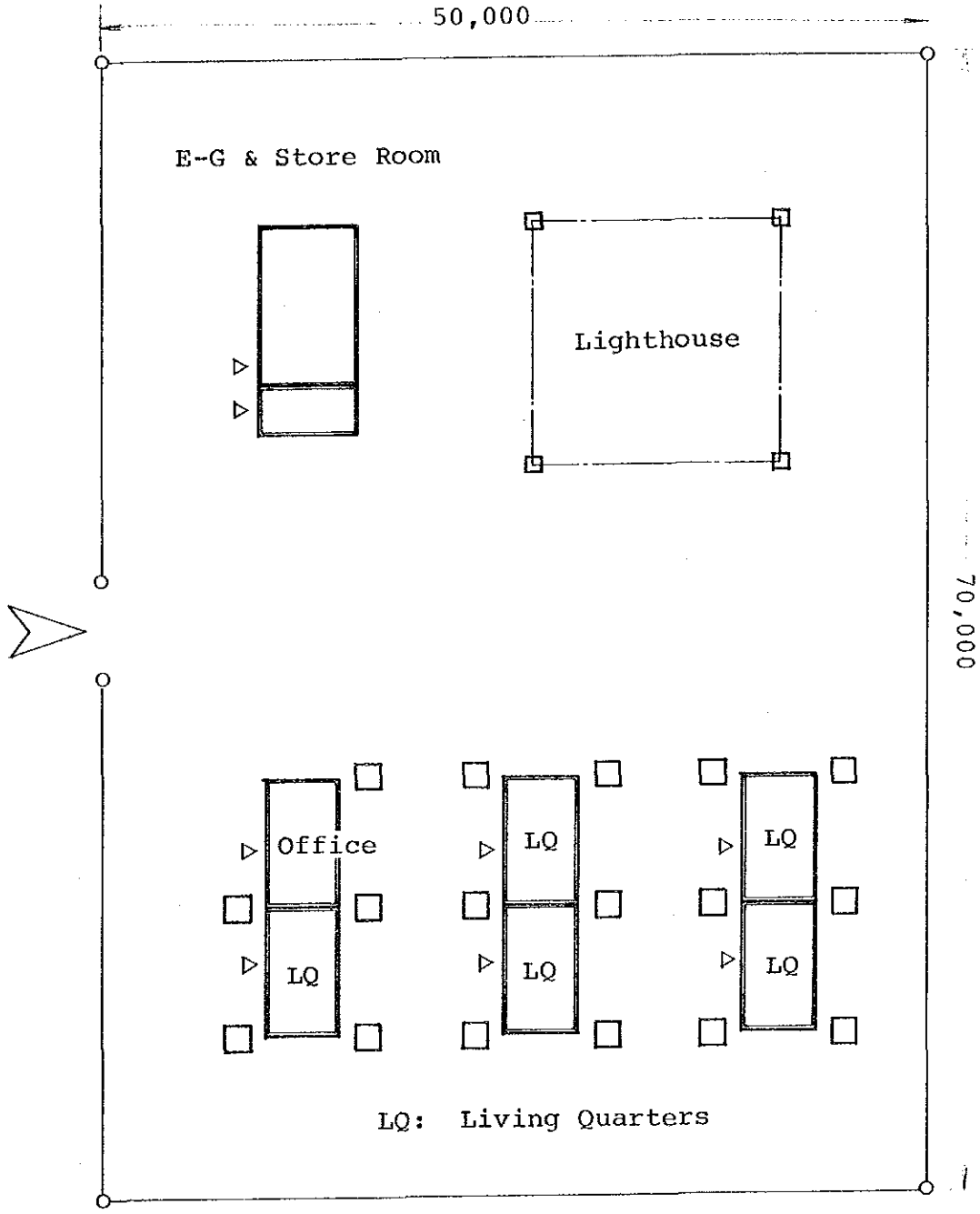
APPENDIX-18

VISUAL AIDS FACILITIES

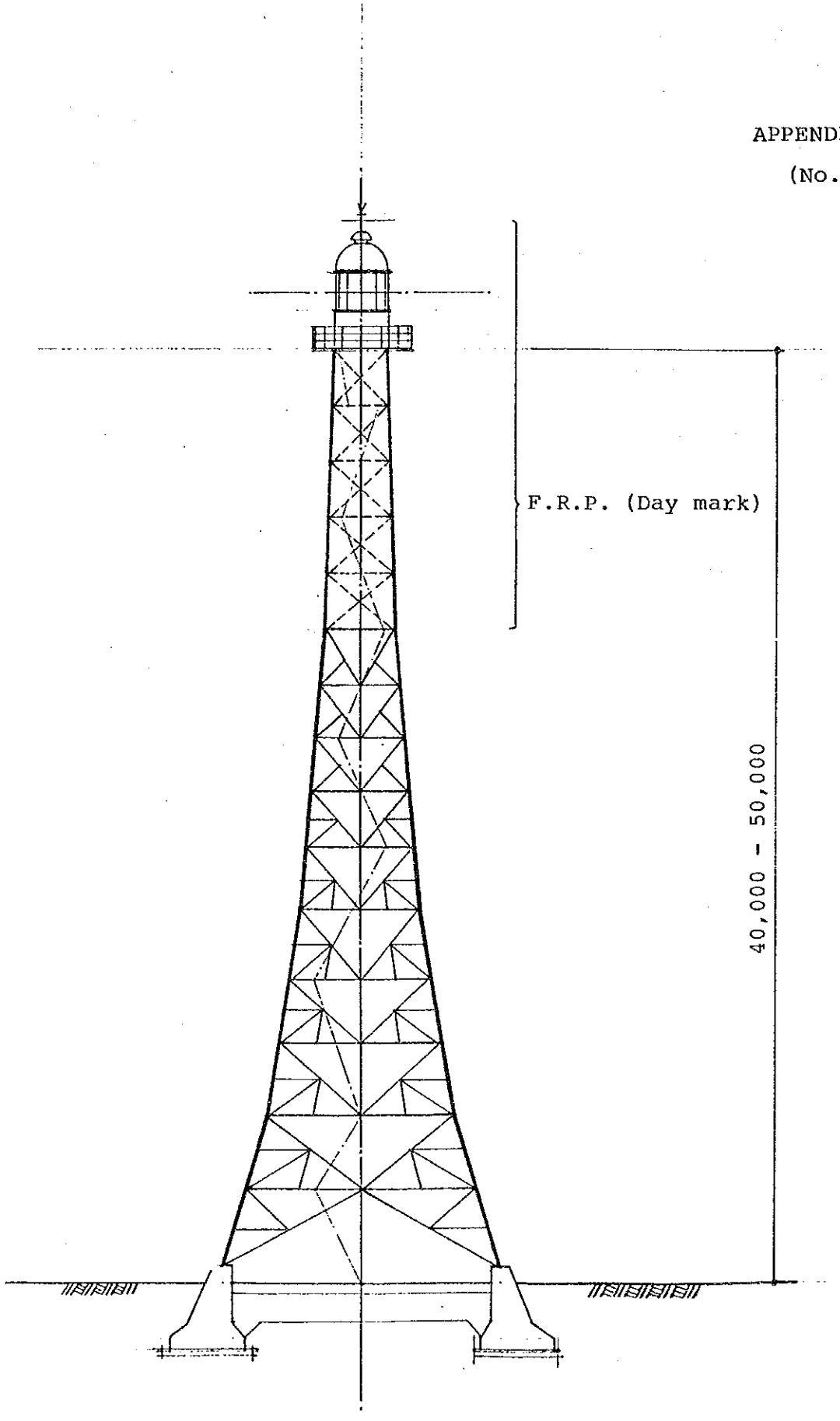
Lighthouse
Light Beacon (on land)
Light Beacon (offshore)
R.L.B.

= For Reference Only =

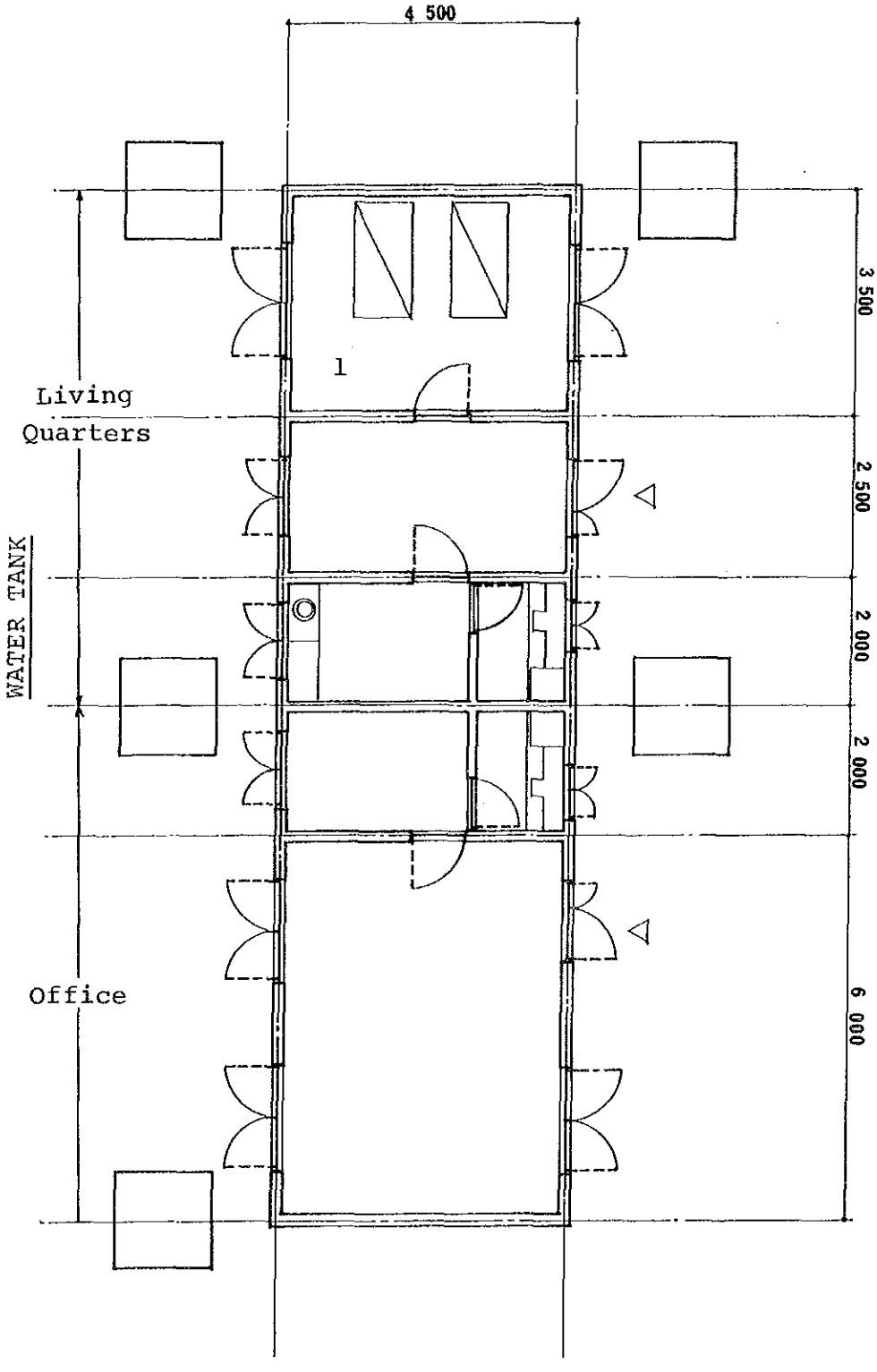


1) LIGHTHOUSE: SITE PLAN

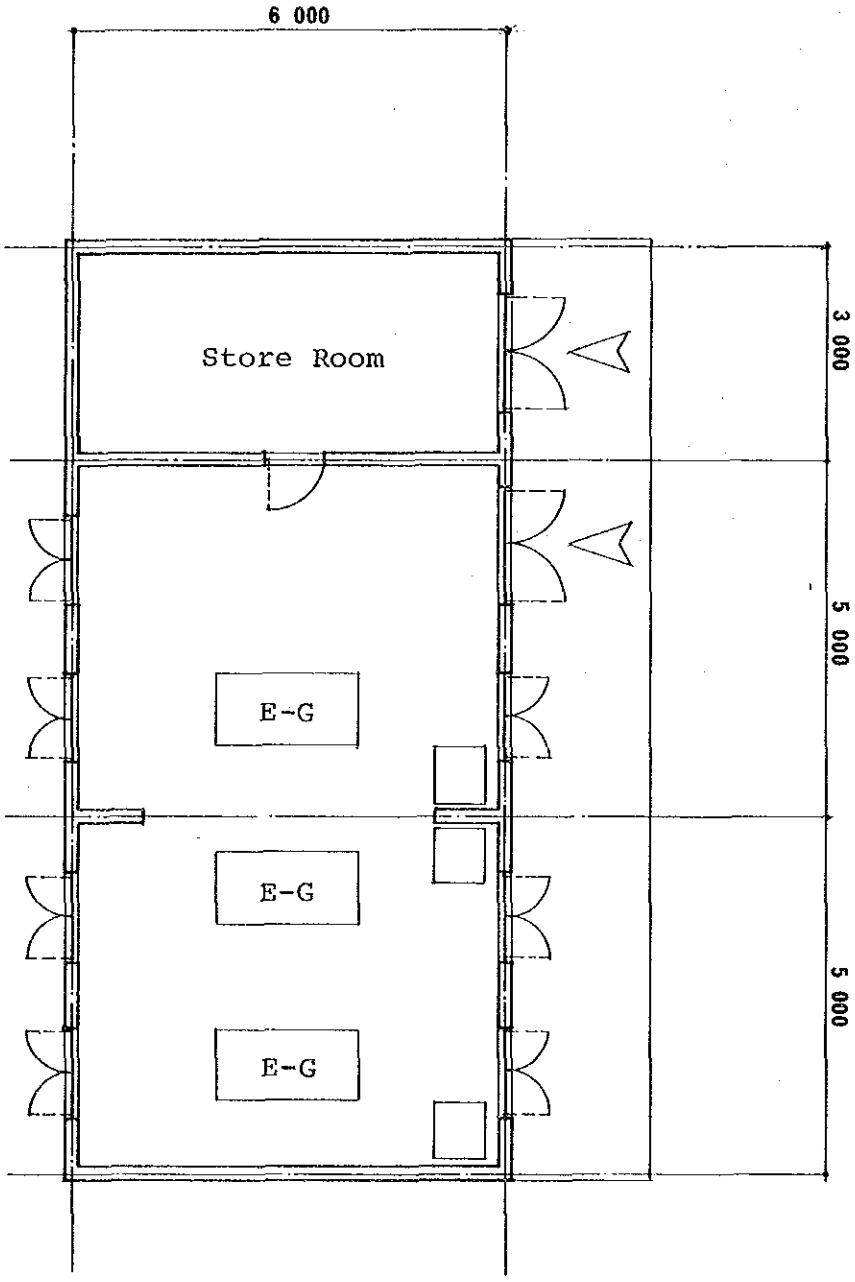
A18-1



2) LIGHTHOUSE: LIGHT TOWER



3) LIGHTHOUSE: OFFICE AND QUARTERS

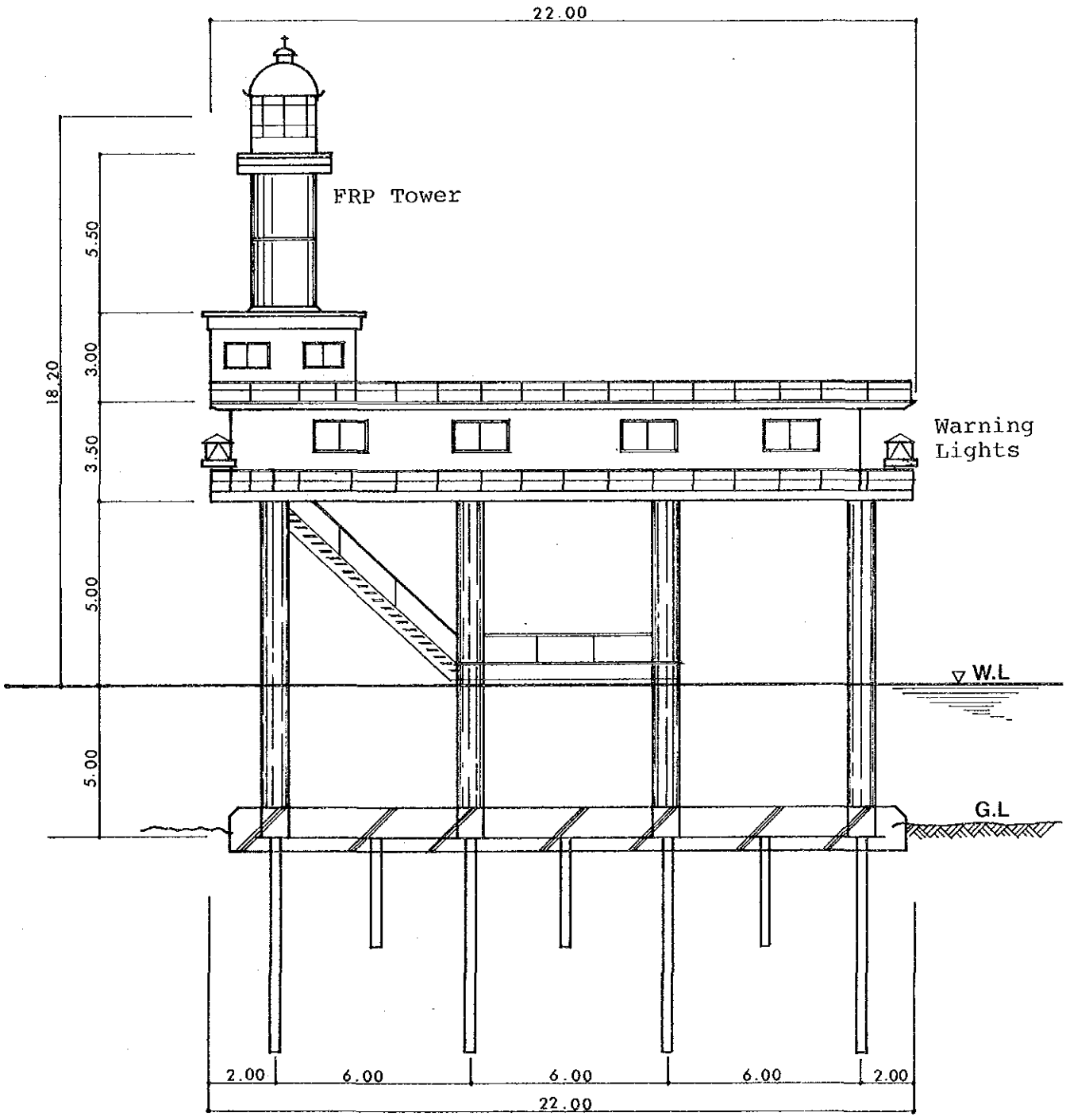


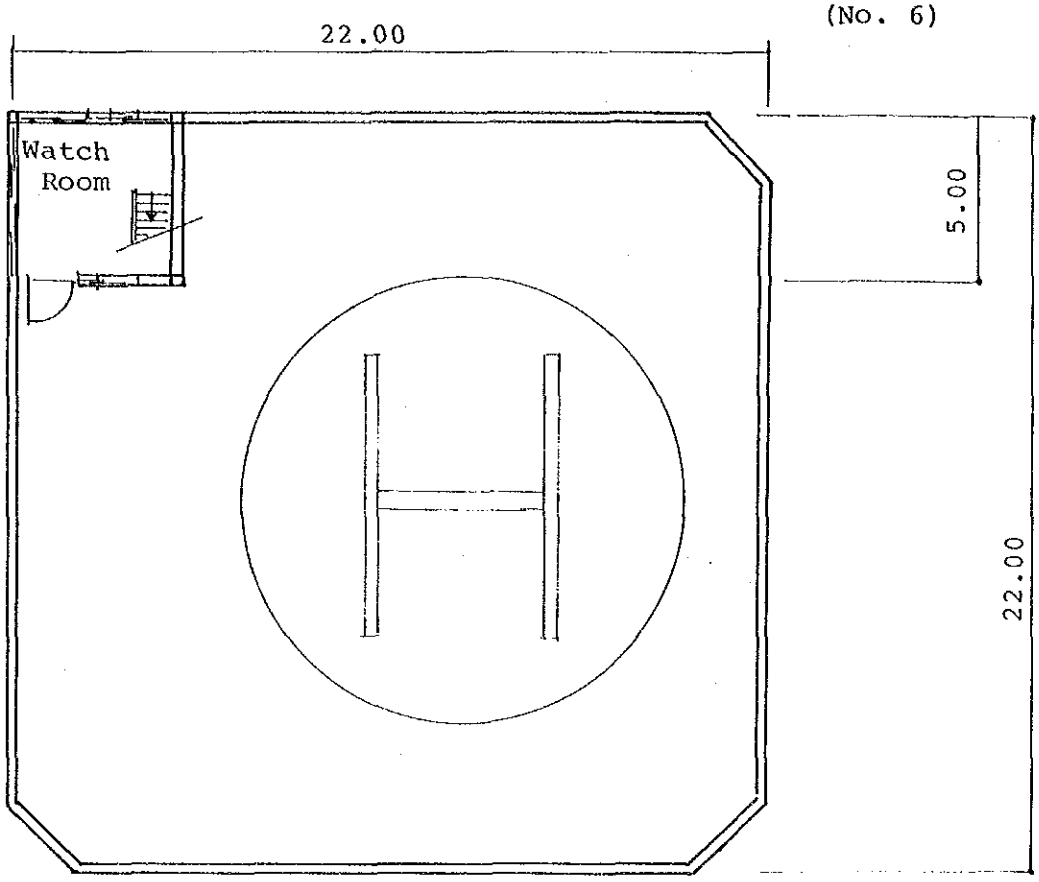
4) LIGHTHOUSE: ENGINE GENERATOR AND STORE ROOM

APPENDIX-18
(No. 5)

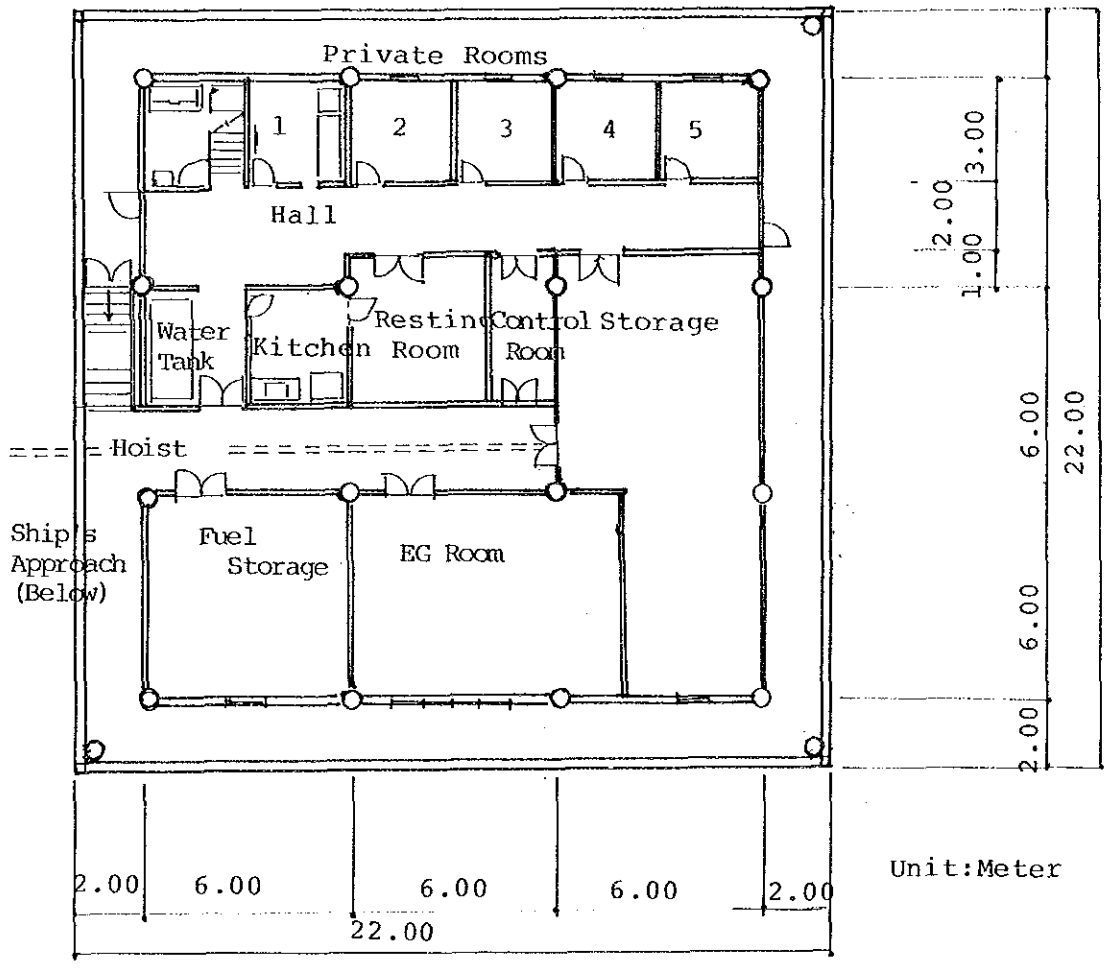
5) LIGHTOUSE (OFF SHORE): TOWER

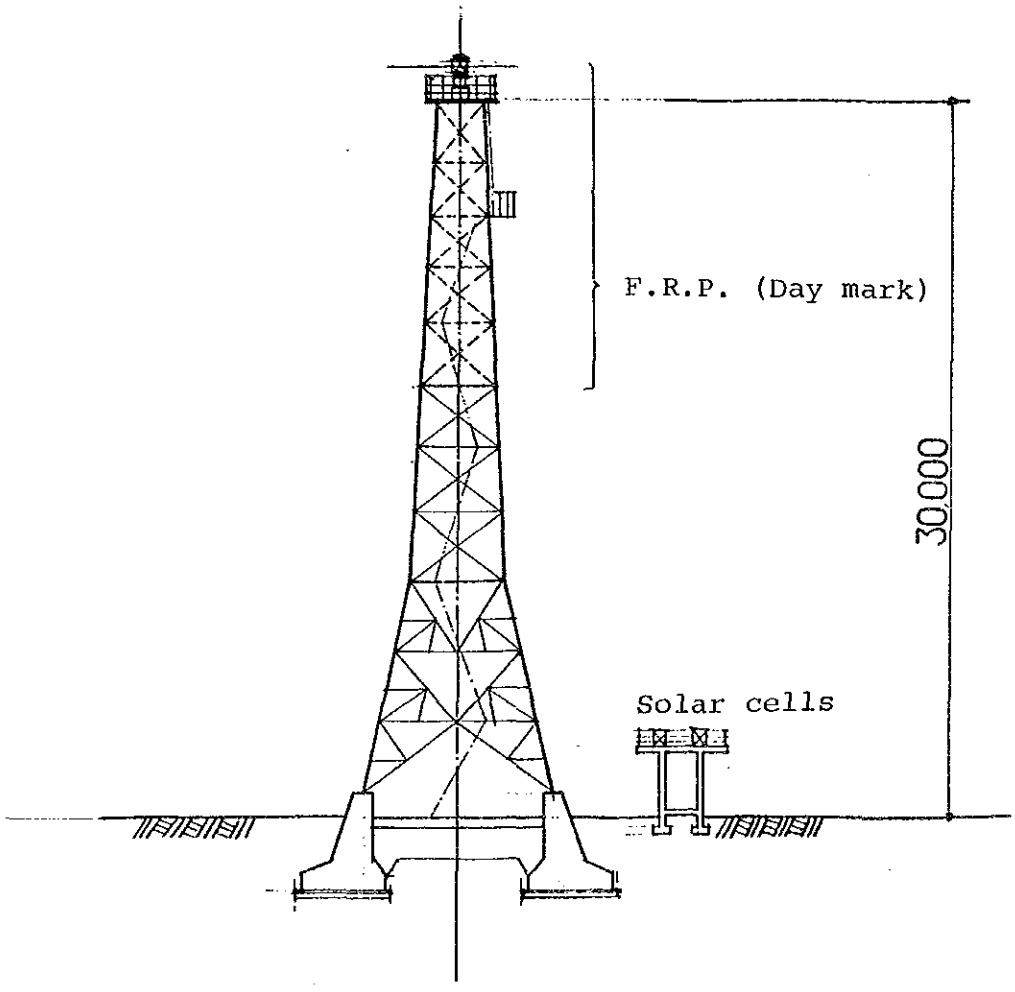
Unit: Meter



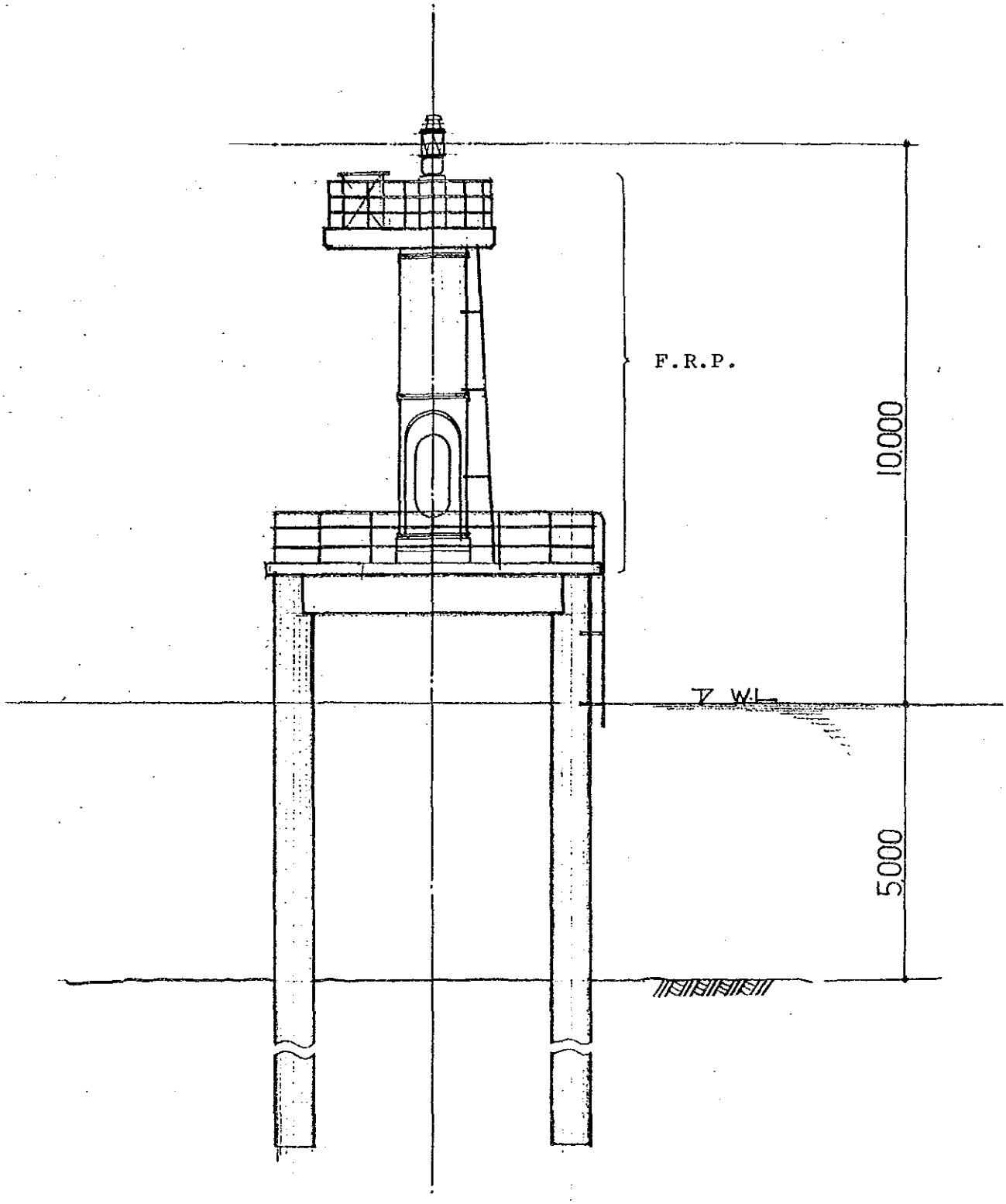


6) LIGHTHOUSE (OFFSHORE): PLAN

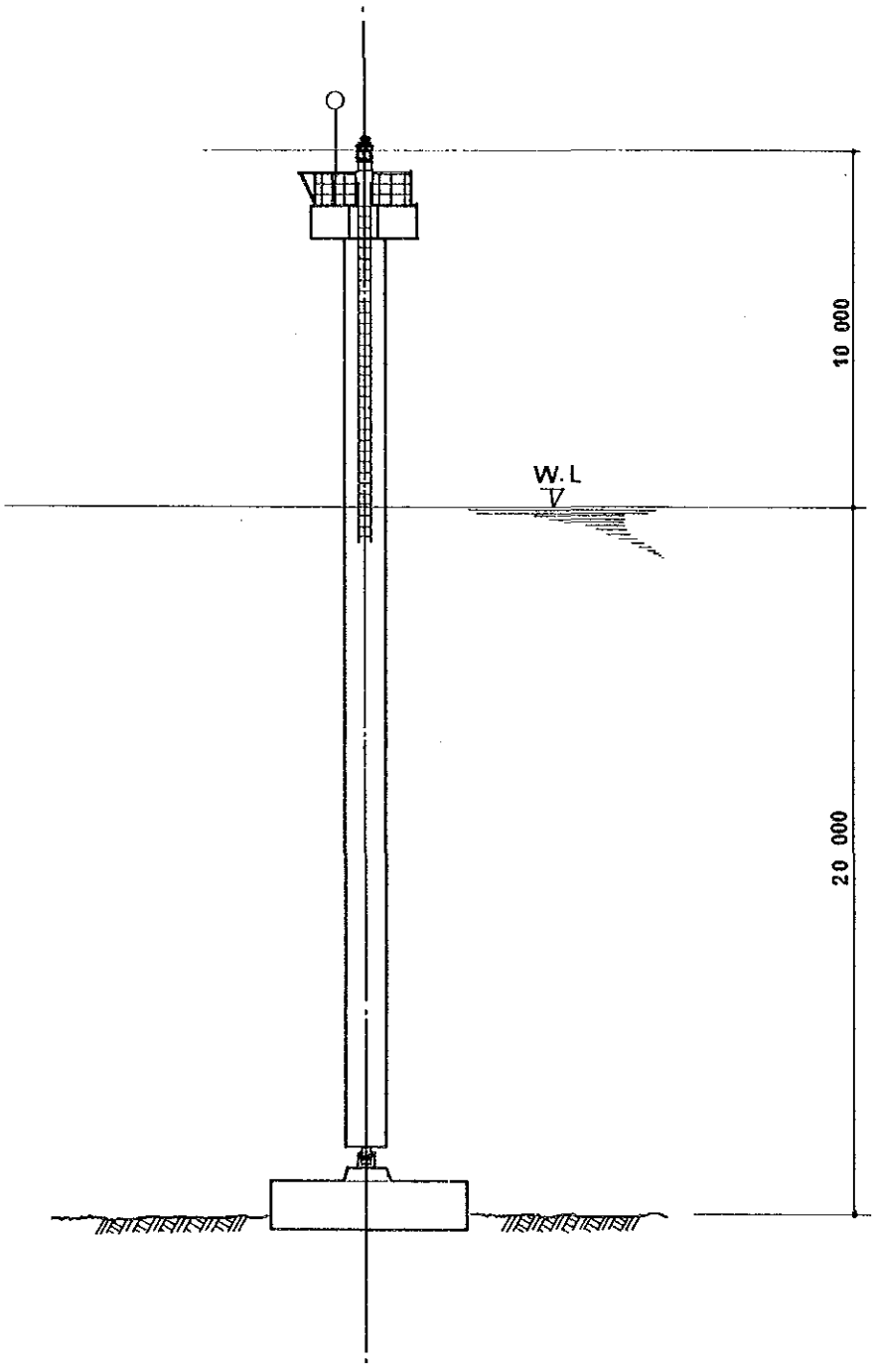




7) LIGHT BEACON (ON LAND)



8) LIGHT BEACON (OFFSHORE)



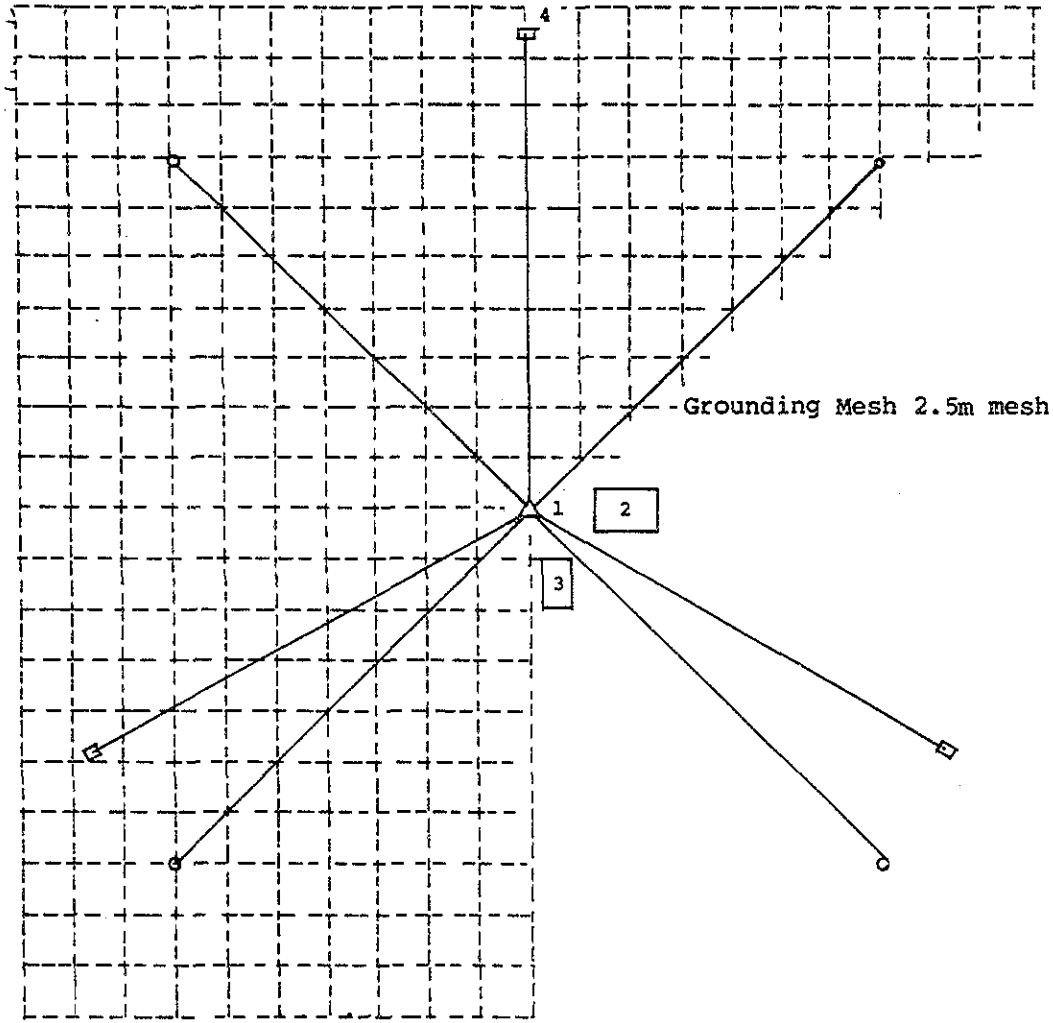
9) RESILIENT LIGHT BEACON

ELECTRONIC AIDS FACILITIES

MF Radiobeacon Station
Radar Beacon (Racon) Station

(Ref: Section 4-3-2)

= For Reference Only =



6

8

7

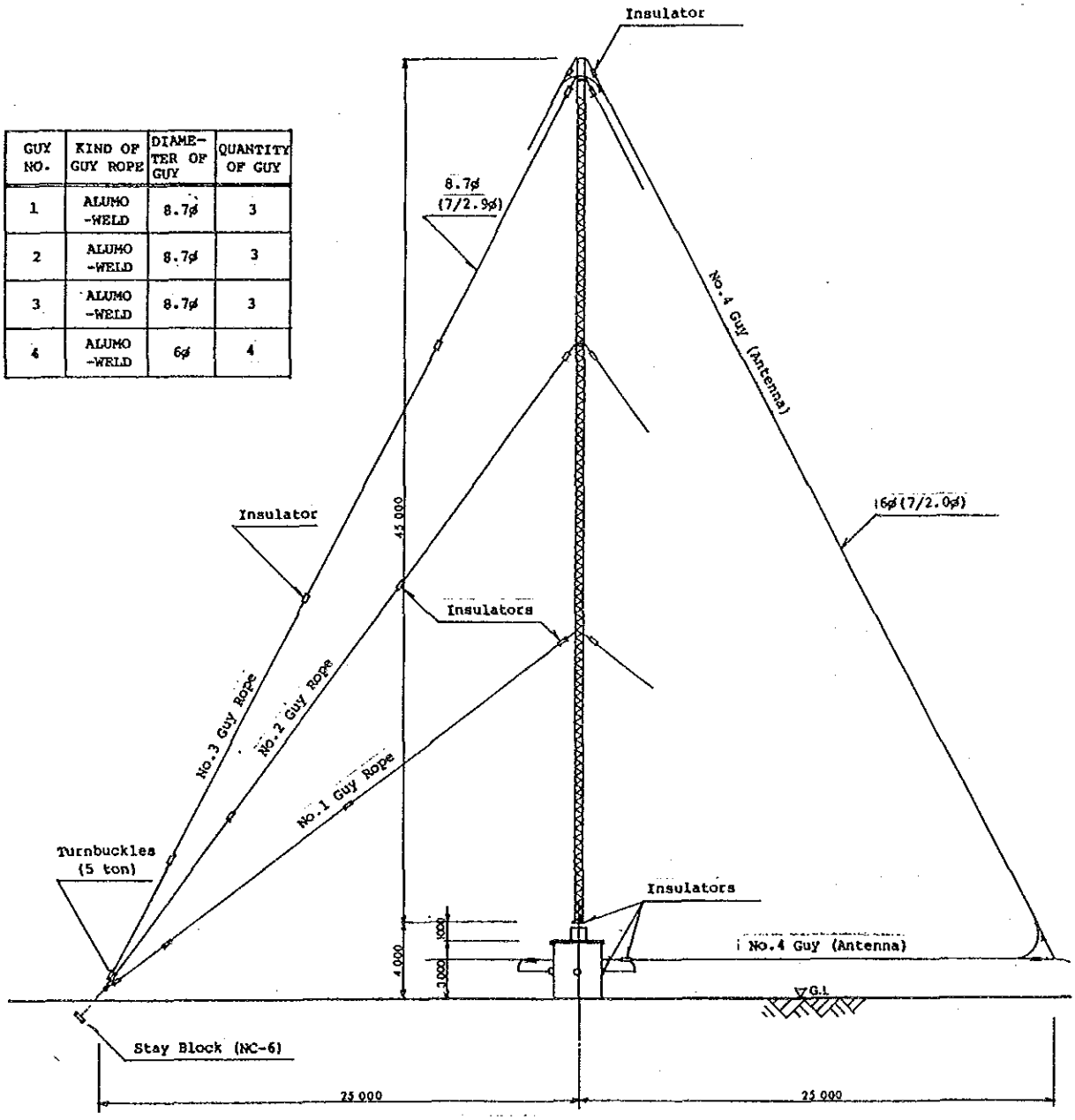
	Name	Code
1	Antenna mast	45 m trus
2	Main shelter	2.5m x 3H
3	Battery shelter	2.5 x 3.5
4	Stay anchor	
5	Antenna extension poles	8m steel
6	Quarters for maintenance personnel	Only when necessary, 100m^2
7	Fuel tank	Except co-use with lighthouse
8	E-G hut	

Medium-wave Radiobeacon Station

- Site Plan -

APPENDIX-19
(No. 1)

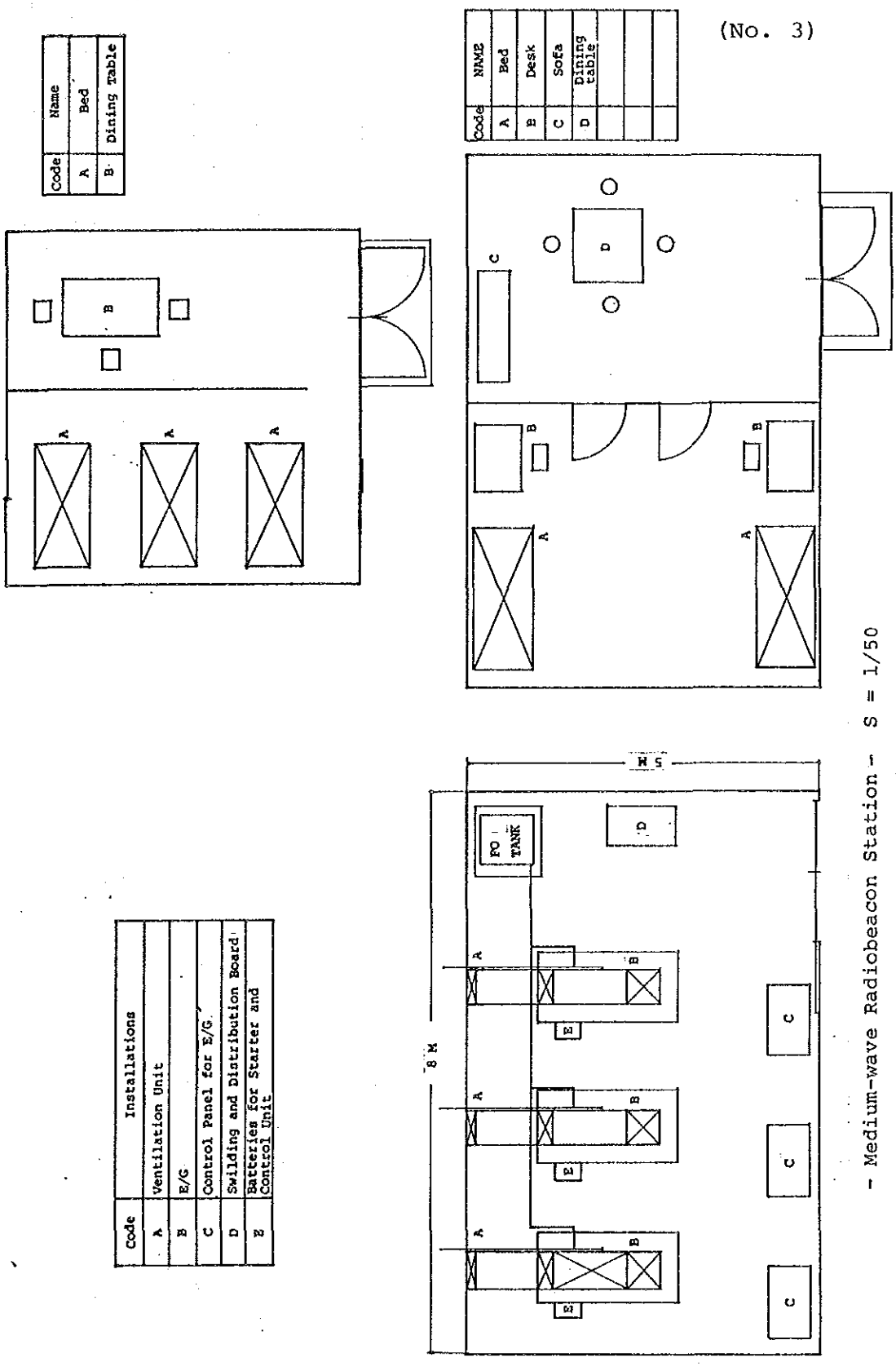
GUY NO.	KIND OF GUY ROPE	DIAMETER OF GUY	QUANTITY OF GUY
1	ALUMO -WELD	8.7φ	3
2	ALUMO -WELD	8.7φ	3
3	ALUMO -WELD	8.7φ	3
4	ALUMO -WRLD	6φ	4



Medium Wave Radiobeacon Station

APPENDIX-19

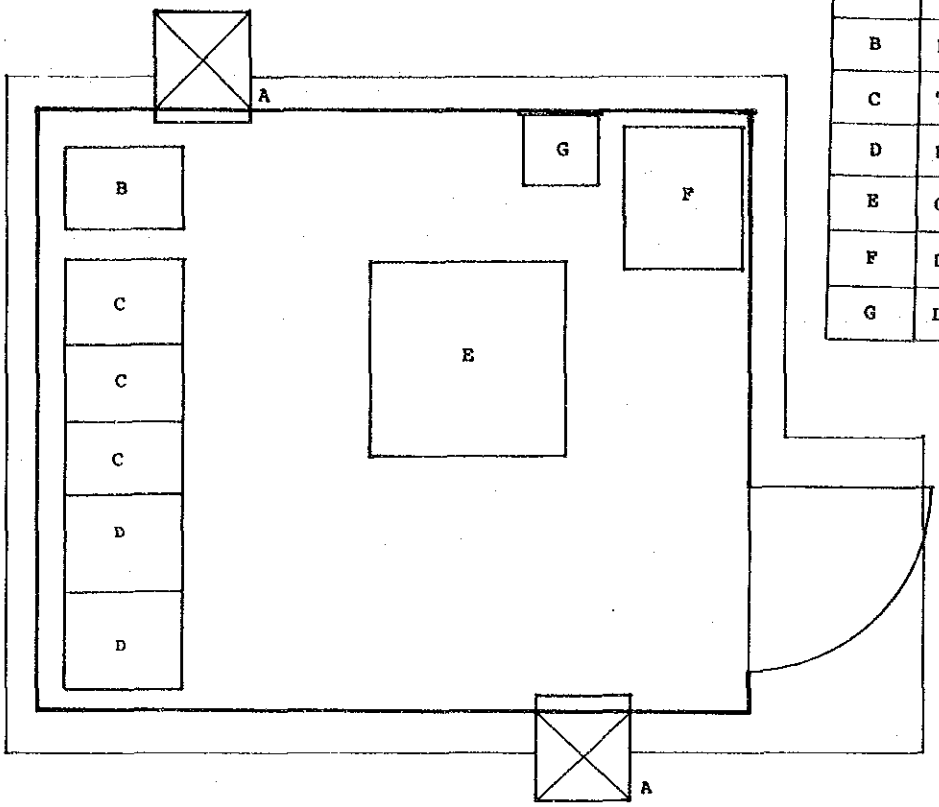
(No. 3)



Code	Installations
A	Ventilation Unit
B	E/G
C	Control Panel for E/G
D	Swilding and Distribution Board
Z	Batteries for Starter and Control Unit

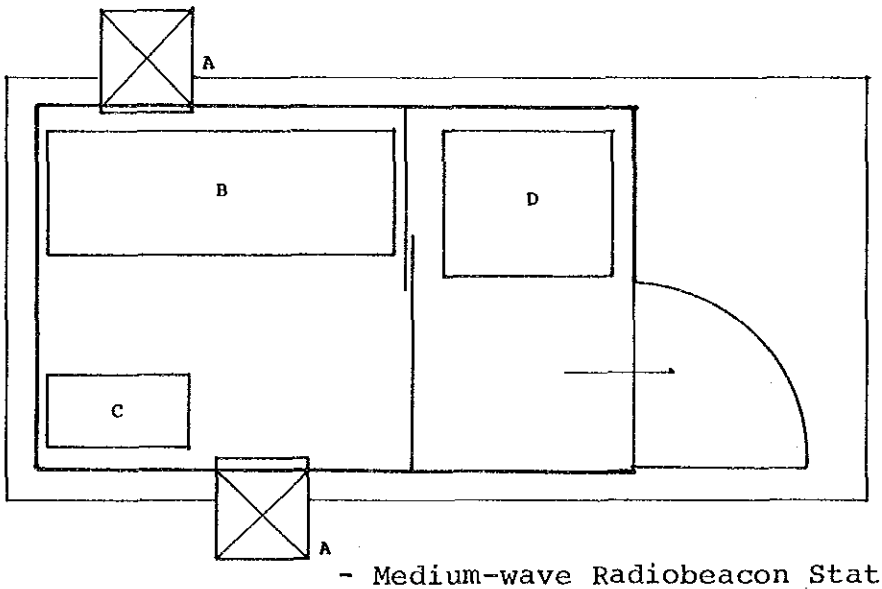
- Medium-wave Radiobeacon Station - S = 1/50

Code	Installations
A	Ventilation Unit
B	Rack for Instrument
C	Transmitter
D	Beacon Controller
E	Goniometer
F	Desk
G	Loading Coil



Main Shelter S = 1/30

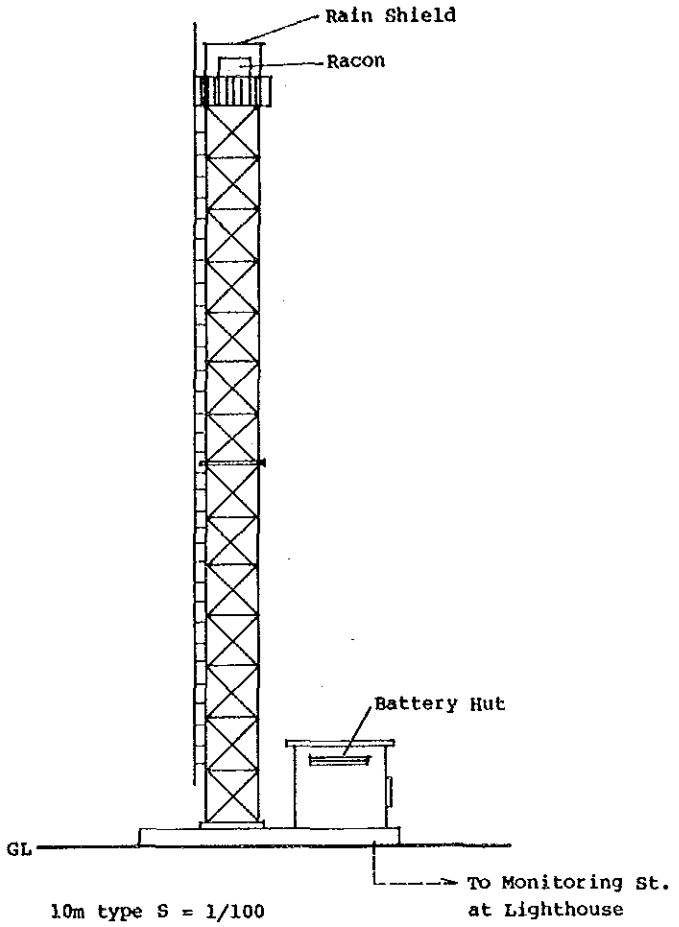
Code	Installations
A	Ventilation Unit
B	Battery for Transmitter
C	Battery for Control Unit
D	Battery Charger



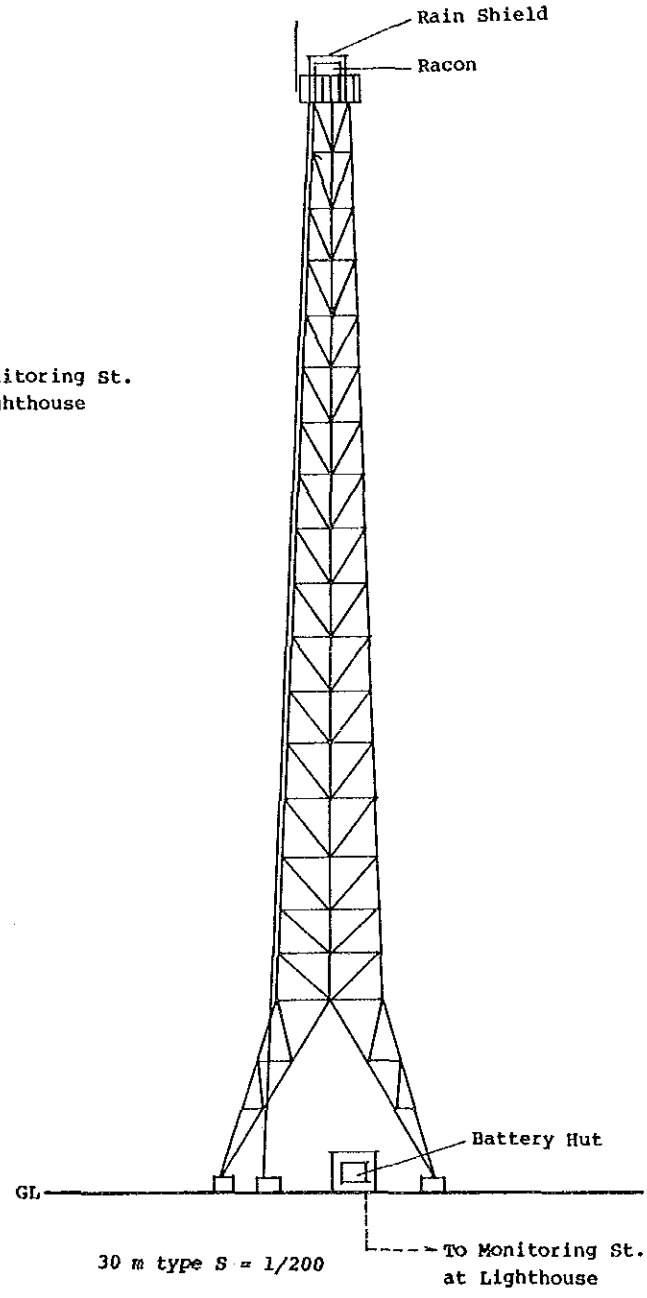
- Medium-wave Radiobeacon Station - S = 1/30

APPENDIX-19

(No. 5)



10m type S = 1/100



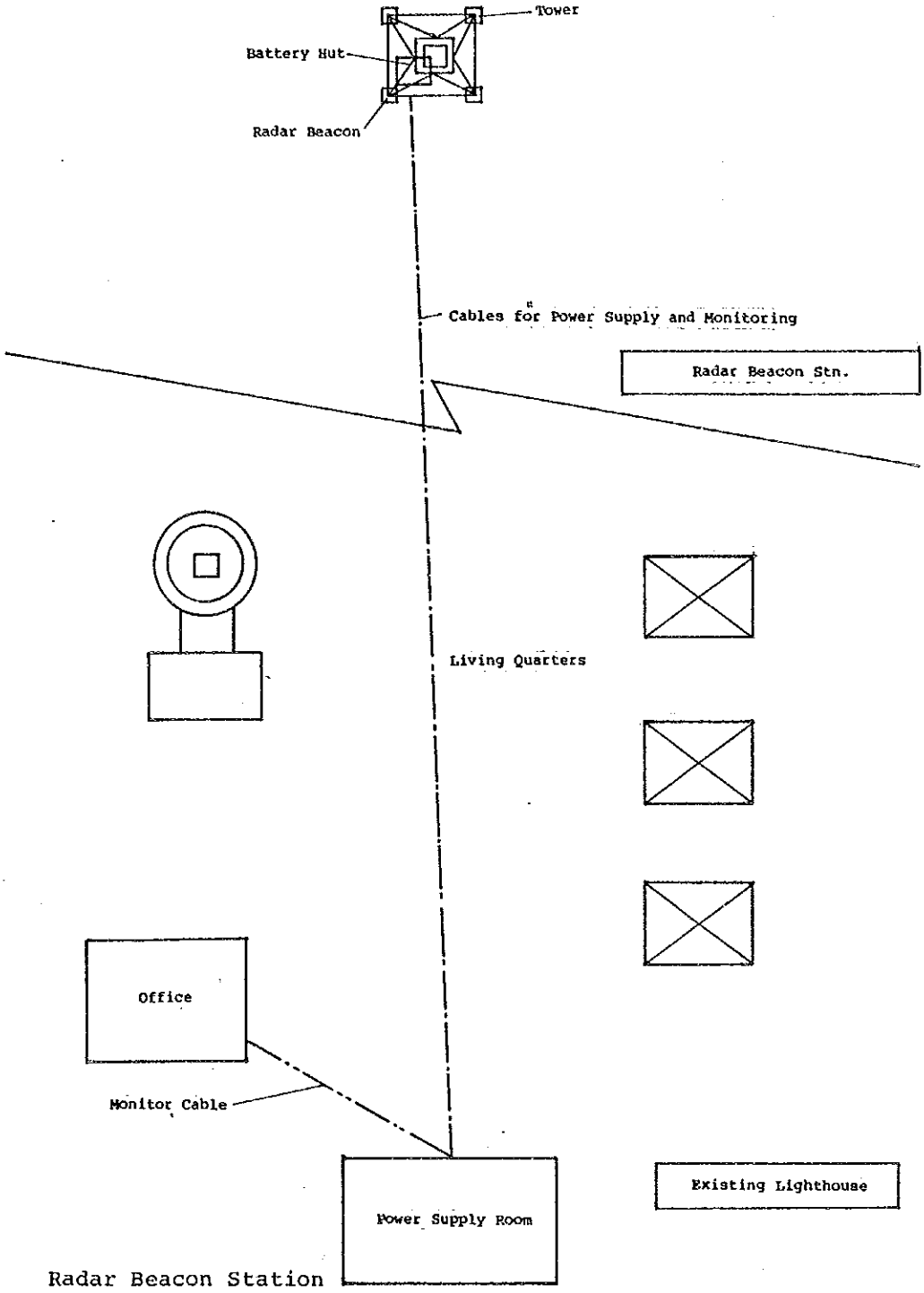
30 m type S = 1/200

Radar Beacon Station

- Installation Plan -

APPENDIX-19

(No. 6)



Radar Beacon Station

- System Plan -

APPENDIX-20

TRAINING FOR AIDS TO NAVIGATION PERSONNEL IN THE U.S. COAST GUARD

Extract from "Aids to Navigation Manual"
U.S. Coast Guard, Administration,
Comdtinst M16500.7 (old CG-222-1)

TRAINING FOR AIDS TO NAVIGATION PERSONNEL
IN THE U.S. COAST GUARD

Extract from "Aids to Navigation Manual"
U.S. Coast Guard, Administration,
Comdtinst M16500.7 (old CG-222-1)

CHAPTER 11. TRAINING

A. Aids To Navigation School.

1. General. In order to develop a professional service force, all officers and enlisted men in the aids to navigation field must continuously participate in training . On the job training as well as a purposeful use of training facilities should result both in increased efficiency in daily operations, and increases in retention of valuable manpower.

2. Use Of Aids To Navigation School.

   a. To fully utilize the Aids to Navigation Training School, the Commandant will keep at a maximum the quotas available for aids to navigation training. These quotas will be scheduled to best take advantage of individual district "off seasons." District commanders will be furnished a comprehensive listing of the number of officers and men required from each district, per class, as far in advance as possible.

   b. District, group, and individual unit commanders will attempt to use every training quota offered, and where applicable, will impress the need for formal training upon each commanding officer or officer-in-charge subordinate to them. Temporary operational demands should not be allowed to overshadow the future need for an adequate level of trained personnel. District, group, and unit commanders will also insure that their officers and men are sent to the correct course, attempting whenever possible to assign graduates of the school to aids to navigation duties corresponding to their most recent training. Similarly, district, group and unit commanders shall verify that the men who will best use the training are in fact being sent. Resources should not be expended on training either "short timers" or men whose ratings or duties slightly, if ever, involve the type of advanced training provided by the school.

3. Officer Attendance Requirements.

   a. As many officers involved in aids to navigation work as possible should receive training at the Aids to Navigation School.

   b. Upon assignment to one of the following duties an officer should attend the applicable Aids to Navigation School if he has not attended that school in the past five years.

      (1) Chief district (oan)

      (2) Assistant Chief district (oan)

A.3.b. (3) Tender Commanding Officer

(4) Tender Executive Officer

(5) Tender Operations Officer

(6) Tender First Lieutenant

(7) Lightship Commanding Officer

(8) Certain Headquarters (G-N) Division and Branch Chiefs

c. Attendance by the above officers should be scheduled as soon as possible after their assignment to the above duties. Tender or lightship personnel could be scheduled during availability or yard periods.

4. Petty Officer Attendance Requirements.

a. Petty officers assigned as buoy deck supervisors on tenders should attend the minor aids to navigation course if they have not attended the Aids to Navigation School within the past three years.

b. Petty officers assigned as officers-in-charge should attend the Officer's Basic Aids to Navigation Course in lieu of the minor course.

B. Aids To Navigation Courses.

1. General. The following sections contain a brief description of the courses available at the Aids to Navigation School, Governors Island. More information and qualifications for students is in COMDTINST 1510 series.

2. Automated Aids Course (ANC-1). This course is seven weeks in duration and is designed for enlisted personnel with an EM rating, 2nd class or above, and civilian personnel of the same skill level. It provides electricians with management, maintenance and troubleshooting training for automated aids to navigation.

3. Minor Aids To Navigation Courses.

a. Basic (ANC-3). This course is two weeks in duration and designed for enlisted personnel (non-rated and E-4) and selected wage board personnel who are responsible for the maintenance and operation of smaller unmanned shore aids, and all unmanned, unmonitored floating aids in the federal aids to navigation system. This course provides minimum training to service, troubleshoot and repair 12 vdc minor beacon and buoy equipment and power sources.

B.3. b. Advanced (ANC-2). This course is five weeks in duration and is designed for supervisory enlisted personnel (E-5 thru E-9) and civilians of an equivalent supervisory level. It is intended to provide a working knowledge in the following areas:

(1) Safety precautions involved in maintenance and repair of minor aids to navigation equipment.

(2) The functioning, principles of operation, preventive maintenance required, and troubleshooting procedures for minor aids to navigation equipment.

(3) Proper use of common testing equipment, including calibration methods.

(4) Mathematical calculations used to insure proper operation and servicing of minor aids to navigation equipment.

(5) General content of pertinent Coast Guard directives to the field.

(6) Hazards and problems that may be expected when working in the field.

(7) Preparation and maintenance of the SANDS system.

(8) Basic small boat piloting techniques and positioning buoys using horizontal sextant angles.

c. Specially, training is provided in the following areas: mathematics; basic electricity; blueprint reading; solid state devices; minor aids and minor aid power; aids to navigation publications; visual signaling; minor sound signals and servicing procedures; basic piloting; buoys and appendages; retro-reflective materials; and administrative and radiotelephone procedures.

4. Officer Basic Aids To Navigation Course (ANC-4).

a. This basic course is three weeks in duration and is designed for commissioned (O-1 and 2) and warrant officers, civilian administrative and professional engineering personnel, and chief petty officers serving in administrative aids to navigation billets. This course provides training which, when completed, will give the student a working knowledge in the following areas:

(1) The statutory requirements from which Coast Guard authority and responsibility in the federal aids to navigation system derived.

B.4.a. (2) Principles involved and recommended procedures used in the administration of aids to navigation units and offices of the Coast Guard.

(3) Theory, principles of operation, maintenance and testing methods for aids to navigation equipment, including new developments, in general use throughout the federal aids to navigation system.

(4) Safety precautions pertinent to the aids to navigation mission areas.

(5) The application of basic engineering principles to the operation and servicing of the aids to navigation system, especially aboard a tender.

(6) Present trends in aids to navigation work, and new developments presently in the prototype stage.

(7) Legal problems occurring in the aids to navigation field.

(8) Systems evaluation of aids to navigation.

b. Specifically, training is provided in the following areas: the theory of illumination, optics and acoustics; operation of power supplies (both battery and generated), major optical systems, minor lights, sound signal, buoys and other minor aids; administrative and operating procedures at bases, and on board tenders, with emphasis on safe methods of operation and common failures and method of reducing them; new types of equipment being planned or tested for possible future use.

5. Officer Advanced Aids To Navigation Course (ANC-5).

a. This advanced course is two weeks in duration and is designed for officers in the grade of Lieutenant and above, and for civilian administrative and professional engineering personnel in the grade of GS-9 and above. Students should have completed the Officer Basic Navigation Course at some previous time, except for officers who have extensive experience in aids to navigation operations.

b. This course provides training which, when completed, will give the student an advanced working knowledge in the areas listed under the Officers Basic Course, and principles and inter-relations of higher echelon administration in the mission area.

c. Specifically, training is provided in the following areas: administration, signals engineering, system evaluation, plus statutory authority and legal requirements for aids to navigation.

B. 6. Automated ATON Electronics Course (ANC-6). This course is five weeks duration and is designed for enlisted personnel with an ET rating, 2nd class or above, and civilian technicians of the same skill level. The course covers maintenance of the lighthouse Automation and Modernization Program (LAMP) monitor and control equipment.

7. Sound Maintenance Course (ANC-7). A course of one week duration, it is designed for enlisted personnel of EM rating, 2nd class and above, or civilian WG-10 or above. It provides training for the maintenance, troubleshooting and repair of standard Coast Guard signal equipment.

8. Additional Aids To Navigation Resident Courses. With the introduction of certain types of new aids to navigation equipment, manufacturers will frequently offer courses to field personnel to familiarize them with the equipment and its operation. COMDTNOTE 12410 series will indicate commencement of these courses and other information pertaining to them. When newer equipment becomes standardized as part of the aids to navigation system, instruction concerning the equipment will be incorporated into the curriculum of the Aids to Navigation School.

C. District Aids To Navigation Training.

1. General. Completion of one or more of the aids to navigation courses offered at the Training Center greatly improves the qualifications of aids to navigation personnel. However, a coninuing need exists for updating the knowledge of field personnel based on improvements and new techniques for disseminating information peculiar to individual operating areas and for on-the-job observation and assitance by trained aids to navigation instructors. Hence, the need exists for a comprehensive district aids to navigation training program. To meet this need billets have been allocated to districts specifically for aids to navigation training.

2. Aids To Navigation Training Teams.

a. Each district that is allocated training team billets with maintain at least one mobile training team composed of two or more enlisted men well qualified for such duties by virtue of training and field experience.

b. Personnel selected for training teams shall have considerable aids to navigation field experience at various types of units, be graduates of the major and Minor Aid Courses at the Training Center within the last five year or six months upon arrival. Instructor training is mandatory. A current knowledge

C.2.b.(Cont.) of hardware and servicing techniques is a definite prerequisite. Candidates for this assignment should be screened for ability to get necessary points across to field personnel, while at the same time establishing a good rapport and basis of understanding, functioning primarily as counselors, not inspectors.

c. Training teams are required to visit all aids to navigation units within a district at least semi-annually. The length of the visit may vary in accordance with the expertise of the personnel attached. Visits will be scheduled to coincide with normal unit operations and the team should participate in the unit's scheduled aids to navigation work.

d. Teams will emphasize daily, on-the-job training, determining problem areas and correcting them on the spot. Training teams will perform the following specific tasks:

(1) Conduct training sessions on aids to navigation hardware installation and maintenance procedure at the unit or central location.

(2) Assist and monitor units in developing and conducting an aids to navigation training program.

(3) Provide instructions in the use of SANDS.

(4) Consult with the unit commanding officer or officer-in- charge on the current status of the unit's library of manufacturers' instructions and Coast Guard aids to navigation directives and publications.

(5) Discuss unit aids to navigation material allowance, making recommendations for changes as required.

(6) Select a small number of aids within the units operating area to inspect, and then tailor the training and feedback to the unit to include remedies to the problems found.

(7) Report on problems found or specific areas needing improvement only to the unit.

(8) General reports of trends or overall developments noted in the field will be submitted to the district commander.

C.2. e. Training teams are to supplement, not replace unit training programs and use of the Aids to Navigation School. Additionally, to standardize training methods and material, each team member will be required to spend approximately two weeks every year at the Aids to Navigation School to attend an ATON training team management course. The two week visit will be coordinated by the Aids to Navigation School.

f. The number of teams needed may vary between districts, depending on the number of district aids to navigation units, amount of travel necessary to visit units and district use of the aids to navigation school.

g. Teams should be molded to best suit district needs while accomplishing the ultimate goal of upgrading overall professionalism in aids to navigation. Problem areas revealed through SANDS analysis should be used in determining where to put teaching emphasis.

3. District Aids To Navigation Seminars.

a. The purpose of the district seminar is to provide for the exchange of information between district and field personnel. Participation in these seminars results in: better methods of handling equipment; identification of problem areas and solutions; development and promulgation of new techniques; and discontinuance of erroneous practices.

b. A district-wide seminar for district aids to navigation unit commanding officers and senior group aids to navigation personnel or their representatives shall be conducted at least annually. In addition to the district-wide seminar each group or combination of adjoining groups will hold a seminar for group aids to navigation unit officers-in-charge or their representatives, at least once every year. In addition to aids to navigation operating and servicing personnel, civilian employees and industrial managers should attend.

c. The seminars shall be conducted by a team from the district operations and engineering divisions. Minutes of each seminar shall be distributed to all units in the district having any aids to navigation servicing responsibility with copies to Commandant (G-NSR) and (G-E) plus each district commander (oan). In this respect each seminar will benefit all district aids to navigation units, and not just those attending a specific seminar, while also providing another avenue for inter-district communications.

4. Training Team Coordinator.

a. The training team coordinator billet is assigned to the aids to navigation school. He will act as a contact point with the school and provide for the gathering and dissemination of information to the training teams.

D. Unit Training.

1. General. Personnel assigned to an aids to navigation unit must be familiar with the basic aspects of aids to navigation equipment operation and maintenance when their duties are directly related to aids to navigation. In this connection, the following minimum training requirements are established.

   a. Every aids to navigation unit will insure that adequate "all hands" training is conducted in safety precautions. At least one "all hands" safety training session will be held each quarter.

   b. Light Stations shall hold monthly drills in the operation of all aids to navigation equipment. The drills shall include the method of starting, securing, focusing, checking, and adjusting MAIN, STANDBY, EMERGENCY, and HIGH INTENSITY (definitions of these terms are found in the Glossary) apparatus and associated machinery and alarms, including monitoring and control equipment for automated stations.

   c. Lesson plans for various aspects of aids to navigation training can be found in CG-415-3, The Unit Training Manual Afloat.

2. Use Of Aids To Navigation School Graduates. Recent returnees from Aids to Navigation School should be used as much as possible in planning and conducting unit training. This not only aids in keeping information current but boosts the individual's prestige, thereby aiding overall unit morale.

E. Yearly Service-wide Aids To Navigation Seminar.

1. General. The Commandant (NSR) in conjunction with the commanding officer of the Aids to Navigation School and Commandant (PTE) will schedule an annual seminar for all chiefs of district aids to navigation branches or their representatives. District commanders so desiring may also request assignment of district engineering representatives to the seminar. The seminar attendees will review common areas of aids to navigation interest and will be briefed by cognizant headquarters personnel on current or projected trends, problems or developments in aids to navigation.

F. Aids To Navigation Bulletin.

1. General.

   a. The Aids to Navigation Bulletin, published quarterly for information purposes only, is intended to:

      (1) Provide another vehicle of communication between Headquarters, field and staff organizations.

F.1.a. (2) Increase professionalism and professional knowledge of all aids to navigation personnel;

(3) Improve the esprit de corps of Coast Guard aids to navigation personnel.

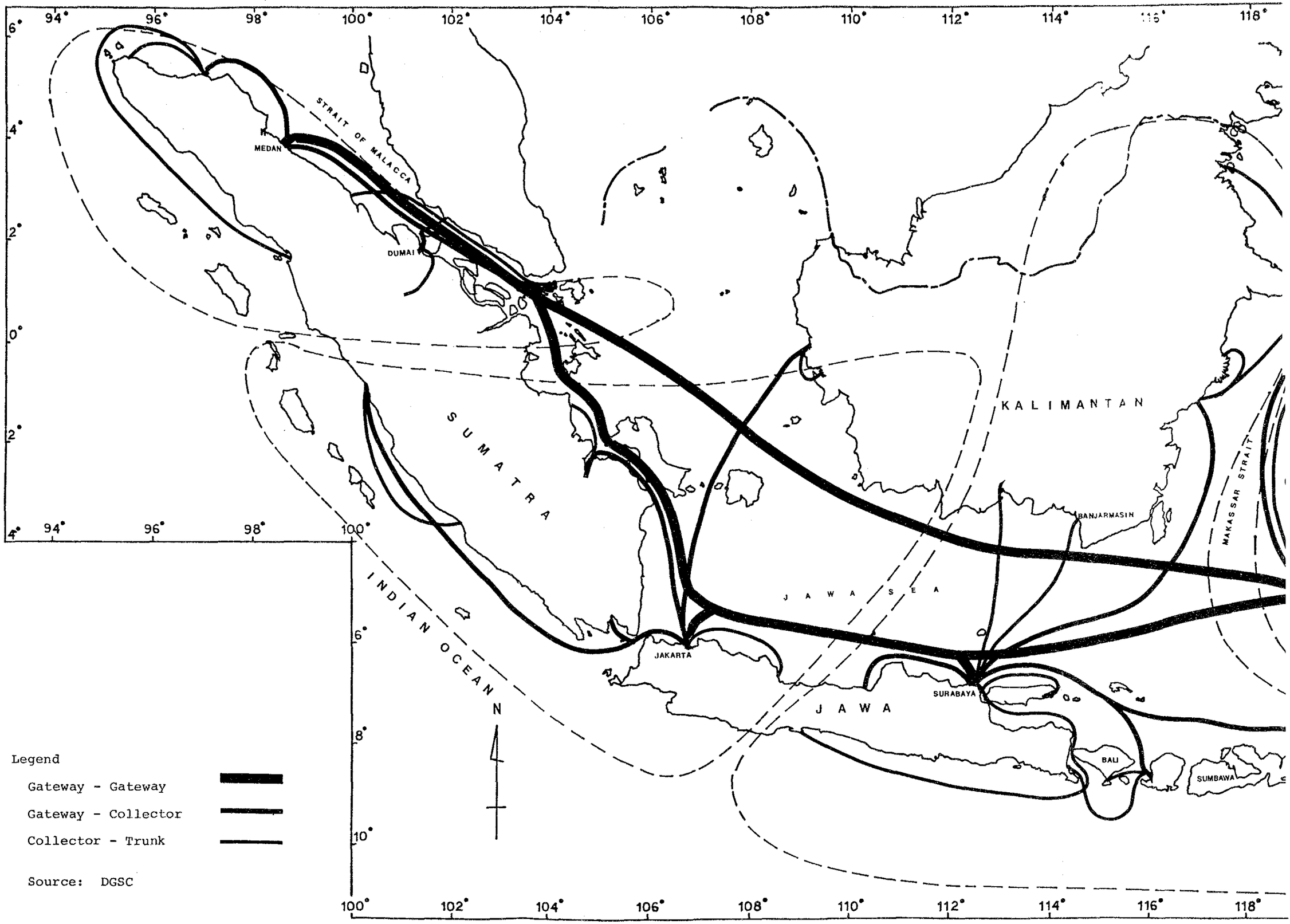
b. Articles from anyone relevant to aids to navigation work are appreciated and solicited. Commanding officers and officers-in-charge are encouraged to use these articles as training aids.

2. Forwarding Articles. Forward articles to the Editor, Aids to Navigation Bulletin, c/o Commandant (G-NSR-2). Material intended for the bulletin does not have to be routed through the chain of command; it may be submitted directly to the editor.

3. Distribution. Commanding officers and officers-in-charge will make the bulletin available to all hands.

APPENDIX-21

REPUBLIC OF INDONESIA
SERVICE ROUTES FOR GATEWAY-GATEWAY, GATEWAY-COLLECTOR AND COLLECTOR-TRUNK PORTS


94°
96°
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108°
110°
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114°
116°
118°
6°
4°
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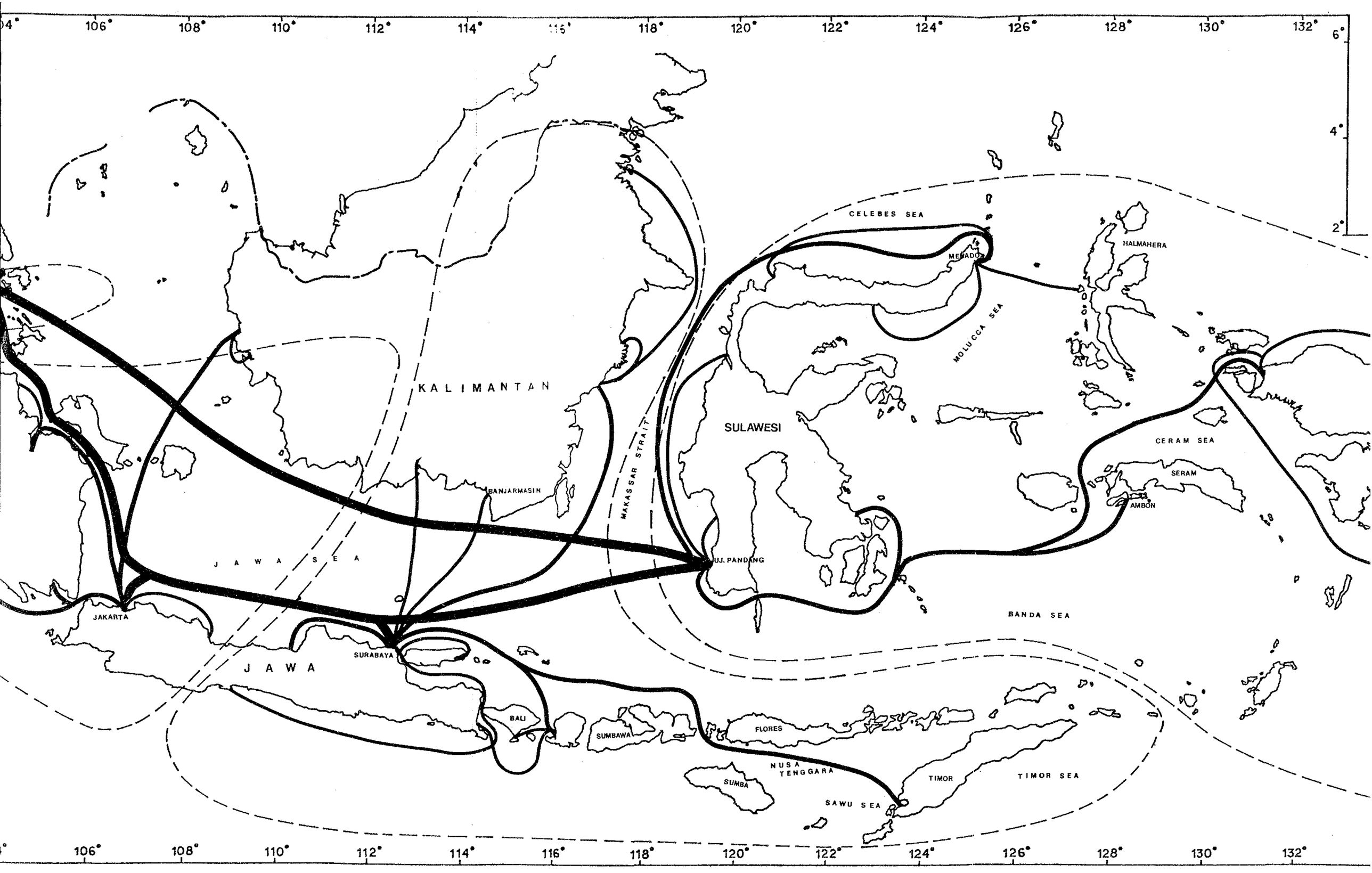
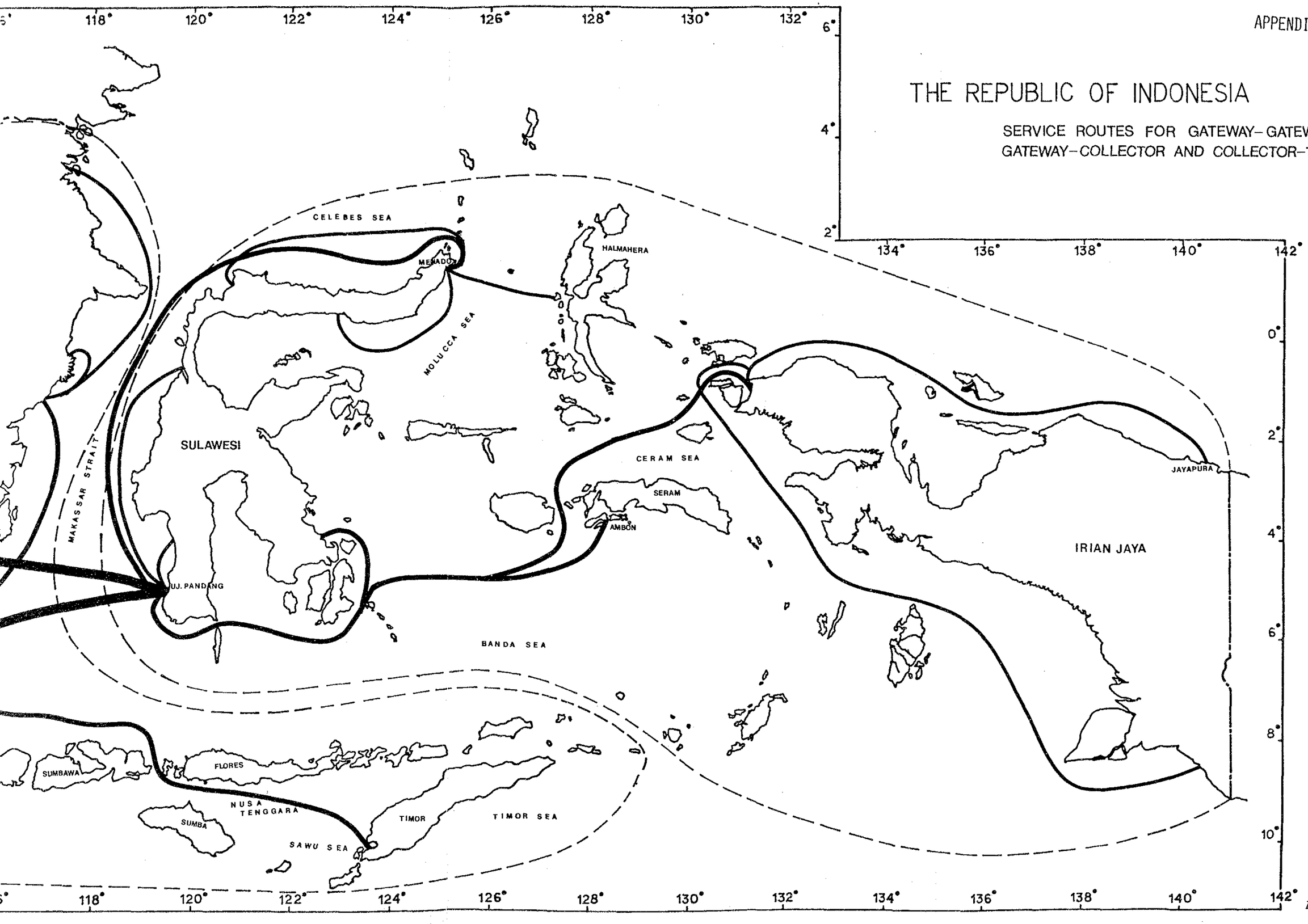
4°
6°
8°
10°
MEDAN
STRAIT OF MALACCA
DUMAI
S U M A T R A
K A L I M A N T A N
BANJARMASIN
MAKASSAR STRAIT
J A W A S E A
INDIAN OCEAN
JAKARTA
SURABAYA
J A W A
BALI
SUMBAWA
N
Legend
Gateway - Gateway
Gateway - Collector
Collector - Trunk
Source: DGSC


104°
106°
108°
110°
112°
114°
116°
118°
120°
122°
124°
126°
128°
130°
132°
6°
4°
2°
CELEBES SEA
MENADO
HALMAHERA
MOLUCCA SEA
KALIMANTAN
SULAWESI
CERAM SEA
SERAM
AMBON
MAKASSAR STRAIT
BANJARMASIN
UJ. PANDANG
JAWA SEA
JAKARTA
BANDA SEA
SURABAYA
JAWA
BALI
SUMBAWA
FLORES
NUSA TENGGARA
SUMBA
TIMOR
TIMOR SEA
SAWU SEA

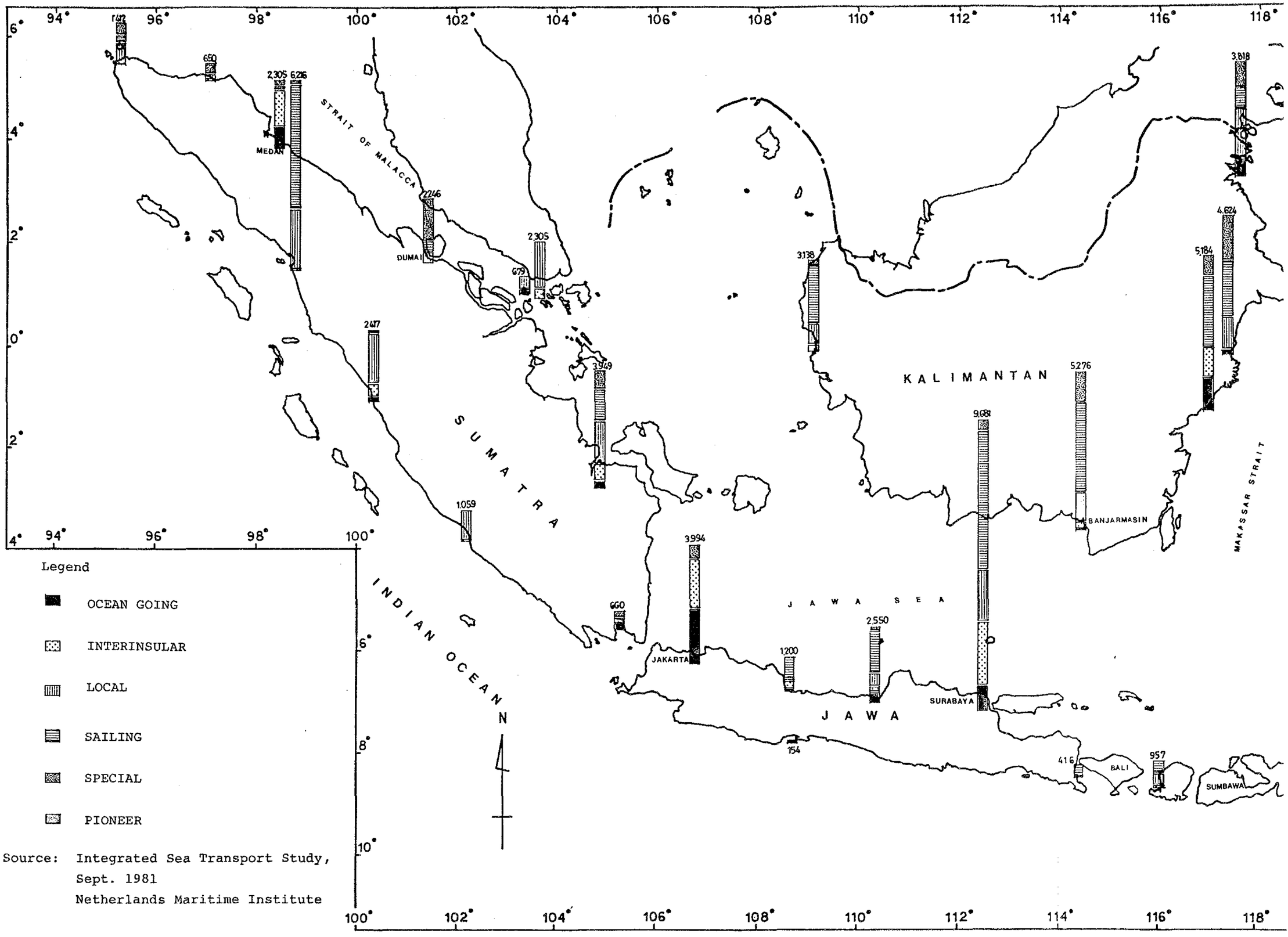
THE REPUBLIC OF INDONESIA

SERVICE ROUTES FOR GATEWAY–GATEWAY
GATEWAY–COLLECTOR AND COLLECTOR–TRUNK



APPENDIX-22

NUMBER OF SHIP CALLS TO MAIN PORTS BY TYPES OF SERVICE



Legend

- OCEAN GOING
- INTERINSULAR
- LOCAL
- SAILING
- SPECIAL
- PIONEER

Source: Integrated Sea Transport Study, Sept. 1981
Netherlands Maritime Institute

104° 106° 108° 110° 112° 114° 116° 118° 120° 122° 124° 126° 128° 130° 132°

6° 4° 2°

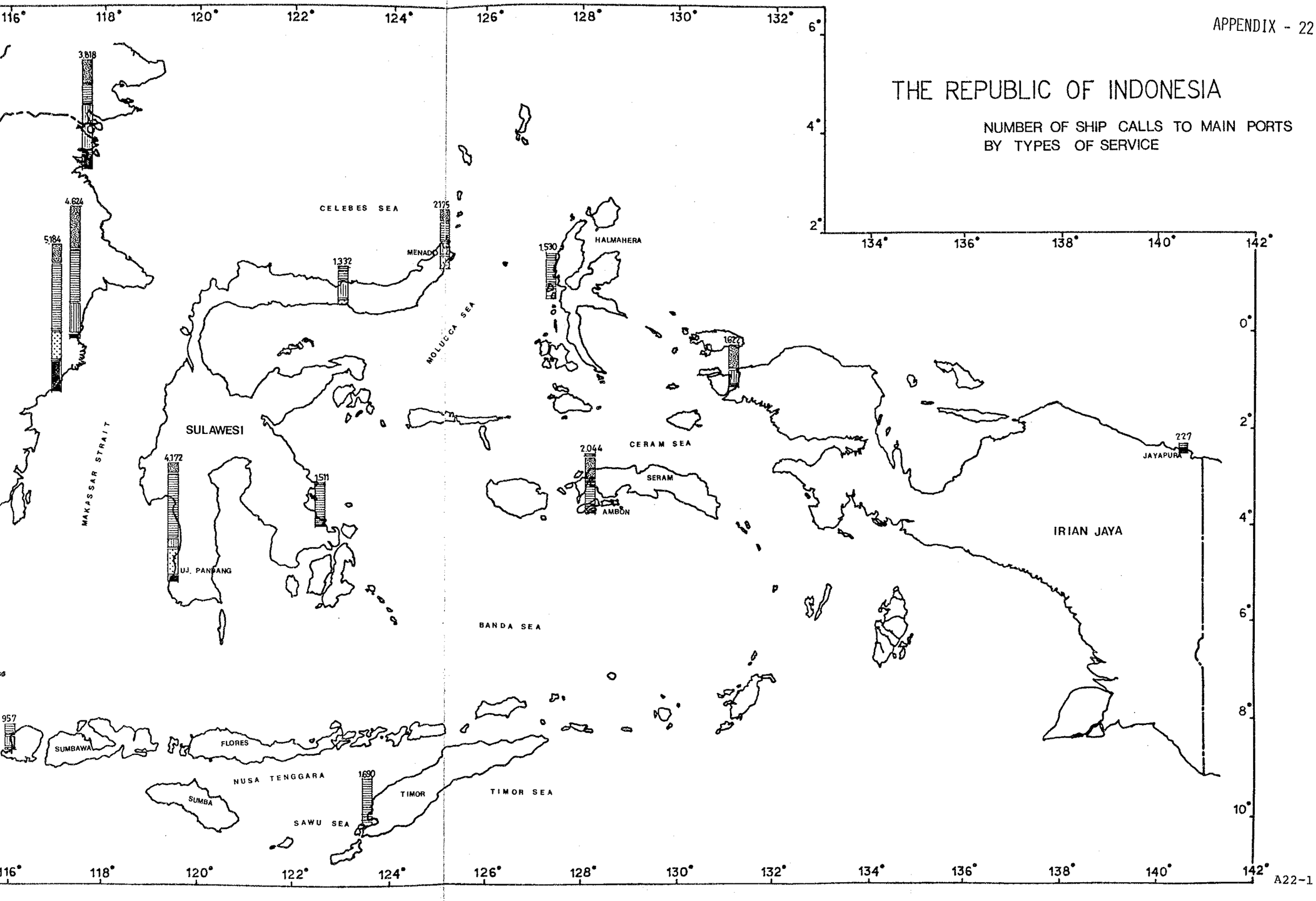
KALIMANTAN

3.818
4.624
5.184
3.138
5.276
9.681
3.949
3.994
660
2.550
1.200
JAKARTA
SURABAYA
BANJARMASIN
154
416
BALI
957
SUMBAWA
JAWA
JAWA SEA
MAKASSAR STRAIT
CELEBES SEA
2.175
MENADO
1.332
MOLUCCA SEA
SULAWESI
4.172
UJ. PANDANG
1.511
HALMAHERA
1.530
1.624
2.044
CERAM SEA
SERAM
AMBON
BANDA SEA
FLORES
NUSA TENGGARA
SUMBA
1.630
TIMOR
TIMOR SEA
SAWU SEA

104° 106° 108° 110° 112° 114° 116° 118° 120° 122° 124° 126° 128° 130° 132°

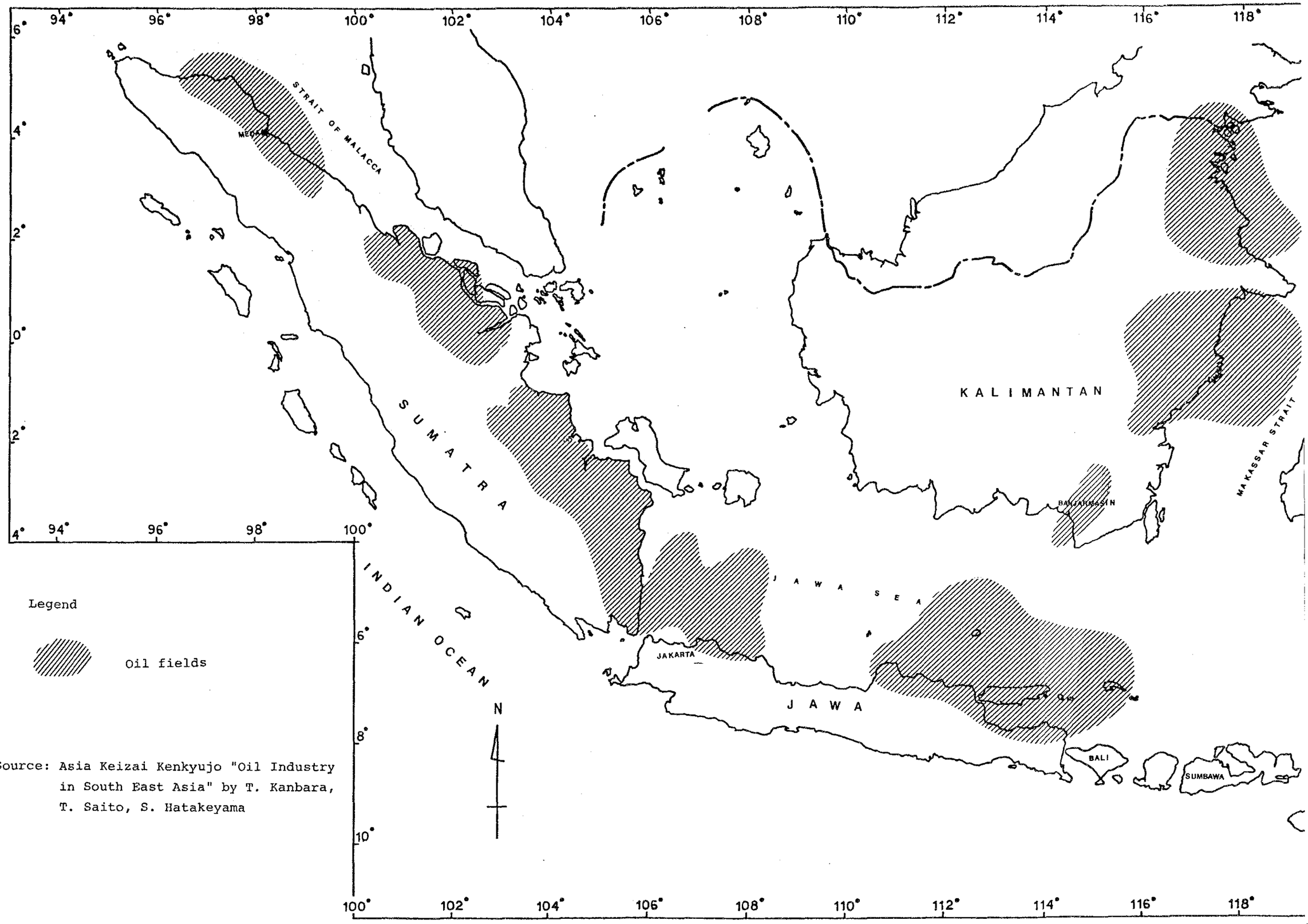
THE REPUBLIC OF INDONESIA

NUMBER OF SHIP CALLS TO MAIN PORTS
BY TYPES OF SERVICE

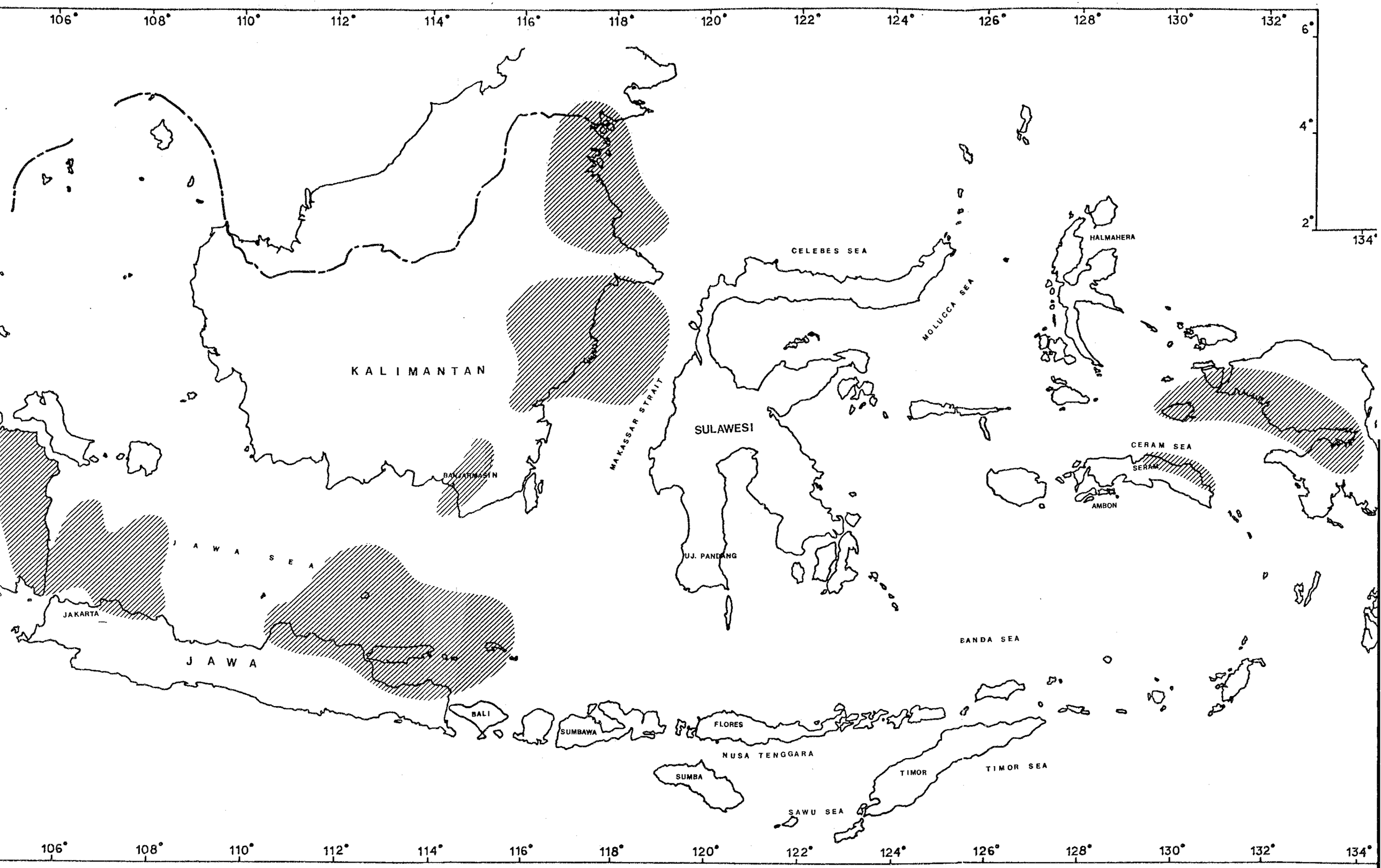


APPENDIX-23

OIL FIELDS IN INDONESIA

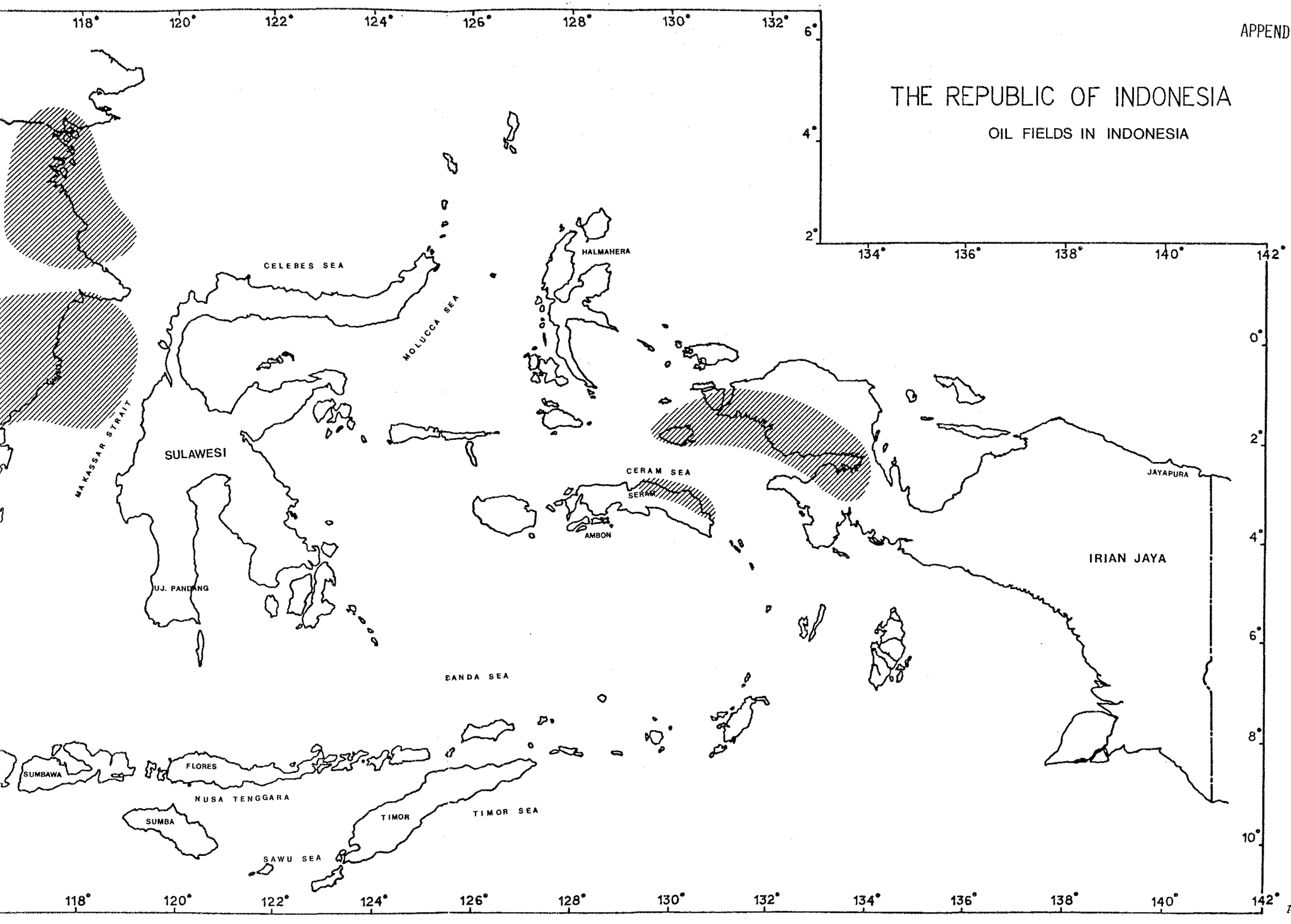


Source: Asia Keizai Kenkyujo "Oil Industry in South East Asia" by T. Kanbara, T. Saito, S. Hatakeyama


106°
108°
110°
112°
114°
116°
118°
120°
122°
124°
126°
128°
130°
132°
134°
6°
4°
2°
KALIMANTAN
BANJARMASIN
MAKASSAR STRAIT
CELEBES SEA
MOLUCCA SEA
SULAWESI
UJ. PANDANG
HALMAHERA
CERAM SEA
SERAM
AMBON
JAWA SEA
JAKARTA
JAWA
BALI
SUMBAWA
FLORES
NUSA TENGGARA
SUMBA
SAWU SEA
TIMOR
TIMOR SEA
BANDA SEA

THE REPUBLIC OF INDONESIA

OIL FIELDS IN INDONESIA



LIST OF EXISTING AIDS TO NAVIGATION SUPPORTING FACILITIES

(Ref: Section 2-3-1, (4))

APPENDIX-24
(Ref: Section 2-3-1, (4)

EXISTING AIDS TO NAVIGATION SUPPORTING FACILITIES

POSITION : MARCH 1985

Location	Office	Vessel			Jetty L(m) x B(m)	Buoy open storage (m^2)	Workshop (m^2)	Drydock (TLC)	Storehouse (m^2)			Gas Plant (m^3/hr.)
		Nama	Gross Tonnage	Type					Chain & Ballast	Equip-ment	Gas cy-linder	
1	2	3	4	5	6	7	8	9	10	11	12	13
D U M A I	First Class District of Navigation	MUCI KARAKATA SUAR-012 AE-025 SUAR-006 B-066	608.83 569.10 100.00 82.46 65.34 28.61	S/V B/T A/T I/B A/T A/T	40 x 11	2,400	400	70	200	48	104	-
TANJUNG PRIOK	First Class District of Navigation	BIMASAKTI PAMANCASA PERMATA MESA BAYAN MITRA II SUAR-014 MITRA I MITRA IV MITRA III AP-027 AB-P3 PILE DRIVING PONTON	1.373.65 904.52 664.89 644.04 192.87 186.30 108.58 104.30 80.06 70.00 46.67 8.16 8.00	Y/V S/V S/V B/T A/T Y/C A/T Y/C Y/C Y/C A/T A/T P/T	70 x 12	5,900	2,500	-	168	279	166	-

1	2	3	4	5	6	7	8	9	10	11	12	13
SURABAYA	First Class District of Navigation	PRAJAPATI INTAN KUMBA MANDALIKA BOGA SUAR-002 B-068	683.60 668.50 569.23 467.82 192.87 47.74 33.61	B/T S/V B/T S/V A/T A/T I/B	115 x 15	9,900	1,100	-	165	-	120	-
SAMARINDA	First Class District of Navigation	PUSPARAGAM MITHUNA DAGONG SUAR-010	668.50 644.23 79.22 66.55	S/V B/T A/T A/T	50 x 8	2,956	600	75 50 25	200	-	216	1
SORONG	First Class District of Navigation	PRADAWANA RAJA AMPAT ELPA PUTIH SUNGAI KAIBUS	762.78 397.79 258.55 29.50	B/T I/B A/T A/T	40 x 10	1,200	650	-	60	-	60	-
TANJUNG PRIOK	Marine Safety Technology Centre	P A R I	644.46	B/T	200 x 12	-	-	-	-	-	-	10
S A B A N G	Second Class District of Navigation	SUAR-005 B-133	47.28 34.08	A/T A/T	-	-	80	-	-	-	30	-
BELAWAN	Second Class District of Navigation	BLEKOK SUAR-008 B-118	191.53 67.28 45.10	A/T A/T A/T	25 x 5.5	315	138	-	-	100	73	-
SIBOLGA	Second Class District of Navigation	DUATA (D-042)	72.95	A/T	-	-	-	-	-	-	80	-

1	2	3	4	5	6	7	8	9	10	11	12	13
TELUK BAYUR	Second Class District of Navigation	BALAM	192.87	A/T	-	-	144	-	-	81	54	-
TANJUNG PINANG	Second Class District of Navigation	BARAU DUDAT (D-046) SUAR-004 TENGGIRI-002 B-082	195.25 83.51 55.93 48.20 36.97	A/T A/T A/T I/B A/T	-	-	230	-	-	90	80	-
PALEMBANG	Second Class District of Navigation	DAIK (D-044) DATTA (D-047) SUAR-001 B-125 B-126 B-025	65.19 57.97 36.12 34.54 34.01 30.06	A/T A/T A/T A/T A/T A/T	33 x 4.5	300	575	20 50	-	37	138	-
SEMARANG	Second Class District of Navigation	SUAR-011 B-124 B-008	115.37 44.37 39.63	A/T A/T A/T	-	-	60	-	-	-	80	-
CILACAP	Second Class District of Navigation	SUAR-007	63.34	A/T	25 x 8	300	80	-	-	-	-	-
B E N O A	Second Class District of Navigation	DAMARA	72.95	A/T	-	-	80	-	-	-	-	-
KUPANG	Second Class District of Navigation	BABUT AE-027	194.34 59.53	A/T A/T	-	-	80	-	-	-	-	-
PONTIANAK	Second Class District of Navigation	AE-012 SUAR-003	47.99 47.28	A/T A/T	-	-	610	200	-	-	80	-

1	2	3	4	5	6	7	8	9	10	11	12	13
BANJARMASIN	Second Class District of Navigation	B I D O AE-032	194.34 82.65	A/T A/T	-	-	60	-	-	-	-	-
BALIKPAPAN	Second Class District of Navigation	DUKU (D-043)	77.52	A/T	-	-	-	-	-	-	-	-
UJUNG PANDANG	Second Class District of Navigation	BETTET	194.34	A/T	-	-	216	-	-	104	73	-
KENDARI	Second Class District of Navigation	DINGKI (D-045)	79.22	A/T	-	-	-	-	-	-	-	-
A M B O N	Second Class District of Navigation	BENDALU B-135	192.87 44.37	A/T I/B	-	-	80	-	-	-	80	-
MANADO/BITUNG	Second Class District of Navigation	B E O SUAR-009 B-134	194.34 67.29 34.68	A/T A/T A/T	-	-	-	-	-	-	80	-
JAYAPURA	Second Class District of Navigation	DWIWARNA TANJUNG VERKAMI TELUK TN MERAH TAMI FJS RUMAINUM PULAU JEFBO	301.96 150.00 141.96 134.36 84.45 10.96	I/B I/B I/B I/B I/B I/B	-	-	300	250	-	55	-	-
MERAUKE	Second Class District of Navigation	TANJUNG NAMARIPI BINTANGGUR	197.90 133.68	I/B I/B	-	-	322	60 150	-	-	80	-
TG. B. KARIMUN	Navigational Working Unit	AE-024	100.25	I/B	-	-	-	-	-	-	-	-

1	2	3	4	5	6	7	8	9	10	11	12	13
BENGKALIS	Navigational Working Unit	B-013	29,37	I/B	-	-	-	-	-	-	-	-
TG. PANDAN	Navigational Working Unit	AE-028	59,02	I/B	-	-	-	-	-	-	-	-
KALIANGET	Navigational Working Unit	AE-029 B-120	82,65 41,38	A/T A/T	-	-	-	-	-	-	-	-
SAMPIT	Navigational Working Unit	B-115	40,83	I/B	-	-	-	-	-	-	-	-
TARAKAN	Navigational Working Unit	B-129	44,37	I/B	-	-	-	-	-	-	-	-
FAK - FAK	Navigational Working Unit	TANJUNG FATAGAR	176,98	I/B	-	-	-	-	-	-	-	-
MANOKWARI	Navigational Working Unit	PULAU BATANTA	8,61	I/B	-	-	-	-	-	-	-	-
B I A K	Navigational Working Unit	TELUK ETNA TANJUNG SABRA	252,58 120,55	I/B I/B	-	-	-	-	-	-	-	-

SOURCE: DGSC

Remarks

Column 1 : Base location
Column 2 : Office establishment
Column 3 : Vessel's name
Column 4 : Gross tonnage of the vessel
Column 5 : Type of the vessel
B/T = Buoy Tender
S/V = Supply Vessel
A/T = Aids Tender
I/B = Inspection Boat
P/P = Pile Pontoon
Y/V = Survey Vessel
Y/C = Survey Craft
Column 6 : Jetty floor measurement
L (m) = Length in meter
B (m) = Breadth in meter

Column 7 : Buoy open storage in square meter
Column 8 : Workroom in square meter
Column 9 : Dry dock for ship's repair in ton lifting capacity
Column 10: Chain & ballast open sheltered storehouse in square meter
Column 11: Equipment closed storehouse in square meter
Column 12: Gas cylinder open sheltered/closed storehouse in square meter
Column 13: Acetylene gas plant filling capacity in cubic meter per hour

LISTS OF WORKSHOP INSTALLATIONS

Equipment List A:

Equipment List B:

Ref: Sections 4-3-1, (1), 2) and
4-3-2, (2), 2)

Equipment List A

Equipment List A-1 (Machine Tools)

No.	Equipment		Qty
1	Lathe	2000 x 250 mm	1
2	Precision Lathe	400 x 50 mm	1
3	Universal Milling Machine	270 x 1350 mm	1
4	Vertical Milling Machine	270 x 1350 mm	1
5	Radial Drilling Machine	drilling 40 mm	1
6	Shaping Machine	Stroke 500 mm	1
7	Vertical Drilling Machine	drilling 25 mm	1
8	Bench Drilling	drilling 13 mm	2
9	Hack Saw	cutting ø350mm	2
10	Bench Grinder	ø205 mm 3000 r.p.m	2
11	Bending Machine	wide 1800 mm thickness 6.5 mm	1
12	Sheering Machine	Wide 1800mm thickness 6.5mm	1
13	Press Machine	25 ton	1
14	Pipe Bender	ø 80mm	1
15	Sand Blasting	sand consumption 200 kg/h	1

Equipment List A-2 (Woodwork Machine)

No.	Equipment		Qty
1	Wood Milling Machine	500 x 2000 mm	1
2	Wood Band Saw	thickness 220 mm	1
3	Circular Saw	ø405 mm 4000 r.p.m	1
4	Wood Lathe	1000 x 400 mm	1

Equipment List A-3 (Cutting & Welding Machine)

No.	Equipment		Qty
1	Engine Welder	20 kVA, 300A	1
2	Acetylene Gas set		2

Equipment List A-4 (Compressor & Pump)

No.	Equipment		Qty
1	Air Compresser	50 PS, 5 m^3/min	1
2	Blower Fan	15 m^3/min	4
3	Water Jet Pump	15 kg/cm^2	1
4	Pump	25 m, 10 m^3/h	5

Equipment List A-5 (Hand Tools)

No.	Equipment		Qty
1	Air Hammer	5 kg/cm^2 1500/min	4
2	Hand Pneumatic Chisel	5 kg/cm ^{2} 1500/min	4
3	Hand Surface Grinder	ø150 mm 3000 r.p.m	4
4	Hand Drill	ø12 mm 2600 r.p.m	4
5	Universal Hand Drill	ø25 mm 250 r.p.m	2
6	Hand Circular Saw	ø270 mm 3000 r.p.m	2
7	Soldering	200 W	4
8	Hand Hack Saw	300 mm	6

Equipment List A-6 (Bench Tools)

No.	Equipment		Qty
1	Parallel Vice	200 x 100 mm	3
2	Steel Anvil	416 x 113 mm	4
3	Hammer for Smith Set	5.4 kg, 2.7 kg	1
4	Hammer Set (Claw Hammer, Test Hammer)		1
5	Bearing Puller Set	No. 1 - 6	4
6	Slide Hammer Puller Set	No. 1 - 6	4
7	Petroleum Oil Torch		4

No.	Equipment	Qty
8	Pipe Vice, Pipe Cutter Set ø10 - ø90 mm	2
9	Pipe Wrench 10 - 4 mm, 34 - 90 mm	2
10	Chain Tong 19 - 100 mm, 38 - 200 mm	3
11	Die Set 8 - 50 mm	4
12	File Set for Machinist	4
13	Adjustable Wrench 60 mm	6
14	Reamers Set Taper Shank Type 10 - 45 mm	3
15	Wire Rope Cutter & Clamp Set 1 1/4"	2
16	Screw Driver Set	4
17	Socket Wrench Set 8 - 27 mm	3
18	Caliper (Outside & Inside) Set 150, 300 mm	4
19	Steel compass 150, 300, 400 mm	4
20	Tool Box	4

Equipment List A-7 (Testing & Measuring Equipment)

No.	Equipment	Qty
1	Vernier Caliper 150, 300 mm	6
2	Outside Micrometer 0 - 100 mm	3
3	Tubular Inside Micrometer Set 25 - 300 mm	3
4	Ruler Set	2
5	Hand Tachometer 50 - 20,000 r.p.m (Contact & noncontact type)	4

No.	Equipment	Qty
6	Digital Multimeter 0 - 2 K Ohm, 0 - 25 K Ohm	3
7	Vibrometer 10 - 1,000 Hz	2
8	Insulation Resistance Tester (Megger)	2
9	Thickness Gauge max. 3 mm	2
10	Fuel Injection Tester	1
11	Gas Pressure Indicator	1
12	Battery Charger DC 24V, 20 A	1

Equipment List A-8 (Electric Maintenance Equipment)

No.	Equipment	Qty
1	Oscilloscope	1
2	Volt Meter 300 μV - 100 V	1
3	Frequency Counter 10 Hz - 500 MHz	1
4	Regulated DC Power Supply 300 V/7 A	1
5	DIP Meter 400 kHz - 200 MHz	1
6	Function Power Meter 400 kHz - 2,000 MHz	1
7	Digital Multimeter 100 K Ohm	3
8	Current Meter 250 A	1
9	Signal Generator 30 Hz - 40 MHz	1
10	Maintenance Tool Set	4

Equipment List A-9 (Handling Equipment)

No.	Equipment		Qty
1	Chain Hoist	0.5, 1.5, 3 ton	2
2	Electric Hand Hoist	5 ton	1
3	Overhead Travelling Crane	7.5 ton	1
4	Forklift	5 ton, 3 m	2
5	Mobile Crane	10 ton	1
6	Harbour Crane	12 ton, R15 m	1
7	Hydraulic Jack	30 ton, 50 ton	2
8	Truck	5 ton	1

Equipment List A-10 (Generating Set)

No.	Equipment		Qty
1	Diesel Engine Generator	50 kVA	1

Equipment List B

Equipment List B-1 (Machine Tools)

No.	Equipment	Qty
1	Lathe 2000 x 250 mm	1
2	Universal Milling Machine 250 x 1000 mm	1
3	Shaping Machine Stroke 380 mm	1
4	Vertical Drilling Machine drilling 25 mm	1
5	Bench Drilling drilling 13 mm	2
6	Hack Saw cutting ø350mm	2
7	Bench Grinder ø205 mm 3000 r.p.m	2

Equipment List B-2 (Woodwork Machine)

No.	Equipment	Qty
1	Wood Milling Machine 500 x 2000 mm	1
2	Wood Band Saw thickness 220 mm	1
3	Wood Lathe 1000 x 400 mm	1

Equipment List B-3 (Cutting & Welding Machine)

No.	Equipment		Qty
1	Engine Welder	20 kVA, 300A	1
2	Acetylene Gas set		2

Equipment List B-4 (Compressor & Pump)

No.	Equipment		Qty
1	Air Compresser	40 PS, 0.6 m^3/min	1
2	Blower Fan	15 m^3/min	2
3	Water Jet Pump	15 kg/cm^2	1
4	Pump	25 m, 10 m^3/h	3

Equipment List B-5 (Hand Tools)

No.	Equipment		Qty
1	Air Hammer	5 kg/cm^2 1500/min	2
2	Hand Pneumatic Chisel	5 kg/cm^2 1500/min	
3	Hand Surface Grinder	ø150 mm 3000 r.p.m	2
4	Hand Drill	ø12 mm 2600 r.p.m	2
5	Universal Hand Drill	ø25 mm 250 r.p.m	1

No.	Equipment		Qty
6	Hand Circular Saw	ø270 mm 3000 r.p.m	1
7	Soldering	200 W	2
8	Hand Hack Saw	300 mm	4

Equipment List B-6 (Bench Tools)

No.	Equipment		Qty
1	Parallel Vice	200 x 100 mm	2
2	Steel Anvil	416 x 113 mm	3
3	Hammer for Smith Set	5.4 kg, 2.7 kg	1
4	Hammer Set (Claw Hammer, Test Hammer)		1
5	Bearing Puller Set	No. 1 - 6	2
6	Slide Hammer Puller Set	No. 1 - 6	2
7	Petroleum Oil Torch		4
8	Pipe Vice, Pipe Cutter Set	ø10 - ø90 mm	2
9	Pipe Wrench	10 - 4 mm, 34 - 90 mm	1
10	Chain Tong	19 - 100 mm, 38 - 200 mm	1
11	Die Set	8 - 50 mm	2
12	File Set for Machinist		3
13	Adjustable Wrench	60 mm	3
14	Reamers Set	Taper Shank Type 10 - 45 mm	2
15	Wire Rope Cutter & Clamp Set	1 1/4"	1

No.	Equipment	Qty
16	Screw Driver Set	3
17	Socket Wrench Set 8 - 27 mm	2
18	Caliper (Outside & Inside) Set 150, 300 mm	2
19	Steel compass 150, 300, 400 mm	2
20	Tool Box	3

Equipment List B-7 (Testing & Measuring Equipment)

No.	Equipment	Qty
1	Vernier Caliper 150, 300 mm	3
2	Outside Micrometer 0 - 100 mm	2
3	Tubular Inside Micrometer Set 25 - 300 mm	2
4	Ruler Set	2
5	Hand Tachometer 50 - 20,000 r.p.m (Contact & noncontact type)	2
6	Digital Multimeter 0 - 2 K Ohm, 0 - 25 K Ohm	2
7	Vibrometer 10 - 1,000 Hz	1
8	Insulation Resistance Tester (Megger)	1
9	Fuel Injection Tester	1
10	Battery Charger DC 24V, 20 A	1

Equipment List B-8 (Electric Maintenance Equipment)

No.	Equipment		Qty
1	Oscilloscope		1
2	Volt Meter	300 μV - 100 V	1
3	Frequency Counter	10 Hz - 500 MHz	1
4	Regulated DC Power Supply	300 V/7 A	1
5	DIP Meter	400 kHz - 200 MHz	1
6	Function Power Meter	400 kHz - 2,000 MHz	1
7	Digital Multimeter	100 K Ohm	2
8	Current Meter	250 A	1
9	Signal Generator	30 Hz - 40 MHz	1
10	Maintenance Tool Set		4

Equipment List B-9 (Handling Equipment)

No.	Equipment		Qty
1	Chain Hoist	0.5, 1.5, 3 ton	1
2	Overhead Travelling Crane	7.5 ton	1
3	Forklift	5 ton, 3 m	2
4	Hydraulic Jack	30 ton	2
5	Truck	5 ton	1

Equipment List B-10 (Generating Set)

No.	Equipment		Qty
1	Diesel Engine Generator	50 kVA	1

APPENDIX-26

LIST OF ELECTRONIC AIDS TO NAVIGATION

Medium-wave Radiobeacon Stations

(Now under implementation as 1st Phase-F-ST-3C-Project)

Radar Beacon Stations

MF Radiobeacon Station - lst Phase Implementation -

Stn. No.	Name of Station	LAT/LOG	Covering area	KANWIL-	District NAVIGASI	Monitor Station	Remarks
1	SABANG (IE MEULE)	N 05° 54' E 95° 20'	North Point of SUMATERA	I	SABANG	SABANG RADIO	lst phase of F-ST-3C
2	SIMEDANG ISLAND	S 03° 19' E 107° 13'	JAVA SEA	III	PALEMBANG	JAKARTA RADIO	lst phase of F-ST-3C
3	TG. PRIOK (JAGA SELATAN Is.)	S 05° 42' E106° 43'	JAVA SEA	III	TG. PRIOK	JAKARTA RADIO	lst phase of F-ST-3C
4	PONTIANAK (TG. BANKAI)	N 00° 21' E108° 55'	West of	III	PONTIANAK	PONTIANAK RADIO	lst phase of F-ST-3C
5	PESEMUT ISLAND	S 02° 30' E108° 51'	KARIMATA STRAIT	III	PONTIANAK	PONTIANAK RADIO	lst phase of F-ST-3C
6	MANDALIKA ISLAND	S 06° 23' E110° 55'	JAVA SEA	IV	SEMARANG	SEMARANG RADIO	lst phase of F-ST-3C
7	CILACAP (SIMIRING)	S 07° 47' E109° 03'	South Coast of JAVA	IV	CILACAP	CILACAP RADIO	lst phase of F-ST-3C
8	JAMUANG ISLAND	S 06° 56' E112° 44'	JAVA SEA	IV	BENOA	SURABAYA RADIO	lst phase of F-ST-3C
9	TG. SELATAN	S 04° 11' E114° 39'	JAVA SEA	V	BANJARMASIN	BANJARMASIN RADIO	lst phase of F-ST-3C
10	BENOA (TG. SEDIHING)	S 08° 49' E115° 36'	South of BALI Is.	IV	BENOA	SURABAYA RADIO	lst phase of F-ST-3C
11	BALIKPAPAN (TG. JUMALAI)	S 01° 20' E116° 45'	MAKASSAR STRAIT	V	BALIKPAPAN	BALIKPAPAN RADIO	lst phase of F-ST-3C
12	TG. MANGKALIHAT	N 01° 00' E118° 59'	MAKASSAR STRAIT	V	SAMARINDA	BALIKPAPAN RADIO	lst phase of F-ST-3C
13	TG. MANDAR (TG. RANGASA)	S 03° 34' E118° 56'	MAKASSAR STRAIT	VI	UJUNG PANDANG	UJUNG PANDANG RADIO	lst phase of F-ST-3C

Stn. No.	Name of Station	LAT/LOG	Covering area	KANWIL-	District NAVIGASI	Monitor Station	Remarks
14	UJUNG PANDANG (DEWAKANG Is.)	S 05° 24' E118° 26'	JAVA SEA	VI	UJUNG PANDANG	UJUNG PANDANG RADIO	1st phase of F-ST-3C
15	AMBON (TG. NUSANIVE)	S 03° 48' E128° 06'	BANDA SEA	VIII	AMBON	AMBON RADIO	1st phase of F-ST-3C
16	BITUNG (MAYU)	N 01° 19' E126° 23'	MOLUCCA SEA	VII	BITUNG	BITUNG RADIO	1st phase of F-ST-3C
17	RAMSORONG	S 00° 51' E131° 11'	DAMPIER STRAIT	IX	SORONG	SORON RADIO	1st phase of F-ST-3C
18	MERAUKE	S 08° 30' E140° 23'	South-west of IRIAN JAYA	IX	MERAUKE	MERAUKE RADIO	1st phase of F-ST-3C

Radar Beacon Stations - Existing

Stn. No.	Name of Location	No. of Existing Lighthouse	Position (LAT/LON)	Area	KANWIL	DISTRICT NAVIGASI	Coast Station Nearby	Remarks
1	ONE FATHOM BANK			Strait of MALACCA	II	DUMAI	DUMAI	
2	NANKA IS.			NW point of BANKA Is.	III	PALEMBANG	PALEMBANG	
3	KALAN JAMUANG			NW point of MADURA Is.	IV	SURABAYA	SURABAYA	

APPENDIX-27

MAINTENANCE AND CHECKING PROCEDURES

FOR

ELECTRONIC AIDS TO NAVIGATION

Medium-wave Radiobeacon Stations

Radar Beacon Stations

Maintenance and Checking Procedures for Electronic Aids to Navigation

(1) Medium-wave Radiobeacons

It will be extremely important to carry out the regular checkings and error measurements in an effective way so as to prevent occurrence of troubles in the system.

Even in case where troubles may occur, development for the set-up of continuous monitoring and smooth supply of spare parts and components will be vitally required together with the training of personnel who have expertise of equipment handling, maintenance and repairs.

Following outlines the regular checking and error measurements for medium-wave radiobeacon stations.

1) Regular checking

The personnel who have sufficient knowledge on the technical performances and skills thereof will make regular visits to each station once every three months to carry out the checking of operational status and performances as given below;

(a) Frequency deviation measurement

Frequency deviation will be measured using a frequency counter, and necessary adjustment will be made if and when the deviation exceeds the allowable deviation of 10^{-4}.

(b) Antenna power measurement

Antenna current will be measured to calculate the antenna power. The allowable deviation shall be 10% for upper limit and 20% for lower limit.

(c) Modulation measurement

Modulation measurement will be made using a synchroscope through wave shape observation to adjust to the required wave shape.

(d) Timing measurement

Checking for the transmission timing will be made in reference to UTC broadcast from Manila (call sign DUW21)

(e) Spurious measurement

Field strength will be measured in the vicinity of a station to calculate the field strength of spurious emission. The allowable standards shall be not more than 50 mW and 40 dB less.

(f) Checking of antenna system

The base insulator and antenna insulators will be cleaned to thinly put silicon grease on them. Arrester gaps will also be cleaned and adjusted.

(g) Checking of power supply

The operational status and performances of power supply equipment will be checked for its necessary adjustment.

2) Error Measurement

Error measurement and evaluation tests will be carried out for the directional radiobeacons when they will be newly constructed and/or modification works, which may affect the transmissions such as antenna works, will be done, so that the directivity errors of the transmissions may be minimized through necessary adjustment of the error correction devices incorporated in the goniometer.

Furthermore, scheduled error checking test will be carried out preferably every year in order to confirm the operational performances of radiobeacons, and appropriate adjustment will be made when the test results prove necessary. The test procedures are described below.

The error checking test will be carried out simultaneously both on land and at sea: Optical bearing measurement will be made to obtain the bearing of a ship using a transit installed on land, while on board reception of the radiobeacon signals will be made to plot on a recording chart together with time signals as shown in Fig. 2. Fig. 1 shows an example of the measured data.

Alternatively, electronic bearing measurement will be made using the temporary installation of a precise

position fixing system on shore and on board instead of the optical bearing measurement.

A test vessel goes along a circle, 3 - 5 NM in diameter for the continuous measurement of a radiobeacon. After completion of the test, reading of the number of dots at a audio-null point counted from the starting code will be made so as to obtain the ship's bearing in reference to the radiobeacon station by multiplying the dots counted by two, and then accuracy check will be conducted making reference to the actually observed bearings by a transit on shore. This is exampled in Fig. 3.

The recording chart gives both true and measured bearings in relation to a radiobeacon station plotted in the center of chart, and bearing scales are lined for the true bearing extending from outside toward the center and for the measured bearing from the center to outside. If the plotted bearings would form a concentric circle with the diameter plotted in the center between the inner and outer circles, on which bearings are scaled, then the measured bearing errors are nil. Any deviation from the concentric circle shows that errors exist: the farer the plots are away from the center, the more bearing errors exist.

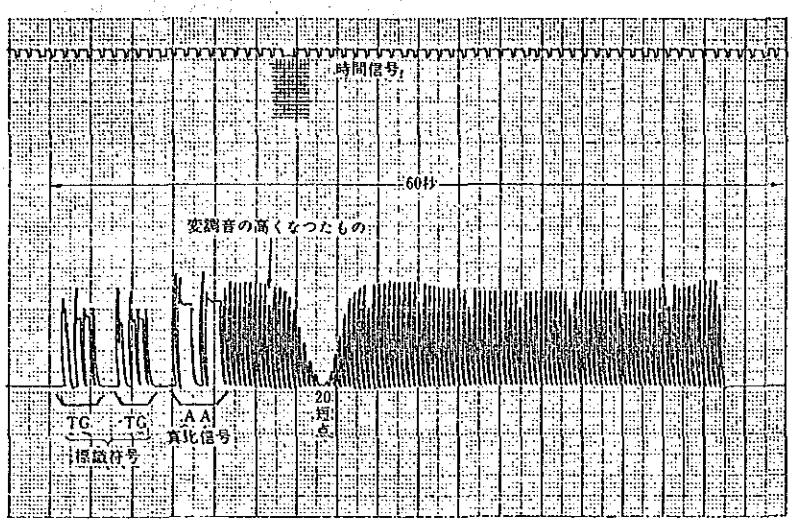


Fig. 1 Example of Received Signal from Directional Radiobeacon

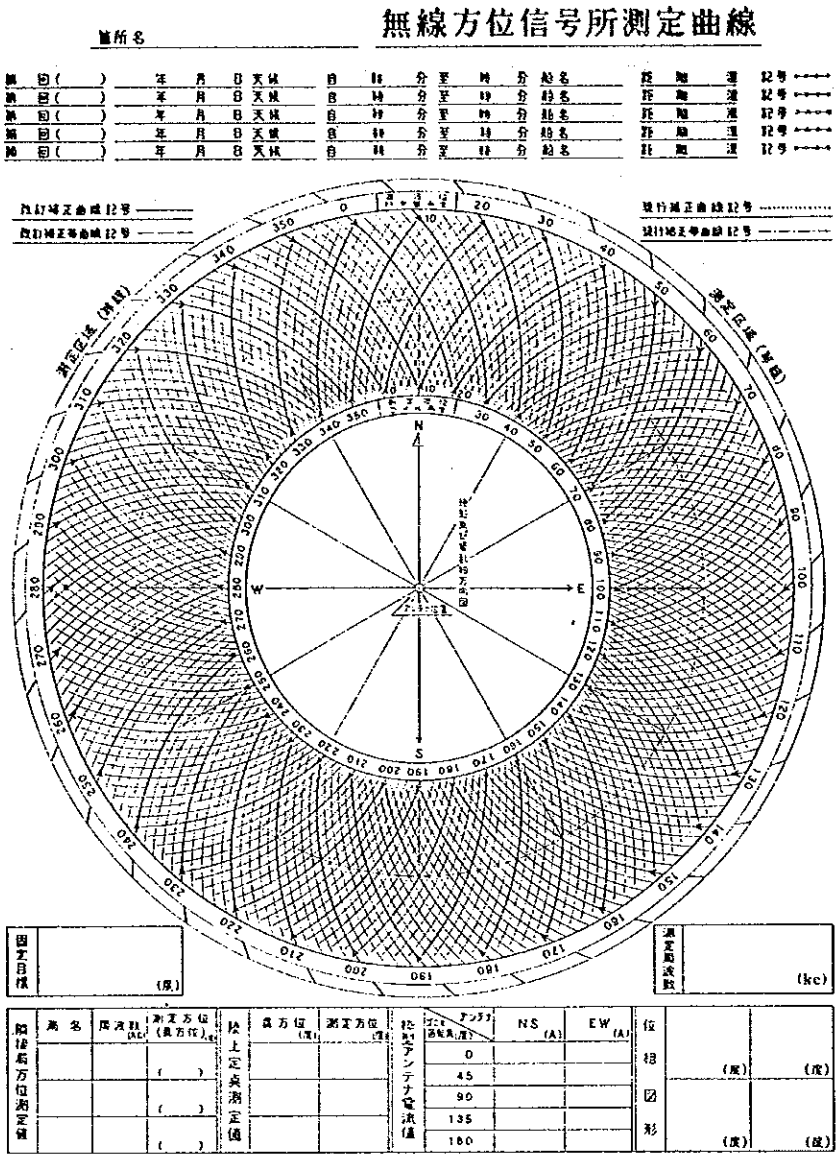


Fig. 2 Recording Chart of Error Measurement

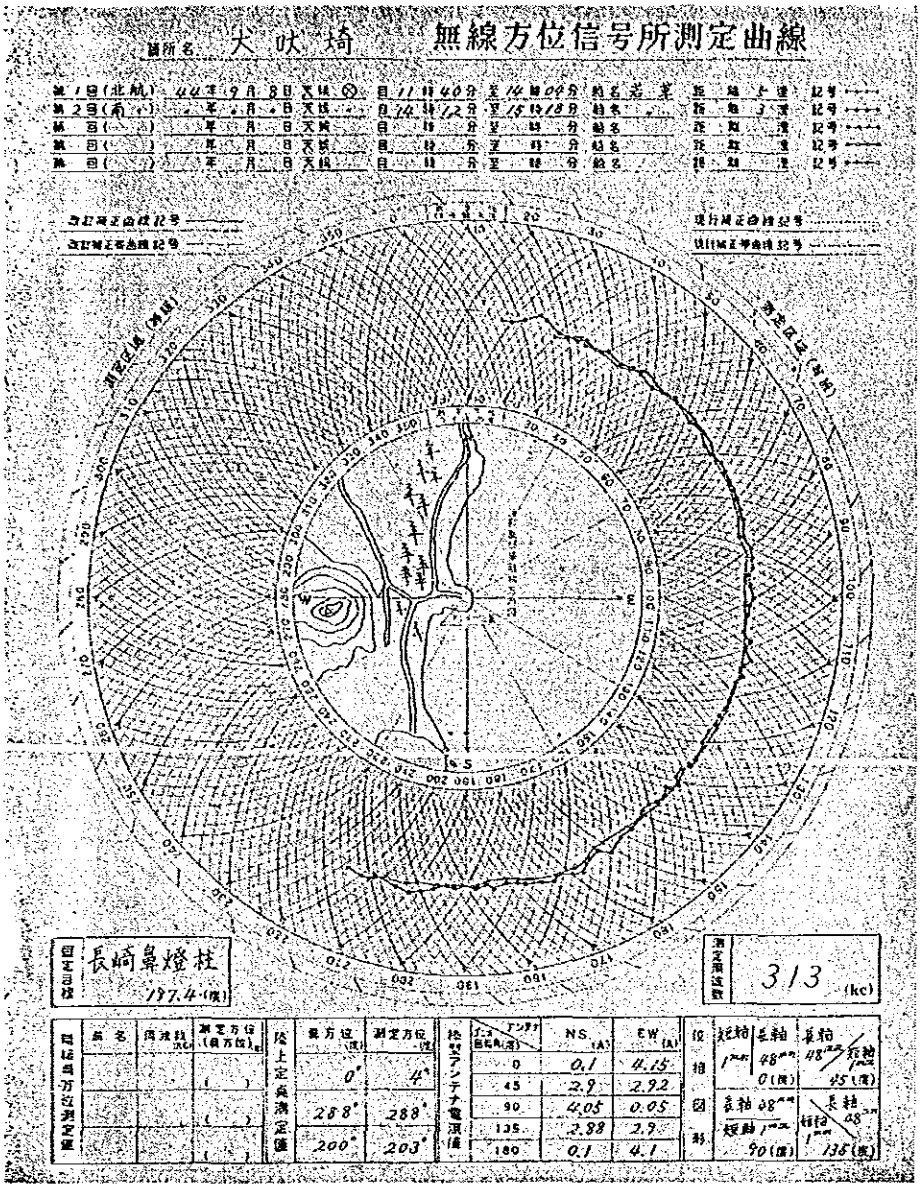


Fig. 3 Example of Error Measurement Recorded

(2) Radar Beacon Stations

The scheduled checking and maintenance for radar beacon stations are vitally required for prevention of possible troubles in order to maintain the operational performances and reliability of the stations.

Even in case of trouble occurrence, substantial necessity exists to develop a system for the smooth supply of spares together with the training of personnel who may have the expertise knowledge required for the repairs.

Following outlines the scheduled checking and maintenance for radar beacon stations.

1) Scheduled checking

(a) On-board checking will be carried out for the operational status of racons within the coverage area through reception of the signals on PPI.

(b) Checking will be made for the operational status of racons by means of reading each of the built-in meters.

(c) Checking will be made for each facility to see whether there are any abnormalities.

2) Scheduled Maintenance

Radar beacons are normally situated at remote areas such as isolated islands and reef, capes and so on, and accordingly it is difficult to carry out various measurement tests and the adequate maintenance required for maintaining the reliability of equipment.

For this reason, a unit replacement system will be applied for the main units changing over the in-operation unit to stand-by and vice-versa every two years so that the removed units may be serviced at workshops on shore.

APPENDIX-28

Outline of Maritime Safety School, Japan

Outline of Maritime Safety School

1) Purpose of Establishment

The Maritime Safety School was established as an internal educational setup within the Maritime Safety Agency (MSA) for the purpose of providing the students, who have been newly recruited as MSA personnel, with the education and training required for execution of the respective services of search and rescue, hydrography and aids to navigation.

2) Year of Establishment

1949

3) Educational Philosophy

(a) Awareness of the essence of his duty as a Maritime Safety Officer and current understanding of his responsibility.

(b) Provision of rigid discipline and high morale as well as cultivation of spirit of cooperation

(c) Cultivation of magnanimous candour personality and bland good sense.

(d) Provision of the expertise and skill required for maritime safety services.

(e) Building up of physical strength and cultivation of indomitable spirit.

4) Courses and Period

Navigator course	:	1 year
Engineer course	:	1 year
Telecommunications course	:	1 year
Hydrographic course	:	1 year
Aids to navigation course	:	2 years

5) Boarding School System

For the purpose of cultivating necessary discipline, sense of responsibility and harmony and positiveness, all the students live in the school dormitories.

6) Others

Summary of the Aids to Navigation Course is as follows:

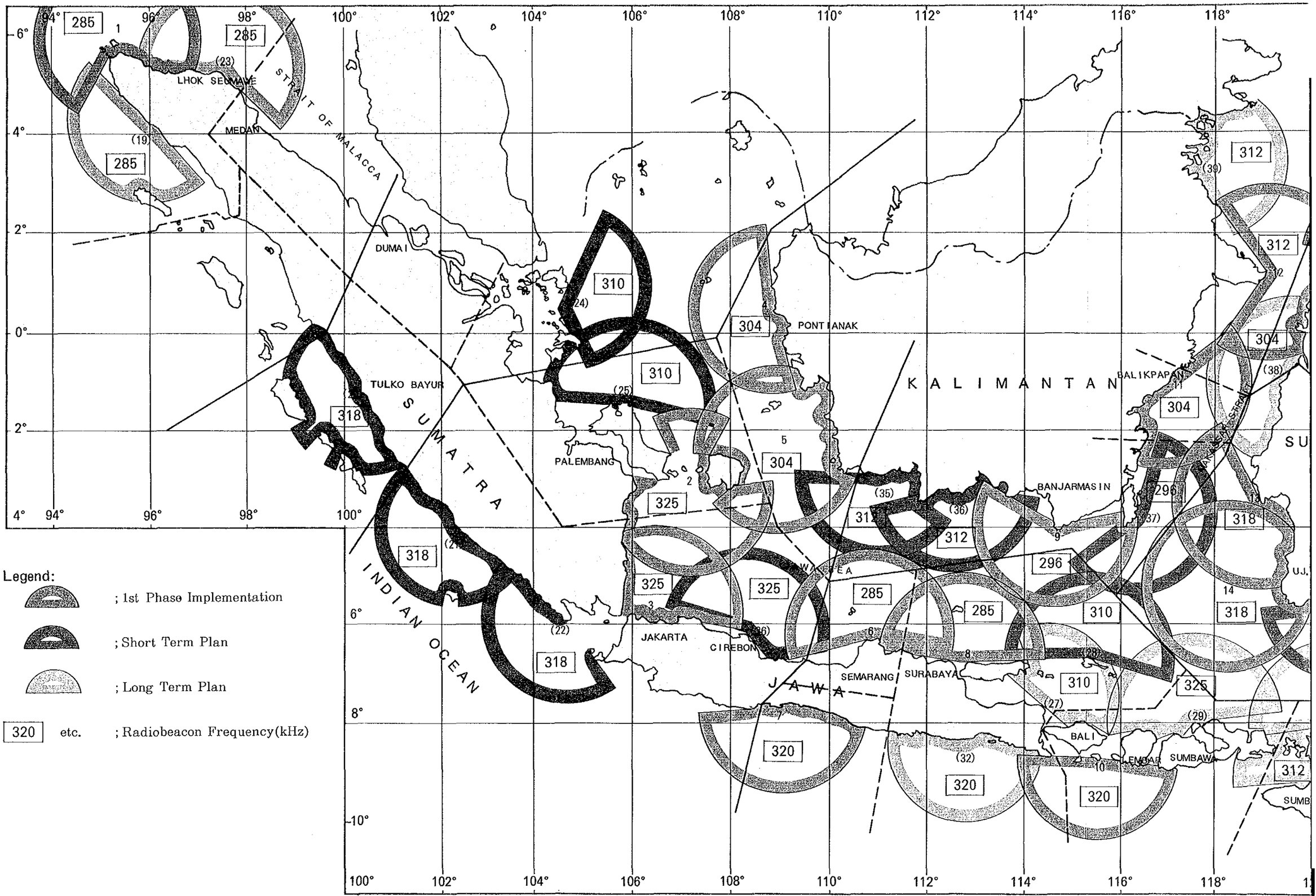
(a) Training period ..... 2 years

(b) Qualifications ..... Senior high school graduates

(c) Number of students .... 20 - 35 per year

APPENDIX-29

OVERALL FREQUENCY ALLOCATION PLAN FOR MEDIUM-WAVE RADIOBEACON STATIONS IN INDONESIA



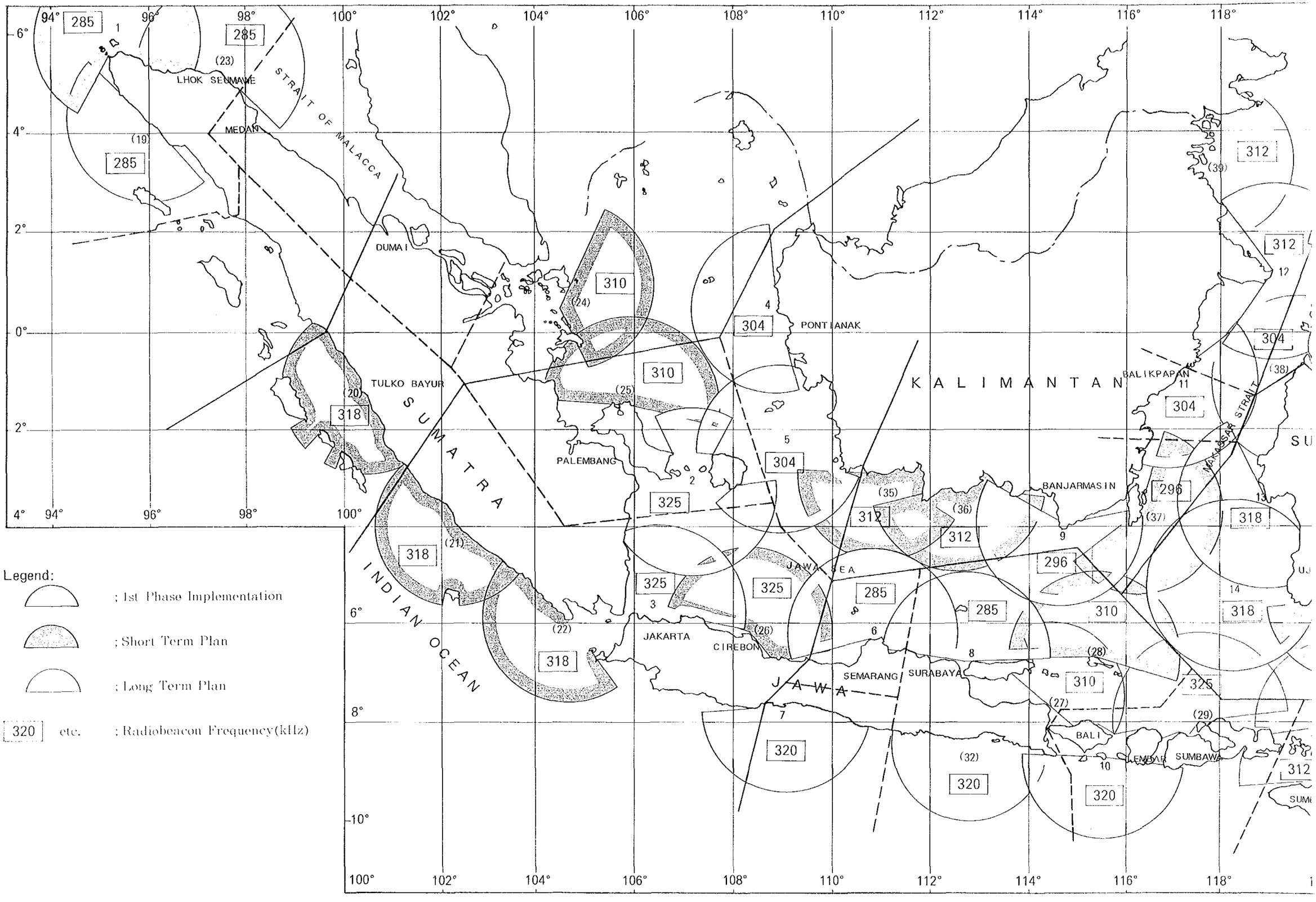
Legend:

; 1st Phase Implementation

; Short Term Plan

; Long Term Plan

320 etc. ; Radiobeacon Frequency(kHz)



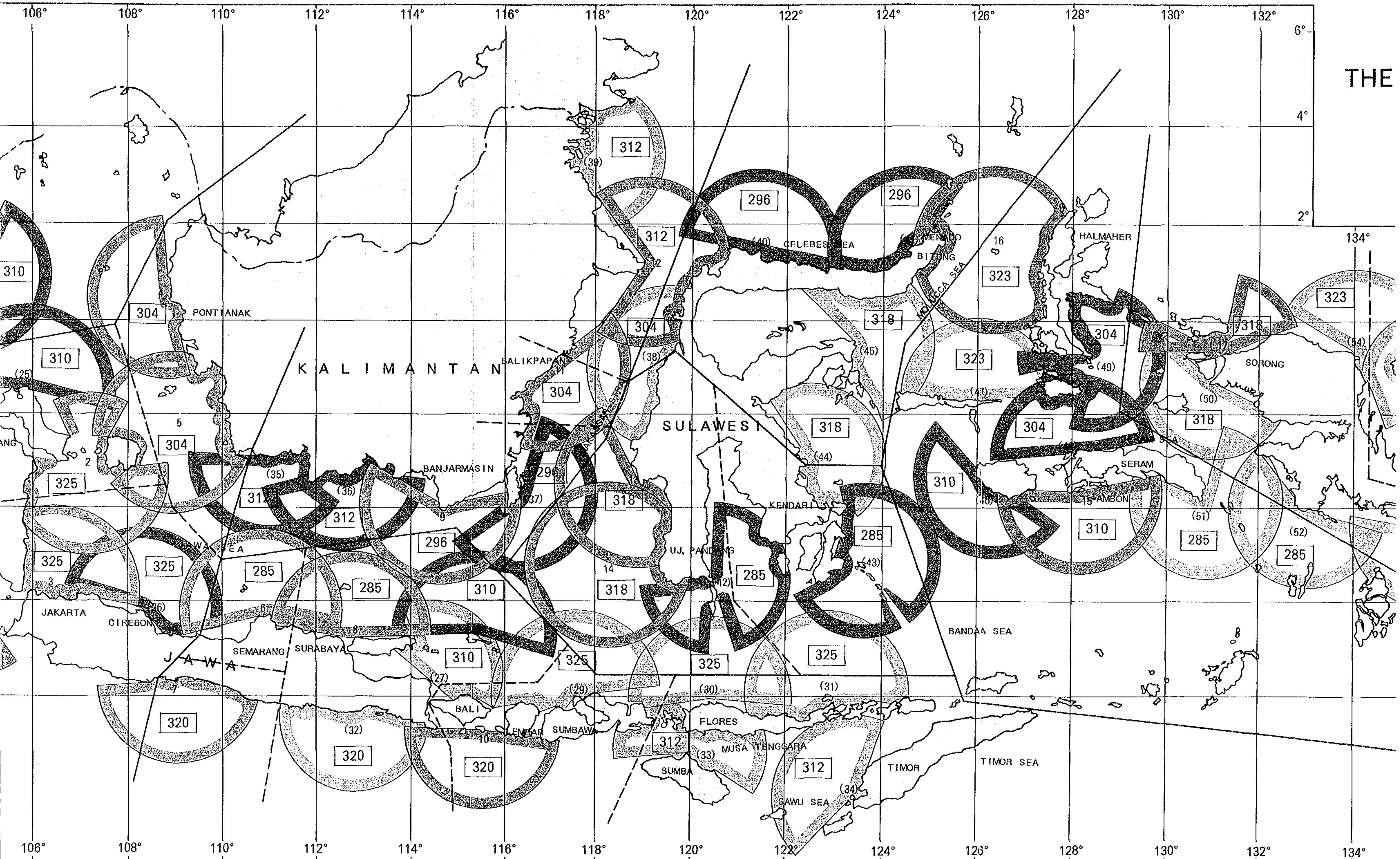
Legend:

; 1st Phase Implementation

; Short Term Plan

; Long Term Plan

320 etc. ; Radiobeacon Frequency(kHz)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SULAWESI
JAWA
PONTIANAK
BALIKPAPAN
BANJARMASIN
JAKARTA
CIREBON
SEMARANG
SURABAYA
BALI
SUMBAWA
FLORES
SUMBA
TIMOR
TIMOR SEA
SAWU SEA
BANDAA SEA
CELEBES SEA
MOLUCCA SEA
MENADO
BITUNG
KENDARI
UJ. PANDANG
HALMAHER
SORONG
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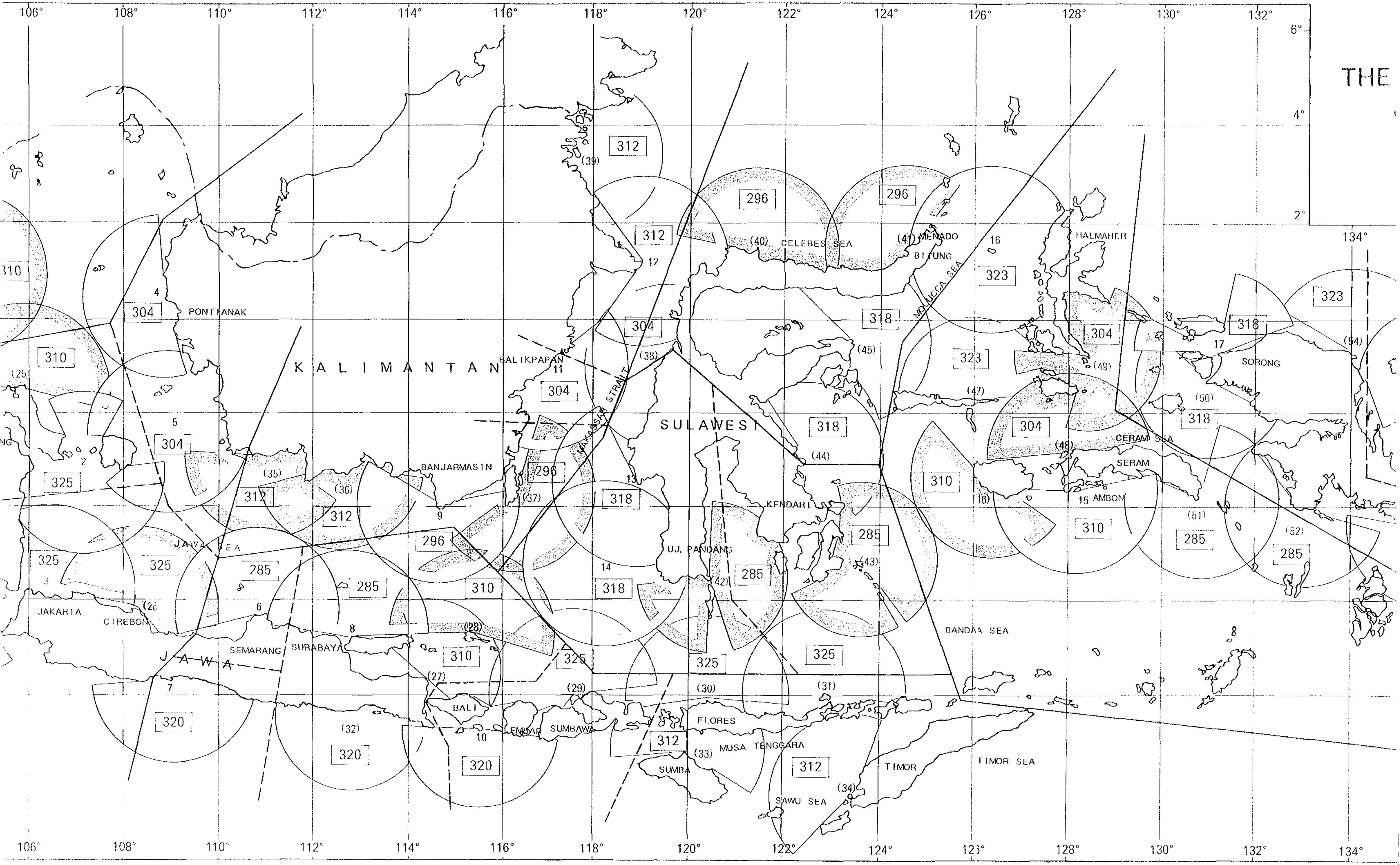
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MOLUCCA SEA
HALMAHER
SORONG
CERAM SEA
SERAM
AMBON
KENDARI
UJ. PANDANG
BANDAA SEA
JAWA SEA
JAKARTA
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SEMARANG
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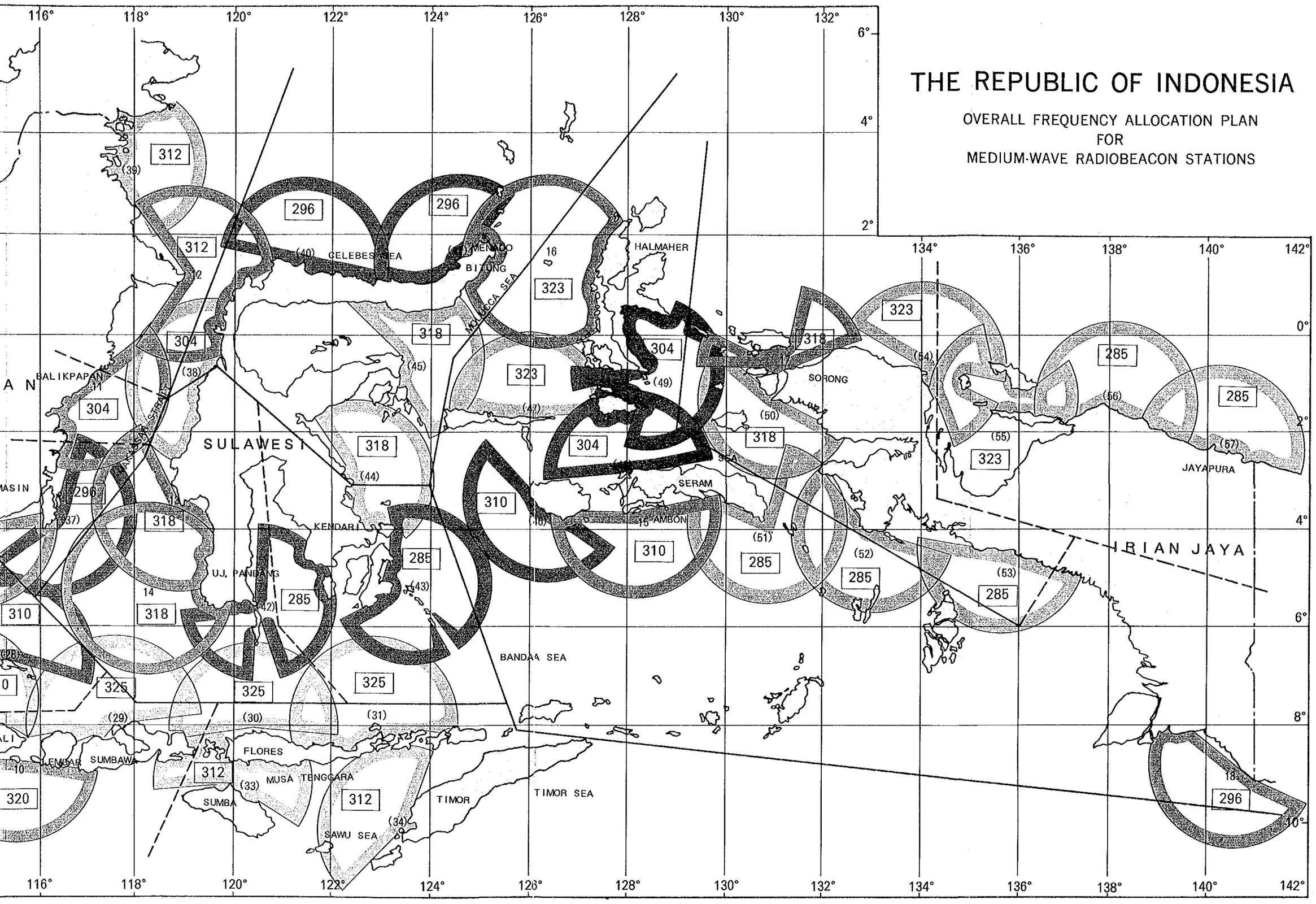
THE REPUBLIC OF INDONESIA

OVERALL FREQUENCY ALLOCATION PLAN
FOR
MEDIUM-WAVE RADIOBEACON STATIONS



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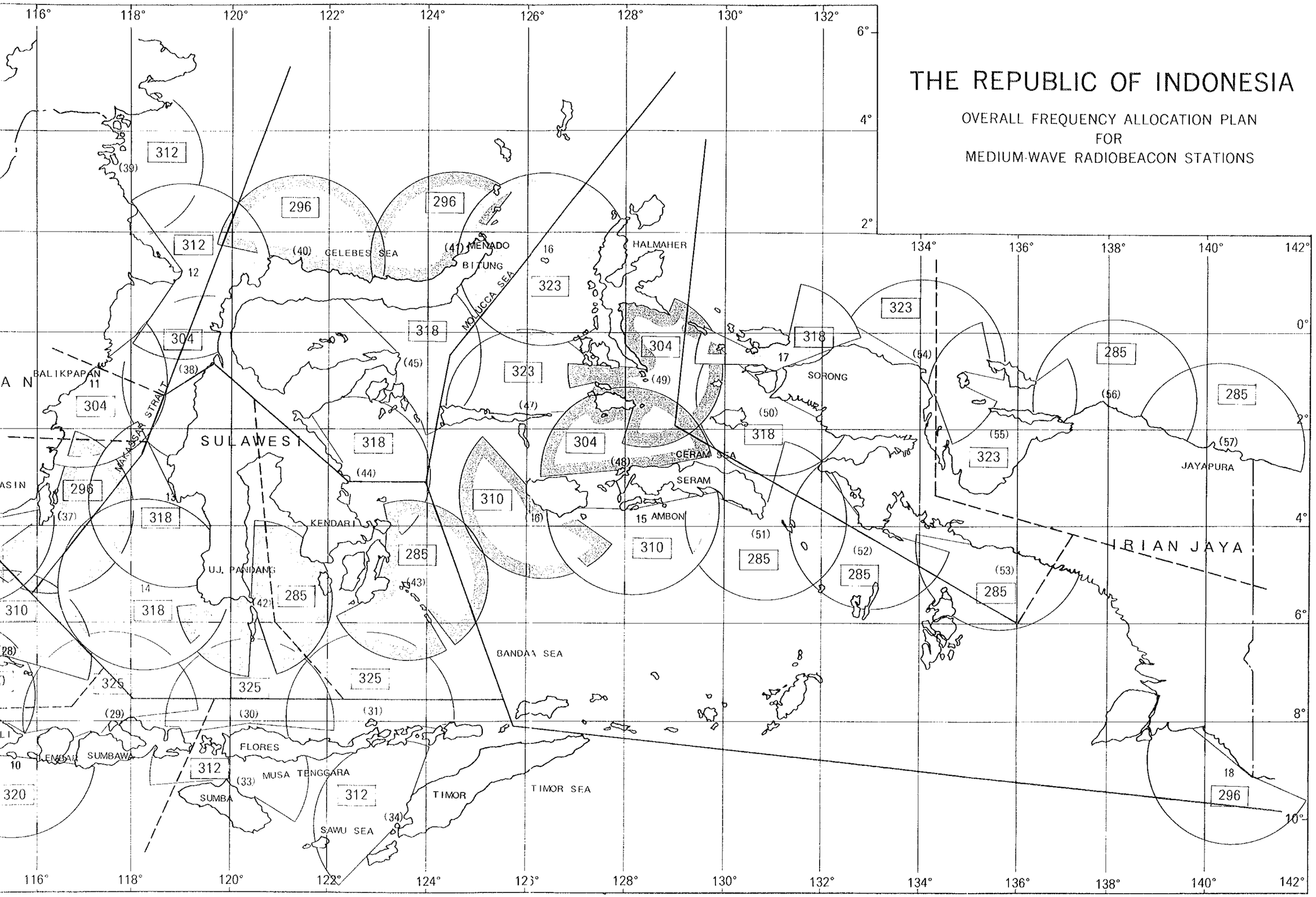
THE REPUBLIC OF INDONESIA

OVERALL FREQUENCY ALLOCATION PLAN
FOR
MEDIUM-WAVE RADIOBEACON STATIONS



A29-1

OVERALL FREQUENCY ALLOCATION PLAN
FOR MEDIUM-WAVE RADIOBEACON STATIONS
IN INDONESIA

No.	Name of Station	Frequency (kHz)	No.	Name of Station	Frequency (kHz)
1.	SABANG	285	31.	TG. KOPONDEI	325
2.	SIMEDANG ISLAND	325	32.	PU. SEMPU	320
3.	TG PRIOK	325	33.	TG. SASAR	312
4.	PONTIANAK	304	34.	TG. KURONG	312
5.	PESEMUT ISLAND	304	35.	TG. SELAKA	312
6.	MANDALIKA ISLAND	285	36.	KUALAPEMBUANG	312
7.	CILACAP	320	37.	LAUT (TG. SELOKA)	296
8.	JAMUANG ISLAND	285	38.	PASANGKAYU	304
9.	TG SELATAN	296	39.	TARAKAN	312
10.	BENOA	320	40.	TG. KANDI	296
11.	BALIKPAPAN	304	41.	SIDATE	296
12.	TG MANGKALIHAT	312	42.	PASITANETE	285
13.	TG MANDAR	318	43.	WANGI-WANGI	285
14.	U. PANDANG	318	44.	PADABALE	318
15.	AMBON	310	45.	MALIK (TG. PANGKALSIONG)	318
16.	BITUNG	323	46.	BOBO	310
17.	RAM SORONG	318	47.	MANGOLE (TG. LAMPAU)	323
18.	MERAUKE	296	48.	BOAND	304
19.	MEULABOH	285	49.	TG. LIBOBO	304
20.	TELUK BAYAR	318	50.	SEGET	318
21.	Tg. KERBAN	318	51.	KWAOS	285
22.	BELIMBING	318	52.	TG. PAPISO	285
23.	TG. JAMBO AYE	285	53.	WANAPIRI	285
24.	TG. PINANG	310	54.	MANOKUWARI (TG. MEMORI)	323
25.	BANGKA (TG. SAMAK)	310	55.	TG. WOKA	323
26.	INDRAMAYU	325	56.	TEBA (CD URVILLE)	285
27.	TG. JANGKAR	310	57.	DEMTA (MATTERER B)	285
28.	ARIASA	310			
29.	P. MEDANG	325			
30.	REO	325			

APPENDIX-30

PRESENT STATUS OF FACILITIES OWNED BY MARITIME OCCUPATIONAL HEALTH, DGSC

(1) PRESENT STATUS OF LABORATORY FACILITIES OF M.O.H.

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
1.	Water bath	To heat (with water)	3
2.	O v e n	To heat (with air)	2
3.	Hot plate	To heat (by electricity)	2
4.	Kjeldel plask	To measure fat conceration	2
5.	Heating mantle	To mute heat	2
6.	Electrical balance		2
7.	Mufflefurnace		2
8.	Centrifuge		2
9.	Sterilisator		2
10.	Microscope		1
11.	Object glass		2
12.	Haemometer		3
13.	Haemocytometer		4
14.	Leucocyte dropper		15
15.	Erythrocyte		15
16.	Standard BBS metal		2
17.	Instrument cupboard (two doors)	To keep medical instruments	3
18.	Instrument cupboard (one door)	idem	3
19.	Test tube	For chemical reaction	50
20.	Centrifuge tube	To check BSR	50
21.	Stainless rack (20 holes)	To put test tubes	4
22.	Interval timer equity	To time chemical reaction	2
23.	Measuring dropper 10 cc		10

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
24.	Measuring dropper 5 cc		10
25.	Measruing dropper 1 cc		10
26.	Measuring dropper 0.5 cc		10
27.	Labu ukur 1000 cc		2
28.	Labu ukur 500 cc		2
29.	Labu ukur 250 cc		2
30.	Labu ukur 100 cc		2
31.	Labu ukur 50 cc		2
32.	Labu ukur 25 cc		2
33.	Measuring glass 1000 cc	Chemical measuring glass	2
34.	Measuring glass 500 cc	Chemical measuring galss	2
35.	idem 250 cc	idem	2
36.	idem 100 cc	idem	2
37.	idem 50 cc	idem	2
38.	idem 25 cc	idem	2
39.	Object glass	To check blood and faces	2
40.	Refrigerator (2 doors, 10 feet)	To refrigerate medicines	1
41.	Refrigerator (1 door, 6 feet)	To refrigerate chemical	1

(2) PRESENT STATUS OF FACILITIES TO TEST THE ABILITY OF MARITIME PERSONNEL

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
1.	RCKS Shoulder wheel	To exercise arms	2
2.	Deluxe shoulder wheel	idem	2
3.	Lifting pole	To exercise legs	2
4.	Buck single fulley traction set	To stretch	2
5.	Kanavel table	To exercise arms and fingers	2
6.	Buck traction extension set		2
7.	Dumbell with trolly		2
8.	Parallel bar	To do walking exercise	2
9.	Step exercise	To do step test	2
10.	Basic four posture frame	To measure basic posture	1

(3) PRESENT STATUS OF PHYSICAL FITNESS TEST FACILITIES FOR MARITIME PERSONNEL

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
1.	E.C.G.	To test heart function	2
2.	TREADMILL	idem	1
3.	ERGOCYCLE	idem	1
4.	CARDIOTESTER	idem	1
5.	PULSESTESTER	To measure pulse rate	1
6.	X-RAY MAST CHEST	To test lung function	1
7.	PORTABLE X-RAY	idem	1
8.	AUTOMATIC FIIM PROSESSING	idem	1
9.	AUTOSPIROMETER	idem	2
10.	EYE DIAGNOSTIC INSTRUMENT	To test vision	1
11.	EAR DIAGNOSTIC INSTRUMENT	To test hearing	1
12.	DENTAL UNIT COMPLETTE	To test/check teeth	1
13.	DENTAL X-RAY UNIT	idem	1
14.	MEDICAL AID INSTRUMENT		
	a. EMERGENCY DOCTORS BAG	Emergency bag	2
	b. PORTABLE BLOOD PRESSURE	To measure blood pressure	2
	c. STANDARD BLOOD PRESSURE	idem	2
	d. STETHOSCOPE	To detect visceral sound	2
	e. REFLEX HAMMER	To test somatic reflexes	3
	f. HEAD LAMP	To check E.N.T.	2
	g. PEN LIGHT	idem	5
15.	MEDICAL/INSTRUMENT TABLE	To put medical instrument	4
16.	PORTABLE TREATMENT TABLE	Treatment table	2

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
17.	OXYGEN STANDARD TANK	For respiration aid	4
18.	OXYGEN CYLINDER TROLLEY	idem	2
19.	STAINLESS STEEL BOWL AND STAND		2
20.	DRESSING CONTAINER		2

(4) PRESENT STATUS OF PHYSICAL TEST FACILITIES FOR MARITIME WORKING ENVIRONMENT

No.	I T E M	FUNCTION	NO. OF UNIT AVAILABLE
1.	Psychrometer unit	To test humidity and air flow velocity	1
2.	Anemometer	idem	1
3.	Thermometer	idem	2
4.	Thermometer Ball	idem	2
5.	Stopwatch		2
6.	Vibration acceleration meter	To test mechanical vibration	1
7.	Sound survey level meter and octave band analyser	To test noise	1
8.	Luksmeter	To measure light intensity	2
9.	Personal dust sampler	To test personal dust	1
10.	High volume sampler	idem	1
11.	Impinger	To test dust and gas	1
12.	Vacuum pump	idem	1
13.	Flowmeter	idem	1
14.	Spectrophotometer	idem	1
15.	Ph meter	To measure acidity	4
16.	Complete gas detector	To analyse gas	1
17.	Complete water kid analyzer	To analyse water	1
18.	Stabilisator 10 kVA 1 phase	To stabilise electrical potential	2

DEVELOPMENT PLAN OF MARITIME OCCUPATIONAL HEALTH LABORATORY, DGSC

DEVELOPMENT PLAN OF
MARITIME OCCUPATIONAL HEALTH LABORATORY

I. SITE PLAN :

NO	LOCATION	NO. OF UNIT	SCHEDULE
1.	SURABAYA	1	SHORT TERM
2.	D U M A I	1	SHORT TERM
3.	SAMARINDA	1	LONG TERM
4.	S O R O N G	1	LONG TERM

II. FACILITIES / SPECIFICATION :

1.	A R E A	:	1000 M^2
2.	SPACE OF BUILDING	:	400 M^2
3.	FURNITURES	:	1 UNIT
4.	AIR CONDITIONING	:	10 UNITS
5.	ELECTRICITY	:	10 KVA
6.	CLEAN WATER	:	1 UNIT
7.	TELEPHONE	:	2 UNITS
8.	FENCE / HEDGE	:	1 UNIT

III. LABORATORY FACILITIES OF M.O.H. :

1. PHYSICAL FITNESS TEST FACILITIES FOR MARITIME PERSONNEL
2. PHYSICAL TEST FACILITIES FOR MARITIME WORKING ENVIRONMENT
3. LABORATORY EQUIPMENTS OF M.O.H.
4. FACILITIES TO TEST THE ABILITY OF MARITIME PERSONNEL (ONLY IN JAKARTA)

IV. PERSONNEL PLAN LONG TERM AND SHORT TERM :

1. PERSONNEL REQUIRED (ALL MALE) :
   - 10 DOCTORS
   - 5 DENTISTS
   - 5 PSYCHOLOGIST
   - 5 SANITARY TECHNOLOGY

15		NURSES
5		RONTGENOLOGIST
5		MEDICAL ELECTRICIAN
5		NUTRICIONIST
5		PHYSIOTHERAPIST
5		ANALYST
10		SANITARIAN
TOTAL	:	75

JICA