

## 第 7 章 事業の評価

### 7-1 水産資源調査計画による便益

本調査船の導入によって、インドの水産資源調査は飛躍的に強化・拡大されるが、その期待される効果は以下のとおりである。

#### (1) 直接効果

##### 1) 調査海域の拡大による資源把握

従来は1隻による調査から、新鋭調査船2隻の導入により、調査海域は飛躍的に拡大するので、マグロ資源の分布や回遊状況、さらに資源量の把握が高精度で可能となる。このことにより漁期毎の漁場が把握されれば、操業上の稼働ロスが少なくなり、漁獲効率をあげることができる。

##### 2) 技術習得の機会増による技術者の養成拡大

今回の2隻を導入することにより46人(23人×2隻)の乗組員が乗船できることになるので、技術者養成の場は拡大されることになる。これら技術を習得した乗組員は、将来延縄漁業が本格化された際の基幹乗組員となり、事業の発展に役立つものである。

##### 3) 漁獲による動物蛋白質の供給

2隻の調査船による調査活動による漁獲量は、調査の時期、海域により異なり商業的操業と異なるので多くを望めないが、2隻では数百トン程度には達すると予想されるのでこれによる動物性蛋白質の供給増も期待される。

##### 4) 加工・製造の拡大

調査船での漁獲物は国営加工工場(IFP)にあげられ、主要魚種のキハダマグロは缶詰原料として加工され、その缶詰は一般市場で販売される。

今回の2隻によって漁獲されるキハダマグロは調査船の隻数、能力の増加によって従来より相当量増加すると思われる。これはIFPの操業度を向上させるばかりでなく、魚食の普及をはかるインド国政府の政策を、実質的に側面から援助するという効果をもたらすであろう。そして国民への動物蛋白質食糧の供給増と共に、また加工に従事する従業員の雇用拡大につながる。

#### (2) 波及効果

##### 1) 調査情報により新規に着業の可能性が大きいこと。

詳細な調査結果により良好な漁場が開発され、将来的に企業目途がたった折は、新規にマグロ事業に従事しようとする企業船が現れ、インドのマグロ漁業開発に大きく貢献することになるろう。

## 2) 漁民の雇用促進

将来的に企業船が増え、漁獲努力量が増加すると、乗組員の雇用は増大し、国策に沿った良好な結果となる。

## 3) 漁民の収入増加

前項の雇用促進と共に、定業のマグロ延縄船に乗船することにより、収入の増が図られる。

## 4) 輸出による外貨獲得

将来的に経営規模が増加し、漁獲量が増大した場合、加工したマグロ缶詰の輸出、あるいはキハダマグロを主体とした缶詰用の原料魚の輸出により、外貨収入が得られる。

## 7-2 実施の妥当性

### (1) 漁場環境からみた本計画の妥当性

インド洋という大洋に沿ったインドのマグロ漁業は、主要魚種であるキハダマグロの資源量が多いこと、漁場が基地から至近距離にあることなど、漁場環境は極めて良いといえる。

従ってインドが第7次5カ年計画の漁業の開発で、マグロ漁業開発を中心とすることは、極めて妥当といえる。

### (2) 調査計画からみた本計画の妥当性

調査計画については有望なキハダマグロ資源が生息するアラビヤ海側と、同じくベンガル湾側の2海域を各1隻の専属調査船で調査すること、さらに船の大きさは、1航海を約3週間とする設定からみると、操業約17日間、漁獲は1日平均3トンで1航海約51トンであり、L 36m、B 7.4m、D 3.1mの船型は妥当であることなどにより調査計画からみた本計画は妥当と考えられる。

### (3) 運営維持管理計画からみた本計画の妥当性

本計画の調査船の運営維持管理については、直接調査船を運航する各 Zonal Baseには機関・電気関係などの保守手入れを担当する技師がおり、円滑な運航に細心の注意を払っている現状（既供与の MATSYA SUGUNDHI 号の実績より）からみて維持管理面の問題は無いと考えられる。

### (4) 予算措置からみた本計画の妥当性

調査船の運航経費は国庫から支出される一方、漁獲物の売上代金は直接国庫に納入される仕組みがとられている。

FSI の予算でみると1985~1990年の5カ年間に非経常的支出として約3億ルピーが計上されているが、本調査船2隻の運航経費もこの中に含まれている。

先にも述べた通り FSI は所有する 10 隻の調査船について船毎の仕分けはしていないが、本計画の 2 隻分の予算は充分手当されているものと判断される。

以上のとおり漁場環境、事業計画、及び予算措置にかかわる運営維持管理計画等から検討した本計画の妥当性は高いと判断される。

## 第 8 章 結 論 と 提 言

### 8-1 結 論

基本設計調査団は現地調査において、インド側の要請内容を確認し、帰国後これを解析・検討して水産資源調査計画を策定し、それに基づき本調査船の基本設計を行い、さらにドラフト・ファイナル・レポート説明において、インド側の合意をえた。

本調査船は、インドにおけるマグロ漁業振興のパイオニアとなるもので、その目的はインド経済専管水域内のマグロ資源量の把握と、その回遊状況の調査である。

1980年に供与した2隻の調査・訓練船は現在7年を経過しているが、整備状況は良く調査船および訓練船としての実績をあげており、本調査船の運航、保守についての不安はない。

今回の2隻の調査船は前回の実績に鑑み、新鋭の漁撈機器や計器類を装備する計画であるが、インド側も経験を積んでおり技術的な向上が見られるので、本計画が実施の暁にはインド半島両側海域のマグロ資源開発は大きく前進するものと考えられる。

### 8-2 提 言

「水産資源調査計画」の実施のため、新たに調査船が配属された場合、本調査船を効率良く運航させるため、以下の事項につき提言する。

#### (1) 操業稼働率の向上

- 1) 稼働率を向上させるためには乗組員の調査意欲を醸成するような賃金システムをとることが望ましい。
- 2) 現在のMATSUYA SUGUNDHI号の使用漁具は、1日当たり150鉢と少なく、また本調査船でも200鉢程度を目標にしているが、将来的には1日当たり250～300鉢程度で操業する事を目指すなど調査効率および、操業稼働率の向上に努力する必要がある。
- 3) モンスーンシーズンはインド沖合は相当時化が多く、休漁することも多いと思われるが、本調査船は機動力が優れているので、時化の時期は赤道付近の漁場まで南下して、公海の調査をすることも、漁獲をあげるうえで必要な措置と思われる。

#### (2) 流通上の配慮

本調査船の基地港には、本船の漁獲物保蔵温度と等しいかあるいは、それ以下の低温設備をもつ陸上保蔵施設(冷蔵庫)を確保することが流通上必要であろう。

#### (3) 漁具保管のための専用倉庫が必要

漁具専用の保管倉庫をもち、無駄のない管理を行うことは、調査船に限らず漁船を運航するためには重要なことである。漁具などについて長期需給計画を策定し、専用倉庫で適切な管理を行うことは、漁具不足により操業が出来ないなどの無駄をなくすことであり、調査船の管理運営上必要である。



# 附 属 资 料



付属資料1 調査団員名簿

(1) 基本設計調査

担 当	氏 名	所 属
調査団長	藤村 政弘	農林水産省 水産庁 海洋漁業部 国際課 企画官
計画管理	志村 茂	国際協力事業団 国際協力専門員
水産資源開発 (主任技術者)	堀内 清英	日魯漁業(株)
船体設計	平島 寛	”
漁具・漁法	上原 長年	”
積算	西橋 隆嗣	”



(2) ドラフト・ファイナル・レポート説明

担 当	氏 名	所 属
調査団長	藤村 政弘	農林水産省 水産庁 海洋漁業部 国際課 企画官
計画管理	志村 茂	国際協力事業団 国際協力専門員
水産資源開発 (主任技術者)	堀内 清英	日魯漁業(株)
船体設計	平島 寛	〃

付属資料2 調査行動表

(1) 基本設計調査

日数	月 日	曜日	調 査 内 容
1	S62.10.29	木	成田発
2	30	金	デリー着、大使館、JICAと打合せ、農業省表敬挨拶
3	31	土	資料整理、団内協議
4	11. 1	日	デリー発、ボンベイ着
5	2	月	FSI本部と協議、計画の背景、要請内容の確認
6	3	火	同 上
7	4	水	ボンベイ発コーチン着
8	5	木	FSI支部と水産資源調査、維持管理計画の協議 MATSYA SUGUNDHI号調査
9	6	金	IFPにてインド水産業について聴取、船舶修繕施設調査
10	7	土	団内打合せ、資料整理
11	8	日	CIBAにて養殖事情の調査
12	9	月	MPEDAにて水産物の輸出事情の聴取
			CIFNETにて協議
			CMFRIにて漁業資源状況、ラカディブ諸島の漁業事情聴取
13	10	火	ボンベイに移動
			午後FSIと協議
14	11	水	ミニッツ調印
15	12	木	資料収集
16	13	金	官側団員ボンベイ発帰国
17	14	土	資料収集
18	15	日	ボンベイ発、デリー着
19	16	月	大使館、JICA、農業省に報告
20	17	火	デリー発、成田着

(2) ドラフト・ファイナル・レポート説明

日数	月 日	曜日	調 査 内 容	
1	S63. 1.17	日	成田発、バンコック着 (A 1301 便欠航のため)	
2	18	月	バンコック発、デリー着	
3	19	火	在インド日本大使館、JICA 挨拶、インド大蔵省、農業省 表敬訪問及び、コンサルタント雇用問題討議	
4	20	水	デリー発、ボンベイ着 FSI に DFR、説明	
5	21	木	FSI. にて DFR、説明	
6	22	金	"	
7	23	土	" ミニッツ調印	
			(官側2名、平島)	(堀内)
8	24	日	デリー発、モルムガオ着	デリー発、ピサカパトナム着
9	25	月	モルムガオ調査	ピサカパトナム調査
10	26	火	モルムガオ発、デリー着	ピサカパトナム発、デリー着
11	27	水	在インド日本大使館、JICA に報告、農業省訪問	
12	28	木	農業省と打合せ(コンサルタントのみ)	
13	29	金	デリー発、成田着	

付属資料3、面談者名簿

(1) 基本設計調査 (SG2.10.29-11.17.)

氏名	所属	役職	同左英文名
(インド政府関係者)			
Mr. S. SOM	農業省	局長	Ministry of Agriculture : Joint Secretary
Mr. S. K. DAS	"	部長代理	" : Deputy Commissioner
Mr. S. S. AHLUWALIA	"	課長	" : Director
Dr. D. SUDARSAN	漁業調査試験場	ホバ本部 総局長代理	FSI BombayHQ: Deputy director General
Mr. A. K. GOORHA	"	" 船用機械技師	" : Mechanical Marine Engineer
Mr. R. CHANDRASEKRAN	"	" サービス技師	" : Service Engineer
Mr. ANTHONY JOSPH	"	" コンピュータープログラマー	" : Computer Programmer
Mr. T. E. SIVAPRKASAM	"	マドラス支部 支部役員	" : Zonal Director
Mr. P. SULOCHAM	"	コーチ支部 "	" : Zonal Director
Mr. K. K. VARGESE	"	" 主任漁業科学者	" : Sr. Fisheries Scientist
Mr. T. V. NIRN	"	" "	" : Sr. Fisheries scientist
Mr. A. J. PAL	マツヤ	スガンディー号 漁撈長	" : Skipper
Mr. S. PENIKAR	"	" 航海士	" : Mate
Mr. J. H. KARKERA	"	" 機関長	" : Chief Engineer
Mr. R. SATHIARAJAN	統合漁業機関	役員	IFP: Director
Mr. M. SWAMINATH	漁業航海機関中央訓練場	場長	CIFNET : Director
Mr. T. K. A. NAIR	水産物輸出振興局	会長	MPEDA : Chairman
Dr. A. LAXMINARAYANA	海面養殖中央研究所	管理科学職員	CIBA : Scientist and Officer in Charge
Mr. P. K. PANDIAN	"	科学者	" : Scientist
Dr. P. S. B. R. JAMES	海面漁業調査中央研究所	役員	CNFRRI: Director
(在インド日本大使館)			
菅野悠紀雄	在インド日本国大使館	参事官	
杉江潤	"	一等書記官	
宮永豊司	"	一等書記官	
(JICA)			
倉林太郎	JICAインド事務所	所長	

- FSI : Fishery Survey of India  
 IFP : Integrated Fisheries Project  
 CIFNET : Central Institute of Fisheries Nautical & Engineering Training  
 MPEDA : The Marine Products Export Development Authority  
 CIBA : Central Institute of Brackist water Aquaculture  
 CNFRRI : Central Marine Fisheries Research Institute

2) ドラフト・ファイナル・レポート (S63. 1.17-29.)

氏名	所属役職	同左英文名
(インド政府関係者)		
Mr. G. HADHUSOODAN PILLAI	大蔵省 課長補佐	Ministry of Finance :Deputy Secretary
Mr. B. C. SARMA	農業省 局長	Ministry of Agriculture:Joint Secretary
Mr. K. M. JOSEPH	" 部長	" :Joint Commissioner
Mr. S. K. DAS	" 部長代理	:Deputy Commissioner
Mr. S. BALAKRISHNAN	" 係長	:Under Secretary
Dr. D. SUDARSAN	漁業調査試験場 ボンベイ本部 総局長代理	PSI Bombay HQS :Deputy Director General
Dr. V. S. SOMVANSHI	" " 主任漁業科学者	" " :Sr. Fisheries Scientist
Mr. H. E. JOHN	" " 漁業科学者	" " :Fisheries Scientist
Mr. A. M. GOORHA	" " 船用機械技師	" " :Mechanical Marine Engineer
Mr. R. CHANDRASEKARAN	" " サービス技師	" " :Service Engineer
Mr. ANTHONY JOSEPH	" " コンピュータープログラマー	" " :Computer Programmer
Mr. T. E. SIVAPRAKASAM	" マドラス支部 支部役員	" Madras :Zonal Director
Mr. GOPALAKRISHNAN	" ビサカパトナム支部 "	" Visakhapatnam:Zonal Director
Mr. P. SULOCHANAN	" コーチン支部 "	" Cochin:Zonal Director
Mr. K. VIJAYAKUMARAN	" ホムムガオ支部 "	" Mormugao:Zonal Director
Mr. K. P. PHILIP	" " 漁業科学者	" " :Fisheries Scientist
Mr. H. ROSHAN AKAR	" " "	" " :Fisheries Scientist
Mr. A. SETHUMADHAVAN	" " サービス技師	" " :Service Engineer
Mr. V. K. GOPINATHAN	" " 船用機械技師	" " :Mechanical Marine Engineer
Mr. A. K. MALIK	" " 科学助手	" " :Scientist Assistant
Mr. S. G. PAWARI	" " "	" " :Scientist Assistant
Mr. N. S. H. PRASAD	海産物輸出振興局 副会長	MPEDA :Vice Chairman
(造船所関係者)		
Mr. K. V. RAGHAVAN	ヒンダスタン造船所 営業部長	Hindustan Shipyard Ltd. :General Manager
Mr. N. V. VISWANATHAN	" 専任課長	" :Chief Manager
Mr. S. A. AMONKAN	ゴア造船所 課長	Goa Shipyard Ltd. : Manager
(在インド日本国大使館)		
野口英二郎	在インド日本国大使館 特命全権大使	
堀内伸介	" 公使	
菅野悠紀雄	" 参事官	
杉江潤	" 一等書記官	
宮永豊司	" 一等書記官	
佐伯義文	" 一等書記官	
(ボンベイ総領事館)		
荒木大山	ボンベイ総領事館 総領事	
杉本忠幸	" 領事	
中西直樹	" 領事	
(JICA)		
倉林太郎	JICAインド事務所 所長	

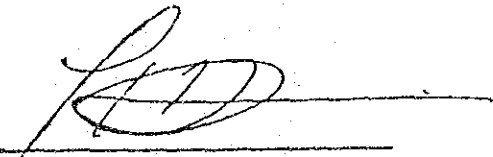
MINUTES OF DISCUSSIONS  
ON  
THE FISHERIES RESOURCES SURVEY PROJECT  
IN  
INDIA

In response to the request of the Government of India, the Government of Japan decided to conduct a basic design study on the project for the fisheries resources survey in India (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA"). JICA sent to India the study team headed by Mr. Masahiro Fujimura, Planning Officer, International Affairs Division, Ocean Fisheries Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries from October 29th to November 17th, 1987.

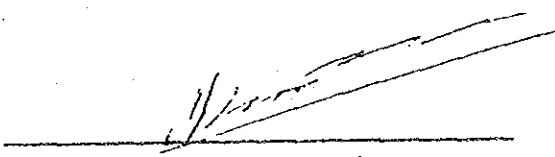
The team had a series of discussions on the Project with the officials concerned of the Government of India headed by Dr. D. Sudarsan, Deputy Director General, Fishery Survey of India (FSI), Department of Agriculture and Cooperation, Ministry of Agriculture, and conducted a field survey in Bombay and Cochin.

As a result of the study and discussions, both parties have agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the project.

11th November 1987  
Bombay



Masahiro Fujimura  
Team Leader,  
Basic design Team for  
the Fisheries  
Resources Survey Project,  
Planning Officer,  
International Affairs  
Division, Ocean Fisheries  
Department, Fisheries Agency,  
Ministry of Agriculture,  
Forestry and Fisheries of  
Japan



Dr. D. Sudarsan  
Deputy Director General,  
Fishery Survey of India,  
Department of Agriculture and  
Cooperation,  
Ministry of Agriculture

ATTACHMENT

1) The Objective of the Project

The objective of the Project is to survey fisheries resources in the Exclusive Economic Zone of India with proper fishing gears and methods, and to develop tuna fisheries in India.

2) Executing Organization

The Fishery Survey of India (FSI) is responsible for the implementation of the Project.

3) Request of the Government of India

The team will convey the request of the Government of India to the Government of Japan that the latter will take necessary measures to cooperate by providing the equipment listed in ANNEX I within the scope of the Japan's Grant Aid Program.

4) Necessary Measures to be Taken by the Government of India

The Government of India will take necessary measures listed in ANNEX II on the condition that the Grant Aid of the Government of Japan is extended to the Project.

5) System of the Japan's Grant Aid Program

The Indian side (the Government of India) has understood the system of the Japan's Grant Aid, explained by the team, which includes a principle of the use of a Japanese consultant and a Japanese firm for the implementation of the Project.

6) Assurance of Necessary Budget

The Indian side assured that the necessary budget for effective operation and maintenance of the equipment would be provided, in line with the adequate number of Indian personnel with sufficient knowledge, technique and experience, on condition that the Grant Aid of the Government of Japan is extended to the Project.

7) Alternations or Adaptations of Requested Items

It was mutually agreed that the items mentioned in ANNEX I are subject to alterations and/or adaptations at a later date to meet the budgetary allocation provided by the Government of Japan.

ANNEX I

(1) 36-m Type Survey Vessel for Tuna Fishery :

1) Type and Number

Tuna long line fishing type  
Two (2) Vessels of the same specification

2) Rules and Regulations

The following should be applied

- (a) Classification Society: NK (Nippon Kaiji Kyokai)
- (b) Japanese Government's Inspection Rules for Export Vessel
- (c) The International Convention for the Prevention of Collision at Sea, 1972
- (d) The International Regulation for Tonnage Measurement of Ships, 1969

The following should be referred as applicable

- (a) IMO Intact Stability, Recommendations for Fishing Vessel  
(IMO A-168 paragraph V)
- (b) Maritime Regulations of India framed under Indian Merchant Shipping Act (1958) and the Rules made thereunder.

3) Principal Particulars

Length overall	abt. 36 m
Lpp	abt. 31 m
Breadth	abt. 7.35 - 7.40 m
Depth	abt. 3.10 - 3.20 m
Engine Power	abt. 800 PS
Cruising Speed	abt. 10 - 11 knots
Endurance	abt. 7,000 nautical miles
Fish Hold*	abt. 100 - 110 m <sup>3</sup>
Freezing Space*	abt. 4 ton (2 ton x 2 sets)
Fuel Oil Tank	abt. 120 m <sup>3</sup>
Fresh Water Tank	abt. 50 - 60 m <sup>3</sup>
Complements	abt. 25 persons

- \* The team was asked by FSI to consider the freezing temperature and the fish hold temperature to be -35°C and -50°C, respectively.



4) Fishing Machinery

- |   |       |
|---|-------|
| a) Line Hauler  | 1 set |
| b) Line storage and Line storage<br>Box(es) (One Line System) | 1 set |
| c) Line Throwing Machine                                      | 1 set |
| d) Branch Line Reel   | 1 set |
| e) Belt Conveyors   | 1 set |
| f) Guide Roller, Guide Fittings and<br>Guide Pipe             | 1 set |
| g) Hoist  | 1 set |
| h) Others   |       |

5) Navigational and Fish Finding Equipment

- |   |       |
|---|-------|
| a) Gyro Compass with Auto Pilot<br>System | 1 set |
| b) Radar                                  | 1 set |
| c) Direction Finder                       | 1 set |
| d) SSB Radio Telephone                    | 1 set |
| e) Satellite Navigator (NNSS)             | 1 set |
| f) International VHF Radio Telephone      | 1 set |
| g) Public Addressor                       | 1 set |
| h) Search Light                           | 1 set |
| i) SOS Buoy                               | 1 set |
| j) Fish Finder*                           | 1 set |
| k) Weather Facsimile Receiver             | 1 set |
| l) Thermometer for Fish Hold              | 1 set |
| m) Thermometer for Sea Water              | 1 set |
| n) Doppler Log                            | 1 set |
| o) Magnetic Compass                       | 1 set |
| p) Others                                 |       |

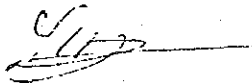
\* Scientific Echo Sounder not to be equipped.

6) Oceanographic Equipment

- |                        |       |
|------------------------|-------|
| a) Oceanographic Winch | 1 set |
| b) Others              |       |

(2) Fishing Gear and Tools for 3 years operation

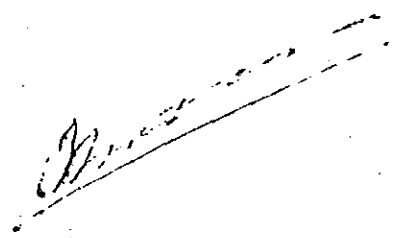
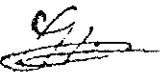
(3) Spare parts for 3 years operation



ANNEX II

Necessary measures to be taken by the Government of India.

- 1) To prompt unloading and/or custom clearance in India of the provided equipment.
- 2) To secure with respect to the supply of the equipment and services under the verified contracts that Japanese nationals shall not be subject to any custom duties, internal taxes and other fiscal levies which may be enforced in India in accordance with the law and regulations concerned of India.
- 3) To accord Japanese nationals whose services may be required in connection with the supply of the equipment and the services under the verified contract such facilities as may be necessary for their entry into India and stay therein for performance of their work.
- 4) To maintain and use properly and effectively the equipments provided by the Grant Aid.
- 5) To bear all the expenses other than those to be borne by the Grant Aid, necessary for the equipment.



## APPENDIX

A perspective plan has been drawn up for the survey of the oceanic resources of the unexplored areas of the EEZ of India by the proposed long liners in a phased manner. The first tuna long liner will be based at Mormugao for the survey of North West Coast of India in the Arabian Sea in 4 phases viz., a preliminary survey, a detailed survey, a test fishing survey and monitoring the resources thereafter. The second longliner will be based at Port Blair in Andaman & Nicobar Islands and survey the EEZ around the Islands. The vessel will also be used for survey of the upper East coast from Vishakapatnam.

The various phases, the region, type of survey, the target resources and the time-frame in which the survey is proposed to be completed over a period of 10 years in respect of two vessels are presented in Tables 1 to 3 and Fig. 1.

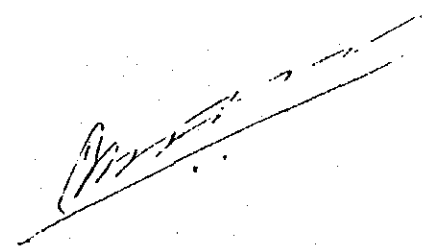


Table 1.

A perspective plan of assessment of oceanic resources of North West coast of Arabian Sea by tuna long liner No. 1 (proposed)

Phase	Base of Operation	Region	Type of Survey	Target Resources	Time Frame
I	Mormugao	North West Coast, Arabian Sea	Preliminary Survey	Oceanic Tunas Yellowfin Skipjack, Bigeye, Billfishes, etc.	1989-1990
II	-do-	-do-	Detailed Survey	-do-	1991-1993
III	-do-	-do-	Test Fishing Survey	-do-	1994-1996
IV	-do-	-do-	Monitoring of Stocks	-do-	1997-1998

Table 2.

A perspective plan of assessment of oceanic resources of Upper East Coast, Bay of Bengal and Andaman & Nicobar Islands by tuna long liner No. 2 (proposed)

Phase	Base of Operation	Region	Type of Survey	Target Resources	Time Frame
I	Port Blair	Andaman & Nicobar Islands	Preliminary Survey	Oceanic Tunas like Yellowfin, Bigeye, Skipjack, Billfishes, etc.	1989
II	Port Blair	-do-	Detailed Survey	-do-	1990-1991
III	Port Blair	-do-	Test Fishing Survey	-do-	1992
IV	Port Blair	-do-	Monitoring Survey	-do-	1993
V	Vishakapatnam	Upper East Coast, Bay of Bengal	Preliminary Survey	-do-	1994
VI	Vishakapatnam	-do-	Detailed Survey	-do-	1995-1996
VII	Vishakapatnam	-do-	Test Fishing Survey	-do-	1997
VIII	Vishakapatnam	-do-	Monitoring Survey	-do-	1998

Table 3.

Annual work plan of two tuna long liners (proposed)

	Long liner No. 1	Long liner No. 2
No. of voyage per year	11	11
Days out at sea per year	220	220
No. of actual fishing days per year	175	175
No. of hooks to be operated per actual fishing day	1000	1000
Type of survey	Tuna long lining	Tuna long lining
Base of operation	Mormugao	1. Port Blair 2. Vishakapatnam
Area of survey	North West coast	1. Andaman & Nicobar Islands 2. North East coast
Phases of survey	Please see Fig. 1 & Table 1	Please see Fig. 1 & Table 2

*C. J. J.*

*[Handwritten signature]*

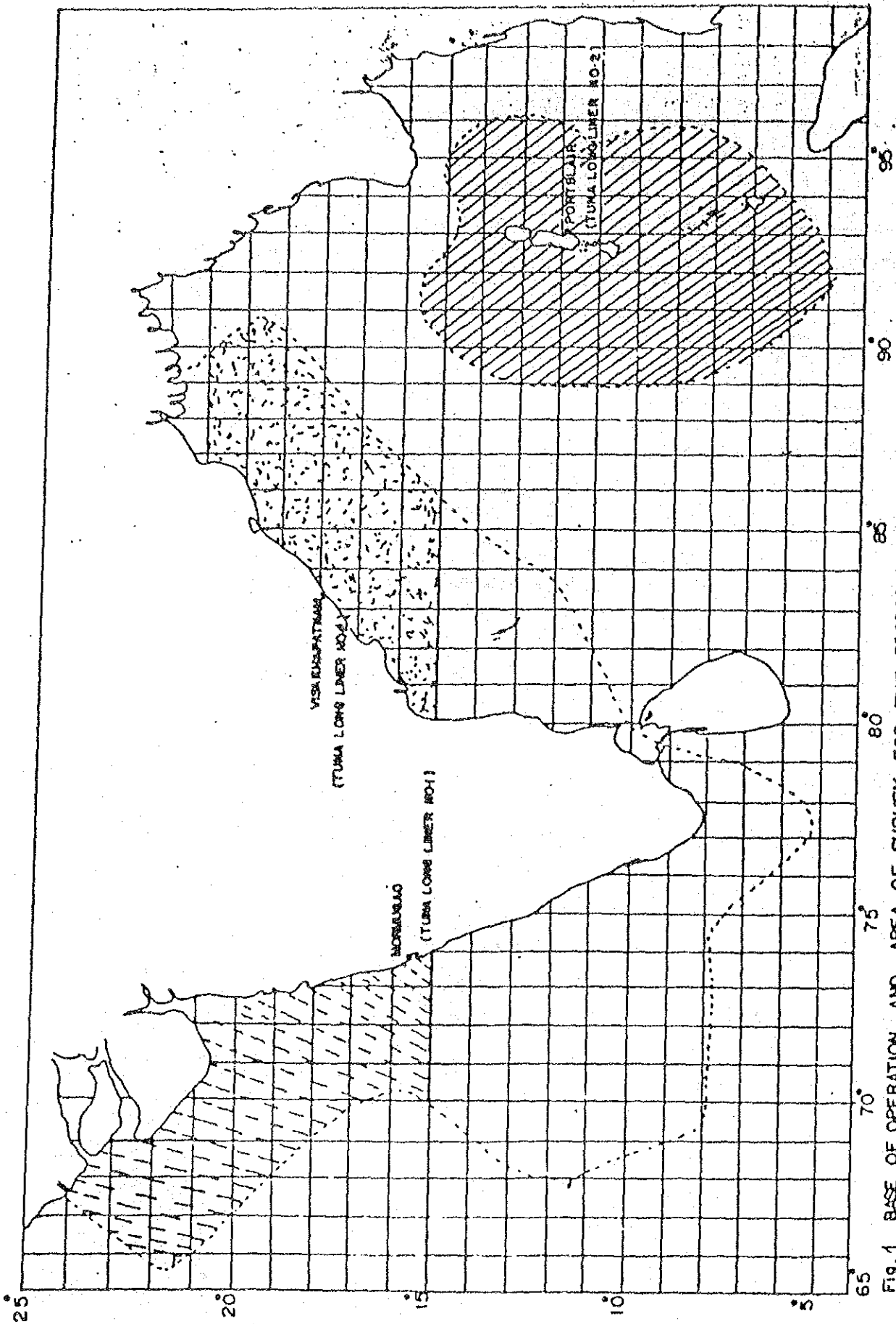


Fig. 1 BASE OF OPERATION AND AREA OF SURVEY FOR THE PROPOSED TUNA LONG LINER NO 1 & 2.

*M. J. ...*

MINUTES OF DISCUSSIONS  
OF  
THE BASIC DESIGN STUDY  
ON  
THE FISHERIES RESOURCES SURVEY PROJECT  
IN  
INDIA

In response to the request of the Government of India for the Grant Aid to the Fishery Resources Survey Project (hereinafter referred to as "the Project"), the Government of Japan decided to conduct a basic design study on the Project and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to India the study team headed by Mr. Masahiro Fujimura, Planning Officer, International Affairs Division, Ocean Fisheries Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries, from October 29 to November 17, 1987.

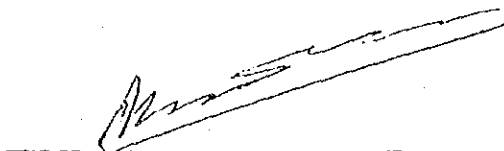
As a result of the study, JICA prepared a draft report and dispatched to India a team headed by Mr. Fujimura, to explain and discuss it from January 17 to January 29, 1988.

Both parties had a series of discussions on the draft report and agreed to recommend to their respective Governments that the major points of understandings reached between them, attached herewith, should be explained towards the realisation of the Project.

Bombay, January 23, 1988



Mr. Masahiro Fujimura  
Leader, Draft Report  
Explanation Team  
Japan International  
Cooperation Agency (JICA)

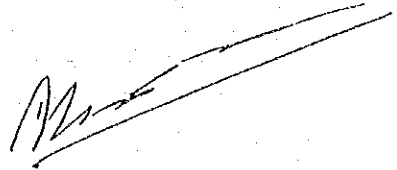
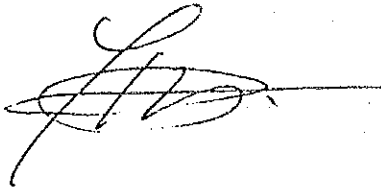


Dr. D. Sudarsan  
Deputy Director General  
Fishery Survey of India  
Department of Agriculture  
Ministry of Agriculture



ATTACHMENT

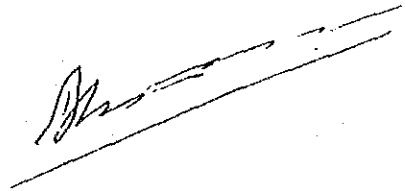
1. The Indian side has agreed in principle on the basic design proposed in the Draft Final Report with minor but appropriate alteration as shown in Annex to be incorporated in the Final Report.
2. The Indian side has understood Japan's Grant Aid System and confirmed that the necessary measures will be taken by the India side as shown in ANNEX II of the Minutes of Discussions on the Project signed on November 11, 1987, on condition that the Grant Aid by the Government of Japan be extended to the Project.
3. The Indian side ensured the provision of the necessary budget for the effective operation and maintenance of the equipment in line with the adequate number of Indian personnel with sufficient knowledge, technique and experience.
4. The Final Report (10 copies in English) on the Project will be submitted to the Indian side by the end of March, 1988.



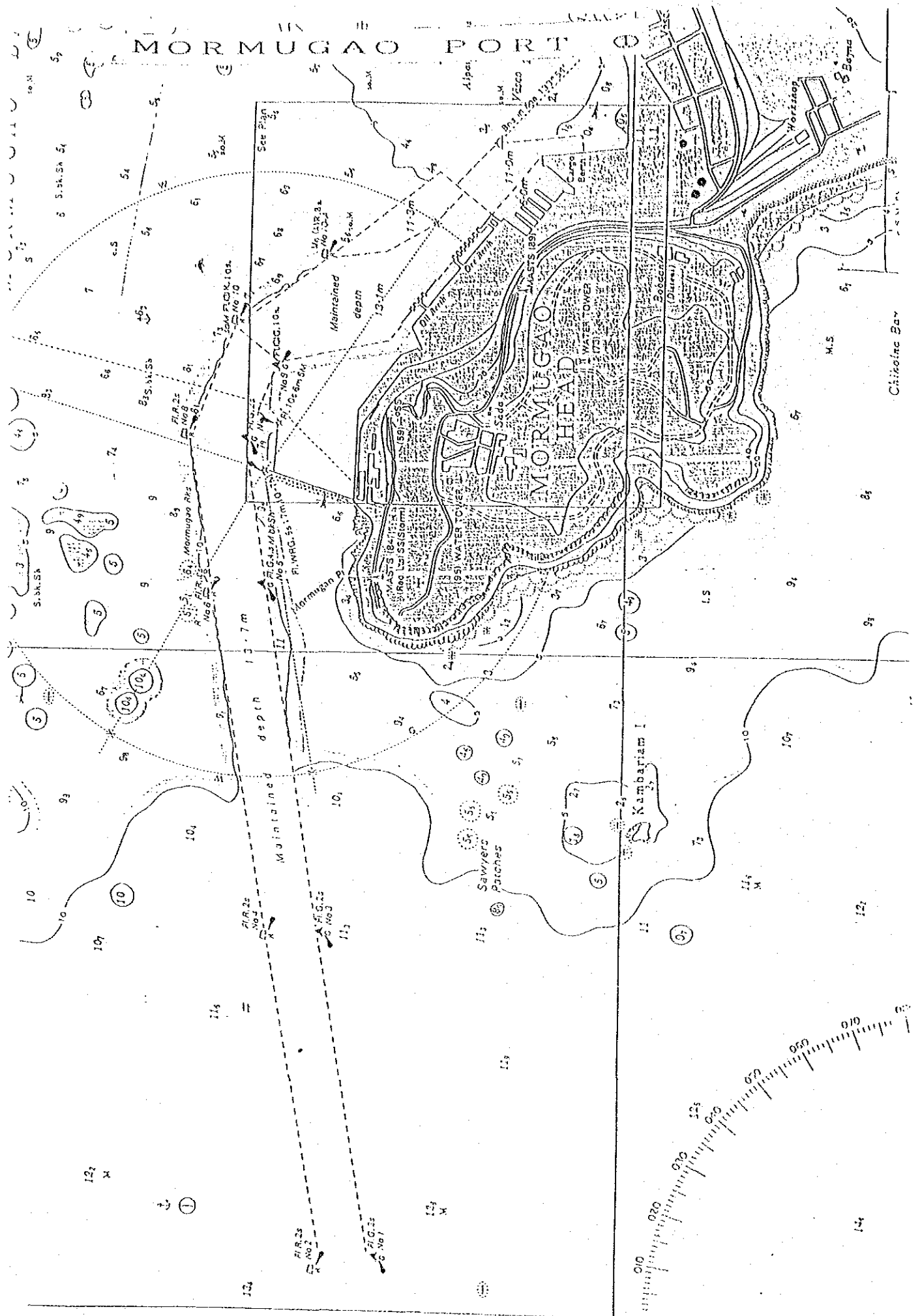
ANNEX

The major modifications agreed by both parties are as follows:-

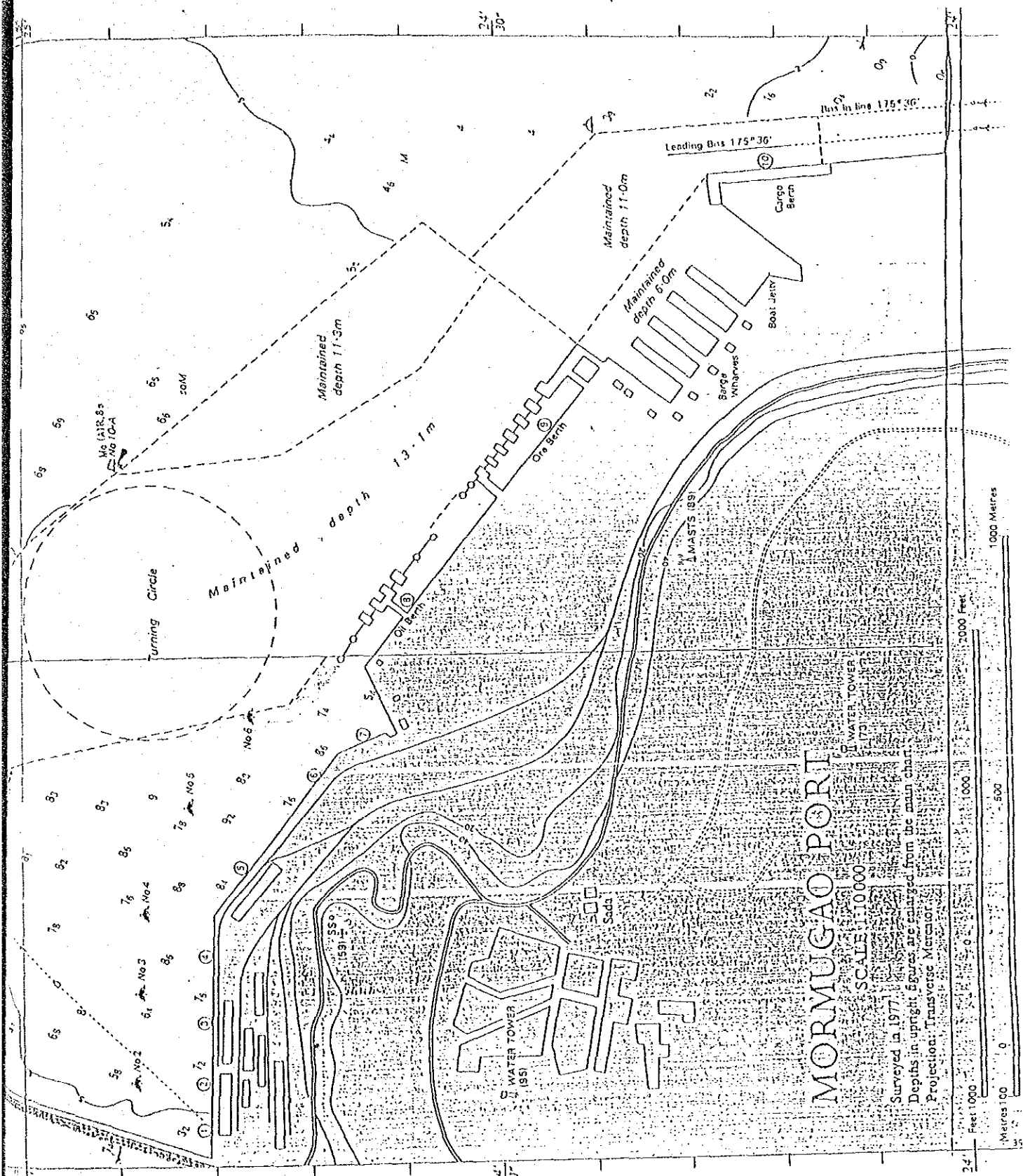
1. Freezing temperature to be  $-55^{\circ}\text{C}$  and fish hold temperature to be  $-50^{\circ}\text{C}$  will be incorporated in the principal particulars for the basic design in the Final Report.
2. The specification of the tuna long liner are subject to ratification by the Government of India.



# MORMUGAO PORT



# MORMUGAO PORT ②



**MORMUGAO PORT**

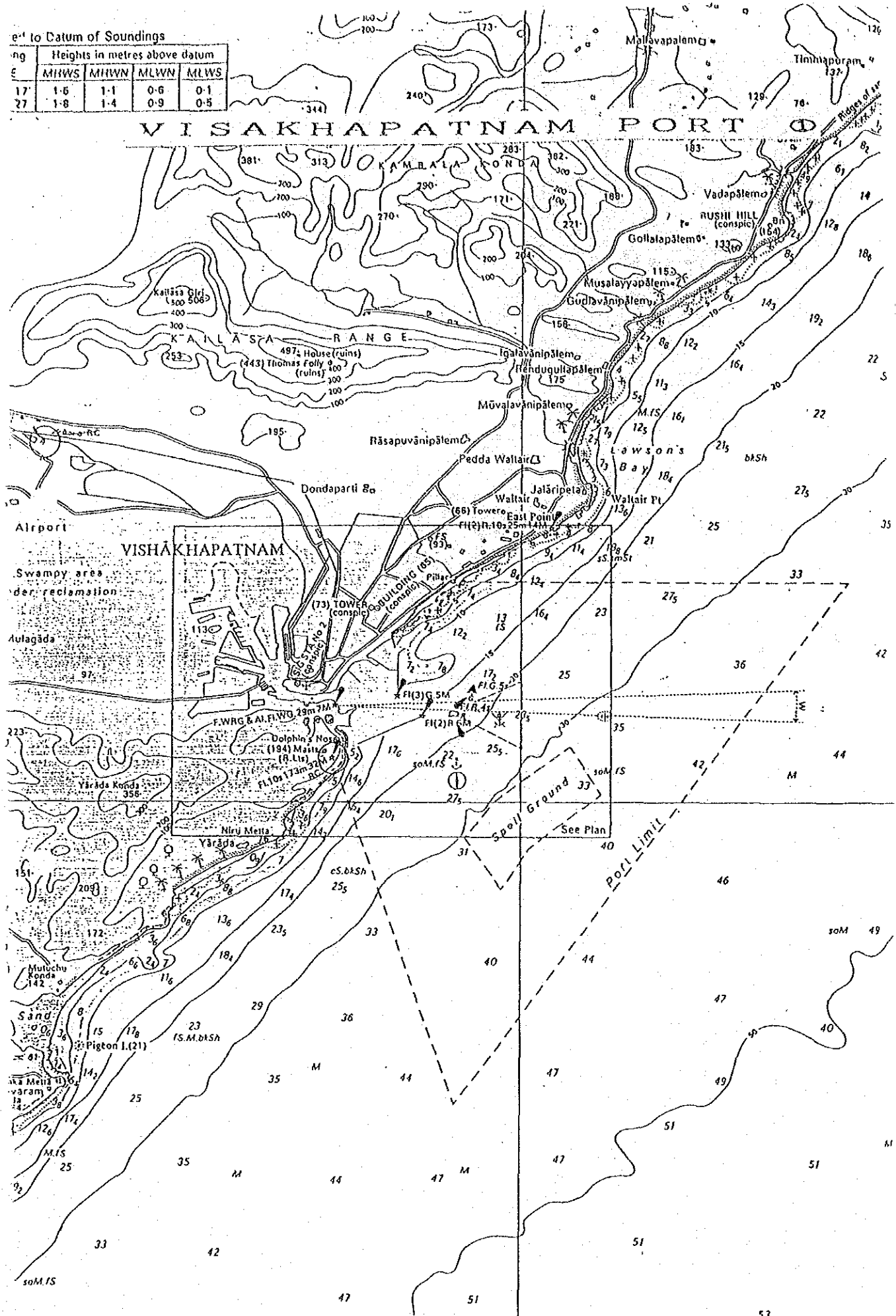
SCALE: 1:10000

Surveyed in 1977.  
 Depths in upright figures are enlarged from the main chart.  
 Projection: Transverse Mercator.

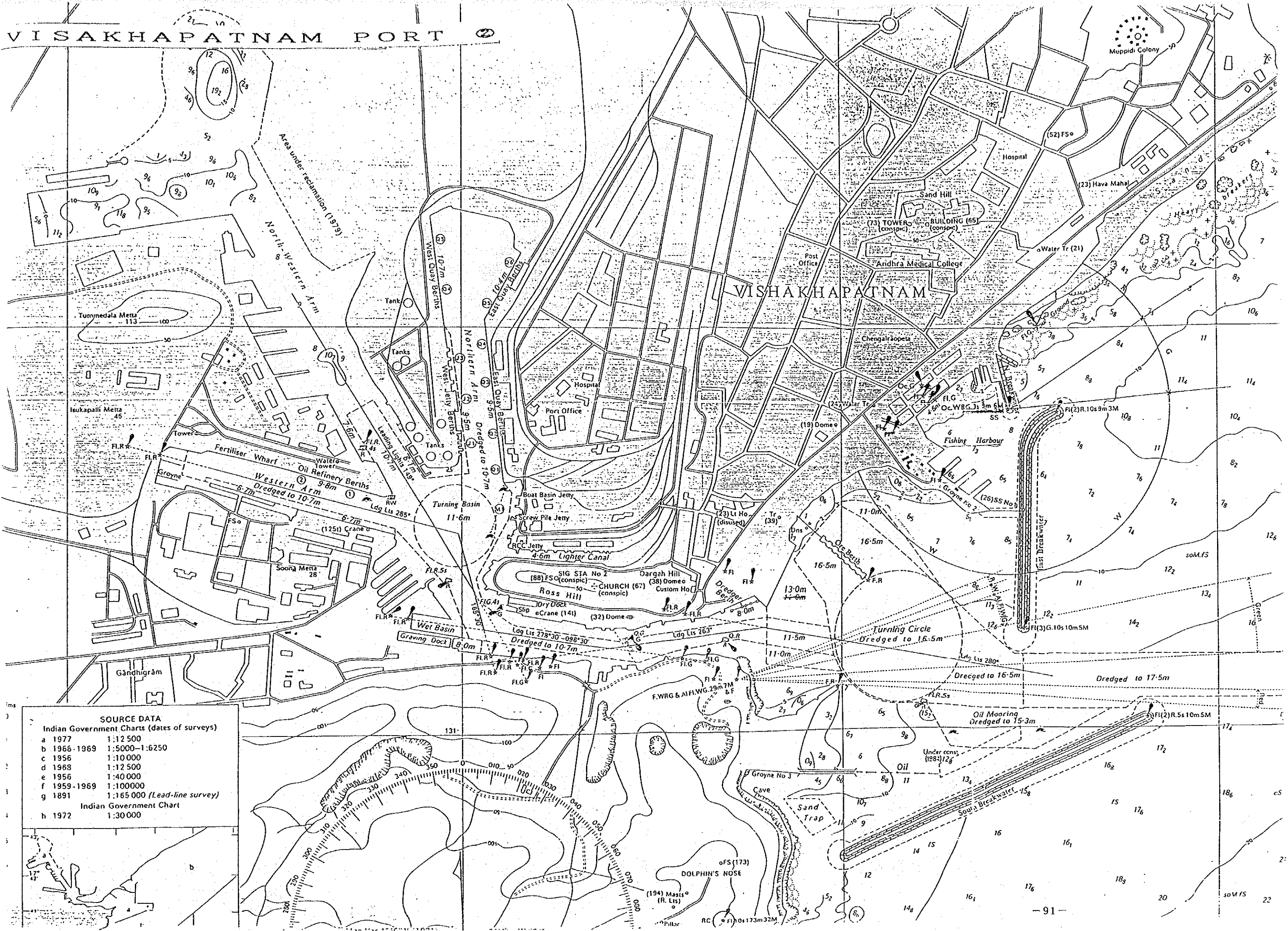
Height to Datum of Soundings

Height	Heights in metres above datum			
	MHW	MHWN	MLWN	MLWS
17	1.5	1.1	0.6	0.1
27	1.8	1.4	0.9	0.5

# VISHAKHAPATNAM PORT

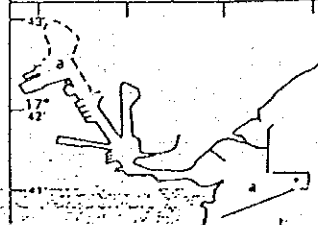


# VISHAKHAPATNAM PORT



**SOURCE DATA**  
Indian Government Charts (dates of surveys)

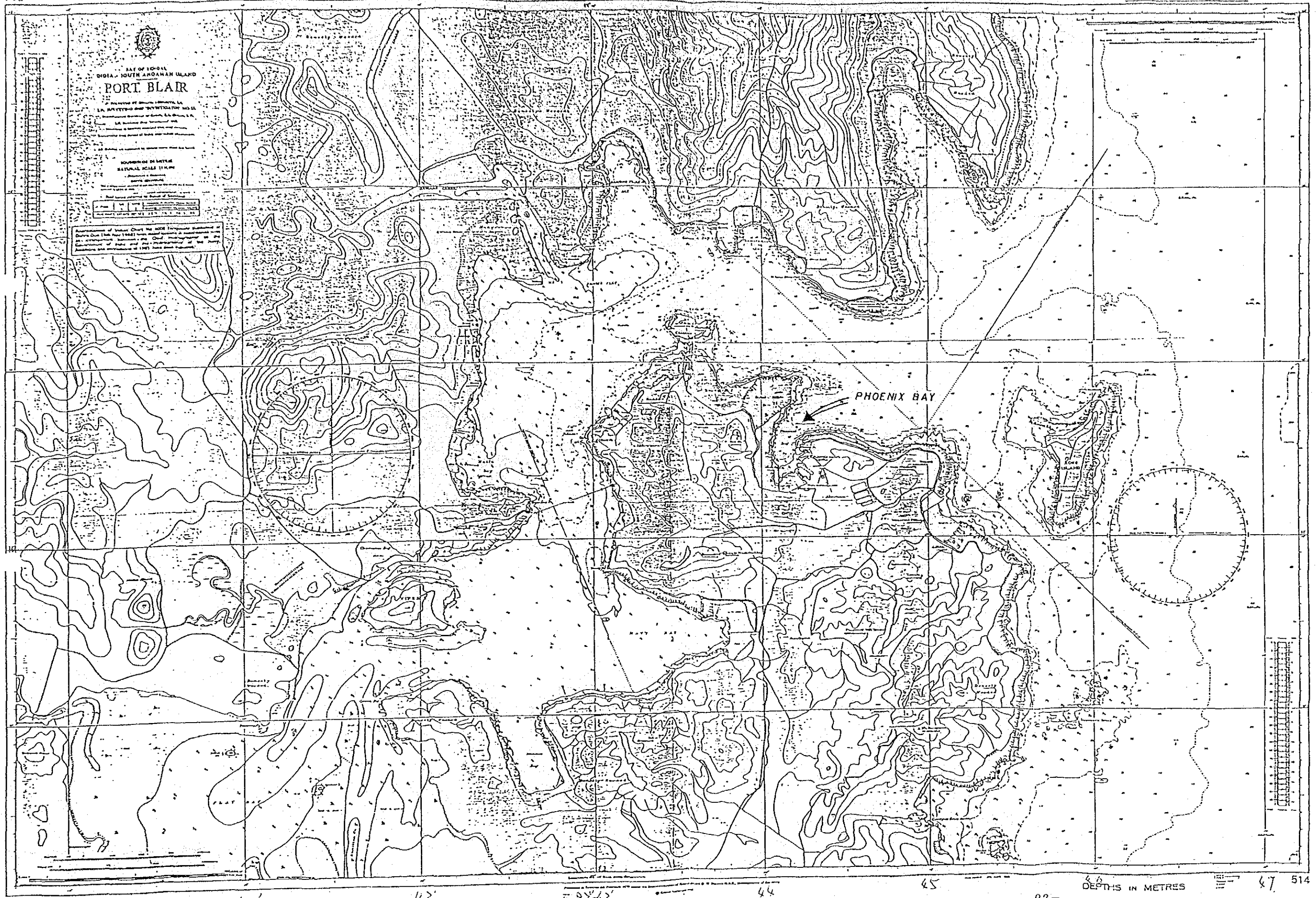
a	1977	1:12 500
b	1966-1969	1:5000-1:6250
c	1956	1:10 000
d	1968	1:12 500
e	1956	1:40 000
f	1959-1969	1:100 000
g	1891	1:165 000 (Lead-line survey)
Indian Government Chart		
h	1972	1:30 000



# PORT BLAIR PORT

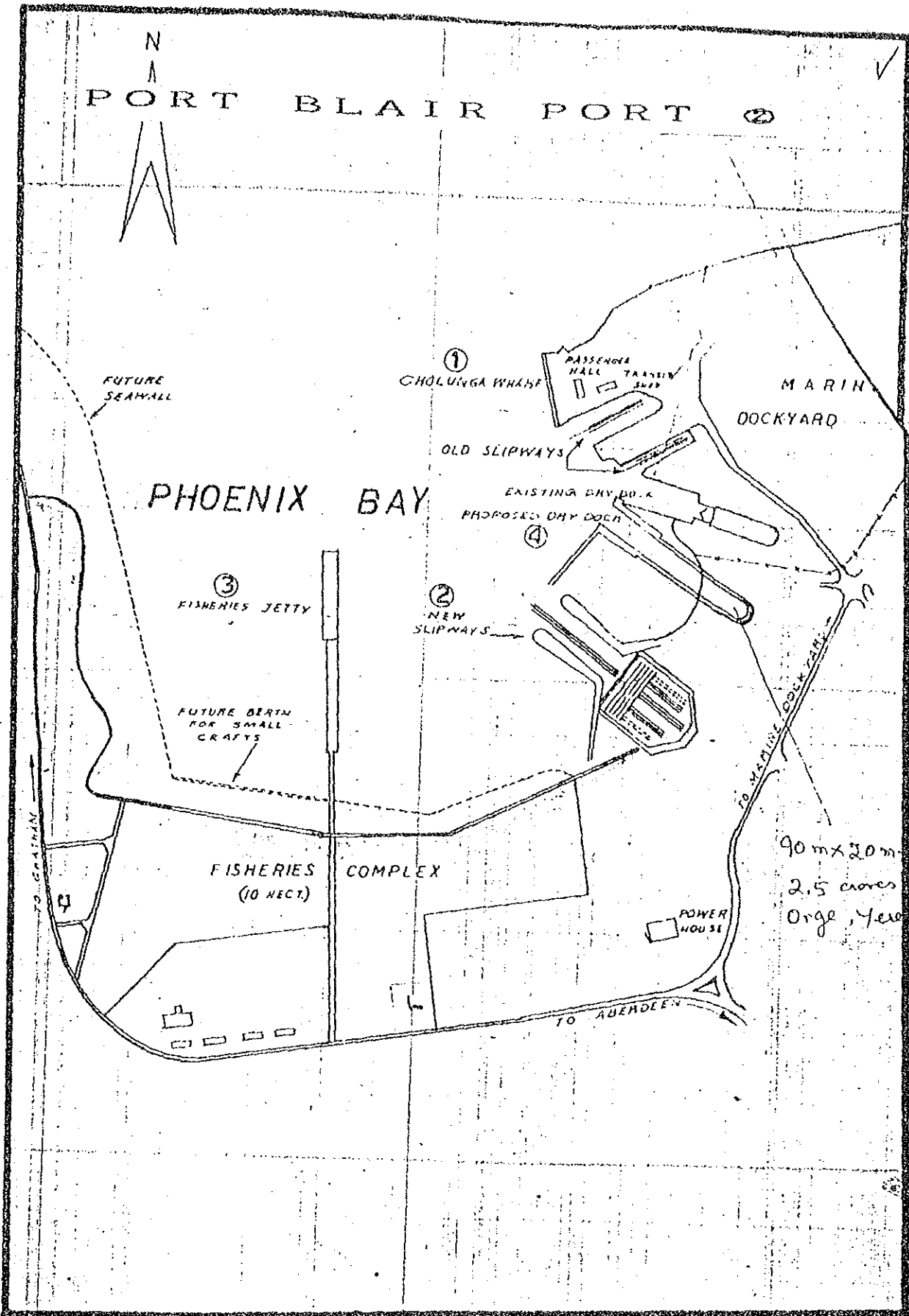
DEPTHS IN METRES

513

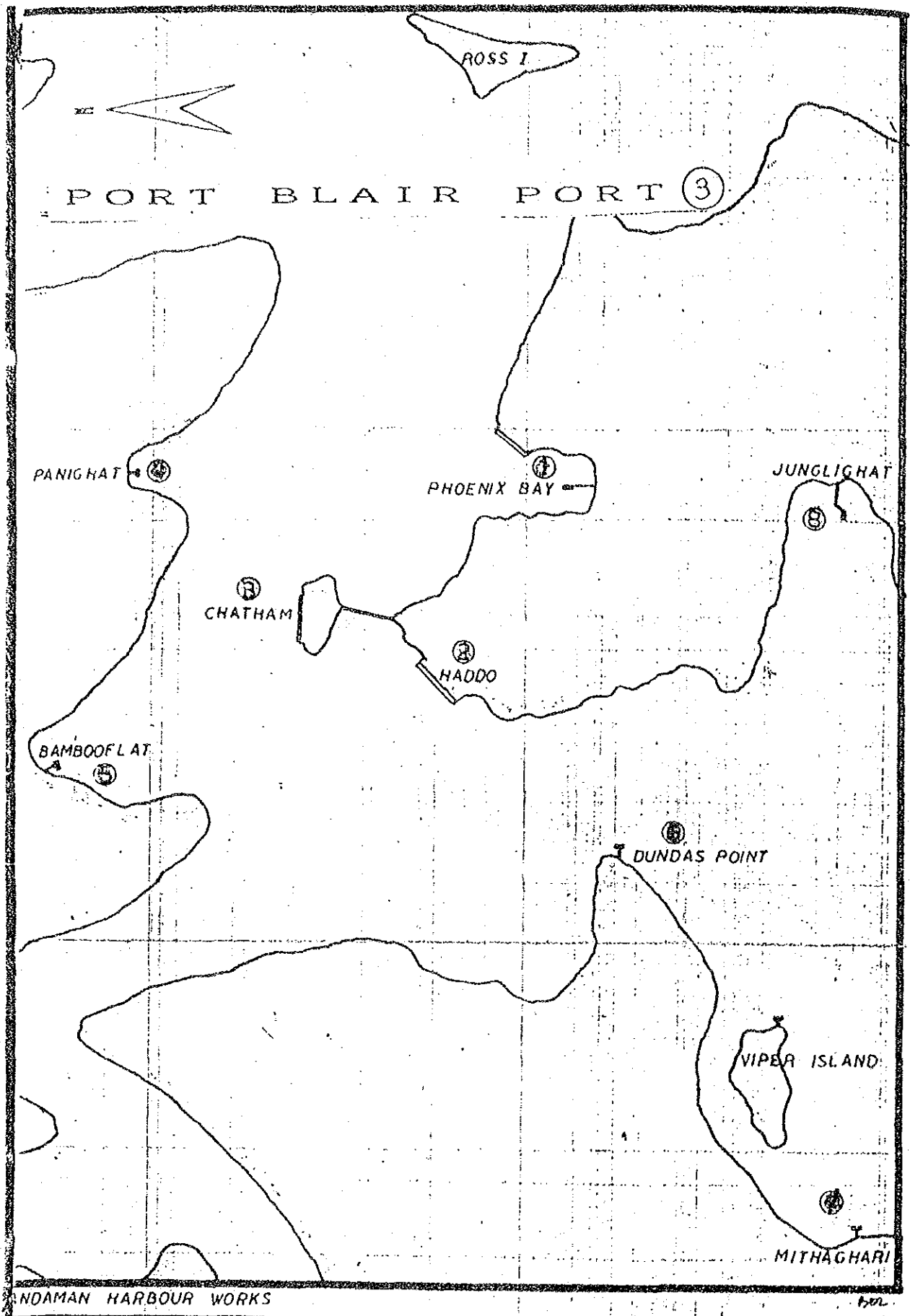




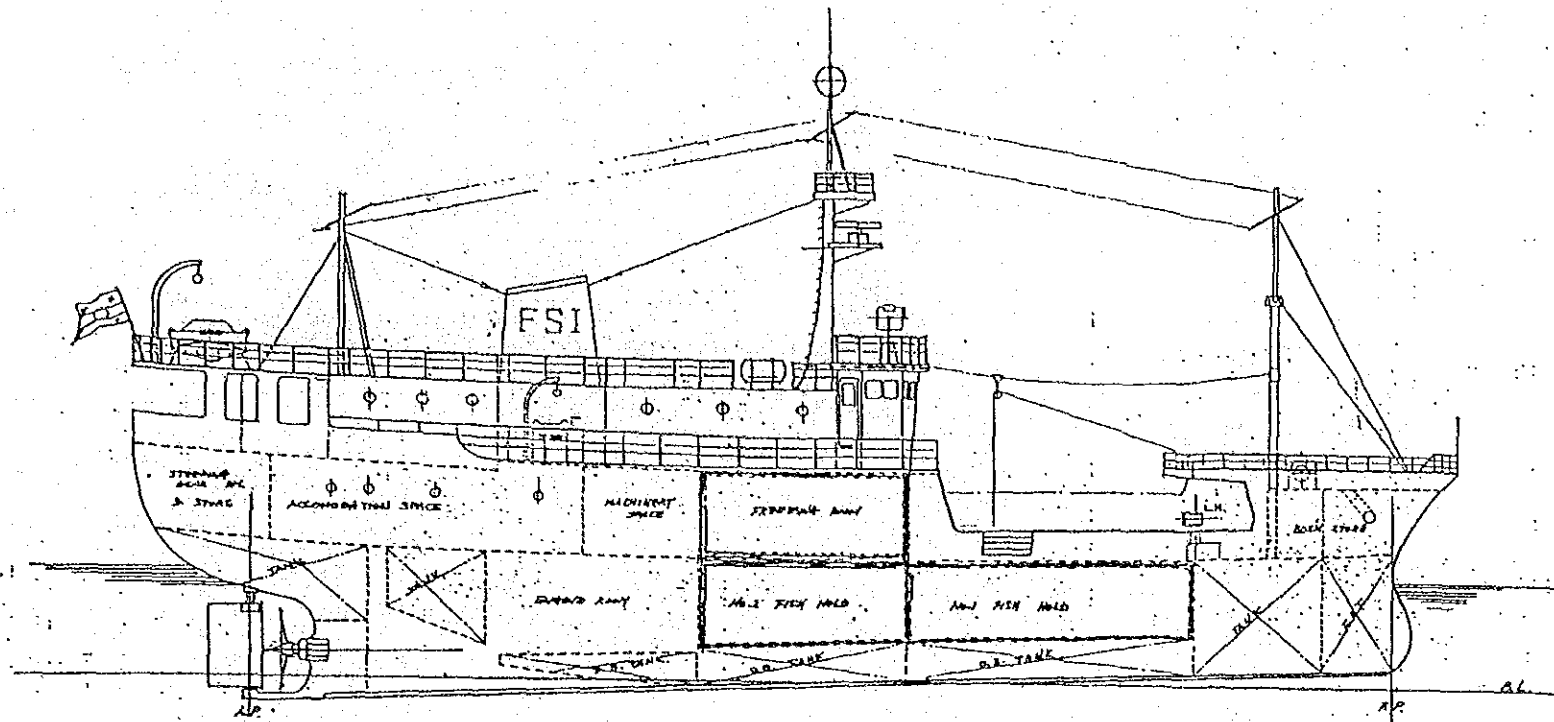




ANDAMAN HARBOUR WORKS



ANDAMAN HARBOUR WORKS

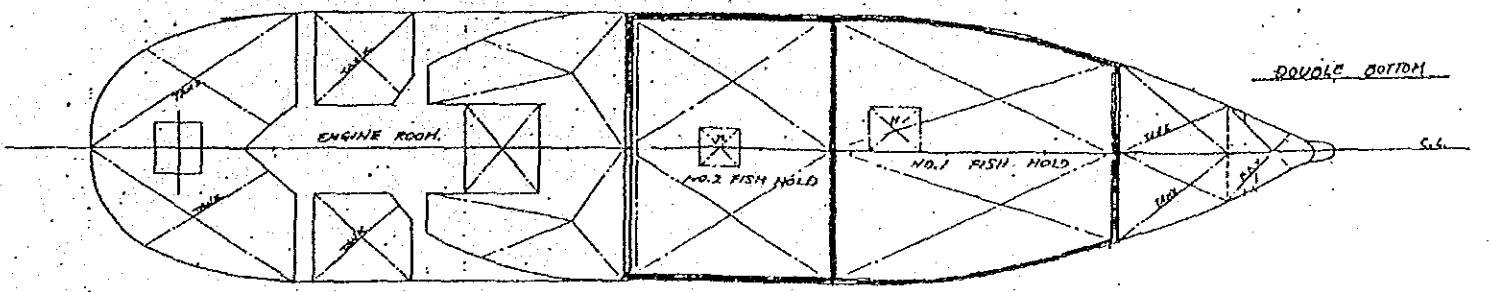
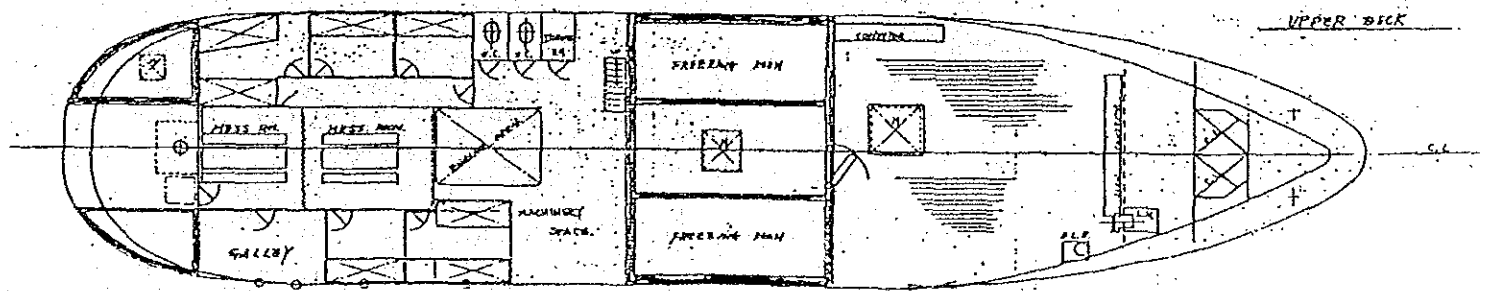
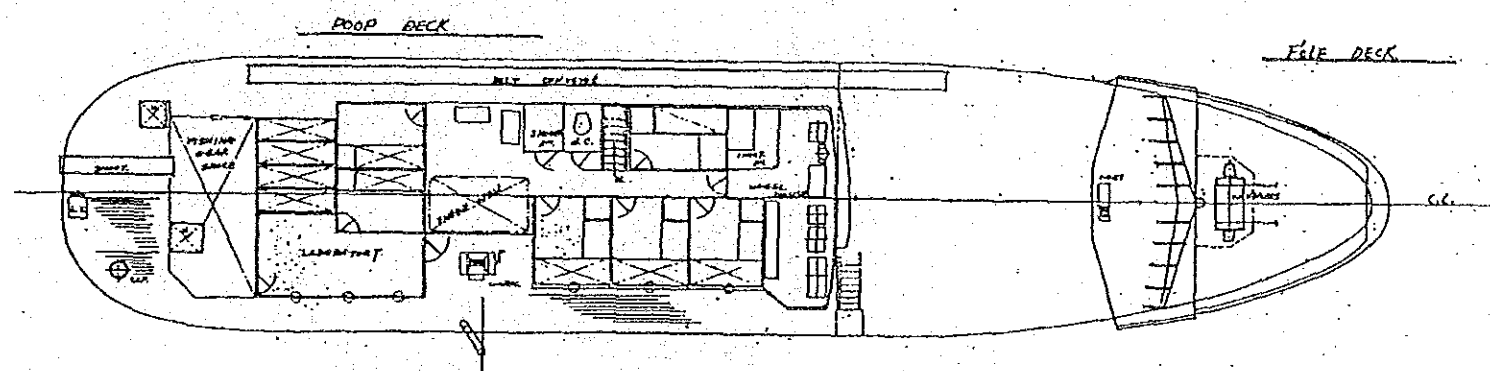


Principal dimensions

Length, over all	abt 35.00 m
Length, between perpendiculars	31.00 m
Breadth, moulded	7.40 m
Depth, moulded	3.20 m
Designed load draft	2.50 m

Capacity and tonnage

Capacity:	
Fish hold (bale)	abt 110.0 m <sup>3</sup>
Freezing room (crate)	55.0 m <sup>3</sup>
Preparation room (bale)	22.0 m <sup>3</sup>
Fuel oil tanks (100L)	120.0 m <sup>3</sup>
Fresh water tanks (100L)	50 - 60 m <sup>3</sup>
Gross tonnage (International regulation 1959)	abt 290 GT



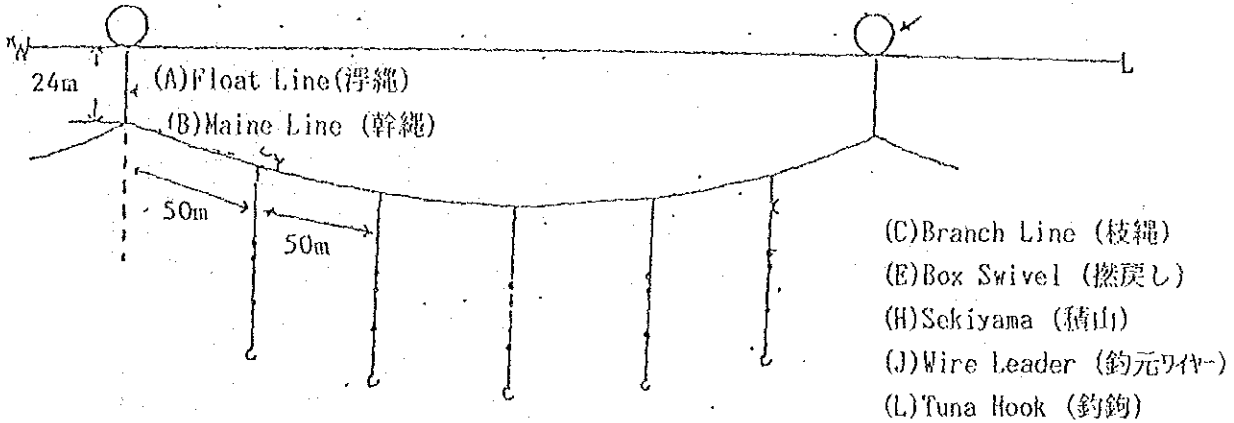
<u>GENERAL ARRANGEMENT</u>	
<u>FISHERIES RESOURCE</u>	
<u>TURKEY VESSEL</u>	
NICHIRO GYOGYO KAISHA, LTD. (INCORPORATED IN JAPAN)	
SCALE	1/100
DATE	10TH JAN. 1988
CHEF OF DEPT	<i>[Signature]</i>
CHECKED BY	<i>[Signature]</i>
DRAWN BY	T. NISHIBASHI



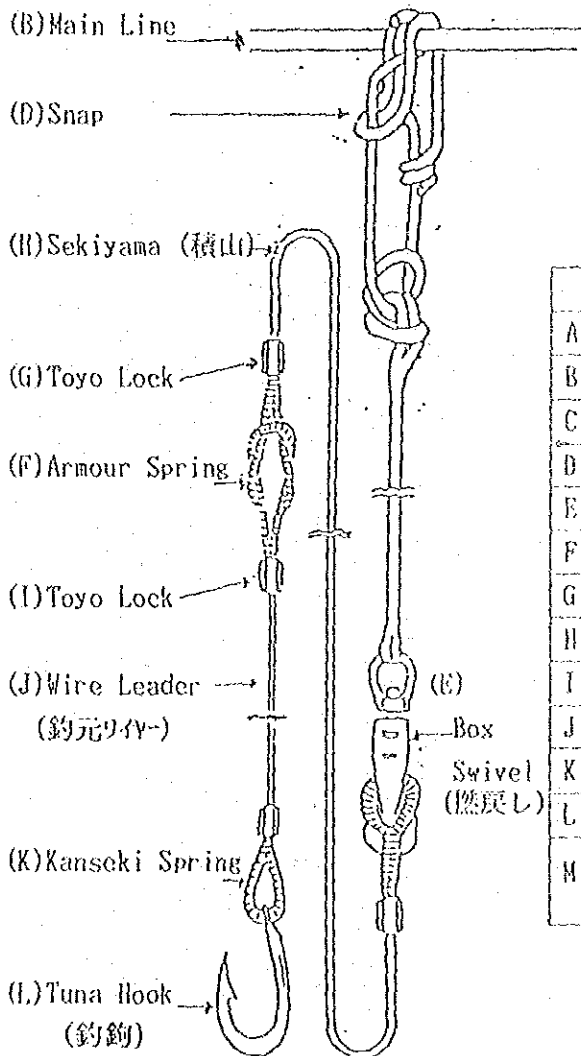
TUNA LONG LINE ARRANGMENT (まぐる延縄仕立仕様)

TUNA LONG LINE (まぐる延縄の投縄図)

Float Polyethylene (浮子玉)



DETAILS OF BRANCH LINE (枝縄)



Operation Plan (計画仕様)

Nos of Hachi (釣鉢) 200Hachi (60,000M)

Nos of Hook (釣鉢) 1,000 PCS (200×5)

	Good	Standard	
A	Float Line	Tetoron 6.7φ×24M	1PCS
B	Main Line	Tetoron 6.7φ×50M	6PCS
C	Branch Line	Tetoron 4.5φ×20M	5PCS
D	Snap	L type	5PCS
E	Box Swivel	Stainless No.9	5PCS
F	Armour Spring	For Sekiyama	10PCS
G	Toyo Lock	For Sekiyama No.4	10PCS
H	Sekiyama	No30×4×3 12M	5PCS
I	Toyo Lock	For Wire Leader No.2	10PCS
J	Wire Leader	No30×4×3 2.5M	5PCS
K	Kanseki Spring	For Wire Leader No1	5PCS
L	Tuna Hook	No3.6 Sun with ring	5PCS
M	Float Polyethylene	300φ with Net of Snap	1set

日本の商業マングロ延続船主要目表

船 号	GT	L <sub>r</sub> × B × D	CN L <sub>r</sub> B.D	L <sub>r</sub> B	L <sub>r</sub> D	B D	GT CN	延			荷			造			配			状		
								ΔL	Δ/CN	KG	KG/D	ΔF	ΔF/CN	C <sub>b</sub>	KG	KG/D	CM	ΔF	ΔF/CN	C <sub>b</sub>	KG	KG/D
1	13438	32.10×7.02×2.68	6039	4.57	11.99	2.62	0.223	23496	0.389	283	1.056	36885	0.644	0.714	2.34	0.873	1.20	12428	6962	15.83	13525	1270
2	13447	32.22×7.00×2.68	6045	4.60	12.02	2.61	0.222	23591	0.395	260	0.970	40415	0.669	0.696	2.26	0.843	1.13	14882	7913	12.56	15238	1135
3	13462	32.10×7.02×2.68	6039	4.57	11.98	2.62	0.223	23959	0.397	251	0.937	42454	0.703	0.760	2.14	0.799	1.14	13684	6562	16.36	19240 (+4240)	1123
4	13477	32.10×7.02×2.69	6039	4.57	11.98	2.62	0.223	23332	0.386	277	1.034	38466	0.637	0.700	2.32	0.866	0.97	12831	7255	15.77	(-4600)	1270
5	17435	36.80×7.50×3.10	8570	4.91	11.89	2.42	0.227	33179	0.387	330	1.066	51481	0.601	0.727	2.58	0.881	0.85	21971	9204	24.22	19508 (+5084)	1678
6	19423	37.01×7.60×3.05	8579	4.87	12.13	2.50	0.228	34802	0.406	331	1.086	53651	0.625	0.680	2.80	0.917	0.62	22673	7784	42.96	16387 (+8829)	1640
7	19492	36.25×7.50×3.15	8564	4.83	11.51	2.38	0.228	31091	0.363	353	1.120	55490	0.648	0.707	2.70	0.857	0.81	22180	7152	32.71	15767 (+7213)	1526 (+495)
8	19499	36.25×7.50×3.15	8564	4.83	11.51	2.38	0.228	33154	0.387	328	1.041	57041	0.666	0.707	2.63	0.835	0.69	21009	77.80	30.80	15900 (+6815)	1484
9	22444	38.75×8.00×3.20	9920	4.84	12.11	2.50	0.226	39240	0.396	346	1.080	65316	0.658	0.685	2.39	0.902	0.74	25820	130.97	30.01	17101 (+7186)	1874
10	25423	40.65×8.00×3.45	11219	5.11	11.85	2.32	0.226	40081	0.357	354	1.025	72426	0.646	0.682	2.84	0.824	0.74	30254	119.55	29.02	20572 (+10696)	1990 (+390)
11	25494	40.60×8.10×3.40	11181	5.01	11.84	2.38	0.228	39039	0.349	349	1.026	71067	0.636	0.678	2.77	0.815	0.98	20058	82.48	36.88	25072 (+4915)	2270
12	28294	43.20×8.50×3.55	13036	5.08	12.17	2.39	0.217	44481	0.341	367	1.034	80532	0.618	0.659	2.94	0.827	0.86	40592	90.30	36.54	23389 (+7872)	2140 (+324)
13	28420	43.10×8.40×3.59	12997	5.13	12.01	2.34	0.219	43134	0.332	357	0.994	79289	0.610	0.658	2.94	0.819	0.86	36407	112.71	42.32	24145	2314
14	28459	42.22×8.40×3.55	12950	5.03	11.89	2.37	0.226	45616	0.362	381	1.072	81383	0.646	0.681	3.03	0.854	0.82	34772	136.26	34.70	23217 (+11808)	2220 (+410)
15	29916	44.13×8.50×3.65	13852	5.13	12.09	2.36	0.216	45890	0.331	365	1.000	84675	0.609	0.655	2.89	0.792	0.90	41816	97.74	33.50	24552 (+10756)	2346
16	29918	44.15×8.50×3.65	13859	5.13	12.09	2.36	0.216	47041	0.339	392	1.074	85514	0.617	0.655	3.04	0.833	0.85	39130	96.20	33.20	24163 (+11900)	2526
17	29920	44.15×8.60×3.65	13859	5.13	12.09	2.36	0.216	46254	0.334	388	1.063	85034	0.614	0.655	3.01	0.825	0.88	38370	117.00	9.550	23849 (+1900)	2526
18	29924	43.95×8.60×3.65	13796	5.11	12.04	2.36	0.217	47559	0.345	394	1.079	86131	0.624	0.660	3.16	0.866	0.75	38440	97.00	33.50	24891 (+10744)	2618 (+639)
19	29928	43.86×8.60×3.55	13235	5.16	12.35	2.39	0.226	45342	0.343	371	1.045	85010	0.642	0.695	2.90	0.817	0.94	37171	138.59	37.28	25961 (+9511)	2372
20	29933	44.13×8.50×3.65	13852	5.13	12.09	2.36	0.216	45386	0.328	367	1.005	83089	0.600	0.653	2.91	0.797	0.88	40822	97.74	34.31	23926	2398

日本の商業マクログロ延繩船主要目表

船名 号	GT	LR × B × D	CN LR, BD	L <sub>B</sub> / B	L <sub>D</sub> / D	L <sub>B</sub> / D	F <sub>1</sub>		F <sub>2</sub>		K				R				FOT	FWT		
							ΔL	ΔL/CN	RG	KG/D	ΔF	ΔF/CN	Cb	KG	KG/D	GM	R	A			K <sub>1</sub>	K <sub>2</sub>
21	299.40	4.88×8.30×3.65	13257	5.27	11.99	2.27	0.226	405.98	0.351	3.80	1.041	84.863	0.640	0.581	3.03	0.830	0.72	400.37	147.43	38.70	247.64	2304
22	299.40	4.95×8.60×3.65	13776	5.11	12.04	2.36	0.217	453.89	0.329	3.83	1.049	85.790	0.623	0.559	2.98	0.816	0.93	370.00	73.50	97.20	260.83 (+83.9)	2646
23	299.40	4.415×8.60×3.65	13659	5.13	12.10	2.36	0.216	469.93	0.339	3.89	1.066	85.466	0.617	0.655	3.00	0.822	0.89	382.30	98.00	90.50	239.74 (+102.34)	2526
24	299.42	4.318×8.50×3.61	13250	5.08	11.96	2.35	0.226	462.36	0.349	3.68	1.019	83.370	0.629	0.680	2.93	0.812	0.84	403.37	94.86	34.90	245.06	2375
25	299.46	4.415×8.60×3.65	13859	5.13	12.10	2.36	0.216	437.97	0.316	3.82	1.047	85.672	0.618	-	-	-	0.91	383.40	114.20	77.50	238.35 (+119.00)	2526
26	299.48	4.415×8.60×3.65	13859	5.13	12.10	2.36	0.216	465.78	0.336	3.91	1.071	85.416	0.616	0.655	3.03	0.830	0.86	371.58	101.16	100.15	257.57 (+105.8)	2525
27	299.49	4.650×8.40×3.53	13225	5.31	12.63	2.38	0.226	454.71	0.344	3.71	1.051	85.098	0.643	0.680	2.92	0.827	0.82	382.77	89.36	86.27	255.4 (+108.0)	2326
28	299.57	4.415×8.60×3.60	13669	5.13	12.26	2.39	0.219	475.73	0.340	3.74	1.025	85.848	0.628	0.658	2.93	0.803	0.96	383.10	101.40	89.50	238.35 (+119.00)	2562
29	299.57	4.335×8.50×3.60	13259	5.10	12.04	2.36	0.226	475.30	0.338	3.81	1.058	86.490	0.652	0.684	3.06	0.849	0.83	438.48	147.59	38.87	257.07 (+124.28)	2562
30	299.60	4.378×8.30×3.65	13257	5.31	12.07	2.27	0.226	463.43	0.350	3.78	1.036	84.645	0.639	0.701	3.02	0.827	0.73	400.35	147.82	27.10 (+123.12)	247.64 (+123.12)	2304
31	299.65	4.415×8.60×3.65	13852	5.13	12.09	2.36	0.216	457.41	0.330	3.61	0.989	84.525	0.610	0.655	2.87	0.786	0.92	423.18	97.74	54.27 (+108.0)	245.52 (+108.0)	2346
32	299.69	4.363×8.50×3.57	13240	5.13	12.22	2.30	0.226	468.90	0.346	3.93	1.105	85.210	0.644	0.702	3.02	0.846	0.85	400.37	80.04	46.73	248.40 (+131.0)	2526
33	299.72	4.367×8.30×3.65	13230	5.24	11.90	2.27	0.227	457.75	0.346	3.84	1.052	84.040	0.635	0.680	3.05	0.836	0.71	400.57	147.43	38.70	247.64 (+123.12)	2304
34	299.85	4.384×8.50×3.55	13229	5.16	12.35	2.39	0.227	471.35	0.356	3.84	1.080	85.985	0.650	0.695	2.96	0.879	0.89	364.28	129.93	46.50 (+119.8)	274.31 (+119.8)	2484
35	299.91	4.345×8.50×3.57	13246	5.11	12.17	2.38	0.226	477.03	0.360	3.91	1.095	85.684	0.647	0.695	3.11	0.833	0.80	404.86	162.77	36.20	255.47	2308
36	299.99	4.510×8.45×3.62	13796	5.34	12.46	2.33	0.217	462.43	0.335	3.25	0.899	84.902	0.615	0.657	2.77	0.764	1.11	392.56	129.68	53.70 (+107.47)	255.36 (+107.47)	2200
37	314.11	4.480×8.60×3.60	13870	5.21	12.44	2.39	0.226	486.29	0.336	3.86	1.072	87.892	0.634	0.679	2.98	0.828	0.86	396.97	120.52	91.06 (+103.56)	270.14 (+103.56)	2292
38	314.15	4.495×8.60×3.60	13917	5.23	12.49	2.39	0.226	498.52	0.358	4.00	1.111	84.869	0.610	0.689	3.08	0.856	0.92	360.17	122.00	86.53	318.12	2446 (+42.0)
39	314.52	4.495×8.60×3.60	13917	5.23	12.49	2.39	0.226	510.00	0.366	4.11	1.142	93.2	0.670	0.721	3.08	0.856	0.85	380.50	112.68	87.98 (+107.56)	311.06 (+107.56)	2330
40	314.52	4.496×8.60×3.60	13920	5.23	12.49	2.39	0.226	503.79	0.362	3.77	1.046	79.534	0.571	0.669	3.06	0.851	0.72	458.88	164.42	63.53	250.12 (+107.56)	2522
41	314.59	4.495×8.60×3.60	13917	5.23	12.49	2.39	0.226	507.24	0.364	4.03	1.119	90.291	0.649	0.701	3.08	0.855	0.92	371.84	97.16	102.74 (+107.56)	272.82 (+107.56)	2714 (+35.0)
42	314.61	4.615×8.60×3.65	14486	5.37	12.64	2.36	0.217	476.55	0.329	3.86	1.058	89.952	0.621	0.658	3.13	0.836	0.82	417.90	136.65	47.90 (+107.56)	258.02 (+107.56)	2400
43	314.65	4.495×8.60×3.60	13917	5.23	12.49	2.39	0.226	504.22	0.362	4.07	1.131	89.652	0.644	0.700	3.27	0.908	0.72	394.77	127.92	90.12 (+107.56)	251.77 (+107.56)	2324 (+33.0)
44	314.72	4.615×8.60×3.65	14486	5.37	12.64	2.36	0.217	488.34	0.337	3.83	1.049	90.441	0.624	0.659	3.03	0.830	0.92	408.78	92.40	47.86 (+107.42)	270.98 (+107.42)	2400

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LITERATURE AND DOCUMENTS RELATING TO THE STUDY

Field	Title of information and material	Issuing Authority	Date of Issue	Nature	Summary
Fisheries Resources	FISHERY RESOURCES OF THE INDIAN ECONOMIC ZONE	UNDP/FAO			
"	RE-STUDY OF DEVELOPMENT CONDITION OF FISHERIES RESOURCES IN THE INDIAN OCEAN	FAO IOFC	5, 1977		
Fishing	Information regarding catch by experimental vessels in Indian waters		5, 1983		Letter from V M SHAH, EXPORT HOUSE MANAGER, RALLIS INDIA LIMITED to our Company
Fishing Policy	REPORT to the GOVT. OF INDIA		1971		
Fisheries Resources	INDIAN FISHERY RESOURCES	IMPEX INTER-NATIONAL INDIA	4, 1983		
Operation Records	EXPLORATORY FISHERIES PROJECT GOVT. OF INDIA	GOVT. of Poland	1977		Operation record of Polish vessel
Fishery Project	EXPLORATORY FISHERIES PROJECT VOL. I NO. 3		5, 1979		
Survey Records	Records of 43th Navigation of KOYOMARU, 1968 (North-West Indian Ocean)		1, 1969		
Fishing Survey	Soviet Fishing Magazine				"Possibility of demersal shrimp fishing on continental shelf of South Indian Peninsula", "Some characters relating to the ecology of catfish in North-West Indian Ocean", "Industrial fisheries resources and other resources in Indian Ocean", "Results of industrial scale experimental operation", "Distribution of animal plankton in West Indian Ocean in Monsoon season"



Field	Title of information and material	Issuing Authority	Date of Issue	Nature	Summary
Fisheries Resources	CMFRI bulletin 37 CEPHALOPOD BIOLOGICS, FISHERIES AND RESOURCES OF THE EXCLUSIVE ECONOMIC ZONE OF INDIA	CMFRI	6, 1985	Original	Research on Fisheries Resources in Indian EEZ
	Annual Report 1986/87	MINISTRY OF AGRICULTURE (GOVT. OF INDIA)	-	Copy	Annual Report on Indian Fisheries
	Annual Report 1985/86	-ditto-	-	Original	-ditto-
Vessel Design	Rules on Steel Made Vessel 1987	NK	8, 1987	-ditto-	
"	Inspection Procedure for Rules on Steel Made Vessel 1987	NK	8, 1987	-ditto-	
"	Standard of Steel Made Fishing Vessel Structure 1982	Fishing Vessel Association	10, 1982	-ditto-	
"	Operation Manual for Fishing Vessel Refrigerating Equipment, Appendix Explanation, 2, 1980	-ditto-	2, 1980	-ditto-	
"	International Convention for Safety of Human Life on Sea, 1983	Foundation for Promotion of Ship Building in Japan	8, 1985	-ditto-	

Field	Title of information and material	Issuing Authority	Date of Issue	Nature	Summary
Fishing Survey	Report of Study of Indian Fisheries Condition	Nichiro Gyogyo Ltd.	9, 1984	Original	Company Report on Indian Fisheries Condition
"	Preliminary Study of the Item of Grant Aid for India	-ditto-	4, 1987	-ditto-	Report of Self Preliminary Study on "Project"
Ship Building Condition	Report of Research and Enterprise on Overseas Market of Middle and Small Sized Ships Area 3	Association of Industries of Middle and Small Sized Ships in Japan	12, 1985		
Fishing Condition	Tuna and Skipjack in the World				
"	National commission of Agriculture (Fisheries)	GOVT. of India	1976	Copy	Report of National Commission of Agriculture (Fisheries)
"	Fresh water Fish Culture	Direction of Agricultural Research, India	1985	Copy	Introduction of Fresh Water Fish Culture in India
"	Indian Seafood Trade Fair	Agency of Marine Products Export CIFNET	1987	Copy	Report of Marine Products Export Exhibition in India
Fishing Development	Oceanic Tuna - a Feasible Fishery in Indian EEZ		10, 1986	Original	Report on Tuna Fisheries Development Study in Indian EEZ, Operation Conditions of Previously Granted Vessels, etc.
"	Annual Report 84/85	CIFNET	1986	Copy	Annual Report of CIFNET
Marine Products Processing	Integrated Fisheries Project	Direction of Agricultural Cooperation, India	1986	Copy	Introduction of Businesses of Marine Products Canning Plant
General	Economic Survey 1986/87	Direction of Economy, Gov't of India	1987	Copy	
Development Plan	Seventh Five Year Plan 1985-90	Planning Commission, GOVT. of India	1985	Copy	Seventh Five Year Plan

Field	Title of information and material	Issuing Authority	Date of Issue	Nature	Summary
Vessel Design	INTERNATIONAL CONFERENCE ON SAFETY OF FISHING VESSEL, 1977	IMCO	-	Original	Treaties on Safety of Fishing Vessels
"	MANUAL OF MERCHANT SHIPPING ACT, 1958	BHANDARKAR PUBLICATIONS	12, 1985	-ditto-	Rules on Merchant Vessel of India
"	OBJECTIVES AND ACHIEVEMENT (1952 - 1986)	MINISTRY OF AGRICULTURE (GOVT. OF INDIA)	-	-ditto-	History of Development of Indian Fisheries
"	RESEARCH HIGH LIGHTS 1986/87	CMFRI	9, 1987	-ditto-	
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"	MARINE FISHERIES INFORMATION SERVICE NO.68	-ditto-	7, 1986	-ditto-	Research on Fisheries Resources in and around Laccadive Islands
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"	MARINE FISHERIES INFORMATION SERVICE NO. 72	-ditto-	4, 5, 6 1987	-ditto-	Information relating to Laccadive Islands
"	MARINE FISHERIES INFORMATION SERVICE NO. 71	-ditto-	1, 2, 3, 1987	-ditto-	Research on Whales and Dolphins in India
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"	MARINE FISHERIES INFORMATION SERVICE NO. 74	-ditto-	8, 1987	-ditto-	Report on Fisheries Resources Survey
"	MARINE FISHERIES INFORMATION SERVICE NO. 70	-ditto-	11, 12 1986	-ditto-	Report on Fisheries Resources Survey
"	Annual Report 1985/86	-ditto-	-	-ditto-	Annual Report of CMFRI 1985/86

Field	Title of information and material	Issuing Authority	Date of Issue	Nature	Summary
Fishing	A CIFNET REFERENCE BOOK ON MARINE FISHERIES TRAINING/ TECHNOLOGY Tuna Long Lining	CIFNET	5, 1985	Original	Text Book made by Mr. Haruta (JICA) for Training for CIFNET
Guide	CIFNET NEWS LETTER	-ditto-	8, 1985	-ditto-	Booklet for Introduction of CIFNET
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	CIFNET ANNUAL REPORT 1986/87	-ditto-	9, 1987	-ditto-	Annual Report of CIFNET 1986-87
	Proceedings of International Seminar on Training and Education for Marine Fisheries Management and Development	-ditto-	1, 1987	-ditto-	Proceedings of CIFNET Seminar in 1986
Fisheries Resources Survey	Bulletin of Fishery Survey of India	FSI	6, 1986	Original	Survey on Tuna Resources made by M/S in Arabian Sea
	EXPLORATORY FISHING PROGRAMME 1987/88	-ditto-	3, 1987	Original	Tuna Resources Survey Project in 1987/88 in Arabian Sea
Survey Report	ANNUAL REPORT 1986/87	-ditto-	8, 1987	-ditto-	Survey Report 1986/87, Annual Settlement of Accounts
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