

6-4 Quality Control

Quality control, in a wide sense, is defined as "a system of measures for economically producing a product of the quality that meets the buyer's needs." In a narrow sense, it refers to inspections. Generally, it means statistical quality control. Inspections will be discussed in the sections that deal with individual production processes. This section describes quality control as a whole including inspection operations.

6-4-1 Organization and Assignment

IMAG's quality control function consists of two systems: the Quality Assurance Department that is the office responsible for quality control and the quality assurance sections that belong to the individual divisions in charge of production. The quality assurance sections inspect the products and assure quality within their respective divisions. The Quality Assurance Department is in a position to guide the quality assurance sections of the individual divisions. The department and the sections supplement each other.

1) Quality Assurance Department

The Quality Assurance Department has three groups reporting to the head of the department: the quality inspectors group, quality planning & controlling group, and analytical & statistical processing group. It is under the direct control of the president. Figure 6-4-1 shows the organization chart of the Quality Assurance Department.

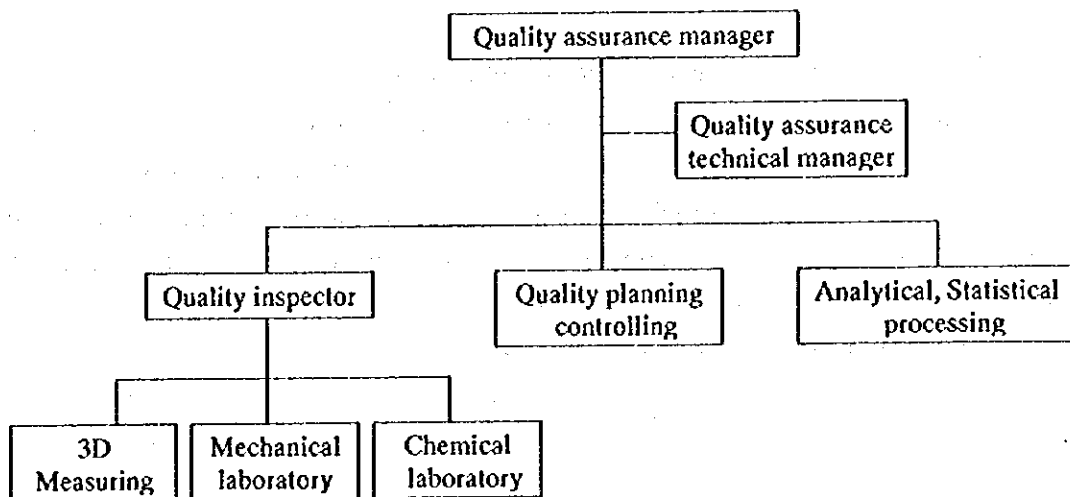


Figure 6-4-1 Organization Chart of the Quality Assurance Department

Work assigned to each group are described below.

(1) Quality Inspectors group

This group is composed of four inspectors, and operates a chemical analysis laboratory, in mechanical inspection laboratory, and three-dimension measuring laboratory. Addition, one expert inspector is assigned to the chemical analysis laboratory. The group undertakes the chemical analysis and mechanical inspections for quality assurance. It also inspects products that cannot be inspected at the manufacturing sites such as subcontract goods including intra-company subcontracts.

(2) Quality planning & controlling group

The quality planning & controlling group takes charge of the total planning of quality assurance and of the quality planning from the development phase (including that of mass produced products). It also manages the quality control system. The group comprises of two members. The acting head of the department is temporarily substituting for one of these members.

(3) Analytical and statistical processing group

The group, consisting of one inspector and one assistant (worker), conducts inspections on samples taken out of the production lines, determines the present quality status, and processes the results statistically. The group also calculates the costs involved in quality failures and deals with defective units (remedial plans including rework and recycling).

2) Quality assurance Sections of Individual Divisions

The quality assurance sections of individual divisions are similar to each other and have nearly identical functions. Each quality assurance section has acceptance inspection (inspection of purchased goods), in-process inspection (inspection of semi-finished products), and completed item inspection (inspection of finished products) teams, each of which has its own workers who inspect the products for which they are responsible. Figure 6-4-2 shows the organization chart of the quality assurance sections.

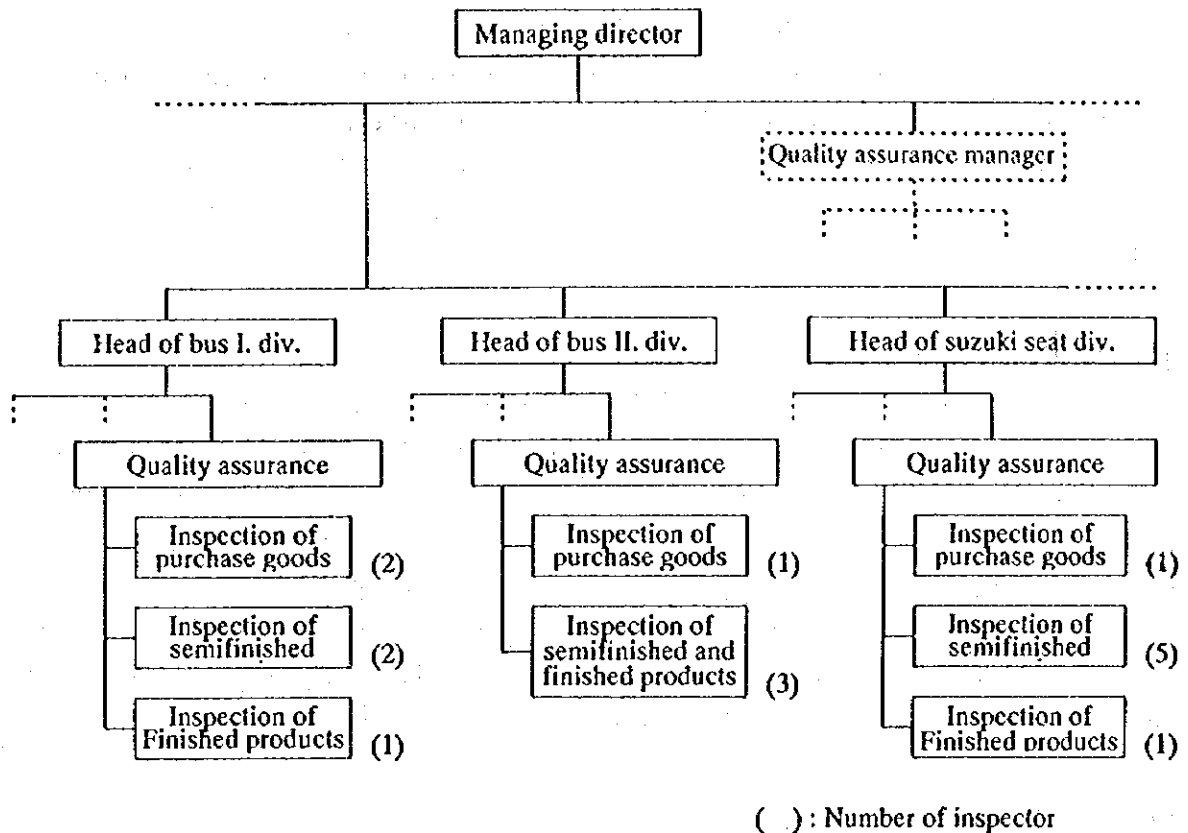


Figure 6-4-2 Organization Chart of the Quality Assurance Sections

The individual teams have the following tasks.

(1) Inspection of purchased goods

In each division this is done by one or two inspectors who inspect purchased goods and subcontract goods. The methods employed are mainly sampling inspections and periodic inspections (of steel material).

(2) Inspection of semi-finished products

The Bus I Division and Passenger Car Seat Division have two or three inspectors exclusively assigned to the inspection of semi-finished products. The Bus II Division has three inspectors who also serve as inspectors of finished products. All these inspectors conduct inspections during the production process.

(3) Inspection of finished products

The Bus II and Suzuki Seat Divisions perform 100% inspections of completed seats (including wire harnesses in the case of the Bus II Division). The Bus I Division carries out the completed item inspections of the products to be shipped from the factory.

6-4-2 Present State of Quality Control

IMAG obtained the ISO 9001 certification in 1995. Partly for this reason, operation liability ranges and operating procedures have been documented, and the division of work between the Quality Assurance Department and the quality assurance sections of the individual divisions has been clearly defined. The Quality Assurance Department plays a leading role in quality assurance activities.

1) Quality control policy

A quality control policy is one of the "responsibilities of the management" that is a requirement of ISO 9001, and is contained in the business policies announced by the president each year. The policy of '95 is to "find faults in accordance with ISO and review and modify the plans." This policy is completely appropriate with respect to its orientation and timing, in the light of "overall intention and instructions concerning quality as a business" stipulated by ISO 9001 and the business situation in which IMAG is placed now. It is not certain, however, how many of the employees are aware of or accept this policy. Nowhere in the shops could be seen it displayed, and no employee be asked knew about it.

2) Quality assurance systems

The company has regulations for quality assurance systems, in which the organizational structure, responsibilities, procedures, and processes for quality assurance have been documented. Also, an excellent system diagram that covers the entire company is in place. The individual departments and divisions also have their own quality assurance manuals in place. However, this system diagram is very complicated. The coordinators and more senior employees are being educated about this system diagram, but it is likely to take a lot of time and effort to get all the employees to assimilate it.

3) Document and data management

The documents and data are managed according to one of the ISO 9001 requirements, document management. The relative documents are well classified and the locations of files are clearly defined. Also, they are properly stored and maintained.

4) Quality control techniques

The company is developing modern quality control techniques under the leadership of the Quality Assurance Department. It started to use the following techniques for solving the problem of quality failures: PDCA (Plan, Do, Check, Action) for eliminating defective units, based on the concept of TQC; the cause and effect diagram for investigating the causes of problems; and the control chart for learning whether a process is in a stable condition. Although the use of these techniques is incomplete, the company is taking a forward-looking approach. Some examples

are shown below.

(1) Counter measures for an appearance defect (clip mark) during Installation of PVC covering over a door rim

This example shows a defective condition that has been corrected. The problem was that the protrusion (clip mark) shown on the right of Figure 6-4-3 was produced during the installation of a PVC sheet over the hardboard using the clip shown in the left hand drawing. Although the three individual parts (clip, hardboard, and PVC covering) satisfied the required quality, they produced the defective condition when assembled. Through repeated investigations, discussions of the results, and proposals, a solution was suggested finally that satisfied the client. Figure 6-4-4 shows the process of solving the problem. Adopting the concept of TQC is reasonable.

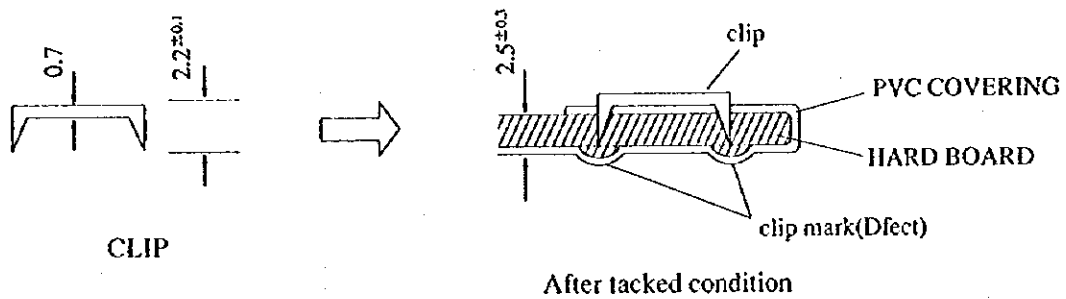


Figure 6-4-3 Defective Condition: Clip Marks on PVC Covering

DEFECT-CAUSE ANALYSIS

The trace of clipping was visible on 282 pieces of PVC door covering

The defect was unobserved : because this criterion was not written on the check sheet.

Arrangement : immediate selection (OK)
 100% inspection (OK)

The origin of defect : the clip pushes the particles of hardboard to the opposite side.

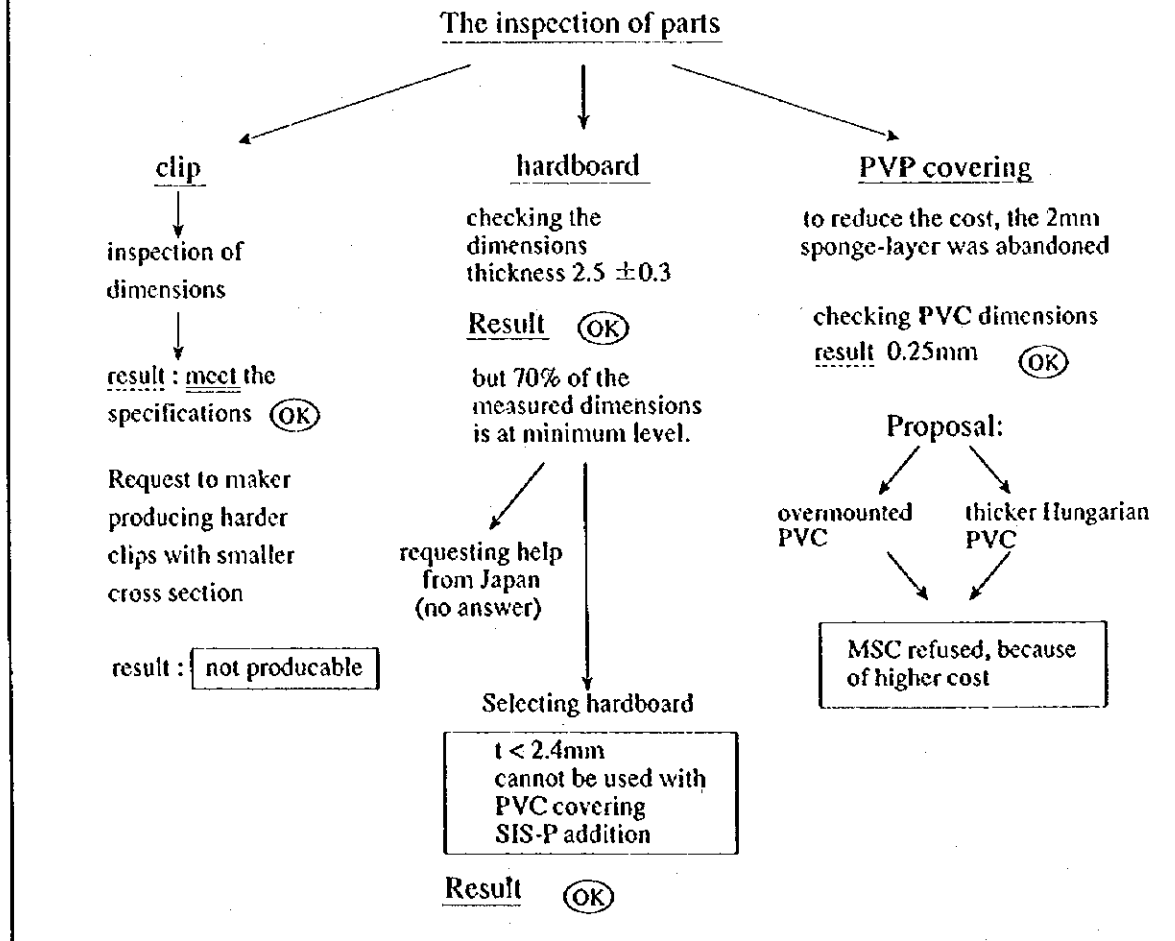


Figure 6-4-4 Process of Problem Solving: Clip Marks on PVC Covering

(2) Countermeasures for Quality Failures During the Urethane Foaming Process

The urethane foaming process in the Bus II division often encounters the quality failure shown in Table 6-4-1. To solve this problem, the analytical & statistical processing group has gone into action and is investigating the cause of the failure using a cause and effect diagram. The diagram is immature and the group is groping in the dark. However, the department uses the motto "learn Ishikawa," who is the greatest authority on quality control in Japan. One can sense that the Quality Assurance Department is enthusiastic about quality improvement. Figure 6-4-5 shows the cause and effect diagram used at the beginning of the group's activity. The diagram does not indicate the effect (problem), making it impossible to judge the validity of the division of the factors in the cause system.

Table 6-4-1 Details of Quality Failure During the Urethane Foaming Process (Thru 1995)

REJECTED ITEMS	SEDAN		SWIFT	
WIRE INLET	41.4	12.75		
DEFECT OF MOULD	9.2	14.76		
TEAR OF THE FOAM	-	0.65		
MATERIAL INLET	0.92	0.71		
SURFACIAL FILM	0.92	4.4		
SPREADING	-	0.88		
FAILURE OF MIXING	15.57	15.3		
LACK OF FOAM	0.92	5.8		
HARDNESS	8.3	-		
AIR-INCLUSION	7.68	32.6		
OTHERS	14.9	11.6		

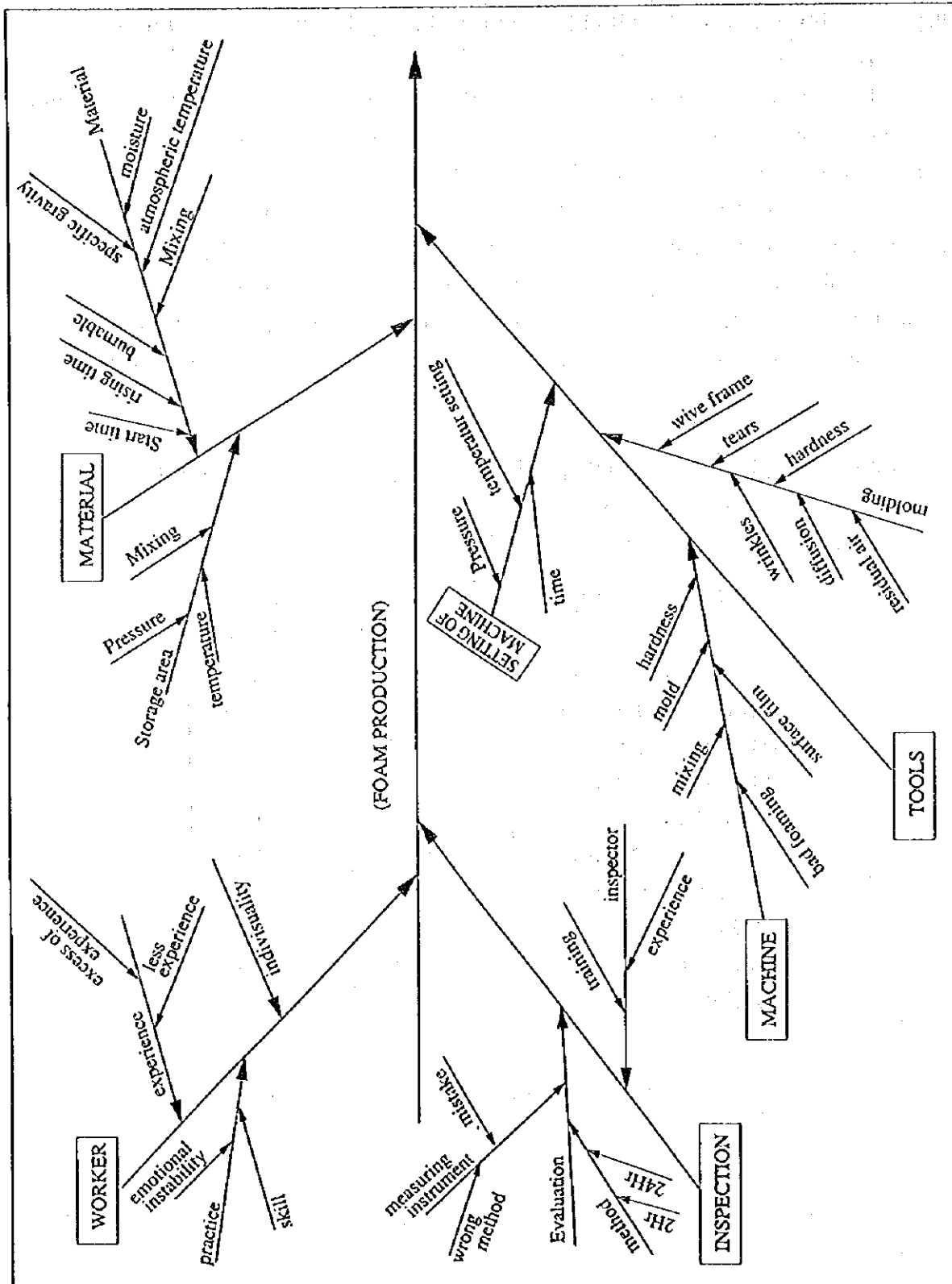


Figure 6-4-5 Cause and Effect Diagram of Quality Failure During the Urethane Foaming Process

(3) Record of elasticity inspection in the urethane foaming process

The performance of seats is affected by the elasticity of the cushions. The elasticity tester is connected to the computer to show the results of an inspection on a control chart (Figure 6-4-6) so that the quality situation can be seen at a glance. Except for this process, control charts are created only in a few important processes. However, a plan is underway to use the chart extensively.

5) Tests and Inspections

(1) Equipment

The test and inspection equipment in IMAG is managed by the Quality Assurance Department. The main items of equipment are shown in Table 6-4-2. They are also used for development and production. Since the Development Department does not have its own test equipment, the items shown in the table are all the test and inspection machines that IMAG has for seats. However, these machines do not allow detailed measurements of the basic characteristics of seats such as the fatigue strength, fracture strength, and deflection of seat frames under static loads. They are not adequate, for developing products or investigating the causes of problems.

Table 6-4-2 List of Test and Inspection Equipment for Seats

No.	EQUIPMENT	PCS	CAPACITY or DIMENSION
1	3-Dimensional length measuring machine	1	Measurement(mm) X=1,080 Y=1,690 Z=780
2	Colliding track	1	v=30km/h acc.=10g
3	Tearing machine	1	range 2,000~100,000N v=10 & 20mm/min.
4	Textile tearing machine	1	range 0~2,000N v=25~300mm/min.
5	Plastic bending equipment	1	Folding v=300mm/min. stroke l = 0~100mm.
6	Wear-down machine	1	stroke N=10/min. stroke l = 0~150mm.
7	Climate Box	1	temp. -30°C~+90°C hum. 0%~90%
8	Burning chamber	1	Fit to FMVSS & UIC standard
9	Air conditioning room	2	To ensure the prescribed 20°C ± 1°C & 65% relative humidity
10	Plastic foam elasticity measuring tool	1	r=250mm pressure max.2,500N, draw max.1,000N

Remarks. In addition to the above equipment, there are some general purpose inspection equipment such as hardness testers (Rockwell, Brinnell, shore), torquemeters, length measuring equipment, film thickness meter, thin plate thickness measuring meter and so on.

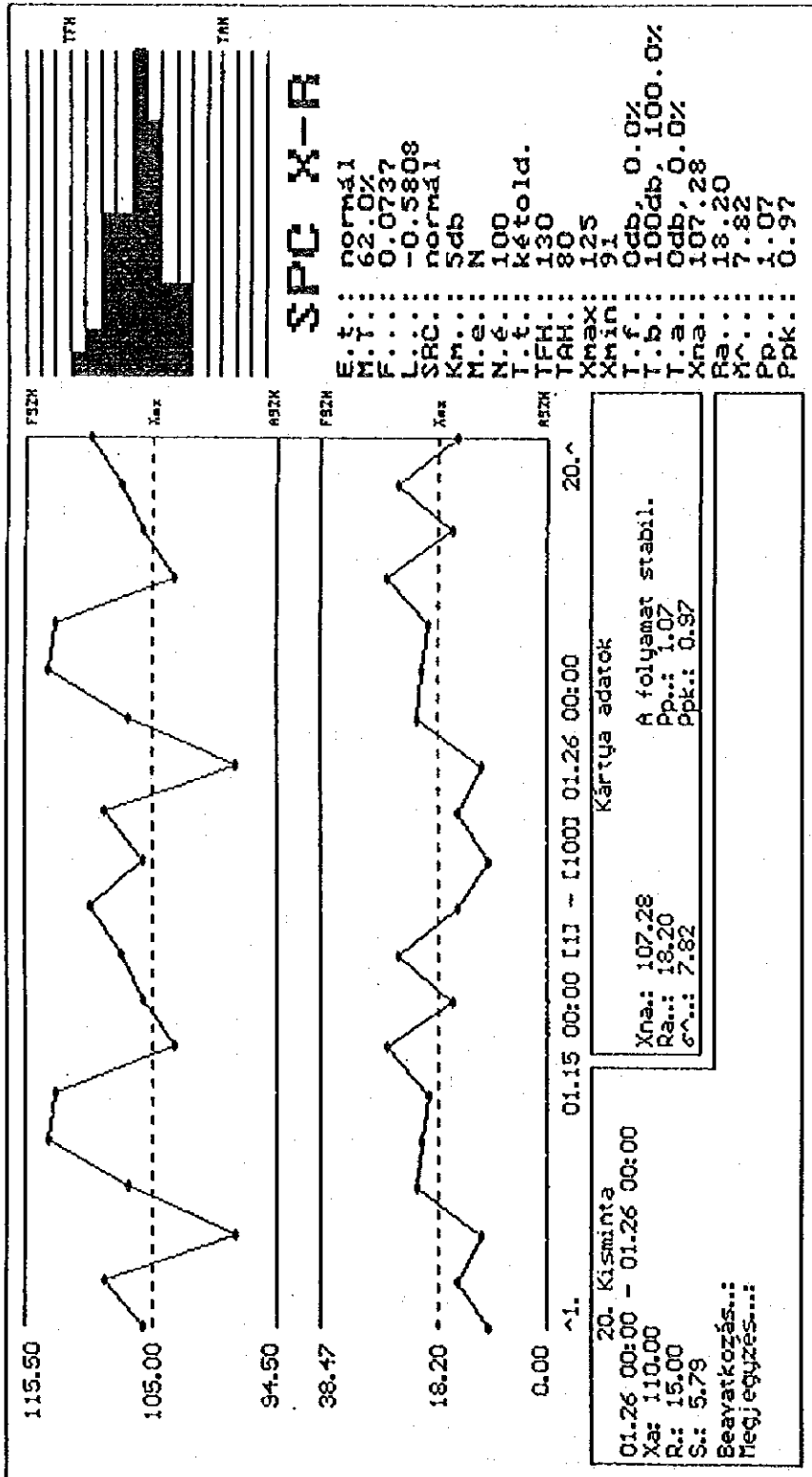


Figure 6-4-6 Control Chart of Elasticity Data in the Urethane Foaming Process

(2) Management

The above mentioned equipment is managed by the quality inspectors group. The inspections are conducted by the group members. The equipment is managed properly. Also, the tests and inspections are performed faithfully.

6) Present status of quality control by category

Each category of quality assurance is provided in accordance with the purposes, responsible offices, methods, and requirements set forth in the "Quality Assurance Handbook" based on ISO 9001.

(1) Quality control of design

Regarding the quality control of design work, in addition to the above handbook, there is a "Quality Assurance Manual for Development," which sets forth the policies and processes for development and the roles played in it. In addition, there is an operating instruction to supplement this manual. The operations are performed in accordance with these documents. Although the manual is full of unfamiliar materials, efforts are being made to follow it.

(2) Quality control in materials procurement

Acceptance inspections are conducted by the quality assurance section of each division. The quality requirements for vendors, characteristics to be inspected, and items to be recorded are specified in detail in the "Quality in Procuring" section of the above mentioned handbook.

Standards such as the Standards on Materials (in compliance with the Hungarian National Standards), Standards on Shapes (GPHSZ-O17), and Standards on Packing Styles (GPHSZ-017) have been established. Inspections are performed faithfully, and the results are reported to the Quality Assurance Department in accordance with the standards. The records of the acceptance inspections of steel materials and the records of periodic inspections (chemical components and mechanical characteristics) are kept properly.

(3) Quality control in manufacturing

Quality assurance by sampling inspection is obligatory for the quality assurance sections under the section "Responsibilities of Quality Assurance Managers of Divisions" of the above mentioned handbook, and quality assurance by voluntary inspection is obligatory for the field workers under the section "Inter-production Control."

At the manufacturing places, the workers conduct voluntary inspections according to the work order. Although inspection records are retained, there are no control charts or histograms for checking whether the processes are stable.

In the final processes of production (such as completed seats and completed cable harnesses), 100% inspection is carried out by inspectors. The manufacturing date is stamped on the product, the inspector's name is entered in a record sheet, and the sheet is stored. The records are kept properly.

(4) Quality control in handling and shipment of finished products

The quality control in the shipment of finished products is the responsibility of the quality assurance sections of the divisions. After 100% inspection, the product (seats) is put on pallets by the inspector, and stored in the temporary storage area for goods to be shipped. The type of packing, the number of units per pallet, etc. have been defined for each product. There is no problem with the handling or protective covering (vinyl sheets) of the finished products.

7) Education and training

The Quality Assurance Department prepares and implements an annual education plan. Based on this plan, separate curricula are created for heads of departments, managers, leaders, and workers, and implemented according to schedules. The educational program for September 1995 covers more than ten subjects, such as ISO 9001, IMAG's standards, TQC, design of experiments, FMEA, computers for quality control, and how to gather data, for each job grade. The program was implemented more successfully than expected. The percentage of attendance in the courses was 87%.

The quality assurance sections of the individual divisions also provide courses and practical training for workers on how to use measuring equipment. The Quality Assurance Department is highly interested in, and committed to, the education of employees.

6-4-3 Problems with Quality Control

As a result of the acquisition of the ISO 9001 certification, the posts and scopes of work, the responsible offices, and the ranges of responsibility, with respect to quality control, are being documented and clearly defined. At present, however, there are some problems as follows:

1) Quality policy

Although the company has a policy for quality control, it does not indicate the course the company should take in future. Its content is ordinary and consists only of what any company should naturally do. On the other hand, one can guess that the persons responsible for quality control are eager to improve quality.

The employees are not made fully aware of this policy. If a company produces seats -- products that come into direct contact with their users -- in the automotive parts industry, and if

it has a problem with their quality, it should come out with a concrete and more drastic policy to instruct all the employees. A policy that the employees are not well aware of cannot be said to be a policy.

2) Organization and Functions

IMAG's quality control function consists of two systems: the Quality Assurance Department that is the office responsible for the quality control and the quality assurance sections that assure quality in the shops. The Quality Assurance Department is in a position to direct the quality assurance sections of the individual divisions, and fulfills its role satisfactorily. The department and sections supplement each other and maintain a good relationship. However, in such an organization, the heads of divisions tend to have little awareness of quality, being interested only in production. Indeed, the heads of the divisions in IMAG are not quality-conscious. In addition to directing the heads of the divisions, the head of the Quality Assurance Department should exchange information with them.

3) Test and inspection equipment

In the situation in which the transition to a market economy is approaching and in which competition among companies will intensify, the test and inspection equipment for seats shown in Table 6-4-2 is insufficient to provide the quality assurance that will satisfy customers. The company should reinforce the equipment for testing the performance of its products so that it can exercise independence in developing seats as a manufacturer. Also, since the company employs order production for passenger car seats, it leaves some of the quality testing to its client. However, to accumulate know-how and reduce development time, the company should equip itself with the test equipment necessary to verify quality.

4) Quality control in the manufacturing places

Field inspections are carried out faithfully according to the rules and regulations. Although the inspection records are retained, it is not certain whether the processes are stable. Inspection data should be collected for quality improvement and also be used to make quality control visible, for example, by creating control charts or histograms and displaying them where they can be easily seen in the working areas.

In some shops, parts that seem to be defective are left at the sides of the lines or in the aisles. It is sometimes difficult to judge if these parts are non-defective, defective, or suspended parts. Steps should be taken to prevent defective units from being mixed with good units: for example, the use of different colors for identification or specification of special storage areas. Defective units should never be allowed to mix with others.

6-5 Information Processing Systems

There are three main approaches for computerizing information processing systematization in a company (factory):

- (a) Systematization of operations: Install EDP followed by CAD/CAM, CIM, and POS to streamline individual operations.
- (b) Systematization of decision making: Administer databases centrally and build MIS or DSS to allow the management to make decisions quickly and accurately.
- (c) Systematization of the company organization: Introduce SIS to network the computer systems within the company so that all the employees can share information.

All the approaches described above aim at extensive and speedy information processing by the use of computers. The information processing system IMAG is currently introducing belongs to (1) "Systematization of operations." It is designed to manage production activities accurately and effectively by centralizing the flow of information that begins with the acceptance of orders from the clients (IKARUS and Magyar Suzuki) and materials procurement, goes through the operations at the work place such as inventory control, production control, and loading control, and ends with sales management.

6-5-1 Organization and Assignment

In IMAG, the tasks related to information processing are undertaken by the Information Control Department. Under the head of the department, there are four groups as shown in Figure 6-5-1, which take charge of the following tasks.

- (1) Staff in charge of systems: two persons, one programmer, two operators
This group is responsible for the designing and installation of computer systems and the creation, maintenance, and revision of programs. It manages all the computer systems in the company: they are connected on-line to the host computer in the Information Control Department.
- (2) Staff in charge of regulations: one person
Manages and maintains company rules and regulations and related statutory regulations. Writes manuals about regulations.
- (3) Staff in charge of information: two persons
Collects and manages the information that the company executives need.
- (4) Staff in charge of telephones: one telephone operator

Operates the telephone switchboard for both inside and outside lines. There is no direct dialing system within the company.

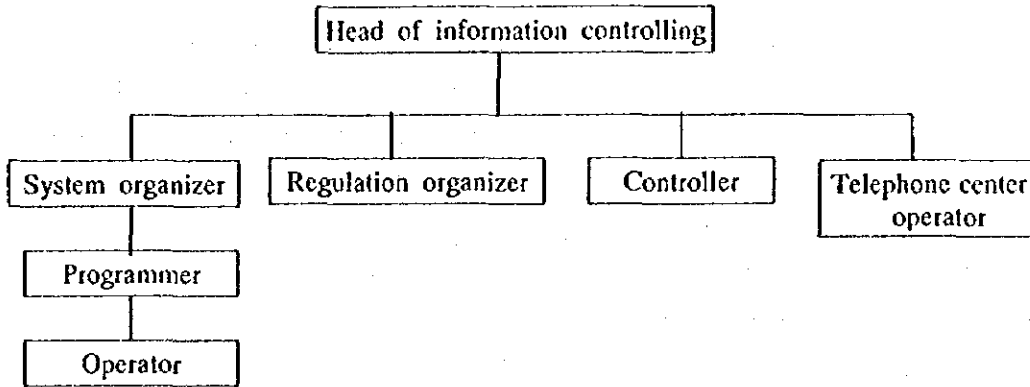


Figure 6-5-1 Organization Chart of the Information Control Department

6-5-2 Present State of Information Processing Systems

IMAG uses the following ten types of computer systems to run the company, excluding those for special purposes such as development and quality control. The specific uses of these systems are shown in Figure 6-5-2.

- | | |
|---|---|
| (a) Production Directing System
(SYMIX) | : Passenger Car Seat Division |
| (b) Technology System | : Bus Coordination Department, Bus I Division,
Bus II Division |
| (c) Stock Management System
(KOROS) | : Bus I Division, Bus II Division, Wire Harness
Division II, Bus Coordination Department,
Marketing Department, Financial Accounting
Department, Factory Department, Human
Resources Department |
| (d) Material Management System
(SKD) | : Wire Harness Division I, Financial
Accounting Department, Corporate
Management Department |
| (e) Material Implement Register
System (TGR) | : Factory Department |

- (f) Manufacturing tool Register System (GYNYR) : Bus I Division, Bus II Division, Passenger Car Seat Division, Tool & Machine - Processing Division
- (g) Waybill Register : Transportation Department, Corporate Management Department, Finance and Accounting Department, Marketing Department
- (h) Ledger Accounting System (DUNA) : Financial Accounting Department
- (i) Accounting Preparation System (SZAVA) : Financial Accounting Department
- (j) Wage Accounting System (TOPBER) : Human Resources Department, Financial Accounting Department

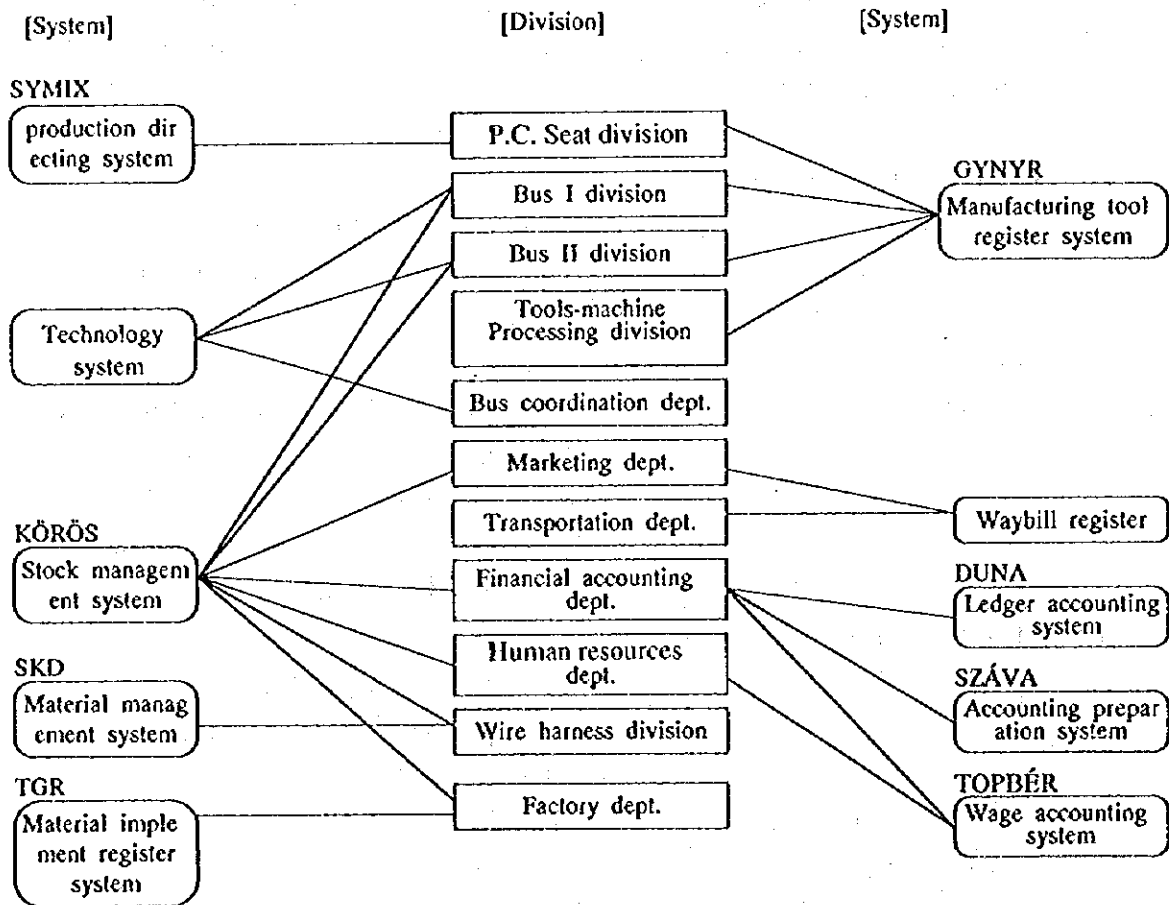


Figure 6-5-2 Computer Systems in IMAG

As shown in Figure 6-5-2, the systems described above are not networked: none of them are connected to each other. Each of them is only used independently. Since the types of systems are different from each other, the same data have to be entered separately. Although these systems are connected to the computer in the Information Control Department, facsimile or mail is used to exchange information with outside sources, with which the systems are not connected. All the computers used are personal computers except the one used in the Passenger Car Seat Division. At present, approximately 50 computers are used.

1) Present state of each system

The details of each computer system that IMAG owns are shown below.

(1) Production Directing System (SYMIX)

This system was installed in the Passenger Car Seat Division in October 1994 to modernize and streamline the production control of passenger car seats which had just been put into production. At present, the system is used only for the production control of passenger car seats, excluding those produced in the Bus I and Bus II Divisions. When the installation of the system (SYMIX) was under consideration, the company had the intention of forming a network by connecting SYMIX to the existing systems in order to modernize information processing so as to solve existing problems. Therefore, IMAG had a plan to connect SYMIX with all the computers in the company at an early stage after installation. However, when the system actually started operation, it encountered various problems, leading to delays in carrying out of the plan for networking. At the time of the field survey, the company intended to complete the plan to computerize the whole system (receiving - delivery - accounting systems) related to passenger car seats by the end of 1996. Figure 6-5-3 shows how SYMIX is used in the production of passenger car seats.

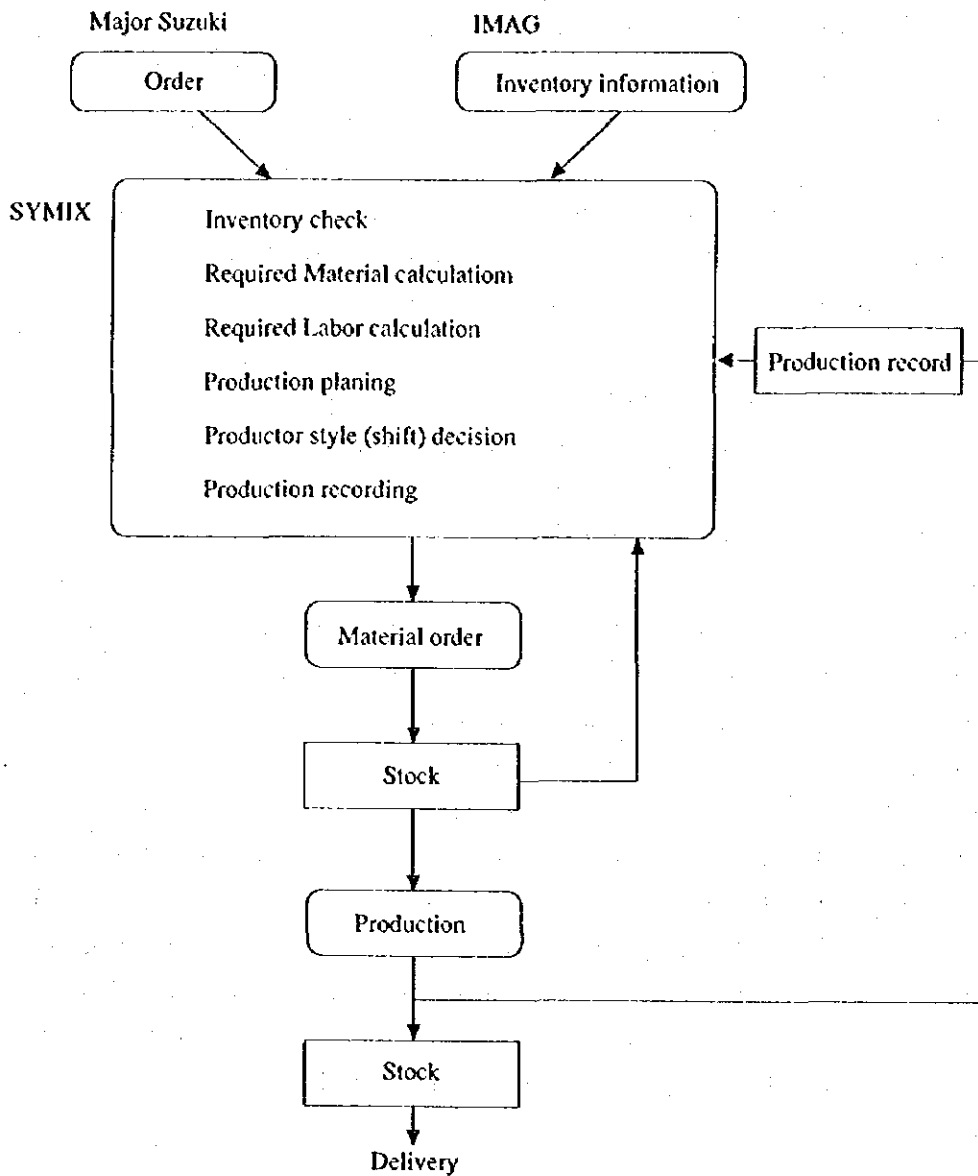


Figure 6-5-3 SYMIX in the Production of Passenger Car Seats

(2) Technology System

This system was brought from a state organization, the Central Institute of Physics, in the 1980s when IMAG produced only bus seats. After a number of improvements, the system acquired its present functions around 1994. It is used for the purposes of process analysis and preparations for production in only the Bus Coordination Department, Bus I Division, Bus II Division, and Marketing Department.

Regarding process analysis, the system can analyze the feasibility of a new product. Also, it allows the user to search for similar parts, select the equipment to be used, and search for tools. It is used exclusively for bus parts for IKARUS.

Regarding preparations for production, when the part number and planned quantity of a product is entered, the system calculates and outputs the components, required raw materials, equipment layout, required time for each process, and required man power. However, the system is used only for bus parts for IKARUS except for the calculation of the required time for each process, and the required man power of the seat for the passenger car and the other customer.

The company is planning to replace this system with SYMIX since it can handle a limited number of products and is far inferior to SYMIX in functions. The relationship of the Technology System with the Bus Coordination Department and related departments and divisions is shown in Figure 6-5-4.

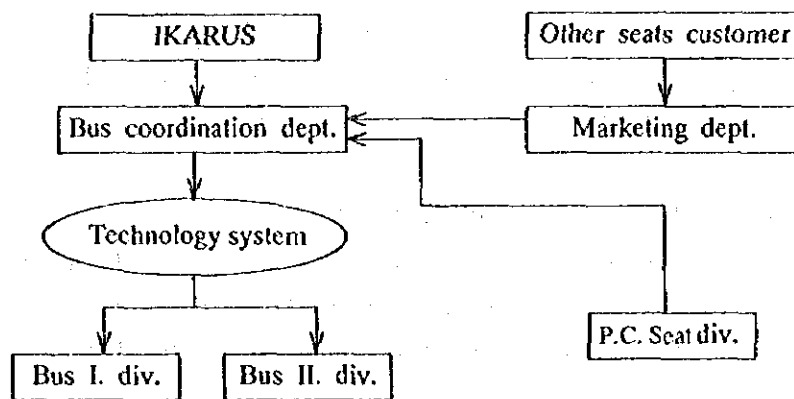


Figure 6-5-4 Technology System of Bus-Related Departments and Divisions

(3) Stock Management System (KOROS)

This system is used in the production plants (divisions) except in the Passenger Car Seat Division and Wire Harness Division, and in administrative departments, namely, the Bus Coordination Department, Marketing Department, Financial Accounting Department, Factory Department, and Human Resources Department.

The quantities of subcontract goods and purchased goods are entered in the system by individual divisions, based on goods receipt and goods issue slips. The amount in stock is output as an inventory list. Also, inventory turnovers are always calculated. This system does not handle in-house products. Data is sent to the Financial Accounting Department via floppy disks.

(4) Material Management System (SKD)

This system was installed exclusively for the Wire Harness Division. However, it is also used by the Financial Accounting Department and Corporate Management Department. It was supplied by the company that provided the technology. Besides inventory control, it is used for

calculating production costs and demands and for technical computing.

(5) Asset Recording System (TGR)

This system is used by the Factory Department for the asset management of the facilities including buildings. Fixed assets with an acquisition cost of 20,000 forints or more are handled to manage depreciation expenses. The data printed out is passed to the Accounting System (DUNA) each quarter.

(6) Manufacturing Equipment Register System (GYNYR)

This system is used by the three divisions associated with seat production (the Bus I, Bus II, and Passenger Car Seat Divisions) and Tool & Machine Processing Division for managing information about production facilities. The information includes the locations of the facilities, plant capacities, frequency of repairs, repair costs, process capabilities, and places of processing, as well as the locations and data about tools, dies, molds, templates, and patterns.

(7) Transportation Record (Waybill Register)

This is a small system used by the Transportation Department, Corporate Management Department, Financial Accounting Department, and Marketing Department to register journeys made by buses and trucks. The information recorded includes the distances travelled, fuel consumption, number of persons transported, weight transported, and number of accidents, which will be used in the state's statistical data.

(8) Ledger Accounting System (DUNA)

This system is used by the Financial accounting Department to keep track of the financial condition of the company. Data is entered from KOROS, SYMIX, and TGR described above and SZAVA and TOPBER to be described later, to create ledgers. The information entered in this system is received on floppy disks except for the information from SYMIX that is received on paper.

(9) Accounting Preparation System (SZAVA)

This system is used by the Financial Accounting Department. The bills, payments, and receipt of money for external transactions are all entered in the system. It manages the information that verifies payments and receipts and records information about the suppliers and costs of purchased items and the customers and prices of goods sold.

(10) Wage Accounting System (TOPBER)

This system is used by the Human Resources Department and Financial Accounting Department for the calculation of salaries. When data on individuals' working hours sent from

the departments and divisions are entered manually, the system calculates the salaries and withholding taxes.

In addition to the above systems, more than ten software systems are used currently in IMAG. All these systems and the places where they can be used are shown in Table 6-5-1.

Table 6-5-1 List of Software Systems Used in IMAG

	Information controlling dept.	Bus I div.	Bus II div.	Development dept.	Human development dept.	Bus coordination dept.	Marketing dept.	Quality assurance dept.	Audi div.	Technical dept.	Financial accounting dept.	Suzuki cable div.	Suzuki seats div.	Transportation dept.	Tool and machine processing div.	Audi seats div.	Factory dept.	Corporate management dept.
1 SYMIX	<input type="checkbox"/>												<input type="checkbox"/>					
2 Technology							<input type="checkbox"/>											
3 KOROS		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
4 SKD		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
5 TGR		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
6 GNYR		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
7 Waybill Register		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
8 DUNA		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
9 SZAVA		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
10 TOPBER		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>										<input type="checkbox"/>	<input type="checkbox"/>
11 measuring		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>									<input type="checkbox"/>	<input type="checkbox"/>
12 Structure analysis				<input type="checkbox"/>														
13 AUTOCAD			<input type="checkbox"/>															
14 PRO ENGINEERING(CAD)			<input type="checkbox"/>															
15 Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16 EXCEL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17 Foaming measuring			<input type="checkbox"/>					<input type="checkbox"/>										
18 Rejected parts calculating								<input type="checkbox"/>										
19 SPC								<input type="checkbox"/>										
20 Customs							<input type="checkbox"/>											
21 Cable making			<input type="checkbox"/>					<input type="checkbox"/>										
22 MAIL(FAX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23 WORD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) The present state of information processing for production lines

The following section describes how the information processing for production lines is related to the above mentioned systems.

(1) Seats for buses

For the production of bus seats, the Technology System is used for production management in the Bus Coordination Department and the Inventory Control System (KOROS) is used for inventory control in the Bus I and Bus II Divisions. The Bus Coordination Department is not concerned with KOROS. The information (the locations of facilities, plant capacities, history of repairs, and tooling used) about the facilities of the Bus Divisions can be obtained from the Manufacturing Equipment Register System (GYNYR). The flow of such information is shown in Figure 6-5-5. The information about how these systems are actually used is provided in the sections on inventory control and process control.

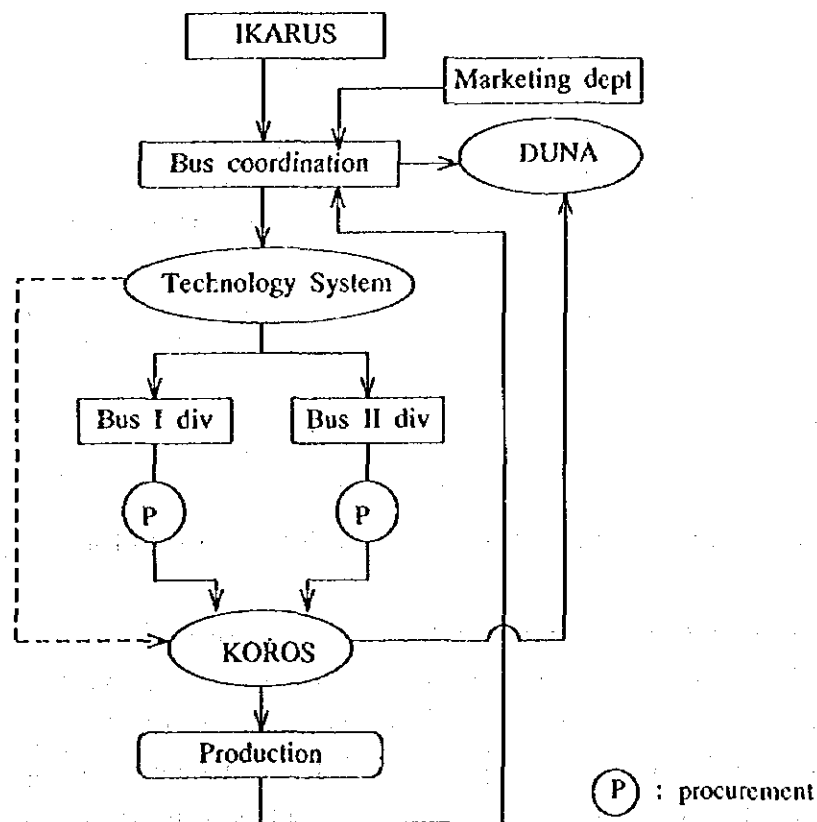


Figure 6-5-5 Flow of Information on the Production of Bus Seats

(2) Seats for passenger cars

For the production of passenger car seats, the Production Management System (SYMIX)

has been installed. In addition, for the parts contracted out to the Bus I and Bus II Divisions, Technology System and KOROS originally intended are used. The flow of information is shown in Figure 6-5-6. The information about how these systems are actually used is provided in the sections on inventory control and process control.

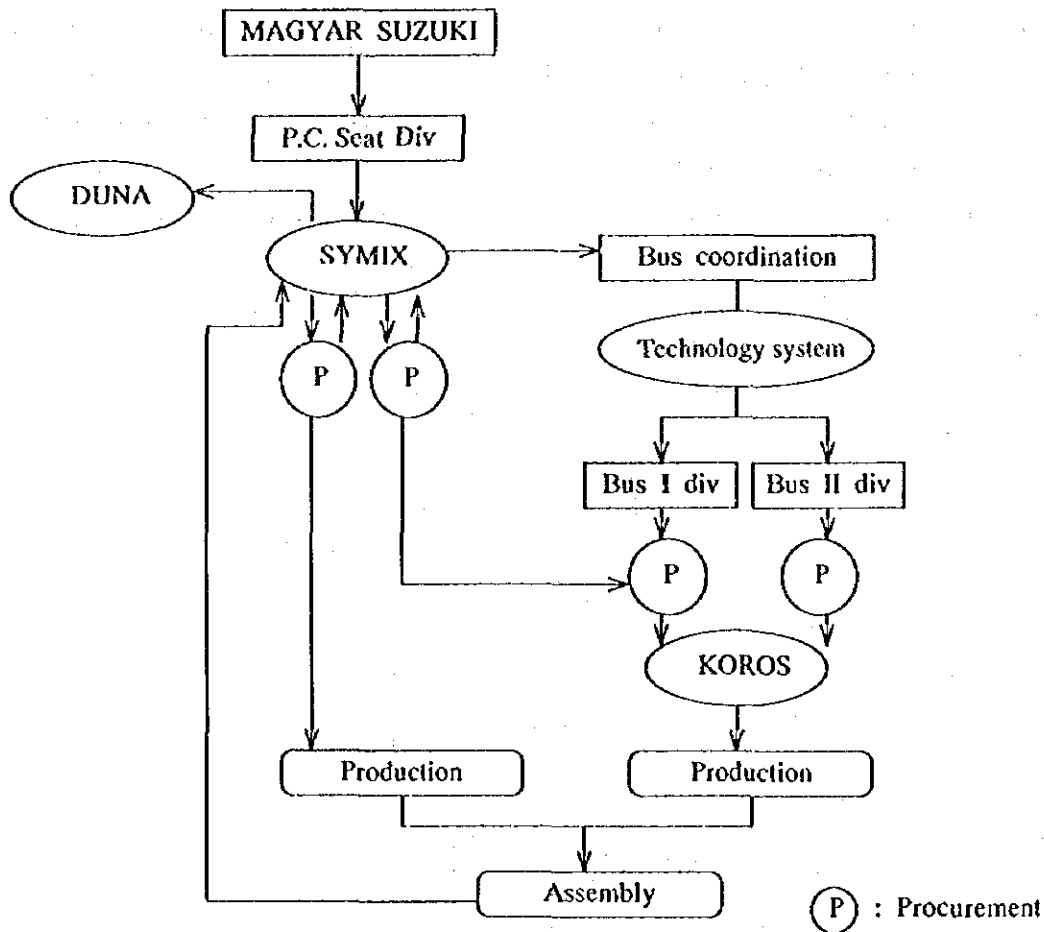


Figure 6-5-6 Flow of Information on the Production of Passenger Car Seats

3) Present state of processing of management information

IMAG's Information Control Department manages all the information about the computer systems and other information necessary for the company. All the information about the company's business (production, sales, and finance) is entered into the computer systems of the departments and divisions concerned, and computer terminals are provided in these departments and divisions, making it possible to access information promptly from whenever it is needed.

The Accounting System (DUNA), Asset Register System (TGR), and Payroll System (TOPBER) shown in Table 6-5-1 can be monitored in all the departments and divisions. The information required by the executives is provided as shown in Figure 6-5-7.

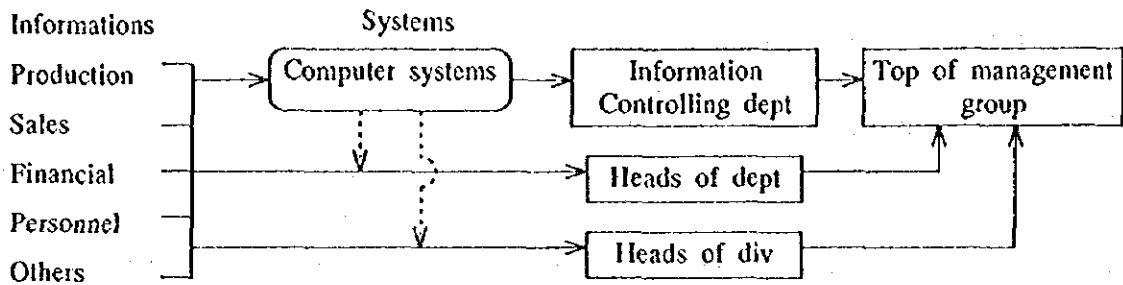


Figure 6-5-7 Flow of Information to Executives

4) Present state of processing of technical information

(1) Product development and design

The company has a computer system for CAD and structural analysis, which however, does not exchange data with external systems. The database of drawings is assembled and managed by the Bus Coordination Department using the Technology System. Part of the information about the drawings of buses is in actual use. However, this information can be retrieved only in the Bus Coordination Department.

(2) Production engineering information

The Technical Department does not have a computer system for its exclusive use. However, in planning capital investment, the department exchanges information with DUNA, and provides the information about the established plan to the departments and divisions concerned through a network such as MAIL. Also, it can quickly send information about changes in facilities to the departments and divisions concerned through the Asset Recording System (TGR), and transfer the information about new products and design changes to the Manufacturing Equipment Register System (GYNYR) through the above mentioned network. Therefore, there is no plan to install an exclusive system for the Technical Department.

(3) Quality control

The Quality Control Department uses computers for three-dimensional length measuring machine, for elasticity testing during the urethane foaming process, and for the analysis of defective parts. The analysis data is sent to the departments and divisions concerned and used effectively. Regarding the process capabilities of each facility, the data obtained by the quality assurance sections of the divisions are processed by the computer system (SPC) of the Quality Control Department, and then entered in the Manufacturing Equipment Register System (GYNYR). Data entry began in March 1995 and the process capabilities of 80% of the facilities have been determined. In this way, the departments and divisions concerned with quality control are striving to process information accurately and quickly by using computer systems effectively.

5) Other information processing

(1) Energy management

IMAG mainly uses electric power and coal as energy sources, and its annual energy bill amounts to about 65 million fronts, which constitutes about 4% of the total cost of sales (1994 results). The use of energy is managed by the energy management staff of the Technical Department by using the Energy System, which is connected on-line with all the departments and divisions that use energy, so that it is useful for dealing with abnormalities. Control of energy consumption is one of the important items designated by the state.

(2) Processing of documented information

All the personal computers in IMAG are networked through the Mail System. This allows documents be exchanged between all the departments and divisions without using facsimile. Also, since the company uses Internet, it can exchange data with external systems via personal computers.

6) Present state of training in information processing systems

The Information Control Department provides training about the systems described above and how to use them. The training courses are not based on a long-term plan, but are provided whenever a new system is installed or as necessary. At present, a course is open on how to handle SYMIX and it includes basic instruction about computers. The participants consist of about 60 employees of mid-ranking from the Passenger Car Seat Division and related departments and divisions. Each participant receives 80 hours of training over a period of three months. External educational institutions are also used for more advanced training. A system has been established that requires a department or division that wants training done outside the company to ask permission from the Human Resources Department. However, there is no participant at present. The Information Control Department is very enthusiastic about education.

6-5-3 Problems with Information Processing System

It takes a long time and much effort to build an information processing system suitable for a company. IMAG has the Information Control Department in charge of information systems, which means that the groundwork has been laid for building an information processing system. Regarding computer systems, which play an important role in information processing, the company uses ten types for production and management, excluding those for special purposes such as development and quality control. These systems consist of more than 50 computers including general-purpose computers and personal computers.

However, in reality, there is not enough information and people are unhappy about the

accuracy of the information and distrust it. The stock of raw materials is always kept a bit too much on the safe side because of nervousness. Partly as a result of this, problems arise such as increased inventories, which place a heavy burden on the management of the company and make it unstable.

1) Exchange of information between computer systems

The computer systems owned by departments and divisions are independent of each other except for some systems such as personal computers. Consequently, when the same data is required by different systems, it must be reentered separately. Also, when data from another department or division is used, it must be entered manually. Some systems use floppy disks to transfer data between them (KOROS, TGR, SZAVA, TOPBER, and DUNA); others use manual input from data sheets.

The systems that need to exchange data should be linked as soon as possible. Although there is no need, of course, to connect all the systems, it is desirable to network the Production Management System (SYMIX), Inventory Control System (KOROS), and Accounting System (DUNA).

2) Problems with individual systems

The following description is based on the assumption that the programs themselves are free from problems. The systems described here are those associated with the production of the seats for buses (including railway vehicles) and passenger cars.

(1) Production Directing System (SYMIX)

This system is used for managing the production of passenger car seats. For the passenger car seat parts produced in the Bus I and Bus II Divisions, it is used only as for as the procurement of the necessary raw materials. From that time on, the production planning is taken over by the Technology System in the Bus Coordination Department. Even though the system is concerned with procurement, the inventory control of the raw materials used by the Bus I and Bus II Divisions is handed over to another system (KOROS). Since procurement and inventories are managed by different systems, it is not clear where responsibility lies. They should be managed by the same system.

The system is used in much fewer areas than originally planned, and its capacity is underutilized. The system should be integrated or merged with other systems urgently by promoting networking. Also, the software should be improved urgently.

(2) Technology System

Although this system is powerful for process analysis and preparations for production,

the range of its application is limited partly because it was installed for IKARUS buses. It is unsuitable for the present organization and production system. It bears a partial resemblance to SYMIX described above, but is inferior to it in its functions. It should be integrated with SYMIX and with KOROS described below.

(3) Inventory Control System (KOROS)

This system is used in production plants (divisions) other than the Passenger Car Seat Division and Wire Harness Division, and in related departments. However, there is no reason to use a separate system for the inventory control of passenger car seats. As described above, this system should be integrated with SYMIX.

3) How input data is created

(1) Information about orders

Ordering information is sent from IKARUS by mail and from Magyar Suzuki by facsimile. Since the data is entered manually, the work is laborious and there are problems with accuracy. The systems should be networked as soon as possible.

(2) Processing of inventory data

All the information on goods receipts and goods issues is processed using slips. The data is entered manually from the slips. The Passenger Car Seat Division has assigned an exclusive staff to this operation. The use of bar codes or OCR should be promoted.

(3) Production information

All the production information is also processed using slips. The Passenger Car Seat Division enters the data from the slips manually.

In the Bus I and Bus II Divisions the production information is not processed by computer. Electronic data processing should be introduced.

4) Accuracy of information

In IMAG, document information can be exchanged directly on-line. On the other hand, most of the production information is transferred in the form of paper and entered manually since the systems that manage all the operations from the acceptance of orders to shipment including procurement, stock-piling and production are not interconnected. As the media of communications between systems, floppy disks are used mainly and paper is also used. The transmission of information through humans is liable to error during the conversion of the information, so reducing its accuracy. Indeed, operators at the site admit that they sometimes make errors. Some checking mechanism is necessary to prevent this happening. Also,

countermeasures must be taken to avoid the recurrence of errors. As described earlier, it is possible to improve the accuracy of information by using computerized information processing, such as on-line connection to clients and the use of bar codes or OCR for the processing of received or issued goods. However, prior to that, it is necessary to detect and correct errors, investigate the causes of errors, and prevent their recurrence. Stock taking can be one of the methods of finding out errors, but it cannot be a preventive measure. Steps should be taken to prevent errors occurring during the conversion of information.

5) How information processing system is used

However excellent a computer system may be, not much benefit can be expected if it is used improperly. Also, to take full advantage of a system, it must be adjusted (or improved) to suit the environment in which it is used. IMAG has many systems capable of serving its purposes. However, it is said that there are many employees who do not want to use computers. Some point out the low usage rate of information exchange systems such as MAIL. It is recommended that the current education in information processing should be intensified so that the computer systems will be utilized more effectively.

6) Information processing for the management of the company

IMAG's information processing system has reached a certain standard and works normally. However, from the viewpoint of computerization to assist management in making speedy and accurate decisions, although the processing of internal information is being computerized, there is no structure or system in place for processing external information. External information is gathered by the Marketing Department, but it is not used for operating the organization. The collection and processing of external information is entrusted solely to the head of the Marketing Department. Acknowledgeable staff is necessary to administer central databases and organize the data into a form suitable for the management to use in making decisions properly.

Chapter 7

Present State and Problems of Corporate Management

Chapter 7 Present State and Problems of Corporate Management

7-1 Decision Making

7-1-1 Organization and Administrative System

1) Organizations and roles

In 1994, IMAG carried out major reforms of its corporate organization, and worked out company rules with the Information Control Department playing a key role. As a result, it established an administrative system consisting of four groups. The organization and roles of each group are shown below:

(a) Top Management Group

Members: President, vice president of finance, vice president of technology

Functions: Dealing with corporate strategies

Resolution of problems concerning operational control in divisions, approval of rules, abolishment of existing divisions, and establishment of new divisions

Authority: Holds all the decision-making authority and gives instructions for tasks to be implemented.

(b) Group of the Heads of Divisions

Members: President, vice president of finance, vice president of technology, heads of divisions, head of Information Control Department

Functions: Control of tasks and review of rules

Planning, Evaluation of performance

Authority: Holds part of the decision-making authority, coordinates organizations, and reports on problems concerning the divisions.

(c) Group of Heads of Departments

Members: President, vice president of finance, vice president of technology, heads of departments

Functions: Control of tasks and formulation of rules

Planning, Evaluation of performance

Commencement of projects (excluding settings associated with the control system)

Authority: Mainly plays a consultative role, makes preparations, and conducts studies for decision making.

(d) Leaders' Council

Members: President, vice president of finance, vice president of technology, heads of divisions, heads of departments

Functions: Development of corporate strategies

Reporting on the condition of projects

Basic policy, Development of priorities, Business reports

Authority: Mainly plays a consultations role in decision making and exchanges information among members.

Decisions concerned with the daily management of the company undergo expert review at meetings of the Group of the Heads of Divisions dealing with production control and Group of Heads of Departments dealing with administration, while the final decisions on important issues are made at meetings of the Top Management Group composed of the president, vice president of finance, and vice president of technology.

In deciding basic policies new projects, investment policies, and others, a meeting including on financial matters, the heads of departments is held, as required by the head of the Information Control Department, to discuss opinions submitted and provision of data. The meeting of the Group of the Heads of Divisions and Group of Heads of Departments is held once a month on average.

The Top Management Meetings are held on a regular basis four times a year, including those for management planning at the beginning of the year, for budget planning, and at the end of the year to review both the plans were actually carried out. There are also held weekly to discuss corporate management issues. The head of the Information Control Department takes charge of clerical work such as the preparation of minutes.

2) Methods of administration

Problems are handled at meetings in either of two ways: an overall agenda is provided by the top management meeting and specific discussions are left to meetings of the Group of the Heads of Divisions and Group of Heads of Departments, or problems are presented by a meeting of the Group of the Heads of Divisions and Group of Heads of Departments and discussed at the top management meeting.

Regarding the 90 decision-making items needed to run the company, roles and authority have been specified in detail for the president, vice president of finance, vice president of technology, and the 14 divisions and departments. The roles and authorities are classified into the decision maker, proposer, advisor, coordinator, and executor.

The allotment of roles for important items is as follows:

(a) Strategic planning

Decision maker: President

Proposers: Vice president of finance, vice president of technology, head of Marketing Department, head of Information Control Department, head of Human Resources Department, head of Bus Coordination Department, heads of Divisions; the heads of other Department are only allowed to give advice.

Executor: Head of Information Control Department

(b) Revision of company rules

Decision maker: President

Proposers: Heads of divisions, heads of departments concerned, heads of sections in charge of transportation, safety section and supply section

Advisor & executor: Head of Information Control Department

(c) Marketing

Decision maker: President

Proposer, coordinator, & executor: Head of Marketing Department

Advisors: Vice presidents, heads of divisions, head of Information Control Department, heads of Bus Divisions

(d) Technical standards

Decision maker: President

Proposers: Vice president of technology, head of Technical Department, head of Development Department

Advisors: Heads of divisions, heads of Bus Departments, heads of Bus Divisions

Executor: head of Technical Department

The matters decided at the meetings described above are documented by the head of the Information Control Department and conveyed to the divisions and departments concerned. Or they are conveyed at a meeting of the heads of departments. Checking that decisions have been implemented is not done systematically but is carried out in daily activities by the heads of the

departments in charge. Concerning important matters, instructions for verifications are given by the president to the head of the Information Control Department.

3) Other administrative arrangements

The following arrangements have also been established.

(1) Informal meetings

At the president's suggestion, starting in fiscal year 1996, the management and the heads of the departments get together from 14:00 to 16:00 every Friday for informal meetings to exchange views freely. These informal meetings are chaired by the president himself, and opinions are exchanged on predetermined topics. The topics discussed so far include:

- (a) Organization of the company
- (b) Financial policies
- (c) Development of human resources

(2) Ad hoc committees

Ad hoc committees are organized for individual problems. Experts are invited from outside to participate as required. The ad hoc committees organized so far include:

- (a) Team for handling problems with passenger car seats
- (b) Financial improvement team
- (c) Technical improvement team

4) Relationship with IKARUS

Although IMAG reports important matters such as business results and plans to its owner IKARUS, it is not controlled by the latter. IMAG carried out a major organizational reform in 1994, but it did not have to ask IKARUS for consent. However, it sometimes has to adjust wages in order to keep pace with the other companies affiliated with IKARUS.

Because 52% of IMAG's shares held by IKARUS were transferred to RABA, also a state enterprise, in February 1992; RABA will exercise control over IMAG in future. At the time of the field investigation, the of RABA's management policy toward IMAG was undecided. However, they said that they would basically respect IMAG's independence.

5) Business creed

IMAG is planning to establish a business creed that will provide the basis for conduct in performing tasks in the company. The creed is being discussed at the Friday informal meetings

with the intention of preparing about ten items. The items already decided are as follows:

- (a) Become one of the largest parts makers in Europe.
- (b) Achieve sales of 7.6 billion forints in 1996.
- (c) Customer satisfaction = fair price + high quality + punctuality in delivery

The business creed is the embodiment of the corporate philosophy described later and is an important tool that will raise the morale of the employees.

7-1-2 Characteristics of IMAG

The characteristics of IMAG's business management are described below.

1) Historical background

Many of the parts makers that supply most of their products to car makers depend heavily on the car makers for their business, which makes it difficult for them to prepare medium or long-term plans on their own. Since IMAG was a subsidiary of IKARUS which is a bus manufacturer, it did not have to prepare its own management plans. It is likely that IKARUS itself, which is a state enterprise, did not carry out activities such as marketing by itself in the times of the planned economy. However, in addition to rapid social and economic changes such as the transition from communism to capitalism and the evolution into a market economy, the business environment surrounding IMAG is changing drastically as exemplified by the sharp reduction in the production of IKARUS buses. Against such a historical background, IMAG carried out the organizational reforms described above and is trying to revamp its business structure.

2) Characteristics of management

The business management of IMAG is characterized by heavy dependence on the personal administrative abilities of its president. Since its business structure is based on the historical and social background described above, and also since it began managing its own administration only a few years ago, IMAG is not yet capable of business systematically. Generally, dependence on individuals for management means corporate actions can be taken swiftly. However, it also makes them inconsistent and reliant on individual experience. Further, reliance on the personal talents of the management tends to lead to concentrations of power, and prevents actions being taken systematically. However, IMAG's organizational reforms clearly define the division and ranges of responsibility and give adequate consideration to mutual understanding in deciding corporate strategies.

3) Business Administration

A company regards its business environment as a source of marketing opportunities, sets corporate goals to suit it, works out strategies for achieving the goals, constructs a framework for action, and builds a management system for enhancing the ability of the organization to put the strategies into action. The flow of this process is shown in Figure 7-1-1. IMAG's management system employs the method of operation enclosed in the box indicated as IMAG's corporate organization in the figure.

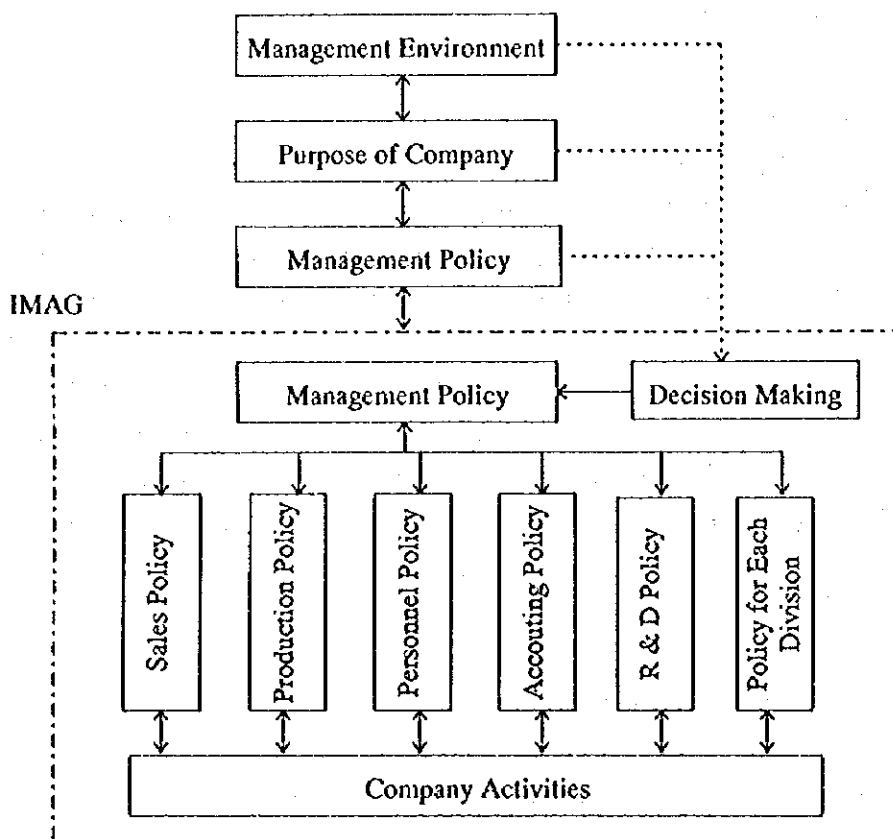


Figure 7-1-1 Management System

In IMAG, the Top Management Group decides corporate policies. This is decision making by top management. Based on these overall management policies, individual departments run the company by managing their own departments. The company must formulate overall management policies, based on the corporate goals and philosophy. Otherwise the policies will lack consistency and will not last long. The corporate goals and philosophy are not permanent: they should change with changes in the environment surrounding the company, i.e., the business

environment has priority. To take a concrete example, one progressive company forecasts the business environment for the year 2000. Based on this forecast, this company sets a goal as to what it should be in the year 2000. Then it works out strategies for achieving this goal, and reforms its organization and systems to carry out these strategies.

4) Management planning

IMAG does not prepare management plans for business management. When the social conditions of the country are changing drastically, it is difficult for the company, which does order production to suit the production of auto makers, to draw up medium-term plans. However, management planning is even more necessary because the company is in such a business environment. A management plan is the embodiment of top management policies.

7-1-3 Problems with Decision Making

1) Arrangements for decision making

The arrangements, responsibilities, and authority for decision making have been defined. Since a small number of executives have the final authority to make decisions, decisions are made quickly and put into action efficiently. This arrangement has been defined in detail by the company rules. It has an ideal form as is illustrated by the fact that informal meetings of executives are held each Friday to prevent it from becoming inflexible. The future problem is how to reflect this arrangement in practical affairs.

2) Development of human resources

For a company to grow, the development of human resources is an important issue. Since administrative action is concentrated in the president and a few executives, the development of human resources and management systems are neglected.

3) Progress observation system

There is no observation system for checking the progress of actions after a decision has been made.

4) Information gathering and processing system

The information necessary for decision making is gathered and processed separately by individual divisions and departments: there is no system for doing this. The Information Control Department should consolidate the handling of information and establish a system for controlling the information necessary for management.

5) Management planning

With the transition to a free economy, the business environment is changing drastically. In addition to radical short-term changes, changes in the corporate environment are expected to continue for as long as several decades. These changes cannot be addressed haphazardly on a short term basis. Management plans should be drawn up from a medium- to long-term perspective.

7-2 Marketing Activities

7-2-1 Organizations and Roles

The Marketing Department was formed at the end of 1993 to deal with marketing. It was changed into the present organization (shown below) in the summer of 1995. It is composed of 16 persons in total.

(1) Purchase and sales promotion group

(a) National trade group

This group is composed of two procurement personnel and four inventory control persons. The head of the group is also the head of the international trade group.

The group procures and manages the electric appliances and office supplies of domestic origin used throughout the company as well as chemicals and fuels which have to be handled by specially qualified staff.

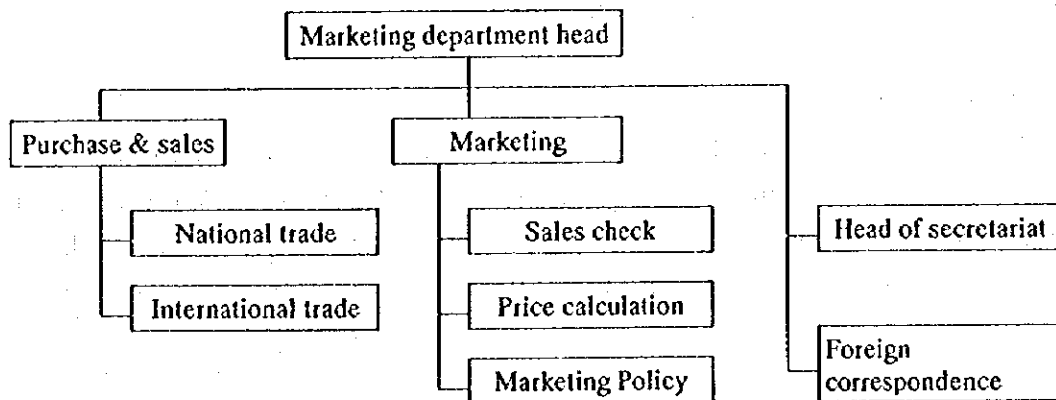


Figure 7-2-1 Organization Chart of the Marketing Department

(b) International trade group

This group, consisting of two persons, takes charge of the procurement of imported goods and the export of products. It handles daily management, such as transporting and receiving imports and exports.

(2) Marketing group

The head of the Marketing Department serves simultaneously as the head of this group. This group has three subgroups: the marketing policy group, price group, and sales check group.

(a) Marketing policy group (two persons)

This group examines the possibility of concluding small domestic contracts from a comprehensive viewpoint by widely studying related matters such as the production capacity, technical expertise, and investment of the company. This group also handles the contracts for seats for minibuses and parts for repairing bus seats.

(b) Price calculation group (two persons)

This group examines the financial aspects of the domestic contracts mentioned above such as costs, exchange rates, and profits.

(c) Sales check group

This group is now in the process of being formed. It will have one member and will engage in gathering various data concerned with marketing, which is now performed by the head of the Marketing Department. The types of data to be collected will include product life cycle data, sales data, and cost data. This group will also have the function of checking the two groups described above.

7-2-2 Present State of Marketing Activities

1) Sales activities

IMAG, as an automotive parts maker, engages in two types of sales activity. The first type is to enter into long-term lasting contracts with auto makers. Therefore, marketing activities are carried out mainly by the president and the head of the Marketing Department personally; there is no systematic sales activity. In addition to IKARUS, IMAG has had contracts so far with the following companies.

Audi (Germany):	Automotive parts
Michael (Germany):	Wire harnesses
Teves (Germany):	Wire harnesses
Magyar Suzuki (Japan):	Passenger car seats, wire harnesses
Hungarian National Railways:	Seats for railway vehicles

Until about 1990, IMAG traded through a third party. At present, however, it does its own sales activities. In 1995, the marketing group investigated five deals, most of which were related to seats.

The second type of sales activity is the acceptance of orders from many miscellaneous

companies. The products are mainly seats for repairing minibuses. Since small-lot production is employed, and also because there is no salesman in the Marketing Department, no positive marketing is carried out. This passivity results from the consideration that entry into the after market (repair parts market) will hurt the brand image of the company

2) Communications with customers

IMAG maintains communications with its major customers IKARUS and Magyar Suzuki (MSC) as shown in Table 7-2-1. As can be seen from the table, the marketing group does not take part in such communications. The marketing group transfers the work to the manufacturing group after an agreement has been reached and a contract has been concluded. The head of the Marketing Department makes contact with the design group of IKARUS because of his personal connection with them. However, he has no contact with Magyar Suzuki. Thus, the Marketing Department is not concerned with daily customer support.

The Marketing Department is sometimes required to participate in meetings or negotiations with customers, make suggestions from the viewpoint of marketing management, and collect information. Also, the department is required to record the results of negotiations and how support is provided to customers for sales promotion.

Table 7-2-1 Communications with Customers: IKARUS and MSC

	Seats for Buses	Seat for Passenger Cars
Overall Meeting	IKARUS President Persons in Charge of Accounting Persons in Charge of Technology IMAG President (Once per Month)	Magyar - Suzuki President Vice President in Charge of Purchasing Manager in Charge of Quality Information IMAG Manager in Charge V.P. of Technology (4 times/year)
Technical Meeting	Engineers in Charge (Once for 2 weeks)	Engineers in Charge (About once/week)
Production Meeting	Engineers in Charge of Production (Every day)	Engineers in Charge of Production (Every day)
Quality Meeting	Persons in Charge of Quality Control (About once/month)	Persons in Charge of Quality Control (Periodic Meeting once per month)

3) Customer record

The company manages customers with whom it has dealings and customers whom it got to know at trade shows by making a list of them which includes sales data. These customers are divided into groups according to the following two criteria and managed accordingly.

By amount of sales: Customers with annual sales of 2 million forints or more (10 to 15 companies); customers with annual sales of less than 2 million forints

By type of contract: Direct customers (10 companies); indirect customers dealt with through sales agents

IMAG tries to maintain communications with these customers by inviting them to the company about twice a year to show products or hold explanatory meetings.

4) Information gathering

The Information gathering necessary for management planning and corporate-strategy planning is not carried out systematically. According to the company's plan, this function will be served by the sales check group which is now being established. What information to collect or what data to accumulate is to be decided in the future. Information about the products of competitors is investigated and evaluated by IMAG's executives at the time of trade shows. Users' opinions are also gathered on such occasions.

7-2-3 Problems with Marketing

1) Arrangements for sales activities

Unlike general consumer goods, IMAG's products are intended for regular customers. Thus, sales activities are not carried out systematically: they are carried out only by executives. This is likely to make the decision making process up to the time of concluding contracts fairly efficient. However, there is a limit to the time and ability of executives and their main occupation may be neglected. Also, the personnel in the Marketing Department have to act as secretaries to the president or department head. This hinders the development of human resources.

2) Response to customers

Although IMAG advocates "customer satisfaction," in any part of the company (not only in sales activities) this principle is not put into practice. To take an example, the idea prevails that a sales price is the "cost + profit," and the price is not considered in the context of market prices. Also, there is the view that the auto makers which are IMAG's customers should strive for the mutual prosperity of themselves and IMAG. In this way, business concepts differ from those in the market economy.

3) Corporate image

For a parts maker aiming at West European markets as well as Hungarian markets, the reliability of the company and its corporate image are critical.

The public buses equipped with IMAG's seats are required to be serviced every seven years. Most of the seats used as replacements at the time of servicing are made by small businesses and, thus, are inferior in quality to IMAG's seats. However it is well known that most of the public buses are made by IKARUS and equipped with IMAG's seats. Therefore, if these inferior seats continue to be used as replacements, there is a high risk that IMAG's image may be damaged. IMAG should enter into the domestic repair parts market to maintain and improve IMAG's high-quality image.

4) Product development

Development capability is a powerful weapon for driving marketing activities. If it is not strengthened, the effects of the activities will be reduced greatly. To survive the future competition among companies, it is essential to improve the ability of developing products.

7-3 Cultivation of Human Resources and Personnel Management

7-3-1 Organization and Dutes

The cultivation of human resources and personnel management are undertaken by the Human Resources Department shown in Figure 7-3-1. The Human Resources Department is broadly divided into five groups, whose roles are shown below.

- (a) Human affairs group (four persons in all)
Reception of new employees, management of employee's personal data, education, and postal desk work.
- (b) Factory health group (one doctor and two nurses)
Required by law. Provides health care and first aid within the factory.
- (c) Guards (eleven persons in all)
This group guards the entire company (groups of three persons work in three shifts).
- (d) Social welfare group (four persons in all)
Services related to production: Driving of employees to and from the company, medical affairs, education, provision of work clothes.
Services related to social welfare: Dining hall, management of welfare facilities, support of cultural activities, congratulations and condolences, other support activities.
- (e) Caretakers (fourteen persons, one gardener)
Cleaning of offices

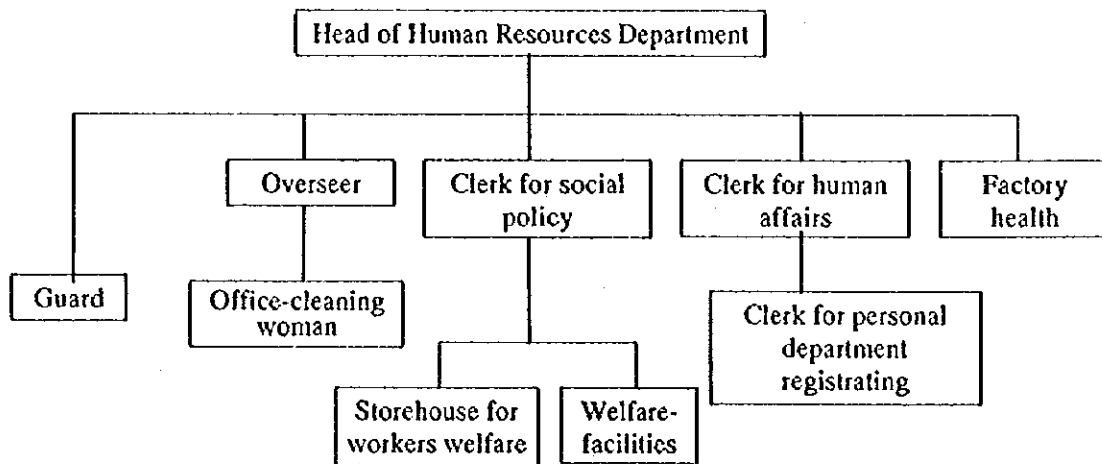


Figure 7-3-1 Organization Chart of the Human Resources Department

7-3-2 Present State of the Labor Force

The present situation in IMAG is as follows.

1) Employees

The statistics on the changes in the number of employees are shown in Figure 7-3-2.

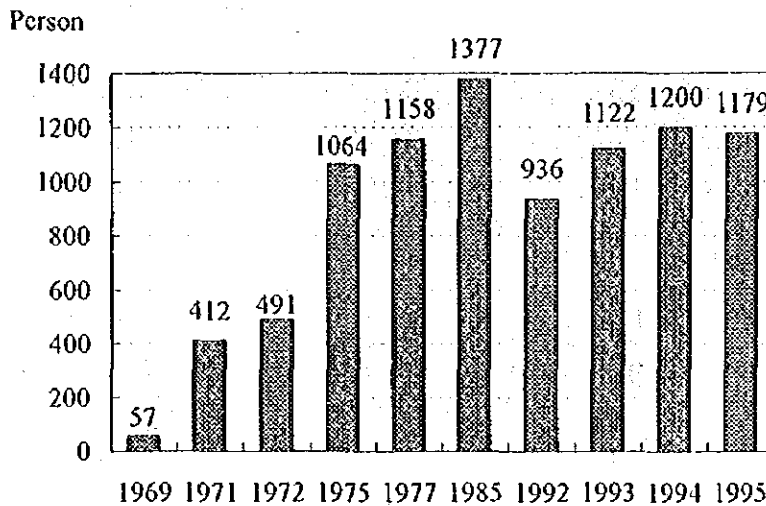


Figure 7-3-2 Changes in the Number of Employees

The number of regular employees in 1995 was 1,179, including approximately 300 contract employees. The number of temporary employees was approximately 20 to 30. The terms of the contracts for contract employees are two months to one year. Otherwise the labor conditions are the same as those for regular employees. Contract employees can be qualified as regular employees after five years of employment. In addition, there are approximately 150 absentees, including long-term absentees because of illness, military service, and pregnancy. In 1995, the company hired 300 new employees. An overview of the employees is shown below.

Men and women	: Approx. 50:50
Employees retiring for personal reasons	: 30 to 40 per year
Number of employees by job type (1995)	
Direct workers	: 969
Indirect workers	: Approx. 210 (incl. 16 administrators)
Average age	: 34 years old (direct: 33; indirect: 38)

2) Working conditions

The number of working days in a year is 252. The number of paid holidays in a year varies from 20 to 35 days, depending on the length of service. A direct worker works approximately 1,600 hours a year with 6.5 hour working day. By backward calculation, the percentage of attendance is computed to be 80%. For rank and file workers, overtime work is limited to 200 hours a year, 8 hours a week, or four hours a day per person, irrespective of sex. However, employees under 18 years of age and pregnant women are prohibited from working overtime.

Regarding direct workers, the work performance, number of persons, and necessary number of persons in each category are submitted to the president every month to regulate the number of persons in each category.

3) Wages and functions

Regarding wages, the direct workers are paid by the hour and the indirect workers and administrative staff are paid by the month. The average wages in 1995 were as follows:

Direct workers : 18,190 forints/hour (wages paid by the hour)

Indirect workers : 46,327 forints/month

The system of job descriptions and wages are shown below. The job descriptions are divided into five basic groups. The wages are for 1995. The supplementary payments were abolished after 1995.

(a) Staff in leader positions

The staff in leader positions are divided into management 1 and management 2. Further, there are seven grades of management and wages. The management 1 group includes deputy directors and the heads of divisions, while the management 2 group includes the heads of departments and managers.

The minimum and maximum wages are defined for each grade.

Maximum : 80,000 forints (monthly salary) + 30,000 forints (supplementary payment)

Minimum : 40,000 forints (monthly salary) + 7,000 forints (supplementary payment)

(b) Production directors

There are three grades for production directors. The minimum and maximum wages are defined for each grade.

Maximum : 69,000 forints (monthly salary) + 5,000 forints (supplementary payment)

Minimum : 34,000 forints (monthly salary) + 5,000 forints (supplementary payment)

(c) Professionals not in leader positions

Professionals not in management positions are divided into three grades, which are subdivided into eight grades. Further, as a senior class, there are four groups of persons with three or more years of experience in each grade.

Maximum : 71,000 forints (monthly salary) + 5,000 forints (supplementary payment)

Minimum : 16,000 forints (monthly salary)

(d) Employees in management

The employees in management are divided into two grades.

Maximum : 52,800 forints (monthly salary)

Minimum : 15,000 forints (monthly salary)

(e) Direct workers

The direct workers are divided into the following five groups. In addition, there are ten grades of jobs and wages.

Unskilled worker

Semi-skilled worker

Skilled worker

Skilled worker grade A

Master

In addition, there is a senior group with advanced skills. Basically, the direct workers are paid by the hour. The figures in parentheses are the equivalent monthly salary calculated on the assumption that an average of 174 hours are worked per month.

Maximum : Hourly wage of 385 forints (67,100 forints/month on average)
+ supplementary payment of 3,000 forints

Minimum : Hourly wage of 75 forints (13,000 forints/month on average)

The overtime pay is 150% of the normal hourly rate for weekdays and 175% for holidays, while the allowances for specific working conditions are included in the wages by job grade, and range from 3,000 to 8,700 forints. Data such as the wages, family situations, and professional careers of the employees are entered in the computer, while other data are recorded separately together on personnel management sheets. There is also a side work column.

4) Welfare

A budget of more than 80 million forints is appropriated for supporting youth clubs, sports clubs, and resort villas, and for providing education, congratulation and condolence payments, and helping the needy, as well as the facilities for providing lunches and transporting employees to and from the company. However, there is no company housing for employees.

7-3-3 Present State of Education and Training

1) Educational system

The cultivation of human resources is closely related to the employment system and makes the organizations more active and develops the capabilities of the company's employees. It also has the secondary effect of improving the workers' attendance and the working environment. Education and training are conducted for each job grade. The contents of IMAG's education plan are as follows:

- (a) Heads of sections and staff in management positions
How to use the system and equipment for quality control
- (b) Technical staff
Training on the use of computers and quality control; improvement of technical skills, instruction in economics, foreign languages, and personnel affairs; courses on technology development and production engineering
- (c) Production directors
Special courses inside and outside the company

In addition, special training is provided for new employees and those posted to new jobs. The two main methods of training, OFF-JT and OJT, are both used.

2) Overview of the 1995 education plan

In 1995, which was the year in which the ISO 9001 certification was acquired, the company placed emphasis on quality control and concentrated on education to quality improve quality in production. The overview of the 1995 education plan is shown below.

- (a) Heads of sections
 - Training outside the company : Twice/year
 - Training inside the company : Once/year
 - Office responsible : Personnel Management Department
- (b) Middle management and production management
 - Training inside the company : Four times/year
 - Office responsible : Heads of departments
- (c) Direct workers
 - Training inside the company : Four times/year
 - Office responsible : Heads of departments

When setting up the production line for a new product or applying a new technology, a separate training program is instituted such as special technical training outside the company.

3) Overview of the education provided

In 1995, a total of 49 courses was provided and a total of 212 employees participated. Of these, there were 46 general education courses (regardless of whether conducted by internal or external lecturers), and 209 employees took part in them. They were provided under the supervision of the Human Resources Department, and OJT was conducted simultaneously. Four courses were conducted by internal lecturers. The main achievements are as follows:

- (a) In-company training

Training was provided on a wide variety of subjects, such as the use of computers, quality control, social insurance, customs duties, financial management, safety technology, personnel management, the finite element method, labor laws, transportation, linguistics, and crane operation. Many of the subjects are related to staff organization units. Each course had one or two participants, except for the courses on the use of computers, quality control, operating techniques, and use of three-coordinate measuring machines, which had many participants.
- (b) Education at national institutions

Three courses were available including courses on finance and corporate management engineering. There were three participants.

The education budget for 1995 was 3.7 million forints, while that for 1994 was 4.04 million forints. The 1996 education plan is currently being drawn up, and will focus on education that will enhance work motivation. The company intends to provide a larger education budget than in 1995.

4) Other systems

(a) Self-assessment system

The company does not have a system of this kind. Promotion is decided by the head of the office to which the employee belongs and the Human Resources Department. There are sometimes problems with employees and negotiations may be held with a labor union.

(b) Suggestion system

Currently, the introduction of a Japanese-style suggestion system is under consideration.

7-3-4 Safety Control and On-the-job Injuries

Figure 7-3-3 shows the statistics for on-the-job injuries.

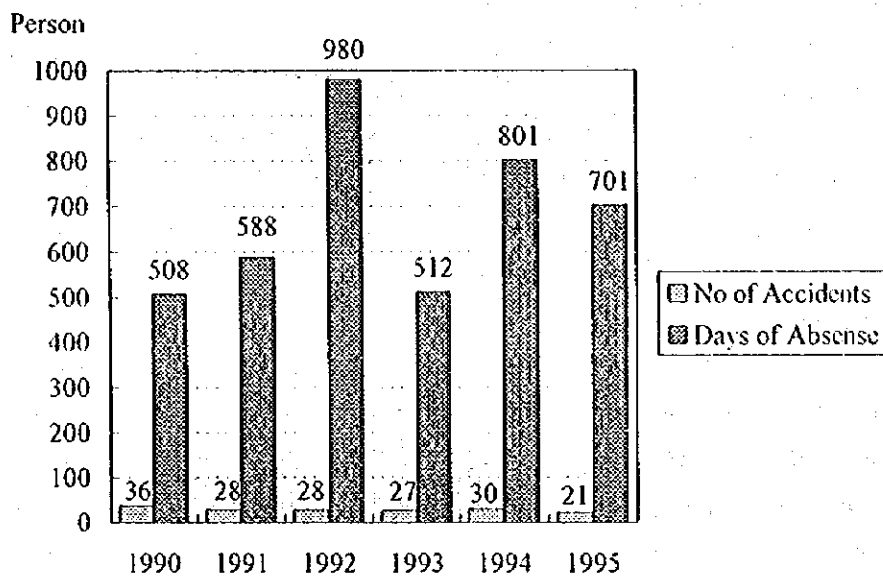


Figure 7-3-3 Statistics for On-the-job Injuries

In 1995, there were 21 on-the-job injuries, and 701 man-days were lost due to accidents. The breakdown of the accidents that occurred in 1995 is as follows.

- Caused by victims' own errors : 12 (including two major accidents causing 558 days' absence)
- Caused by other employee's error : 1
- Caused by company negligence : 4
- Responsibility unclear : 4

Since many of the accidents involve employees who are unfamiliar with the machines, the company provides safety education and training for new employees and for those who are transferred to new posts. The average rate of occurrence of on-the-job injuries in Hungary is 33 per 1,000 employees. The compensation during absence is paid by social insurance or the company's insurance. Frequent occurrences of on-the-job injuries will result in a survey being made by the competent institutions. However, IMAG has no record of this kind. The company reports the occurrence of on-the-job injuries to the competent institutions and labor unions. A revision of the company safety standards is being prepared by the Human Resources Department.

The Human Resources Department stores and manages various kinds of personal protection equipment, such as working wear, safety goggles, gloves, shoes, safety masks, arm covers, according to the work being done.

In the urethane foaming and painting processes and in the shops with a high noise level, special precautions are taken, such as prohibiting overtime work or conducting a medical examination once a year. However, safety slogans or records of accident-free operation, which are often found in Japan, are not displayed.

7-3-5 Personnel Management

1) Labor unions

At present, there are two labor unions in IMAG, which have different parent bodies.

- (a) MSZOSZ : Has a history of 150 years. Very moderate.
- (b) LIGA : Organized recently, rather radical.

The employees can join either union as they wish. The membership is about fifty-fifty. The union officers are not full-time: there is one representative from each of the two labor unions and a joint representative for both unions, who are elected by vote. Subordinate bodies are organized for various categories.

2) Joint consultation

A meeting is held regularly each week with the head of the Human Resources Department as the central figure. From the labor unions, three persons take part in the meeting: the representative of each labor union and the joint representative of both unions. Depending on the issues being considered, the company president may take part. The subjects of consultations include:

- (a) Working conditions, welfare, special matters such as complaints from employees
- (b) Company reports such as the business report and statement of accounts

At present, the labor-management relations seem to be amicable, thanks to the efforts of both sides, and there have been no strikes. When employees are dismissed due to restructuring or the like, consultation is required only if ten or more employees are dismissed. Naturally, those dismissed are mainly contract employees. They are given two to twelve months' pay when dismissed.

7-3-6 Problems with the Cultivation of Human Resources and Personnel Management

1) Personnel management

Since IMAG was a national enterprise of Hungary at the time when the country was a socialist state, it manages its personnel by management putting itself in the workers' place. Also, management systems are in place. The future problem for the company is how to maintain or reform the existing methods of personnel management to conform with the principles of free competition.

IMAG has had technical tie-ups and done consignment production for several foreign companies for passenger car seats, seat parts, and wire harnesses. Now it is introducing methods of personnel management learned from these foreign companies. However, there are differences between the new and existing methods of management. This results in a lack of understanding among divisions, hindering the progress of activities that the entire company should perform as a single entity.

2) Attendance

The attendance rate is much lower than that of Japanese companies. Measures should be taken to improve the attendance rate even if allowances are made for generally accepted ideas and practices in Hungary.

3) Education

One can feel that the company puts great emphasis on the education of its employees. In order to make good use of the educational funds, steps should be taken, such as increasing the number of courses conducted by internal lecturers or having employees who received training outside the company then become teachers within the company.

4) Motivation of employees

It is important for a growing company to consider how its employees can work actively. For that, the ceaseless efforts of management are essential. It is desirable to arrange and implement events or plans, including a suggestion system, designed to increase the motivation of the employees, wherever possible. Not only the Personnel Management Department, but also the heads of the divisions under its direct control should take part in this.

5) Safety control

There are quite a few on-the-job injuries in the company. Although it may be important to investigate the details, find out the causes, and make improvements; it is also necessary to change the awareness of the employees and management.

For the specifics of safety management, it is important to provide equipment to protect personnel. However, more weight should be placed on the enhancement of the individuals' safety consciousness. It is necessary to review the education and training to increase the employees' awareness of safety. It is also necessary to change the awareness of the management.

7-4 Financial Management

7-4-1 Organization and Duties

As shown in Figure 7-4-1, financial management is undertaken by the Corporate Management Department and Financial Accounting Department under the supervision of the vice president of finance.

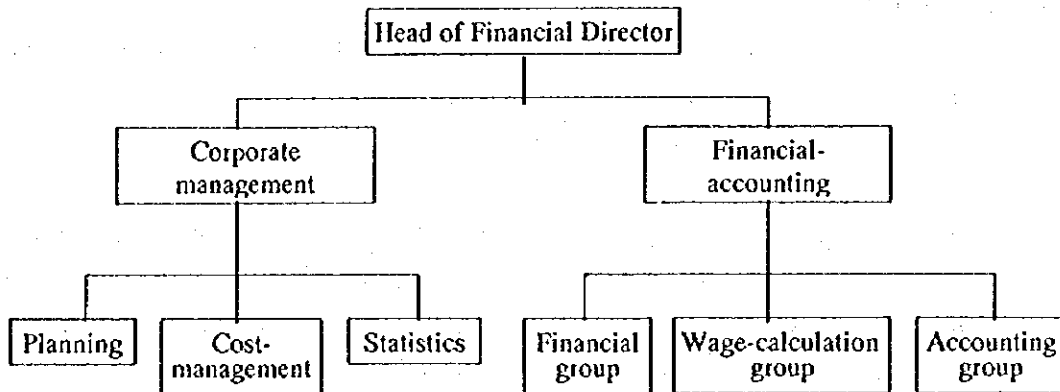


Figure 7-4-1 Organization Charts for Financial Management

The Corporate Management Department, which consists of six persons, undertakes the financial aspects of corporate planning, investment planning, cost management, preparation of financial statistics, and financial analysis. The Financial Accounting Department, which consists of twenty persons, undertakes accounting and wage calculations. The Financial Accounting Department controls all its divisions with the following personnel.

Secretary:	one person
Tax group:	two persons
Financial group:	two persons
Distribution staff:	one person
Wage calculation group:	four persons
Slip creation staff:	three persons
Computer operator:	one person
P/C input staff:	two persons
Treasurer:	one person
Auditor:	three persons

7-4-2 Financial Statements

The accounting system in Hungary was changed to one based on Western-style corporate accounting principles in accordance with the fiscal law promulgated in June 1991. Consequently, IMAG has been following the new accounting system using computer-aided accounting since January 1992. The law requires a company with total assets of 150 million forints, a sales volume of 300 million forints, and an average of 100 employees or more to produce an annual report. It is obligatory to submit the annual report to the Court of Registration by March 31 of the following year. The fiscal year begins on January 1 and ends on December 31. The annual report must contain the financial statements described below. However, the fiscal law does not require the creation of a cash flow account. The balance sheet and profit and loss account contain the records for two business years.

- (a) Balance sheet
- (b) Income statement
- (c) Supplementary documents
- (d) Business report

Since IMAG was a 100% subsidiary of IKARUS until 1995, it prepared individual financial statements and submitted them to IKARUS. The latter created consolidated financial statements of its affiliated companies and submitted them as annual reports

1) Income statement

The income statement for the four years from 1992 to 1995 are shown in Table 7-4-1. The main items of the income statement are as follows:

- (a) Net sales revenues
 - Net domestic sales: Seats, wire harnesses, door trims, roof trims
 - Net export sales: Wire harnesses, seat adjusters
 - Other income: Profits on sale of scrap and disused inventory articles, receipt of arrears.
- (b) Direct costs
 - Own production
 - Materials costs, labor costs (wages, bonuses, welfare expenses)
 - Manufacturing expenses (electric power ; fuel; water, lighting and heating; supplies; repairs; depreciation; and other expenses)
 - Cost of goods sold
 - Profits on sale of scrap and disused inventory articles

- (c) Indirect costs
 - Indirect cost of sales
 - Overhead costs
 - Personnel expenses (wages, bonuses, welfare expenses)
 - Expenses for Electric power; water, lighting and heating; supplies; repairs; traveling; communications; entertainment; advertisement; insurance; and other expenses
 - Other general overheads
 - Welfare expenses; depreciation expenses
- (d) Other expenditures
 - Exchange losses, taxes on business activities (local tax), other charges
- (e) Extraordinary charges and profits
 - Penalty taxes
 - Refund of taxes

Categories in the income statement, given above, differ from those in Japan. The classification of account titles varies greatly, depending on countries or types of business. In this report, profits in the income statement is divided into gross profit on sales, operating profits, ordinary profits, and profits before tax.

- (a) Gross profit on sales

The Gross profit on sales is calculated by subtracting the cost of goods sold from the net sales revenue. This value indicates the competitive position of the products the company deals in. A large gross profit on sales means a strong competitive position and high profitability of the products.
- (b) Operating profit

The most basic profit and loss that a company makes from its primary business activities such as the sale of products and provision of services.
- (c) Ordinary profit

The profit and loss that are calculated by adding the operating profit obtained from the main business to the financial profit and loss obtained mainly from financial activities other than the main business.
- (d) Profit before tax (current income)

The profit and loss that are calculated from the ordinary profit by adding or subtracting non-operating profits or losses such as an extraordinary profit or loss generated which has no direct relation to the normal business activities of the company for a certain period.

Table 7-4-1 Income Statement (entire company of IMAG)

Denomination	(Unit: Thousand HFT)			
	1992	1993	1994	1995
Net domestic sales	627,460	1,605,855	2,230,075	4,927,769
Net export sales	370,932	397,818	468,274	409,936
Net sales revenues	998,392	2,003,673	2,698,349	5,337,705
Other income	20,235	83,338	77,742	141,577
Own production	622,062	1,238,308	1,889,252	3,529,331
Cost of goods sold	37,583	42,753	38,122	249,342
Direct cost of sales	659,645	1,281,061	1,927,374	3,778,673
Indirect cost of sales	8,051	4,574	18,386	19,939
Overhead costs	347,634	585,465	719,948	1,063,260
Other general overheads	17,632	11,142	14,326	16,053
Indirect sales costs	373,317	601,181	752,660	1,099,252
Other expenditures	39,059	161,732	211,492	320,990
OPERATING PROFIT	-53,394	43,037	-115,435	280,367
Received interests and interest-like revenues	3,212	1,972	1,611	10,891
Other incomes from financial transactions	14	-	-	-
Revenues from financial transactions	3,226	1,972	1,611	10,891
Paid interests and interest-related payments	1,373	27,876	60,797	109,682
Costs of other financial activities				
Financial transaction expenses	1,373	27,876	60,797	109,682
ORDINARY PROFIT	1,853	-25,904	-59,186	-98,791
USUAL ENTERPRISE RESULT	-51,541	17,133	-174,621	181,576
Extraordinary profit	13,423	4,395	9,676	-
Extraordinary charge	2,077	-	1,571	-
EXTRAORDINARY PROFIT	11,346	4,395	8,105	-
PROFIT BEFORE TAX	-40,195	21,528	-166,516	181,576
Tax payment	-	706	18,789	32,176
PROFIT AFTER TAX	-40,195	20,822	-185,305	149,400
Use of retained earnings for dividend and shareholding				
Paid off (approved) dividend and shareholding				
PROFIT (LOSS) OF THE YEAR	-40,195	20,822	-185,305	149,400

To examine the financial affairs closely, the following operations were performed, and an analysis and summary were made of the income statement for the four years starting from 1992 when the production of passenger car seats was started. The results are shown in Table 7-4-2. The figures in parentheses indicate percentage changes over the preceding year.

- (a) Transfer the income and expenditure (such as the profit on sale of disused inventory articles) listed as ordinary profit to non-operating profit and loss.
- (b) Transfer the exchange loss listed as an indirect cost of sales to the extraordinary profit and loss.

With the increase in the sales of car parts such as passenger car seats and wire harnesses, the sales revenue increased rapidly beginning in 1992. However, after going into the black in 1993, the company posted a deficit of 170 million forints in 1994. A profit of 180 million forints is expected in 1995. The reasons include:

(1) Gross profit on sales

The manufacturing costs in 1994 increased 153% over the previous year, exceeding the rise in the net sales revenue. As a result, the gross profit on sales increased only 106%. In 1995, since the increase in manufacturing costs was held down while the net sales revenue increased 198%, the gross profit on sales is expected to increase as much as 224%.

The manufacturing cost is broadly divided into a fixed cost (such as general administrative expenses) and variable costs (such as materials costs). Since Hungary is suffering from soaring inflation now, it is very difficult to hold down the fixed costs, not to mention variable costs. However, it is very important to reduce the manufacturing cost, because the manufacturing cost forms a large proportion of the total cost.

(2) Operating profit

The operating profit, which stood at 60 million forints in 1993, dropped to a negative figure in 1994 in spite of the 135% increase in the net sales revenue over the previous year. In 1995 the company posted an operating profit of 580 million forints. The general administrative and selling expenses that accounted for 32% of the net sales revenue in 1994 dropped to 23% in 1995. With sales revenue unlikely to increase as rapidly as previously, efforts should be made to lower the general administrative and selling expenses below the 1995 level.

Table 7-4-2 Analysis of Income Statement

Denomination	(Unit: Thousand HFT)			
	1992	1993	1994	1995
NET SALES REVENUE	998,392	2,003,673	2,698,349	5,337,705
	-	(201%)	(135%)	(198%)
COST OF GOODS SOLD	622,062	1,238,308	1,889,252	3,529,331
	-	(199%)	(153%)	(187%)
GROSS PROFIT ON SALES	376,330	765,365	809,097	1,808,374
	-	(203%)	(106%)	(224%)
GENERAL ADMINISTRATIVE & SELLING EXPENSES	412,376	704,486	870,343	1,230,242
	-	(171%)	(124%)	(141%)
OPERATING PROFIT & LOSS	-36,046	60,879	-61,246	578,132
	-	-	-	-
FINANCIAL PROFIT & LOSS	1,853	-25,904	-59,186	-98,791
	-	-	-	-
ORDINARY PROFIT & LOSS	-34,193	34,975	-120,432	479,341
	-	-	-	-
EXTRAORDINARY PROFIT & LOSS	-6,002	-13,447	-46,084	-297,765
	-	-	-	-
PROFIT BEFORE TAX	-40,195	21,528	-166,516	181,576

(3) Ordinary profit

Growth in the inventories of the mostly imported raw materials increased the expenditure on interest payments, which in turn caused the ordinary profit to go into the red in 1994. IMAG's inventory assets in 1994 amounted to about 700 million forints, 88% of which were raw materials inventories. The interest payments in the same year amounted to about 60 million forints, greatly affecting the company's business. To help IMAG out of this situation, Magyar Suzuki bought cloth, part of the inventories for passenger car seats. This reduced the raw materials inventories by 37%.

(4) Profit before tax

Since IMAG imports parts for passenger car seats from Japan, its pretax profit is greatly diminished by exchange losses. The exchange loss in each fiscal year is as follows:

Fiscal 1993: 58,427,000 HFT

Fiscal 1994: 93,809,000 HFT

Fiscal 1995: 190,000,000 HFT (estimate)

Since the Hungarian government reviewed its currency policy and has begun to announce a fixed exchange rate each month, it is now possible for companies to estimate exchange losses. It is expected that IMAG can also improve its exchange losses from now on.

2) Balance sheet

The results of four years from 1992 to 1995 are shown in Table 7-4-3. In Hungary, balance sheets employ a report form. The classification and order of expense items also differ from those employed in Japan. The main differences are shown below. Detailed analysis for the balance sheets is shown in 8-4-5.

(1) Notation

Japan: Account form

Hungary (IMAG): Report form

Asset	(Current Reserve) Current Asset	Liability	Current Liability
			Fixed Liability
	Fixed	Reserve	
	Asset	Equity	

Assets
Invested Assets Current Assets Prepayment
Liability - Source
Equity Specific Reserve Liability Accrued Expenses

(2) Order of liquidity

Japan: Arranged in descending order of liquidity.

Hungary: No strict order is observed.

(3) Distinction between "liquid (current)" and "fixed"

In both countries, the following standards are used.

Standards for operating cycles: Accounts receivable, notes receivable, inventory assets, accounts payable, and notes payable in normal business transactions (in the process of the operating cycle) such as buying-in, manufacturing, and selling are treated as current assets or current liabilities even though the manufacturing, inventory, or selling period exceeds one year.

One year rule: The claimable assets or liabilities outside the operating cycle will be treated as current assets or current liabilities if they are liquidated within one year, and as fixed assets or fixed liabilities if they are liquidated later than one year.

7-4-3 Cost Control

The manufacturing cost data of each manufacturing department are collected by the Corporate Management Department. Based on this data, the cost plan for the manufacturing costs in the next fiscal year is created. In planning manufacturing costs, the annual production of products is planned according to the annual production plan of the clients. Based on this, the target value of the annual production cost is calculated. The break down of the costs for fiscal 1995 of the Bus Divisions and Passenger Car Seat Division is shown in Table 7-4-4.

The unit prices of products are decided, based on the estimated values of the manufacturing cost, once a month in the case of passenger car seats, or through negotiations with the client each time the contract is signed in the case of bus seats. Table 7-4-5 shows the form of the basic data for price negotiations of passenger car seats. Hungary has approximately 25% inflation, making it extremely difficult to negotiate unit prices of sales. Therefore, in 1995 vice presidents of technology and finance were assigned exclusively for conducting negotiations.

7-4-4 Capital Investment Planning

For planning of capital investments, the annual plan for the next fiscal year is created. Under the present situation where the domestic social and economic conditions and business environment are changing rapidly, it is difficult to prepare a medium-term or long-term plan.

The capital investment plan is established after being reviewed technically by the vice president of technology and financially by the vice president of finance, based on the requests submitted by the manufacturing divisions.

Investment plans are supposed to be evaluated according to an established form. However, specific standards or methods have not yet been established for evaluation.

Table 7-4-3 Balance Sheet (1/2)

Denomination	(Unit: Thousand HFT)			
	1992	1993	1994	1995
A. Invested assets	469,717	482,836	579,738	570,356
I. INTANGIBLE ASSETS	45,696	26,943	35,851	39,924
Licenses				
Intellectual property	44,420	19,600	28,487	23,636
Activated value of research and development		3,640	2,912	11,446
Activated value of formation, transformation	1,276	3,703	4,452	4,842
II. TANGIBLE ASSETS	424,021	455,893	536,267	523,024
Real estates	284,776	288,685	291,771	291,718
Technical equipment's, machinery, vehicles	80,833	105,440	158,001	160,176
Other equipment, machinery, vehicles	37,765	50,890	64,267	62,363
Investments in fixed assets in process	20,051	9,415	22,228	8,767
Advance payments made towards investments	596	1,463		
III. INVESTED FINANCES				
Shareholdings			7,620	7,588
Securities				
Loans			7,620	7,588
Long-term bank deposits				
B. Current assets	499,000	825,694	1,294,300	1,191,046
I. INVENTORIES	240,418	465,289	694,266	339,862
Raw materials	176,804	406,083	608,796	223,564
Goods for resale	3,772	3,581	4,916	3,965
Advance payments made towards inventories	9,541	32	2	1,958
Work in progress and semi-finished goods	46,601	37,193	53,025	80,972
Finished products	3,700	18,400	27,527	29,403
II. CLAIMS	203,687	302,862	384,940	647,260
Accounts receivable from supply of goods and services (Customers)	195,913	278,245	382,780	642,000
Draft receivable				
Unpaid part of subscribed capital				
Claims against founders				
Other receivable	7,774	24,617	2,160	5,260
III. SECURITIES (34-36.)				
Bonds bought for sale				
Own shares, share quotas, shares bought for sale				
Other securities				
IV. LIQUID ASSETS	54,895	57,543	215,094	103,924
Cash, cheques	595	687	1,315	971
Bank deposits	54,300	56,856	213,779	102,953
C. Pre payments	22,385	12,656	9,637	35,000
TOTAL ASSETS	991,102	1,321,186	1,883,675	1,696,582

Table 7-4-3 Balance Sheet (2/2)

Denomination	(Unit: Thousand HFT)			
	1992	1993	1994	1995
D. Equity	549,805	570,627	580,322	719,777
I. SUBSCRIBED CAPITAL	590,000	590,000	785,000	785,000
II. CAPITAL RESERVE				
III. RETAINED EARNINGS		-3,145	-19,373	-46,804
IV. LOSSES CARRIED FORWARD				
FROM PREVIOUS YEARS	-37,050			-167,819
V. PROFIT (LOSS) OF THE YEAR	-40,195	20,822	-185,305	149,400
E. Specific reserves	385	1,195	3,307	118,000
1. Specific reserves for expected losses	385	1,195	3,307	60,000
2. Specific reserves for expected obligations				10,000
3. Other specific reserves				48,000
F. LIABILITIES	432,253	720,937	1,284,456	843,805
I. LONG-TERM LIABILITIES	97,664	101,377		
Credit and loans for fixed asset investments		34,760		
Other long-term credits				
Long term-loans	97,664	66,617		
Debts on bond issues				
Obligations towards founders				
Other long-term liabilities				
II. SHORT-TERM LIABILITIES	334,589	619,560	1,284,456	843,905
Advance payments received from customers				2,130
Trade creditors	227,002	218,246	799,051	417,000
Discount paper		149,779	92,827	
Short-term credits		34,770	59,043	
Short-term loans		42,900	250,000	350,000
Other short-term liabilities	107,587	173,865	83,535	59,675
G. Accrued expenses	8,659	28,427	15,590	15,000
TOTAL LIABILITIES	991,102	1,321,186	1,883,675	1,696,582

Table 7-4-4 Break Down of the Costs (fiscal 1995)

(Annual Production Volume)	Bus I and II 1,324 Units	Passenger Car Seat 36,627 Units
<SEAT DIVISION>		
Direct Costs and Expenses		
Material Costs	363,750	2,048,241
Direct Labor Wages	84,201	58,313
Social Insurance Expenses	37,049	25,658
Sub Total	485,000	2,132,212
Indirect Costs and Expenses		
Indirect Material Costs	24,500	82,000
Office Expenses	34,796	27,501
Administrator's Wages	52,900	13,500
Other personal Costs	18,341	6,825
Social Insurance	26,813	6,820
Depreciation	24,250	25,000
Other Costs	3,400	22,800
Sub Total	185,000	184,446
<Other Division>		
Other Costs	8,620	84,310
Energy Costs	40,934	5,017
Maintenance Costs	27,442	3,460
Sub Total	76,996	92,787
Manufacturing Costs Total	746,996	2,409,445
Unit Cost (HFT/UNIT)		
Financial Costs	0	62,189
Sales and General Administrative Costs	37,000	128,000
Grand Total	783,996	2,599,634

Table 7-4-5 Form for Cumulative Data of Unit Prices of Passenger Car Seats

Magyar Suzuki Corporation		Price Offer (for Parts)					/ Page	
Sending Date: 199..		Month		Day		No.....		
The Price Offer Detailed below:								
Model:		Number of Part:		Name of Part:		Piece/Car:		
P a r t	Raw Material	A (*) B	Size	Weight	Unit Price	Total (Ft)	Checking	Remark
P r i c e	Total Price:					(1)		
	No.	Process Name	Machine Name	Necess. Time	Charge Ft/min	Total (Ft)		
P r o c e s s	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
C o s t	SubTotal:					(2)		
	Process Name		Quantity		Unit Price	Total (Ft)		
	Galvanizing				dm ²			
	Painting				dm ²			
H e a t	Heat Treatment				kg			
	SubTotal					(3)		
Process Cost: (2) + (3)						(4)		
Marginal Cost:						(5)		
D i e	Die Name		Value	Amortization No.				
J i g	SubTotal							
	Total Price of Offer (Ft): (1) + (4) + (5)						(6)	
Checked Unit Price:								

.....
Signature and Stamp

(*) Choose the appropriated column by 'X'
A - The raw material is supplied by own
B - The raw material is supplied by Magyar Suzuki Co. for cost paying

Notice: Fill in only the inside of double frame!

Chapter 8
Modernization Plan

Chapter 8 Modernization Plan

8-1 Policies for Modernization Plan

A modernization plan is formulated based on the following policies in order to create a company structure that can cope with the drastically changing business environment and which will enable to produce seats for 50,000 passenger cars a year.

8-1-1 Modernization of the Production Processes

1) Receiving of raw materials

A acceptance inspections and the management of material movements should be improved and control over goods in inventory should be strengthened to establish a structure that can procure materials and parts properly and can accommodate future production increases.

2) Metal Working

The output should be increased by rearranging the layout to suit the quantity being produced. Operations such as cutting, bending, and welding should be investigated and improved to reduce the percentage of defects.

3) Cutting and sewing processes

Method of improving the profitability should be worked out in order to reduce the waste of surface materials that make up a high percentage of the manufacturing cost, and improve the operating efficiency.

4) Cushion process

The productivity should be improved by standardizing the work procedures and reviewing the processes. At the same time, modifying the raw materials should be considered in order to reduce their costs.

5) Assembly process

The assembly lines for bus seats should be modified so that the layout is suitable for the quantity being produced. Also, the line balance of the assembly lines of passenger car seats should be analyzed and improved to accommodate an annual production of seats for 50,000 cars.

6) Inspection process

Control in the inspection processes should be strengthened by displaying the standards (such as process specifications) and inspection records in order to eliminate defects in every process as well as in finished products.

7) Flow of materials

Wasted efforts in handling materials should be eliminated by adjusting the layout in each shop to suit the scale of production as well as by planning proper production lots in each process.

8-1-2 Modernization of Production Control

1) Product development and design control

The capability of developing products that meet market needs should be improved as well as the ability to produce designs and quality that satisfy customer requests. Also, design standards should be established within the company to try to reduce manufacturing costs at the development and design stages.

2) Inventory control

Control of inventories should be strengthened by improving organization and its functions. A framework should be established for reducing inventories by classifying them and clarifying the quantities to be ordered, the order timing, and the amount of safety stock.

3) Production control

The production control functions of the divisions associated with production should be reviewed, and the necessary forms (for example, of procedures and daily schedules) should be organized. Control techniques and process management techniques such as dispatching boards should be introduced.

4) Quality control

The percentage of defects should be reduced by introducing quality control techniques such as QC flow charts for each product and enhancing company-wide quality consciousness through QC group activities.

5) Information processing systems

The existing computer systems should be improved. At the same time, concurrent engineering should be introduced in order to concentrate and speed up information processing. In this way, an information processing system can be constructed that will provide proper information concerned with business conditions and will help to reduce the costs of products.

8-1-3 Modernization of Corporate Management

1) Decision making

In order to cope with the drastically changing business environment, it is necessary to establish a decision making process based on the existing structure of IMAG. Management plans necessary for decision making should be worked out and business management should be made market oriented.

2) Marketing techniques

Systematic techniques should be introduced into marketing activities and analyses should be made to find new markets which can be cultivated. The Marketing Department should take the lead in revamping its structure as part of the marketing activities needed to establish customer confidence.

3) Human resources development and labor management

In order to secure and develop human resources that can adapt to changes in the business environment, a job grading system should be incorporated into the current qualification system. In this way, comprehensive human resources development and labor management can be promoted in order to strengthen the business structure.

4) Financial management

Analysis techniques based on financial statements such as statement analysis should be used to analyze financial problems and improve the financial situation.

8-1-4 Modernization of Production Facilities

The modernization of the production facilities is aimed at strengthening the company business structure by improving quality of products and reducing manufacturing costs. For that, the modernization plan should be implemented in three steps as follows:

First stage plan (fiscal 1996): The equipment and facilities included in IMAG's 1996 capital investment plan should be introduced, as a short-term improvement plan.

Second stage plan (fiscal 1997): The equipment and facilities for improving quality and reducing manufacturing cost should be introduced as a medium-term improvement plan.

Third stage plan: The equipment and facilities necessary for meeting international standards as a seat maker should be introduced.

Before implementing the third stage plan, the equipment and facilities introduced in the first and second stage plans should be integrated with the management system. Then, the time for implementing this plan should be decided taking into consideration of the financial conditions at that time and any changes in the quantities being ordered.