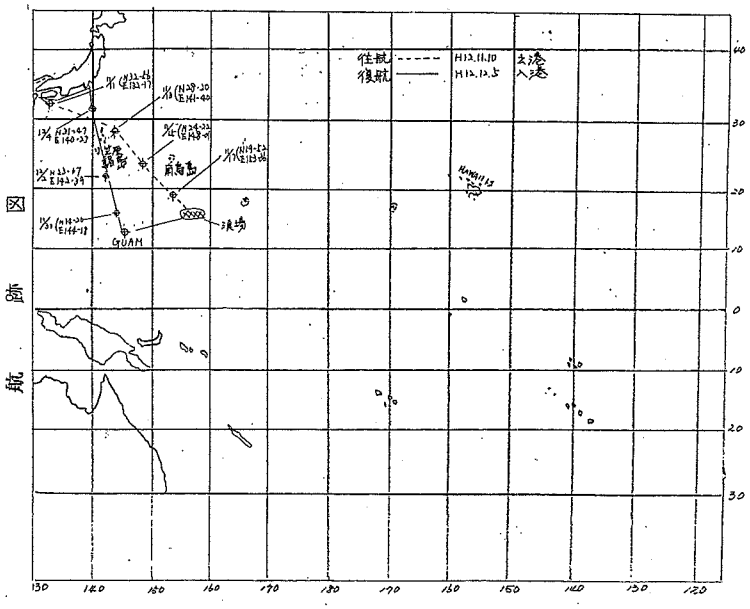
Chief Scientist(s) : M. Mizuguchi / SFHS

General Ocean Area(s) : North Pacific Ocean

Specific Areas :

Main area (16-26N to 17-15N at lstitude, 152-23E to 155-00E at longitude)

Tuna long line fisheries and drifting buoy for surface current



Geographic Coverage : 57

Project Name : National research institeute of for sea's fisheries

Principal Investigators : A; M.Mizuguchi / SFHS

B; M.Sawano / SFHS

C; M.Mizuguchi / SFHS

Objectives and Brief Narrative of Cruise :

Training for tuna long line fisheries acconpanied 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 measures 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
	16.26N	154.48E	D03	Tuna long line first buoy, Nov.19, 2000
	16.30N	155.00E	D03	Tuna long line first buoy, Nov.20, 2000
	17.08N	153.20E	D03	Tuna long line first buoy, Nov.21, 2000
	17.15N	152.28E	D03	Tuna long line first buoy, Nov.22, 2000
	16.42N	152.23E	D03	Tuna long line first buoy, Nov.23, 2000
	17.11N	153.33E	D03	Tuna long line first buoy, Nov.24, 2000

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	21	Stations	H10,H90,M90, H16	STD(upper-1000m) sixty-miles interval 1200miles and fishing ground. (AST-1000(STD) Alec electronics)
D	6		B13,B90	measure body length decide sex.
A	6		H10,H90,M90	STD(upper-1000m) Tuna fishing ground area.

****

Reference No. : 00027
Restrict Data : Yes
Ship Name : TAKUYO
Ship Type : Survey Vessel
Cruise No./Name : No.51 Continental Shelf Survey
Cruise Period : 2000/11/20 to 2000/12/12
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : K. Miki / HD, JCG
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 93
Principal Investigators : A; O.Yokoo / HD, JCG
Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2050	N.Miles	G74	Bathymetric and intensitydata Using sea Beam.
A	1075	N.Miles	G75	Using Air Gun.
A	2453	N.Miles	G27	Using KSS-30 Gravity Meter.
A	2453	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00028
Restrict Data : Yes
Ship Name : TAKUYO
Ship Type : Survey Vessel
Cruise No./Name : No.5th Continental Shelf Survey
Cruise Period : 2000/11/20 to 2000/12/12
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard(HD, JCG)

Chief Scientist(s) : K.Miki / HD, JCG
General Ocean Area(s) : North Pacific Ocean
Geographic Coverage : 93
Principal Investigators : A; O.Yokoo / HD, JCG
Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2050	N.Miles	G74	Bathymetric and intensity data Using sea Beam.
A	1075	N.Miles	G75	Using Air Gun.
A	2453	N.Miles	G27	Using KSS-30 Gravity Meter.
A	2453	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00029
Restrict Data : Yes
Ship Name : SYOYO
Ship Type : Survey Vessel
Cruise No./Name : No 2nd Continental Shelf Survey
Cruise Period : 2000/5/11 to 2000/6/9
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard(HD, JCG)

Chief Scientist(s) : H.Shimizu / HD, JCG
General Ocean Area(s) : Philippine Sea
Geographic Coverage : 95
Principal Investigators : A; O.Yokoo / HD, JCG
Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	3428	N.Miles	G74	Bathymetric and intensity data Using sea Beam.
A	3241	N.Miles	G75	Using Air Gun.
A	3428	N.Miles	G27	Using KSS-31 Gravity Meter
A	2861	N.Miles	G28	Using proton precession magnetometer.

****

Reference No. : 00030

Restrict Data : Yes

Ship Name : SYOYO

Ship Type : Survey Vessel

Cruise No./Name : No.4th Continental Shelf Survey

Cruise Period : 2000/10/16 to 2000/11/07

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Hydrographic Department, Japan Coast Guard(HD, JCG)

Chief Scientist(s) : H.Shimizu / HD, JCG

General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 93

Principal Investigators : A; M.Hayashida / HD, JCG

Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2257	N.Miles	G74	Bathymetric and intensity data Using sea Beam
A	2220	N.Miles	G75	Using Air Gun
A	2257	N.Miles	G27	Using KSS-31 Gravity Meter
A	2239	N.Miles	G28	Using proton precession magnetometer

****

Reference No. : 00031
Restrict Data : Yes
Ship Name : SYOYO
Ship Type : Survey Vessel
Cruise No./Name : 6th Continental Shelf Survey
Cruise Period : 2000/11/25 to 2000/12/25
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD,JCG)

Chief Scientist(s) : H.Shimizu / HD, JCG
General Ocean Area(s) : North Pacific Ocean
Specific Areas : Souteast of Minami-tori-sima
Geographic Coverage : 93, 57
Principal Investigators : A; K.Watanabe / HD, JCG
Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2652	N.Miles	G74	Bathymetric and intensity data Using Sea Beam
A	1746	N.Miles	G75	Using Air Gun
A	2652	N.Miles	G27	Using KSS-31 Gravity Meter
A	2538	N.Miles	G28	Using proton precession magnetmeter

****

Reference No. : 00032
Restrict Data : Yes
Ship Name : TAKUYO
Ship Type : Survey Vessel
Cruise No./Name : 7th Continental Shelf Survey
Cruise Period : 2001/1/10 to 2001/2/1
Port of Departure : Tokyo
Port of Return : Tokyo
Responsible Laboratory :

Hydrographic Department, Japan Coast Guard(HD, JCG)

Chief Scientist(s) : K.Miki /HD, JCG

General Ocean Area(s) : North Pacific Ocean

Specific Areas : Southern part of Minami-tori-sima

Geographic Coverage : 93,57

Principal Investigators : A; F.Kumasaka / HD, JCG

Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	1989	N.Miles	G74	Bathymetric and intensity data Using Sea Beam
A	1989	N.Miles	G75	Using Air Gun
A	1989	N.Miles	G27	Using KSS-30 Gravity Meter
A	1989	N.Miles	G28	Using proton precession magnetmeter

****

Reference No. : 00033

Restrict Data : Yes

Ship Name : SYOYO

Ship Type : Survey Vessel

Cruise No./Name : No.8th Continental Shelf Survey

Cruise Period : 2001/2/18 to 2001/3/12

Port of Departure : Tokyo

Port of Return : Tokyo

Responsible Laboratory :

Hydrographic Department, Japan Coast Guard (HD, JCG)

Chief Scientist(s) : H.Shimizu / HD, JCG

General Ocean Area(s) : North Pacific Ocean

Geographic Coverage : 93,57

Principal Investigators : A; K.Watanabe / HD, JCG

Objectives and Brief Narrative of Cruise :

Continental Shelf Survey for

1.This makes in necessary to prepare data for establishing the continental shelf margin of Japan.

2.Production of Continental Shelf Basic Map of the sea.

Main task

1.Bathymetric Survey.

2.Sonic Prospecting.

3.Magnetic Survey,

4.Gravity measurement at sea.

Summary of Measurements and Samples Taken :

PI	NO	UNITS	DATA TYPE	DESCRIPTION
A	2789	N.Miles	G74	Bathymetric and intensity data Using Sea Beam
A	2052	N.Miles	G75	Using Air Gun
A	2789	N.Miles	G27	Using KSS-31 Gravity Meter
A	2789	N.Miles	G28	Using proton precession magnetmeter

****

6．海洋調査報告（海洋生物調査報告）一覧

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI)

UNESCO 1974

SECTION A - GENERAL INFORMATION

TO	DATA CENTER	REFERENCE NO
01 JAPAN OCEANOGRAPHIC DATA CENTER Hydrographic Department, Maritime Safety Agency, 3-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104-0045 JAPAN	02	03

COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 99－01	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11	12	13 (if part, specify in remarks)

YR.	MO.	DAY
99	1	29

YR.	MO.	DAY
99	3	1

YES ☐ NO ☐ PART ☐ NA ☐

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES ☐ NO ☐ PART ☐	15	16 YES ☐ NO ☐

IHB ZONE (Optional)	ENVIRONMENT TYPE(Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION -- SQUARES(if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION -- POLYGON
23

41.5	N / ~~S~~	142.0	E / ~~W~~	41.5	N / ~~S~~	147.0	E / ~~W~~	N / S		E / W	
N / S		E / W		N / S		E / W		N / S		E / W	
N / S		E / W		N / S		E / W		N / S		E / W	

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B.O.D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

F01 PRINTED RECORD OR TABLE

Cf. "The Results of Oceanographical Observation. Published by the Japan Meteorological Agency."

F02 GRAPHIC DATA PRESENTATION

Cf. "The Prompt Report of Observations for Monitoring Background Marine Pollution.
Published by the Japan Meteorological Agency."

F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J.M.A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : Jan., 1999

Chlorophyll-a and phaeophytin :

Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :

Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :

Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths(inds/10m^3) in the samples were identified.

REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI) UNESCO 1974

SECTION A - GENERAL INFORMATION

TO	DATA CENTER	REFERENCE NO
01 JAPAN OCEANOGRAPHIC DATA CENTER Hydrographic Department, Maritime Safety Agency, 3-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104-0045 JAPAN	02	03

COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 99-04	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11 YR. 99 / MO. 4 / DAY 27	12 YR. 99 / MO. 6 / DAY 3	13 (if part, specify in remarks) YES [V] NO [ ] PART [ ] NA [ ]

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES [ ] NO [ ] PART [ ]	15	16 YES [ ] NO [V]

IHB ZONE (Optional)	ENVIRONMENT TYPE(Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION -- SQUARES(if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION -- POLYGON
23

41.5 N / ~~S~~	142.0 E / ~~W~~	41.5 N / ~~S~~	147.0 E / ~~W~~	N / S	E / W
N / S	E / W	N / S	E / W	N / S	E / W
N / S	E / W	N / S	E / W	N / S	E / W

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B. O. D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

SECTION C - FORMAT

F01 PRINTED RECORD OR TABLE

Cf. "The Results of Oceanographical Observation. Published by the Japan Meteorological Agency."

F02 GRAPHIC DATA PRESENTATION

Cf. "The Prompt Report of Observations for Monitoring Background Marine Pollution.
Published by the Japan Meteorological Agency."

F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J.M.A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : APR., 1999

Chlorophyll-a and phaeophytin :

Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :

Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :

Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths(inds/10m^3) in the samples were identified.

REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI)

UNESCO 1974

SECTION A - GENERAL INFORMATION

TO	DATA CENTER	REFERENCE NO
01 JAPAN OCEANOGRAPHIC DATA CENTER Hydrographic Department, Maritime Safety Agency, 3-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104-0045 JAPAN	02	03

COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 99－09	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11	12	13 (if part, specify in remarks)

YR.	MO.	DAY
99	9	29

YR.	MO.	DAY
99	10	29

YES [レ] NO [ ] PART [ ] NA [ ]

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES [ ] NO [ ] PART [ ]	15	16 YES [ ] NO [レ]

IHB ZONE (Optional)	ENVIRONMENT TYPE(Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION -- SQUARES(if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION -- POLYGON
23

41.5	N / ~~S~~	142.0	E / ~~W~~	41.5	N / ~~S~~	147.0	E / ~~W~~	N / S		E / W	
	N / S		E / W		N / S		E / W	N / S		E / W	
	N / S		E / W		N / S		E / W	N / S		E / W	

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B.O.D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

SECTION C - FORMAT

F01 PRINTED RECORD OR TABLE

Cf. "The Results of Oceanographical Observation. Published by the Japan Meteorological Agency."

F02 GRAPHIC DATA PRESENTATION

Cf. "The Prompt Report of Observations for Monitoring Background Marine Pollution.
Published by the Japan Meteorological Agency."

F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J.M.A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : Sep., 1999

Chlorophyll-a and phaeophytin :

Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :

Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :

Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths(inds/10m^3) in the samples were identified.

REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI)

UNESCO 1974

SECTION A - GENERAL INFORMATION

TO	DATA CENTER	REFERENCE NO
01 JAPAN OCEANOGRAPHIC DATA CENTER Hydrographic Department, Maritime Safety Agency, 3-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104-0045 JAPAN	02	03

COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 00－02	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11	12	13 (if part, specify in remarks)

YR.	MO.	DAY
00	2	1

YR.	MO.	DAY
00	3	3

YES ☐ NO ☐ PART ☐ NA ☐

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES ☐ NO ☐ PART ☐	15	16 YES ☐ NO ☐

IHB ZONE (Optional)	ENVIRONMENT TYPE (Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION — SQUARES (if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION — POLYGON
23

41.5	N / S	142.0	E / W	41.5	N / S	147.0	E / W		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B. O. D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

SECTION C - FORMAT

F01 PRINTED RECORD OR TABLE

Cf. "The Results of Oceanographical Observation. Published by the Japan Meteorological Agency."

F02 GRAPHIC DATA PRESENTATION

Cf. "The Prompt Report of Observations for Monitoring Background Marine Pollution.
Published by the Japan Meteorological Agency."

F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J.M.A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : Feb., 2000

Chlorophyll-a and phaeophytin :
Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :
Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :
Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths($inds/10m^3$) in the samples were identified.

REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI) UNESCO 1974

SECTION A - GENERAL INFORMATION

TO	DATA CENTER	REFERENCE NO
01 JAPAN OCEANOGRAPHIC DATA CENTER Hydrographic Department, Maritime Safety Agency, 3-1, Tsukiji 5-chome, Chuo-ku, Tokyo, 104-0045 JAPAN	02	03

COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 99-06	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11	12	13 (if part, specify in remarks)

YR.	MO.	DAY
99	6	28

YR.	MO.	DAY
99	8	10

YES [✓] NO [ ] PART [ ] NA [ ]

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES [ ] NO [ ] PART [ ]	15	16 YES [ ] NO [✓]

IHB ZONE (Optional)	ENVIRONMENT TYPE(Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION -- SQUARES(if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION -- POLYGON
23

41.5	N / ~~S~~	142.0	E / ~~W~~	41.5	N / ~~S~~	147.0	E / ~~W~~		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B.O.D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

SECTION C - FORMAT

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Published by the Japan Meteorological Agency."

F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J.M.A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : July, 1999

Chlorophyll-a and phaeophytin :
Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :
Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :
Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths(inds/10m^3) in the samples were identified.

REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

RESULTS OF MARINE BIOLOGICAL INVESTIGATION(ROMBI)

UNESCO 1974

SECTION A - GENERAL INFORMATION

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COUNTRY	INSTITUTION / AGENCY
04 JAPAN	05 Hakodate Marine Observatory

SHIP / PLATFORM NAME	RADIO CALL SIGN	PLATFORM TYPE
06 Kofu Maru	07 JDWX	08 01

CRUISE NO. / NAME	EXPED. / PROJECT
09 00-09	10

START DATE	END DATE	DECLARED NATIONAL PROGRAM
11 YR. 00 / MO. 9 / DAY 29	12 YR. 00 / MO. 10 / DAY 23	13 (if part, specify in remarks) YES [ ] NO [ ] PART [ ] NA [ ]

EXCHANGE RESTRICTIONS	COOPERATIVE PROGRAM	INTERNAT'LY COORDINATED
14 YES [ ] NO [ ] PART [ ]	15	16 YES [ ] NO [ ]

IHB ZONE (Optional)	ENVIRONMENT TYPE(Optional)
17 57B	18 05, 06

FIXED STATION	LATITUDE	LONGITUDE	QUADRANT	NE	SE	SW	NW
	19	20	21	①	3	5	7

GEOGRAPHIC LOCATION — SQUARES(if additional space is needed, use blank sheets of paper)
22

PARAMETER	10°×10° SQUARES			1°×1° SQUARES (Optional)							
	Qc	La	LoLo	1×1	1×1	1×1	1×1	1×1	1×1	1×1	1×1
B02 DISP DEDI BIOM	1	4	14								
B10 IDCO DISP BIOM COMM POPE	1	4	14								
B11 IDCO DISP BIOM COMM POPE	1	4	14								

GEOGRAPHIC LOCATION -- POLYGON
23

41.5	N / ~~S~~	142.0	E / ~~W~~	41.5	N / ~~S~~	147.0	E / ~~W~~		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W
	N / S		E / W		N / S		E / W		N / S		E / W

WHOM TO QUERY (Form section B)
24

01 Oceanography Division, Hakodate Marine Observatory, 3-4-4, Mihara, Hakodate, Hokkaido
02
03
04
05
06

SECTION B - PARAMETERS	No.	QUERY	FORMAT	STUDY DESCRIPTION CODES
BIOLOGY OBSERVATIONS				
B01 PRIMARY PRODUCTIN				
B02 PHYTOPLANKTON PIGMENTS	6	01	F01, F02	DISP DEDI BIOM
B03 SESTON				
B04 PARTICULAR ORGANIC CARBON				
B05 PARTICULAR ORGANIC NITROGEN				
B06 DISSOLVED ORGANIC CARBON				
B07 BACTERIA				
B08 OTHER MICROORGANISMS				
B09 NANOPLANKTON				
B10 PHYTOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B11 ZOOPLANKTON	6	01	F01, F02	IDCO DISP BIOM COMM POPE
B12 NEUSTON				
B13 FISH EGGS AND/OR LARVAE				
B14 MICRONEKTON				
B15 PELAGIC INVERTEBRATES				
B16 DEMERSAL INVERTEBRATES				
B17 PELAGIC FISHES				
B18 DEMERSAL FISHES				
B19 MICROBENTHOS				
B20 MEIOBENTHOS				
B21 MACROBENTHOS				
B22 ATTACHED PLANTS & SEAWEED				
B23 INTERTIDAL ANIMALS				
B24 BIRDS				
B25 MAMMALS & REPTILES				
B26 DEEP SCATTERING LAYER				
B27 ACOUSTIC SURVEY, BIOLOGICAL				
B28 BIOLOGICAL SOUNDS				
B29				
B30				
B31				
POLLUTION OBSERVATIONS				
P01 SUSPENDED SOLIDS				
P02 HEAVY METALS				
P03 PETROLEUM RESIDUES				
P04 CHLORINATED HYDROCARBONS				
P05 OTHER DISSOLVED SUBSTANCES				
P06 THERMAL POLLUTION				
P07 NUTRIENT POLLUTION	6	01	F01, F02	DISP DEDI
P08 RADIOACTIVITY				
P09 SEWAGE : B. O. D.				
P10 SEWAGE : NITRATE				
P11 SEWAGE : MICROBIOLOGY				
P12 SEWAGE : OTHER				
P13 DISCOLOURED WATER				
P14 BOTTOM DEPOSITS				
P15 CONTAMINANTS IN ORGANISMS				
P16				
P17				
P18				
BIOCHEMISTRY OBSERVATIONS				(indicate if measurements were taken in water column or organism)
M01 VITAMINS				
M02 AMINNO ACIDS				
M03 ATP , ADP				
M04 DNA , RNA				
M05 FATS & OIL				
M06				
M07				

SECTION C - FORMAT

F01 PRINTED RECORD OR TABLE

Cf. "The Results of Oceanographical Observation. Published by the Japan Meteorological Agency."

F02 GRAPHIC DATA PRESENTATION

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F03 PUNCHED CARD

F04 PUNCHED PAPER TAPE

F05 DIGITAL MAGNETIC TAPE

F06 ANALOGUE MAGNETIC TAPE

F07 ANALOGUE TRACE

F08 PHOTOGRAPH OR FILM

F09 AUDIO RECORD

F10 OTHER

SECTION D - SAMPLING

S01 IS SAMPLING INFORMATION AVAILABLE

YES ☐ NO ☐

S02 SAMPLING GEAR

Bucket. Niskin Sampler. Norpac net.

S03 SAMPLING PROGRAM

S04 METHODS OF ANALYSIS

B02 Fluorometric method(Yentsch & Menzel 1963)
B10 Standard method(J. M. A 1969) Phytoplanktons in surface sea water were settled, centrifuged and identified.
B11 Norpac net was hauled from depth of 150m to the surface.
Wet weight and number of organisms were determined.

SECTION E - DATA STRUCTURE (if additional space is needed use blank sheets of paper)

Area : South of Hokkaido

Ship : Kofu Maru

Period : Sep., 2000

Chlorophyll-a and phaeophytin :

Concentrations(μg/l) from surface to the depth of 300m were determined at 6 stations.

Phytoplankton :

Diatoms(cell/l) in surface water were counted according to species at 6 stations.

Zooplankton :

Wet weight(mg/m^3) in surface layer from depth of 150m to the surface were determined at 6 stations.

Chaetognaths(inds/10m^3) in the samples were identified.

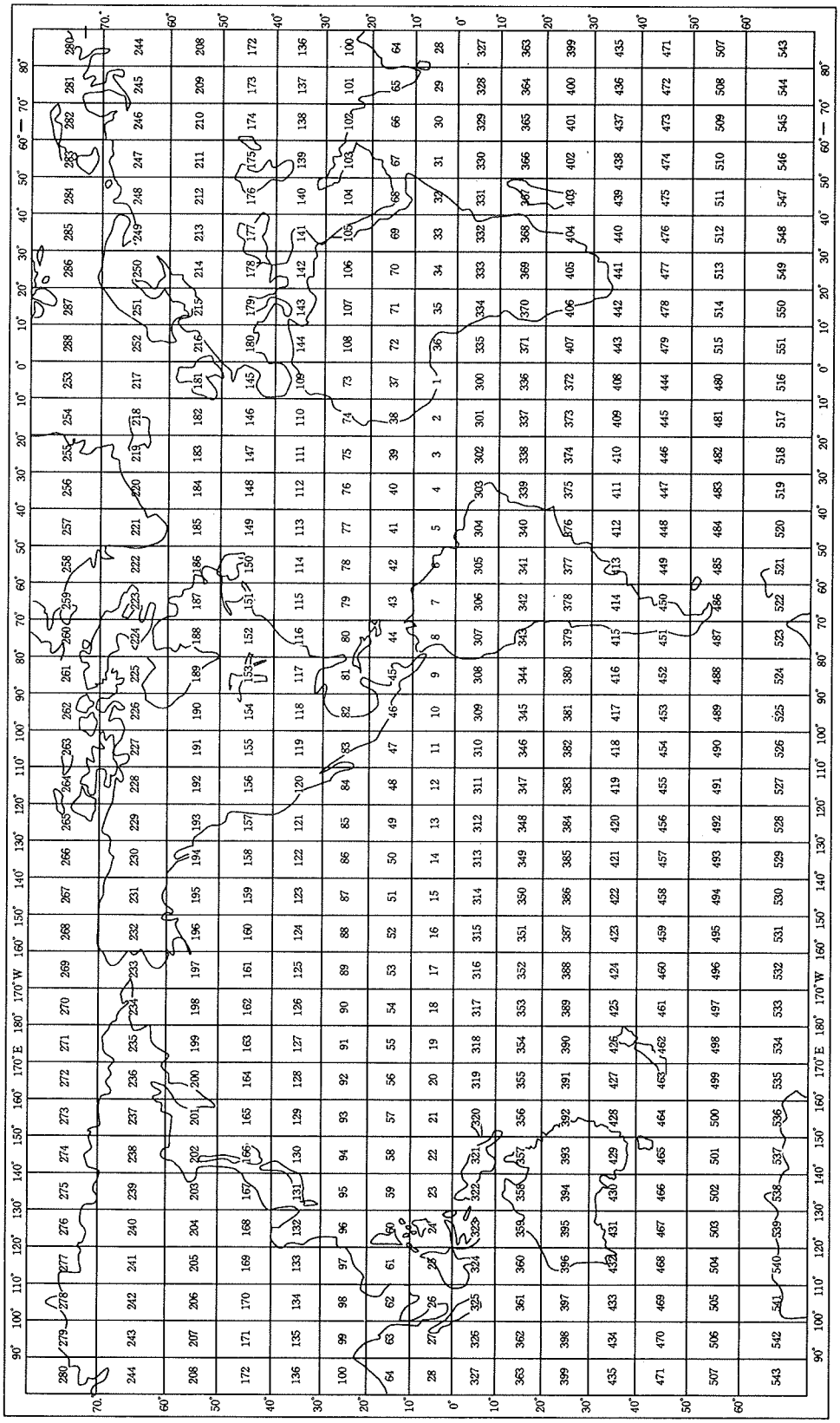
REMARKS (if additional space is needed use blank sheets of paper)

Signed _____ Date _____

付 録 目 次

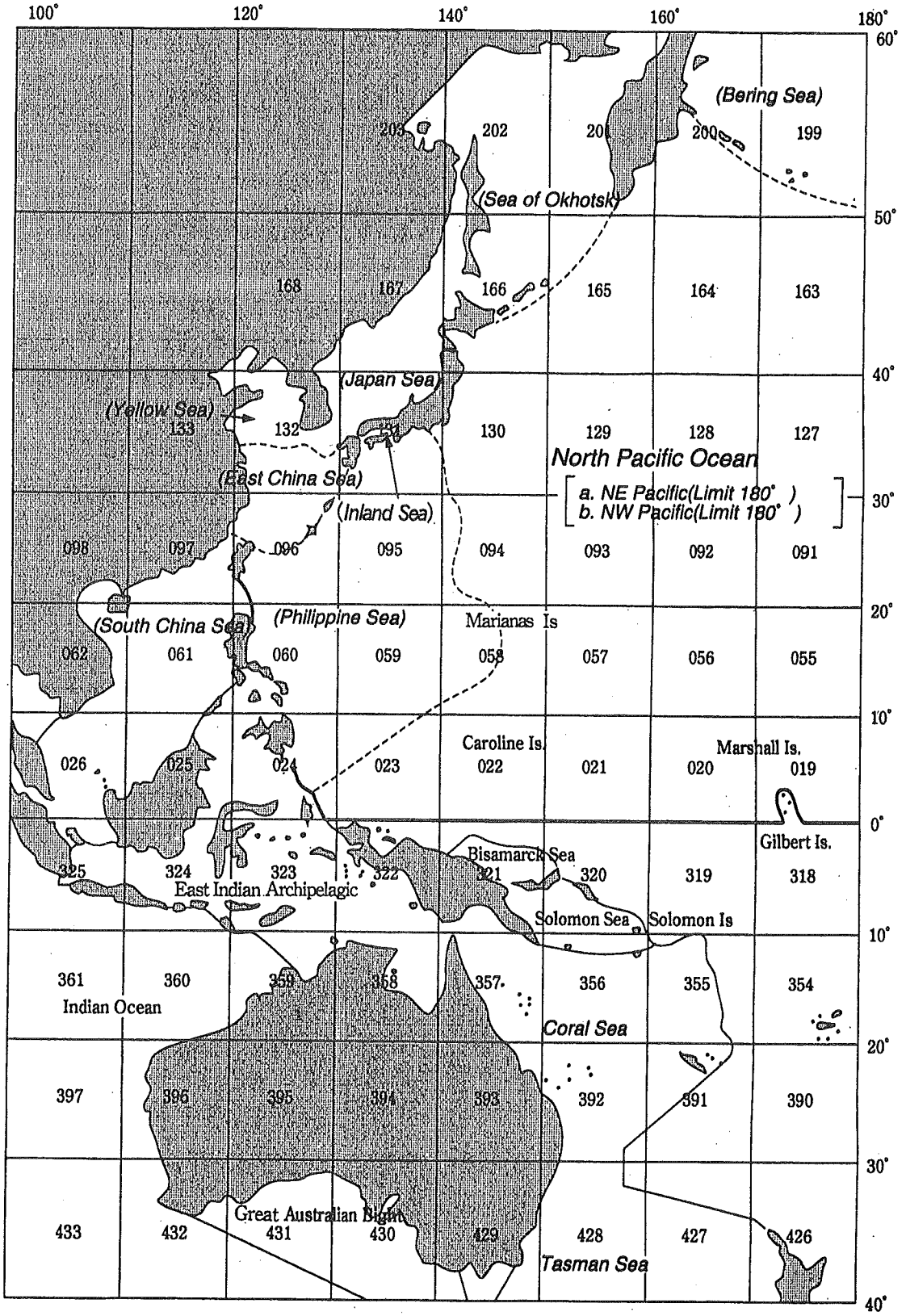
付 録 1

MSQ海域番号図（全世界）



海 域 番 号 図（西太平洋）

海域の境界は IHO 分類による



航海概要報告の記入例

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: JODC Ref.No:

Is data exchange restricted?
データ交換に制限があるか
☐ Yes はい ☐ In part 条件付き ☑ No 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: *Shirase* **Call Sign:**

Type of ship: *Icebreaker*

CRUISE NO./NAME *JARE 33*
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
航海期間

start (set sail) (出港): 14 day 11 month 1991 year to 20 day 04 month 1992 year end (return to port) (入港)

PORT OF DEPARTURE (enter name and country) *Tokyo, Japan*

PORT OF RETURN (enter name and country) *Tokyo, Japan*

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: *National Institute of Polar Research*

Address: *1-9-10, Kaga ,Itabashi-ku ,Tokyo 173*

Country: *Japan*

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

T. Yamamoto, Hydrographic Department, Maritime Safety Agency

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

One of a routine oceanographic observation (physical and chemical) on the 33rd summer mission of Japanese Antarctic Research Expedition

A. Monitoring the position of Subtropical Convergence and Antarctic Convergence

B. Trace of the Antarctic Circumpolar Current

C. Marine pollution analysis

Main task 1. Deploy surface drifting buoy at 47° 35′ S , 47° 10′ E

2. Surface water sampling for temperature measurement and chemical analysis

3. Hydrographic measurement in Southern Ocean en route from Fremantle to Mauritius

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 , Hydrrographic 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 ,ShiogamaMiyagi 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	APPROXIMATE POSITION						DATA TYPE	DESCRIPTION
	LATITUDE			LONGITUDE			enter code(s) from list on cover page.	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.
see top of page.	deg	min	N/S	deg	min	E/W	リストのコードを記入	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
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 tideguage ,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 distingulshed, 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投入、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 see page 2	NO see above	UNITS see above	DATA TYPE enter cpde(s) from list on cover page. リストのコードを記入	DESCRIPTION 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 bottoles 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

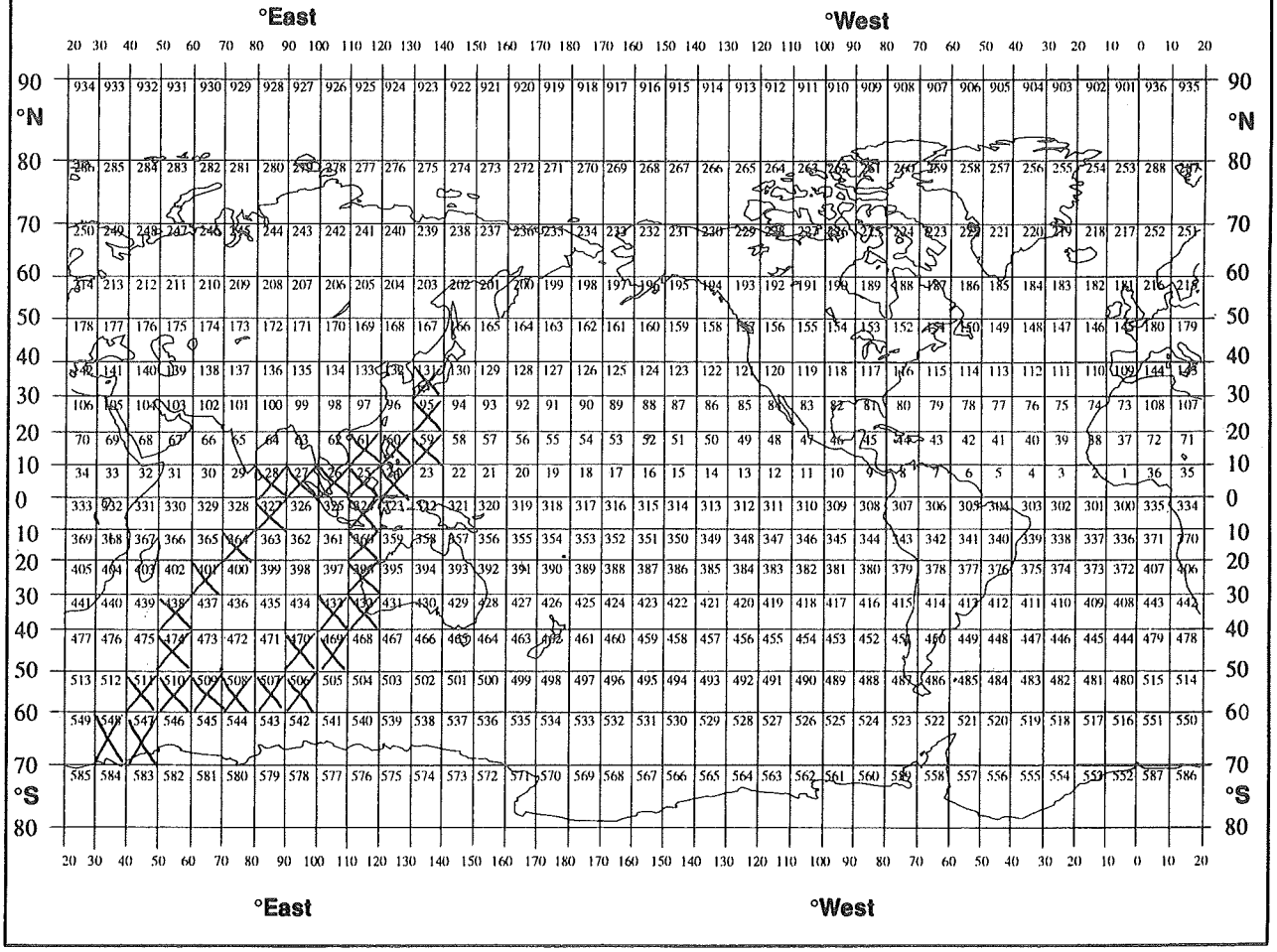
SPECIFIC AREAS: If the cruise activities were concentrated in a specific area(s) of an ocean or sea,then enter a description of the area(s). such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

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。

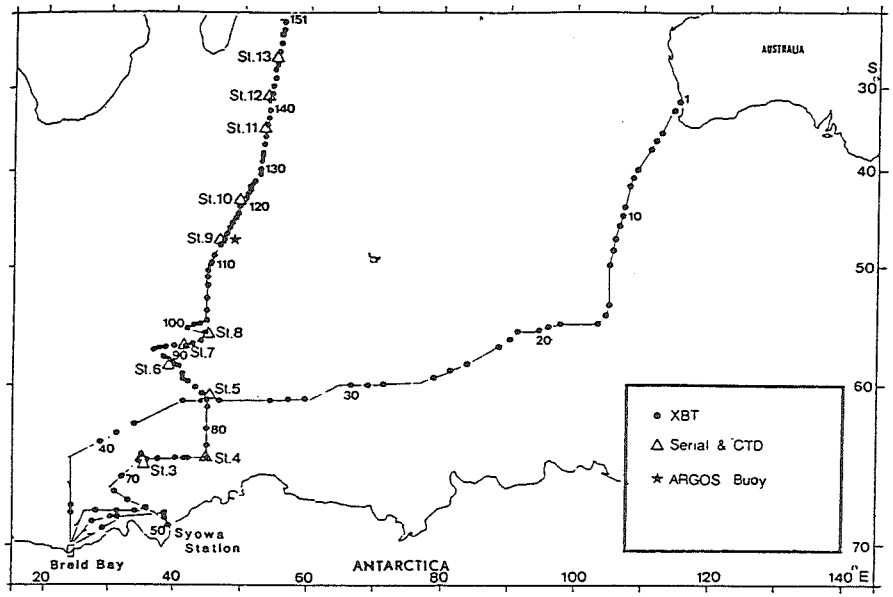
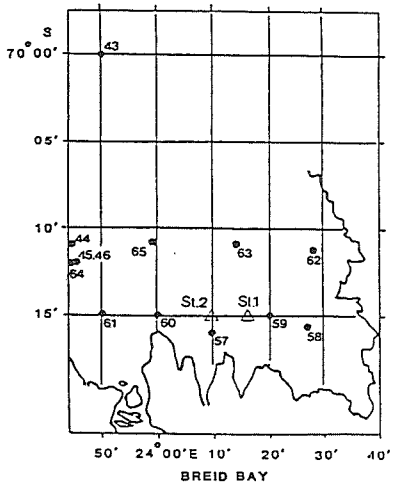


Fig. 1a. The track chart and the station location of oceanographic observations.



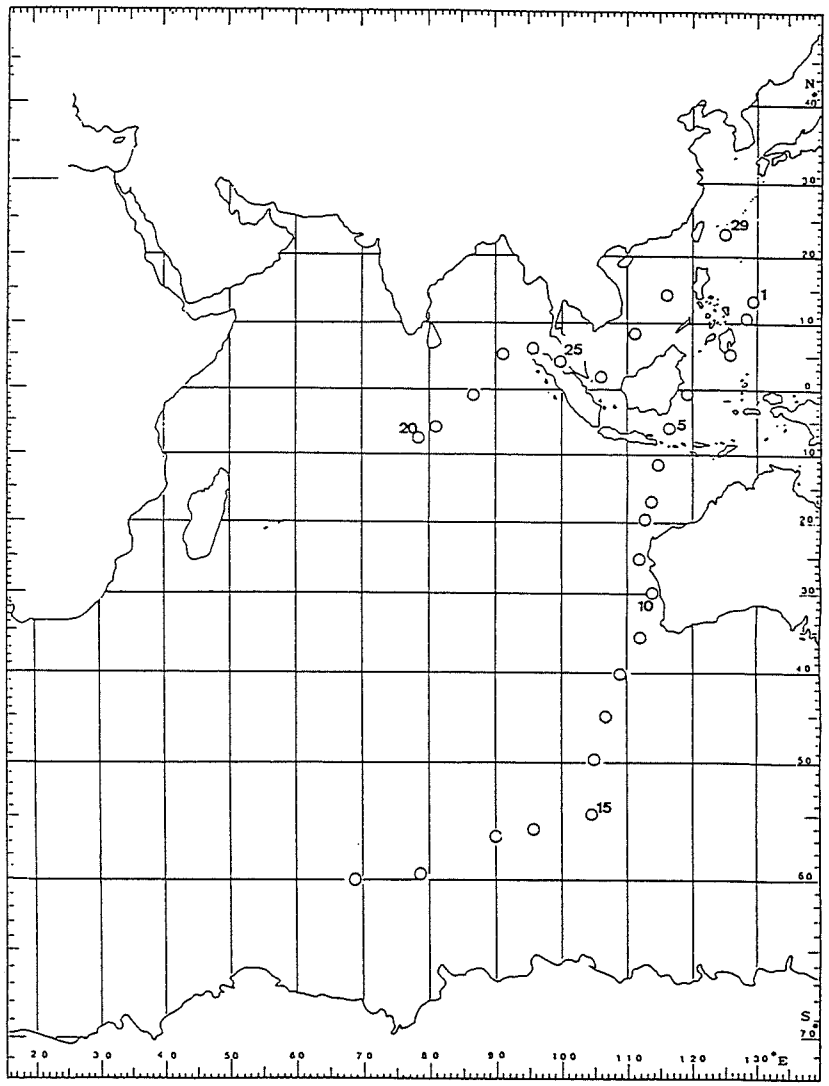


Fig. 2. The location of surface water sampling for marine pollution analysis (petroleum oil, Cd, Hg, Cu and Zn).

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 はい ☐ In part 条件付き ☐ No 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 航海期間 start (set sail) (出港) ☐☐ day ☐☐ month ☐☐☐☐ year to ☐☐ day ☐☐ month ☐☐☐☐ year end (return to port) (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

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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	APPROXIMATE POSITION						DATA TYPE	DESCRIPTION
	LATITUDE			LONGITUDE			enter code(s) from list on cover page. リストのコードを記入	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
see top of page.	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。

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.

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.....

.....

.....

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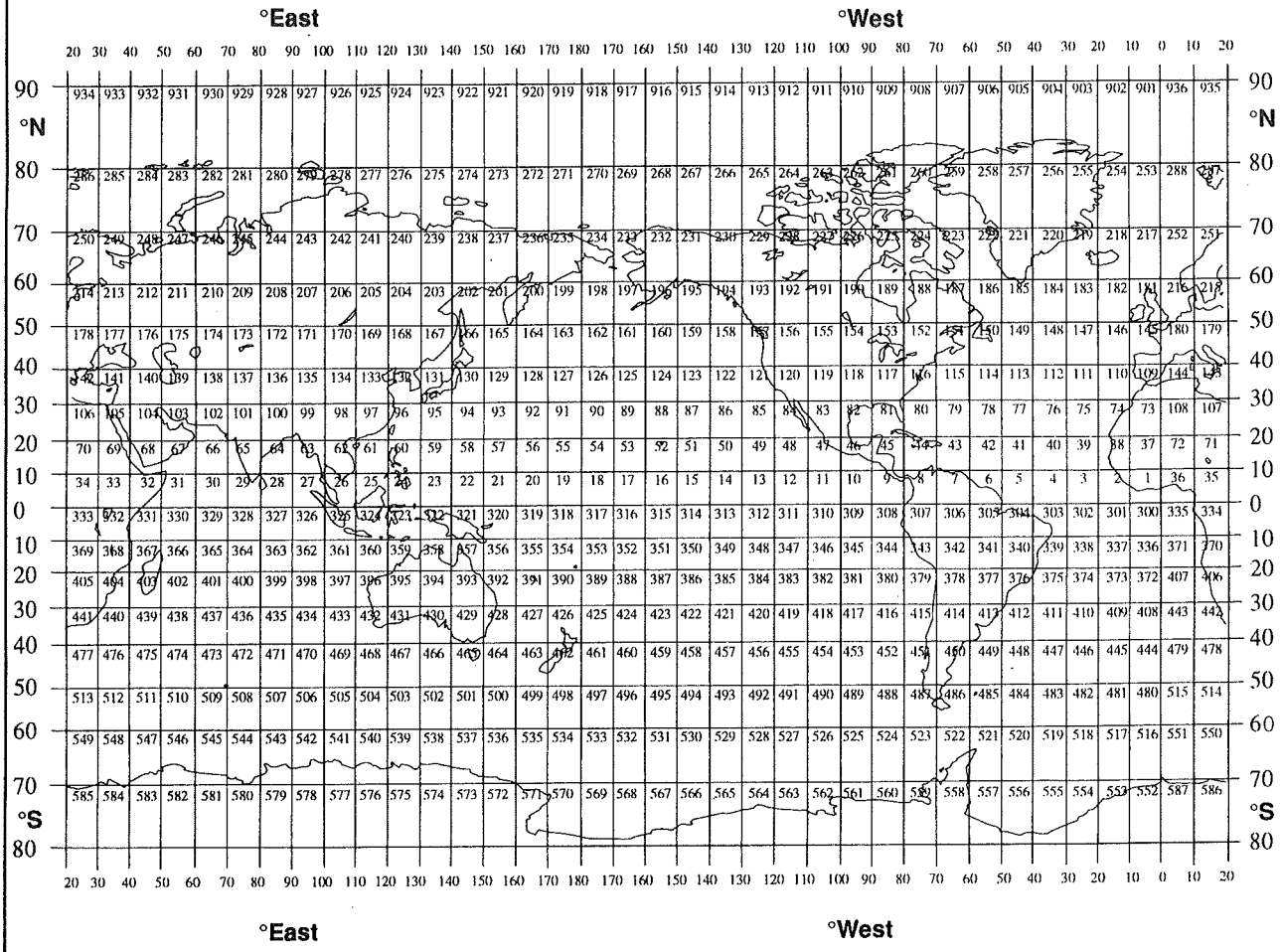

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付 録 3

調 査 機 関 略 語 表

略　語	調　　査　　機　　関　　名
HD,JCG	海上保安庁水路部 Hydrographic Department, Japan Coast Guard
JMA	気象庁 (Japan Meteorological Agency)
CMD, JMA	気象庁気候・海洋気象部 (Climate and Marine Dept., Japan Meteorological Agency)
HMO, JMA	函館海洋気象台 (Hakodate Marine Observatory, Japan Meteorological Agency)
KMO, JMA	神戸海洋気象台 (Kobe Marine Observatory, Japan Meteorological Agency)
MMO, JMA	舞鶴海洋気象台 (Maizuru Marine Observatory, Japan Meteorological Agency)
JAMSTEC	海洋科学技術センター (Japan Marine Science and Technology Center)
ILTS, HU	北海道大学低温科学研究所 (Institute of Low Temperature Science Hokkaido Univ.)
RIAM, KU	九州大学応用力学研究所 (Research Institute for Applied Mechanics (RIAM), Kyusyu Univ.)
FF, NU	長崎大学水産学部 (Faculty of Fisheries, Nagasaki Univ.)
SFHS	鳥取県立境水産高等学校 (Tottori Prefectual Sakai Fishery Hight School)