4-4 Equipment List in the Basic Design

1. RANGOON GENERAL HOSPITAL

Item No.	Description	Q'ty
	(1) RADIO THERAPHY	
8	Linear Accelerator Consisting of: Steel Doors for the above and its construction charges	1
	(2) CLINICAL LABORATORY	
9	Platelet Counter and Accessories	2
10	W.B.C. Counter and Accessories	2
11	Automatic Dilutor	2
12	Ion Analyzer and Accessories for Na, K, Cl and CO_2	2
13	Blood Gas Analyzer and Accessories	2
14	Double Channel Auto Analyzer with Recorder and Accessories	2
15	Autoanalyzer	1
16	Prothrombinometer and Accessories	2
17	Fluorescent Microscope with Camera Attachment	1
18	Immuno-electrophoresis Apparatus and Accessories	1

Item No.	Description	Q ty
(3) CARDIAC EQUIPMENT		
20	Echo Cardiogram	1
21	Treadmill Monitoring ECG	1
22	Analyzer of Holter Monitoring System including Holter	1
(4) NEURO SURGICAL EQUIPMENT		
* NEURO-MICRO-SURGICAL INSTRUMENTS		
23	Operating Microscope for Neuro-surgery	1
24	Additional Light Source	1
25	Electronic Flash	1
26	Monitorised Rollable Stand	1
28	Colour T.V. Camera Head only for Attachment by 'C' Mount Adptor to Microscope	1
29	A.C. Adaptor for Above	1
30	Video Recorder	1
31	Colour Monitor	1
* Microsurgical Instrument		
32	Bipolar Coagulator Complete Set for Neuro-surgery	1
33	Bipolar Forceps Fine Ends 0.5mm Titanium, 8 5/8" (219mm)	2

Item No.	Description	Q'ty
* MICROSURGICAL INSTRUMENT		
34	Diamond Knife Bayonet with 60° Spear-shaped Blade on 7.5cm shaft, 3 1/4" (210mm)	1
35	Diamond Knife Bayonet with 60° Spear-shaped Blade on 9.5cm shaft, 9 1/4" (229mm)	1
36	Fine Probe with Right Angle Plain End	2
37	Fine Probe with Hook End	2
38	Fine Probe with Straight Plain End	2
39	Needle Holder Straight No Catch	2
40	Fine Needle Holder with Curved Jaws	2
41	HEIFEZ Clip Straight 5 x 1.5 (Short)	12
42	Sugita Clip Set	1
43	Vessel Approximator Bar 12.4mm	1
44	Vessel Approximator Bar 19mm	1
45	Temporaty Clip Low Pressure 5mm	1
46	Medium Pressure 5mm Temporary Clip	2
47	Low Pressure 8mm Temporary Clip	1
48	Medium Pressure 8mm Temporary Clip	2
49	Bleasal Suction/Irrigation Tube 10" (254mm)	2

Item No.	Description	Q'ty
	* MICRO INSTRUMENT FOR VESSEL SURGERY	
50	Vessel Knife Sickle Shaped Blade, Malleable Shaft	2
51	Vessel Probe Single Prong with Ball Tip	2
52	Suture Passer & Knot Tier	1
53	Endorterectomy Spatula, Semi-shape, Straight Blade 1 x 10mm	1
54	Endorterectomy Spatula, Semi-shaped Angled Blade 1 x 10mm	1
	* INSTRUMENTS FOR TRANSPHENIODAL HYPOPHYSECTOMY	
55	Hardy Speculum New Model Open Ended, Blackened Blades Small 2 3/4" (70mm)	1
56	Hardy Speculum, Standard 3 1/4"(80mm)	1
57	Expanding Device 6 1/2" (159mm)	1
58	Hardy Enucleator 3 1/2" (216mm)	1
59	Hardy (Bronson Ray) Curette 8 1/2" (216mm)	1
60	Hardy 'Sickle' 8 1/2" (216mm)	1
61	Derome Handle 4 3/4" (121mm)	- discontinued -

Item No.	Description		Q'ty
* STRYKER CRANDIOTOME INSTRUMENT			
62	Stryker Crandiotome Handpiece Electric Air		2
63	Single Fluted Router	4	-Included in No.62-
64	Triple Fluted Router	4	-Included in No.62-
* PATIENT MONITORING SYSTEM FOR I.C.U.			
66	Patient Monitor for I.C.U.		1
67	Intracranial Pressure Monitoring System a Complete Set, Any Type		1
68	D.C. Defibrillator with Trolley		1
69	Wrights Respirometer		1
70	Portable Electric Suction for Neuro-surgery		2
71	Sterilizer		2
72	Electronic Blood Gas Analyzer		1
73	Air Conditioner		4
* ORAL MAXILLO FACIAL & PLASTIC SURGERY FOR ORAL, MAXILLO FACIAL & PLASTIC SURGERY OPERATING THEATRES			
74	Operating Table		2
75	Measure Operating Light		2
76	Portable Operating Light		2

Item No.	Description	Q'ty
* ORAL MAXILLO FACIAL & PLASTIC SURGERY FOR ORAL, MAXILLO FACIAL & PLASTIC SURGERY OPERATING THEATRES		
77	Strong Suction Apparatus for Operating Theatre Use	2
78	Diathermy Sets (Portable)	2
* FOR IN-PATIENT WARDS (WARD 15 & 16)		
79	Instrument Sterilizers for Ward Use	2
80	Suction Apparatus for Ward Use and Out-Patient Department	4
81	Dressing Trolleys	2
82	Air Conditioner for Dressing Room	2
* FOR OUT-PATIENT DENTAL DEPARTMENT		
83	Complete Dental Unit with Chair, Light, Air Roter with Built-in Compressor (Or Separate One) Hand Pieces & Assorted Burs	3
84	Complete Set of Portable Dental X-ray Unit	1
85	Complete Set of Portable Developint unit	1
86	Complete Range of Dental X-ray Films	1
87	Sterilizer	1

Item No.	Description	Q'ty
* URO-SURGICAL DEPARTMENT		
88	Nephroscope & Accessories for Biopsy	1
89	Lecture Scope	1
90	Boiling Sterilizer	1
* CHEST SURGICAL UNIT		
91	Fiber Bronchoscope	1
92	Fiber-Esophagoscope	1
93	Endoscope Locker	1
94	Fiber Teaching Attachment	1
95	Endoscope Illuminator	1
96	Low Pressure Suction Unit	6
97	Suction Apparatus	2
98	Nakayama Gastric Clamps (+4,000 clips)	2
99	Pneumonectomy Set	1
100	Endoscopic Electrohydraulic Table	1
(5)OPERATION ROOM		
101-1	Ventilators for Operation Theatre	5
101-2	Anesthetic Machine	4

2. CENTRAL WOMEN'S HOSPITAL

Item No.	Description	Q'ty
102	Delivery Tables	12
103	Neonatal Resuscitation Unit with Suction & O_2 Attached	5
104	Electrical Bowl Sterilizer	10
105	Electric Suction Apparatus (Adults)	8
106	Electric Suction Apparatus (Neonates)	6
107	Automatic Tissue Processor	1
108	Blood Bank Refrigerator	1
109	Fowler's Beds	12
110	Oxytocin Drip Regulator - Electronic with Tocodynamometer	3
111	Ultra Violet Spectrophotometer	1
112	Coloriemeter	1
113	CVP Monitor with PCO_2 Analyzer, Adults	2
114	Incubators for Babies	6
115	Conduction Analgesia Set Continuous Epidual Set (Disposable)	3
116	Electric Cortery	4
117	Cryosurgical Set	2

Item No.	Description	Q'ty
I18	Microsurgical Tuboplasty Instruments Complete Set with Operating Microscope	1
I19	Electric Vacuum Extractor with Suction Curette	3
120	Ultrasound Linear Scanner	2
121	Sonocaids (Doppler)	4
I22	Dilatation and Curette Instruments	6
123	Hysterectomy Set (Instruments)	4
124	Caesarean Section Set (Instruments)	6
125	Ambu Resuscitator for Adults and Neonates	6
127	Microscope Trinocular	1
128	Microscope Binocular	6
129	Microscope with Microphotography	1
130	ECG Machine	2
131	Freezing Microtome with Sharpener	1

3. CHILDREN'S HOSPITAL, RANGOON

Item No.	Description	Q'ty
(1) INTENSIVE CARE UNIT		
132	Minimonitor Cardioscope	8
133	Cardiac Monitoring System	1
134	Cardiac Resuscitation System	1
135	Skin Blood Gas Analyzer	2
137-1	Suction Machine, Low Type	4
137-2	Suction Machine, High Type	4
138	Respirators and Mechanical Air Compressors for Neonates & Infants	4
139	Respirators and Mechanical Air Compressor for Older Children	4
140	Incubator	4
141	Computor Monitor Infusion Pump	4
143	Autoanalyzer for Electrolytos with Recorder for Na, K, Cl	1
144	37°C Water Bath (For Blood Warming)	2
145	X-ray View Box (Triple) with Trolley	1
146	E.C.G.	1

Item No.	Description	Q'ty
(2)	General Equipment for C.G.R.	
147	Echo Vision (Ultrasonic Diagnostic Equipment)	1
148	Bronchoscope (Non-rigid) with Accessories, Neonates & Children	1
149	Cystourethroscope with Accessories (Including Resectoscope) Two Sizes	1
150	Portable X-ray Unit	1
151	Fibre Optic Colonoscope	1
152	Blood Gas Analyzer	1
153	Echocardiogram	1
154-1	Suction Machine, Low Type	3
154-2	Suction Machine, High Type	3
155	X-ray View Box (Triple) with Trolley	6
156	Ultrasonic Nebuliser	4
157	E.C.G. Machine	3
(3)	NEONATAL UNITS	
158	Incubator	6
159	Apnoea Monitor	4

Item No.	Description	Q'ty
(3) NEONATAL UNITS		
160	Oxiemeter (Direct Reading)	4
161	Reflectance Meter for Blood Glucose Estimation	2
162	Phototherapy Unit	4
163	Bilirubinometer	2
164	Infusion Pump	2

4. MANDALEY GENERAL HOSPITAL

Item No.	Description	Q'ty
(1) URO - SURGICAL UNIT		
168	Fibre Optic Iglesias's Resectoscope	1
169	Fibre Optic Rotating Resectoscope	1
170	Electro-surgical Unit Solid State Type, Combined with Fibre-optic Light Source	1
171	Randall's Kidney Stone Forceps Stainless Steel, 4 kinds of Curve	1
(2) THORACIC SURGICAL UNIT		
172	Bronchofibrescope for Biopsy	1
173	Suction Unit with Standard Accessories and Spare Bottles (4) 220V, 50Hz	2
(3) GENERAL SURGICAL UNIT		
174	Pan View Fibrescope	1
175	Colonoscope	1
176	Peritoneoscope	1
177	Endoscope Locker	1

Item No.	Description	Q'ty
(4) MEDICINE UNIT		
178	Echo Cardiogram	1
179	Electric Suction Unit	3
180	Monitor Difibrilator	3
(5) CLINICAL PATHOLOGY		
181	W.B.C. Counter	1
182	Platelet Counter and Accessories	1
183	Autoanalyzer and Accessories for Na, K, Cl and CO_2	2
184	Prothrombinometer and Accessories	1
185	Double Channel Autoanalyzer with Recorder and Accessories	1
186	Autoanalyzer	1
187	Blood Gas Analyzer and Accessories	2
(6) OBSTETRICS AND GYNAECOLOGY UNIT		
188	Vacuum Extractor	1
189	Super Suction Curettes	1
190	Aspirator, Supplied with Abortion Cannula Set and Tube & Standard Accessories	1

Item No.	Description	Q'ty
(6)	OBSTETRICS AND GYNAECOLOGY UNIT	
192	Resuscitator (For Neonates)	1
193	Miller's Laryngoscope Set for Neonatal and Paediatric Care Use	1
197	Kobak's Needle (For Paracervical and Pudendal Nerve Blocking)	100
198	Physician's Office Scale	1
(7)	X-RAY DEPARTMENT	
199	Automatic X-ray Developing Machine	1

.6. MOBILE SERVICE UNITS

Item No.	Description	Q'ty
202	Dental and X-ray Mobile Unit	5
203	Ophthalmic Mobile Surgical Unit	4

4-5 Facility Preparation before Equipment Installation (Works of Burmese side)

The supply and installation of medical equipments are the responsibility of Japanese side. The preparation works for the medical institutions which will introduce the equipments are the responsibility of Burmese side. Most of these preparation works of the facilities involves simple electrical works, except for the following two hospitals.

(1) Rangoon General Hospital

1) Radio Theraphy Department - Linear-accelerator
2) Oro-Maxillo Facial and Plastic surgery operating room - Ceiling operating light

(2) Rangoon Children's Hospital

1) Interior work for ICU

(1) - 1) Linear-accelerator Room

As shown in Figure 4-1, the building construction including machine rooms, air conditioning system and lighting system have already been completed. The remaining works include the flooring of the treatment room, supply of the power cable to the distribution board, installation of water supply and drainage piping for the cooling unit, and steel doors containing a lead radiation shield (the expense of door falls on Japanese side). The equipment unit weight about 7 tons, and the wiring pit and other preparations are required. After determining the equipment type, make arrangements for the floor design and provision of the wiring pit with Burmese side.

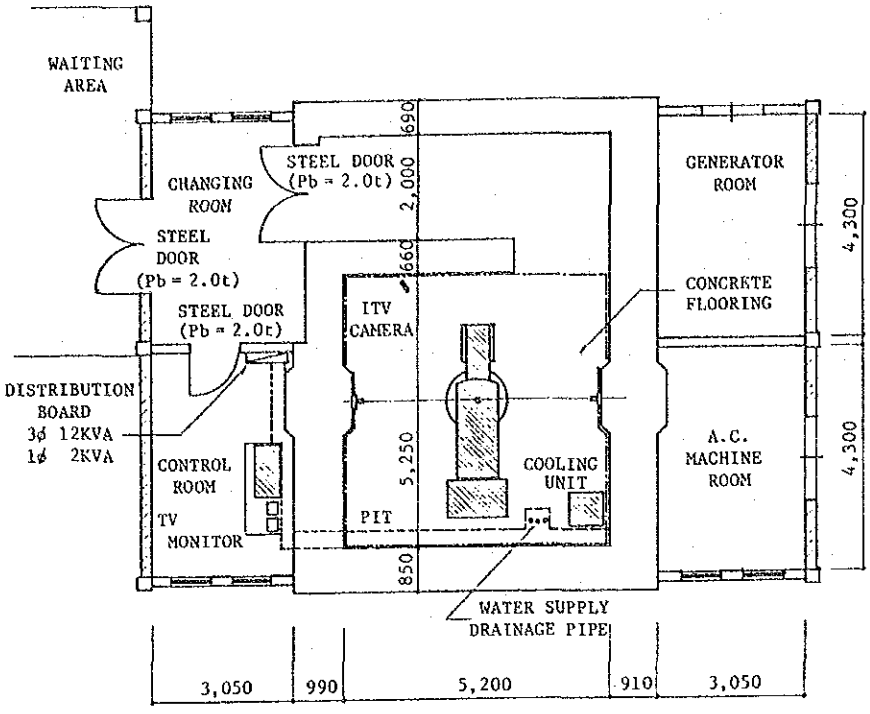


Fig. 4 — 1 LINEAR-ACCELERATOR INSTALLATION PLAN

(1) - 2) Ceiling Operating Light

Since the present ceiling is too high for direct installation of the Operating Light, a frame of wooden beams should be installed under the ceiling. For this work, a detailed design should be provided for agreement by the Burmese side to meet the specifications of the light.

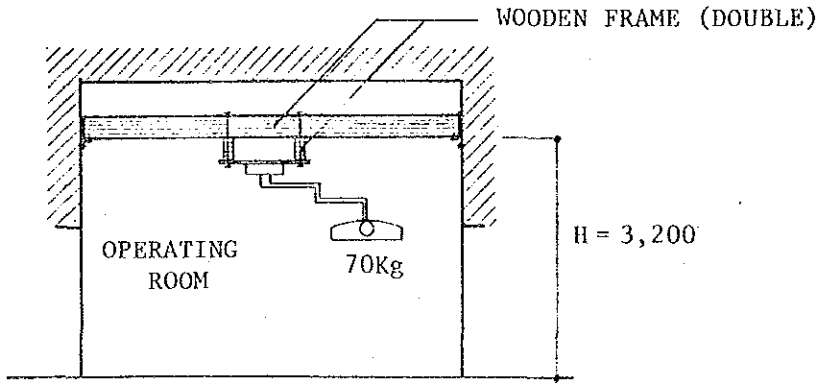


Fig. 4 — 2 OPERATING LIGHT INSTALLATION PLAN

(2) - 1) ICU Interior Work

Although the installed medical equipments are small and light-weight, a space of about 120 m^2 is required. The construction work includes the removal of the existing interior, installation of a partition wall (brick or wood), a monitor shelf, and electrical lighting work such as outlets and the lamp. After determining the location of the ICU, a layout of the ICU room should be immediately provided for agreement to the Burmese side.

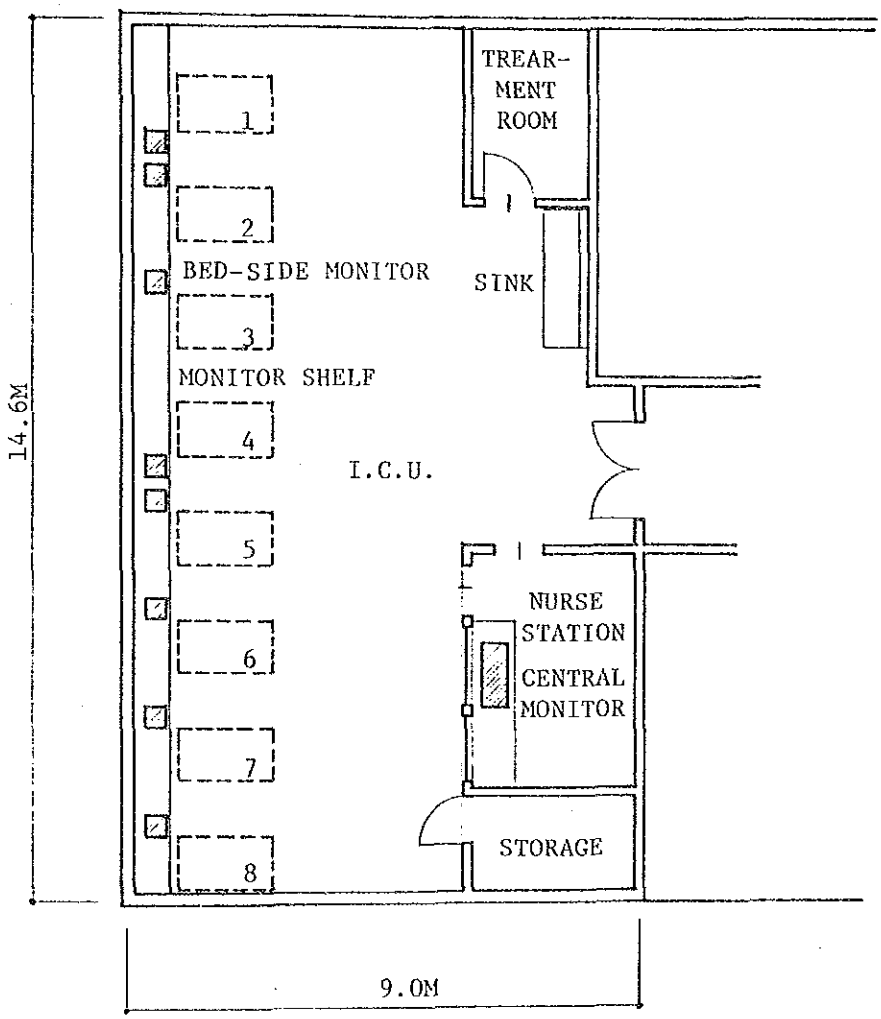


Fig. 4－3 I. C. U PLAN

4-6 Estimated Project Cost

4-6-1 Integration Requirements

(1) Integration Date: October, 1984

(2) Conversion Rate

Although the valve of Burmese currency (Kyat) is based on a floating exchange rate system against the US dollar, the rate was determined based on the exchange rate of March 1985;

US$1 = 8.4 Kyats = ¥236

(3) Equipment Cost Includes;

Export cost (CIF Rangoon, Mandalay) + the cost of instruction manual and maintenance manual (for the respective equipment).

4-6-2 Estimated Project Cost

The Burmese side bears the expense of facility improvement before the equipment installation. This is broken down into:

Rangoon General Hospital	268,000 Kyats (¥7,500,000)
Rangoon Children's Hospital	675,000 Kyats (¥18,900,000)
Electrical work of other facilities	71,000 Kyats (¥2,000,000)
Toal:	1,014,000 Kyats (¥28,400,000)

CHAPTER 5.
PROJECT IMPLEMENTATION

5-1 Implementing Organization

This Project is conducted as a Project of the Ministry of Health in Burma which will implement, operate, maintain and operate the project after completion.

5-2 Implementation Plan

Implementation of the Project is expected to be conducted with grant aid supplied through the cooperation of the Japanese Government. After the implementation of the Project is determined by E/N, consultants for supervising the Project will be selected and contractors will be solicited to bid through public notices. The Project will be implemented in the following sequence: application for tendering bids, determination of contractors, ordering of equipment, equipment manufacture, transport, installation of equipment, limited training and inspection of the work.

It is essential to have proper supervision provided by consultants specializing in the medical equipment when the Project is implemented.

5-3 Scope of Work

The scope of the respective activities borne by the Japanese and Burmese sides in the Project are considered in the following subsection.

5-3-1 Undertaking of Japanese Sides

(1) Medical Equipment and Medical Mobile Service Units for each of the Hospitals

- 1 Rangoon General Hospital
- 2 Central Women's Hospital
- 3 Rangoon Children's Hospital
- 4 Mandalay General Hospital

- 5 Dental and X-ray Mobile Unit
- 6 Ophthalmic Mobile Surgical Unit

(2) Associated Work

Installation of the X-ray shield lead door for the installation of the Linear Accelerator in the Radio Theraphy Department in Rangoon General Hospital.

(3) Other Work

Installation work for the equipment, operator training and delivery. Labor for equipment installation and protection material.

5-3-2 Undertaking of Burmese Sides

(1) Preparation of installation site for medical equipment

(2) Provision of temporary electrical power and water supply

(3) Supply of informations on transport and installation

(4) Provision of temporary site for equipment storage and rain protection

(5) Major Work

- 1 Water supply (City water supply pipes are laid to the site)
- 2 Drainage (City water drainage pipes are laid to the site)
- 3 Power supply (Power supply from exterior and interior of hospital to the site)
- 4 Full set of building materials and works for improving of the hospital

(6) Customs duties on Medical Equipment

(7) Customs duties, local and other taxes are to be exempted for Japanese personnel stationed in Burma related to the Project.

(8) Supply of necessary action from the Burmese government to the Japanese engineers related to the Project for immigration purposes.

5-4 Procurement of Medical Equipment

Judging from the content of the request for the Project from Burma and the present situation of medical facility, it is necessary to import most of the equipment from Japan. In view of performance, specifications and other conditions of the requested equipment, some of the equipment can be obtained from the third country suppliers.

Condition for supply from third countries:

(1) Requested equipment is not manufactured in Japan.

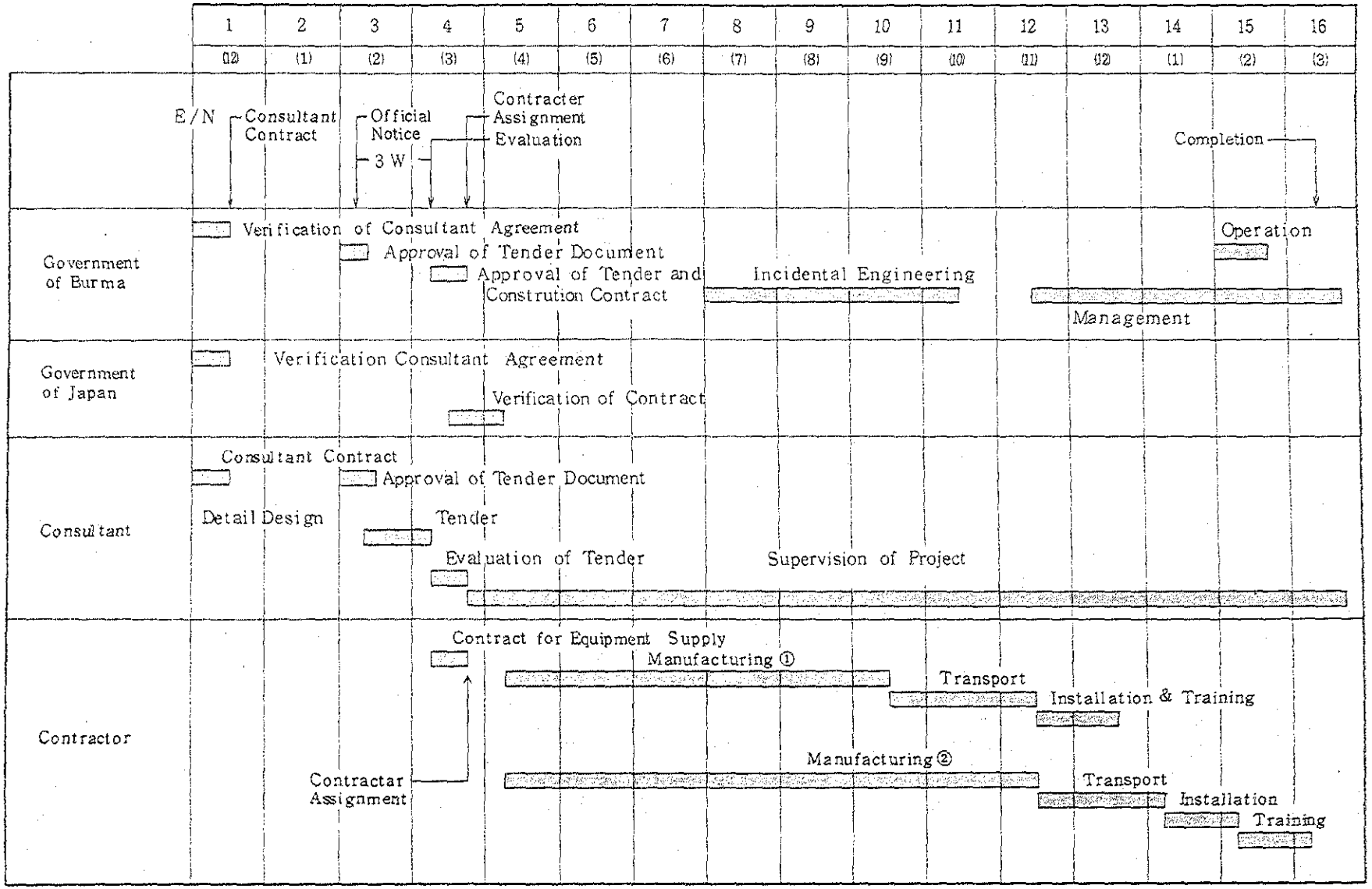
(2) Equipment which is apparently cheaper than that of Japan, capable of sufficient performance, and without potential problems in maintenance and operation.

5-5 Implementation Schedule

The implementation schedule will be started after an Exchange of Notes between the Japanese Government and the Government of Burma relating to grant aid supplied under the cooperation agreement.

The implementation schedule is divided in three stages: preparation of specifications, announcement of open bidding and execution work.

The actual implementation of the work will be started after the contract is approved by the Japanese government. The period from the contract signing to delivery is as follows.



IMPLEMENTATION SCHEDULE

CHAPTER 6.
MAINTENANCE AND OPERATION

6-1 Organization of Maintenance and Operation

Maintenance and operation systems are already established under the organization of hospitals supplied with medical equipment. irrespective of this current situation, the Ministry of Health in Burma has already started to train maintenance personnel for the medical equipment and visible results have been achieved at the Department of Medical Research. This situation indicates that the maintenance of the medical equipment is quite satisfactory.

6-2 Maintenance and Operation

6-2-1 Maintenance and Operation Policy

The Ministry of Health in Burma has instituted a program for training personnel for medical equipment maintenance. These staff members undergo highly intensified training to enable them to deal adequately with the full range of modern medical technology and many will be assigned at the medical institutions.

6-2-2 Maintenance and Operation Personnel (I)

Maintenance and operation personnel for the installed medical equipment will take part in maintenance and operation in two classifications: engineer and technician.

(1) Engineer Qualifications

Grade I: Experience of more than five years plus Grade II certification

Grade II: Experience of more than five years plus Grade III certification

Grade III: Graduates of university in master's or bachelor's degrees.
(Specialty: technology; particularly electronics and mechanical engineering)

At present, there are twenty personnel in Grades I to III in the Ministry of Health. Sixteen engineers from the USA, Great Britain and Canada and four engineers from Japan (under a technical cooperation agreement with JICA) are now under-training. Their special fields including electronics, electro-mechanical engineering, mechanical engineering, construction engineering etc. The Ministry of Health intends to employ about twenty staff every year and will train them as maintenance and operation personnel for medical equipment.

(2) Technician Qualifications

Grade I: Graduates with bachelor's degrees from Engineering Department of Rangoon University

Grade II: Graduates with diplomas from other technical engineering institutions

Grade III: Non-career technicians

Grade I technicians will become officers after obtaining a certain level of working experience and their grade will be similar to that of Grade III engineers. The Ministry of Health intends to employ fifty technicians for the Department of Health, thirty for the Department of Medical Research and six for the Department of Medical Education every year to perform maintenance and operation of medical equipment.

In the Project, the medical equipment requested by Burma are classified as follows:

1) Physiological Test Equipments of patient

-1 Apparatus for Cardiovascular Function Test
-2 Apparatus for Respiratory Function Test
-3 Ultrasonic Diagnostic Equipment
-4 Endoscope

2) Instruments for Specimen Tests

-1 Equipment for Clinical Chemistry Tests
-2 Equipment for Hematology Tests
-3 Equipment for Microbiology Tests
-4 Equipment for Immuno-serology Tests
-5 Equipment for Anatomical Pathology

3) Patient Monitoring Systems

4) Medical Apparatus for Therapeutic Use

-1 Apparatus for the Surgical Operation Theater
-2 Apparatus for Radiation Theraphy
-3 Medical Electronic Apparatus for Theraphy

5) Special Medical Apparatus of Clinical Departments

-1 Special Medical Apparatus for Obstetrics, Gynecology and Neonatal Room
-2 Special Medical Apparatus for Urology
-3 Special Medical Apparatus for Ophthalmology
-4 Special Medical Apparatus for Neurosurgery
-5 Special Medical Apparatus for Dental (Mobile Unit)

⊙ The present situation in Burma is as follows:

1) Equipment similar to the Physiological Test equipment of patient requested by each of the hospitals is already normally operated and is controlled doctors and electrical engineers at the hospital.

2) Equipment for Specimen Tests are maintained by high-level technicians trained under a technical cooperation agreement with JICA at the Department of Medical Research of the Ministry of Health. All of the equipment are being operated without problems. These equipment have some applications in basic electrical engineering and thus technicians with similar maintenance capability as that required for Physiological Test Equipment can be utilized..

As for 3) Patient Monitoring Systems and 4) Medical Apparatus for Therapeutic Use, a study shows that each of the medical institutions has specialized engineers in the maintenance room. As ME (Medical Electronics) equipment now utilizes printed circuit boards maintenance is easier, and if irreparable trouble occurs, mere replacement of the printed circuit board can accommodate all repair needs. Thus, an adequate supply of spare parts will enable efficient maintenance and operation of the unit. In turn, in the field of Radio Theraphy Department, the Linear Accelerator for the radioactive electron beam theraphy is being operated by doctors trained for three years in England.

5) Equipment for the medical department has no problems in construction and ease of control compared with that of the above-mentioned Physiological Tests, Specimen Tests, Patient Monitoring Systems.

In view of the situation in Burma, it is preferable to deliver the equipment, provide operator training when it is installed, instruct maintenance and operation procedures supply spare parts to promote the overall the Project.

6-2-3 Maintenance and Operation Personnel (II)

As high precision units requiring a high technical skills in maintenance and operation, such equipment on the Linear Accelerator and Automatic Chemical Analyzer etc. as described in the Requirement of the Project should be provided with a periodic inspection by technicians from the manufacturer once within the first year after delivery to assure continued proper operation. This is essential for applying both correct diagnosis and proper theraphy and will contribute to improving and maintaining the health of the Burmese people.

The cost of periodic inspection borne by Burme is approximately as follows:

Dispatch of two Japanese technicians for one week for the minimum number of units of the Linear Accelerator and Automatic Chemical Analyzer is estimated at about 55,600 Kyats, or about 1.6 million yen.

6-2-4 Response of Burmese Side for the Project

As apparent from foreign assistance trends, the Project is expected to be a relatively large-scale project in Burma. Therefore, during the study period, we asked the Department of Health and each of the hospitals about the budget plan and personnel required and received the following reply:

(1) Director General of the Department of Health

⊙ The budget should be adequate for the Project. Refer to the results in Burma for assistance proposals from Japan up to the present.

⊙ As for personnel, since the equipment will be distributed to each of the medical departments, each of the hospitals will provide sufficient personnel.

⊙ Transport of equipment from Rangoon Port to each of the hospitals will be the responsibility of the Burmese side. However, we hope that the transport will be performed except the rainy season.

(2) Individual Hospitals

⊙ Small-scale work can be performed within the budget of the hospital. However, large-scale work should be conducted under a supplementary budget from the Ministry of Health.

⊙ As for personnel, the number is adequate, and there are no problems.

6-2-5 Cost of Maintenance and Operation

In the Project, the budget to be borne by the Burmese government is mainly applied for direct operation of equipment and most is in personnel costs for doctors, nurses, midwives, and nurse assistants etc. who employing are directly dealing with diagnostic work, and will also be used for a supply of spare parts and consumables associated with the equipment. As for personnel expense, additional personnel may not be employed to accommodate the Project. Spare parts may be increased or decreased in response to the frequency of equipment use, variable operating conditions for patients, and the number of diseases. However, the spare parts are already attached to the equipment for the time to enable the equipment to be maintained and operated.

As for consumables associated with the equipment, major consumables are chemical reagents for the Automatic Analyzer, recording papers in Patient Monitoring Systems. They are sufficiently supplied in Burma depending on their frequency of use. It is hardly expected that the budget for maintenance and control operation will be increased for the Project. The budget for the Project is expected to be upgraded for each fiscal year which will start in October. Therefore, the budget will be executed at the time the Project is begun.

The cost for conducting maintenance and operation is as follows:

(1) Consumables related to equipment operation

About 2% of total equipment cost: 401,400 Kyats
(about 12 million yen)

(2) Power consumption required for equipment operation

Average monthly amount:

Approx. 8,700 Kyats x 12 = 104,400 Kyats
(about 3 million yen)

Total: 505,800 Kyats
(about 15 million yen)

CHAPTER 7. PROJECT EVALUATION

The objective of the Project is to achieve a qualitative improvement in fundamental hospital diagnostic work to prevent losses or reduction among the peoples who can contribute the nations productively caused by disease or injury as set down in the national health project. They can be evaluated as follows:

Installation of medical equipment as planned at present will enable a more accurate diagnosis and theraphy system to be provided and it is expected that this will eliminate the shortage of medical equipment and may contribute to a more complete medical service.

In Rangoon General Hospital, the Central Women's Hospital, Rangoon Children's Hospital and Mandalay General Hospital, which are the central medical organizations in Burma at present, diagnosis is restricted due to the old medical equipment and this in turn limits the effectiveness of the theraphy.

Enforcing the Project may resolve these restrictions and enables qualitative improvement in the medical equipment together with better medical technicians with better training. The direct contribution to local health and medical services as well as those in both Rangoon and Mandalay cannot be underestimate.

The cost of maintenance and operation is estimated annually about 505,800 Kyats, or about 15 million yen. This cost is expected to be supplied by the Ministry of Health. Although some of equipment may have a relative high electrical power consumption, the cost may be reduced by efficient operation of the equipment and good management, so that no problem on cost may be expected.

Technical maintenance and operation of the Project, as described in section 6-2, Maintenance and Operation no trouble may be expected in the future for technical maintenance and operation in view of the case taken with the Project.

As described above, enforcing the Project may provide a direct contribution to improvement in the health and medical services and it also assures the future prosperity of the medical services organization in Burma. In this way, this Project will have a far-reaching effect.

CHAPTER 8.
CONCLUSIONS AND RECOMMENDATION

8-1 Conclusions

As described in this report, the Project is an important national plan for the Government of Burma. In conclusion, significant effects will be seen in the society with the progress of the Project and its evaluation. Improvements in the situation with diagnosis of health and medical problem which is the aim of the Government of Burma for this Project make it an undertaking of some significance.

The fact that the Project will be supplied with grant aid from Japan is significant and will without doubt contribute to early accomplishment of the national health plan of the Government of Burma.

8-2 Recommendation

Improvements in the health of the people will greatly help consolidate the foundations for the development of Burma. Thus, the Project under grant aid has produced great expectations from the Government of Burma, the Ministry of Health and medical personnel. However, the success of this Project depends greatly on the degree of self-help and the efforts of the Government of Burma and the individual hospitals.

(1) Recommendation to the Government of Burma

In order to ensure that the Project has maximum effect on the diagnostic capabilities of the institutions involved, all hospital and associated organizations should be clear on the aims of the Project. Operation and maintenance of equipment should be such that doctors and technicians receiving technical assistance from Japan are able to keep a consistently improved level of diagnosis and theraphy. This should be achieved by regular periodic inspection of equipment, and allocation of personnel for this purpose, and a well-organized supply of consumables etc. for the equipment.

In order to enforce the aims of the Project, the major works to be carried out in the Burmese side (electric power supply, water supply and drainage etc.) should be completed before transportation of the equipment.

(2) **Recommendation to the Japanese Government**

Equipment improvements as well as new building construction for the New Rangoon General Hospital are out of the scope of this Project. However, these points should be definitely implemented in the near future plan.

Completion as soon as possible is a priority because of the new hospital's central role as a center for the treatemnt of digestive diseases in Burma.

APPENDIX

CONTENTS

1. Data of the Basic Design Study ..... A- 1
   1-1. Schedule of the Study ..... A- 1
   1-2. Members of the Study Team ..... A- 3
   1-3. Major persons interviewed ..... A- 3
   1-4. Minutes of Discussions ..... A- 4

2. Data of 'Background of the Project' (Figures and Tables)..... A-35
   Fig. 2-1. Average Annual Rainfall (1965-74) 1) A-35
   -2. Weather Graph (Rangoon, Mandalay) 6) A-35
   -3. Map of States/Divisions 5) A-36
   -4. Organization of M.O.H. and D.O.H. 5) A-37
   -5. Organizational set-up of the Department of Medical Education 5) A-38

   Table 2-1. GNP·GDP (1981) 3) A-39
   -2. Estimated Active Labour Force (1983/84) 4) A-39
   -3. Balance of Trade 4) A-40
   -4. Import by Type of Commodity 4) A-40
   -5. Health Statistics 3) A-41
   -6. Mortality patterns 2,5) A-42
   -7. Number of Death, by Age Groups (1978) 2) A-43
   -8. Morbidity patterns 5) A-44
   -9. Public Health Service Organization 4) A-45
   -10. Summary of Hospitals 1 (1980) 5) A-45
   -11. Summary of Hospitals 2 (1980) 5) A-46
   -12. List of General Hospitals 5) A-47
   -13. List of Specialist Hospitals 5) A-48
   -14. Hospital Beds 1950-1980 2) A-48
   -15. Health Personnel 4) A-49
   -16. Number of Physicians and Medical Density 1950-1981 2) ... A-49
   -17. Manpower (Categories and Distribution) 5) A-50
   -18. List of Institutions Producing Health Manpower 5) A-51
   -19. Manpower development facilities 5) A-52
   -20. Public Investment by Sectors 4) A-53

Source; 1) JICA: Basic Design Study Reports
2) WHO; World Health Statistics Annual 1983

3) World Bank; World Development Reports 1983
4) Report to the Pyithu Hluttaw 1984/5
5) Data of the Department of Health
6) Rikanenpyo 1984

3. Data of the Objective Hospitals ..... A－55
3-1. Rangoon General Hospital ..... A－55
3-1-1. Radiotherapy Department ..... A－58
3-1-2. Cardiac Medical Unit ..... A－59
3-1-3. Neuro-Surgical Department ..... A－60
3-1-4. Oro-Maxillo, Facial & Plastic Surgery ..... A－61
3-1-5. Urology Department ..... A－62
3-1-6. Operation Theatre ..... A－62
3-1-7.. Department of Clinical Pathology ..... A－63
3-2. Central Women's Hospital ..... A－64
3-3. Rangoon Children's Hospital ..... A－66
3-4. Mandalay General Hospital ..... A－68

4. List of Collected Data ..... A－71

1. DATA OF THE BASIC DESIGN STUDY

1－1 SCHEDULE OF THE STUDY

Date	Particulars
JUL 29 (Sun)	Leave Tokyo for Bangkok (TG741), stay overnight
JUL 30 (Mon)	Leave Bangkok for Rangoon (TG305), preliminary discussions with officials of MOH at airport, check-in at Inya Lake Hotel.
JUL 31 (Tue)	Courtesy Visit to Japanese Embassy, Visit to FERD, Luncheon party hosted by Director General of the Department of Health (D.O.H.) First discussions at D.O.H. Visit to Dept. of Medical Research (D.O.M.R.)
AUG 1 (Wed)	Visit to New Rangoon General Hospital, Courtesy Visit to Deputy Minister for Health, Visit to Dept. of Medical Education (D.O.M.E.)
AUG 2 (Thu)	Study of Rangoon General Hospital, Discussion of study schedule at D.O.H. Study of Rangoon General Hospital
AUG 3 (Fri)	Study of Central Women's Hospital Study of Rangoon Children's Hospital Arrangement of schedule at D.O.H., Study of Rangoon General Hospital
AUG 4 (Sat)	Leave Rangoon for Mandalay (Local airline), Study of Mandalay General Hospital, Leave Mandalay for Rangoon (Local airline)
AUG 5 (Sun)	Team study meeting, Study data review Dinner party hosted by Ambassador Tsukamoto

Date	Particulars
AUG 6 (Mon)	Discussion on the project at D.O.H., Dinner party hosted by the team leader (at Inya Lake Hotel)
AUG 7 (Tue)	Discussion on the project at D.O.H., Exchange of Minutes of Discussions, Dinner party hosted by Deputy Minister for Health
AUG 8 (Wed)	Discussion on equipments at Central Women's Hospital, Discussion on equipments at Rangoon Children's Hospital, Team's leader Torizuka and coordinator Matsuo leave for Japan
AUG 9 (Thu)	Discussion on the details of equipments at Rangoon General Hospital, Team review of collected data in the afternoon
AUG 10 (Fri)	Discussions on the details of equipments at New Rangoon General Hospital, Team review of collected data in the afternoon
AUG 11 (Sat)	Team study meeting, review of collected data
AUG 12 (Sun)	Study of suburban of Rangoon (Pegu)
Aug 13 (Mon)	Discussion at D.O.M.R., Study of N.H.L., Discussion with counterpart
Aug 14 (Tue)	Report to Director General of D.O.H., Japanese Embassy, and JICA Office, Messrs. Sato, Ishikawa, Akita leave Rangoon for Bangkok (UB221), Stay Bangkok overnight

Date	Particulars
AUG 15 (Wed)	Leave Bangkok for Tokyo (TG740)

1－2 MEMBERS OF THE STUDY TEAM

Kanji TORIZUKA
Leader, Professor,
Department of Radiology and Nuclear Medicine,
Kyoto University

Hiroko MATSUO
Project Coordinator
Grant Aid Div., Economic Cooperation Bureau,
Ministry of Foreign Affairs

Akira SATO
Medical Planner
International Total Engineering Corporation (ITEC)

Yoji ISHIKAWA
Medical Equipment Specialist
ITEC

Kazumi AKITA
Facilities Engineer
ITEC

1－3 MAJOR PERSONS INTERVIEWED

1. Japanese Embassy in Rangoon:

Ambassador	TSUKAMOTO
First Secretary	KAMITANI
Medical Officer	HANEDA

2. JICA, Rangoon Office

Chief	SHINOURA
Staff Member	TAKASHIMA

3. Department of Health and Others

Dr. Tun Hla Pu (Deputy Minister; Ministry of Health)
Dr. Pe Thein (Director General; Dept. of Health)

Dr. Aung Than Batu (Director General; Dept. of Medical Research)
Prof. Tin U (Director General; Dept. of Medical Education)
U Khin Maung (Advisor, F.E.R.D.)
U Htin Kyaw (Dy, Medical Superintendent: R.G.H.)
Dr. Khin Khin Nee (Medical Superintendent; C.W.H.)
Dr. Khin Than Nu (Medical Superintendent; R.C.H.)
Dr. Khin Mg. Than (Medical Superintendent; M.G.H.)

1－4 MINUTES OF DISCUSSIONS

MINUTES OF DISCUSSIONS

ON

THE IMPROVEMENT PROJECT OF MEDICAL EQUIPMENT

IN

THE SOCIALIST REPUBLIC OF THE UNION OF BURMA

August 7th, 1984.

MINUTES OF DISCUSSIONS

ON

THE IMPROVEMENT PROJECT OF MEDICAL EQUIPMENT

IN

THE SOCIALIST REPUBLIC OF THE UNION OF BURMA

In response to the request made by the Government of Socialist Republic of the Union of Burma for the Improvement Project of Medical Equipment (hereinafter referred to as "the Project"), the Government of Japan has sent, through the Japan International Cooperation Agency (hereinafter referred to as "JICA") which is an official agency implementing the technical cooperation of the Government of Japan, the team headed by Dr. Kanji Torizuka, professor of Kyoto University, Department of Radiology and Nuclear Medicine, to conduct the survey for 16 days from July 30th to August 14th, 1984.

The team carried out a field survey, held a series of discussions and exchanged views with the authorities concerned of the Government of the Socialist Republic of the Union of Burma.

Both parties have agreed to recommend to their respective Governments and the authorities concerned to examine the result of the survey attached herewith toward the realization of the Project.

K, Torizuka

KANJI TORIZUKA
Head, Japanese Survey Team

DR PE THEIN
Director General
Department of Health

ATTACHEMENT

1. The objective of the Project is to contribute to the upgrading of the medical standard of Burma by improving the present condition of medical equipment in facilities concerned with medical affairs.

2. The Japanese Survey Team will convey to the Government of Japan the desire of the Government of the Socialist Republic of the Union of Burma that the former takes necessary measures to cooperate in implementing the project and bear the cost of the items requested by the latter shown in Annex. I, within the scope of Japanese economic cooperation programme in grant form.

3. The Government of Socialist Republic of the Union of Burma will take necessary measures listed in Annex II under the condition that the grant aid assistance by the Government of Japan is extended to the Project.

4. Both parties confirmed that the Survey Team explained Japan's grant aid programme and the Burma side has understood it.

ANNEX I.

The following items are requested in priority order by the Government of the Socialist Republic of the Union of Burma as grant aid assistance.

Priority

I. Medical Equipment list (detailed in Annex III)

II. Other items are as belows: (detailed in Annex IV)

1. Development of ICU and CCU Units in strategically located General Hospital
2. Development of Dental and X-ray Mobile Services - Prosthetic/Orthotic Services
3. Community Programme for Disability Prevention and Rehabilitation
4. Development of Kidney Units in Rangoon General Hospital
5. Ophthalmic Mobile Surgical Units

ANNEX. II

Following arrangements are requested to be taken by the Government of Socialist Republic of the Union of Burma.

1. To secure space or facilities to accomodate the equipment necessary for the Project when needed before the start of the works.

2. To provide facilities for distribution line of electricity, water supply and drainage and other incidental facilities to the sites (facilities to accomodate the equipment).

3. To provide data and information to a Japanese Consultant and a contractor necessary for the detailed engineering services and construction.

4. To ensure prompt unloading, customs clearance, and prompt internal transportation therein of the products purchase under the grant.

5. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Socialist Republic of the Union of Burma with respect to the supply of the products and services under the verified contracts.

6. To provide and use properly and effectively the facilities purchased, installed and constructed/rehabilitated under the grant, and to arrange the budget for maintenance and operation.

7. To provide and accord necessary permission, licenses and other authorisation required for the execution of the Project.

8. To bear all the expenses other than those to be borne by the grant, necessary for the implementation of the Project.

ANNEX III

Part I. Equipment for New Rangoon General Hospital

Based on the successive discussions between the two teams, the Burmese side

- requested that

(1) Whole Body C.T. Scanner

(2) Remote controlled cassetteless X-ray diagnostic T.V. system

(3) Film Drive System

(4) Gamma Camera System

(5) Auto Multi Gamma Counter

(6) Autoanalyzer

(7) Blood Gas Analyzer

be included and considered as priority equipment for the new Rangoon General Hospital,

- and further requested that consideration for such be made from additional funds.

Part II. Among the Medical Equipment List submitted to the H.E. Japanese Parliamentary Vice Minister for Health and Welfare, the following is the list of equipment considered according to the priority during the discussions between the two teams.

Priority I Equipment for Rangoon General Hospital

Among Equipment for Rangoon General Hospital

1st Priority - Linear Accelerator

2nd Priority - Equipment for Rangoon General Hospital Clinical Laboratory as follows.

Rangoon General Hospital Clinical Laboratory for Automation of tests and improvement (In order of priority)

1. Platelet counter FUJISAWA Model Ultra-Flo 100 and accessories - 2 Nos.
2. a) W.B.C. counter ERMA Model ACM-200 and accessories - 2 "
   b) Automatic dilutor ERMA Model AD-70 - 2 "
3. Auto-technicon C-800 ion analyzer (Stat ion II) and accessories for Na, K, Cl and CO_2 - 2 "
4. Blood Gas Analyzer ABL-2 and accessories - 2
5. Auto-technicon double channel auto-analyzer A A II with recorder and accessories - 2 "
6. Auto-technicon R.A. 1000 and accessories - 1 No.
7. Prothrombinometer and accessories - 2 Nos.
8. Fluorescent microscope with camera attachment NIKON Model - 1 No.
9. Immuno-electrophoresis apparatus & accessories - 1 "

Equivalent Model will be accepted.

3rd Priority - Pan Angiography will be chosen as top priority among Cardiac equipment. Cardiac Equipment requested will be as follows.

1) Echo Cardiogram
2) Thread-Mill Monitoring ECG
3) Analyzer of Holter Monitoring system including Holter

4th Priority - Equipment for Neuro-Surgery, Oral-Maxillo-Facial & Plastic Surgery, Uro-Surgery and Chest Surgery

Neuro-Surgical Equipment (In order of priority)

Equipment	Q'ty	Remarks
1. Neuro-micro-surgical instruments		
Operating microscope OPMI 6 or 7 (for neuro-surgery). Complete set with following accessories:-	1	Preferable 1) Zies OPMI 6 or 2) Olympus 3) Topcon (with reference to FUKUSHIMA of
1) Additional light source	1	
2) Electronic flash	1	

Equipment	Q'ty	Remarks
3) Motorised rollable stand	1	University and MITSUI Memorial Hospital)
4) Audiovisual equipments to be attached with microscope.		
i. Hitachi DK-81, colour TV camera, head only for attachment by 'C' mount adaptor to microscope	1	
ii. Hitachi Ar-4 A.C. adaptor for above	1	N.B. The audiovisual equipment should match with the chosen operating microscope
iii. Sony VO 5630 U-Matic Video recorder	1	
iv. Sony CVM 2000 (SB 20" colour monitor	1	
2. Microsurgical instruments		
1) Bipolar coagulator complete set	1	with reference to DOWNS surgical instruments
2) Bipolar forceps fine ends 0.5mm titanium, 8 5/8" 219mm	2	
3) Diamond knife bayonet with 60° spear shaped blade on 7.5cm shaft, 8¼" (210mm)	1	
4) Diamond knife bayonet with 60° spear shaped blade on 9.5cm shaft, 9" (229mm)	1	
5) Fine probe with right angle plain end	2	
6) Fine probe with hook end	2	
7) Fine probe with straight plain end	2	
8) Needle holder straight no catch	2	
9) Fine needle holder with curved jaws	2	
10) HEIFETZ clip straight 5 x 1.5 (short)	12	
11) Sugita Clip set	1	
12) Vessel approximator bar 12.4mm	1	
13) Vessel approximator bar 19mm	1	
14) Temporary clip low pressure 5mm	1	
15) Medium pressure 5mm temporary clip	1	

Equipment	Qty	Remarks
16) Low pressure 8mm temporary clip	1	
17) Medium pressure 8mm temporary clip	2	
18) Bleasal suction/irrigation tube 10" (254mm)	2	
3. Micro instruments for vessel surgery		
1) Vessel knife, Sickle shaped blade, malleable shaft	2	
2) Vessel probe, single prong with ball tip	2	
3) Suture passer and knot tier	2	
4) Endarterectomy spatula, Semi-shape, straight blade 1x10mm	1	
5) Endarterectomy spatula, Semi-shape, angled blade 1x10mm	1	
4. Instruments for transphenoidal hypophysectomy		
1) Hardy speculum new model open-ended, blackened blades small 2 3/4" (70)mm	1	
2) Hardy speculum standard 3¼" (80mm)	1	
3) Expanding device 6¼" (159mm)	1	
4) Hardy Enucleator 8½" (216mm)	1	
5) Hardy (Bronson Ray) Curette 8½" (216mm)	1	
6) Hardy 'Sickle' 8½" (216mm)	1	
7) Derome Handle 4 3/4" (121 mm)	1	
5. Stryker Craniotome Instruments		
1) Stryker craniotome Handpiece electric	2	
2) Single Fluted Router	4	
3) Triple Fluted Router	4	
6. Laser Surgery Equipment	1	
For laser microsurgery the micro manipulator used as adaptor should be attachable to the microscope chosen in No. 1		

Equipment	Q'ty	Remarks
7. Patient Monitoring System for I.C.U		
1) Toshiba PMS-4 AA	1	
2) Intracramial Pressure Monitoring System, a complete set, any type	1	
3) D.C. Defibrillator	1	
4) Wright's Respirometer	1	
5) Portable Electric Suction	2	
6) DYNACLAVE sterilizer Model CCR-2	2	
7) Electronic blood gas analyser	1	
8) Air conditioner	4	

Priority equipment list for Department of Oro-Maxillo Facial and Plastic Surgery, Rangoon General Hospital

1. For Oral, Maxillo-Facial & Plastic Surgery operating theatres		
1) Operating Table		
Mizuho Operating Table, MOS 11CON	2 nos.	
2) Operating Light		
Skylux Yamada Shadow Lamp CO. 3-L	2 "	
3) Operating Light (Portable)		
Sonne Shadowless Lamp	2 "	
1)-3) absolutely essential as present tables and lights are not adjustable any more.		
4) Strong Suction Apparatus for Operating Theatre use	2 "	
5) Diathermy Sets (Portable)	2 "	
2. For In-patients Wards (Ward 15 & 16)		
1) Steam sterilisers for ward use	2 "	
2) Suction Apparatus for ward use and out-patient department	4 "	
3) Dressing Trolleys	2 "	
4) Air conditioner for dressing room	2 "	
3. For Out-patient Dental Department		
1) Complete Dental Unit	3 Units	
(with chair; light; air roter with built-in compressor (or separate compressor); Hand pieces and assorted burs)		

2) Complete set of portable dental X-ray unit 1 No.

3) Complete set of portable developing unit 1 No.

4) Complete range of dental X-ray films

5) Sterilizer 1 No.

Equipment for Uro-surgical Department of Rangoon General Hospital in order of priority.

1) Nephroscope and accessories for biopsy

2) Lecture Scope model - LS - R

3) Floor-type Boiling sterilizer

Surgical Instruments required for Chest Surgical Unit of Rangoon General Hospital in order of priority.

1) Fiber-bronchoscope FBS 6TL11 1 No.

2) Fiber-esphagoscope 1 "

3) Endoscope locker MT6 1 "

4) Fiber teaching attachment FS-TA11 1 "

5) Endoscope illuminator RX-500J 1 "

6) Low pressure suction unit MSF 210 6 Nos.

7) Suction apparatus 2 "

8) Nakayama gastric clamps (+4000 clips) 2 "

9) Pneumonectomy set 1 No.

10) Endoscopic Electrohydraulic table DR-700 M 1 "

5th Priority - Acoma Ventilators for Operation Theatre 5 Nos.

Priority II. Equipment for Central Women's Hospital in order of priority.

1. Delivery tables 12 Nos.

2. Neonatal resuscitation unit with suction & O_2 attached 5 "

3. Electrical Bowl Sterilizer 10 "

4.	Electric suction apparatus (Adults)	8 Nos.
5.	Electric suction apparatus (Neonates)	6 "
6.	Automatic tissue processor	1 No.
7.	Blood Bank Refrigirator	1 "
8.	Fowler's beds	12 Nos.
9.	Oxytocin drip regulator - electronic with tocodynamometer	3 "
10.	Ultra Violet Spectrophotometer	
11.	Colorimeter	
12.	CVP monitor with PCO_2 analyser - adults	2 "
13.	Incubators for babies	6 "
14.	Conduction analgesia set continuous epidual set (disposable)	3 boxes
15.	Electric Cautery	4 Nos.
16.	Cryosuggical set	2 "
17.	Microsurgical tuboplasty instruments complete set with operating microscope	1 No.
18.	Electric vacuum extractor with suction curette	3 Nos.
19.	Ultrasound	2 "
20.	Sonocaids (Doppler)	4 "
21.	Dilatation and Curette instruments	6 sets
22.	Hysterectomy set (instruments)	4 "
23.	Caesarean section set (instruments)	6 "
24.	Ambu resuscitator for adults and neonates	6 Nos.
25.	Close circuit T.V. with 2 way communication for teaching purposes at operation theatre.	1 No.

26.	Microscope Trinocular	1 No.
27.	Microscope Binocular	6 Nos.
28.	Microscope with Microphotography (MNAOM)	1 No.
29.	E.C.G. Machine	2 Nos.
30.	Freezing microtome	1 No.

Iotity III. Equipment for Children's Hospital, Rangoon (in order of priority)

1st rriority - For Intensive Care Unit

1)	Minimonitor Cardioscope Model - KE 201A	8 Nos.
2)	Cardiac Monitoring System Fukuda - ECU - 10 (page 37)	8 "
3)	Cardiac Resuscitation System FC - 500 - page 58	1 No.
4)	Skin Blood Gas Analyser	2 Nos.
5)	Thermister Electrical Thermometer	8 "
6)	Suction Machine : Low type	4 "
	High type	4 "
7)	Respirators and Mechnical Air Compressors	
	7.1 - For Neonate & Infants	4 "
	7.2 - For Older Children	4 "
8)	Incubators	4 "
9)	Computor Monitor Infusion Pump	4""
10)	Oxygen Analyzer (for incubators)	2 "
11)	Autoanalyzer for electrolytes	1 No.
12)	37°C water bath (for blood warming)	2 Nos.
13)	X-ray view box (Triple) with trolley	1 No.
14)	E.C.G. (Cardiofax)	1 "

2nd Priority - For use in Children's Hospital

1)	Aloka Echo Vision (Ultrasonic Diagnostic equipment)	1 No.
2)	Bronchoscope (non-rigid) with accessories	
	- Neonate	1 "
	- Childrens	1 "
3)	Cystourethroscope with accessories (including resectoscope) two sizes	1 each

4)	Portable X-ray Unit	1 No.
5)	Fibreoptic colonoscope	1 "
6)	Blood gas analyser	1 "
7)	Echocardiogram	1 "
8)	Suction Machines : Low type	3 Nos.
	High type	3 "
9)	X-ray view box (Triple) with trolley	6 "
10)	Ultrasonic nebuliser (for Adm. of Medicine)	4 "
11)	E.C.G. Machine	3 "

3rd Priority - For use in Neonatal Unit, Rangoon Children's Hospital

1)	Incubators	6 Nos.
2)	Apnoea Monitor	4 "
3)	Oximeter (Direct reading)	4 "
4)	Reflectance meter for Blood Glucose Estimation	2 "
5)	Phototherapy Unit	4 "
6)	Bilirubinometer	2 "
7)	Infusion pump	2 "
8)	Oxygen piping system	1 No.
9)	Oxygen synthesizer plant	1 "
10)	Plasma Exchanger & Haemodialysis Machine	1 "

Priority IV - Equipment for Mandalay General Hospital. in order priority.

1) Uro-surgical Unit

a. Fibre Optic Iglesias's Resectoscope.

b. Fibre Optic Rotating Resectoscope.

c. Electro-surgical unit, solid state type. Combined with fibre optic light source unit.

d. Randall's kidney stone Forceps, stainless steel, 4 kinds of curve.

2) Thoracic Surgical Unit.

a.	Olympus Bronchofibre Scope for biopsy, Model BF type	1 set
b.	Acoma suction unit Model SB 10 with standard accessories and spare bottles (4), 220V,50Hz	2 "

3) General Surgical Unit.

a. Pan view fibroscope
b. Colonoscope
c. Peritoneoscope
d. Endoscope locker

4) Medicine Unit.

a.	Echocardiograme	1 No.
b.	Electric Suction Unit	3 Nos.
c.	Monitor Difibrillator	3 Units.

5) Clinical Pathology

a.	W.B.C. counter ERMA Model ACM-200 and accessories	1 No.
b.	Platelet counter FUJISAWA Model Ultra-Flo 100 & accessories	1 "
c.	Auto-technicon C-800 ion analyser (Stat ion II) & accessories for Na, K, Cl and CO_2	2 Nos.
d.	Prothrombinometer & accessories	1 No.
e.	Auto-technicon double channel auto-analyser A A II with recorder and accessories	1 No.
f.	Auto-technicon R.A. 1000 & accessories	1 No.
g.	Blood Gas Analyzer ABL-2 & accessories	2 Nos.

6) Obstetrics and Gynaecology Unit

a. Vacuum Extractor
b. Super suction curettes
c. Aspirator, supplied with abortion cannula set and tube and standard accessories
d. Polaroid type 611

Videoimage recording

Black and White Land Film. 100 Packs.

e. Resuscitator (for neonates)
f. Miller's Laryngoscope set for neonatal and paediatric care-use.
g. Disposible endotracheal tubes
h. Y adapters (disposible)
i. Endoscopic examining chair
j. Kobak's needle (for paracervical and pudendal nerve blocking)
k. Physician's office scale

ANNEX IV

1. DEVELOPMENT OF INTENSIVE CARE & CORONARY CARE UNITS AT THE STRATEGICALLY LOCATED GENERAL HOSPITALS.

1.1 Outline of proposal:-

1. Management of patients needing intensive medical care.
2. To provide optimal services for the coronary and other acute heart failure cases.

1.2 Needs and effects:-

Patients needing intensive care for both the medical and surgical emergencies are over increasing. Provision of facilities and equipment for the proposed units will facilititate effective treatment and thus reduce preventable mortality.

1.3 Implementation Programme:-

To be implemented in (5) General Hospitals listed below in order of priority.

1. Taunggyi
2. Bassein
3. Moulmein
4. Sittwe
5. Magwe

1.4 Requirements:-

1. Essential equipment for intensive care of 1 Bed x 5 Hospitals.
2. Full implement for coronary care of 1 Bed x 5 Hospitals.

2. DEVELOPMENT OF DENTAL AND X-RAY MOBILE SERVICES

2.1 Outline of proposal:-

To promote diagnostic and dental mobile services in out reach areas.

2.2 Needs and effects:-

There is a need to augment and intensify peripheral curative services with accessable diagnostic and dental facilities.

2.3 Requirements:-

1. Mobile dental unit x 5
2. Mobile X-ray unit x 5

III. Prosthetic/Orthotic Services - Community Programme for Disability Prevention and Rehabilitation Project

Present Situation :

The prosthetic/orthotic services was first introduced in Burma with the establishment of the Hospital for the Disabled at Thamaing in Rangoon on 18th. December 1959. Initially, the Hospital accommodated 25 in-patients. By January 1965, without expanding the physical capacity, the Hospital was designated to serve 50 in-patients and 50 out-patients.

The Hospital consists of two in-patient wards (60' x 20' each), two occupational therapy departments (48' x 20' each), one hydro and electrptherapy department (40' x 20'), one therapeutic gymnasium (60' x 30'), one record and two doctors' room (30' x 20'), senior medical officer's room (16' x 8'), nursing sister's room (16' x 8'), dressing room (16' x 16'), administrative office (16' x 16'), prosthetic/orthotic workshop of 7 rooms (32' x 14', 32' x 14', 26' x 20', 40' x 20', 26' x 20', 26' x 20' and 26' x 20') and prosthetic/orthotic extension (100' x 40'). Apart from the prosthetic/orthotic workshop extension, which completed building in January 1983, the quality of all the other buildings are rather poor with their walls and floorings cracking in many places.

The present staff strength of the Hospital for the Disabled is indicated in annex I. The type of diseases and disabled admitted both as in and out patients from 1974 to 1983 is indicated in annex II. The number of prosthetic/orthotic appliances made and repaired from 1974 to 1983 is indicated in annex III. The present situation of equipment and their conditions is mentioned in annex IV.

In addition to providing services for the disabled persons, the Hospital is also involved in the training of 4th. and 5th. years medical students from both the Institutes of Medicine I and II, orthopaedic nurses, sick nurses and physiotherapists. Since August 1982, with the implementation of the community-based disability prevention and rehabilitation project, assisted by [illegible], the Hospital has been engaged in training of community health workers and basic health personnel of Hlegu, Hmawbi and Taikkyi Townships, of the Rangoon Division, in the utilisation of the MRB Manual - Training [illegible] Disabled in the Community. In addition, research [illegible]

to develop and produce prosthetic/orthotic components and other rehabilitation aids that will meet the local social and cultural requirements, utilising appropriate technology.

Problems

The Hospital is the only institution of its kind in Burma providing rehabilitation services for the orthopaedically disabled persons. As it is located in the south of the country it primarily serves the population within a radius of 200 miles. The physical capacity being very limited there is a long waiting list for admission, which defeats the purpose of rehabilitation, and due to insufficient trained prosthetic/orthotic technicians the fabrication period of the appliances are very much delayed. Furthermore, as the maintenance services for the appliances are not readily available, efforts for successful rehabilitation of the disabled persons are seriously jeopardised.

The prosthetic/orthotic repair workshop, established in June 1976, at the Mandalay General Hospital, with 3 technicians is also not effective as it has no in-patient facilities for the disabled persons coming from outside of Mandalay.

Proposal

The following proposal for Japanese Government's assistance is put forward to improve the quality and coverage of rehabilitation services for the disabled persons, particularly prosthetic and orthotic services, for both the urban and rural communities in Burma.

1) Construction of a new 120 to 160 bedded National Institute for Rehabilitation Medicine, in the grounds (15 acres) of the Hospital for the Disabled, to undertake service, training and research - complete with operation theatre, x-ray, laboratory, physiotherapy, swimming pool, indoor gymnasium, occupational therapy, prosthetic-orthotic workshop, auditorium, lecture theatres, library, administration, laundry, cafeteria, kitchen, dining rooms, mortuary etc. (Note - the existing buildings, after some renovations, are to be used as out-patient facilities).
2) Equipment and supplies for the above facilities.

3) Construction of houses for doctors, nurses and workers in the grounds of the Hospital for the Disabled in Rangoon.

4) Construction of 50 bedded Rehabilitation Hospital in Mandalay - complete with x-ray, laboratory, physiotherapy, swimming pool, indoor gymnasium, occupational therapy, prosthetic-orthotic workshop, auditorium, lecture theatre, library, administration, laundry, cafeteria, kitchen, dining room, mortuary etc.

5) Equipment and supplies for item 4 facilities.

6) Construction of houses for doctors, nurses and workers for the Mandalay Rehabilitation Hospital.

7) Construction of eight 16-bedded Rehabilitation Hospitals - complete with x-ray, laboratory, physiotherapy, prosthetic-orthotic workshop, library, administration, cafeteria, kitchen, dining room, mortuary etc., each in Myitkyina, Monywa, Lashio, Taunggyi, Meiktila, Magwe, Prome and Moulmein (see annex V).

8) Equipment and supplies for item 7 facilities.

9) Long-term consultants to train 8 prosthetist/orthotists and 40 prosthetic/orthotic technicians.

10) Short-term consultants to train 16 physiotherapists and nurses in pre and post prosthetic management of upper and lower extremity amputees.

11) Fellowships for 4 medical officers to study amputee rehabilitation.

12) Four fellowships to undergo academic training leading to Diploma in Occupational Therapy.

13) Fellowships for 8 nurses to study general rehabilitation nursing.

14) Fellowships for 4 locally trained prosthetist/orthotists.

15) Fellowships for 8 locally trained prosthetic/orthotic technicians.

16) Fellowships for 4 physiotherapists to study amputee management.

17) One 2 feet roller Rubber Mill.

18) One hydraulic hot platten press to vulcanise prosthetic rubber foot, electrically operated.

19) One ambulance each for Rangoon, Mandalay and other eight 16-bedded Rehabilitation Hospitals.

[illegible] 7.8.74

([illegible])

Senior Medical Officer

Hospital for the Disabled. ANNEX I

Present staff strength

1.	Senior Medical Officer cum Consultant in Rehabilitation Medicine	1
2.	Consultant in Rehabilitation Medicine	1
3.	Assistant medical officers	5
4.	Nursing sister	1
5.	Staff nurse	4
6.	Trained nurse	3
7.	Nurse Aides	14
8.	Physiotherapist	8
9.	Remedial gymnast	1
10.	Occupational therapist	2
11.	Prosthetist / Orthotist (Workshop Manager)	1
12.	Occupational therapy assistant	2
13.	Compounder	1
14.	Orthotic technician	6
15.	Prosthetic technician	6
16.	Leather-work technician	4
17.	Lathe machine operator	1
18.	Lathe machine worker	3
19.	Prosthetic / Orthotic worker	8
20.	Store keeper	2
21.	Clerical staff	4
22.	General worker	22
	Total:-	98

HOSPITAL FOR THE DISABLED

TYPE OF DISEASES AND DISABLED ADMITTED

FROM 1974 to 1983

Year	AMPUTEES	POLIOMYELITIS	CEREBRAL PALSIES	C.V.As.	MUSCULO-SKELETAL DISABILITIES	NEURO-MUSCULAR DISABILITIES	MISCELLANEOUS	TOT
1974	236	402	106	23	506	92	27	1392
1975	302	254	88	22	437	79	14	1196
1976	266	279	78	16	373	89	3	1104
1977	283	239	94	24	471	97	19	1227
1978	302	292	97	22	515	134	19	1397
1979	333	496	110	26	601	153	32	1751
1980	317	540	84	19	606	126	19	1711
1981	345	434	91	17	533	128	29	1577
1982	257	479	82	15	443	95	25	1396
1983	370	528	108	28	550	100	26	1410
TOTAL	3011	3743	934	204	5035	1091	213	14231

HOSPITAL FOR THE DISABLED

ANNEX III

Prosthetic & Orthotic Appliances made and replaced from 1974 to 1983.

	New Appliances				Repairs				Grand Total
	Leg Pros.	Arm Pros.	Braces	Total	Leg Pros.	Arm Pros.	Braces	Total	
1974	156	51	285	492	263	35	372	670	1162
1975	191	40	269	500	268	36	275	579	1079
1976	179	44	369	592	333	33	318	687	1279
1977	220	36	386	642	288	58	305	651	1293
1978	239	54	349	642	338	32	294	714	1356
1979	253	34	378	665	377	25	272	674	1339
1980	291	36	444	771	408	32	289	729	1500
1981	252	22	368	642	404	17	307	728	1370
1982	271	28	335	634	329	29	276	634	1268
1983	300	42	271	613	331	16	297	644	1257
	2352	387	3454	6193	3394	293	3003	6690	12883

HOSPITAL FOR THE DISABLED

LIST OF EQUIPMENT

Sr. No.	Description of Equipment	Number of Serviceable	Number of U Serviceable
1.	PROSTHETIC/ORTHOTIC WORKSHOP		
1.	Electric Arc Welder, single phase, High Amp. 40 - 295, Low Amp. 25 - 195	1	-
2.	Lathe machine (Super 7B) 19" bed, 3½" centre height	1	-
3.	Lathe machine, high speed, 6 ft. bed, 7½" swing, 3 phase, 3 h.p.	1	-
4.	Lathe machine, 6½" centre height	-	1
5.	Milling machine, table 40" x 10", 1" bore, 3 phase, 2.43 h.p.	1	-
6.	Drill machine, floor type, chuck 1" diam. single phase, 1 h.p.	1	-
7.	Drill machine, floor type, chuck ½" diam., 1 phase, ½ and 1 h.p.	2	-
8.	Drill machine, bench type, chuck ½" diam., ¼ phase, ¼ and ½ h.p.	2	4
9.	Grinding machine, bench type, 1 phase, 1 h.p., 10" diam. wheel	1	-
10.	Grinding machine, bench type, 3 phase, 0.75 KW, 10" diam. wheel	1	-
11.	Grinding machine, bench type, 1 phase, ¼ h.p., 6" diam. wheel	3	5
12.	Belt sanding machine, floor type, 3 phase, 0.7 - 0.9 KW, belt width 4½"	1	-
13.	Belt sanding machine, floor type, 3 phase, 2.2 KW, belt width 20"	1	-
14.	Belt & disc sanding machine, 3 phase, 1 h.p., belt 6" x disc 9"	1	-
15.	Belt & disc sanding machine, 1 phase, ½ h.p., belt 6" x disc 10"	1	-

continued next page

Sr. No.	Description of Equipment	Number of Serviceable	Number of Serviceab
16.	Band sawing machine, floor type, 3 phase, 1 h.p., ½" saw	1	-
17.	Band sawing machine, floor type, 1 phase, ¾" h.p., ½" saw	1	-
18.	Wood Frasing machine, floor type, 3 phase, 1.5 KW.,	4	-
19.	Trautman Wood Carving machine, floor type, 1 phase,	3	-
20.	Wood-work machine with multiple attachments, Minor & Major, ½ and 1 h.p. motor	2	-
21.	Sewing machine, PFAFF, flat bed, motor driven, 220V, 1 phase	1	-
22.	Sewing machine, PFAFF, post bed, motor drivon, 220V, 1 phase	1	-
23.	Sewing machine, SINGER, Industrial type, flat bed, motor driven, 220V, 1 phase	1	-
24.	Leather sewing machine, SINGER, round, long-arm bed, foot and motor drive, 220V, 1 phase	1	-
25.	Shoe finishing machine, 1 phase, 220V	1	-
26.	Laboratory oven, bench type, 220-250V, 1 phase, automatic temperature control	1	-
27.	Universal oven, floor type, 3 phase, automatic temperature control	1	-
28.	Slip roll forming machine, floor type, hand driven, length 31"	1	-
29.	Shearing machine, bench type, manual	9	-
30.	Hot platen press, hydraulic, electrical, plate size 10" x 10", 3 phase	1	-
31.	Rubber mill, 2 feet roller, electric motor operated, 3 phase	1	-
32.	Nickle plating plant -complete set	1	-
33.	Buffer machine, floor type, double-ended spindle, 3 phase	1	-

continued next page

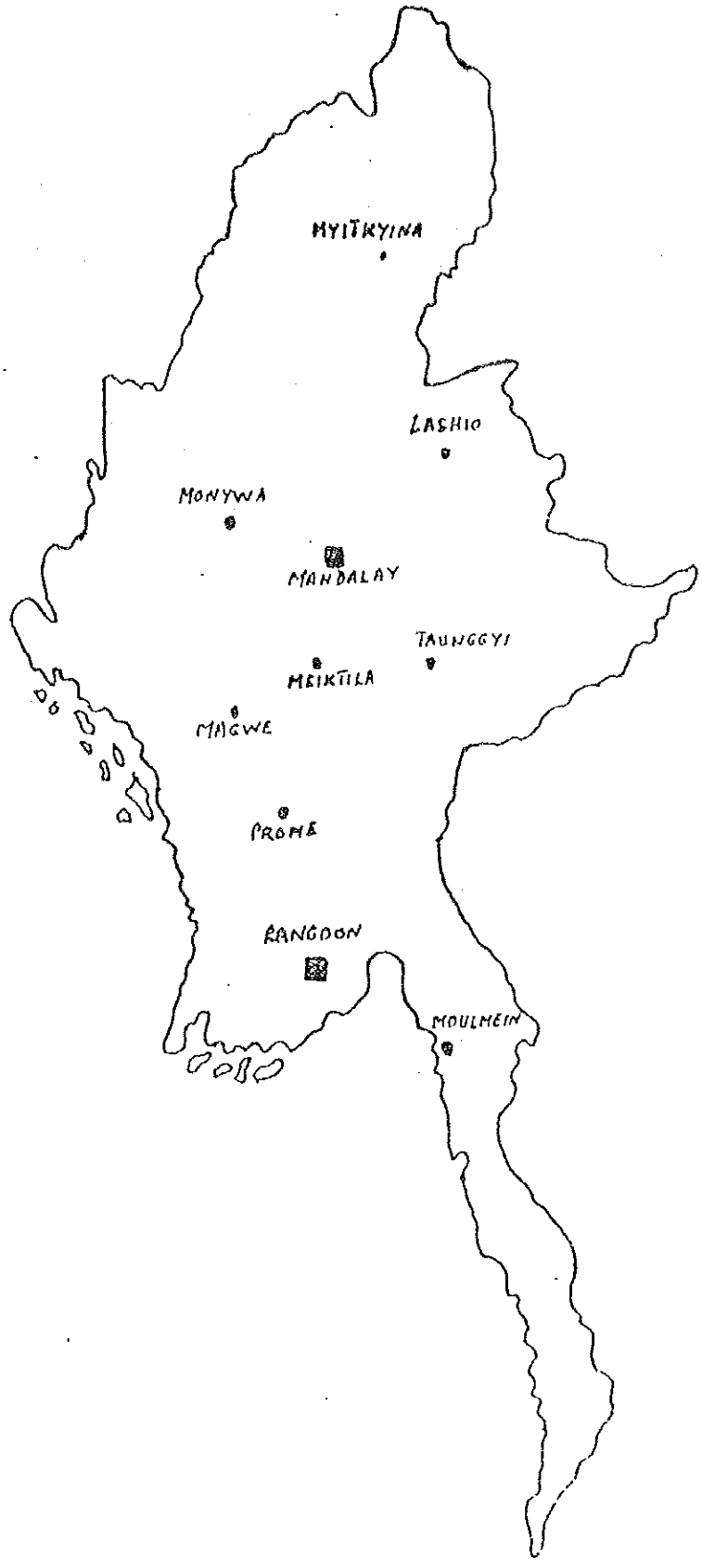
Sr. No.	Description of Equipment	Number of Serviceable	Number of Serviceable
34.	Circular knitting machine, 3.5" cylinder diam., 140 needles, 1 phase	1	-
35.	Circular knitting machine, 3.5" cylinder diam., 160 needles, 1 phase	1	-
36.	Circular knitting machine, 3.5" cylinder diam., 240 needles, 1 phase	1	-
	PHYSIOTHERAPY		
37.	Electric stimulator	2	3
38.	Ultra-violet lamp	1	2
39.	Short-wave diathermy machine	1	2
40.	Ultra-sound machine	2	1
41.	Infra-red lamp	2	-
42.	Whirl-pool bath for leg and arm	1	1
43.	Hydropack heating unit	1	1
44.	Paraffin wax bath	1	-
45.	Cold pack Hydrocollator machine	1	-
46.	Micro-wave irradiator machine	1	-
47.	Acupuncture machine	1	-
48.	Triplex pulley set	2	-
49.	Pelvic traction set	1	-
50.	Hunter-Smith exerciser	1	-
51.	Elgin exerciser	1	-
52.	N.K. Exerciser unit	2	-
53.	Guthrie-Smith suspension set	1	-
54.	Economy restorator	1	-
55.	Bicycle exerciser	2	-
56.	Tilt table	3	-
57.	Hydraulic rowing machine	1	-
58.	Ankle exerciser	-	1
59.	Armour exerciser	1	-
60.	Shoulder wheel	1	-
61.	Stall bar	1	-
62.	Parallel bars, assorted sizes	2	-

continued next page

Sr. No.	Description of Equipment	Number of Serviceable	Number of Serviceabl
62.	OCCUPATIONAL THERAPY		
63.	Oliver Pretsaw machine, foot operated	1	-
64.	Sewing machine, Singer, foot operated	1	-
65.	Hand drill, electric	1	-
66.	Thome Wire Twisting machine	1	-
67.	Electric poker machine	1	-
68.	Table, adjustable	1	-
69.	Chair for cerebral palsy	1	-
70.	Relaxation chair	1	1
71.	Pretsaw machine, small, foot operated	-	1
72.	Pretsaw machine, small, peddle operated	-	1
73.	Crawler, adjustable height	1	-
74.	Suspension walker	1	-
75.	Walkerette for child	4	-

MAP OF BURMA

ANNEX – V



4. DEVELOPMENT OF KIDNEY UNIT IN RANGOON GENERAL HOSPITAL

4.1 Outline of proposal of project:-

1. To equip an artificial kidney unit.

4.2 Needs and effects of project:-

1. These equipments are essential for the Academic - Service - Research complex in Rangoon General Hospital to upgrade the medical teaching, the health service, and research in kidney diseases.

2. Effects:-

   (1) It will provide better services towards the care of patients.

   (2) It will keep abreast in the medical education.

   (3) It will provide a better understanding of kidney diseases and it may contribute to the advancement in treating various kidney diseases which at present defy all treatment in the world.

4.3 Requirements:-

Name of parts	Number Reqd.
For the Artificial Kidney Unit	
1. Artificial kidney machines with all disposable accessories.	10
2. Digital type scale beds	5
3. Digital type scale chair	5
4. Water filter series	1
5. Ion exchange water softener	1
6. Infusion pump	3

5. ESSENTIAL EQUIPMENT AND INSTRUMENTS FOR OPHTHALMIC MOBILE SURGICAL UNIT

1. Basic Surgical Instruments for Entropion - Glaucoma and Cataract operations (2 sets each for one mobile unit);
2. Portable Slit-lamps with Fundus Camera;
3. Slide projector, screen and P.A. systems (one set each for one mobile unit);
4. Portable Steam Sterilizer - one for each mobile unit;
5. Examination Couch is NOT ESSENTIAL;
6. Portable Electric Generator 2 Kilo Watt (Honda Engine) one for each mobile unit.

ESSENTIAL INSTRUMENTS FOR ENTROPION, GLAUCOMA AND CATARACT OPERATION

1.	Corneal Scissors-universal	20 pairs
2.	Corneal needle holder	20 Nos.
3.	Croneal forceps (Colibri)	20 Nos.
4.	Silcock Needle Holder 6 inches	20 Nos.
5.	St. Martin Forceps	20 Nos.
6.	Iris Scissors	20 Nos.
7.	Iris Forceps	20 Nos.
8.	Capsule Forceps	20 Nos.

../.

9.	Frisophate	20 Nos.
10.	Corneal Needle 8 mm	12 Dozens
11.	Schiotz Tonometer	12 Nos.

SUITABLE TYPE OF VEHICLE

1. Nissan or Toyota Land Cruiser or similar type of preferably 4 wheel drive, Petrol Engine, Left Hand drive;

2. Number of vehicles required 4 units.

2. DATA OF BACKGROUND OF THE PROJECT

(Figures and Tables)

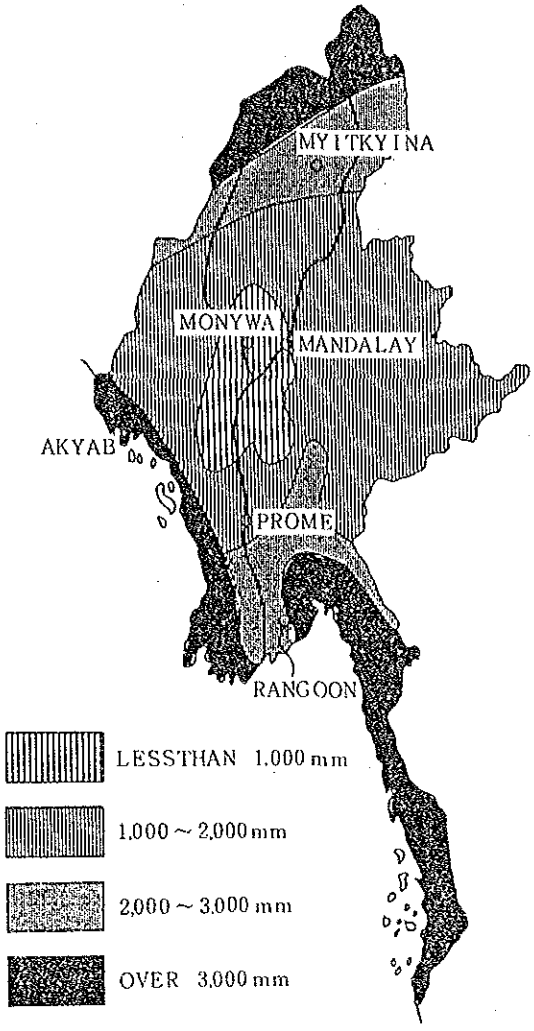


Fig. 2 – 1 AVERAGE ANNUAL RAINFALL (1965~1974)

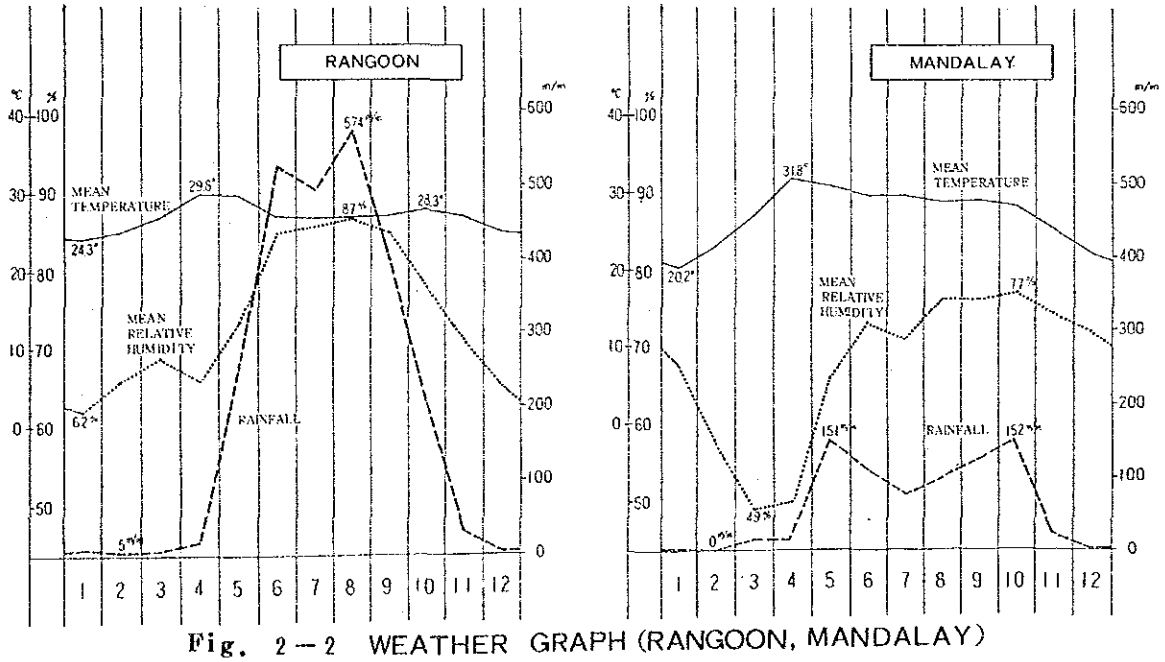


Fig. 2 – 2 WEATHER GRAPH (RANGOON, MANDALAY)

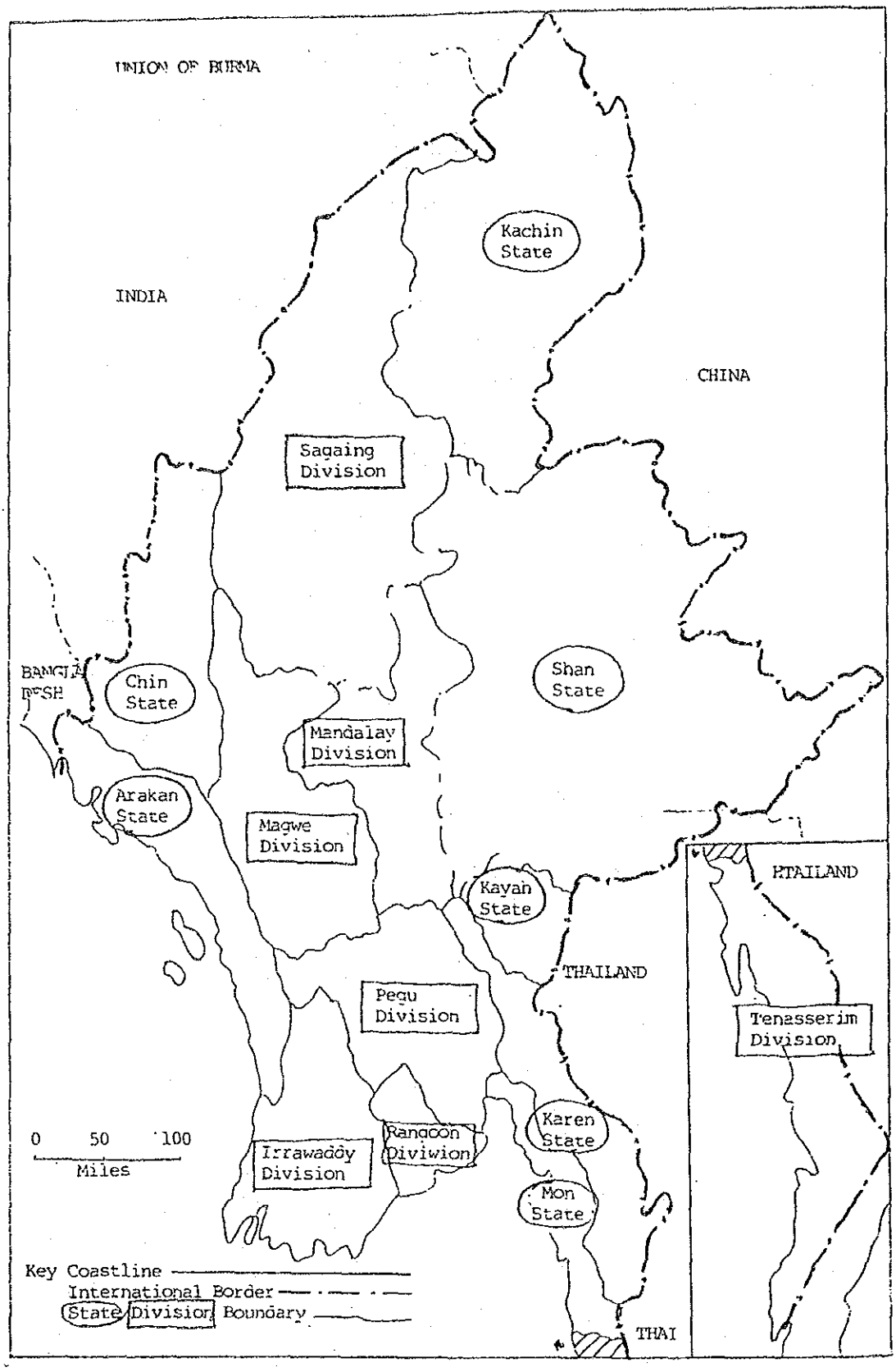


Fig. 2－3 MAP OF STATES/DIVISIONS

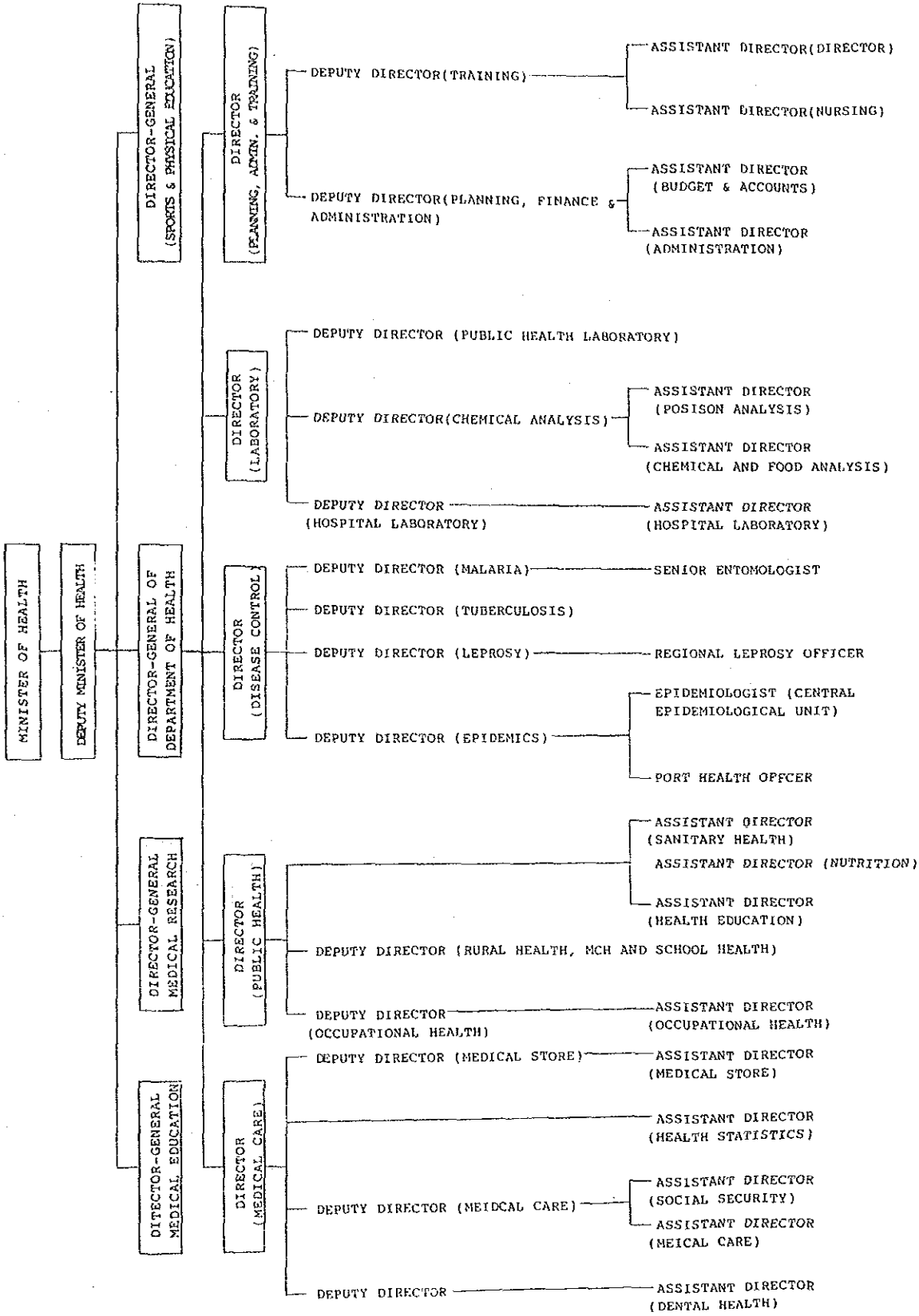


Fig. 2 – 4 ORGANIZATION OF M.O.H AND D.O.H

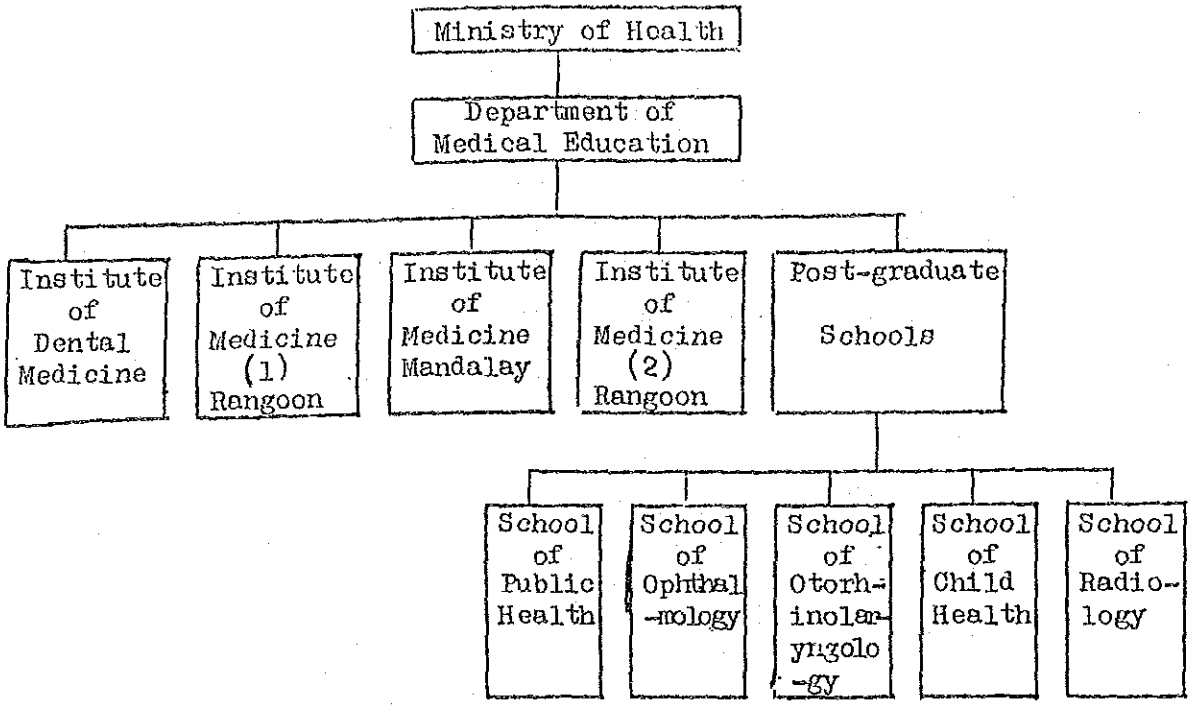


Fig. 2 – 5 ORGANIZATION SET–UP OF THE D.O.M.E

Table 2 — 1 GNP, GDP (1981)

			BURMA	THAILAND	INDONESIA	PHILIPPINES	JAPAN
GNP 1981	per Capita GNP (dollars)		190	770	530	790	10,080
	1960 - 81 Average Annual Growth Rate (%)		1.4	4.6	4.1	2.8	6.3
GDP 1981	Total (Million Dollar)		57.7	368.1	849.6	389.0	11,295
	1970 - 81 Average Annual Growth Rate (%)		4.8	7.2	7.8	6.2	4.5
	Dist (%)	Agriculture	47	24	24	23	4
		Industry	13	28	42	37	43
		Services	40	48	34	40	53

Table 2 — 2 ESTIMATED ACTIVE LABOUR FORCE (1983/84)

(In thousand)

No.	Sector	State sector	Co-operative and private sector	Total	%
1	2	3	4	5	
1	Agriculture	79	9130	9209	63.5
2	Livestock and Fishery	16	178	194	
3	Forestry	99	88	187	1.3
4	Mining	72	13	85	0.6
5	Processing and Manufacturing	187	1011	1198	8.3
6	Power	16		16	0.1
7	Construction	150	75	225	1.6
8	Transport and Communications	115	365	480	3.3
9	Social Services	236	83	319	2.2
10	Administration	525	28	553	3.8
11	Trade	65	1348	1413	9.7
12	Workers n.e.s.		618	618	4.3
	Total	1560	12937	14497	100.0

Table 2 — 3 BALANCE OF TRADE

(Kyat in Million)

	EXPORT	IMPORT	BALANCE
1976/77	1,715	1,627	(+) 88
1977/78	1,756	2,086	(-) 330
1978/79	1,852	3,223	(-)1,371
1979/80	2,696	4,200	(-)1,505
1980/81	3,225	4,635	(-)1,410
1981/82	3,452	5,611	(-)2,158
1982/83	3,036	6,566	(-)3,530
1983/84	3,593	5,730	(-)2,136

Table 2 — 4 IMPORT BY TYPE OF COMMODITY

(Kyat in lakhs)

			1979/80	1980/81	1981/82	1982/83 (Provisional actual)
1		Consumer goods	1886	2628	4314	4941
	1	Durable goods	499	953	1190	1261
	2	Foodstuff	455	541	955	1380
	3	Textiles	88	201	447	380
	4	Medicines and pharmaceuticals	540	736	1332	1317
	5	Other consumer goods	304	197	390	603
2		Raw materials and spares for inter-industry use				
	1	Raw materials	8394	13272	14305	12354
	2	Fuel	52		305	934
	3	Tools and spares	4785	5359	7484	9920
3		Capital goods	26733	24963	29308	37043
	1	Construction materials	4512	3939	6108	5489
	2	Machinery and equipment	18479	18770	18486	28256
	3	Transport equipment	3033	1067	2741	2200
	4	Other capital goods	709	1187	1973	1098
4		Commodity unspecified	159	128	397	476
			42009	46350	56113	65668

Table 2 — 5 HEALTH STATISTICS

		BURMA	THAILAND	INDONESIA	PHILIPPINES	JAPAN
Natality (P.1000 pop.)	1960	43	44	46	47	17
	1981	37	30	35	34	13
General Mortality (P.1000 pop.)	1960	21	15	22	15	8
	1981	13	8	13	7	6
Average Rate of Changes	Natality 1960-81	-13.7	-32.1	-24.4	-27.4	-24.9
	G. Mortality 1960-81	-37.2	-48.8	-41.8	-50.1	-19.7
Infant Mortality (P.1000 Liveborn)	1960	158	103	150	106	30
	1981	98	53	105	53	7
Childhood Mortality (P.1000 Children)	1960	25	13	23	14	2
	1981	12	4	14	4	-
Expectation of Life at Birth	1960	44	52	41	53	68
	1981	54	63	54	63	77

Table 2 -- 6 MORTALITY PATTERNS

Leading causes of deaths in 159 towns in 1978 were in the order of the following causes:-

	Causes of Mortality	Cases	Per Cent
1	Pneumonia	5,213	9.1
2	Enteritis and other diarrhoeal diseases	3,262	5.7
3	All other diseases	3,100	5.4
4	Tuberculosis of respiratory system	3,066	5.3
5	All other infective and parasitic diseases	2,260	3.9
6	Malignant neoplasm, including neoplasm of lymphatic and haematopoietic	2,101	3.6
7	Other causes of perinatal mortality	1,988	3.5
8	Other forms of heart diseases	1,892	3.3
9	All other accidents	1,756	3.0
10	Bronchitis, emphysema and asthma	1,429	2.5
	Total	57,614	100.0

Single leading causes of deaths treated in (435) Township Hospitals in 1981 were in the order of the following:

	Causes of Mortality	Per Cent
1	Malaria	13.1
2	Pneumonia	10.3
3	Ill-defined intestinal infections	6.9
4	Pulmonary tuberculosis	4.8
5	Pyrexia of unknown origin	4.2
6	Toxic effects of substances chiefly non-medical as to source	3.3
7	Other diseases of degestive system	3.2
8	Tetanus	3.1
9	Other diseases of respiratory system	2.7
10	Other protein calorie malnutrition	2.1

Table 2 — 7 NUMBERS OF DEATH: BY AGE GROUPS (1978)

	AGE GROUP	0	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-	N.SP.
NUMBER	57,614	8,356	7,177	3,744	3,213	3,170	4,064	5,766	7,056	7,476	6,944	648
%	100	14.5	12.5	6.5	5.6	5.5	7.1	10.0	12.2	13.0	12.1	1.1

Table 2 — 8 MORBIDITY PATTERNS

Single leading causes of out-patient morbidity from all outpatient departments in each of three seasons (summer, rainy, winter) for 1981 based on 10% samples were in the order of the following:

	Causes of Morbidity	No. of Cases	Per Cent
1	Pyrexia of unknown origin	1,794	8.3
2	Ill-defined intestinal infections	1,373	6.3
3	Supervision of pregnancy and puerperium	1,201	5.5
4	Other and unspedified anaemias	1,181	5.5
5	Bronchitis, chronic and unspedified emphysema and asthma	1,014	4.7
6	Malaria	994	4.6
7	Pulmonary tuberculosis	700	3.2
8	Debility unspecified	673	3.1
9	Other helminthiasis	646	3.0
10	Infections of skin and subcutaneous tissue	622	2.9
	All other causes	11,451	52.9
	Total:	21,649	100.0

Based on 10% samples of in-patients of 435 township Hospitals in 1981, single leading causes of morbidity were as follows:

	Causes of Morbidity	No. of Cases	Per Cent
1	Malaria	110,775	14.5
2	Normal delivery	59,589	7.8
3	Ill-defined intestinal infections	49,907	6.5
4	Pyrexia of unknown origin	32,392	4.2
5	Unspecified abortion	28,106	3.7
6	Penumonia	19,220	2.5
7	Certain traumatic complication and unspecified injuries	18,244	2.4
8	Other diseases of respiratory system	17,986	2.4
9	Other diseases of the digestive system	16,650	2.2
10	Bronchitis, Chronic & unspecified emphysia and Asthma	15,315	2.0

Table 2 — 9 PUBLIC HEALTH SERVICE ORGANIZATION

Organization / Staff	R·H·C	U·H·C	M/C·H·C	School Health Service
Number	1,267	62	336	72
Doctors	32	159	40	82
Dental Surgeons	-	42	-	51
Nurses	-	139	-	-
Dental Nurses	-	-	-	36
Health Assistants	994	-	-	-
Health Supervisors I	320	-	130	-
Health Supervisor II	260	-	94	-
Lady Health Visitors	937	127	295	-
Midwives	6,486	232	791	-

Table 2 — 10 SUMMARY OF HOSPITALS — 1 (1980)

Administrative Level	Number of Beds	General Hospital		Specialist Hospital	TOTAL
		Under D.O.H.	Others	Under D.O.H	
Central State/Division	Over 200 beds	20	2	13	35
State/Division	200 "	1		4	5
Township	150 "	5	-		5
	100 "	27	-		27
	50 "	30	3		33
	25 "	51	2		53
	16 "	154	7		161
Village Tracts	Station/H.	195	-		195
TOTAL		483	14	17	514

Table 2 — 11 SUMMARY OF HOSPITALS — 2 (1980)

State/Division	Specialist Hosp.	General Hosp.	200-beds Hosp.	150-beds Hosp.	100-beds Hosp.	50-beds Hosp.	Less than 25-beds	Total
Rangoon	10	7(1)	-	1	1	4(1)	24(1)	47(3)
Mandalay	3	1	-	-	5	5(1)	36	50(1)
Sagaing	-	1	-	-	3	3	54(1)	61(1)
Magwe	-	2(1)	-	-	3	3(1)	34	42
Pegu	-	1	-	2	1	4	43	51
Mon	-	1	-	-	1	-	16	18
Tenasserim	-	1	-	-	1	-	18(5)	20(5)
Irrawaddy	-	1	-	-	4	5	37	47
Arakan	-	1	-	-	2	-	25	28
Chin	-	1	-	-	-	3	12	16
Kachin	2	1	-	1	-	5	23	32
Shan	2	2	1	1	5	1	62	74
Kayah	-	1	-	-	-	-	12(1)	13(1)
Karen	-	1	-	-	1	-	13	15
Total	17	22(2)	1	5	27	33(3)	409(9)	514(14)

( ); Not under D.O.H

Table 2 — 12 LIST OF GENERAL HOSPITALS

S/D	NAME	BEDS
Rangoon	Rangoon General Hospital	1,500
	North Okkalapa Hospital	250
	East Rangoon Hospital	200
	Workers' Hospital[1)]	200
	Kandawgyi Hospital	12
	West Rangoon Hospital	200
	Insein Hospital	150
Mandalay	Mandalay General Hospital	800

S/D	NAME	BEDS	S/D	NAME	BEDS
Sagaing	Monywa	150	Arakan	Akyab	200
Magwe	Magwe Chank[2)]	200 150	Chin	Falam	150
Pegu	Prome	150	Kachin	Myitkyina	200
Mon	Moulmein	350	Shan	Taunggyi Lashio	200 200
Tenasserim	Tavoy	100	Kayah	Loikaw	150
Irrawaddy	Bassein	200	Karen	Pa-an	150

* 1) Under S.S.B
2) Under Myanma Oil Corporation

Table 2 — 13 LIST OF SPECIALIST HOSPITALS

S/D	NAME	BEDS
Rangoon	Central Women's Hospital	800
	Psychiatric Hospital	1,200
	Children's Hospital	550
	E.E.N.T. Hospital	150
	Orthopaedic Hospital	400
	Leprosy (Htaukkyant)	550
	Thamaing Hospital for the Disabled	50
	Aung San T.B. Hospital	300
	Infectious Disease Hospital	200
	Women & Children Hospital.S.Okkalapa	150
Mandalay	Leprosy Hospital	700
	E.E.N.T. Hospital	100
	Infectious Disiease Hospital	25
Kachin	Anti-Opium Dependence Department, Myitkyina	50
	Anti-Opium Dependence Department, Putao	25
Shan	Women and Children Hospital	200
	T.B. Hospital	50

Table 2 — 14 HOSPITAL BEDS (1950—80)

	TOTAL NUMBER OF BEDS				POPULATION PER BED			
	1950	1960	1970	1980	1950	1960	1970	1980
BURMA	8,583	14,321	23,043	28,889	2,220	1,561	1,197	1,222
THAILAND	-	19,531	40,653	71,718	-	1,393	846	658
INDONESIA	50,410	69,600	76,938	-	1,564	1,343	1,466	-
PHILIPPINES	-	22,598	43,492	93,474	-	1,208	854	518
JAPAN	321,082	842,000	1,311,729	1,319,406	258	111	79	89

Table 2 – 15 HEALTH PERSONNEL

(Numbers)

		1979/80	80/81	81/82	82/83
Doctor	Total	6,816	7,321	7,831	8,381
	Public	3,176	3,420	3,656	3,823
	Private & Others	3,640	3,901	4,175	4,558
Dental Surgeons	Total	317	365	411	471
	Public	190	240	290	317
	Private & Others	127	125	121	154
Health Assistants		1,300	1,300	1,300	1,300
Health Supervisors I		250	356	461	461
Dental Nurses		-	26	36	44
Lady Health Visitors		1,283	1,346	1,401	1,567
Nurses		4,063	4,197	4,326	4,607
Medwives		6,426	7,129	7,831	7,831
Indigenous Medical Practitioners		147	269	359	404
Health Supervisors II		114	238	363	363

Table 2 – 16 NUMBER OF PHYSICIANS AND MEDICAL DENSITY

	NUMBER OF PHYSICIANS				RATE PER 10,000 POPULATION			
	1950	1960	1970	1980	1950	1960	1970	1980
BURMA	2,242	1,400	3,073	7,321*	1.16	0.63	1.11	2.02*
THAILAND	1,522	3,402	4,313	6,867	0.78	1.29	1.25	1.46
INDONESIA	1,196	1,938	4,383	-	0.15	0.21	0.36	-
PHILIPPINES	1,698	3,949	4,051	6,063	0.81	1.44	1.10	1.25
JAPAN	76,446	101,000	117,195	154,578*	9.22	10.84	11.34	13.14*

* 1981.

Table 2 – 17 MANPOWER (CATEGORIES AND DISTRIBUTION)

(Numbers; 1981)

State/ Division	Doctor		Dental Surgeon		Raramedical		Nurse		X-Ray Technician		Population (1983) (10 thousands)	
		%		%		%		%		%		%
Rangoon	1,071	38.2	38	14.5	163	48.4	399	14.5	32	26.2	397	11.3
Mandalay	310	11.1	33	12.6	40	11.9	411	15.0	9	7.4	451	12.8
Sagaing	171	6.1	18	6.9	10	3.0	214	7.8	7	5.7	386	10.9
Magwe	142	5.1	21	8.0	14	4.2	169	6.2	12	9.8	324	9.2
Pegu	159	5.7	27	10.3	15	4.5	215	7.8	11	9.0	380	10.8
Mon	97	3.5	12	4.9	10	3.0	97	3.5	3	2.5	168	4.8
Tenasserim	38	1.4	8	3.1	8	2.4	78	2.9	3	2.5	92	2.6
Irrawaddy	187	6.7	31	11.8	23	6.8	204	7.4	8	6.6	499	14.1
Arakan	107	3.8	12	4.6	8	2.4	134	4.9	3	2.5	204	5.8
Chin	55	2.0	9	3.4	4	1.2	69	2.5	4	3.3	39	1.1
Kachin	103	3.7	12	4.6	8	2.4	167	6.1	4	3.3	90	2.6
Shan	276	9.8	27	10.3	23	6.8	443	16.1	15	12.3	372	10.5
Kayah	37	1.3	6	2.3	4	1.2	59	2.1	2	1.6	17	0.5
Karen	51	1.8	8	3.1	7	2.1	86	3.1	3	3.3	106	3.0
Total	2,804	100%	262	100%	337	100%	2,745	100%	122	100%	3,531	100%

Table 2 — 18 LIST OF INSTITUTIONS PRODUCING MANPOWER

LIST OF INSTITUTIONS PRODUCING HEALTH MANPOWER BY CATEGORY

Sl. No.	INSTITUTION / CATEGORY OF WORKER	Institute of Medicine	Institute of Dental Medicine	Institute of Technology (for engineers)	Institute of Paramedical Science				School of Nursing	School of Lady Health Visitor	Midwifery School	School of Dental Nurse	School of Dental Technician	Ayurvedic Practiotioner School	Health Assistant Training School	Training Courses		
					Pharmacy	Radiographer	Medical Technologist	Physiotherapist								Compounder	Lab. Technician Training	Township Level
1.	Doctor	*																
2.	Dental Surgeon		*															
3.	Sanitary Engineer			*														
4.	Pharmacist				*													
5.	Radiographer					*												
6.	Medical Technologist						*											
7.	Physiotherapist							*										
8.	Nurse								*									
9.	Health Assistant														*			
10.	Lady Health Visitor									*								
11.	Midwife										*							
12.	Midwife														*			
13.	Public Health Super,Gr.I														*			
14.	Public Health Super,Gr II														*			
15.	Vaccinator														*			
16.	Dental Lab. Technician												*					
17.	School Dental Nurse											*						
18.	Compounders															*		
19.	Laboratory Technician I																*	
20.	Laboratory Technician II																*	
21.	X-ray Technician I					*												
22.	X-ray Technician II					*												
23.	Ayurvedic Practitioner													*				
24.	Auxiliary Midwife																	*
25.	Community Health Worker																	*

Table 2 – 19 MANPOWER DEVELOPMENT FACILITLES

Institution	Number	Length of Training	Annuel intake	Estimater output
Institute of medicine	3	4½ years	550-600	450-500
Institute of Dental Medicine	1	4 years	60	50
Institute of Technology (for training engineers)	1			
Institute of Paramedical Science				
(a) Pharmacy	1	2 years	4	4
(b) Radiographer	1	2 years	6	6
(c) Medical Technologist	1	2 years	8	8
(d) Physiotherapist	1	2 years	4	4
School of Nursing	7	3 years	150	150
School of Lady Health Visitor	1	9 months	55	55
Midwifery School	16	18 months	450	450
School of Dental Nurse	1	3 years	20	20
School of Dental Technician	1	3 years	12	12
Ayurvedic Practitioners School	1	3 years	30	30
Courses for:				
(a) Public Health Supervisor I	1	9 months	50	50
(b) Public Health Supervisor II	1	9 months	300	300
(c) Compounder	Hosps.	1 year	30	30
(d) Vaccinator	1	3 months	55	55
(e) Laboratory Technician I	1	2 years	25	25
(f) Laboratory Technician II	1	1 year	37	37

Table 2 — 20 PUBLIC INVESTMENT BY SECTORS
(On delivery basis)

(Kyat in lakhs)

	1982/83		1983/84		1984/85	
	Provisional actual		Provisional		Annual Plan	
	Volume	%	Volume	%	Volume	%
Agriculture	8,705	10.6	9,208	11.3	10.272	12.9
Livestock and Fishery	2,344	2.9	2,623	3.2	2,499	3.1
Forestry	2,744	3.3	1,863	2.3	2,357	3.0
Mining	11,418	13.9	4,448	5.5	2,412	3.0
Processing and Manufacturing	31,695	38.6	31,083	38.1	24,829	31.2
Power	5,130	6.3	7,002	8.6	11,270	14.2
Construction	2,369	2.9	3,232	4.0	3,178	4.0
Transport and Communications	6,445	7.9	7,484	9.2	8,743	11.0
Trade	1,473	1.8	3,316	4.1	3,537	4.4
Social Services	4,822	5.9	6,287	7.7	5,496	6.9
Financial Institutions	228	0.3	347	0.4	181	0.2
Administrative Organizations	3,973	4.8	3,785	4.6	3,523	4.4
Town and City Development Committees	661	0.8	854	1.0	1,315	1.7
Total	82,007	100.0	81,532	100.0	79,611	100.0

3. DATA OF THE OBJECTIVE HOSPITALS

3－1. RANGOON GENERAL HOSPITALS

1. THE EXISTING BUILDINGS OF SITE

Fig. 3－1－1

2. ORGANIGATION OF R.G.H

Fig. 3－1－2

Fig. 3-1-1 THE EXISTING BUILDING OF SITE

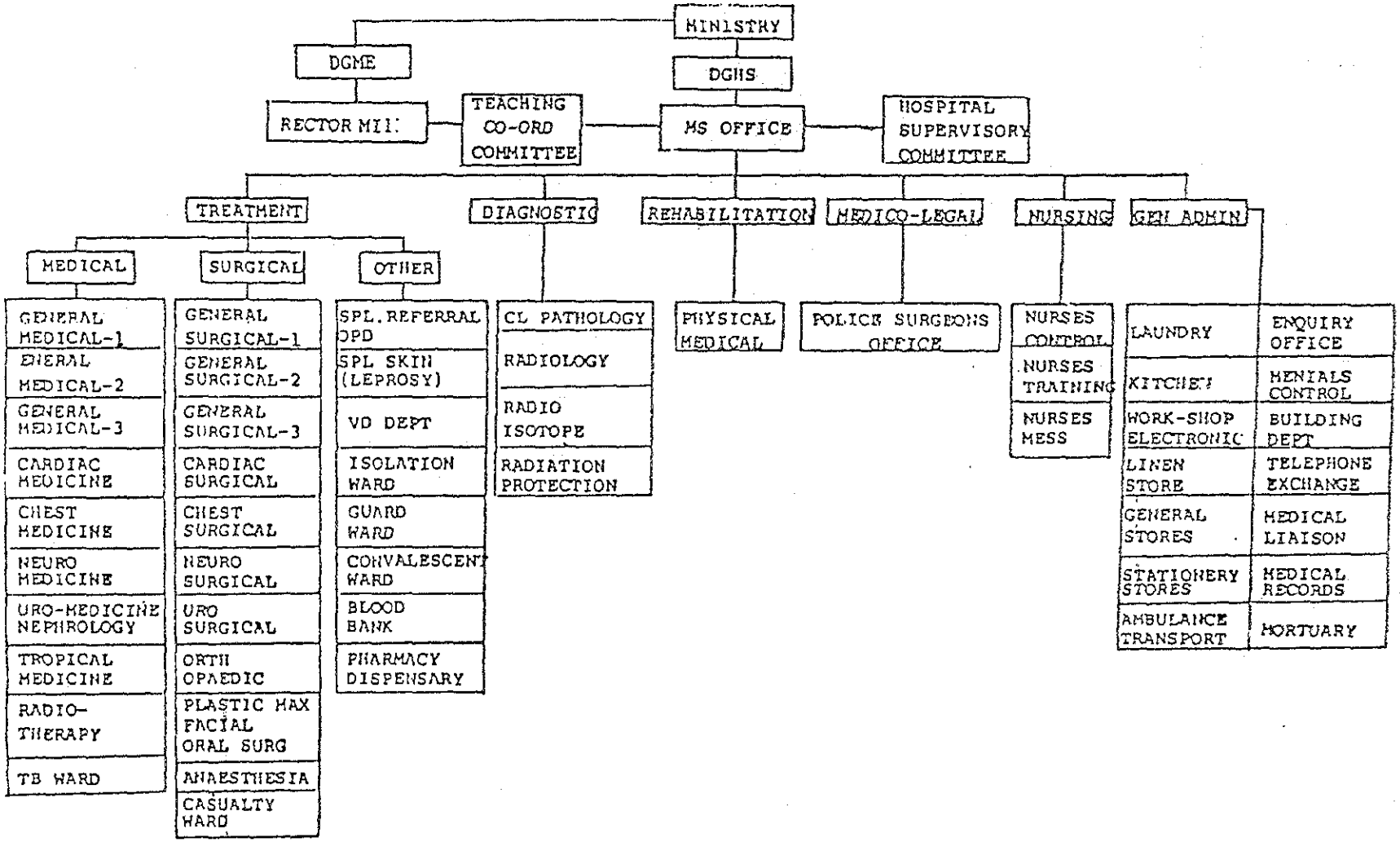


Fig. 3—1—2 ORGANIZATION OF R. G. H

3—1—1 RADIOTHERAPY DEPT.

1. Number of Bed

90

2. Number of Out Patient

Cobalt Machine I	80/day 1,800/month
Cobalt Machine II	100 - 120 /day 2,200 - 2,400/month

3. Disease Pattern (All Cancer Cases)

MALE		FEMALE	
1. Lung	19.4%	1. Breast	19.6%
2. Liver	16.7%	2. Cervix	17.0%
3. Stomach	10.3%	3. Lung	11.5%
4. Oesophagus	7.5%	4. Stomach	8.7%
5. Larynx	5.0%	5. Oesophagus	4.5%
6. Skin	2.7%	6. Liver	3.1%
7. Penis	2.5%	7. Ovary	2.5%
8. Other	35.8%	8. Other	32.0%

4. Number of Staff

Doctor	Specialist	4
	Other	2
Nurses	Sister	1
	Staff Nurse	2
	Trained Nurses	9
	Student Nurses	10
Technician	Chief Technician	1
	Senior Technician	1
	Technician	7
Administration	Clerks	3
Helpers (others)		29

3—1—2 CARDIAC MEDICAL UNIT

1. Number of out-patient days: 4 out of 7 days of the week

   Number of follow-up clinics/ week: 4

   Number of admisswon-days/week: daily, ie 7

   Number of admission-days for CCU/ week: daily, 24 hours round the clock

   Number of medical-surgical conference: once per week

   Average number of patients seen per session: 50

   Total number of new patients seen per year: 4000-6000

   Total number of old patients seen per year: 14000 - 18,000

2. Number of in-patients = 40

   Number of CCU beds 8

3. Disease pattern:

	1968 (no.of new referrals)	1984 (no.of new referrals)
Rheumatic heart disease	about 1000	still about 1000
Hypertensive	about 500	" " 500
Ischemic heart disease	about 300	About 1000
Cor pulmonale	about 300	" " 300
Congenital heart disease	about 200	" " 200

The above 5 are the main types of heart diseases seen in Burma, and are equally distributed all over the country.

Although the number of new referrals to the Cardiac Clinic, BGH, remains the same from 1968 to 1984, the number of referrals for ischemic heart disease alone seems to have trebled over the past 16 years.

4. Number of staff: Head of Cardiac Medical Unit- 1
   Cardiac consultants - 2
   Assistant to consultants- 2
   Post-graduates undergoing training ranging from 4-6/year
   Assistants given training for 220 bed-hospital= 2
   Rotating assistants: 5 to 6 in each monthly roster

   Nurses in CCU: 5 to 6 distributed round the clock

   Nurses in Card.Med.Ward: 2 senior staff nurses
   3-5 junior nurses distributed round the clock
   Male nurses 1 or 2

   Nurses in Cardiac Clinic and Card.Catheter-Room: 4

   Technicians..Nil

   Part-time radiologist- 2
   Part-time radiographers- 2

   Administrators: part of the hospital-all-round administrators:
   Medical superintendent and 2 assistant med.superintendents

   Electronic engineer- full-time in Cardiac Unit- one

   Echocardiographic sessions: post-graduates 2 per sessions
   occasionally one from Children Hospital

3—1—3 NEURO—SURGICAL DEPT.

1. NUMBER OF OUT PATIENT

12 / Day, 700 / Month

2. NUMBER OF BED

100

3. DISEASE PATTERN

Neuro-Trauma (A & E) 30%

Brain Tumours 20 - 30%

- Glioma
- Meningioma
- Accustic Neuroma
- Pituitary Tumour
- Pineal Tumours

Vescular surgery 5%

Congenital abnormalities 10%

Spinal surgery 3%

Others including brain abscess 22%

There is a changing trend in the disease profile with the installation of the CAT SCAN in 1982. Brain tumours and vascular lesions are now on the increase.

4. NUMBER OF STAFF

Doctor	-	14
Consultant Neuro-surgeon	-	2
Senior Assistant	-	2
Junior Assistant	-	4
Consultant Anaesthetist	-	1
Senior Assistant	-	1
Consultant Neuro-Radiologist	-	1
Senior Assistant	-	1
Consultant Neuro-Pathologist	-	1
Neuro-Physiologist	-	Nil
Nurses		
Sister	-	2
Senior Staff Nurse	-	18
Junior Staff Nurse	-	6
Nursing Attendance	-	Nil

Technician

Neuro-Radiology	-	2
Physiotherapist	-	1
Administrator	-	1
Others (General purpose workers)	-	12

3—1—4 DEPT. OF ORO—MAXILLO FACIAL & PLASTIC SURGERY

1. NUMBER OF OUT-PATIENTS

The department sees an average of 270 out-patients per day; 8100 out-patients per month.

2. NUMBER OF BEDS

50 beds.

3. DISEASE PATTERNS

(i) Oral and Dental diseases e.g.	Dental caries, oral infections, oral cysts and tumours.
(ii) Maxillo facials diseases e.g.	Road traffic accidents. Fracture of facial bones Aquired & congenital defects Cancer of maxilla etc.
(iii) Plastic Surgical diseases e.g.	Congenital deformities like cleft of lips and palate, facial clefts etc, Aquired deformities e.g. Burns and Post burn contractures, skin lesions e.g. Cancer of Skin, Melanomas etc..

4. NUMBER OF STAFFS

Doctors	-	Consultant and Head of Department	1
		Consultant Plastic Surgeon	1
		Civil Assistant Surgeon	2
		Dental Assistant Surgeon	4
Nurses	-	Sister	1
		Staff Nurse	2
		Trained Nurses	7
Technicians	-	Dental Technician	9
Administrator	-	Head of the Department	1
Others	-	Ward Boys	2
		Sanitory Attendant	9
		Security personel	1

3—1—5 DEPT. OF UROLOGY

1. Number of out patient - 40 patients/day - 2 days/week
2. Number of beds available - 65 beds
3. Disease pattern

	1980	1981
Prostate	- 51.6%	47.7%
Kidney	- 17.8%	26.7%
Ureter	- 7.7%	9.7%
Bladder	- 12.1%	9.7%
Urethra	- 10.8%	6.2%

4. Number of Staff

Doctors -	Head/Consultant Urologist	FRCS - 1
	Consultant Urologist	FRCS - 1
	1st Assistant	M.Sc.- 1
	2nd Assistant	MBBS - 2
	Rotating M.O.	- 4
		Total - 9

Nurse -	Sister	- 1
	Blue Staff	- 1
	Trained Nurse	- 5
	Nurse aid	- 1
	Dresser	- 1
	Ward servant	- 2
	Boy	- 2
	Stretcher man	- 4

3—1—6 OPERATION THEATRE

There are 14 Operation Theatres in the Rangoon General Hospital, they are as follows: -

1. & 2.	Theatre	No.of Operation per day.	No.of Opn. month
Operation Theatre Suite 3rd Floor	4	about 16 cases /day in each theatre.	320 cases in each Theatre
Operation Theatre Suite 2nd Floor	4	"	320 cases in each Theat

Emergency Theatre	2	1.Trauma 40	1120
		2.Gen. 20 Emergency	560
Chest Theatre(Thoracic)	1	8-10/wk.	40
Neuro Theatre	1	9/Wk.	36
Cardiac Theatre	1	10-15/ Wk.	40-60
Cancer Unit Theatre	1	4/Wk.	16

3. DISEASE PATTERN

All variety of All surgical cases

4.

No. of Staff	Doctors(Anaesthetist)	Nurses	Tech.	Admin.	Other
Theatre Suite 3rd floor) " " 2nd floor)	12	20		2	6
Emergency Theatre	8	12		1	6
Chest Theatre	1	5		1	2
Neuro Theatre	2	3		1	2
Cardiac Theatre	3	10		1	3
Cancer Unit Theatre	1	4		1	1

3—1—7 DEPT. OF CLINICAL PATHOLOGY

Number of Staff

Doctor	6
Specialist	3
Biochemistry	1
Medical Technicalogist	8
Technician I	12
" II	12

3—2 CENTRAL WOMEN'S HOSPITAL

1. Organization Chart

Fig. 3-2-1

2. Disease Pattern (1983)

Tumours

Ovarian - benign	108
- malignant.....	56
Corpus uteri - benign ...	170
- malignant	22
Chorio carcinoma	16
Carcinoma of cervix	47
Carcinoma vulva	7
Others **	20

Other conditions

Endometriosis	13
Hydatidiform mole ..	39
Investigations of infertility	496
Prolapse	273
Fistulae:Vesico-vaginal.	10
Recto-vaginal...	3

Infections

Pelvic	77
Others	15

3. Analysis of Operation (1983)

Major

Abdominal hysterectomy - total	181
- sub-total	3
Vaginal hysterectomy	125
Repair of prolapse	129
Repair of fistulae **.....	5
Myomectomy	20
Ovarian cystectomy	4
Oophorectomy	39
Others **	120

Minor :

Tubal ligation	1249
Laparoscopy diagnostic	11
D U A and/or diagnostic curettage	525
Cervical cautery	48
Others **	250

Operations of malignant disease

Ovaries	32
Corpus uteri	15
Cervix uteri	12
Vulva	2

Total operations - 6782

Major :	Abdominal	367
	Vulval	5
	Vaginal	254

Minor :

Diagnostic curettage..	525
Evacuation of RPC's..	5004
Vulva	48
Others	365
Laparoscopy	49
Diagnostic	11
Operative	38
Tubal ligation (non-puerpural) ...	167
Day cases	413

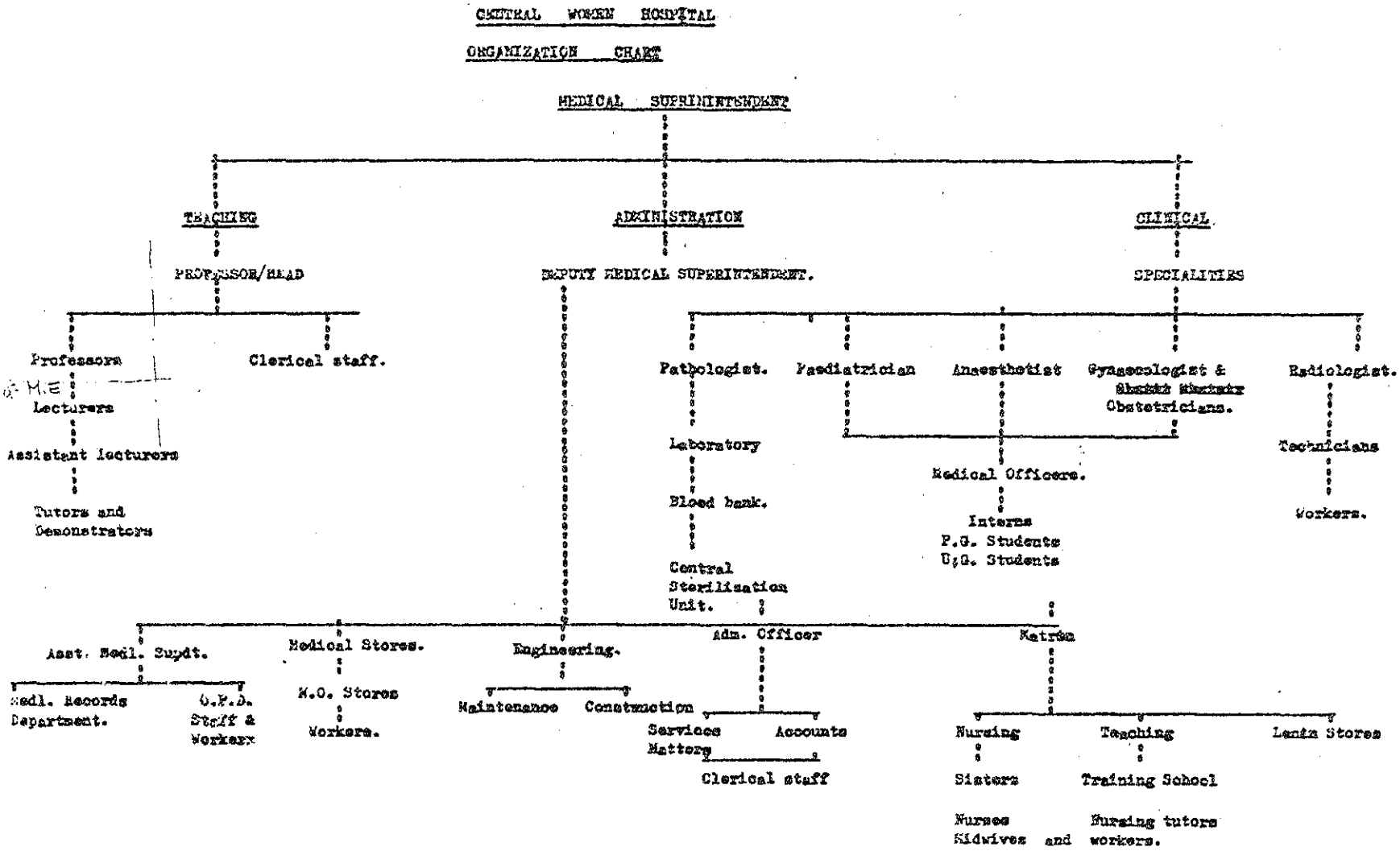


Fig. 3—2—1 ORGANIZATION CHART

3—3 RANGOON CHILDREN'S HOSPITAL

1. Leading Causes of Admission to RCH (1979)

0 - 1 year	1 - 4 years	5 - 14 years
1. Enteritis and other diarrhoeal diseases 20~25 %	1. Enteritis and other diarrhoeal diseases 20~25 %	1. Malaria 25 %
2. Pneumonia 20 %	2. Pneumonia 20 %	2. Enteritis and other diarrhoeal diseases 25 %
3. Pyrexia of unknown origin 10 % (DENGUE HAEMORRHAGIC FEVER)	3. Pyrexia of unknown origin 10 %	3. Pyrexia of unknown origin 10 %
4. Bronchitis and bronchiolitis	4. Malaria DC	4. Ascariasis and helminthiasis
5. Other diseases of respiratory system	5. Bronchitis	5. Typhoid fever
6. Malaria	6. Ascariasis and helminthiasis	6. Leceration, open wounds, superficial injuries etc.
7. Upper respiratory tract infection	7. Other diseases of respiratory system	7. Fractures of humerus radius and ulna
8. Infection of skin and subcutaneous tissue	8. Malnutrition	8. Pneumonia
9. Immaturity	9. Whooping coughs	9. Bronchitis
10. Tetanus	10. Infections of skin and subcutaneous tissue	10. Influenza

2. Leading Causes of Deaths in RCH (1979)

0 - 1 year	1 - 4 years	4 - 15 years
1. Pneumonia % %	1. Enteritis and other diarrhoeal diseases % %	1. Pneumonia % %
2. Enteritis and other diarrhoeal diseases % %	2. Pneumonia % %	2. Malaria % %
3. Pyrexia of unknown origin % %	3. Pyrexia of unknown origin % %	3. Enteritis and other diarrhoeal diseases
4. Immaturity	4. Malaria	4. Pyrexia of unknown origin
5. Tetanus	5. Malnutrition	5. Tetanus
6. Other diseases of respiratory system	6. Bronchitis	6. Dengue haemorrhagic fever
7. Meningitis	7. Other diseases of respiratory system	7. Meningitis
8. Ascariasis and helminthiasis	8. Diphtheria	8. Typhoid fever
9. Vitamins and nutritional deficiencies	9. Dengue haemorrhagic fever	9. Malnutrition
10. Chronic and unqualified bronchitis	10. Tetanus	10. Leceration, open wounds superficial injuries etc.

3. Number of Staffs

4.MEDICAL ADMINISTRATION.

Population M (I)
F (2)

5.MEDICAL STAFF.

Prof: Paediatrics	I.
Lecturer Paediatric	I.
Paediatric Surgeon	2.
Anaesthetist	I.
Pathologist	I.
Radiologist	I.
JUnior Consultants	7.
Assist: Surgeon Male	9.
: : :: Female	27.

NURSES.

Matron	I.
Sisters	II.
Senior Staff	
Nurses	33.
Junior Staff	
Nurses	89.
Nursing Atten:	
male and female	46.

TECHNICAL AND PARAMEDICAL.

Pharmacist . .	I.
Radiographer . .	2.
Medical Techonologist . .	4.
Phiotherapist . .	5.
X ray Technician . .	I.
Lab: Technician . .	8.
Compounders . . .	6.

(Administratives)

Administrative Officer . .	I
Office Assist: Clerks . .	8.
Store Keepers . .	2.
Ambulance Driver . .	2.
Stretcher Bearer . .	6.
Office Poem . .	2.
Ward Servant Male and Female	I22.
X ray Servant . .	I.
Gate Keeper . .	I2.
Sweeper . .	20.
Cooks . .	6.

Cultivation System Of Staff.

Officers by Public Service Commission.
Others by Local Labour Offices,

3-4 MANDALAY GENERAL HOSPITAL

1. Disease Patterns

TEN LEADING CAUSES OF MOBIDITY IN M.G.H. IN THE YEAR 1982

MEDICAL CAUSES (内科)	
1. Malaria	M 20
2. Rheumatic Heart Diseases	809
3. Viral Hepatitis	543
4. Liver Diseases	531
5. Lung Diseases including kochs	507
6. Respiratory Diseases (asthma bronchiectasis)	484
7. Typhoid	442
8. Poisoning	434
9. Hypertension	370
10. Gastro intestinal Diseases including Gastroenteritis	345
SURGICAL CAUSES (外科)	
1. Accident & Violence	47 16
2. Gastric Ulcer, Duodenal Ulcer pyloric Stenosis	1872
3. Infection of skin &	1567
4. Neoplasm (Malignant)	681
5. Appendicitis	643
6. Disease of Genitourinary System	626
7. Neoplasm (Benign)	596
8. Hernia	550
9. Intestinal Obstruction of others Diseases of G.I. Tract	326
10. Diseases of Circulatory System	313

2. The Existing Buildings of Site

Fig. 3-4-1

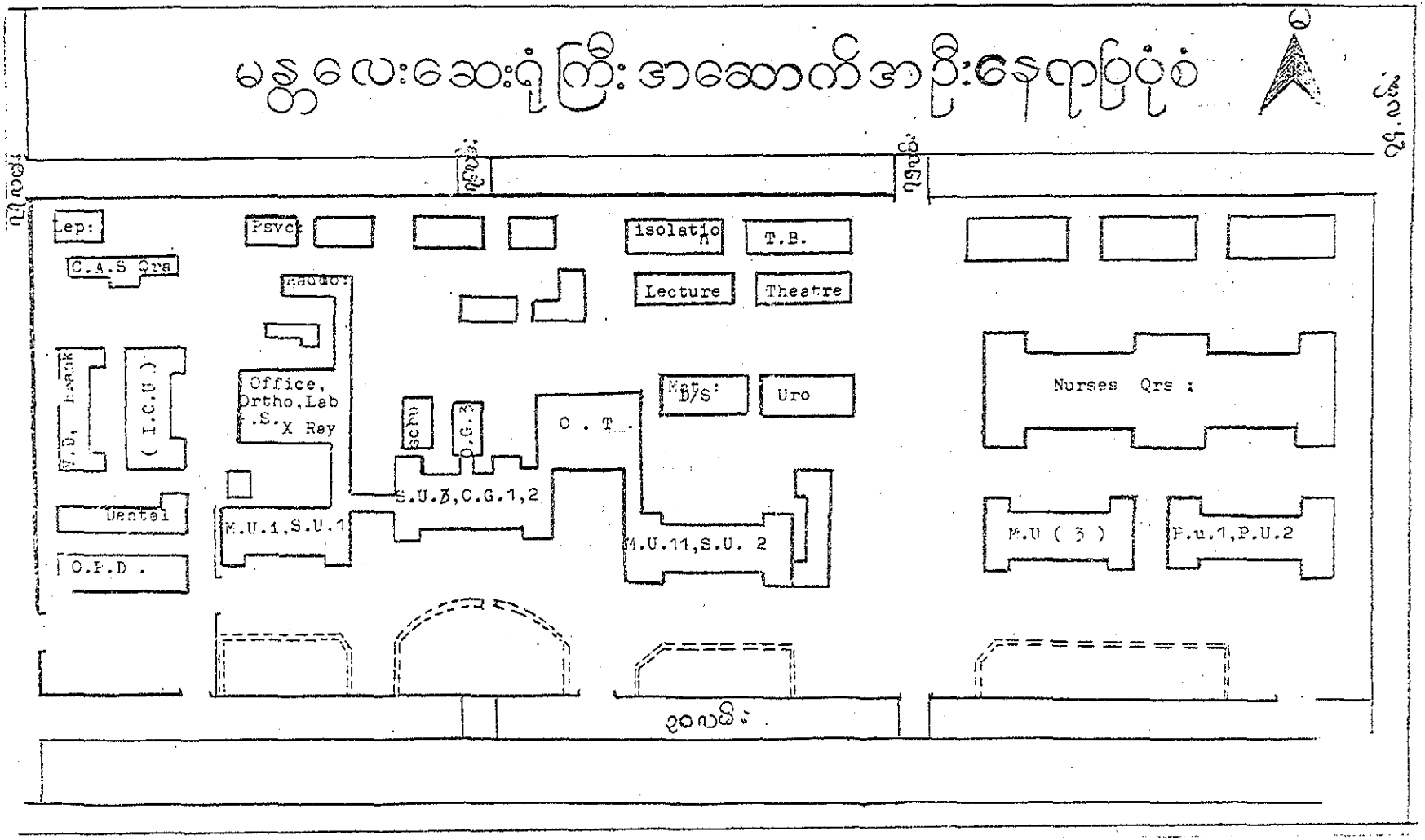


Fig. 3—4—1 THE EXISTING BUILDINGS OF SITE

3. Leading Causes of Deaths (1982)

TEN LEADING CAUSES MORTALITY IN N.G.H. 1982

Ser. No	Causes	Cases	%
1	Respiratory Causes	154	14.7
2	Accident Injury	150	14.3
3	Low-Birth weight	125	11.9
4	Cardiovascular Disc:	106	10.1
5	Gastroenteritis	73	7.0
6	Malaria	65	6.2
7	Liver Diseases	61	5.8
8	Tetanus	58	5.5
9	Malignant Diseases	55	5.3
10	Septicemia & Shock	37	3.6

4. LIST OF COLLECTED DATA

1. Report to The Pyithu Hluttaw on The Financial, Economic and Social Conditions of the Socialist Republic of the Union of Burma for 1984/85. 1984 Ministry of Planning and Finance
2. Hospital List: 1980 Health Information Services Department of Health, Ministry of Health, Burma
3. General Information Booklet December 1983, Department of Medical Education, Ministry of Health
4. Rangoon General Hospital Annual Statistical Report, 1983 Published Jointly by Health Information Services, Dept. of Health and Medical Records Dept., Rangoon General Hospital August 1984
5. Cancer in Rangoon July, 1983 Rangoon Cancer Registry Radiotherapy Dept. Rangoon General Hospital
6. Department of Medical Research: Research Programmes and Facilities (1982) Dept. of Medical Research, Ministry of Health
7. World Health: The Magazine of the World Health Organization May, 1984
8. General Health and Health Related Information in Burma
9. The United Nations and Burma August, 1983
10. Primary Health Care in Burma: UNICEF Assistance 1978-86
11. Background Information and Activities of Mandalay General Hospital