(2) 各費目の積算条件

1. 土地取得費並びに造成費： すべてのプロジェクトがHIC 所有地で実施され、それぞれの土地はすでに工場用地として造成済みであると仮定し、土地取得費並びに造成費は計上しなかった。

2. 工場建屋建設費： 工場建屋の新設あるいは増設が必要な場合は、工場建屋建設費を計上した。建設費は、HIC の推定 1㎡当り平均建設費単価を使用した。しかし、特別な仕様のために外貨部分の増大が見込まれるプロジェクトについては、特別仕様分についての所要資金積算を行ないその結果を計上した。なお、HIC の推定 1㎡当り平均建設費単価は次の通り。

現地通貨部分	(3,457チャット／㎡)	70,108円／㎡
外貨部分	(US$ 453／㎡)	57,622円／㎡
計	127,730円／㎡	

3. 工場機器設備費

輸入機器はFOB 船積み港ベースで見積った。補修用予備品費は 1年分を計上し、設備機器代に含めた。

4. 海上輸送費、海上保険、現地陸揚げ費および内陸輸送費はいずれも下記に示すHIC の過去における輸入実績平均値を使用した。

a) 海上輸送費および海上保険料： FOB 価格の 8.0%～11.7%
b) 現地陸揚げ費用および内陸輸送費： FOB 価格に上記 a) の費用を加算した金額の 1.3%～ 2.0%（上記のパーセントは算定結果の範囲を示し、実際の積算は箇別に適用率を想定した。）

5. 設備機器据付費

設備機器据付費は、HIC の過去における実績をもとに、設備機器 1トン当り 1,750チャットとした。

6. ライセンスフィー

ライセンスフィーを必要とするプロジェクトについてはライセンスフィーを計上した。

7. 技術指導料

教育訓練、据付指導、運転指導などの技術指導料である。設備機器のデザイン、エンジニアリング、調整等に係わるエンジニアリング費 (Home Office Costs)は機器設備費に含めた。

8. ソフトウェア料

ソフトウェア料を必要とするプロジェクトについては、ソフトウェア料を計上した。

9. 予備費

フィジカルコンティンジェンシーおよびプライスコンティンジェンシーの両要素をカバーするため、10パーセント相当額を計上した。

10. 建設期間中金利

ほとんどのプロジェクトが船積み時点（支出時点）から操業開始までの期間は、6ヶ月から 1年以内と見込まれている。したがって、建設期間中金利は計上しなかった。

11. 輸入関税

ビルマ国内での輸入関税は、現地調査時点で適用されている税率を適用し計上した。機器設備に適用した税率は次の通り。

関税率 ： FOB 価格に海上輸送費および海上保険料を加算した金額の15%

4-7 本近代化計画の効果

(1) 序　論

これまでに述べた通り、本近代化計画は、４工業プロジェクトに関し、

1. 生産設備の修復と合理化を計る一方、生産管理および保全体制の整備・確立にによって、現在の生産を維持し、かつ、将来生産を拡大するための基盤をまず整備する。（生産設備の修復および合理化と生産基盤の整備・確立）
2. 原材料・部品の輸入を極力削減するため、可能な限り国産化を促進すると共に、輸出の可能性のある製品、若しくは部品については、将来輸出を促進するための基盤を確立する。（国産化の拡大と輸出基盤の確立）
3. 予想される将来の需要増に対応するために、次のステップで生産拡大を計る。（生産拡大のための設備拡充）
4. 将来 HICが自力でモデルチェンジや製品開発が行なえるような体制を確立し、自力化を計る。（製品開発および製品設計体制の確立と構築）

を目的とするものである。すでに第１章および第２章で考察した通り、４工業プロジェクトがビルマの産業発展に大きく貢献することは明らかで、したがって、４工業プロジェクトの近代化によってその生産の維持・拡大を計ることの意義については、本節で改めて言及するまでもない。本節では、近代化計画を実施した場合の効果について、上記の目的に照らし評価する。

(2) 生産設備の修復および合理化と生産基盤の整備・確立

この目的のための近代化計画を実施するには、付帯設備の整備も含め 177.5億円の外貨資金が必要である。第３章で考察した通り、４工業プロジェクトの設備は損耗が激しく、現在も生産に支障をきたしているが、その状況は今後ますます悪化することが予想され、このまま放置できない事態に至っている。したがって、４工業プロジェクトの生産を維持するためには不可欠の投資であると判断される。

(3) 国産化の拡大と輸出基盤の確立

原材料・部品の国産化を計るための設備投資として、 557.9億円の外貨資金が必要である。1988年度の生産が HICの計画通り達成されるとして、そのために必要な原材料・部品の輸入に要する外貨資金額を推定すると、表 4.7-1に示す通り年間

Table 4.7-1 REQUIRED IMPORT OF COMPONENT PARTS AND RAW MATERIALS (WITH RENOVATION PLAN AND WITHOUT RENOVATION PLAN)

(Million Yen)

Products	1988	1993			1998		
		w/o Plan (A)	w/ Plan (B)	(A-B)	w/o Plan (C)	w/ Plan (D)	(C-D)
1 Agricultural M/E							
1) Power tiller	156	187	175	12	312	292	20
2) Power thresher	78	101	78	23	156	120	36
3) Diesel engine	801	918	586	332	1,057	681	376
2 Light vehicles							
1) B600 pick-up	277	346	343	3	368	366	2
2) X2000 cross country	369	430	360	70	773	647	126
3) T2000 light truck	287	287	254	33	574	509	65
3 Heavy vehicles							0
1) TE 6.5ton truck	1,597	2,228	1,962	266	2,264	1,993	271
2) BX 33-passengers bus	387	697	666	31	1,162	1,110	52
4 Electric products							
- Electric fan	78	151	124	27	151	124	27
5 Other factors contribute to reduce import requirement							
- Rubber parts product'	0	0	-75	75	0	-105	105
- Enamel coated wire	0	0	-138	138	0	-138	138
- Reclamation of alminm	0	0	-4	4	0	-6	6
- Gauge production	0	0	-4	4	0	-4	4
- Cutting tool prduct'n	0	0	-3	3	0	-3	3
Total	4,030	5,345	4,324	1,021	6,817	5,586	1,231

Note:Total import requirement including the parts not converted to the domestic production without the Plan is as follws;

	1988	1993	1998
Import requirement of the CP & RM not converted to the domestic production:			
1) Agricultural M/E	575	689	769
2) Vehicles	1,874	2,454	3,006
3) Electric products	3,876	4,647	6,169
Sub-total	6,325	7,790	9,944
Total import requirement	10,355	13,135	16,761

103.6億円が見込まれる。その中で、本計画によって国産化を行なう原材料・部品の輸入外貨額は、40.3億円と推定される。これは上記の総輸入必要額の約40パーセントに相当する。1988年の計画生産量がそのまま維持されるとした場合、国産化計画を実施すれば年間約 4.4億円の外貨節約になると推定される。これは国産化の対象とした輸入原材料・部品の輸入外貨額の約11パーセントに相当する。

将来生産拡大を計画しており、それに伴って原材料・部品の輸入も当然増加する。上記の部品国産化を実施せず、従来通り輸入原材料・部品を使って生産を拡大すると仮定した場合の外貨必要額を、1993年および1998年時の計画生産量に基づき推定すると、1993年が 131.4億円、1998年が 167.6億円と推定される。その中で、上記国産化計画で輸入が代替される原材料・部品の額は1993年が53.5億円、1998年が68.2億円と推定され、この金額に対し国産化によって節約される外貨額は1993年が10.2億円、1998年が12.3億円と推定される。（この計算はすべて1988年時価格による。）

この外貨節約期待額は原材料・部品の輸入代替にかかわる節約額で、設備投資額は考慮されていない。この外貨節約期待額だけを見ると、投資必要額に比べさほど大きな節約効果が期待できない。これは、これらの設備の中には、国産化に要する設備だけでなく、後述する生産拡大にも対応できる設備が考慮されている場合が多く、現時点での計画生産量が小規模なため、外貨節約効果が少ないものが含まれているためである。現在の計画生産量でも、明らかに節約効果が期待されるプロジェクトを挙げると下記の通りである。

#4-3	鋳造工場増強
#4-5	ピストンおよびピストンリング増産
#4-10	シリンダーライナー国産化（ただし、鋳造より一貫した場合）
#4-22	脱穀機部品国産化
#4-23	耕うん爪国産化

しかし節約効果が少ないものでも、例えば新プレス工場建設(#4-2)のように、将来の基盤、特に輸出基盤を整備するためには設置せざるをえないものが多い。このような金属加工部門の設備拡充と生産管理体制の改善等により、将来は輸出も可能になると期待できる。

しかし、中には非常にコスト高になると見込まれるものもあり、実際に実施する段階では本調査の結果を踏まえて、実施対象プロジェクトとその実施時期を慎重に検討し、決定することを提言する。

(4) 生産拡大のための設備拡充

第２章に考察した通り、４工業プロジェクトの現在の生産量は、大半の製品が国内需要をはるかに下回っている。将来必要になると予想される需要を満たすため国産されなければ完成品が輸入されると仮定して、そのために流出すると見込まれる外貨額を推定すると、1993年が12.0億円、1998年が32.3億円と推定される。

一方、本計画で生産が拡大されることにより必要になる原材料・部品輸入のための外貨額を推定し、完成品輸入のための外貨流出額の中に占める割合を算定すると、表 4.7-2に示す通り、加重平均で49.2パーセント、言替えれば、設備投資分を除外すれば生産拡大によって約50パーセントの外貨節約が期待できる。これに対し、生産拡大のための設備拡充に要する外貨所用資金額は35.8億円と推定され、外貨節約効果は大きい。但し、この所用資金額の他に、前述の国産化のための所用資金額に含まれている部分も多く、実際に実施するに当たっては、本調査の結果を踏まえ、実施するプロジェクトを慎重に選定するよう提言する。

(5) 生産管理体制の改善、製品開発および製品設計体制の確立と構築

このための外貨所用資金額は64.2億円と推定される。その効果を定量的に測定することは困難であるが、将来 HICが自力化を計り、しかも輸出のための体制を確立していくためには、必要な資金と思われる。

(6) 総合評価

上記の評価を集約し、総合的に見ると、生産基盤の整備確立に必要なものや、外貨節約効果が十分期待できるものから優先して実施すべきと考える。 HICとして本調査の結果に基づき実施のための優先順位をつけて実施するよう提言する。

Table 4.7-2 OPPORTUNITY SUBSTITUTION OF IMPORT BY THE RENOVATION PLAN

Products	Unit import price (FOB) (000Yen)	Production increase over exist'g capacity (Nos.)		Opportunity substitution of import (mil Yen)		% of CP/RH cost in case of dom. prodct'n
		1993	1998	1993	1998	
1 Agricultural H/E						
1) Pumping set	93	600	2,470	55.8	229.7	51.0
2) Power tiller	215	0	400	0.0	86.0	74.3
3) Power thresher	125	150	500	18.8	62.5	35.2
4) Diesel generating set	141	200	300	28.2	42.3	80.7
2 Light vehicles						
1) B600 pick-up	422	150	200	63.3	84.4	96.6
2) X2000 cross country	422	80	500	33.8	211.0	88.2
3) T2000 light truck	342	100	400	34.2	136.8	92.4
3 Heavy vehicles	682	225	600	153.5	409.2	47.5
4 Electric products						
1) Incandescent lamps	0.16	0	2,500,000	0.0	400.0	21.9
2) Fluorescent lamps	0.48	950,000	1,550,000	456.0	744.0	22.5
3) Electric accessories	0.13	0	350,000	0.0	45.5	23.8
4) Watt-hour meter	14	4,500	12,500	63.0	175.0	38.6
5) Electric motor	39	1,000	3,000	39.0	117.0	17.2
6) Dry battery	0.03	8,350,000	16,350,000	250.5	490.5	83.3
Total				1,196.1	3,233.9	49.2

Note: Unit import prices are the average prices of the similar type products exported from Japan in 1987 (f.o.b.).

付　　編

SCOPE OF WORK

FOR

THE STUDY

ON

THE RENOVATION OF THE FOUR INDUSTRIAL PROJECTS

IN

THE SOCIALIST REPUBLIC OF THE UNION OF BURMA

AGREED UPON BETWEEN

THE HEAVY INDUSTRIES CORPORATION

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

RANGOON: 14th OCTOBER, 1987

LT. COL. THAN SHWE
MANAGING DIRECTOR
HEAVY INDUSTRIES CORPORATION

MR. SHINNOSUKE TOKUSHIGE
LEADER, JAPANESE PRELIMINARY
SURVEY TEAM,
THE JAPAN INTERNATIONAL
COOPERATION AGENCY

I. Introduction

In response to the request of the Government of the Socialist Republic of the Union of Burma (hereinafter referred to as "GSRUB"),the Government of Japan has decided to conduct a study on the renovation of the Four Industrial Projects of Heavy Industries Corporation (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of GSRUB.

The present document sets forth the Scope of Work with regard to the Study.

II. Objective of the Study

The objective of the Study is to diagnose factories of the Four Industrial Projects of Heavy Industries Corporation (hereinafter referred to as "HIC") as shown below and investigate the possibilities of their renovation from technical and economic points of view and prepare the report.

1. Factories and sites
2. Products and assembly lines

III. Scope of the Study

In order to achieve the above objective, the Study will cover the following items:

1. Survey of the back-ground and relevant conditions of the Study

   1-1. Present economic and social situation

   1-2. Present situation and policies of industries

   1-3. Development program of the Four Industrial Projects

   1-4. Laws, regulations and other relevant information related to industries

2. Diagnosis of the factories

   2-1. General aspects:

      2-1-1. Location and layout

      2-1-2. Production items and its production

      2-1-3. Major facilities and equipment installed

      2-1-4. Organization, administration scheme and manpower

      2-1-5. Plan and past record of production

      2-1-6. Sale of products

      2-1-7. Education and training system

   2-2. Management aspects:

      2-2-1. Operation of machinery and equipment

      2-2-2. Quality control

      2-2-3. Process control

      2-2-4. Maintenance of machinery and equipment

      2-2-5. Procurement and stock control

2-2-6. Cost control and price mechanism

2-2-7. Test and inspection control

2-2-8. Safety and environmental control

2-3. Technical aspects:

2-3-1. Assembly lines, offsite and auxiliary facilities

2-3-2. Building, structure and warehouse

3. Market survey

4. Formulation of renovation program

4-1. Renovation plan

4-2. Financial requirement

4-3. Training plan

4-4. Implementation schedule

5. Conclusion and recommendation

IV. Steps and Schedule

1. Steps

Step 1: Preparatory office work

Step 2: Field work in Burma

Step 3: Home office work in Japan

Step 4: Presentation of and discussion on the interim report

Step 5: Home office work in Japan

Step 6: Presentation of and discussion on the draft final report

2. Tentative schedule

The tentative schedule of the Study is shown in Annex I.

V. Reports

JICA shall prepare and submit the following reports written in English to GSRUB.

1. Inception report at the beginning of step 2: 5 copies
2. Progress report at the end of the step 2: 10 copies
3. Interim report at the step 4: 20 copies
4. Draft final report and its summary within six months after commencement of the step 3: 20 copies
5. Final report and its summary within one and a half month after the receipt of comments on the draft final report by HIC: 50 copies

VI. Undertaking of GSRUB

1. To facilitate smooth conduct of the Study, GSRUB shall take necessary measures:

1-1. to secure the safety of the Japanese study team,

1-2. to permit the members of the Japanese study team to enter, leave, and sojourn in Burma for the duration of their assignment therein, and exempt from alien registration requirement and consular fees,

1-3. to exempt the members of the Japanese study team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into Burma for conduct of the Study,

1-4. to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,

1-5. to provide necessary facilities to the Japanese study team for remittances as well as utilization of funds introduced into Burma from Japan in connection with the implementation of the Study,

1-6. to provide the medical services as needed and its expenses will be chargeable on the members of the Japanese study team,

1-7. to secure permission for the Japanese study team to take all data and all documents related to the Study out of Burma to Japan.

2. GSRUB shall bear claims, if any arises, against the members of the Japanese study team resulting from, occuring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Japanese study team.

3. HIC shall act as counterpart agency to the Japanese study team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. HIC shall , at its own expenses, provide the Japanese study team with the following, if necessary:

4-1. available data and information related to the Study,

4-2. counterpart personnel,

4-3. suitable office with necessary equipment in each Study site,

4-4. credentials or identification cards,

4-5. chauffeured vehicles.

VII. Undertaking of JICA

For the implementation of the Study, JICA shall take necessary measures as follows:

1. to dispatch, at its own expense, study team to the Socialist Republic of the Union of Burma,
2. to pursue technology transfer to the Burmese counterpart personnel in the course of the Study.

VIII. Consultation

JICA and HIC will consult with each other in respect of any matter which may arise from or in connection with the Study.

Tentative Schedule of the Study

ANNEX I.

Item \ Year & Month	1987					1988											
	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Preparatory Work (Step 1)																	
Field Work (Step 2)																	
Home Office Work (Step 3 & Step 5)																	
Presentation of Interim Report (Step 4)																	
Presentation of Draft Final Report (Step 6)																	
Submission of Final Report																	

Remarks

In Japan

In Burma

FACTORIES AND SITES AS WELL AS PRODUCTS AND ASSEMBLY LINES TO BE COVERED BY THE STUDY

1. Factories and Sites

No.(1) H.I Rangoon (including Htauk Kyant)

No.(3) H.I Sinde

No.(4) H.I Htonbo

No.(5) H.I Myaungchidauk

Note. The Study Team might visit the No.(2) H.I Malun to have a look at production lines of injection pumps, if the Study Team has enough time left.

2. Products and assembly lines

2.1 Facilities

2.1.1 Die repairing and die making facilities.

2.1.2 Jig production facility.

2.1.3 Gauge production facility.

2.1.4 Scrap and raw material handling facility for iron foundry.

2.1.5 Forging facilities for rear axle shaft.

2.1.6 Pressing facilities for big parts.

2.1.7 Cylinder liner production.

2.1.8 Manganese dioxide purification facilities.

2.1.9 Components for dry cell batteries production facilities.

2.1.10 Sand reclaiming and recycling facilities.

2.1.11 2000cc Engine and transmission production facilities.

2.1.12 Bus component production facilities.

2.1.13 Rear axle housing production facilities.

2.1.14 Conversion of heating system for furnaces. (from oil to LPG and Electricity)

2.1.15 Enamel copper wire production facilities.

2.1.16 Bolt and Nut making facilities. (Including U-bolt, stud bolt and long bolts)

2.1.17 Disc wheel production.

2.1.18 Radiator production.

2.1.19 Material handling and transport facilities for the above mentioned facilities.

2.1.20 Planning and drawing facilities.

2.2 Assembly line.

2.2.1 Dry cell Battery Assembly line.

2.2.2 Fluorescent Lamp Assembly line.

2.2.3 Incandescent Lamp Assembly line.

2.2.4 Watt hour meter Assembly line.

2.2.5 Electric motor Assembly line.

2.2.6 Distribution Transformer Assembly line.

2.2.7 Electric Accessories Assembly line.

2.2.8 Electric fan Assembly line.

2.2.9 Light Vehicle Assembly line.

2.2.10 Heavy Vehicle Assembly line.

2.2.11 Bus Assembly line.

2.3 Products

2.3.1 Dry cell batteries.

2.3.2 Fluorescent lamp.

2.3.3 Incandescent lamp.

2.3.4 Watt hour meter.

2.3.5 Lighting fixture.

2.3.6 Electric motor.

2.3.7 Distribution Transformer.

2.3.8 Electric Accessories.

2.3.9 Electric Fan.

2.3.10 600cc Vehicle.

2.3.11 2000cc Vehicle.(Including 2 ton Light Truck)

2.3.12 6.5 ton Truck series.

2.3.13 33 passenger Bus.

2.3.14 Water pumping set.

2.3.15 Power Tiller.

2.3.16 Thresher.

2.3.17 Portable diesel generator.

2.3.18 Spare parts and components for automobile and farm machinery:-

- Cylinder liner.
- Piston Pin
- Rear Axle shaft.
- Drive pinions and ring gears.
- Gear for engine and transmission.
- Rear axle housing.
- Radiator.
- Disc wheel.
- Bolts and Nuts.

Minutes of Meeting
between
The Heavy Industries Corporation
and
The JICA Survey Team
on
The Progress Report for The Study on
The Renovation of The Four Industrial Projects

The JICA Survey Team (the Team) headed by Mr. Masayasu Sakanashi had a meeting with the Heavy Industries Corporation (HIC) chaired by Lt. Col. Than Shwe, Managing Director and attended by other HIC officers at HIC Head Office in Rangoon on February 22, 1988 in order to discuss on the Progress Report for The Study on The Renovation of The Four Industrial Projects (the Study). A list of the participants is attached as Appendix I.

Salient points of the discussion are as follows:

1. Both sides agreed in principle to proceed with the succeeding work of the Study in accordance with the approach and schedule stated in Chapters 3, 4 and 5 of the Progress Report.

2. HIC requested the Team to consider the following points:

   1) Investigation on steps to be taken by HIC if it undertakes the production of reaper and color television receiver sets in the future.

   2) Investigation on effective utilization of idled old machines such as their utilization for training purpose

   3) Investigation on availability of mini-machines designed for training purpose

The Team agreed to consider the foregoing investigations in the Study, however, the investigation on Item 1) above be made on a preliminary study basis by taking required machines and equipment as well as technology into consideration and also subject to approval of JICA.

Rangoon, February 24, 1988

Lt. Col. Than Shwe
Managing Director
Heavy Industries Corporation

Mr. Masayasu Sakanashi
Leader, Japanese Survey Team
Japan International Cooperation Agency

Appendix I

LIST OF PARTICIPANTS

A. MEMBERS OF JAPANESE SURVEY TEAM

1.	Mr. M. Sakanashi	Team Leader
2.	Mr. H. Sasaki	Deputy Team Leader
3.	Mr. M. Umeoka	Team Member
4.	Mr. H. Osawa	Team Member
5.	Mr. A. Horiguchi	Team Member
6.	Mr. E. Katoh	Team Member
7.	Mr. I. Sasaki	Team Member
8.	Mr. S. Ochi	Team Member
9.	Mr. H. Wani	Team Member
10.	Mr. S. Miyamoto	Team Member
11.	Mr. F. Satoh	Team Member
12.	Mr. T. Hiratsuka	Team Member
13.	Mr. O. Ebina	Team Member
14.	Mr. M. Nakamura	Team Member
15.	Mr. T. Yoshida	Team Member
16.	Mr. T. Nakagawa	Team Member
17.	Mr. M. Nagatomo	Team Member
18.	Mr. S. Ikutoh	Team Member
19.	Mr. Y. Fukuhara	Team Member
20.	Mr. T. Baba	Team Member
21.	Mr. N. Ohkawa	Team Member
22.	Mr. T. Inada	Team Member
23.	Mr. T. Inooka	Team Member
24.	Mr. M. Sakakura	Team Member
25.	Mr. M. Maruyama	Team Member

B. EMBASSY OF JAPAN

	Mr. U. Kitamura	Administrative and Technical Staff (Deputy Representative, JICA)

C. MEMBERS OF H.I.C. AND OTHER BURMESE COUNTERPARTS

H.I.C. Head Office

1.	Lt.Col. Than Shwe	Managing Director
2.	Lt.Col. Sein Htoon	Director (Planning)
3.	U Thein Aung	Director (Production)
4.	Daw Hta Hta Yee	Director (Finance)
5.	Maj. Aung Myint	Deputy Director (Planning)
6.	U Aung Soe Win	Assistant Director (Planning)
7.	Daw Tin Tin Nu	Deputy Assistant Director (Finance)
8.	U Win Tint	Deputy Assistant Director (Planning)
9.	U Tin Win Naung	Deputy Assistant Director (Planning)
10.	Daw Than Swe	Deputy Assistant Director (Planning)
11.	U Aung Min	Deputy Assistant Director (Design)
12.	U Myo Aung	Deputy Project Engineer (Design)
13.	U Thein Win	Deputy Project Engineer (Planning)
14.	Daw Mya Mya Kyaw	Assistant Project Engineer (Planning)

No.1 H.I.

1.	Maj. Maung Kyi	Deputy Factory Superintendent
2.	Daw Khin May Than	Deputy Factory Superintendent
3.	U Than Htut	Deputy Factory Superintendent
4.	U Lone Khain	Assistant Factory Superintendent

Technical Services Corporation

1.	U Saw Boiteau	Deputy Assistant Director
2.	U Kyaw Soe	Head of Department

LIST OF COUNTERPARTS H.I.C HEAD OFFICE

Name	Designation	Office Phone No.
1. Lt. Col. Than Shwe	- Managing Director	60721/62863
2. Lt. Col. Sein Htoon	- Director (Planning)	61769/62579
3. Daw Hta Hta Yee	- Director (Finance)	62865
4. U Thein Aung	- Director (Production)	62883
5. U Tin Kyi	- Director (Administration)	62879
6. U Zaw Win	- Deputy Director (Planning)	62869
7. Maj: Aung Myint	- Deputy Director (Planning)	62892/62887
8. U Aung Soe Win	- Assistant Director (Planning)	62892/62887
9. U Win Tint	- Deputy Assistant Director (Planning)	62892/62887
10. U Tin Win Maung	- Deputy Assistant Director (Planning)	62892/62887
11. U Thein Win	- Deputy Project Engineer (Planning)	62892/62887
12. Maj. Tin Aung	- Assistant Director (Design)	62892/62887
13. U Aung Min	- Deputy Assistant Director (Design)	62892/62887
14. U Myo Aung	- Deputy Project Engineer (Design)	62892/62887

LIST OF COUNTERPARTS No.(1) H.I.

Name	Designation	Office Phone No.
1. Maj: Maung Kyi	- Deputy Factory Superintendent	62872
2. Daw Khin May Than	- Deputy Factory Superintendent	
3. U Than Htut	- Deputy Factory Superintendent	
4. Capt. Aung Lwin	- Assistant Factory Superintendent (Production. 1)	
5. Daw Kyin Htay	- Assistant Factory Superintendent (Production. 2)	
6. U Thein Zaw	- Assistant Factory Superintendent (Production. 3)	
7. Capt. Kyaw Soe	- Assistant Factory Superintendent (Electric & Service)	
8. U Aung Thaw	- Assistant Factory Superintendent (Manufacturing Store)	
9. Daw Tin Tin Hla	- Assistant Factory Superintendent (Finance)	
10. U Htay Lwin	- Assistant Factory Superintendent (Administration)	
11. U Lone Khaing	- Assistant Factory Superintendent (Inspection Dept.) (Coordinator for the diagnosis of No.(1) Factory).	

LIST OF COUNTERPARTS - No.(3) H.I.

Name	Designation	Office Phone No.
1. Maj. Tha Tun Aung	- Factory Superintendent	053-21182/21572
2. U Kye Shwe	- Advisor	
3. U Thein Ngwe	- Deputy Factory Superintendent	
4. Maj.Khin Mg Tun	- Assistant Factory Superintendent (Production)	
5. Daw Mya Mya Lwin	- Assistant Factory Superintendent (Finance)	
6. U Kyaw Myo Win	- Plant Manager	
7. U Htay Kyu	- Plant Manager	
8. U Zaw Oo	- Plant Manager	
9. U Ko Ko Gyi	- Assistant Factory Superintendent (Planning) (Coordinator for the diagnosis of No.(3) Factory)	

LIST OF COUNTERPARTS No.(4) H.I.

Name	Designation
1. Maj: Nelson Khaing	- Deputy Factory Superintendent
2. U Hla Shwe	- Assistant Factory Superintendent (Production)
3. U Tin Shein	- Assistant Factory Superintendent
4. U Khin Maung Htwe	- Plant Manager (Battery Plant).
5. U Myint Thein	- Plant Manager (Inspection Dept.)
6. Capt. Kyaw Htun	- Plant Manager (Vehicle Assembly and Painting)
7. U Kyaw Lwin	- Shop Manager (Diesel Engine Plant)
8. U Soe Myint	- Shop Manager (Piston & Piston Ring Shop)
9. U Thaung Htun	- Shop Manager (Battery Container Plant)
10. U Ngwe Soe	- Shop Manager (Machine Shop)
11. U Kyaw Kyaw	- Shop Manager (Machine Shop)
12. U Myint Aung	- Shop Manager (Body Assembly Shop)
13. U Win Maung	- Shop Manager (Light Alloy Foundry Shop)
14. Daw Toe Toe San	- Shop Manager (Light Alloy Foundry Shop)
15. U Myo Minn	- Assistant Factory Superintendent (Planning). (Coordinator for the diagnosis of No.(4) Factory).

LIST OF COUNTERPARTS - No.(5) H. I.

	Name		Designation
1.	Maj. Htun Win	-	Factory Superintendent
2.	U Win Kyaing	-	Deputy Factory Superintendent
3.	Daw Thet Thet Thein	-	Assistant Factory Superintendent (Finance)
4.	U Kyi Win	-	Assistant Factory Superintendent (Production)
5.	Daw Than Than Aye	-	Plant Manager (Planning)
6.	Daw Tin Myo Khaing	-	Shop Manager (Planning)
7.	U Myo Hlaing	-	Shop Manager (Production)
8.	U Khin Maung Cho	-	Plant Manager (Planning) (Coordinator for the diagnosis of No.(5) Factory).

LIST OF COORDINATORS.

1. Coordinator for the entire team — U Thein Win
   Deputy Project Engineer (Planning)
   HIC Head Office.
   (Phone No. 62887/62892)

2. Coordinator for the diagnosis of each factory
   1. U Lone Khaing
      Assistant Factory Superintendent
      (Inspection Dept).
      No.(1) H.I. Phone No. 62872
   2. U Ko Ko Gyi
      Assistant Factory Superintendent.
      (Planning)
      No.(3) H.I. Phone No.053.21182/21572
   3. U Myo Min
      Assistant Factory Superintendent.
      (Planning)
      No.(4) H.I.
   4. U Khin Maung Cho
      Plant Manager (Planning)
      No.(5) H.I.

3. Coordinator for market Study
   1. U Thein Aung
      Director (Production)
      HIC Head Office
      Phone No. 62883/62880
   2. U Khin Maung Myint
      Manager. (Sale Dept)
      HIC Head Office
      (Phone No. 62883/62880)

4. Coordinator for collecting local factors for cost estimate
   1. Daw Hta Hta Yee
      Director (Finance)
      HIC Head Office (Phone No.62865)
   2. Daw Tin Tin Nu
      Deputy Assistant Director (Finance)
      HIC Head Office
      (Phone No. 62865).

Annex 3: Record of Field Survey

Date	Group	Place of Stay	Particular
Jan.29 (Fri)	Team 1	RGN	Arrival from Tokyo
Jan.30 (Sat)	Team 1	RGN	Inception Meeting with HO
Jan.31 (Sun)	Team 1	RGN	Internal Meeting
Feb. 1 (Mon)	Team 1	RGN	Discussion on R/P with HO
Feb. 2 (Tue)	Team 1	RGN	Discussion on R/P with HO
Feb. 3 (Wed)	Team 1	RGN	Discussion on R/P with HO
Feb. 4 (Thu)	Team 1	RGN	Discussion on R/P with HO and Arrival of Team No.2
Feb. 5 (Fri)	All members	RGN	Plant Visit at No.1 and Internal Meeting
Feb. 6 (Sat)	All members	RGN	Internal Meeting
Feb. 7 (Sun)	PC1	No.3	Travel from RGN to No.3
	PC2	No.4	Travel from RGN to No.4
	PC3	RGN	Summary of Field Study
	EP	No.3	Travel from RGN to No.3
	AM	No.3	Travel from RGN to No.3
	LV	No.4	Travel from RGN to No.4
	HV1	RGN	Summary of Field Study
	HV2	No.4	Travel from RGN to No.4
	MW	No.3	Travel from RGN to No.3
	MA	RGN	Summary of Field Summary
Feb. 8 (Mon)	PC1	No.3	Meeting with No.3 and Plant Visit
	PC2	No.4	Inception Meeting with No.4
	PC3	RGN	Discussion on R/P with No.1
	EP	No.3	Meeting with No.3 and Plant Visit
	AM	No.3	Meeting with No.3 and Plant Visit
	LV	No.4	Discussion on R/P with No.4
	HV1	RGN	Discussion on R/P with No.1
	HV2	No.4	Meeting with No.4
	MW	No.3	Meeting with No.3 and Plant Visit
	MA	RGN	Discussion with HO
Feb. 9 (Tue)	PC1	No.3	Discussion with No.3
	PC2	No.4	Discussion with No.4
	PC3	RGN	Discussion with No.1
	EP	No.3	Discussion with No.3
	AM	No.3	Discussion with No.3
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.4	Discussion with No.4
	MW	No.3	Discussion with No.3
	MA	RGN	Discussion with HO

Feb.10 (Wed)	PC1	No.3	Discussion with No.3
	PC2	No.4	Discussion with No.4
	PC3	RGN	Discussion with No.1
	EP	No.3	Discussion with No.3
	AM	No.3	Discussion with No.3
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.4	Discussion with No.4
	MW	No.3	Discussion with No.3
	MA	RGN	Discussion with Corps
Feb.11 (Thu)	PC1	No.3	Travel from No.3 to No.5 and Discussion with No.5
	PC2	No.4	Discussion with No.4
	PC3	RGN	Discussion with No.1
	EP	No.3	Discussion with No.3
	AM	No.3	Discussion with No.3
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.4	Discussion with No.4
	MW	No.3	Discussion with No.3
	MA	RGN	Discussion with Corps.
Feb.12 (Fri)	PC1	No.3	Travel between No.3 to No.4 and Discussion with No.4
	PC2	No.4	Discussion with No.4
	PC3	No.4	Travel from RGN to No.4
	EP	No.3	Discussion with No.3
	AM	No.3	Discussion with No.3
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.4	Discussion with No.4
	MW	No.3	Discussion with No.3
	MA	RGN	Summary of Field Study
Feb.13 (Sat)	PC1	No.4	Internal Meeting
	PC2	No.4	Internal Meeting
	PC3	No.4	Internal Meeting
	EP	No.3	Travel between No.3 and No.4 and Internal Meeting at No.4
	AM	No.3	Travel between No.3 and No.4 and Internal Meeting at No.4
	LV	No.4	Internal Meeting
	HV1	RGN	Summary of Field Study
	HV2	No.4	Internal Meeting
	MW	No.3	Travel between No.3 and No.4 and Internal Meeting at No.4
	MA	RGN	Summary of Field Study

Feb.14 (Sun)	PC1	No.4	Travel from No.4 to RGN
	PC2	No.4	Summary of Field Study
	PC3	No.4	Summary of Field Study
	EP	No.3	Travel from No.3 to RGN
	AM	No.3	Summary of Field Study
	LV	No.4	Summary of Field Study
	HV1	RGN	Summary of Field Study
	HV2	No.4	Summary of Field Study
	MW	No.3	Summary of Field Study
	MA	RGN	Summary of Field Study
Feb.15 (Mon)	PC1	RGN	Discussion with No.1
	PC2	No.4	Travel from No.4 to No.2 and Plant Visit and Discussion
	PC3	No.4	Discussion with No.4
	EP	RGN	Discussion with No.1
	AM	No.3	Travel from No.3 to No.5 Plant Visit and Discussion
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.2	Travel from No.4 to No.2 Plant Visit and Discussion
	MW	No.3	Travel between No.3 and No.5 Plant Visit and Discussion
	MA	RGN	Discussion with HO
Feb.16 (Tue)	PC1	RGN	Discussion with No.1
	PC2	No.4	Plant Visit and Discussion and Travel from No.2 to No.4
	PC3	No.4	Discussion with No.4
	EP	RGN	Discussion with No.1
	AM	No.3	Discussion with No.3
	LV	No.4	Discussion with No.4
	HV1	RGN	Discussion with No.1
	HV2	No.4	Travel between No.4 and No.2 and Discussion with No.2
	MW	No.3	Discussion with No.3
	MA	RGN	Discussion with HO
Feb.17 (Wed)	PC1	RGN	Discussion on R/P with No.1
	PC2	No.4	Travel from No.4 to No.3 Plant Visit and Discussion
	PC3	No.3	Visit to ITC/TS and Discussion
	EP	RGN	Discussion on R/P with No.1
	AM	No.3	Plant Visit
	LV	No.4	Discussion on R/P with No.4
	HV1	RGN	Discussion on R/P with No.1
	HV2	No.4	Discussion on R/P with No.4
	MW	No.3	Discussion on R/P with No.3
	MA	RGN	Observation of Markets with HO

Feb.18 (Thu)	PC1	RGN	Discussion on R/P with No.1
	PC2	RGN	Discussion on R/P with No.3 and Travel from No.3 to RGN
	PC3	RGN	Visit to ITC/TS and Discussion and Travel from No.3 to RGN
	EP	RGN	Discussion on R/P with No.1
	AM	RGN	Plant Visit and Travel from No.3 to RGN
	LV	RGN	Discussion on R/P with No.1
	HV1	RGN	Discussion on R/P with No.1
	HV2	RGN	Plant Visit at No.3 and Travel from No.3/4 to RGN
	MW	RGN	Plant Visit and Discussion and Travel from No.3 to RGN
	MA	RGN	Discussion with HO
Feb.19 (Fri)	PC1	RGN	Discussion on R/P with No.1
	PC2	RGN	Discussion on R/P with No.1
	PC3	RGN	Internal Meeting
	EP	RGN	Meeting with No.1
	AM	RGN	Internal Meeting
	LV	RGN	Plant Visit at No.1
	HV1	RGN	Plant Visit at No.1
	HV2	RGN	Plant Visit at No.1
	MW	RGN	Plant Visit at No.1
	MA	RGN	
Feb.20 (Sat)	PC3	RGN	Meeting with HO
	LV	RGN	Plant Visit at No.1
	HV1	RGN	Plant Visit at No.1
	HV2	RGN	Plant Visit at No.1
	Others	RGN	Summary of Field Study
Feb.21 (Sun)	All members	RGN	Internal Meeting
Feb.22 (Mon)	All members	RGN	Progress Meeting with HIC
Feb.23 (Tue)	Team 2	RGN	
Feb.24 (Wed)	Team 2	RGN	
Feb.25 (Thu)	Team 2	RGN	

NOTES:

Team 1: Mr.Sakanashi/Mr.H.Sasaki/Mr.Umeoka/Mr.Inooka
Mr.I.Sasaki/Mr.Katoh/Mr.Horiguchi
Mr.Nagatomo/Mr.Maruyama
Team 2: Mr.Sakanashi/Mr.H.Sasaki/Mr.Inooka

Group	Sub-Team	
PC		(A) Production & Control System
	PC1	Mr.Osawa/Mr.Horiguchi
	PC2	Mr.Umeoka
	PC3	Mr.I.Sasaki/Mr.Katoh
EP		(B-1) Electric Product Mr.Ochi/Mr.Miyamoto/Mr.Wani/Mr.Sato
AM		(B-2) Agricultural Machineries Mr.Hiratsuka/Mr.Ebina/Mr.Nakamura
HV		(B-3) Heavy Vehicles
	HV1	Mr.Yoshida
	HV2	Mr.Nakagawa/Mr.Nagatomo
LV		(B-4) Light Vehicles Mr.Ikutoh/Mr.Fukuhara/Mr.Nagatomo
MW		(C) Metal Working & Component Parts Mr.Ohkawa/Mr.Inada/Mr.Baba
MA		(D) Project Backgound & Market/Cost Analysis Mr.Inooka/Mr.Sakakura/Mr.Maruyama

Abbreviation

R/P : Renovation Plan
RGN : Rangoon
HIC : Heavy Industry Corporation
HO : Head Office
No.n : No.(n) HIC

No.n : No.(n) HIC