IV-2. Present Status of Production

IV-2-1. Manufacturing Methods

(1) State of Operations of Rubber Footwear Manufacturers

Table IV.2-1 shows the size and state of operations of the rubber footwear manufacturers visited this time. The nine companies had a total production capacity of about 15 million pairs a year. The company with the largest capacity could produce about 5 million pairs. Seven companies operated on the basis of one shift for the sewing and assembly divisions and two companies on the basis of two shifts. Five companies worked on one shift for the milling room, two on two shifts, and one on three. Note that one company did not have a milling division.

The per capita working time was over 2,300 hours a year in the case of five companies and on an average 2,291 hours, a high figure.

Table IV. 2-1 Size and Operation of Main Companies

Company		A	B	C	D	E	F	G	H	I
Size	Land ($1,000m^2$)	20.2	115.0	29.3	36.7	12.1	0.5	11.0	19.4	80.9
	Building ($1,000m^2$)	13.0	14.0	7.4	6.2	4.7	0.4	3.4	-	23.8
	Employment (Person)	1,087	1,854	517	536	300	58	444	195	797
	Production Capacity (1,000 Pairs/Year)	2,900	4,744	956	1,248	1,040	* 260	* 1,750	594	1,800
Operation	Days/Year ('87)	238	240	264	289	290		292	296	287
	Hours/Day	9	9	8.5	8	7.8	8.5	8	8	8
	Shift	Rubber -2 2	1	1	Rubber -3 2	1	1	1	1	2
Working Hours	Hours/Week ('88)	45	45	48	48	48	45	48	48	43.5
	Hours/Month ('88)	195	176	192	208	208	187	192	-	174
	Hours/Year ('88)	2,340	2,115	2,304	2,496	2,424	2,250	2,304	-	2,095

Source : Survey Questionnaires
Note : Production Capacity Excluding Sandals, Slippers and Soles
* Field Survey Interviews

(2) Manufacturing Processes

1) Manufacturing Methods and Characteristics of Rubber Footwear

Manufacturing methods, characteristics and production items of rubber footwear are shown in Table IV-2-2.

Table IV. 2-2 Shoe Manufacturing Processes, Features and Items.

Manufacturing Process	Features	Main Items	Main Sole Materials
Valucanising Process	1. Valcanisation required 2. Large expenses incurred for facilities 3. Large amount of rubber used, resulting in heavy weight 4. Adaptability for different applications owing to strong soles 5. Large number of workers	Canvas Shoes School Shoes Sports Shoes Boots	Rubber
Cold Cement Process	1. Vulcanisation not required 2. Small expenses sufficient 3. Light products possible by combination with soles 4. Large number of workers	Jogging Shoes Canvas Shoes Sports Shoes	Rubber E.V.A. P.U.
Injection Moulding Process	1. Vulcanisation not required 2. Largest expenses incurred for facilities 3. Sole attachment by single mechanical process possible 4. Smallest number of workers 5. Uniform, stable quality products obtainable 6. Suitable for mass production	Canvas Shoes School Shoes Sports Shoes Boots	P.V.C. P.U. T.P.R. Rubber

Source: Survey in Japan

The manufacturing processes used for making rubber footwear in Malaysia are the vulcanising process and cold cement process, with the injection moulding process being now introduced for slipper and sole production. A look at the nine rubber footwear manufacturers visited this time shows two manufacturers using both the vulcanising process and cold cement process, five only the vulcanising process (of which, one was specialised in the manufacture of boots), and two only the cold cement process. Overall, the vulcanising process was the main one used.

Japanese rubber footwear manufacturers use both the above-mentioned processes, with the main footwear manufacturers also using the injection moulding process.

On the other hand, in South Korea and Taiwan, the majority of the manufacturers of the medium level size and up use the two methods in the same way as in Malaysia. Further, some manufacturers also have adopted the injection moulding process. China uses only the vulcanising process, but is currently trying to introduce the cold cement process. It does not use the injection moulding process.

2) Processes by Manufacturing Method

The processes of the three manufacturing methods are generally as shown in Fig. IV.2-1 to Fig. IV.2-3.

The rubber footwear industry in Malaysia uses the processes indicated in Fig. IV.2-1 and Fig.IV.2-2.

Table IV.2-3 summarises the main equipment possessed by rubber footwear manufacturers and the main countries producing the equipment. From this table, it may be said that Malaysia is fairly much equipped for making footwear by each of the processes. The equipment, with the exception of sewing machines and related equipment, is mostly made in Taiwan, followed by South Korea.

The sewing machines and related equipment are mostly Japanese in make, followed by Europe and the U.S.

Note that one company purchased all its soles and thus had no equipment for sole production at all.

On the other hand, Table IV.2-4 summarises the number of years of use of the main equipment. This table shows the total for only for rubber footwear manufacturers whose number of years of use are known.

From this table, from the number of years of durability of the equipment, the Banbury mixers, mixing rolls, calender rolls, etc. in the rolling sector may be said to be old. However, this equipment does not pose a problem in use so long as precision levels are maintained. Further, the tacking sewing machines, computer sewing machines, double eyelet machines, and other labour-saving equipment and the toe-lasters, side-lasters, heel-lasters, and other quality improving equipment are relatively new, showing that the companies have been working to introduce this type of equipment in recent years. Seen overall, the number of years of use of the equipment may be said to be about the same as in Japan.

Fig. IV. 2-1 Vulcanising Process

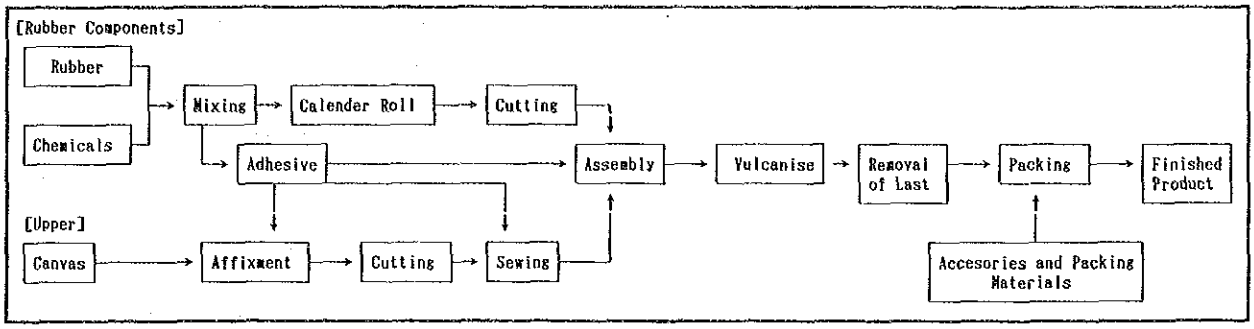


Fig. IV. 2-2 Cold Coment Process

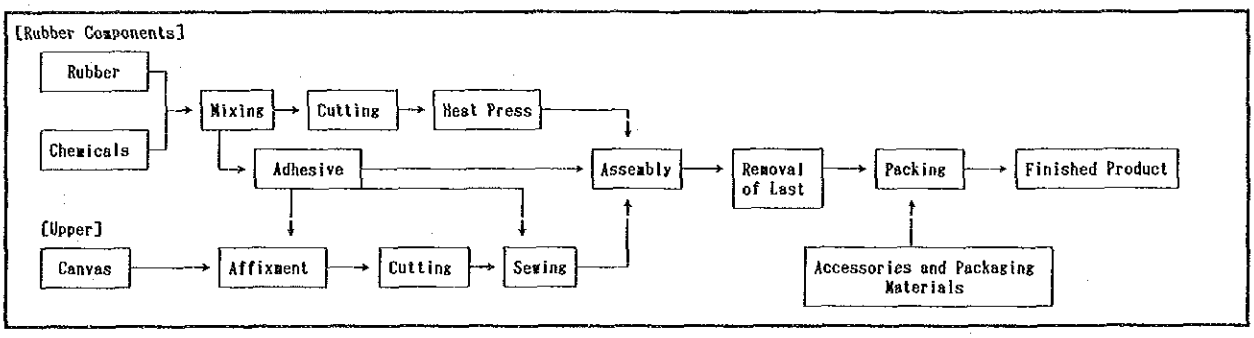


Fig. IV. 2-3 Injection Moulding Process

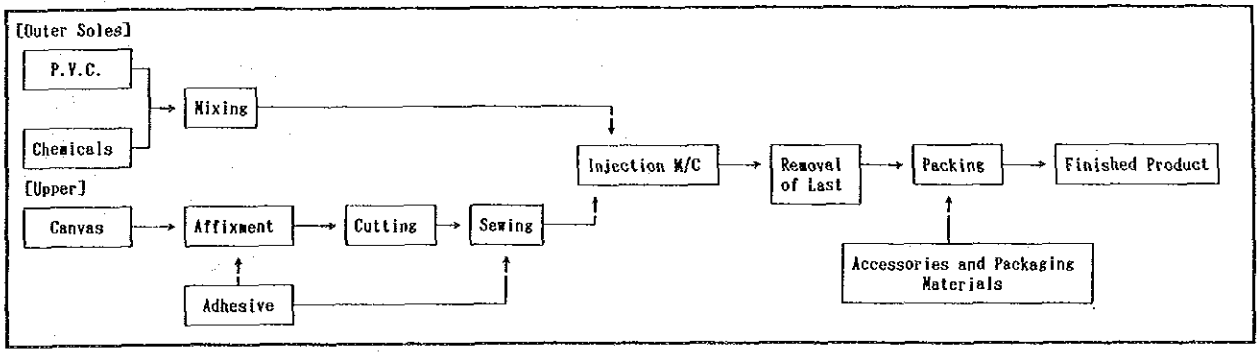


Table IV. 2-3 Main Equipment

Equipment \ Company	A	B	C	D	E	F	G	H	Origin of Equipment
Banbury Mixer	2	2	1	2	0	1	0	2	Taiwan, Sweden UK, Norway
Mixing Roll	8	5	5	5	0	7	3	13	Korea, Norway Calender Roll
Calender Roll	7	6	2	5	0	6	3	5	Taiwan, Korea China, Norway
Heat Press	11	9	12	3	0	2	18	26	Taiwan, Korea
Cutter (Sole & Cloth)	24	17	7	4	3	4	4	6	Taiwan, Korea Italy
Sewing Machine	200	220	260	140	24	200	62	50	Japan West Germany USA
Tacking Sewing Machine	20	14	3	2	0	2	0	3	Japan
Computer Sewing Machine	1	15	2	1	0	0	0	0	
Single Eyelet Machine	20	*	4	5	0	9	4	2	Taiwn,n Korea
Double Eyelet Machine	0	4	0	0	0	0	0	0	
Toe-Laster	10	8	3	1	1	0	2	-	Taiwan
Side-Laster	2	0	3	0	1	0	2	-	Taiwan
Heel-Laster	7	4	3	1	1	0	2	-	Taiwan
Vulcaniser	2	2	0	2	0	2	2	6	
Injection Machine	0	3	0	0	0	0	0	0	

Source: Survey Questionnaires and Field Survey Interviews
Notes:
1) C and E Companies not having Vulcaniser because of their having only Cold Cement Process
2) E Company not having Rolls because of their Procuring all Soles Outside
3) * N.A. in case of B Company
4) Only Name of the Origin of Equipment Confirmed when Interviewing

Table IV. 2-4 Years of Use of Main Equipment

Name of Machinery & Equipment	Number of Years of Use			
	Under 3 Years	3~10 Years	Over 10 Years	Total
Banbury Mixer	1	2	7	10
Mixing Roll	1	12	33	46
Calender Roll	2	7	25	34
Heat Press	5	40	36	81
Cutter (Sole & Cloth)	10	34	23	67
Sewing Machine	220	606	130	956
Tacking Sewing Machine	2	39	3	44
Computer Sewing Machine	19			19
Single Eyelet Machine	4	23	4	31
Double Eyelet Machine	4			4
Toe-Laster	11	14		25
Side-Laster		8		8
Heel-Laster	5	12		18
Vulcaniser		9	7	16
Injection Machine			3	3

Source: Survey Questionnaires
Note: Totaled Numbers of Equipment of 9 Companies Confirmed

3) Characteristics of Manufacturing Processes at Rubber Footwear Manufacturers

The characteristics of the manufacturing processes of the manufacturers visited are summarised below:

a) Manufacturing Process of Rubber Parts

In this process, rubber and chemicals are kneaded together to make the rubber for the calender soles, foxing tape, toe-guards, and pre-moulded soles.

Regarding equipment, all of the manufacturers had Banbury mixers, mixing rolls, calender rolls, and other main equipment. Korean and Taiwan models accounted for the majority of these, with some being of European, Japanese, and Chinese make as well. No domestic makes were seen. Most of the equipment was small, which are not that different from large ones in terms of precision but knead a correspondingly small amount of rubber each time. Companies with foreign equity participation and well set-up management systems had good layouts of factory, maintenance of equipment, clear passageways, and good stocks of materials and products. Compared with these, the companies based principally on local capital and without good management systems lacked the above features, of course, and further even had rubber sheets laid out on the passageways.

On the other hand, the same sort of situation as in Malaysia may be seen in South Korean and Taiwanese manufacturers.

In some of the foreign capital affiliated companies and companies receiving technical guidance, the layout, of course, and also stock control are managed well. In the majority of the other manufacturers, the situation was confused and "4S" (Seiri • Seiton = order, Seiso = cleaning, Seiketsu = cleanliness) control was poor.

[1] Manufacturing Process of Foxing Tape

To make the foxing tape rubber continuously output from the calender roll into sheets, it is cut sheet by sheet by scissors. Each sheet is cut by a knife with a ruler so as to obtain six to 10 foxing tapes.

It is efficient and there is less loss of materials if the rubber coming out from the calender roll is allowed time to cool (shrink) and a rolling knife is attached for automatic cutting. Only one manufacturer was observed through a factory survey to be making such improvements.

On the other hand, some Korean and Taiwanese manufacturers attach automatic cutters for cutting sheets. The majority of these, however, are using knives to cut the foxing tapes.

[2] Manufacturing Process of Calender Soles

The sole rubber coming out from the calender roll is classified and cut according to the type and size of the soles.

The majority of the manufacturers are cutting soles by heat press cutters, but two or three manufacturers are manually cutting them with hot irons and hand cutters. The efficiency of manual work is worse than that of machine cutting and further is no good due to the variations in the dimensions and quality of the result. Korean and Taiwanese manufacturers which have received technical guidance from Japan use heat press cutting. Other manufacturers in Korea and Taiwan primarily use hand cutting.

Judging from the factory visits, the yield of calender soles from a sheet is, converted to weight, about 50 to 60 percent. The scraps can be recycled, but if one considers expenses of labour, power, etc. due to the scraps, it could be said to be necessary to make sole rubber with a length and width matching the size of the soles. In this regard, Japanese manufacturers produce soles with a yield of 60 to 80 percent, though there are some differences depending on the sole design.

b) Fabric Affixing Process

Cloth is an important material of the uppers. In the majority of cases, use is made of two pieces of cloth adhered together. In this process, therefore, cotton cloth is adhered.

In one manufacturer, it was possible to view the affixing work. Due perhaps to poor adjustment of the machinery, the amount of adhesive attached was not constant and there were places seen where the amount was insufficient. In Korea and Taiwan, most manufacturers order out the work to specialised affixing factories. This is because the diversification of upper materials and adhesives has made it difficult for footwear manufacturers to provide the large numbers of equipment required. It was heard that there was some fluctuation in quality, but the overall level can be said to be about the same as in Japan.

The front and back cloths were not matched neatly, with the front cloth being adhered on in a zigzag manner.

Insufficiency of adhesive becomes a cause of peeling of the front cloth and back cloth in the final product, poor strength of the cloth, wrinkles, and other defects. The mismatching of the front and back clothes also leads to higher costs.

c) Cutting Process

In this process, the parts used for the sewing process are cut and advance preparations are made for the sewing.

The main equipment are cutting machines. All of the manufacturers have large sized hydraulic types. Most are of Italian make, but some were also seen from Taiwan. Die-cut knives are all procured domestically. Note that two companies were producing them on their own.

The die-cut knives of one manufacturer had cutting edges which were extremely dull, were terribly rusted, and could not in practice cut even with a cutting action, so scissors were used on a supplementary basis. This may be said to be a problem of quenching of the cutting edges and daily care. If the cut materials are portions appearing on the surface, the appearance suffers as well. In this regard, Korea and Taiwan are good in care, usually grinding the cutting edges whenever they become dull.

In the preparatory sector, the cut upper materials are marked to determine the sewing positions and the overlap positions. With the exception of one company, all set marking patterns and marked the materials with pencil. Therefore, five to ten workers, a large number, are assigned to this work. Note that one company used a marking machine and was able to perform the work efficiently and with good precision. On the other hand, in Korea, Taiwan, and China, the majority of the companies perform the work manually with pencils.

d) Sewing Process

In this process, the upper is assembled. The main equipment here are sewing machines. Almost all of the sewing machines are of Japanese or European make. There were six companies, including large ones, which were introducing tacking sewing machines for labour saving - two to 20 such machines. These account for 1 to 9 percent of all the sewing machines. Four companies, including large ones, have computer sewing machines - one to 15 units. These correspond to 0.6 to 6 percent of the total sewing machines. These labour-saving machines are introduced in the large companies in large numbers and the work is performed efficiently with one worker handling two machines. A difference was also seen between the large companies and the medium and small ones in the automatic thread cutting sewing machines and special sewing machines, and some companies did not have any such labour-saving sewing machines. Overall, Malaysia may be said to be behind in the introduction of labour-saving sewing machines.

On the other hand, in Korea and Taiwan, the large companies are aggressive about introducing such machines. In particular, the large companies are taking the lead in introducing high priced computer sewing machines, though only a few are being introduced by any manufacturer at the present time. China has not introduced almost any labour-saving machines and is only now making general use of post sewing machines, twin needle sewing machines, etc. Note that with tacking computer sewing machines,

training of maintenance personnel is very important. Full consideration needs to be given to this point when introducing them.

For line organisation, the majority of the companies have introduced belt conveyor systems. Three companies are using Secaro sewing machine systems (developed by the Bata Co.) for the inter-process conveyance system. Note that only one company did not have a conveyance system but was assigning workers for conveyance work.

The large companies of Korea and Taiwan have introduced belt conveyor systems, but the majority of the other manufacturers and the manufacturers in China currently assign workers especially for conveyance work and thus proceed with work inefficiently.

For attachment of eyelets, many companies make attachment holes one by one by a punch and then attach eyelets by a single eyelet machine. Two companies have made group punching machines for the holes and punch holes all at once by a press. One company had introduced a double eyelet machine (machine able to simultaneously make holes and attach eyelets inside and outside). The medium and large size manufacturers of Korea and Taiwan are introducing double eyelet machines. Manufacturers which have introduced them but still do not have sufficient numbers of them are making holes with group punching machines. Note that the very small companies of Korea punch holes one by one. Further, the Chinese punch holes one by one as general practice, though double eyelet machines have been partially introduced.

Comparison with Japan, the speed of work is about 50 - 60 percent of that of Japan. Note that the speeds in Korea and Taiwan are 70 percent and that in China 50 percent.

Due to the state of introduction of labour saving equipment, the state of improvement of jigs and tools, and the speed of work, the number of workers may be said to be higher than usual.

An important thing in the sewing process, further, is the training of workers with multiple skills. This is because sewing machine operators need a long time before they can handle various types of sewing machine work. Unless they are trained for multiple skills, it will be impossible to deal with situations such as numerous absences or imbalances in processes, which of course would have an effect on the production.

Further, training of multiple skill workers is very important for enabling a company to handle diverse types of production. Only one of the companies visited this time displayed tables of skill for different processes for different workers and managed the same by colour coding. This kind of management leads to stabler production and quality and in turn leads to reduced costs.

Korea and Taiwan are advanced in training of workers with multiple skills, due in part to the guidance from Japanese companies. On the average, each worker can handle

two to three types of work. In China, on the other hand, the rule is one type of work for one worker. China has not yet reached the point of training workers for multiple skills.

e) Manufacturing Process of Pre-moulded Soles

In this process, a heat press is used to vulcanise rubber and produce outer soles and EVA sponge etc. and the burrs are removed and adhered portions buffed.

The heat press work is performed with one worker handling two to three machines. In Japan, the vulcanisation conditions are carefully combined so that one worker can handle three to six machines. In the factories visited, sheet like rubber was cut by workers using scissors and then placed into the moulds. This is where the difference in the number of machines handled arises. With the workers having to cut the rubber by scissors, they do not have the time to handle more machines. A further reason for the low number of machines handled is that the time conditions of the vulcanisation are not combined well.

Regarding the number of heat presses handled, in Korea and Taiwan, the majority of the manufacturers arrange vulcanisation conditions and work loads so that one worker can handle six machines for single colour soles and one worker three for multiple colour soles.

In China, one worker handles two to three machines, about the same situation as in Malaysia.

A look at the soles after vulcanisation shows a large amount of burrs. This may be said to arise due to the poor precision of the moulds and the distortion along with use and to the overly large amount of rubber charged. In the former case, the moulds should be properly repaired and maintained. In the latter case, control should be exercised over weight so that a standard amount is charged. This would be one means of reducing materials costs.

Note that there was one manufacturer using die-cut knives for the cutting in the roll process. In this case, scissor cutting is not necessary and it is easy to control the weight. The majority of the companies in Korea and Taiwan use the die-cut knife system and have little burrs. China cuts the rubber into short sizes when it comes out of the calender roll.

In the buffing process, the majority of the companies use rotary type buffing machines for hand buffing. Considering precision and efficiency, examination must be given to the use of automatic profiles buffing machines and other improvements of the jigs and tools.

In Korea and Taiwan, there are many specialised sole manufacturers. These specialised manufacturers have introduced profile buffing machines and automatic buffing

machines for more efficient production. The equipment is made in-house or domestically. One of the reasons that these manufacturers are able to make such improvements is that they are specialised. The manufacturers producing the soles in-house are at about the same level as the specialised manufacturers.

f) *Assembly Line*

In this process, the uppers and the insoles are lasted to the last and the rubber parts are attached to the uppers by an adhesive.

The production systems used are the belt conveyor system and chain system, the latter being better in terms of the work, production, and technology control. Four companies had introduced the latter system. Of the four, two are foreign capital affiliates and of the other two, the core of the personnel were trained in one of the foreign capital affiliates. In Korea and Taiwan, the companies which have received technical guidance from Japan have introduced the chain system, but the majority of the others use the belt conveyor system. China also uses the belt conveyor system.

The main equipment installed along the conveyors are, for the lasting, toe-lasters, side lasters, and heel lasters. Press machines are used for the adhesion of rubber parts. Many of the lasting equipment are of Taiwanese make, but some are from Europe. Many of the press machines are also of Taiwanese make. The large companies sometimes make their own machines.

The assembly lines differ between the large companies and the medium and small ones, but overall have many workers assigned to them. The main reasons for this are that the work speed is slow and that single workers handle single processes, i.e., workers do not handle multiple processes. In Japan, an effort is made to grasp the capabilities of individual workers and time studies are made so as to assign personnel properly and to determine the suitable production lots for more efficient production. Korea, Taiwan, and China do not engage in the same type of control as in Japan.

Observation was made of flattening of the bottom surface of the toe portion after lasting by cutting the excess canvas with a knife. This can be considerably improved, though perhaps not completely, by improvements to the pattern. Companies in Korea and Taiwan which have received technical guidance from Japan are making improvements in patterns and can resolve problems by some correction with a grinder. Other manufacturers and the Chinese are currently cutting the canvas with knives in the same way as Malaysia.

A look at the press machines shows that Malaysia is slow in making improvements. For this reason, tracing (application of roller by hand) is performed after the press work, with two to three persons per line or, in some companies, five to six,

assigned for that purpose. In Korea, Taiwan, and China, one to two workers are assigned for that purpose.

Due to the differences seen in various aspects of efficiency, as mentioned above, to view efficiency overall, a look was taken of the per capita production capacity in the companies. The comparison was made assuming the production in Japan of the same type of rubber footwear as that produced in these factories. The results are shown in Table IV.2-5. This data was obtained from interviews at the production floors of the factories visited, so there is some inaccuracy, but even considering this, the production capacity is about 50 to 60 percent of that of Japan. Further, Table IV.2-6 shows a comparison of the most advanced company and production in Japan assuming shoes brought from Japan. This data was obtained through a discussion and comparison with a Malaysian company about the personnel assignments and production of that company. Even viewing this, the capacity was 65 percent of that of Japan. On the other hand, companies in Korea and Taiwan, while there are differences between them, have reached an overall level of about 70 percent while China has reached one of 40 to 50 percent. The reasons for the differences may be considered to be mainly the following, though it is difficult to make a detailed analysis for individual companies: In this regard, the same may be said for Korea, Taiwan, and China.

[1] The slow speed of individual aspects of work
[2] The system of one worker for one process, i.e., the failure to use one worker for several processes
[3] The failure to suitably assign personnel
[4] The brushing on of adhesive for the foxing tape, i.e., the small number of companies using the dipping method
[5] The large amount of knife cutting work of the canvas of toe portions after lasting
[6] The large number of workers engaged in tracing

Summarising the above, Malaysia may be said to be behind in terms of work control and processing technology.

Table IV. 2-5 Comparison of Productivity

Process	Company	Type of Products	Malaysia					Japan				Comparison of Productivity A/Bx100
			Production Volume	Operator	Operating Hours	Productivity	Productivity Per 7 Hours (A)	Production Volume	Operator	Operating Hours	Productivity Per 7 Hours (B)	
			Pairs/ Day	Person	Hours/ Day	Pairs/ Day	Pairs/ Day	Pairs/ Day	Person	Hours/ Day	Pairs/ Head	%
Vulcanising Process	A	Foxing Tape, Toe Guard, Toe Guard	2,500	39	9	64.1	49.9	2,400	24	7	100	50
	B	Foxing Tape, Toe Guard, Mark	1,000	27	8	37	32.4	2,400	26	7	92	35
	C	Foxing Tape, Reinforcing Tape	1,000	26	7.8	38.5	34.6	2,400	23	7	104	33
	D	Foxing Tape, Toe Cap, Toe Guard, Mark	1,200	24	8	50	43.8	2,400	25	7	96	46
	E	Foxing Tape, Toe Cap, Toe Guard	1,200	25	8	48	42	2,400	24	7	100	42
Cold Cement Process	A	Jogging Shoes	1,800	34	9	52.9	41.1	1,300	16	7	81	51
		Leather Sports Shoes	1,600	40	9	40	31.1	1,300	22	7	59	53
	F	Leather Sports Shoes	1,500	31	8.5	48.4	39.9	1,300	22	7	59	68

Source: Survey Questionnaires and Survey in Japan

Table IV. 2-6 Comparison of Production of Canvas Shoes

	Japanese Co.	Malaysian Co.
Last Preparation	0.5	1
Middle Sole Cementing	1	1
Upper Cementing	1	1
Lasting	4.5	5
Flatting	---	1
Dipping	1	2
Restacking	---	1
Sole Cementing	1	2
Sole and Upper Assembly	1	1
Sole Press	1	1
Foxing Tape Cementing	1	1
Foxing tape Affixment	2	2
Press	1	1
Toe Guard Cementing		1
Toe Guard Affixment	1	1
Mark Affixment	1	1
Press	1	---
Tracing	---	2
Inspection	1	1
Foreman	1	1
Total No. of Workers	20	27
Daily Production Lots	2,500 Pairs/7H	2,800 Pairs/9H
Per Capita Capacity	125 Pairs/7H	103.7 Pairs/9H
Daily 7-Hour Conversion	125 Pairs/7H	80.7 Pairs/9H
Comparison	100 %	65 %

Source: Survey Questionnaires

The most important thing on the assembly line is the adhesion of the rubber parts with the uppers. No matter how strong the adhesive used, the parts will not adhere to each other if the drying timing is not right and even if they adhere, the adhesive force will be weak, forming a serious defect.

Therefore, it is important to have a system which ensures thoroughgoing tact control and strictly observes the drying time. Among the companies visited, the foreign capital affiliates were well managed. On the other hand, the primarily local capital companies were seen as having several pairs of semifinished shoes accumulating between processes. In other words, they cannot grasp the capacities of the workers and thus do not suitably assign personnel or control tacts. This is an important point, so advice was given on tact management to the companies which sought advice during the visits.

Next most important thing has a large effect on the appearance and quality on the assembly line. Specifically, there are many elements in this process which affect the appearance, such as warping, wrinkling, and height differences arising due to the poor lasting, fouling by adhesives, fouling from jigs and tools, etc. To improve and preserve the quality, thoroughgoing control of standard work is essential.

g) Packing Process

In this final process, the finished footwear is inspected as to if it meets the standards (primarily appearance) and, if passing it, is packed in a carton together with laces and other accessories.

About the only equipment needed is a belt conveyor for conveyance. Not much other equipment is required in this process. All of the companies visited this time had belt conveyors installed.

On the other hand, many of the companies had too dark illumination or insufficient lighting for the final process, which after all judges the passing of the finished product. In this regard, however, the companies explain that the workers do not like bright lighting. The same thing was seen in sewing factories. The excellent quality of the eyes of the workers can be proved up here.

There is much repair and retouching work in the inspection process and the situation was often seen where the flow of products almost came to a standstill on the belt conveyors. This shows that the work in the previous process, the assembly line, is unstable in quality. This means that the packing line is kept idle.

That is, it is important and essential that education be given on the concept of "the next process being the customer" in the overall processes and that work standards for each process be prepared, managed, and guided. Korea, Taiwan, and China are also behind on this point.

4) State of Factory Floors

In the current visit, the state of the production floors of the rubber footwear manufacturers was surveyed based on a "floor check list". This check list included 25 items of evaluation. Evaluation was performed for each ranking based on three stages (excellent.. two points, usual.. one point, and inferior.. 0 point).

A summary of the results of the survey for the nine companies all together is given in Table IV.2-7.

While there are differences among the manufacturers, it may be said from this table that there are problems in the assigned personnel and control systems in the area of work control, in everything for product control, in the control system for quality control, and in everything in labour management.

Table IV. 2-7 Results of Field Survey at Factories

Evaluation Item	Check points	Total Points
Production and Technology		
Work Management		
1. Dispatched Workers	• The Level of Automation • Job Range	5
2. Speed of Operation	• Earnest Attitude • A Look in Eyes • A Chat During Work	11
3. Working Speed	• Speed of Manual Work • Working Speed	7
4. Operation Efficiency	• Frequency of Operation Stoppage • The Number of Walking Workers • Meetings	11
5. Management Style	• Posting of a Notice about Production Targets and Achievements • Posting of a Notice about Absence	5
6. Operation Improvement	• The Littleness of Wastefulness • Improvements in Jigs and Fixtures	8
Products Management		
7. Materials • Parts	• Containers Storage Method • Manner or Piling • Use of Shelf Labels	9
8. Semi-Processed Products	• The Degree of Accumulation • Use of Stock Slips	8
9. Finished Products	• Types of Packing • Cleanness of Packages	7
10. Material Handling	• Notice of Storage Space • Carriage Method • Manner of Placing	8
Quality Control		
11. Process Inspection	• Posting of a Notice of Inspection Standards • The Level of Inspection Skill • Boundary Samples	11
12. Handling of Defective Products	• Notice of Defective Units • Classification of Storage Spaces	9
13. Inspection Equipment	• Manner of Handling • Inspection Mark	8
14. Management Method	• Control Chart • Posting of a Notice of a Fraction Defective and Other Ratios	3
Plant Management		
15. Factory Layout	• The Level of Adopting Assembly Line • The Level of Continuous Operation	10
16. Maintenance of Equipment	• Soil on Equipment • Proper Pipe Laying and Wiring	10
17. Maintenance of Building	• An Uneven Floor • Breakage of Window Glasses • Colouring • Rain-Cover • Leaking of Rain	11
Labour Management		
Working Environment		
18. Proper Arrangement	• Securing and Indication of Passages • Manner of Putting Jigs and Fixtures	9
19. Clothing	• Uniform and Regulation Cap • Work Shoes • Name Card	1
20. Lighting	• The Level of Lightness • Lighting Method	8
21. Ventilation	• Dust • A Bad Odor • Window • Ventilating Fans	8
22. Resting Room	• Existence of a Section for a Resting Room	7

Table IV. 2-7 Results of Field Survey at Factories
(Continued)

Evaluation Item	Check points	Total Points
Safety & Sanitation		
23. Safety	• Posting of a Danger Sign • Use of Safety Implements • Posters for Safety in Work Operations	3
24. Sanitation	• Cleaning of Buildings and Passages • Existence of a Sashhand Stand	8
Morale		
25. Motivation	• Existence of a Bulletin Board • Existence of a Quality Control Bulletin Board • Posting of a Slogan of Company-Wide Activities	3

Source: Factory Survey

(3). Standards

Rubber footwear is produced through the processes of procurement of materials, production of parts, assembly, etc. The standards are the specifications for judging of the quality of the materials and parts or finished products of each of the processes. For example, even inexpensive but good-looking products must clear certain standards or else cannot be called finished products or shoes.

1) Malaysian Standards

SIRIM (Standards and Industrial Research Institute of Malaysia) has established standards for the following three types of footwear:

[1] Spike-proof combat boots

[2] Safety footwear

[3] Canvas shoes, rubber sole, for school children

Standardisation is supposed to be promoted for jogging and sports shoes also, but there are no clear plans for the future. Note that the SIRIM inspection has been undergone in accordance with requests from companies and the SIRIM mark attached for only the safety shoes of four companies.

Only one company among those visited had established company standards. First rank companies of other countries establish company standards stricter than public ones in an effort to create appeal to the consumer and improve technology.

Table IV.2-8 shows the main standards currently in use. Manufacturers producing school shoes use the SIRIM standards for the above [3]. For exports, it was learned, the companies use the standards of the customer or of the export destination.

Table IV. 2-8 Main Standards Used

Company Standards	A	B	C	D	E
Standards Used for Own Brands	SIRIM	Company Standard DIN ASTM	ASTM BS JIS	BS ASTM	DIN4843 SIRIM CSA, ANSI DS, NS SIS, SFS
Standards Used for OEM Brands	Customer's Specifi-cations	Company Standard ISO BS	ASTM BS JIS	BS ASTM	DIN4843 SIRIM CSA, ANSI DS, NS SIS, SFS

Source: Survey Questionnaires

2) Japanese Standards

The JIS (Japanese Industrial Standard) currently includes the following 16 Standards for footwear:

[1] Jikatabi by cementing process (S5001)
[2] Canvas boots and shoes (S5002)
[3] Jikatabi by sewing process (S5003)
[4] High boots (S5005)
[5] Rubber "Zori" (S5006)
[6] Rubber soles for shoe-making (S5007)
[7] Mountaineering boots with light outfit (S5035)
[8] Sizing system for shoes (S5037)
[9] Leather shoes (S5050)
[10] Leather safety shoes (T8101)
[11] Rubber safety shoes (T8102)
[12] Anti-electrostatic footwear with/without safety toes(T8103)
[13] Safety shoes with metatarsal Protector (T8104)
[14] Safety shoes with polyurethan form shoes (T8105)
[15] Protective boots for occupational health (T8117)
[16] Protective footwear for radioactive contamination (Z4811)

In the establishment of a JIS, a specialised committee is formed comprised of footwear manufacturers, of course, related public organisations, consumers, and other members which deliberate and decide on the Standards.

Note that the JIS are deliberated on by a JIS committee at least every three to five years (different depending on type of JIS) and either confirmed, amended, or abolished in consideration of consumer demands, opinions, and the improvements made in technology by footwear manufacturers.

The main rubber footwear manufacturers of Japan have obtained JIS approval for JIS Marking Factory. Japanese rubber footwear manufacturers obtained such JIS approval by having worked to make the various improvements and maintaining and improving quality as spoken of in the prior section on manufacturing processes. At the present time, they have established company standards tougher than JIS and produce better products through judgement of the quality of materials, parts, and finished products.

IV-2-2. Level of Technology

(1) State of Technical Level

When evaluating the level of technology, the following three points were viewed:

[1] Physical aspects, e.g., the outer sole, foxing tape, etc. do not come off in use, the canvas does not tear, and there is no discolouration of the cotton cloth sufficient to cause a drop in quality

[2] Appearance, i.e., merchandise value, e.g., good stitching, number of stitches, and other facets of the sewing condition, free of deformation of the product, and free of dirt

[3] Functional aspects such as use of materials suitable for application, weight of product, and fit.

1) Physical Properties

In the current visit, one company was found to be developing new products by testing prototypes on actual feet to determine the durability of the physical properties. It takes time to confirm the durability of physical properties, but this is a good thing. Japan also performs wearing tests for footwear. Sports shoes are tested on sportsmen and school shoes on school students. These tests are performed not only on new products, but on improved versions as well. The tests not only cover durability but sometimes also confirm the fitting in the case of new lasts, patterns, materials, etc. used. Technology is further improved based on the results of such analysis.

Discolouration of the cotton cloth used for Malaysian rubber footwear was a problem a few years ago, but samples of canvas for rubber footwear obtained from the companies visited this time proved to be of no problem when brought back and analysed in Japan. The results of the analysis are shown in Table IV.2-9.

However, deeply coloured products are inferior in colour fastness to friction. This is unavoidable when dyeing cotton materials and is not a problem of the dyeing technology. Japanese products too give the same analysis data. In other words, care must be taken not to use deep colour cotton materials at problem locations such as the back cloth and insole cloth. Table IV.2-10 shows the test methods for cotton cloth.

The outer sole was analysed in the same way as the cotton cloth, but there were generally no problems. There were differences among the companies in the adhesion, however, with some being good and others weak.

In the above way, the results of analysis of the materials and parts were good, but the users visited spoke two or three times of detachment of the outer sole and foxing tape in domestic products. The samples provided by the companies visited this time showed a similar tendency from analysis back in Japan.

2) Appearance

The appearance was not that bad in the products seen in the current visit. Considering the fact that it is the Japanese market that is being targeted, however, there is still room for improvement, such as the protrusion of the adhesion on the foxing tape, deformation of the premoulded soles, wrinkles due to the lasting at the toe portions, dirtiness of the uppers, and warping of the product.

Of the samples provided by the companies visited, if judged as to suitability for the Japanese market, there were some which were excellent in appearance, but improvement in the sewing and processing technology would be desirable.

In general, when evaluating the technical level in Japan, an overall judgement is sought covering not only the physical properties, appearance, and function, but also the design, price, delivery, etc. That is, no matter what the item, technological capability may be said to exist if one can supply a product of a quality sufficient to satisfy user demands. In other words, supply capabilities and the ability to adapt may be used for evaluation of the technical level.

Table IV. 2-9 Results of Physical and Colour Fastness Testing of Malaysian Canvas

Materials	Colour	Bursting Strength	Colour Fastness (Rating)						Colour Fastness to Vulcanisation	Colour Transfer to Rubber
			Rubbing		Hot Water	Washing & Laundry	Organic Solvents	Carbon Arc Light		
		kg/cm^2	Dry	Wet				Lamp	(Rating)	(Rating)
	White	18.5	--	--	--	--	--	3	4	--
Cotton	Pink	22	3.5	3	5	5	5	3	5	5
Canvas	Green	21.5	3	3	5	5	5	3.5	5	5
Weave	Yellow	21	4.5	4	5	5	5	3.5	5	5
20/2x17/2	Blue	20.5	4.5	3	5	5	5	2.5	3.5	5
40x32	Red	20	4.5	3	5	4	4	3.5	5	5
	White	16	--	--	--	--	--	3	4	--
Cotton	Purple	18	4.5	4	5	5	5	3	5	5
Canvas	Light Purple	18.5	5	4.5	5	5	5	3.5	5	5
Weave	Yellow	17	4.5	4	5	5	5	4	5	5
12/2x6/1	Blue	16	3.5	3.5	5	5	5	4	5	5
40x26	Pink	16	4.5	4.5	5	5	5	3	5	5
	White	15	--	--	--	--	--	3.5	4	--
Cotton	Moss Green	17.5	4	3	5	5	5	4	5	4
Hopsack	Peppermint	22	4.5	4	5	5	5	2.5	5	5
Weave	Olive	22	4.5	4	5	5	5	4	5	5
20/2x10/2	Orange	19	4.5	3.5	5	5	5	3	5	5
14x11	Black	18.5	2	1.5	5	5	5	4	4	5
	White	16	--	--	--	--	--	3.5	4	--
Dyed Cotton	Rouge	21.5	3.5	3	5	5	5	3	5	5
Hopsack	Dark Blue	17	3.5	3	5	5	5	4	3.5	5
Weave	Blue	21	5	2.5	5	5	5	3.5	5	5
20/2/2x	Gray	19.5	5	5	5	5	5	4	5	5
20/2/2	Red	20.5	3	3	5	5	5	4	5	5
36x21	Pink	20	5	4.5	5	5	5	4	5	5
Cotton	Natural	10.5	--	--	--	--	--	3	4	--
Jean	Navy Blue	14	4.5	2.5	5	5	5	4	5	4
Weave	Red	13	4	2.5	5	5	5	4	5	5
20/1x20/1	Black	13	4	2.5	4.5	5	5	4	5	5
82x47										
	White	10.5	--	--	--	--	--	3.5	4	--
Cotton	Beige	8.5	5	4.5	5	5	5	4	5	5
Sheeting	Purple	9.0	5	4	5	5	5	4	5	5
Weave	Yellow	9.5	5	3.5	5	5	5	4	5	5
20/1x20/1	Blue	8.5	4	3.5	5	5	5	4	5	5
60x60	Pink	8.5	5	3.5	5	5	5	4	5	5

Source: Results of Testing of Cotton Canvas Obtained from Malaysian Manufacturers Surveyed.

Table IV. 2-10 Test and Method of Testing of Canvas

Test	Method of Test	
Bursting Strength	JIS	S5002
Colour Fastness to Rubbing	JIS	L0849-6, 2
Colour Fastness to Hot Water	JIS	L0845
Colour Fastness to Washing and Laundry	JIS	L0844
Colour Fastness to Organic Solvents	JIS	L0861
Colour Fastness to Carbon Arc Lamp Light	JIS	L0842
Colour Fastness to Vulcanisation	140°C x 50 Min. in Vulcanisation	
Colour Transfer to Rubber	70°C x 24H After Vulcanisation	

Source: JIS

In general, when evaluating the technical level in Japan, an overall judgement is sought covering not only the physical properties, appearance, and function, but also the design, price, delivery, etc. That is, no matter what the item, technological capability may be said to exist if one can supply a product of a quality sufficient to satisfy user demands. In other words, supply capabilities and the ability to adapt may be used for evaluation of the technical level.

(2) Quality Control

Quality control may be said to consist of the establishment of a control system enabling quality to be stably maintained within a certain range and of the creation of a control system where countermeasures can be immediately taken when abnormalities occur in a cycle of PDCA (Plan, Do, Check, Action).

1) State of Quality Control

Out of the companies visited for the survey, one company, as a means for maintaining the quality, was performing sampling inspections from the assembly line every day and immediately stopping the line whenever a defective product turned up. Such a system and a system for restoring the line to normal are essential for quality control. As for test machines, the majority of the companies had basic testers and were performing sampling inspections from the assembly line on a daily basis. On the other hand, companies with no testers were commissioning the inspection to the Rubber Research Institute of Malaysia (RRIM) or university (USM), but such a testing system does not allow tests tied up with the assembly line on a daily basis. Table IV.2-11 summarises the testing of main test items. Further, Table IV.2-12 summarises the state of quality control and the level of quality. From these tables it will be clear that the quality control systems are fairly well set up, that there are little overall repairs or defects, and there are extremely few complaints over quality.

Table IV. 2-11 Physical Testing of Main Components

Testing Place

(1) Own Testing
(2) Testing by Suppliers
(3) Private Testing Institute
(4) Public Testing Institute
(5) No Testing

Compo-nents	Test	A Co.	B Co.	C Co.	D Co.	E Co.	F Co.	G Co.	H Co.	I Co.
Main Sole	Hardness Test	(1) (4)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Tensile Strength Test	(1) (4)	(1)	(1)	(4)	(1)	(2)	(1)	(1)	(1)
	Elongation Test	(1) (4)	(1)	(1)	(4)	(5)	(2)	(1)	(1)	(1)
	Abrasion Test	(1) (4)	(1)	(1)	(4)	(1)	(2)	(4)	(1)	(1)
	Specific Gravity Test	(1) (4)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Shrinkage Test	(1) (4)	(1)	(1)	(1)	(1)	-	(1)	(1)	(1)
Upper Cloth	Bursting Strength Test	(1) (2)	(1) (2)	(1)	(4)	-	(2)	(1)	(1)	(1)
	Colour Fastness Test to Hot Water	(1) (2)	(1) (2)	(1)	(1)	(1)	(1)	(2)	(1)	(5)
	Colour Fastness Test to Friction : Under Dry Condition	(1)	(1) (2)	(4)	(1)	(5)	(2)	(2)	(5)	(1)
	Colour Fastness Test to Friction : Under Wet Condition	(1)	(2)	(4)	(1)	(5)	(2)	(2)	(5)	(1)
Sewing Thread & Shoe Lace	Tensile Strength Test	(1) (2)	(1) (2)	(1)	(4)	(2)	(2)	(2)	(1)	(1)
	Colour Fastness Test to Hot Water	(1) (2)	(2)	(1)	(1)	(5)	(1)	(2)	(1)	(5)
Cloth & Others	Peeling Strength Test	(1)	(1)	(1)	(4)	(1)	(1)	(1)	(1)	(5)

Source: Questionnaires

Table IV. 2-12 Quality Control and Quality Level

Item \ Company	A	B	C	D	E	F	G	H	I
Quality Control Dept.	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Number of QC Staff (Persons)	3	15	2	-	7	1	3	3	8
Quality Inspection Dept.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Preparation of Quality Inspection Standard Books	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preparation of Bundary Samples	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Sampling Inspection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Method of Final Inspection	Sam-pling	All	Sam-pling	All	All	All	All	All	Sam-pling
Repair Ratio in '87 (%)	3	0.5	3	N/A	4	1	0.7	3	0.5
Defect Ratio in '87 (%)	1	0.75	1.3	1	2	0.5	1.3	0.1	8
Number of Claims (Cases/'87)	Nom-inal	1	0	-	0	6	0	0	10 ~20
Claims to Export Products	None	None	Some	None	-	None	None	-	Some

Source: Survey Questionnaires

In Japan's case, companies prepare written inspection standards giving the inspection units, inspection items, sampling methods, persons judging passage, methods of lot disposal, and handling of documents and tables of specifications giving the inspection items, classifications, specifications, allowable limits, etc. Further, boundary samples are established and kept for use.

2) State of Quality Related Work

One company visited this time was applying adhesive in the fabric affixing process by machine, but the amount was not constant and thus workers had to adjust the amounts. Even so, places were seen where there was some insufficient adhesive. Further, in the majority of the companies, almost the same types of brushes were used for this as used in the application of the adhesive in the assembly line. Seen from the amount of adhesive applied, it would be desirable to consider changing the size of the brushes etc. for the object of application. Alternatively, in the sole affixing process of the assembly line, the production pitch was off, so 10 or more pairs of outer soles before affixment and uppers would pile up on the side of the conveyor, with mountains of such parts been seen. In other words, the company had not adopted a system of work standardised for maintaining a stable quality.

In Japan's case, written work standards, written technical standards, written control standards, etc. are established and kept for use so as to control such work governing the quality.

The sewing, assembly line, and other manufacturing processes depend very often on manual labour. With manual labour, it is difficult to stabilise quality in the same way as with machine work. Further, these are very difficult processes to mechanise. Therefore, training in job skills is important . At the same time, training to raise the consciousness of quality, knowledge about the product, and knowledge about user desires is very important. Nothing was heard in the current survey about any worker training being performed based on such thinking.

In Japan's case, a supervisor explains the points to watch in quality, explains new products, etc. for each manufacturing process before the start of production of a new product. Further, when a need for repair or other abnormality arises, instructions and training are given to stop the line each time. When complaints arise, further, training and activities for improvements are engaged in through QC circle activities.

Table IV.2-13 shows the state of QC circle activities and the suggestion system in rubber footwear manufacturers in Malaysia.

Three companies had QC circle activities and five had suggestion systems. In so far as the site inspection showed during the current visit, however, it did not seem as if such QC circle activities were truly going in in the manufacturers supposedly engaged in them. For example, no displays or management charts regarding QC circles were seen and the number of suggestions for improvement were extremely few.

From this situation, it is difficult to say there is much activity in QC circle activities.

Table IV. 2-13 QC Group Activities and Suggestion System

Item \ Company	A	B	C	D	E	F	G	H	I
QC Group Activities	Yes	No	No	No	No	Yes	Yes	No	No
QC Suggestion System	Yes	Yes	No	No	No	Yes	Yes	Yes	No
Number of Suggestions (Per Year)	50	120	-	-	-	20	A few	5	-

Source: Survey Questionnaires

The large, first rank Japanese companies are very positive when it comes to QC circle activities. As of December 1988, about 280,000 circles were registered in the *QC Circle* journal issued by the Japan Science and Technology Federation. There are also numerous unregistered circles. Further, many suggestions for improvement are submitted.

IV-2-3. Product Development

There are two types of new product development: one wherein completely new lasts, patterns, moulds, etc. are produced to develop new products and one wherein existing lasts, patterns, moulds, etc. are used and the colour combinations changed, parts of the uppers changed, the materials changed, and other changes made in appearance to make the new products.

(1) Desire for Product Development

In one company, as a method for new product development, samples of Japanese shoes were obtained as research on the Japanese market and lasts were designed based thereon. Further, one company directly acquired the lasts. As a means for improving the level of the designers, one company sent a designer to a Japanese rubber footwear manufacturer for one year for training and, if the chance arises, has the intention of sending a young worker to Japan again. further, some companies dispatch people to overseas trade fairs and exhibitions. In this way, there are companies which are aggressive when it comes to raising their capabilities of new product development.

Table IV.2-14 shows the state of new product development systems. Large companies assign numerous personnel to be designers or patterners. There was one

company which did not have a design division and did not assign anyone as a designer, but this company produced mostly school shoes. In the future, with the need for development of more fashionable and higher value-added products, however, this will not constitute enough personnel.

Note that yearly development costs ran 2 to 3 percent of total sales in one company and less than 1 percent in the rest.

Table IV. 2-14 Product Development Systems

Item \ Company	A	B	C	D	E	F	G	H	I
Development Department	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Number of Designers	2	6	3	2	3	1	1	0	1
Number of Patterners	2	5	0	1	5	1	3	1	5
Investment Cost (M$ 000) (1987)	500	-	80	32	-	12	Marginal	-	20
Investment/ Total Sales %	2-3	-	1	0.5	-	1	-	-	Negli-gible

Source: Survey Questionnaires

(2) State of New Product Development

The large companies visited for the survey had a sample fabrication section, with as many as 10 to 15 workers engaged in preparing prototypes. Numerous samples were arrayed in the showroom.

Only a yearly basis, some 300 to 600 new products are developed, including new models, changes in colour combinations, and changes in materials. Other companies had showrooms, but few samples on display and only 30 to 100 new products were developed a year.

From the samples in the showrooms seen in the current visit, it was observed that the trend in products in the large companies was to develop the colours more, attach decorations or embroidery to the uppers, print designs on the foxing tape, and otherwise improve the fashionability of the shoes. Further, as a means for showing the modification of the colour combination, there were places seen which attached cut samples of cloth directly to the shoes.

Note that Table IV.2-15 shows the state of development of new products.

In Japan, the companies develop very large numbers of new products each year due to there being four distinct seasons. Further, the main footwear manufacturers primarily develop lasts and moulds on their own, with only some commissioning them to

other companies. Patterns are also developed in-house, with patterns produced by grading machines. The large companies have introduced computers as well.

Table IV. 2-15 Development of New Products

Item	Company	A	B	C	D	E	F	G	H	I
Period Needed for Producing Prototype for New Order		14	30	7	20	7	14~21	-	8	7~21
Number of Newly Developed Models (pairs) in 1987		300	580	34	100	7	68	60~70	0	30~40
Development of New Last	Own		Yes				Yes	Yes		
	Outside	Yes	Yes	Yes	Yes	Yes			Yes	Yes
Development of New Mould	Own		Yes			Yes				
	Outside	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Development of Pattern	Own	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Outside									
	By Hand				Yes	Yes		Yes	Yes	
	Grading Machine	Yes	Yes	Yes	Yes		Yes			
	Computer									

Source: Survey Questionnaires

It is possible to study the development capabilities of companies by the number of patent rights owned. A look at this for the rubber footwear manufacturers of Malaysia from the current questionnaire survey shows no company having a registered patent right.

(3) PR of New Products

While developing new products in this way, it is also important to publicise them in the market. One method for this is product catalogues, but in the current survey all the companies were found to be insufficiently prepared with product catalogues. In the survey, many companies expressed interest in the product catalogues of Japanese manufacturers brought with the survey group. Japanese companies produce general catalogues, of course, and also produce catalogues for brands, applications, seasons, and other classifications emphasising the sales points of different products.

(4) Product Development Information

Table IV.2-16 and Table IV.2-17 show the data collection relating to new product development and problem points of the same.

Places of acquisition of information include, in addition to tied-up companies, importers, design magazines, and exhibitions in the majority of the cases. Some is obtained from the Malaysian Export Trade Centre (MEXPO) or RRIM, but the amount of the data available is not considered sufficient. In Japan, information is actively collected

from tied-up companies, design magazines, domestic and international exhibits and fairs and also garment fashion shows and fiber manufacturers and other different industries.

There were some companies which complained about a lack of technology as a problem in product development, but many companies mentioned they were not able to obtain the materials for development of high value-added products.

Table IV. 2-16 Sources of Development Information

Source \ Company	A	B	C	D	E	F	G	H	I
Tied-up Companies		O							O
Sales Agents		O	O			O			
Buyers	O	O	O	O	O	O	O	O	O
Design Magazines	O	O	O	O	O	O			O
Trade Fairs & Exhibitiohs	O		O	O	O	O			O
Design Contests									
MRPMA									
MEXPO								O	
RRIM	O					O			
SIRIM									
Others		O	O						

Source: Survey Questionnarires

Table IV. 2-17 Problems of Product Development

Problem \ Company	A	B	C	D	E	F	G	H	I
Lack of Technology of Producing High Value-Added Products			O		O			O	O
Unavailability of Materials of Producing High Value Added Products	O	O	O		O			O	O
Lack of Marketing Information of Product Trend			O				O	O	O
Others				O		O			

Source: Survey Questionnaires

(5) Product Development in Korea Etc.

The majority of products developed in Korea and Taiwan are done so by presentation of product sketches or samples from the buyers. The companies, in the development, design the materials and physical properties to be used. That is, they develop product patterns, while the buyers develop the designs. Therefore, few personnel are assigned as designers, which large numbers are as patterners and staff for production of sample prototypes.

(6) New Trends in Product Development

It was stated that there are two methods for new product development, but in recent years in addition to the same, the development of functional aspects has take on considerable weight.

Sports shoes are being developed with consideration of performance aspects enabling the wearer to run faster, jump higher, and exercise more safely.

This type of thinking is permeating into the footwear industry as a whole.

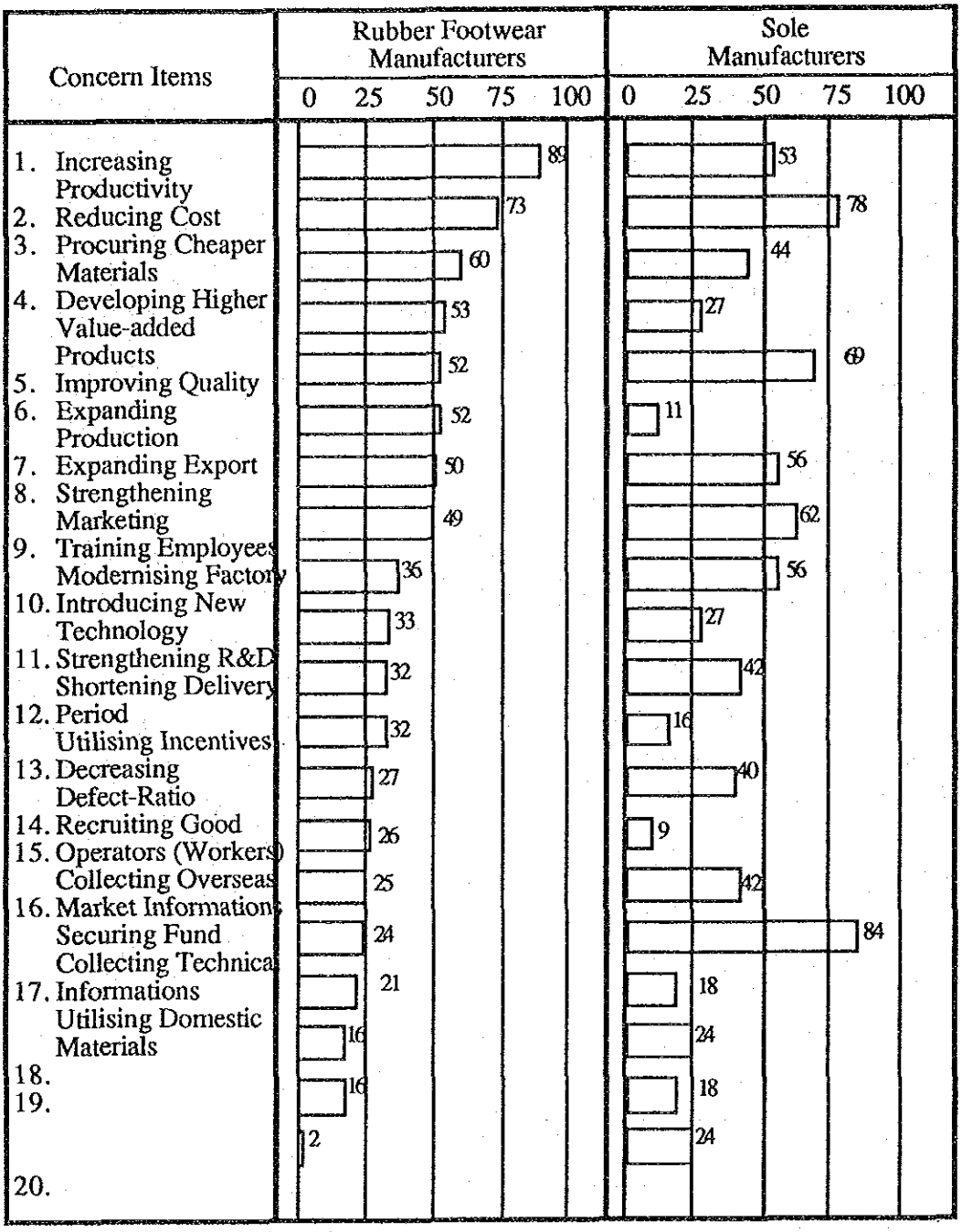
IV-2-4. Corporate Operations

(1) Operational Stance

Figure IV.2-4 shows the results of a questionnaire survey on what kind of points managers of rubber footwear related companies have concerns about.

In this figure, 15 items of concern to managers were selected in the order of highest concern down and a ranking was appended to the degrees of concern. In calculating these, the first item was considered worth 15 points, the second 14, and so on. The points for each item were collected and illustrated using the highest theoretical point as 100 percent.

Fig. IV. 2-4 Main Items of Concern to Managers



Source: Survey Questionnaires

Arranging the characteristic points seen in Fig.IV.2-4 based on the results of the interviews too, the following can be mentioned:

[1] The biggest things of concern right now to footwear manufacturers are improvement of productivity and reduction of costs. They are seeking better quality, more inexpensive materials and parts and components to cut such costs. This is considered to be due to the fact that production is increasing, while the labour supply is becoming increasingly tight, and unit prices of materials are soaring.

On the other hand, in the small sole manufacturers with their small numbers of employees, the greatest point of concern right now is, more directly, how to secure good workers.

[2] When considering the Japanese footwear market as a target, there is a need for improvement of the current levels of quality.

On the other hand, a questionnaire on quality showed that this was of only medium concern and that there was a large discrepancy among companies. That is, concern ran from second place to 13th place.

[3] Next on the manufacturers' minds is the idea of making new products, expanding quantities, and strengthening positions on the sales market and also increasing exports. Note that this too was largely governed by the environment the companies were placed in and concern fluctuated.

When export expansion was taken up in particular, the concern in companies already having large export ratios and companies considering exports impossible were 16th place and 12th place, respectively.

[4] Due to the nature of rubber footwear being produced by the work of large numbers of people, while education and training of workers is very important from the standpoint of improvement of product quality, reduction of the defect rate, and improvement of efficiency, the degree of concern shown in the results of the questionnaire was in general low.

Further, the concern over overseas market information and technical information was low. In this regard, in the current company visits, numerous questions were received on the Japanese market and technical improvements there - which is the direct opposite of this. In the questionnaire, it is believed, the acquisition of information was shown as of low concern due to the difficulty in realising the same.

[5] Another major characteristic was the low concern shown in government incentives and procurement of materials from local, domestic companies. Regarding the incentives, the government makes available discounts on materials used for the rubber industry and on power charges, but companies mentioned that these are becoming ineffective or that the application procedures are complicated. The low concern shown is considered to be related to this.

Further, regarding procurement of materials, the thinking seems to be that it does not matter where materials are purchased so long as they are cheap and of good quality. In may be seen as backing up the high degree of concern shown in cost reductions.

[6] Procurement of operating funds was of great concern to small sized companies, ranking first place with them. However, it only ranked less than 15th place with companies of medium size or larger.

Sole manufacturers are all small in size and concern in this ran from fifth to ninth place.

(2) Locations of Businesses

1) State of Location of Businesses

There were nine companies visited which produced "shoes", i.e., rubber footwear other than sandals and slippers (See Fig. IV.2-5.)

One company was located in East Malaysia, while the other eight were in Peninsular Malaysia.

The company in East Malaysia was situated in Papar in Sabah. The site was chosen as part of a programme for promotion of employment. The state government invested in the company for this purpose.

The eight companies in Peninsular Malaysia were all on the western coast of the peninsula close to major cities.

Three were located near Penang at the north of the peninsula, three near the central Kuala Lumpur, one in Malacca, and one in the southern Johore.

One company near Penang was situated in a free trade zone and was exporting 98 percent or more of its production. The remaining seven companies were located in domestic consumption areas.

The west coast of Peninsular Malaysia has three federation ports, i.e., Penang, Port Klang near Kuala Lumpur, and Johore Bahru, i.e., large ports managed and run by the Port Authority.

Further, Peninsular Malaysia is equipped with a good road network. therefore, the rubber footwear companies may be said to be situated close to domestic consumption areas and advantageously for exports.

2) Characteristics of Siting

In Peninsular Malaysia, there are rising problems in securing the necessary labour force.

Near Penang there are many electronic related industries. These industries have air-conditioned work floors and the added appeal of being modern industries. Therefore, female workers, which form the mainstay of the workforce for rubber footwear, tend to flock to the electronic industries.

Near Johore, further, the labour force is going to Singapore, drawn by the air-conditioned work floors and high wages, so the Malaysian company is building dormitories and seeking workers from the north of the peninsula.

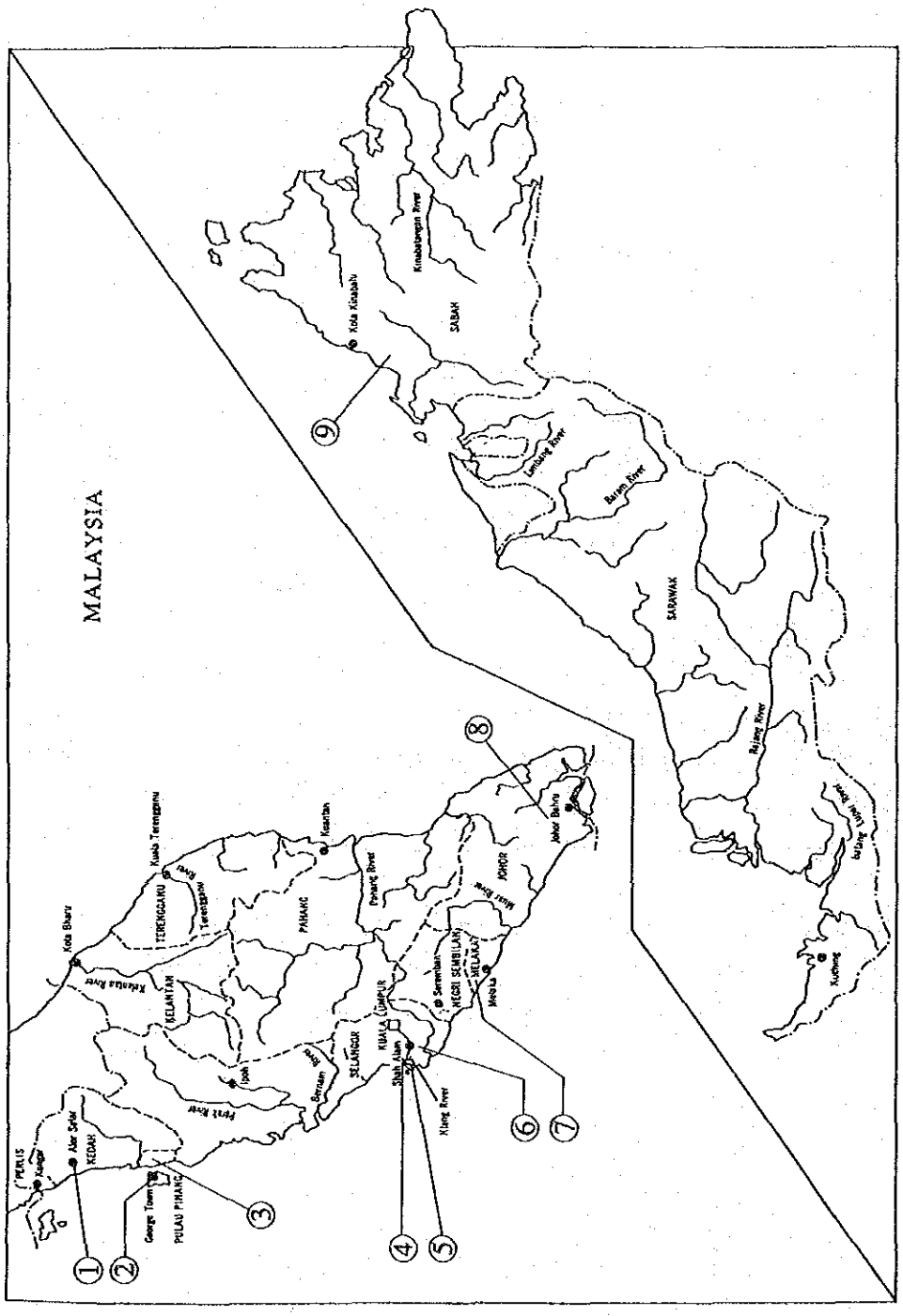
There is also a shortage of labour occurring in the central part of the peninsula.

While not particularly stressed in the current company visits, the respondents to the questionnaire all commented out there were problems with labour shortages and commented that these were increasing as a general trend.

The company in East Malaysia was primarily producing canvas shoes for school children and was not using any particularly high class materials, but had to rely on imports from Peninsula Malaysia for all raw materials except for natural rubber and adhesives. Therefore, the ratio of "imports" in the value of materials purchased was a high 85 percent. In other words, the supporting industries have yet to be built up in East Malaysia.

Further, the electricity rates in East Malaysia are 40 percent higher than Peninsular Malaysia. This was another disadvantage caused by the siting. Note that corrective measures regarding electricity rates were reportedly under study.

Fig. IV. 2-5 Location of Rubber Footwear Manufacturers

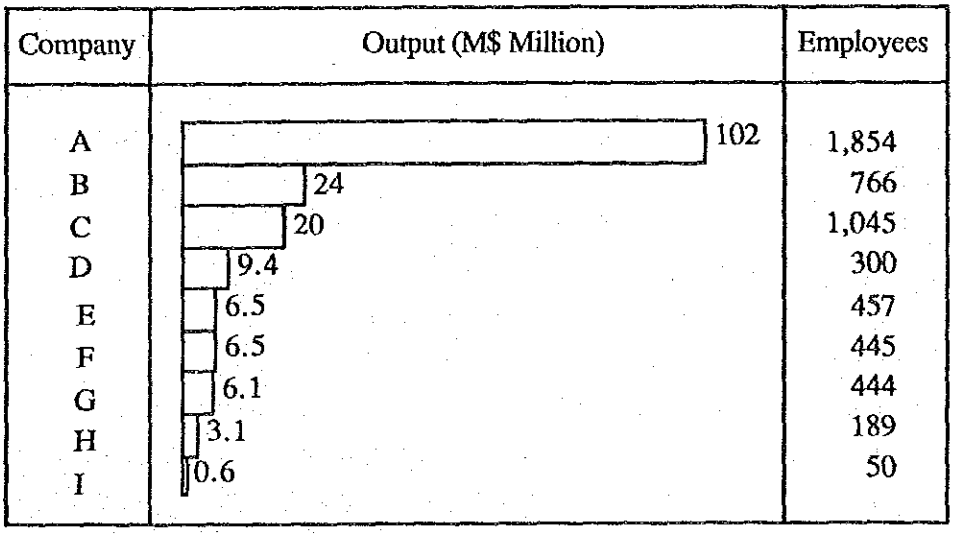


(3) Scale of Businesses

1) Size of Sales

Figure IV.2-6 shows the sales of the footwear divisions of rubber footwear companies.

Fig. IV. 2-6 Company Output and Employment in Rubber Footwear Industry in 1987



Source: Survey Questionnaires
Note: Sandals and Slippers included in A Co.

As clear from the figure, when compared against each other, there was one company among the group which displayed remarkably high sales. Company B and company C are companies with high export ratios. Seen from this point, it may be understood that company A holds a large share of domestic sales and thereby generates large sales.

2) Number of Employees

A look at the scale of business by the number of employees shows that, as seen in Fig. IV.2-6, there were two companies with over 1000 workers. Two companies had less than 200 and the remaining five had about 500.

About 80 percent of the workers in canvas shoe factories are female. Female workers constitute the mainstay of the workforce for sewing uppers and for assembling

uppers and soles. The work includes numerous manual operations which are difficult to mechanise, so the number of requisite workers is large.

In boot factories, the type of work differs, so female workers account for only about 50 percent of the workforce. Further, the work differs in content from that of canvas shoes, so there are less workers than in canvas shoe factories.

Note that many canvas shoe factories order out part of the sewing work and thus the real number of workers is larger than it may seem.

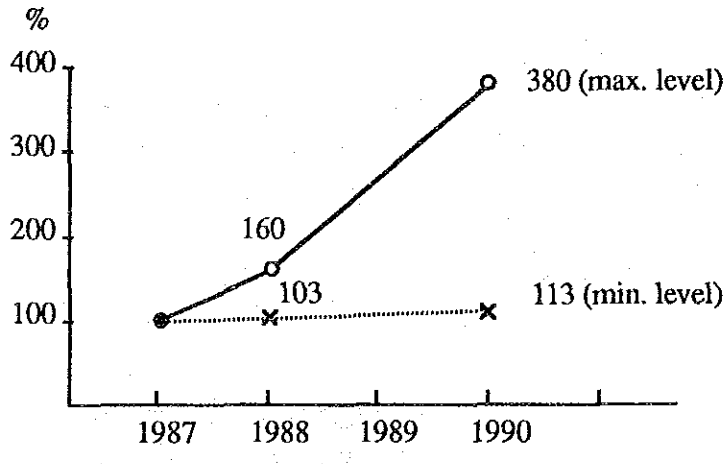
3) Plans for Expansion

The companies visited in the current survey were in general considering measures for expansion. In the large and medium sized companies, the direction taken was less the new construction of factories and more the improvement of efficiency through improvements in current systems so as to raise the production.

On the other hand, in the small sized companies, the management was moving forward with plans for expansion based on the construction of new factories.

The current survey was meant to be broad based and therefore included some sole manufacturers and sandal and slipper manufacturers as well. The sole manufacturer visited was in the process of constructing a new factory and planned to produce jogging shoes there. Fig. IV.2-7 shows the size of plant expansion plans under consideration by manufacturers on the basis of the inquiry survey.

Fig. IV. 2-7 Plans for Expansion of Production



Source: Survey Questionnaires

There are two aspects of Fig. IV.2-7 to note.

[1] One is the way of projecting the growth of domestic demand.

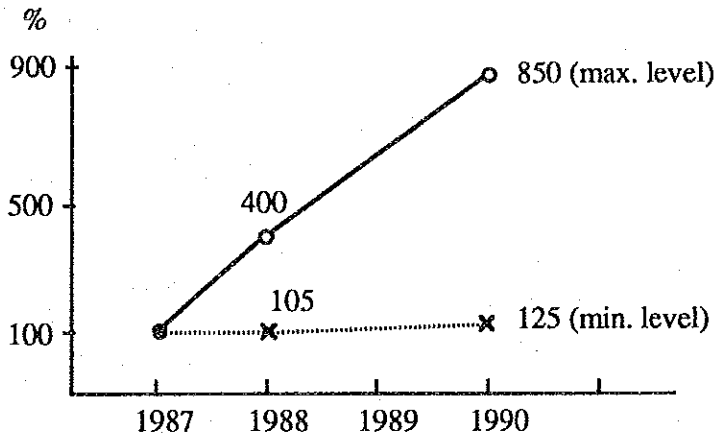
In the current survey, when projections of domestic demand were sought, numerous companies either were not able to reply or else erred largely in the size of domestic demand. Only one company made a reasonable evaluation of demand of over 10 million pairs. The projections of this company meant an annual growth of 7 percent. The minimum level shown in Fig. IV.2-7 is based on this projection.

[2] The other is the point of view for the expansion of exports.

The maximum level show in Fig. IV.2-7 is based on assumption of a four-fold increase in exports in 1988 compare with 1987 and an eight-fold increase by 1990. In other words, it is assumed that there will be large growth in the scale of production as the companies work to increase their exports.

Figure IV.2-8 illustrates such plans for expansion of exports as revealed from the current survey.

Fig. IV. 2-8 Plans for Expansion of Export



Source: Survey Questionnaires
Note: Excluding Nominal Planning

(4) Capital Structure

1) Capital Structure

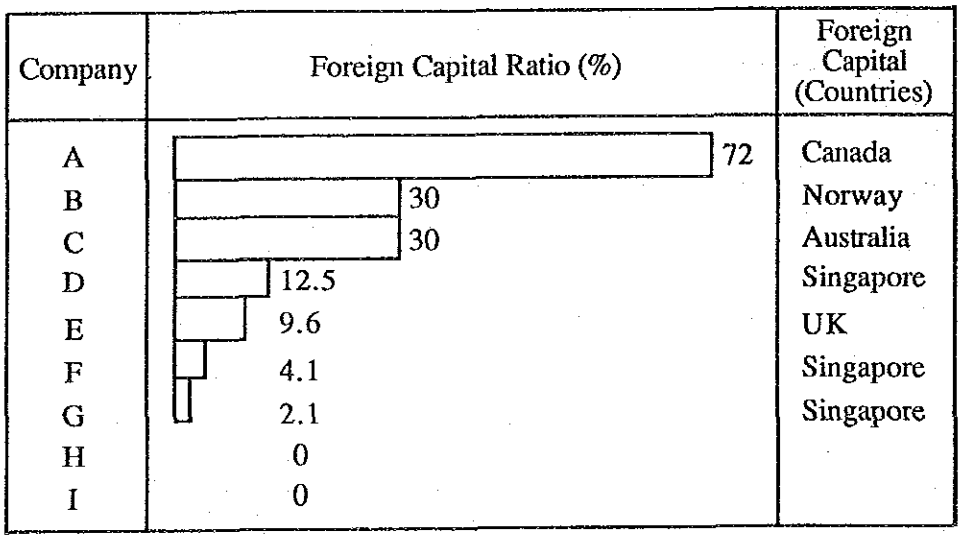
Looking at the capital structures from the viewpoint of the main investors of the nine rubber footwear companies, one company was founded primarily by foreign capital, two were founded mostly by the state government, and the remainder were founded by primarily local capital.

As mentioned above, there was one company founded primarily by foreign investors, but there another six with foreign equity participation. The ratio of foreign investment to the paid-in capital of the six companies was 30 percent for two companies, 12.5 percent for one, and less than 10 percent for the other three.

A look at the foreign equity by country shows equity from four countries: Canada, Norway, Australia, and Singapore.

Figure IV.2-9 illustrates this.

Fig. IV. 2-9 Capital Composition of Rubber Footwear Industry



Source: Survey Questionnaires
Note: G and E Co. Invested Mainly by State Government.

The following four characteristics may been seen in relation to this capital structure.

First, the foreign capital affiliate, which was established early on back in 1936, has created a large pool of trained personnel. Employees of this firm have later established their own operations or else play important roles in other companies as key personnel and may without exaggeration be said to be behind the activity in today's Malaysian rubber footwear industry.

Second, in another company having a 30 percent foreign equity, since it is exporting nearly 100 percent of its products, the marketing capabilities are held by the foreign parent company. The local company has no such capabilities at all.

Third, the companies in which the state governments hold the main equity are by nature means for the governments to create employment. Note that in one of the two companies, the products, though not all, are purchased by the state government and supplied for free to school children.

Fourth, Japan, Korea, Taiwan, and other countries have yet to invest in Malaysia. However, the sandal, slipper, and sole manufacturers visited this time reported recent surveys by Korean companies as to the feasibility of production there, showing that such moves are beginning.

2) Procurement of Funds

As mentioned earlier regarding matters of concern to managers, procurement of operating funds is an item of strong concern to small sized companies. On the other hand fund procurement is not viewed as a problem by companies backed up by group parent companies or state governments. When small sized companies move to expand the scale of their operations, however, they first need the funds for purchasing greater amounts of materials.

On the other hand, the payments from sales of products take a long time coming in. Further, materials account for about 50 percent of the prime costs of manufacture.

Procurement of funds to cover this period is difficult for small sized companies and thus they try to obtain the payments for sales as fast as possible. In the current survey of distribution and funds, it was commented that this situation is seen in other industries besides rubber footwear as well. Further, in the small sized rubber footwear companies visited, the strong opinion was voiced that fund procurement was a very great problem for small sized companies and that this was a problem common to all industries, not limited to rubber footwear.

(5) Building Up Human Resources

The large companies engaged in in-house education and training as a means for building up their human resources.

Personnel development may be said to include two main types: One covering management and the other the general worker.

1) Training of Management

Management training is offered in-house for the middle management and up on matters such as labour management, sales control, and production control.

However, only two foreign capital affiliates were doing this. In one of the medium sized companies, plans were being drawn up for management training, not offered in the past, after the company become affiliated with a corporate group. This may be considered a means for strengthening the company in its new role as a group member.

In general, it may be said that it is the companies which have business management systems introduced from foreign affiliates that are offering such training.

Training at this level is provided in-house and through dispatch to affiliated companies, RRIM, etc.

Note that five of the nine rubber footwear companies were offering such outside training.

2) Training of General Workers

Only one company, the one with a good overall management system, was offering basic education as part of its general worker training. The others established training periods during which they used the new workers for actual labour.

For training after this period, the companies use on-the-job training. Most of the general employees given this training are graduates of primary schools and lower secondary schools.

A look at the level of education by company shows there were four companies with 50 percent or more of their employees graduates of primary schools, the highest level being 95 percent. There were another four companies where 50 percent or more of their employees graduated from lower secondary schools. Figures were not known in the remaining company.

Due to this situation, the environment is not conducive to QC circle activities involving the front line workers.

The work for manufacture of rubber footwear is largely dependent on manual labor. Further, due to the fact the products are mass produced, the maintenance of a stable quality is largely dependent on the skill of the individual workers.

Mechanisation of the work is one approach to achieve stabler quality, but there are limits to this so a strong attempt should be made to train the workers for higher quality.

To promote this type of training for general workers, the National Productivity Centre (NPC) is aggressively pushing QC circle activities, but at the present point of time

it is only concerned with the electronic related industry in the Penang region and has not turned its attention to the rubber footwear industry.

Table IV.2-18 shows the hopes for government support in training of the nine rubber footwear companies.

Table IV. 2-18 Expected Government Support for Training and Education

Support Measures	Number of Companies
1. OJT by Foreign Experts	7
2. Dispatching Public Institution Instructors	5
3. Subsidy for Training and Education	5
4. Increase of Technical Seminars	4
5. Expansion of Public Institutions	3

Source: Survey Questionnaires

(6) Cost Reductions

1)Trends in Cost Factors

a) Materials Costs

In the current survey, several sets of data were obtained on the share of cost elements in the prime cost of manufacture. These are shown in Table IV.2-19.

According to the data, materials account for about 50 percent of the costs and labour for about 20 percent.

A breakdown of the about 50 percent materials costs shows natural rubber accounting for about 5 to 10 percent, depending on the product, and synthetic rubber for about 2 percent. That is, materials other than rubber account for an overwhelmingly large share of the materials costs.

Table IV. 2-19 Production Cost Composition of Rubber Footwear Industry

Cost		A Co. %	B Co. %
Material & Component	Natural Rubber	5.3	11.4
	Synthetic Rubber	1.5	1.7
	Others	46.7	38.2
	Sub-Total	53.5	51.3
Labour		21.0	22.6
Sub-Contract		2.2	0
Others		23.3	26.1
Total		100.0	100.0

Source : Survey Questionnaires

The prices of materials rose as a general trend in 1987 and 1988. Table IV.2-20 shows the trends in the prices of main items.

Table IV. 2-20 Main Materials Price Trends (1986 = 100)

		1987	1988
• Natural Rubber		120	135
• Synthetic Rubber	*	101	124
• Cotton Cloth		101	120
• Split Leather		100	104
• Nylon Taffeta	*	100	110
• Eyelet	*	128	135
• White Carbon	*	115	118
• Rubber Accelerator		107	126
• Zinc Oxide		100	154
• Titanium Dioxide		126	134
• Stearic Acid		100	124
• E.V.A. Resin	*	110	140
• E.V.A. Blowing Agnet	*	110	110

Source: Survey Questionnaries
Note: * Relying Wholly on Imports Without Domestic Supply Sources.

From Table IV.2-20, it may be said that the rapidly rising cost factor for all rubber footwear companies is materials.

Note that the comment was voiced that titanium dioxide was coming in short supply.

The percentage of imported materials was considerably high. The percent of imported materials in value considering the total cost of materials as 100 was about 30 percent. Note that this was calculated by a simple average excluding the one company in East Malaysia.

The share of materials costs was further higher in the sandal and slipper manufacturers, about 60 percent, so these are further affected by rising prices of materials.

Macroeconomically speaking, according to one sandal, slipper, and sole manufacturer, the prime costs of manufacture have risen close to 50 percent in the past year, while the sales prices have been raised about 20 percent. The soaring costs of materials is therefore considered a problem.

b) Labour Costs

Table IV.2-21 shows the average wage level.

The average shown in Table IV.2-21 may be said to be the level of the rubber footwear industry. There are considerable differences among individual companies with respect to this average level, as shown by the range of the table. That is, the maximum level is almost three times the minimum level.

Table IV. 2-21 Average Wages in the Rubber Footwear Industry

M$/Month

Classification	Average (No. of Co.)	Range	
		Minimum~ Maximum	Maximum/ Minimum
•Managerial Staff	2,688 (4)	1,200~3,155	2.6
•Technical/Supervisory Staff	1,017 (8)	558~1,324	2.4
•Clerical Staff & Others	624 (8)	300~763	2.5
•Factory Workers	332 (7)	168~475	2.8
Average	442	--	--

Source: Survey Questionnaries
Note: 1) Monthly Average Payment = Annual Payment Divided by 12 Months including bounuses,etc.
2) Different Numbers of Companies Owing to No Reply Against Questionnaires
3) Averaged by Classwide and Companywide.

No particular opinions were heard during the current company visits regarding these trends in wage levels.

However, as mentioned earlier, the labour supply and demand situation is becoming tighter and in relation to this four companies indicated an awareness of problems in rising wage levels in the questionnaire.

2) Cost Rationalisation Activities

In recent years, costs of raw materials have been soaring and the need for rationalisation has become strongly recognised. To reduce materials costs, some companies are seeking lower priced materials, for example, seeking PVC materials from scrap. The large companies are directly purchasing materials.

Further, many companies are looking at improvements of the work methods and improvements of equipment to raise productivity.

Consideration is being given to improve productivity by reorganisation of the sewing lines, connection of the vulcanisation and inspection lines, and changeover to in-house production from outside orders when expanding factories. The equipment is already there and thus new equipment is being introduced not for improving the situation all at once, but for making up for various weak points in the system.

For example, companies are increasing the number of computer sewing machines in the sewing lines and trying to make full use of the double eyelet machines which have already been introduced but are not now in operation.

Factories were inspected in the current company visits, and during the inspections and in the discussions after the inspections, the individual problems held by factories were talked about. The companies pressed in detail as to what had to be done for rationalisation. They were very concerned with rationalisation.

However, these rationalisation activities may be said to be the preserve of the top management and some of the staff of the companies. No company-wide activities were being performed where company targets were set for cost reduction and each section took up the challenge. The only similar case was an efficiency campaign of a large company with this as its aim.

In one medium sized company, the survey members explained the Japanese method of cost rationalisation through establishment of targets and the efforts by all workers to eliminate waste.

Further, an explanation was made of the abundant examples of rationalisation by other companies in Japan and the ease of acquisition of various materials for study of rationalisation measures.

In response to this, the comment was made that such information was currently not available in Malaysia. It is considered important to do something about this to broaden the range of rationalisation and promote stronger rationalisation activities.

IV-2-5. Sales Promotion

(1) Domestic Sales

1) Weight of Domestic Sales

The domestic market is a small one and there are limits to the demand for canvas shoes and sports shoes. Further, middle aged and elderly consumers mostly prefer sandals, slippers, and thongs, the opinion was expressed in the current survey.

Despite this general opinion, only one of the companies visited was exporting over 50 percent of its canvas and sports shoes, i.e., the weight of domestic sales was high. Some of the companies had failed in export and turned to the domestic market only then.

Table IV.2-22 shows the ratio for individual companies.

Table IV. 2-22 Domestic Sales of Canvas Shoes, Etc.by Company

Company	Canvas Shoes	Sports Shoes	Sandals Slippers
	%	%	%
A	100		
B	99.5		
C	94		
D	67	90	97
E	59		
F	47	3	
G		100	
H		80	

Source: Survey Questionnaires

The system for supply of products to the domestic market in many cases was for the manufacturing company to establish a specialised marketing company and sell to retail stores through it. A company with a large sales organisation also opened up its own stores.

A look at this by the number of workers of the companies in the sales divisions shows all but one of the companies had 10 or less such workers, with the lowest being two and the average being 5.6. The company with its own sales stores had 124 sales workers. Notable differences were thus seen in the domestic sales systems.

2) Domestic Sales Outlets

Most of the stores selling directly to consumers are shoe stores and sports goods stores in shopping complexes. Further, shoe corners have been established in supermarket style sales outlets and many products are displayed there. Note that there are as yet no large scale mass sales outlets for shoes.

There are large numbers of shoe outlets, with one outlet operating a few doors down from another in the same shopping complex. In all outlets, the lighting is good and the shoes are well displayed.

Table IV.2-23 shows an example of the outlets. Note that the states of the outlets were evaluated subjectively by the survey members.

Table IV. 2-23 Rubber Footwear at Retail Shops

Retail Shop				Rubber Footwear			Remarks
Location	Place	Kind of Shop	Display	Kind	Design	Colour	
Penang	Shopping Complex	Retail Shop	Average	Less	Average	Less	
		Retail Shop	Good	Average	Average	Less	Large-Size Shop Having Various Kind of Rubber Footwear
Kota Kinabalu	Shopping Complex	Shoe Shop	Good	Many	Many	Many	
		Sports Goods Shops	Good	Many	Many	Many	
Johore Bahru	Shopping Complex	Own Shop	Good	Many	Average	Many	
		Shoe Shop	Good	Average	Average	Many	
		Super Market	Good	Less	Average	Less	
Kuala Lumpur	Super Market	Own Shop	Good	Average	Many	Many	

Source: Market Survey

3) Domestic Sales Prices

A look at the retail price range of domestic footwear shows the following:

Baby shoes:	M$5 to 10
Children's shoes:	M$10 to 15
School shoes:	M$10 to 15
Jogging shoes:	M$30 to 40

Imported, famous brand jogging shoes such as Nike and Adidas sell for M$100 to 130, about three times the price of domestic counterparts. This is a high price for people who earn an average of M$400 monthly.

Sales prices in East Malaysia were set somewhat higher than in Peninsular Malaysia.

The differences seen in the price tags of products of one manufacturer were as follows:

	Prices in Peninsular Malaysia	Prices in East Malaysia	Difference
Leather Shoes	M$59.9	M$65.9	M$6
Sandals	24.9	27.9	3
Children's Shoes	9.9	10.9	1

Table IV.2-24 shows details on the above sales prices.

Note one of the features of the domestic market is the obligatory use of white canvas school shoes in the 11 years from primary school to form 5, resulting in a stable source of demand. Note that the shoes are provided free by the state government in East Malaysia, but not in Peninsular Malaysia. The school shoes need only be white. The rest of the design is not stipulated.

Table IV. 2-24 Domestic Sales Price

Retail Shops			Kind and Price of Rubber Footwear		
Location	Place	Kind of Shops	Kind	Price	Remarks
Penang	Shopping Complex	Retail Shop	Casual	M$38	
			Children	22.00	
			School	14	Discount/Sales
		Retail Shop	Casual	29.90	Similar to Japanese One Pricing at ¥1,980
				39.90	Similar to Japanese One Pricing at ¥1,980
				32.95	Similar to Japanese One Pricing at ¥1980
			Jogging	29.90	
				45	Similar to Japanese One Pricing at ¥4,000
				90	Similar to Japanese One Pricing at ¥7,000~¥8,000 (Imported)
Kota Kinabalu	Shopping Complex	Shoe Shop	Fashion	35	
			School	10~15	
			Jogging	20	For Children
		Sports Goods Shop	Sports	100~130	Imported
Johore Bahru	Shopping Complex	Own Shop	Children	10~15	
			School	10 more/less	
			Jogging	30 more/less	Best Quality = M&55
			Slipper	15 more/less	PVC
				30 more/less	Upper = Leather
		Shoe Shop	Infant	5~10	
		Supper Market	Jogging	40 more/less	
				100 more/less	Imported
Kuala Lumpur	Super Market	Own Shop	Casual	25 more/less	For Ladies, Colourful
				15~17	For Ladies, Low Rating
			Jogging	24	Similar to Japanese One Pricing at ¥1,980
				30~40	Similar to Japanese One Pricing at ¥3,000

Source: Market Survey

(2) Export Strategy

1) Export Situation

At the present time, only one company is exporting more than 50 percent of its canvas and sports shoes. Note that close to 100 percent of boots are exported, however. Most of the current export-oriented products are ordered by overseas partners, i.e., are OEM products. The large companies dealing in canvas and sports shoes rely on OEM shipments for about 90 percent of their exports.

About 90 percent of boot exports are made using the companies' own brands, but marketing is handled by the overseas partners, so from the viewpoint of export activity, the result is the same as with OEM.

Most of the exports are to Europe, but shipments are also made to the U.S., Australia, Singapore, and the like. Several companies expressed the opinion that entry into the Japanese market was difficult, but one company was already shipping products to that market.

Table IV.2-25 shows this in tabular form.

Table IV. 2-25 Export Ratio of Rubber Footwear

Company	Canvas Shoes	Sport Shoes	Boots	Sandals Slippers	OEM Ratio	Main Countries Exported
A	53	97			94	Australia,France,UK,USA
B	41				100	USA,Singapore
C	36	10		3	89	Italy,Canada, Singapore
D	6					Singapore,UK,
E	0.5					Netherlands,
F		20			33	Japan
G			98		13	Norway,Sweden,Denmark

Source: Survey Questionnaires

2) Export Promotion Activities

a) Systems and Content

Since most of the exports are OEM, the export staffs of rubber footwear companies are currently at the most six members. The average was 3.8 members, with as few as two in one company. Therefore, companies still do not engage in sufficient market surveys or sales promotion activities on their own. Only one company has its own sales promotion office overseas, with the others relying on thier partners and importers. Two companies were placing advertisements in overseas newspapers and magazines.

The companies, it may be seen, have not prepared sufficient corporate brochures, product catalogues, and other materials required for export promotion.

Such materials could be obtained in the current company visits only infrequently. Further, there was a notable lack of catalogues at the fair held in September 1988 in Osaka Japan. This lack of preparation of materials was also pointed out by a raw material manufacturer visited for this survey.

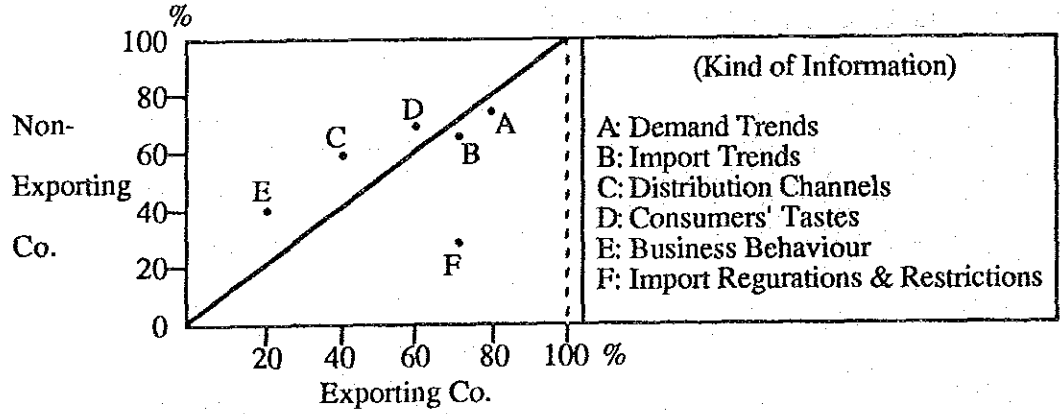
b) Overseas Market Information

Information on overseas markets is obtained from importers and MEXPO in addition to affiliated firms, but cannot necessarily be evaluated as sufficient.

Due to this situation, many companies expressed interest in the catalogues of Japanese manufacturers brought along in the current survey as part of the information regarding export markets.

Figure IV-2-10 shows what kind of information is considered necessary.

Fig. IV. 2-10 Overseas Information Needed



Source: Survey Questionnaires

Notes: 1) Classifying 5 Export-oriented Companies as Exporting Company and the Other 4 as Non-Exporting Company.
2) Totaling Points after Giving 6 Point to the 1st Selection and then 5 points to the 2nd Selection and so on.
3) The Highest Points Supposed to be 100.

The following may be pointed out from Fig. IV.2-10.

[1] Information about market trends is considered most required regardless of whether companies are currently exporting or not (A, B, D).

[2] Companies currently with less exports or not now exporting seek information on how to export (C, E).

[3] Companies currently exporting desire information regarding the restrictive conditions of overseas markets (F).

c) Direction of Expansion of Exports

As the direction taken for expansion of exports, many companies mention selective emphasis, out of products already being produced, on higher value-added products such as sports and leisure shoes and casual shoes.

As markets for expanded exports, common interest was shown in Japan as a target market. Note that common interest was shown in the U.S. as well.

Table IV.2-26 shows this.

Table IV. 2-26 Export Items To Be Expanded

Classification	No.of Manufac-turers	Item	Export Market
Present Products	3	Canvas Shoes Safety Boots Ladies Boots	Japan, U.S.A. Europe
High Value-Added Products	6	Sports/Leisure Shoes Casual Canvas Shoes Leather Sports Shoes Jogging & Court Shoes	Japan, U.S.A. Europe,Canada Eastern Europe

Source: Survey Questionnaires

In terms of quality, one of the requirements for successful expansion of exports, the standards currently applied to export products are primarily foreign ones, such as those of the ISO, ASTM, and DIN. This may be said to be natural as OEM production is prevalent at present. Only one company was using its own standards.

There are almost no complaints regarding exports. A company exporting to Japan indicated that there were complaints about quality and delivery and another company indicated there were claims on slight points of quality.

The low level of complaints may be said to be due to the prevalence of OEM production at present.

IV-2-6. State of Peripheral Industries

(1) Subcontracting Industries

Subcontracting in Malaysia takes the form of commissioning of production outside based on one's own specifications. Two types of work are currently being subcontracted: sewing of uppers and production of soles.

Sewing of uppers is believed prevalent for mass production items with fixed specifications, such as seen in the case of companies producing mostly canvas school shoes. This work is labour intensive and can be done so long as one has sewing machines, so subcontracting is used. Five out of eight companies, with the exception of boots, were using subcontractors for the sewing of uppers. None of the companies considered the quality or delivery of subcontracted work to be a particular problem, so the situation is good. The subcontractors are all set up as companies.

On the other hand, there is the case of a small sized sandal manufacturer. It produces soles on its own, but contracts out the work for finishing them into sandal products. The company's brand is affixed to the products for their sale. In this case, the company reportedly contracts work out to 20 odd small locations, so it is considered that some of the work is being performed at private homes.

Two companies were contracting out production of soles. One company was engaged in large scale production, so contracted out production of premoulded soles for the cold cement process. The other company is placing orders with a sole manufacturer which recently entered its corporate group.

(2) Materials Industries

The rubber footwear industry is labour intensive, so seeks an abundant, inexpensive, and good quality labour force. At the same time, the system of supply of materials is an important element. This is because rubber footwear requires diverse types of materials.

Table IV.2-27 shows the state of procurement of main materials at the present time.

Materials which are not yet produced domestically and must all be imported are synthetic rubber, nylon taffeta, eyelets, white carbon, and EVA resins. Other main materials are produced domestically.

The main materials of uppers, cotton cloth and vinyl leather, are produced domestically in various types of good quality.

Regarding the dyeing of cotton cloth, there were problems of discolouration in 1985, but this has been resolved now. This point was confirmed by analysis of samples obtained during the survey and brought back to Japan. Some cloth is imported, but this is because special types are demanded.

Sewing thread is also produced and supplied domestically.

These materials are all produced by domestic companies with superior management and no problems are believed to exist in stability of quality.

Almost all types of shoe laces are now being produced domestically, but laces used frequently for some jogging shoes are not yet produced. However, consideration is being given to introduction of facilities to enable production of such laces in the near future.

In this way, many materials are now being produced domestically, but some are imported, such as shoe laces, due to the fact that domestic industry is not yet producing a part of them and, in the case of fasteners, due to the fact that domestic materials are available, but the grade of quality has to be high or they cannot be used.

The states of procurement of materials from a questionnaire of rubber footwear manufacturers were grouped together as follows. Table IV.2-27 shows details for each item:

A:	Items for which all companies use domestic products	3
B:	Items for which almost all companies use domestic products	4
C:	Items for which there about equal numbers of companies using domestic products and imported products	3
D:	Items for which almost all companies use imported products	4
E:	Items for which all companies use imported products	7
	Total	21

Table IV. 2-27 Procurement of Main Materials

	Materials	Classi-fication	Domestic	Imported	Main Import Source
1.	Natural Rubber	A	Yes		
2.	Synthetic Rubber	E		Yes	Japan, Korea, Taiwan Belgium
3.	Cotton Cloth	B	Yes	Yes	Korea,Taiwan,Thailand
4.	Vinyl Leather	C	Yes	Yes	Korea, Taiwan
5.	Split Leather	D	Yes	Yes	Japan, Korea, Taiwan
6.	Nylon Taffeta	E		Yes	Korea, Taiwan
7.	Shoe Lace	B	Yes	Yes	Korea, Taiwan
8.	Eyelet	E		Yes	Japan, Korea, Taiwan Hong Kong, India, Sweden
9.	Fastner	E		Yes	Japan, Hong Kong, Taiwan USA, France
10.	Adhesive	B	Yes	Yes	Taiwan
11.	Carbon Black	A	Yes		
12.	White Carbon	E		Yes	Korea, Taiwan
13.	Calcium Carbonate	B	Yes	Yes	China
14.	Clay	A	Yes		
15.	Rubber Accelerator	D	Yes	Yes	West Germany, USA, UK
16.	Zinc Oxide	C	Yes	Yes	West Germany, China
17.	Titanium Dioxide	D	Yes	Yes	West Germany, UK Australia, Belgium, Japan
18.	Stearic Acid	C	Yes	Yes	
19.	E.V.A. Resin	E		Yes	Singapore, Japan, Korea Taiwan
20.	E.V.A. Blowing Agent	E		Yes	Korea, Taiwan, China
21.	E.V.A. Gross Linking Agent	D		Yes	Korea, Taiwan

Source: Survey Questionnaires
Note : Refer to Classification In The Previous Page

(3) Jig and Tool Manufacturers

1) Mould Manufacturers

Only one large company was producing moulds in-house. The other companies were procuring them through orders to mould manufacturers. While some domestic moulds were used, the majority of the companies placed orders to Korea and Taiwan.

The main reasons were that deliveries take three to six months when orders are placed with domestic manufacturers, but only about two weeks when imported.

Mould manufacturers were visited and the situation surveyed, and the mould manufacturers themselves indicated that deliveries take three to four months.

The main reason why deliveries by domestic mould manufacturers take such a long time is that the manufacturers are small scale operations of 10 to 20 workers which handle orders for moulds for leather shoes as well and have large balances of orders.

This is also due to the fact that there are only three mould manufacturers in the Kuala Lumpur area and only one manufacturer in Penang.

Despite this situation, the mould manufacturers have no desire to expand the scale of their operations all at once. They have difficulties in securing skilled labour and prefer to expand step by step.

One of the manufacturers visited had an electro-discharge machine and was scheduled to purchase a copy milling machine - thus modernising its facilities, but another manufacturer was still operating with old-fashioned machinery.

Seen from the state of equipment, there is a large gap between the equipment in use and the latest equipment at MIDEC. It was heard that the Metal Industry Development Centre (MIDEC) was interested in modernising manufacturers of moulds for rubber footwear and believe that the pace of modernisation will pick up in the future.

Note that one of the manufacturers was using Japanese materials for the moulds. Another was switching over from Japanese materials to Korean ones due to the yen appreciation, but Korean materials were considered poorer in workability.

2) Last Manufacturers

There are no rubber footwear manufacturers which produce lasts in-house. When a question was raised as to the place of procurement during the visits to the rubber footwear manufacturers, only one place of procurement, i.e., last manufacturer, was mentioned. Therefore, orders from the companies concentrate in this one company and like the case with moulds deliveries take three to four months.

This last manufacturer has about 30 workers and adopts a production system involving much troublesome work, so cannot easily increase production.

Therefore, lasts, like moulds, are also being contracted out to Korea. Note that the evaluation of one company, a last user, was that Korean makes are cheap in price, but suffer from many flaws and are poor in quality.

3) Die-Cut Knife Manufacturers

Die-cut knives come in many forms, but all of these are ordered from businesses close to the rubber footwear manufacturers. There are no problems in procurement, either in terms of quality or delivery.

IV-3. System and Policy

IV-3-1. Industrial Promotion Policy

The Malaysian government has designated the rubber product industry as one of the 12 priority industries under its Industrial Master Plan (IMP) which maps out the course of industrialisation in the coming 10 years. The government also regards the rubber product industry a a central leader of resource-based industries which raises the value added of natural rubber, one of the principal products of the country, and earns foreign currency.

Tyres account for 70 percent of the rubber products in Malaysia and demand for medical rubber gloves has been growing sharply lately in connection with AIDS. Nevertheless, rubber footwear remains an important component of the industry.

Malaysia has no specific industrial promotion measures aimed at rubber footwear manufacturers. But the country has special promotion measures for the rubber product industry in general. The measures include a discount system applied to natural rubber purchased from the specified government agencies for export and a power rate reduction system for the production of goods for export. The rubber footwear industry benefits from these measures.

In addition, the pioneer status system applied to the manufacturing sector or Malaysia for the encouragement of investment as well as the grant of investment tax allowances (ITA) and other measures are applied to the rubber footwear industry.

(1) Incentives for Investment

1) Pioneer Status

Under this stimulation program, the privilege of exemption from corporate tax and development tax is given. The period of exemption is five years from the start of production. If additional conditions are fulfilled, extension of the exemption period for another five years will be granted.

2) Investment Tax Allowance (ITA)

The manufacturers of rubber footwear would be eligible to apply for the Investment Tax Allowance. The maximum amount of allowance that can be granted under the ITA is 100%. The rates vary depending upon the proportion of:

a) export ratio (upper limit of 30%);

b) local raw material content (20%);

c) added value (20%);
d) number of employees (15%);
e) site location (15%)

3) Abatement of Adjusted Income

The abatement of adjusted income to large companies which purchase components from local small-scale companies has become to be given from the year of assessment 1990. The abatement is 5% of adjusted income or a total value of components purchased, whichever is lower.

(2) Incentives for Research and Development

In order to encourage research and development (R & D) activities in Malaysia, the following incentives would be provided:

1) Expenses required for scientific research for projects run by a company directly or through an agent and of a nature which would be lead to earnings in the future may be deducted. Expenses required for research approved by the Ministry of Finance may be deducted doubly.

2) Building used for the purpose of approved research are allowed the industrial building reduction of an initial 10% and subsequent 2%.

(3) Incentives for Training

The following incentives would be given for certain training activities to improve technical skills and productivity:

1) The Industrial Building Allowance (IBA) is granted to a company which has incurred expenditure on buildings used for approved industrial training. The incentive consists of an initial allowance of 10% and annual allowance of 2%.

2) Double Deduction of Operational Expenses is granted to a manufacturing company that has incurred expenditure for approved training.

The mixing of synthetic rubber with natural rubber for outer soles of rubber footwear has become common lately as a result of attempts to meet the needs of

consumers who seek durable and lightweight products. Still required is the blending of natural rubber (at an average rate of 30 percent or sometimes close to 50 percent depending on the market prices of natural rubber). In order to keep the blending ratio of natural rubber from falling or to raise it in the future, it will be necessary to further step up efforts for the research and development of new materials using natural rubber, centering on the Rubber Research Institute of Malaysia (RRIM) which has a long tradition and much experience.

Low-interest loans to small- and medium-sized businesses from the ASEAN fund (AJDF), tax privileges for small firms (total exemption of import duties on raw materials, parts, machinery and equipment, etc.) and the improvement of the credit guarantee system to be implemented by the fiscal 1989 budget will be powerful incentives for the rubber footwear industry and some of its peripheral industries which have a good many small- and medium-sized firms.

The industry, however, strongly desires that these measures be flexibly applied and procedures for them simplified. Realization of such desires is strongly hoped for.

IV-3-2. Export Promotion Plan

In the special export promotion plan for the rubber footwear industry, as mentioned in the previous section, there are discounts on purchases of natural rubber and discounts on electricity, as follows:

[1] When purchasing natural rubber to use for rubber footwear production for export from the Federal Land Development Authority (FELDA), Malaysia Rubber Development Corporation (MARDEC), and Rubber Industry Small Holders Development Authority (RISDA), a price discount of M$0.2 per kg will be made.

[2] Depending on the rubber footwear export level, there is a maximum 20% discount for the use of electricity. If 100% of the production is targeted for export, there will be a 20% discount. When production is 40% for export, the discount will be 8% (20% x 40% = 8%).

In addition, there are the following export promotion measures which are also applied to other industries:

1) Abatement of Adjusted Income for Exports

An abatement of Adjusted Income for Exports would be granted to rubber footwear manufacturing companies exporting, directly or through agents

a) a rate which is equivalent to 50% of export sales as bears to total sales; and
b) 5% of the value of indigenous Malaysian materials which are incorporated in the manufacture of the products exported.

2) Double Deduction of Export Credit Insurance Premiums

To encourage the development of new markets, rubber footwear manufacturers would be allowed to make a double deduction for payments of premiums for export credit insurance.

3) Double Deduction for Export Promotion

Double deductions would be allowed for some specific expenses incurred by manufacturers for developing export markets for products made in Malaysia.

The qualifying are as follows:

a) Overseas advertisements
b) Supply of free samples overseas

c) Surveys of export markets
d) Preparation for bidding overseas
e) Supply of technical information overseas
f) Displays and participation in trade or industrial fairs recognized by the Ministry of Finance
g) PR activities relating export
h) Overseas business trips of employees
i) Food and lodging expenses for Malaysian businessman on overseas trips (M$200 per day)
j) Expenses for maintaining overseas sales office

Because the domestic market is narrow and apt to cause overproduction, the course of the development of the rubber footwear industry of Malaysia cannot but naturally be oriented toward exports. However, the overseas market for high-grade goods is currently flooded with Korean and Taiwanese products while China, Thailand, and Indonesia are expected to advance into the low-grade goods market. Therefore, Malaysia should first make efforts to eliminate waste from its production lines and reduce costs as much as possible. It will also be necessary for Malaysia to aim at medium and high-grade products with high value added in the future because the country's labor costs are higher than costs in China, Thailand and Indonesia, Uppers and other materials of higher grade will be needed to produce medium and high-grade footwear and, under the present circumstances, will have to be imported. It is hoped that procedures for exemption or rebates of customs duties on imports of these materials will be simplified.

Overseas marketing activities are also a major decisive factor in export promotion.

It is currently enough to make rubber footwear on order because OEM accounts for most of the production. But in the future, it will become necessary to precisely grasp the needs of various foreign countries through market research, participation in overseas trade fairs and other means and to set up separate production systems geared to satisfy the taste of individual markets.

The Ministry of Trade and Industry of Malaysia has an export center (MEXPO) which has conducted overseas exhibitions, commercial negotiation meetings and market research and also has good offices for use for inquiries and supply of information relative to rubber footwear. But the results have not been perfect due to budgetary restrictions and a shortage of staff. Especially desirable are stepped-up activities for the collection of market information and samples in foreign countries and participation in overseas trade fairs, activities which currently appear to be insufficient.

Finally, efforts for exports must be made by the rubber footwear industry as a whole. It will be necessary to expand and strengthen the footwear manufacturers' organization, now a section of the Rubber Products Manufacturers Association (MRPMA), as well as MEXPO. The government and private organizations must join forces and exert themselves to open up and expand export markets.

IV-3-3. Incentives for Rubber Footwear Companies

In regard to the questionnaire given to nine companies, their evaluation and use of favourable aspects of the system are as follows:

"Accelerated Depreciation Allowance" -- (five companies, "using"; two companies," very effective"; three companies, " effective").

"Double Deduction for Promotion of Export" -- (five companies, "using"; two, "very effective"; and three companies," effective").

"Abatement of Adjusted Income for Exports"-- (four companies, "using"; two companies," very effective"; and two companies," effective").

The Export Credit Refinancing and the Pioneer Status were evaluated by one company "not effective."

At these company interviews, one company strongly stressed a dissatisfaction concerning the drawback system on customs duties for materials used for export production. They reported that it took them several months from application to payment.

In total, the use of incentives by the companies was high for systems having to do with export. On use of the favourable systems on research and the training of workers, there should be further considerations in the future. As a result, the evaluation on research and training of workers is to begin now. There are already two companies who answered "not effective" on the double deduction system for training.

Table IV. 3-1 Evaluation of Incentive Schemes

Incentive	Not Using	Using		
		Very Effective	Effective	Not Effective
•Pioneer Status	4	2	1	1
•Accelerated Depreciation Allowance	2	2	3	
•Export Credit Refinancing	2		1	1
•Abatement of Adjusted Income for Export	2	2	2	
•Double Deduction for Promotion of Export	2	2	3	
•Double Deduction for R & D	6	1		1
•Double Deduction for Training	4			2

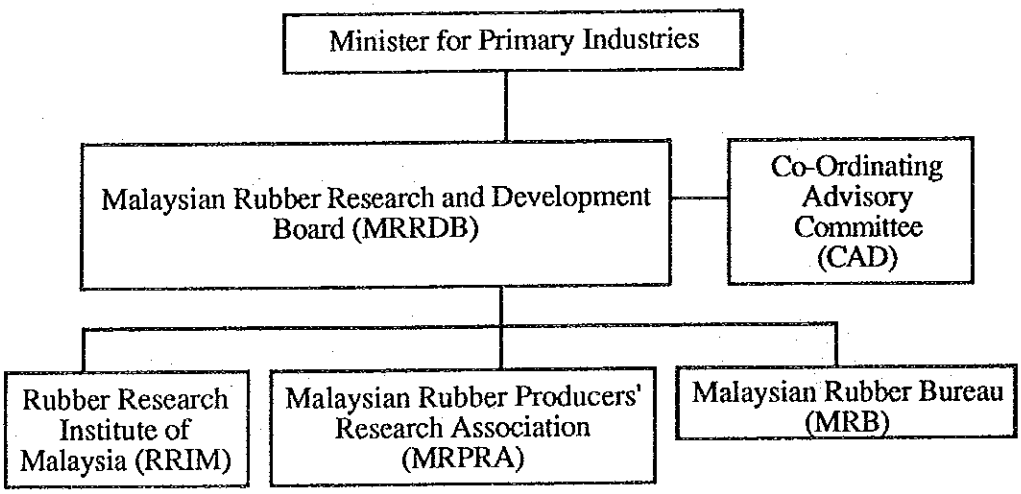
Source: Survey Questionnaires

IV-3-4. Supporting Facilities

(1) Rubber Research Institute of Malaysia (RRIM)

The RRIM was established in 1925 and was organised by the Malaysia Rubber Research Development Board (MRRDB), which is a government institute directly controlled by the Ministry of Primary Industry of the Malaysian government. Fundamentally, it has a long history as an institute involved in raw rubber manufacturing technologies and the cultivation of natural rubber. Research, development, inspection and testing of rubber products were all performed after 1976, when the Technology Center was established. So this phase in its history is brief. The RRIM organisation is shown on Fig. IV. 3-1. Its headquarters is in Kuala Lumpur and the Technology Center is located in the Research Center at Sungai Buloh. Here, there are 1,300 hectares of experimental farms for rubber and 1,200 hectares of experimental farms at Kota Tinggi in Johore State.

Position of RRIM



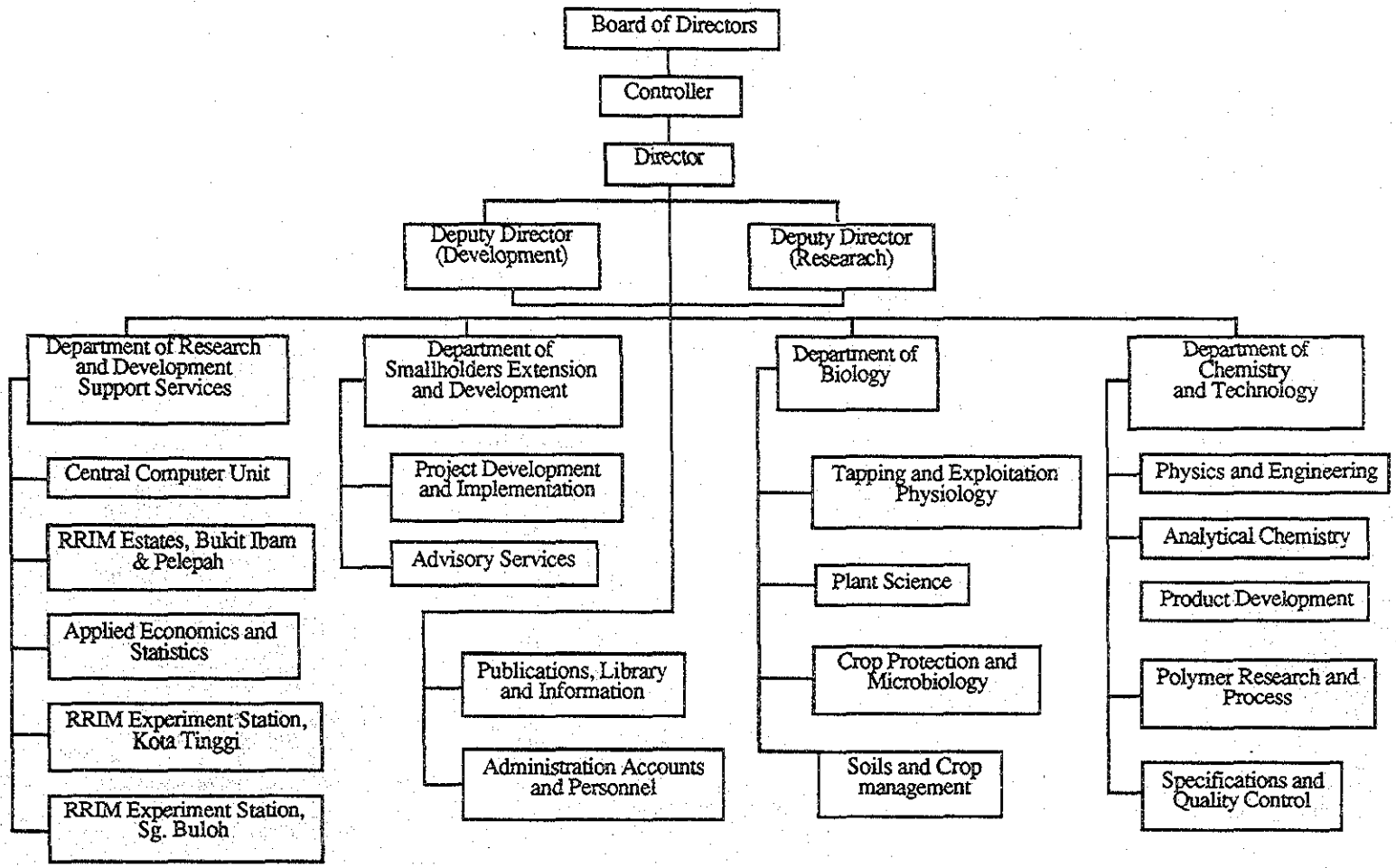
There are 200 excellent senior staff assigned to RRIM. This institute is the world's biggest among those researching only one product. Operational budget comes from MRRDB. For every kilogramme of rubber exported, M¢3.85 are collected by MRRDB as reseach fund. The budget for 1988 was M$39.0 million.

The Technology Center has manufacturing equipment such as the Banbury Mixer, Mixing Roll, Calender Roll, Extruder, Press and manufacturing machinery such as the Tyre Builder and the Tyre Vulcanising Press, which was installed with support from Japan. Also, the Physical Testing Laboratory (PTL) has testing equipment that deals with tension, rubbing, flex, hardness and aging qualities.

This center has 35 experienced senior staff. They are engaged in different types of research and development. Concerning services, there is the Technical Advisory Service and the Physical Testing Service. They perform services on problem solving advices and product development as well as on inspection and quality assurance of rubber products, based on appropriate standards.

Tests and quality assurance work for rubber footwear are performed only when there is a request from the individual company. The numbers are still very small. However, these cases are expected to increase; therefore, an increase in facilities to test rubber footwear is planned. Also, there is a plan to build a National Testing Centre for rubber products.

Fig. IV. 3-1 Organisation Chart of RRIM



(2)Standards and Industrial Research Institute of Malaysia (SIRIM)

SIRIM is a government institute for industry standardisation and for research and development. It is located in Shah Alam west of Kuala Lumpur. Its organization chart is shown on Fig. IV. 3-2. There are 715 people on staff. The standardisation section authorizes the SIRIM mark, based on Malaysian Standards, authorises the SIRIM conformity mark, based on other standards (total of 706 cases in 1988), and registers companies under the Assessment and Registration of Quality Systems (ARQS). This is equivalent to Japan's JIS marking factory system.

Research and development is also a very important duty of SIRIM. The Technology Transfer Centre transfers techniques to the private sector and offers advices on commercialisation and technical applications to small- and medium-scale industries in addition to supplying technical information.

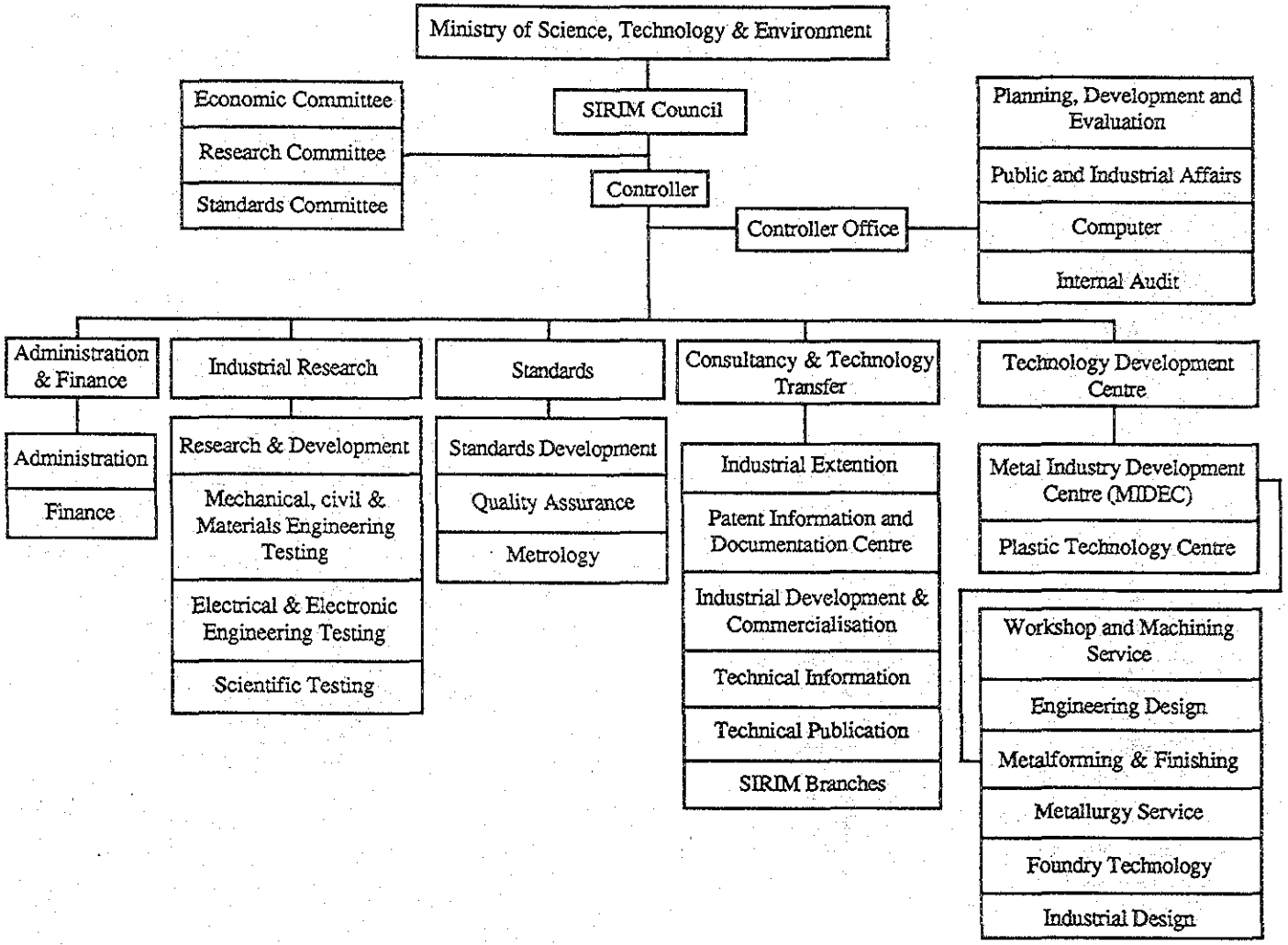
As mentioned, there are only three Standards established for rubber footwear. They are for safety footwear, spike-proof combat boots and canvas shoes, rubber-soled, for school children. The establishment of Malaysian Standards for sports shoes, etc., is expected to be a long-term development because of budget restrictions.

At present, there are only four companies that have the SIRIM mark on their safety shoes, authorised by SIRIM. The actual inspections are carried out mostly by RRIM. The pattern of RRIM inspecting rubber products and SIRIM authorising inspection will continue.

Because RRIM has a long history and experience, it is the government's policy to concentrate R&D efforts on rubber products in conjunction with RRIM. This seems to be the best plan and will tend to prevent duplicate investments.

For quality improvement of the product, standardisation is the premise. And it is also necessary to increase the number of SIRIM mark authorisations. It is very important to aim for an improvement in the industry and to expand these SIRIM registered factory systems, which were started from the end of 1988, to rubber footwear factories. (At present, one glass factory and four factories for reclaimed tyres are registered.)

Fig. IV. 3-2 Organisation Chart of SIRIM



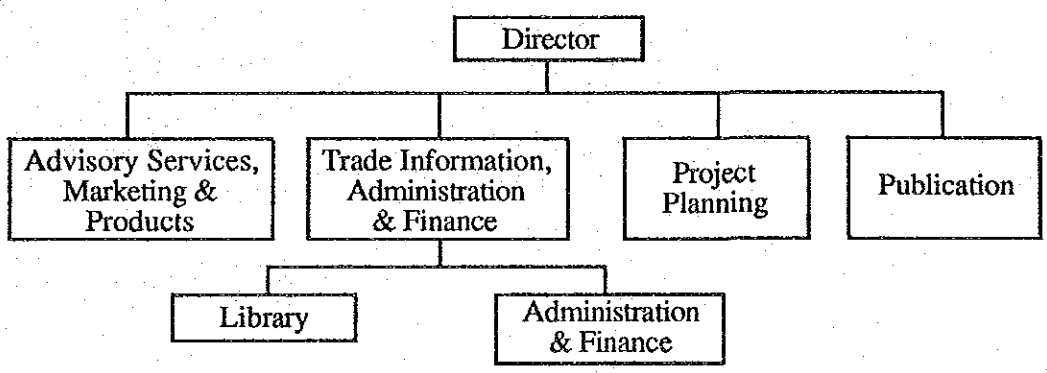
(3) Malaysian Export Trade Centre (MEXPO)

MEXPO is the official trade promotion organisation of Malaysia and was established in 1980 as one unit of the Ministry of Trade and Industry. It was established for the purpose of promoting exports from small- and medium-scale industries, but currently it is promoting exports of Malaysian products in general.

Its head office is located in the centre of Kuala Lumpur and includes a permanent exhibition hall on the ground floor and a trade library on the first floor. Its activities cover the collection of various information and the arrangement of business negotiations and inquiry services through its network of 30 overseas trade commissioners.

The organisational chart of the head office is shown in Fig. IV. 3-3. The number of staff is less than 40. Its main functions include (1) the arrangement of business negotiations and inquiry services, (2) the collection and dissemination of information on the economy and trade, (3) the operation of the permanent exhibition hall, (4) participation in overseas trade fairs and exhibitions, (5) the dispatch and reception of trade missions and (6) the organisation of various seminars and study meetings.

Fig. IV. 3-3 Organisation Chart of MEXPO



At present, through its company registration services, information regarding 3,000 domestic exporters and 26,500 overseas importers has been input in the computers to be used for business negotiations, inquiries and information supply. This information is provided to the private sector through periodicals and business associations. Applications for company registration are acceptable at any time.

In the permanent exhibition hall, which has 1,000 square metres of space, new export products from 270 companies are on display every six months. Any inquiries, including those regarding exhibits, are handled by receptionists in the hall.

The trade library, though rather small in space, keeps 15,000 statistics books, directories, tariff books, market survey reports and country reports, etc. and is used by 50 to 60 visitors every day. The number of visitors is steadily increasing and totalled 10,000 in 1988. It is sincerely hoped that its activities and the number of its staff will be expanded.

IV-4. Analysis of Competitiveness

The evaluation of competitiveness is made generally from two points of view.

(1) The view from the out-put of the firm, in other words, a view from the user's side in terms of quality, delivery and cost. This is called "Q.D.C."

(2) The view of resources utilised in the business activities from the maker's side. This includes manpower, materials, machines, management, money and information, and is called "5M1I."

Regarding (2), detailed explanations have already been made and thus only simple summaries are given below.

Manpower - - High quality labour can be obtained at a low cost. However, the current demand and supply situation is facing difficulties.

Materials - - - Domestic purchasing of natural rubber and other high-quality raw materials is beginning. However, some of the raw materials are not yet domestically produced and it is difficult to procure moulds and lasts at home.

Machines - - - Equipment and facilities for the production of footwear are almost arranged, however, there is not enough utilisation of labour-saving facilities.

Management - The management system in every field, although different among companies, is weak.

Money - - - - - Larger companies have no problems with money, however, small-scale businesses are in trouble in terms of operating capital.

Information - - Information on rationalisation and markets is in short supply. Public relations for products is also insufficient.

Consequently, in order to strengthen their competitiveness, various aspects concerning management and information must be improved.

Another way to evaluate the competitiveness, that is an analysis and evaluation from the manufacturer's side, is described as follows.

IV-4-1. Competitiveness in Quality

In the survey, samples were collected from firms by obtaining cooperation from the Malaysian rubber footwear industry. The samples were either the major products or products intended for export. They were obtained after it was explained that they would be used in Japan for quality and marketability analysis and evaluation.

(1) Quality of the Sample Products

The samples were analysed and evaluated from the viewpoints of performance and appearance. The evaluation is based on the methods used in the Japanese market.

1) Results from the Performance Tests

The performance testing included a test for the intensity of the rubber and cloth and a test of the adhesive strength of the cloth and the sole, that is, it was to test the quality of the performance as footwear.

The results and evaluation are shown in Table IV. 4-1. The number of the samples tested was eight (pairs). One pair of shoes was collected from each firm. All were canvas shoes and boots were excluded.

Table IV. 4-1 Results of Testing of Malaysian Samples

Evaluation O ..... Good, Δ ..... Good, But to be Partly Improved, X ..... To be Improved

Testing Item	Unit Value	A Co. Value	A Co. Evaluation	B Co. Vakye	B Co. Evaluation	C Co. Value	C Co. Evaluation	D Co. Value	D Co. Evaluation	E Co. Value	E Co. Evaluation	F Co. Value	F Co. Evaluation	G Co. Value	G Co. Evaluation	H Co. Value	H Co. Evaluation
Outer Sole																	
Thickness																	
Main Stamping Area (Including Crown)	mm	3.4	Δ	4.2	O	4.7	O	5.0	O	3.7	O	5.5	O	5.5	O	5.2	O
Arch	"	1.6	Δ	3.0	O	3.2	O	3.0	O	2.0	O	3.0	O	3.3	O	2.5	O
Heel (Including Crown)	"	5.4	O	4.8	O	5.2	O	5.0	O	4.3	O	5.5	O	5.6	O	5.2	O
Physical																	
Hardness	degree	69	O	62	O	67	O	74	O	59	O	54	O	64	O	64	O
Tensile Strength	kg/cm^2	155	O	174	O	170	O	140	O	177	O	147	O	125	O	125	O
Elongation	%	450	O	600	O	450	O	420	O	570	O	480	O	520	O	440	O
Gravity	-	1.42	X	1.15	O	1.12	O	1.28	Δ	1.13	O	1.18	O	1.22	O	1.30	Δ
Abrasion	cc	0.28	Δ	0.10	O	0.11	O	0.16	O	0.13	O	0.23	O	0.10	O	0.36	Δ
Peeling Strength																	
Upper Cloth/ Foxing Tape	kg/cm	Completely Cemented	O	2.3 - 2.7	O	0.6 - 1.5	X	1.7 - 2.7	O	1.1 - 1.5	X	3.0 - 3.4	O	-		-	
Upper Cloth/ Outer Sole	"	-		-		-		-		-		-		1.6 - 5.5	Δ	1.2 - 3.8	Δ
Upper Cloth/ Upper Back Cloth	kg/3cm	3.2	O	1.4	O	2.4	O	-		1.5	O	1.2	O	0.3	O	0.45	O
Insole Cloth/ Insole Rubber	"	1.1	X	-		0 - 6.0	X	2.2	O	4.0	O	2.0	O	1.7	Δ	5.4	O
Rubberized Heel Cloth/Heel Rubber	kg/cm	0.8	Δ	0.7	Δ	0.5	X	1.0	O	0.3	X	0.8	Δ	-		-	
Upper Cloth Bursting Strength	kg/cm^2	2.3	O	25.5	O	2.2	O	21.5	O	29.5	O	25.5	O	32	O	40	O
Insole Cloth Bursting Strength	"	8.5	O	5.5	O	10.5	O	9.5	O	8	O	14	O	7	O	5	O

Source: Testing Results and Evaluation in Japan

The testing method was based on Table IV 4-2

Table IV. 4-2 Items and Method of Testing

	Testing Item	Testing Method
Outer Sole	Thickness	JIS S5002
	Hardness	JIS K6301
	Tensile Strength	JIS K6301
	Elongation	JIS K6301
	Gravity	JIS K6350
	Abrasion	Akron-Type Abraser Angle 10°, Load 3Kg. Rotation Speed 1,000 r.p.m.
Peeling Strength	Upper Cloth/Foxing Tape	JIS S5002
	Upper Cloth/Outer Sole	JIS S5002
	Upper Cloth/Upper Back Cloth	JIS S5002
	Insole Cloth/Insole Rubber	JIS S5002
	Rubberised Heel Cloth/Heel Rubber	JIS S5002
Bursting Strength	Upper Cloth	JIS S5002
	Insole Cloth	JIS S5002

As the test was conducted aiming at the Japanese market, the Japan Industrial Standards (JIS) and the internal criteria of major Japanese footwear firms were borrowed for evaluation purposes. However, only the latter was used when the former did not include the item in question.

The test results indicate that the following aspects must be improved to raise the competitiveness of the products.

a) The outer soles were fine for the most part, however, some of the calender rolled soles are thin and some products with heavy specific gravity and advanced abrasion were observed. Blending of materials and chemicals for outer soles should be rechecked.

b) The adhesive strength of each position and parts should be improved, except for the adhesion of the upper cloth and upper back cloth.

Products with weak or "zero" adhesion were observed. Adhesive strength varied among the products, thus both adhesive and manufacturing technologies must be improved.

Incidentally, these results correspond to the tact control or disproportion of tact time.

The bursting strength of the cloth of the major parts was sufficient. Regarding colour fastness, as the test was conducted with samples presented by some cotton cloth manufacturers, the materials used for the sample were not tested.

The test results, shown in Table IV.2-9, indicate no problem with the samples from the cotton manufacturers.

2) Test Results of the Appearance Test of the Sample

Evaluation of the appearance of the products differed from market to market.

The evaluation here was conducted with the Japanese market in mind as it is said to have strict standards.

The appearance evaluation, based on the manufacturing standards of the Japanese footwear manufacturers, is shown as follows: The number of inappropriate samples is shown in brackets [ ] by item. The total number of the sample is eight.

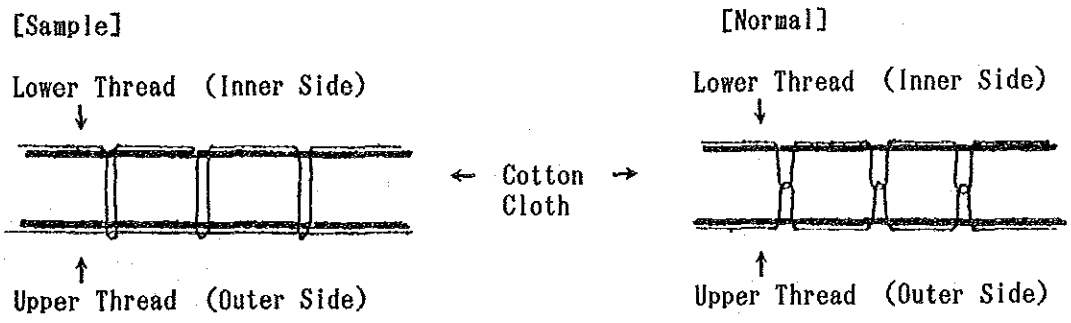
a) Sewing

[1] Rough stitching [two pairs]

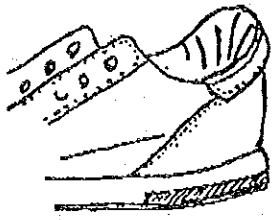
There are only seven to nine stitches per three cm. The standard in Japan is 10 to 12 stitches.

[2] Uneven seams [three pairs]

This is caused by the fact that the twining of the upper thread and lower thread is not proper as is shown in the drawing below:



[3] Too many wrinkles in the counter vinyl in the heel [three pairs]
This is caused basically by using the wrong pattern. However, it is also caused by inaccurate affixment or sewing.



[4] Sewn wrinkles found [two pairs]
There were wrinkles in the canvas because parts were sewn without fitting or pulling the canvas.

[5] Punching scratch and unfirm fixings found with the eyelets. [one pair]
This is supposedly caused by not well adjusting the eyelet machines.

b) Assembling

[1] The centre of the heel was not well adjusted. [three pairs]
(The centre indicates the joint of the upper parts.)

[2] The height of the heel was different between the right and left shoes. [two pairs]

[3] The widths of the toe tips were unequal. [three pairs]

Problems [1], [2] and [3] are caused by bad lasting.

[4] The upper part is stained by the adhesives. [three pairs]
This is caused by uneven width being applied with adhesives for fixing foxing tape.

c) Others

[1] The designs of the outer sole and toeguard were not clear.[two pairs]

[2] Differences in the level of the surface of the foxing tape was observed. [two pairs]
This is caused by the lack of fitting between the sizes of the outer sole and the lasted upper.

[3] There were differences between the right and left shoes in terms of the thickness of the outer sole. [one pair]

[4] The inner sole was deformed. [two pairs]
This was caused by the fact that the shape of the insole did not fit that of the last.

[5] The printing ink used for heel marking had come off. [one pair]

(2) The Inspection Standards of Export Inspection Law

It would be preferable if the samples obtained were improved as prescribed above.

In Japan, too, there were many products with poor appearance 30 years ago. Consequently, the Export Inspection Standards were created based on the Export Inspection Law which was enforced in February 1958. It stipulated inspection of appearance in detail and was aimed at the improvement of products.

In order to raise the quality of the appearance of Malaysian products and secure competitive power for them, it seems necessary to prepare some standards of this sort. Thus the appearance section of Japan's export inspection standards is shown.

Incidentally, under the Export Inspection Law, rubber footwear was a designated item and was subject to compulsory inspection. The inspection was conducted for OEM products as well.

In April 1973, canvas shoes etc., the quality of which had improved, were excluded from the designated items.

Export Inspection Standards for Rubber-soled Footwear

(Appearance)

1) General Form

a) There should be no difference between the right and left shoes. Any asymmetry should not be noticeable.

b) Differences in the corresponding parts between the right and left shoes should not be noticeable.

c) Irregularity in the outer sole, insole or lasted parts in the upper should not be noticeable. This clause is not applicable to irregularity used in the pattern.

d) Deformity should not be noticeable.

2) Form and Size of Inner Sole
The inner sole should be in balance, in form and size, with the outer sole.

3) Lasting of Upper
Lasting of the upper should be appropriate.

4) Heel Fixing
The heel should be fixed properly.

5) Counter
The downward edge of the counter should reach to insole.

6) Cracks, Hole Flaws, Breaks
a) Cracks, hole flaws or breaks should not be found in the trunk, upper or the surface of the sole and they should not be noticeable when found in other parts.

b) Iron burns, scratches and other flaws should not be noticeable.

7) Fabric Unevenness and Fabric Knots

Fabric Unevenness and fabric knots should not be noticeable on the outside and on the inside, they should not stand out.

8) Wrinkles or Creases
Wrinkles or creases should not be noticeable.

9)Spots, Pockmarks and Stains
Spots, pockmarks or stains should not be noticeable on the outside and on the inside should not stand out.

10) Folded Edges
Frays should not be noticeable, particularly, frays around the top line edge should be easily undone.

11) Mould
Mould should not be found.

12) Tack
Tack should not be found anywhere.

13) Foreign Matter
Foreign matter should not be noticeable.

14) Frosting and Blooming of Chemicals
Frosting and blooming should not be noticeable.

15) Bubbles
Unevenness in the bubbles in the areas made of sponge should not be noticeable or in other areas bubbles should not be noticeable.

16) Elasticity
Elasticity in the rubber woven cloth should be appropriate.

17) Colour Tone and Uniformity in Pattern
Differences, unevenness and bleeding in colour, irregularity in gloss, nonuniformity, shears and indistinctness in pattern should not be found on the

outside and should not be noticeable on the inside except for differences, unevenness in colour or irregularity in gloss used for decoration.

18) Width of Cementing
The width of cementing should not be unsightly.

19) Varnishing
Missing, cracks, scars, unevenness, dripping and other defects in varnishing should not be noticeable.

20) Adhesion
The cemented part on the outer sole, heel, tape around the outer sole (except for the tape cemented on to the upper and the rubber outer sole), trunk and upper (except for cemented part between the trunk or the upper cloth and its back cloth) should not easily be separated. Missing and incorrect cementing of adhesive in those parts should not be found and separation and swelling in those parts should not be noticeable. In other cemented areas (except for the cemented area on the outer sole and the mark inside), missing, incorrect cementing and swelling and separation of the cemented area should not be noticeable.

21) Sewing
a) Missing and incorrect sewing should not be found in the sewn part except for the sewn part in the mark and decoration and here they should not be noticeable.
b) Sewing, thread terminal and the condition of thread should be good. Breaking and cramps in sewing and inequality in stitching paces should not be noticeable.
c) More than three consecutive missed or dropped stitches should not be found and two consecutive missed or dropped stitches should not be found in more than five areas.

22) Fallout of Yarn
Fallout of yarn should not be noticeable.

23) Rust
Rust on any fixtures other than nails, wooden screws and other fixtures of that kind and reinforced fixtures set onto the bottom part should not be noticeable. Iron-made fixtures should be plated or coated or should be treated with rustproofing.

24) Finish

Finish should be good and waste thread, burrs and other defects should not be noticeable.

25) Setting of Parts

Setting of parts (fixed in some other method than adhesion or sewing) should be good and any missing or incorrect setting should not be found.

26) Operating parts

Operating functions should be good.

27) Accessories

Accessories should be good and any missing or incorrect setting should not be found.

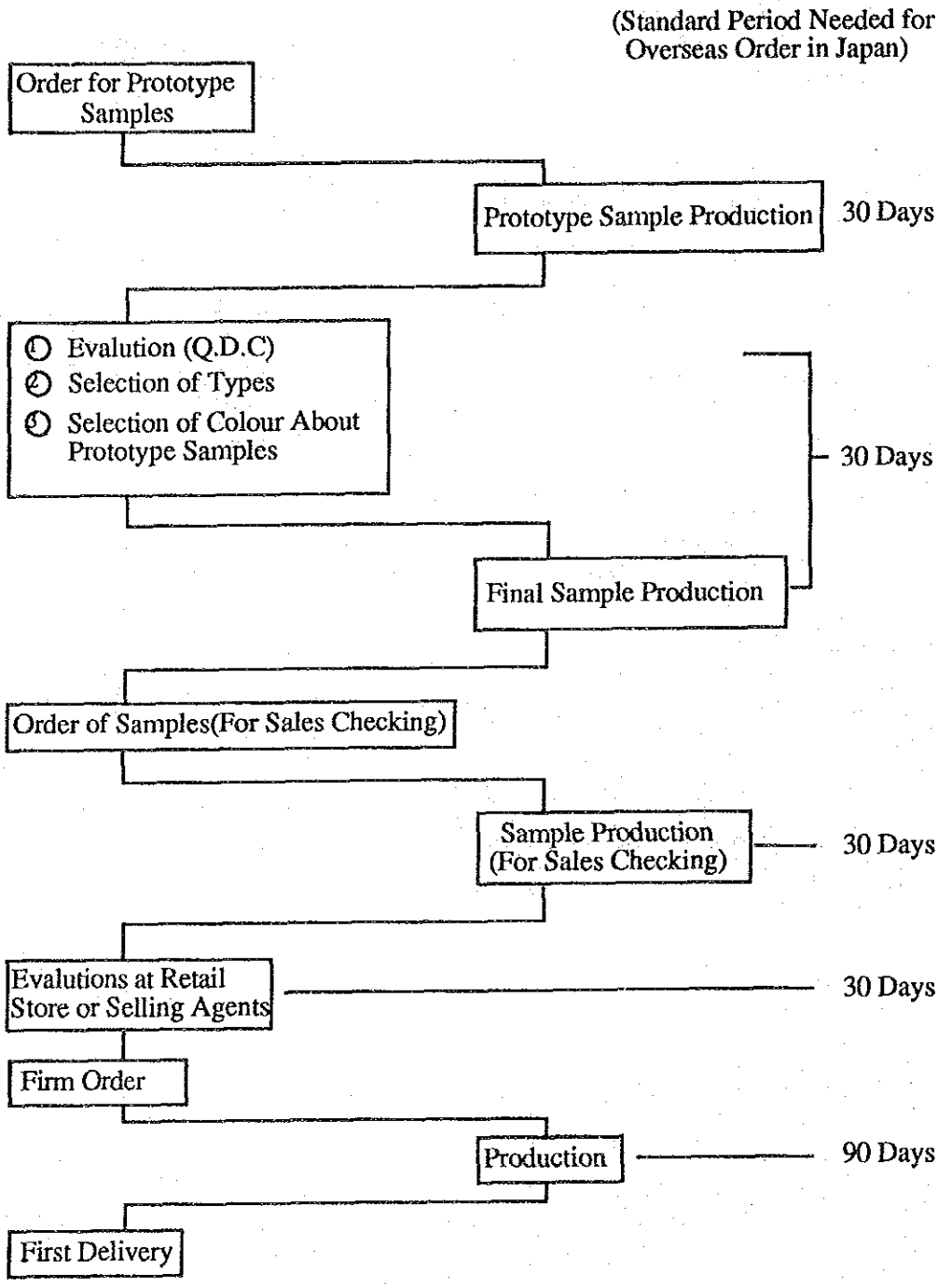
IV-4-2. Fulfillment of Delivery

(1) Production Period of Prototype Samples

The basic steps of new product development are shown in Fig. IV. 4-1.

Foreign manufacturers first check as to the capability of making the prototype samples requested, as is shown in Fig. IV. 4-1.

Fig.IV. 4-1 Basic Steps From Trial\Order to First Delivery



If the prototype samples are appropriate, its colour is determined and some products to be sold on trial are produced.

If the prospects for market acceptance of the product are bright, makers may receive a mass order and begin substantial production.

The time spent on prototype sample production, calculated from the data from the survey, is shown in Table IV. 4-3.

Table IV. 4-3 Period Needed for Prototype Production

Classification	Period Needed
Shortest	7 days
Longest	30 days
Average	15 days

Source: Survey Questionnaires

As is shown in the table, the longest period is 30 days.

The survey was conducted without taking consideration of various conditions, therefore the responses include seven days for the shortest. However, to evaluate the products' competitive power, the 30 days for the longest period should be paid more attention.

This means the Malaysian rubber footwear manufacturers are capable of producing in the requested period.

(2) Production Period for Products

The production period, as shown in Fig. IV. 4-1, is the period from the time a firm order is received to the time of delivery.

This period in Japan is supposed to be 90 days. On the other hand, the analysis of the production period in the survey is shown in Table IV. 4-4.

Table IV. 4-4 Production Period after Firm Order

Case	Period Needed		
	Shortest	Longest	Average
A	60 days	100 days	80 days
B	35 days	90 days	79 days
C	20 days	90 days	67 days

Notes : Case A: Survey Questionnaires
Case B: In Case of Malaysian Samples Collected
Case C: In Case of Japanese Samples Handed Over to Malaysian Manufacturers

Case A in Table IV. 4-4 indicates the number of days spent from the time of order of 50,000 pairs of shoes by OEM to the time of delivery.

Case B indicates the number of days spent from order to delivery. The volume of the order is not specified.

Case C is the number of days spent for the delivery of the minimum order received, which was requested by the Malaysian manufacturer, namely, the days spent for the minimum amount delivered for an order.

As is shown in the average number of days and the longest period of time in Table IV 4-4, the days spent for production are 80 to 90 on average. Accordingly, the competitive power in this regard is not a problem.

Concerning delivery, which is related to the production period, the Japanese market is said to be particularly strict. In Japan, new products are sold based on four seasons and the selling period for a season is about three months. If a delivery is one month behind the fixed schedule, sales plans are totally undermined. This is why delays in delivery of seasonal goods to the Japanese market are not tolerated. Seasonal commodities belong to the high value added category.

The Malaysian rubber footwear industry is predicted to move in the direction of adding more value to their products. At present there is no problem with the production period and therefore it would be logical for manufacturers to attend to delivery times in order to maintain competitive power.

IV-4-3. Analysis of Marketability

(1) Marketability of Malaysian Sample Goods

1) Competitive Power from the Viewpoint of Design

Evaluation was carried out of the samples obtained from Malaysia for the survey from the viewpoint of design. In other words, it was determined whether consumers would accept the commodity or if enough value has been added to it. Accordingly, the evaluation differs from market to market. Here the evaluation is based on the Japanese market.

Regarding the samples collected, some aspects on which improvement should be made are described as follows. The total number of pairs of shoes evaluated was eight. The number of samples corresponding to each aspect is written in brackets [ ].

a) The colour of the outer sole is not liked in Japan. [five pairs]
Dull and blackish colours were found where a sense of transparency is desired.

b) The design of the outer sole was thought to be old-fashioned. [one pair]

c) Selection and arrangement of the colour were not liked in Japan. [one pair]

d) The colour of the foxing tape and that of the upper part were not the same. [two pairs]
In Japan, the same color is preferred.

e) The material of the upper part was roughly woven. [one pair]
More finely woven material is preferred in Japan.

f) The products do not carry their brand. [three pairs]
It is preferable that the brand be attached to the product.

g) The shoelaces were either too thick, too short or too hard. [three pairs]

As has been shown in the above, all of the points are related to what is called "taste." However, the evaluation was conducted by a representative rubber footwear manufacturer in Japan which does constant research on the Japanese market and therefore it may be considered the voice of the market rather than just "taste."

2) Grasp of the Market

In Japan, a design is developed one year ahead of the placement of the product on the market. Market trends are grasped by researching and analysing the general direction of the fashion world such as the trends in the apparel industries, the characteristics of best selling products and other related industries. As for upper materials, the trends of colour tone, designing and weaving are to be surveyed and analysed. The footwear industry tries to be in harmony with other industries and accordingly it is necessary for it to stay abreast of all trends and to prepare development budget for this purpose.

High value-added products in the Japanese market have thus been produced as the result of much advanced planning.

Although the Malaysian samples surveyed this time were not the type that could compete with high value-added products from other competing countries, it is recommended that the needs of that market be grasped precisely. The above mentioned development is truly recommended as a method to raise competitive power if higher value-added products are the final target for Malaysia.

3) Quality Evaluated from the Viewpoint of Marketability

The evaluation results on the quality of Malaysian products are shown in Table IV. 4-5.

Table IV. 4-5 Quality Evaluation of Malaysian Rubber Footwear Samples

Samples			A	B	C	D	E	F	G	H	Total(%)	
Performance Testing											(82)	(100)
	Good		8	12	11	12	12	13	11	10	89	108
	To be Slightly Improved		4	1	0	1	0	1	2	3	(11) 12	
	To be Improved			2	0	3	0	2	0	0	(7) 7	
Appearance Testing	Production Related										(66)	(100)
		Good	6	9	8	6	8	4	10	7	58	88
		To be Improved	5	2	3	5	3	8	1	3	(34) 30	
	Design Related										(72)	(100)
		Good	5	6	6	6	6	2	4	4	39	54
		To be Improved	2	1	0	1	1	4	3	3	(28) 15	

Notes : Figures are the number of evaluation items. The reason why the total numbers are not the same is that some items are not evaluated.

Various aspects which should be improved to enhance competitive power have been described so far. However, the evaluation, as shown in Table IV. 4-5, awards very high marks overall. For performance, a score of 82% is given and 66% is shown for appearance related to production technology. Appearance related to design receives a score of 72%. On the other hand, not all of the samples were of high quality. There were some points on which improvement could be made. Accordingly, it is necessary to improve the products individually to strengthen their competitive power.

As for marketability, from the consumer's point of view, the performance test results should all be good. The appearance test results related to production technology should also be good because appearances have improved completely by the consumers' requests. Concerning the appearance of the design, a commodity is selected based on personal preference. Therefore, if it suits the buyer's taste, it can sell regardless of a high price. This trend is observed in rubber footwear for school children. With this in mind, the items in Table IV 4-5 which require improvement should be improved at an early stage. If this is done, Malaysia could obtain strong competitive power for its products.

(2)The Price Competitiveness of the Sample Products

1) Prices of Malaysian Products

The samples obtained for this survey were presented with their export prices and are listed in Table IV.4-6.

Table IV. 4-6 Comparison of Export Prices of Malaysian Products and Average Import Prices in Japan

Sample	Malaysian Export Price	Average Import Price
A	FOB US$ 4.2	FOB US$ 4-4.5
B	5.2	4-4.5
C	7.0	6-6.3
D	2.8	4-4.5
E	4.0	4-4.5
F	7.8	4-4.5
G	4.5	4-4.5
H	3.6	3.5-4

Source: Survey Questionnaires in Malaysia and Interviews in Japan

The average import prices for Japan are the present market prices of the same kind of products from Korea or Taiwan. The table shows that samples B and F are high, C is slightly high in price compared to the corresponding prices in Japan. The prices of the other products are more or less the same as those of Korea and Taiwan. Sample D is cheaper. To maintain competitiveness in imports, it is recommended that the prices of products be lower than those of Korea or Taiwan.

Incidentally, sample D is attractive in price but not of good quality. In the market, a low-priced commodity must still be of good quality to be welcome.

2) Export Prices Based on Japanese Samples

Two kinds of rubber footwear were brought from Japan for the present survey and their production prices were calculated when made in Malaysia. Some of the manufacturers concerned cannot make both kinds and the prices calculated by the maker are shown accordingly in Table IV.4-7.

Table IV. 4-7 Export Price of Japanese Samples

Company	Export Price (FOB) Sneakers	Jogging Shoes	Remarks
A	M$10.8	M$ --	Average Import Price in Japan
B	13.0	28.0	
C	10.0	--	Sneakers M$10 - 11 FOB
D	10.8	--	Jogging Shoes M$20 - 21
E	10.0	--	

Source: Survey Questionnaires and Interviews in Japan

There is nothing remarkable to be noted from the table except that the sample of maker B is slightly expensive. Accordingly, the prices are competitive if the quality is good and there is no trouble with delivery.

3) Cost Analysis from a Macroscopic View

Figures concerning the standard cost and cost composition of an individual firm, by nature, should not be publicised. Accordingly, strict cost analysis of any firm is impossible. Thus the means for improving the competitiveness of Malaysian products

were concluded by analyzing some of the results related to cost analysis which were obtained from the survey.

a) Cost-related Data

From the survey, the following aspects are clarified.

[1] Annual sales per capita are shown in Table IV.4-8.

Table IV. 4-8 Comparison of Annual Sales (1987)

Classification		Annual Sales per Capita
Average of Malaysian 7 Firms		¥2.75 - 0.58 Million/Capita/Year
Japanese Firms	3 Main Firms	¥25.30 - 19.25 Million/Capita/Year
	Medium Scale Industries	¥15.23 Million/Capita/Year

Sources: Malaysia; Survey Questionnaires (M$1 = ¥50)
Japan; Main Firms : Securities Report
SMI Firms : Cost Index of SMI (1988)

The survey results show that the standard productivity of the Japanese manufacturers, from a microscopic view, is about 10 times that of Malaysian firms.

[2] Annual wages per capita are shown in Table IV.4-9.

Table IV. 4-9 Annual Average Wage of Rubber Footwear Industry

Country	Annual Average Wages per Capita		Remarks
Malaysia	US$2,122	(10)	1988 (M$1 = US$0.4)
Japan	22,322	(100)	1987
Hong Kong	7,137	(32)	1988
Korea	5,609	(25)	1987
Taiwan	4,813	(22)	1987 - 1988

Sources: Malaysia : Survey Questionnaires Refer to Table IV. 2-21.
Japan, Others : Japan Rubber Footwear Manufacturers' Association
Note: Figures in ( ) are shown as Japan at 100.

The results show that the average wages in Malaysia, from a macroscopic point of view, are around one tenth those of Japan.

[3] The itemised ratio of production costs is shown in Table IV.4-10.

Table IV. 4-10 Composition of Main Production Costs of Rubber Footwear

Cost Item	Malaysia Case A	Malaysia Case B	Japanese Small & Medium Scale Industries	Remarks
Materials	53.5%	60.6%	48.9%	Management • Sales Cost/Total Cost
Labour	21.0	18.5	20.4	In case of B : 19.0%
Sub-Contract	2.2	0	20.3	In Japan : 19.2%
Others	23.3	20.9	10.4	Almost the Same Figures
Total	100	100	100	

Sources: Malaysia : Case A. Survey Questionnaires Refer to Table IV.-19
Case B. Quotation Based on Japanese Samples
Japan : Cost Index of SMI

As is shown in the table, the survey clarified, from a microscopic point of view, that for raw material costs, Malaysia's ratio is 55% while Japan's is 49%. Labour costs for both countries are 20% but for the cost of sub-contracts only the Japanese figure - 20% -was listed.

[4] The production efficiency of assembly lines in achieving the same amount of production as in Japan is shown in Table IV.4-11.

Table IV. 4-11 Productivity of Rubber Footwear Production Lines

	Malaysia	Japan
Productivity	68 - 33	100

Source : Survey Questionnaires Refer to Table IV. 2-5, Table IV. 2-6
Note : Japan = 100

The table shows, from a microscopic point of view, that the efficiency of the Malaysian assembly line is around one half of that of Japan. Regarding sewing work, Malaysia relies partly on subcontracting, whereas the Japanese footwear manufacturers place all orders with subcontractors and these subcontractors have more employees than the footwear manufacturers. This is shown in the cost for outside orders in Table IV.5-10.

b) Assumption of a Cost Structure

A cost structure which can explain, without contradiction, all four aspects clarified in the survey is shown in Table IV.4-12.

For simplification, approximate figures are used here.

Table IV. 4-12 Composition of Production Costs of Rubber Footwear Manufacturers

Cost	Malaysia			Japan			Malaysia/Japan
Total Cost		%	%		%	%	
Production Cost							
Material	55	55		245	49		
Labour	20	20		100	20		
Sub-Contract	0	0		100	20		
Others	25	25		55	11		
Sub-Total	100	100	80.6	500	100	80.8	
Sales-Management	24		19.4	119		19.2	
Total	124		100	619		100	
Sales		124		619			
Output		10		10			1 : 1
No. of Employees		20		10			2 : 1
No. of Sub-Contract Employees		0		10			
Labour per Head		1		10			1 : 10
Company Labour		20		100			
Sub-Contract Labour		0		100			
Sales Productivity		6.0		61.9			1 : 10
Unit Price		12.4		61.9			1 : 5

Source: Survey Questionnaires

As is shown in table IV.4-12, the cost of the product in Malaysia is one-fifth of that in Japan. The actual unit cost of the product in Japan is impossible to know because footwear manufacturers produce other products as well and also, such data is not publicised.

On the other hand, data for the unit cost of sales and the amount of sales by the manufacturer could be obtained and the unit cost of the product calculated from them. This is shown in Table IV.4-13.

Table IV. 4-13 Sales Unit Prices of Malaysian Rubber Footwear

Company	A	B	C	D	E	F	G	H
Unit Price (M$)	8.7	10.3	12.8	8.5	8.0	7.9	5.1	8.9

Source : Survey Questionnaires
Note : Only Canvas Shoes, Excluding Boots, Sandals and Slippers, Including both Domestic and Export Prices.

As is shown in the table, the unit cost is less than M$10 or approximately ¥500.

The unit costs of Japanese products, although they are not clarified, are never under ¥500 on the assumption of the commodities sold.

c) Interpretation of the Analysis Results

The above mentioned evaluation indicates that it is desirable that Malaysian footwear manufacturers seek higher-grade materials to produce higher value-added products. It is also recommended that they maintain the current production efficiency if they begin producing products of a more complicated nature. Again, it is recommended that development of higher value-added products be advanced and the improvements be made to increase sales.

When developing in this direction, the low labour costs which contribute to competitiveness could be of great significance.