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FOOTWEAR DEVELOPMENT

DP/HUN/75/001

HUNGARY

Terminal report

Prepared for the Government of Hungary
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of J.J. Berg, project manager

United Nations Industrial Development Organization
Vienna

id.77-7573

Explanatory notes

A comma (,) is used to distinguish thousands and millions.

A full stop (.) is used to indicate decimals.

The monetary unit in Hungary is the forint (Ft). During the period covered by the report, the value of the Ft in relation to the United States dollar were $US 1 = Ft 41.74 (commercial rate) and $US 1 = Ft 20.83 (non-commercial rate).

Totals may not add because of rounding.

The following abbreviations are used in this report:

BIMEO	Quality Control Department of the Research Institute for Leather, Artificial Leather and the Shoe Industry
BMKI	Research Institute for Leather, Artificial Leather and the Shoe Industry
CMEA	Council for Mutual Economic Assistance
GD	General Director
MC	Minőségi Cipőgyár (Quality Shoe Factory)
MDI	Fashion Institute
MEFO	Central Quality Control Department
MEO	Factory Quality Control Department
MERT	Soviet Export Control Organization
MLI	Ministry of Light Industry
SATRA	Shoe and Allied Trade Research Association (United Kingdom)
TD	Technical Director
USMC	United Shoe Machine Co.

ABSTRACT

The project entitled "Footwear Development" (DP/HUN/75/001) arose from a request submitted in March 1975 by the Government of Hungary for United Nations Development Programme (UNDP) assistance in the modernization of the footwear industry in Hungary. The request was approved in May 1975, with the United Nations Industrial Development Organization (UNIDO) designated as executing agency and the Ministry of Light Industry as the government co-operating agency. This report summarizes the work carried out by the three members of the UNIDO expert team in the following three areas, each being dealt with by one expert during the term of his assignment: footwear marketing (December 1975 to March 1976), shoe designing and pattern cutting (July 1976 to October 1976), and footwear technology and management (May 1976 to September 1977).

Among the conclusions of the report, the following are noteworthy:

(a) Hungary's economic structure would be well suited to producing articles at competitive prices on Western markets, local technical resources for the footwear industry are very good, and Hungarian shoe factories seem to be well equipped and comparable to many of the best producers in Western Europe;

(b) The difficulties faced by the Hungarian footwear industry on Western markets arise from the failure to utilize local technical resources fully and effectively, from the shortage of skilled workers, and from commercial and marketing problems such as slowness in responding to fashion changes and the lack of a clear product profile and aggressive sales and marketing organization.

The following recommendations should also be noted:

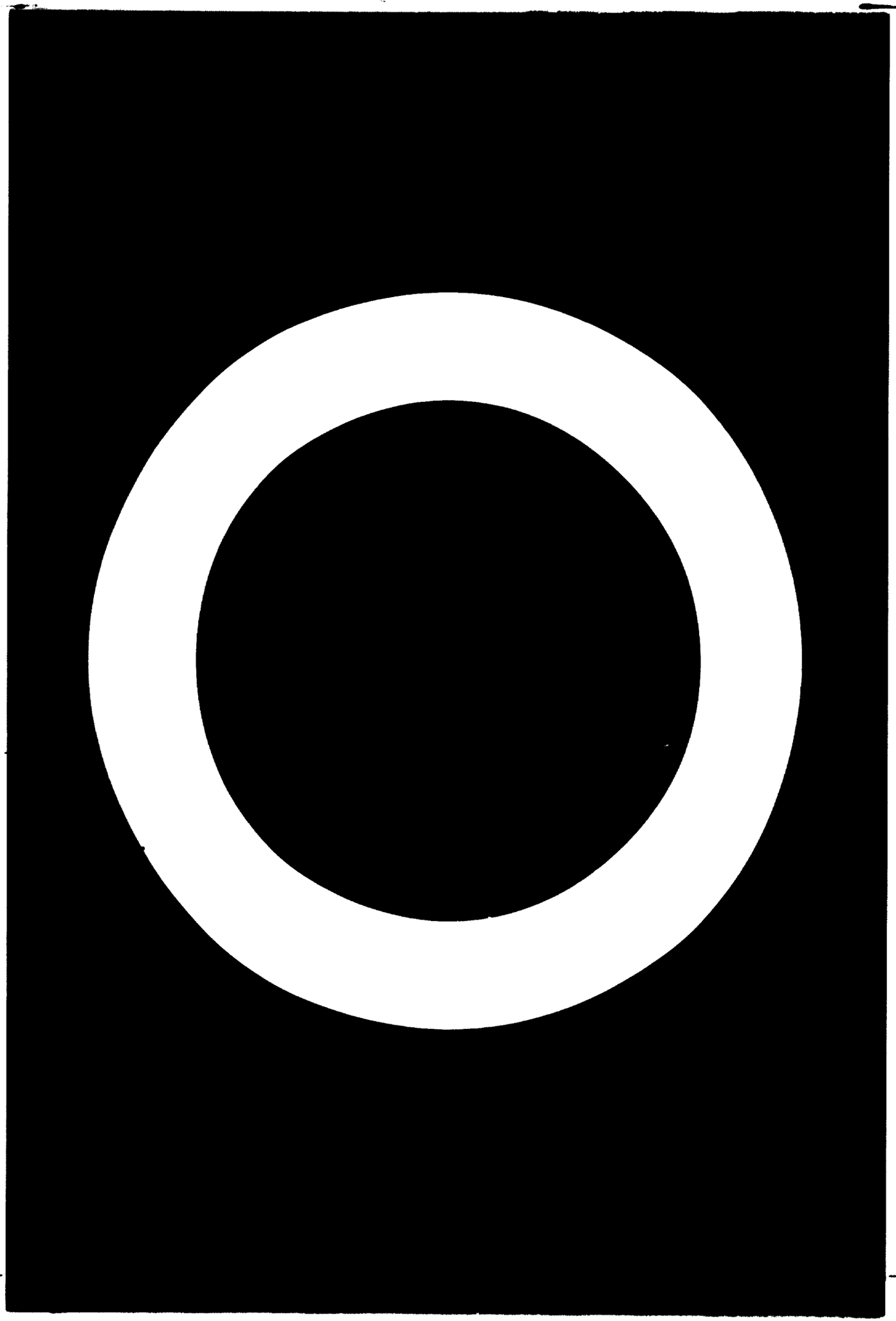
(a) The product development departments should be reorganized with a view to achieving greater specialization in shoe upper development and more technical know-how at an earlier stage in the designing work;

(b) A stronger marketing organization playing a central role in both style development and sales should be established;

(c) The quality control departments should be reorganized and the quality controllers of semi-finished and finished products directly administered by the production managers;

(d) Sewing techniques should be modified from the "cement assembly" method to stitching largely by hand fitting, and the assembly of interlinings should be rationalized by using pre-cemented interlinings and an iron-on press instead of hand cementing with latex;

(e) Lasting technology should be developed towards "hot-melt" lasting, and wire brush roughing should be adopted for most materials. Automatic roughing should also be developed further, and the application of cement technology improved.



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I. INTRODUCTION

Minöségi Cipögyár (MC) (Quality Shoe Factory), the leading Hungarian producer of women's shoes, has not been able to achieve satisfactory export results in Western European markets. The reasons are mainly that in spite of their solid quality, the products lack the necessary finish in terms of style, fashion and eye-appeal, and that the organizational structure of the factory is not geared to compete in dynamic fashion markets of the Western European type. The Government of Hungary, through the Ministry of Light Industry (MLI), wanted to remedy this situation and to create an MC model factory to serve as an example for other shoe factories in Hungary.
A request was therefore submitted in March 1975 by the Government of Hungary for UNDP assistance in the modernization of the footwear industry in Hungary. The request was approved in May 1975, with the United Nations Industrial Development Organization (UNIDO) designated as executing agency and the Ministry of Light Industry as the government co-operating agency. The original budget provided for Government and UNDP contributions of respectively $US 82,160 and $US 72,500.

The project also had a fellowship component, under which three Hungarians should be sent for suitable in-plant training in the Western European shoe industry (possibly in Italy, France or the United Kingdom) on the following basis:

Fellowship post	Duration
Footwear designer	3 months
Footwear production	3 months
Footwear marketing	3 months

The budget provided for this purpose involved Government and UNDP contributions of respectively $US 3,000 and $US 5,400.

The project involved a team of three UNIDO experts, one of whom served as Project Manager. Each expert prepared a report on his particular assignment. The mission of the expert in footwear marketing took place from December 1975 to March 1976, and that of the expert in designing and pattern cutting from July 1976 to October 1976. The mission of the footwear technologist and management expert, who served as Project Manager, was from May 1976 to April 1977, and was extended a further four months to enable the expert to follow up his recommendations to MC and to give advice to the shoe industry in general.

This report analyses the findings of the team and identifies the factors which the experts consider to be causing the difficulties faced by the industry.

The long-range objective of the project was to achieve a considerable increase in the export potential of the footwear industry and to find ways and means of meeting future development requirements.

The immediate objectives were as follows:

(a) To formulate and assist in implementing a flexible management structure in order to achieve quicker production planning through the MC factories;

(b) To provide direct assistance in design and styling, in process control in upper leather cutting and upper stitching, and in production with quality control and process work;

(c) To advise on marketing for both the export and domestic market;

(d) To prepare a training programme to provide effective support in case of production changes.

Annex II sets forth the conclusions reached during a meeting held to discuss the implementation of the recommendations made in this report.

Special courses

During the Project Manager's extension period special courses for the MTM and sewing machinist instructors were conducted. The MTM course was held by a member of the "Deutsche MTM-Vereinigung", and the expert considers that such training should be continued. It would be useful if a student group of about 10 persons could be formed to carry out a complete MTM analysis in a Hungarian shoe factory (the MC A-factory would be a suitable subject of study). This work would take about one year to complete, and the Deutsche MTM-Vereinigung would be responsible for its supervision.

The sewing machinist instructor course lasted three weeks and was based on the principles of skills analysis. During the course 12 instructors were trained for the various MC plants. Annex III, by R.C. Lucas, expert in footwear marketing, contains recommendations for the training of sewing machinists in footwear manufacture.

Katy project

One of the recommendations made by a UNIDO expert following a previous mission resulted in a joint venture programme with a United States company, Katy Industries Inc. A contract was signed between MC, Tanimpex and Technoimpex on the one hand, and Katy Industries Inc., on the other, whereby MC undertakes to produce a suitable shoe for United States export and to sell a fixed quantity of these shoes through Tanimpex at seasonably revisable prices based on the world market situation and raw material costs. The production machinery would be recommended and supplied by Katy through Technoimpex. Katy will supply the "know-how" on a fixed-charge basis and guarantee quality and production results and sales on the United States market.

Background information

The Hungarian footwear industry is under rapid development and the total production of 1976 was approximately 47 million pairs. Total production is planned to reach 54 million pairs by the end of the present five-year plan in 1980. MC production was 7.3 million pairs in 1976, or about 15½ per cent of total Hungarian production, and was distributed as follows: 55.9% for Council of Mutual Economic Assistance (CMEA) exports, 42.7% for the domestic market, and 1.4% for western exports. The 1977 MC production plan places greater emphasis on western exports, with scheduled production as follows: 49.7% CMEA exports and 39.7% domestic market. Total production is planned to be 7.5 million pairs.

The factory organization was restructured in late 1975, and is currently meeting the requirements of both the domestic market and CMEA export market. The current organization will not, however, bring optimum results on Western markets, and changes taking place on the domestic market will probably also demand a modified organizational structure in the near future. Suggestions for a reorganization are therefore made in this report.

II. FINDINGS

A study of the Hungarian shoe industry within a global economic context shows clearly that Hungary's economic and industrial structure has considerable potential for promoting the production of competitive footwear. The trend in Western economies in recent years has been to move the shoe industry from northern, industrial, high-wage countries to less industrialized countries with lower labour costs. Hungary's economic structure would be well suited to produce articles at competitive prices on Western markets, thereby obtaining the hard currency needed to pay for the raw materials and machinery which in the leather and shoe industry are mainly imported from the dollar area.

What then are the problems obstructing this development? From the financial point of view, there seem to be no great difficulties, that is the industry is given the tools to work with and all the shoe factories visited seem to be well equipped and comparable with many of the best producers in Western Europe. On the other hand, commercial and marketing problems are very obvious. The success of Western European shoe manufacturers is usually due to the following factors: quick response to fashion changes; clear product profile and aggressive sales and marketing organization; efficient purchasing organization to secure the right materials at the right price and at the right time; capable and well-organized production unit with flexibility to change overnight to follow new market trends. In the case of Hungary, the first three factors seem to be lacking, and this is obviously caused by the fact that the shoe industry is geared to the less market-orientated CMEA exports and the domestic market only. The factories are therefore large and accustomed to work with large series of relatively unsophisticated products. Development, marketing and material supply are geared to the same ends. In other words, the present organization is not designed for the vigorous conditions existing in Western markets and cannot achieve good results.

A successful women's fashion-shoe factory for Western-type production should not be as big as the Hungarian state-controlled factories. Production for such a fashion-shoe factory should not exceed 5,000 pairs/day.

The social problems of the Hungarian shoe industry are many. The shortage of workers in the Budapest area and of skilled workers throughout the country is a real problem. Wages in the shoe industry, which are 16% lower than the wage average in Hungarian industry as a whole, do not encourage young people of high calibre to start in an industry which does not offer them greater benefits and opportunity. The workers' discipline and motivation, as well as their professional skills, leave much to be desired.

Local technical resources for the industry are very good. The technical education and "know-how" level of top management in the shoe, leather and component industry is comparable with the standard in most industrialized countries, and there is a Research Institute for Leather, Artificial Leather and the Shoe Industry (BMKI) which is well equipped and has good technical staff. It seems, however, that the resources are not at all fully and effectively utilized. The contact between shoe factories and their suppliers is very poor, and the lack of communication often causes embarrassing situations involving delayed or unnotified material deliveries. The shoe factories also have very poor contacts with BMKI, and do not utilize its resources to solve their many problems.

A. Design and pattern cutting

A member of the UNIDO team of experts has thoroughly studied the design and pattern-cutting departments, and gives a complete picture of their work in a technical report[1/] containing recommendations for technological and organizational improvements. The design and technical pattern-cutting departments of the Budapest factories subsequently adopted the expert's technological recommendations, and, in the opinion of the department heads, have obtained very satisfactory results.

To further standardize the pattern-making department work, further technological improvements have been introduced. All the last moulds for new lasts are now made in the product development department, and from there handed over to the design department. A special method of standardizing the throat opening in different heel heights has also been adopted. A last mould and pattern will be fully approved after bulk production of 10,000 pairs. Any alterations to the pattern will then be communicated from the technical pattern-making department to the designers and the correction will be made.

[1/] K. H. Longman, "Shoe design and pattern cutting" (DP/ID/SER.A/85).

The design department faces quite a difficult task, i.e. to work with three entirely different markets with overlapping seasons as follows:

Market	Design period	Presentation
USSR collection	October - March	May
Local market I	May - August	August
Local market II	October - February	February
Western, including the United States spring/summer	April - July	August
Western, including the United States autumn/winter	September - December	January

It could be argued that fundamentally there is only one market and that women's fashion is today so universal that a fashion collection sold on the United States market could as well be presented in the Hungarian and USSR markets. This, however, is not so. Only the difference in the last fittings for these three markets requires different patterns, although the upper design, construction and material would be the same.

It is therefore very important to achieve a certain specialization in the design department and to select special designers to work with the different markets and with the different shoe types. It cannot be expected that a designer, in the same design period, should switch his attention from one market to another and from one type of shoe to another, and still maintain a high level of creative performance. One of the main recommendations made by the above-mentioned expert was to reorganize the design and pattern-cutting departments by amalgamating them into one department only, and by creating teams specialized in the different markets and shoe types. This recommendation is certainly a good one and would solve the problems referred to above. In this connection, the expert feels that as this department would then work under the pattern department manager, who in turn works under the Technical Director, the marketing and sales department would have very little influence over the product profile. As the marketing and sales department is responsible for the sales results of the company and has direct contact with the customers, it should have more influence over the product profile and range building. This report contains recommendations relating to this matter.

B. Product development and research and development

Product development is currently organized in one main department (see annex IV). On the other hand, some development work is carried out in the Central Organization and Development Department. Some of the functions do not seem to be clearly defined and there is some overlapping of duties. The main Product Development Department is under the supervision of the Technical Director and the Central Organization and Development Department is directly under the General Director.

The expert's suggested organizational changes are as follows:

(a) The main Product Development Department should be re-organized along the lines recommended in the above-mentioned report, 2/ and deal only with the development of patterns, styles, lasts, heels and samples, i.e. only with the development of new products;

(b) A new department, called Research and Development (R and D), should be created, and this department should take over part of the duties of the present Central Organization and Development Department and of those of the present Product Development Department. The suggested organogram for this new department is presented in annex IV;

(c) The R and D department should work under the Technical Director and have the responsibility of evaluating all new technical development concerning new machinery, technologies and materials. This matter is further dealt with in the section dealing with general organization.

C. Upper making

Cutting departments

The cutting departments in the MC group of factories are organized so that the Budapest factories have one central cutting department located in the Budapest A-factory and all the country factories including Tiszakeszi and Hódmezövasarhelyi have their own cutting departments, programmed to produce the quantity needed for the factory in question. All cut welding and flow moulding for shoes to be stitched in Tiszakeszi or other factories are also carried out in the Budapest A-factory.

The cutting departments are mainly equipped with modern machinery. For instance, the synthetic materials are cut in layers direct from rolls with hydraulic beam presses using material feeding devices. The cutting

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2/ Ibid.

departments are able to keep up with the planned capacities and do not require any large investment to modernize. The only machinery that is worn out and not functioning satisfactorily is the splitting equipment.

If additional capacity is needed, the cutting rooms can be re-organized to give higher production without extra investment. Under the present organization of work, the upper leather clicking presses are not fully utilized. The clickers cut a daily average of 180 to 220 pairs of shoes of a 6 piece/pair model. In other words the clicking presses are utilized to make only about 1080-1320 cuts per day. This result could be about doubled if the work was organized so that a clicker would only set the die, click and place the cut piece on a table or on a conveyer, with a clicker's helper examining the number and quality of pieces and bundling them up. The helper should also examine and control the leather received and returned and place it on a wooden horse.

The cutters at MC are working on a premium system for leather savings. The leather allowances are calculated according to the USSR system by Suisztorovics, and the method is basically the same as that used in most Western countries. A comparison made between the USSR system and a system introduced in the Scandinavian countries by the Swedish Shoe Research Institute gave surprisingly close results.

The MC cutters lately expressed their dissatisfaction for not earning enough premium. This has been blamed on the fact that the leather quality correction factors do not follow the upper-leather quality fluctuation. This is true to some extent, and the leather quality fluctuations are enormous and very difficult to control.

As it seems that there will not be any change in this situation for some time to come, the expert believes that the only way to deal with the problem is to let a very experienced cutter-foreman make a practical cutting test of all new material deliveries to ascertain the leather-cutting correction factor. A still more accurate and useful method would be to construct a leather measurement frame to determine the percentage of usable leather (annex V). This usable percentage would then be transformed as a leather allowance multiplying factor, in order to work out in the leather store the correct quantity of leather to be given out. This would replace the presently used norms for the leather grade (assortment) allowance.

This system would function in practice so that a random sample of about 7% to 10% of each delivery would be measured by an experienced upper cutting technologist or by an experienced cutter-foreman. The person in question would simply count out the squares under the wire mesh, which in his determination consist of unusable quality, and then calculate the percentage of usable leather.

In a short while a bank of information would be collected and the MC leather store and the purchasing department would be fully informed as to what the usable leather portion consists of in the various leather types and grades of the different tanneries. Sudden changes and deterioration of quality could be noted in good time and should serve as a good base for quality complaints against the tannery. The buying office also will probably obtain some very useful information, and it may be found that a leather previously considered expensive will now turn out to be cheaper than a leather which previously was considered reasonably priced, as reflected in the example given below.

Nominal price (Ft/dm^2)	Usable leather (percentage)	Real price (Ft/dm^2)
5.00	75	6.25
5.90	95	6.20

The expert observed that the MC cutters are at present obtaining much better leather-saving results and higher bonuses when working with a lower grade of leather, say quality IV with 118 as multiplying factor. This suggests that the extra 18% allowed for the leather quality compensation is cut into the shoes instead of left away as waste. As the usable leather percentage is not accurately determined and the tannery grading does not necessarily follow the norms on usable leather established by a shoe factory, it is very difficult under the present system to control the cutters' performance accurately. The new system would make it possible to conduct much more reliable checks on the cutters and see that leather of unusable quality is not cut for the shoes.

Closing departments

In MC as in most shoe factories throughout the world the upper closing department is the real bottle-neck. There are four main factors which are influencing capacity in these departments: planning and programming; technology applied; machinery and equipment; skill of the operators.

With regard to the first factor, the writer has found the general planning and workshop organization very good, especially in the newly organized Szigetvár factory closing department. This organization will serve as a model for the other MC closing rooms and the equipment required for this has been recommended in the investment plan outlined in annex VIII. The expert made special study of the Szigetvár factory and in a technical report of 17 December 1976 established that the newly installed KAEV direct delivery transporters are increasing productivity by about 10%.

The programming of the work, however, is not sufficiently accurate and detailed. The work programming at factory level takes into consideration only the total production time needed for completing the upper and the detail operations are completely ignored. This often causes production delays and programme changes when it is suddenly found out that a certain shoe cannot go through the production line according to plan, as there is not enough machine capacity or skilled labour for a certain detail operation. Closing room production programming with detailed operation times need not be as complicated as it sounds, and the extra work needed will be abundantly repaid in the form of smoother production flow.

The technology used in MC closing rooms is, in the expert's opinion, not based on an efficient use of manpower. In several studies conducted by by the expert, considerable labour savings have been effected by eliminating certain operations which have no bearing on the appearance or quality of the upper or by combining certain other operations, and in some cases by changing the sequence of the operation flow.

The reason for this situation is that the shoes offered for sale have not been studied in detail by an experienced closing technologist, and after the shoes are sold it is too late to make the necessary changes.

The machinery and equipment in the closing rooms generally perform well, but there has been a lack of certain simple home-made machinery, for instance for laminating thermoplastic interlinings and edge-inking spray tables. This is now being corrected and the first round-table-model thermolaminating press is installed. There has also been a lack of certain other special machines such as stitch and trim machines. This has been taken into consideration in the investment plan.

Several changes have taken place during the past year, and a considerable amount of improvements have been carried out in stitching room technology.

The skill of the operators in the sewing section has a great deal to do with the output of these departments. As there is no analytical training system, the expert has recommended the adoption of such a system. UNIDO could arrange the services of an expert to conduct an analytical training course in Budapest. This is subject to financial arrangements by the Hungarian Government on a Funds-in-Trust basis.

D. Lasting, making and stock fitting

The MC lasting departments are mainly organized to work with a "home-made" constant speed conveyor, although the B-factory is equipped with a United Shoe Machine Co. (USMC) Duo-Rail system. Construction of a similar type of local conveyors has not been successful. The forepart lasters are mainly the Hungarian made KAEV machines produced under Schön licence, and original Schön Domina DHL lasting machines have been ordered for the Szigetvár plant to use in the Katy project. The side lasting is done with Czechoslovak staple lasters and the seat lasting with USMC (or other) heel-seat tack automatic machines. A typical layout diagram of an MC lasting track is presented in annex VI.

The main technical problems in the lasting rooms are as follows:

(a) Although the forepart lasting machines are equipped with hot-melt cement applicators, this facility is not utilized, and the lasting is performed with pre-applied latex cement. The main reason is that the MC mechanics have not been able to make accurate enough hot-melt injection moulds;

(b) The shoes are not produced in pairs and large differences are accepted in the vamp length. This is causing many problems and claims (11% of all export claims were caused by differences in vamp length);

(c) In many cases the lasting margin at the joint is too narrow (often only three to four mm instead of the specified minimum of 12 mm). Such shoes represent potential claims due to sole bond failure;

(d) The sole bond, although above the Hungarian minimum norm, is not sufficiently strong. Over 60% of all domestic claims are caused by sole bond failure. This aspect has been specially dealt with in the expert's technical report of 30 January 1977.

It is clear that the lasting and making department has been rationalized to quite some extent since 1974. At that time MC used 33 persons on their making conveyor to reach the heel-attaching operation. Today these operations require 24 persons at MC, although heat-setting has been included.

It must now seriously be considered what further rationalization possibilities the present stage of technology can offer and what should be the long term objectives and plans from the investment point of view.

The Katy project has selected a three-machine lasting system using hot-melt forepart lasting with Schön Domina, side lasting with micro-tacks, and heel seat with regular heel-seat tacking automatic devices. This is certainly still today the most universally used system for women's fashion footwear, and has proved its practical value for years throughout the world. The development is, however, going further, and there are already two machine lasting systems available which can produce high-heel women's shoes in all heel heights. An especially interesting system is the USMC combined DVUZ-RA pulling-over toe and side-lasting machine. This machine together with the USMC 5RB Automatic Heel-Seat Laster deserves serious study.

Annex VI, table 3, shows that there is a possibility of saving seven persons per 1200 pairs from the lasting and making conveyor if the above-mentioned machines and automatic roughing are installed.

The quality of the shoes should be improved by having loose linings, thereby eliminating also the lining and laminating operations and that of stitching down the lining on the lasting margin. In addition to the cement side lasting by the DVUZ-RA, the sides are also tacked down with 5 or 6 tacks in each side by the 5RB automatic heel-seat laster. As the toe puff and linings are automatically roughed prior to toe wiping, the operation of skiving the lasting margins of leather linings or roughing textile linings will be eliminated.

Six pairs of MC uppers have been sent to USMC with one pair of "Hedi" style lasts (90 mm heel) to show the quality of the workmanship of these machines. The USMC has also promised to arrange a factory visit to a Western European factory as soon as the machine system is operating in a women's fashion footwear factory. The expert considers that a machine system as discussed above should be of interest to MC in the latter part of 1979.

The making of insoles for the production of the Budapest factories (12,000 pairs) takes place at the B-factory, where a modern Morbach production line is installed. Plastac machinery from Italy has been ordered for the Szigetvár factory, and the Nyirbator and Szeged factories are working with an old type of conventionally made insole. After installation of the Morbach equipment, it was found out that although labour was reduced by about half,

the final product was more expensive, owing to the use of thicker and more expensive shank board and to uneconomical material usage of the high speed cutter. The price difference between the Morbach-produced and the conventional insole is Ft 0.33 per pair, making it a loss of over Ft one million a year for the insole production for the Budapest factories. This is actually a typical example of the way in which the introduction of a well-proven and economical production technology from a country with a high cost of labour does not necessarily give economical results in a country with a different wage structure and raw-materials situation.

According to pre-costing figures, Plastac insoles with injected shank are the cheapest to produce, with a final price of Ft 0.19 less than the price of the conventional type of insole. The manufacturing of pre-finished Neolite rubber soles for the Budapest factories is also carried out in the B-factory. A production line from CIC-Ralph is used for this purpose. The sole edges are not well finished, giving the whole shoe an unfinished look. This is caused partly by low-grade edge colour and partly by a dust exhaustion problem.

E. Quality and quality control

The Hungarian quality control system has been designed and introduced by BMKI, which issues and maintains quality norms and standards for the various products and materials used by the industry. Each company has its own Central Quality Control Department (MEFO), and the production plants and sub-plants have their Factory quality Control Departments (MEO). The MEFO is usually directly under the jurisdiction of the General Director, and MEO is supervised from MEFO but functions under the Plant Director or Manager. In other words, the quality control functions are separated from the production functions.

In the case of MC, MEFO consists of 33 persons (see organogram in annex III). Of these 33 persons, excluding the Manager, 19 check and receive raw materials, four work in the laboratory, three work on norms and statistics, two on shoe claims and four on technical control, i.e. visiting various facilities and checking that the norms and standards issued are adhered to. In the MEO of the various facilities, there are 115 people working on various tasks of checking and controlling quality. This makes a total of 148 persons directly engaged in quality control functions throughout the organization, which means that for every 190 pairs produced or for every 32 people employed there is one engaged in quality control functions. This, in the expert's view, should

certainly be sufficient man-power to ensure a high quality level.

MEFO and MEO do an excellent job in producing good data on second-class and rejected shoes, on claims and customer returns, and on the reasons for the rejection of raw materials, as reflected in annex VII, tables 4 to 7.

It seems, however, that the analyses made and the efforts in the field of quality control, do not bring the right results. In fact, the quality of the shoes is very close to the critical level (although MC is one of the best of the Hungarian factories in this respect). In 1976, revenue losses owing to downgraded and rejected shoes and customer returns was Ft 91.7 million, or about three times the profit earned by the company. Table 1 below gives details.

Table 1. Shoe sales in 1976

Item	Pairs	Loss per pair	Total loss (in thousands of Ft)
Second-class articles	198,889	22.80	4,535
Substandard articles	22,000	67.46	1,484
Security reserve (sold locally)	327,720	110.31	36,151
Export claims	79,259	154.44	12,241
Domestic claims	38,850	157.42	6,116
Customer returns (domestic)	159,763	195.33	31,206
Total loss			91,733

The biggest loss is caused by the security reserve for USSR exports. As orders to the USSR have to be delivered exactly according to specifications, and only first-class merchandise is accepted, production planning provides for a 4.5% security reserve to compensate for eventually downgraded shoes. This 4.5% is usually insufficient, and the total security reserve produced in 1976 represented 7.7% of total export shoes. There is no easy solution to this problem, and only upgrading quality through better workmanship and better supervision can resolve the difficulties.

The second biggest loss item is domestic customer returns. It is interesting to note that the main reason for the domestic returns are sole

bond failures, accounting for a total of 65.2% of all domestic returns. On the other hand, sole bond failures represent only 11% of export claims. As the shoes are mainly of the same construction and have the same materials and cement, it seems that such a big difference in sole bond failure claims must have some other reason than quality, such as a different evaluation by retailers and buying public of what is considered a legitimate claim. A special study was made concerning this very sensitive problem (see the expert's technical report of 30 January 1977). A number of the claims are really caused by pure carelessness and a lack of supervision, resulting, for example, in size differences (16.2%), wrong pairing, i.e. two lefts or two rights (0.6%), or different vamp lengths (12%). In addition to financial losses, these faults are causing quite unnecessary irritation with export customers.

It seems that the main problem about quality control in MC is the belief that quality can be improved by inspections and by producing quality analysis, instead of building the quality into the products through good workmanship and supervision. The Quality Control Department operates separately from production functions, and the quality data produced is not followed up by the Production Managers and Technical Departments. Another factor that seems quite strange is that domestic claims are not at any stage examined by quality control, only the claim protocols are analysed. It would be of great importance to ensure not only that quality control examines shoes that are the subject of claims, but also that representative samples of the claims are shown to the Technical and the new Product Development Department.

To improve this situation and to involve production staff and supervisors more in quality checking, each facility should start a special quality control system with the participation of senior management and supervisory personnel (the expert has had good experience of this type of system in a United States factory). This group should consist of the following persons:

Chief of MEFO or MEO
Plant Production Manager (Chief Engineer)
Senior Supervisor of Cutting
Senior Supervisor of Stitching
Senior Supervisor of Lasting and Making
Chief of Technical Department
Technical Director and Chief of Product Development in the main plant

This group of persons should have daily meetings (lasting 15 to 20 minutes), examine half-finished and finished shoes selected at random by the quality control department, and make a quality assessment. The lack of quality or faulty workmanship should then be appropriately dealt with as decided by the group. The examined products should include: a case of finished uppers from each transporter; six pairs of ready lasted shoes, after roughing; and six pairs of ready shoes from the previous day's production.

In addition to this, the group should have a meeting once a week to go through the quality analysis provided by quality control and to decide on corrective measures to improve the situation. In these meetings it would be appropriate to present samples of customer returns which could then be dealt with.

F. Productivity

It is very difficult to compare shoe production outputs in different countries or even different shoe factories in the same country. The reason is that the type of shoes produced and the quality standards required or technology applied make it impossible to establish a sound basis of comparison. It is, however, interesting to note the following output figures in various countries (source: Shoe and Allied Trade Research Association, England (SATRA)).

Country	Output in 1972 (pairs/employee)
France	3170
USA	2995
Canada	2779
Italy	2670
Holland	2470
Denmark	2220
UK	2010
Finland	1969
Germany	1960
Belgium	1660
Ireland	1600

According to the figures obtained from MLI, total Hungarian production in 1976 was 48.4 million pairs, with a total work force of 42,637 persons. This makes the yearly production figure of 1135 pairs per employee. The seven

state-controlled factories have a higher output, with a total work force of 23,506 persons and a total production of 31.4 million pairs, i.e. a total output per employee of 1335 pairs/year.

In the case of MC the figures are as follows:

Total work force: 5,000 persons

Total production: 7.3 million pairs

Output per worker: 1,468 pairs/year

The productivity of MC is the highest of all Hungarian factories, but still very much below average output in the Western countries. The factory has modern machinery, applies relatively modern technology and has a very refined and simple product profile. What is then the reason for the comparatively low output? If the work content of direct labour in the different departments of MC is compared with internationally known standards, it will be found that MC shoes are very much up to the standards normally accepted by the Pirmasens Shoe Technology Institute (Federal Republic of Germany) or SATRA.

Table 2. Conventional leather shoe manufacture (stick-on process)

Operation	Percentage of total labour involved in each operation		
	SATRA	Pirmasens	MC
Cutting	11	8	10
Closing	42	52	51
Stock fitting	6	8	5
Lasting and making	30	24	24
Finishing	10	8	10

When checking MC Production Norms for the average production times of the direct labour involved in MC shoes, the following results are obtained:

Operation	Approximate average time involved (minutes)
Cutting of upper	4
Closing of upper	21
Stock fitting	2
Lasting and making	9.7
Finishing	4.3
	41 (production time)
	4.3 (10.5%)
Total	45.3

This would give a direct labour productivity per worker of 10.6 pairs/day, or 2,862 pairs/year (270 working days). This would not be far from the Scandinavian or the Federal Republic of Germany direct labour outputs. When, however, the productivity of the entire labour force is taken into account, the enormous administrative aparatus and the very large indirect labour force brings the productivity per person down to 5½ pairs/day. This figure is confirmed by the accounts department. The entire payroll of MC is Ft 153 million, making the average labour cost per pair Ft 20.95. The direct labour part is Ft 74 million, or an average of Ft 10.13 per pair. Annex VIII contains a cost breakdown of a typical MC shoe. Direct labour accounts for only 5.4% of the total cost of the shoe (in Western Europe direct labour is normally about 25-29%). It is therefore clear that direct labour rationalization, especially if involving heavy investment, will bring very little savings in the cost. Administrative rationalization, however, would be highly desirable, and could result in substantial savings.

G. Materials and components

Most of the raw materials used by MC are of Hungarian origin. Of a total consumption of upper leathers of 844,435 m^2 in 1976, only 5.36%, or 45,300 m^2, was imported. The total value of all the imported raw materials was Ft 52 million, making 4.63% of a total raw material consumption valued at Ft 1,123 million. On the other hand, it must be remembered that about 60% of the cattle hides used for local leather are imported, in addition to most of the chemicals needed for the manufacturing of soles, heels, synthetic materials etc.

One of the biggest problems for the shoe industry is the unrealibility of material deliveries and the fluctuation of quality, especially in upper leathers. It can be seen from annex VII, table 12, that the MEFO of MC has graded down 15.2% of all upper leathers received and returned to the supplier 17.2% of all upper leathers inspected. To accept only 67% of all leathers inspected would be considered a very exceptional situation, and certainly not a healthy one, for both the tannery and the shoe factory in the Western shoe and leather industry. This shows clearly that the locally manufactured leathers are far from being of satisfactory quality, and in spite of the grading-down and rejection of the leathers, the biggest production problems relate to leather. Over 100,000 pairs, or 22% of the second class shoes, have material faults, and 18.7% of the export returns are caused by various leather faults.

The biggest problem, however, is that the local upper leathers are unsuitable for the production of high-grade women's fashion shoes. The physical and chemical standards may well follow Hungarian norms, but the very important non-measurable properties such as softness, feel, grain distinction, optical depth of finish, colour shades etc., have not been developed very far, when compared with Western fashion leather makers. The most important factor in fashion shoes today is the upper leather, and when this part is lacking it is impossible to produce a design to the desired standard.

Another serious problem is that the MEFO of MC is sometimes forced to accept raw materials which are not fully satisfactory, as otherwise the company would run out of materials. On several occasions the expert noted that raw material deliveries arrived so late that there was no time to make any checks or tests. The materials were sent to production immediately and the tests carried out later.

The large variation in leather substances causes many production problems. Materials which are specified 0.9 mm to 1.2 mm in substance are normally 0.9 mm to 1.6 mm (over 70% are on the heavy side). When a design is made, the leather should, according to specification, be of light, soft and supple quality, and the designer specifies an interlining for improvement of shape retention. When the material is then received, 0.3 mm to 0.4 mm thicker, rigid and unpliable, with an interlining cemented by using 5 to 6 cl of latex, it is no wonder that even the designer cannot recognize his own creation. The main reason for this situation is that the leather raw material, if split to the correct thickness, will not give tear strength according to specification. Ther is of course no easy answer to these problems, and the corrective measures must start already in the rawhide buying. The shoe industry could work with lower tear-strength materials if the correct type of interlinings is used and appropriate care in production taken. The results would be a much softer shoe and better foot comfort. However, no shoe factory in Hungary would take such a risk if not sanctioned through BIMEO.

The technical problems concerning various components have been given detailed consideration in the report of the expert in designing and pattern cutting, and recommendations concerning insoles, stiffeners etc. offered. Therefore, only some of the more general aspects of these problems will be dealt with here.

The Western European shoe industry has during the past two decades more and more developed in the direction of an assembly industry. In other words, the shoe industry produces shoes from components delivered by the component industry. In Hungary this development is not so far advanced, and the shoe factories are compelled to produce a large part of their own components, such as insoles, unit soles etc. This, of course, takes away the benefits of specialization and is part of the reason why the Hungarian shoe industry has such a low productivity figure per worker in comparison with the Western shoe industry.

It may be advisable to start up a component industry by creating a special factory or by amalgamating a group of factories under centrally co-ordinated management. In very broad outline, this should involve the manufacturing of lasts, heels, unit soles, insoles and stiffeners. The above project should be carefully studied, formulated and evaluated.

H. Lasts

There seems to be considerable confusion about the tolerances allowed to the lasts. In MC, the tolerances allowed in the last bottom length have been $\pm$ 1.0 mm, in spite of the fact that Government standard No. 3355/1 specifies 0.5 mm. Moreover, a checking of MC lasts by a member of the team of experts showed that over 50% of the lasts had a tolerance of 1.5 mm or more in the last bottom. The largest error measured was + 3.0 mm. Furthermore, most of the MC lasts are solid without hinge or split. This causes distortion of the shoes in the last slipping. The reason why MC uses solid lasts is that the hinged lasts made by the local last factory break too easily. Another point giving problems in MC production is that the lasts are made too thick on the ankle position. The throats at the top line of the shoes are therefore too wide and open. The reason for designing the last so thick at the ankle position is that the lasts sometimes break in sole pressing. It is suspected that part of the reason for this breakage is heavier than normal pressure used by MC, and not only the quality of the lastwood.

During the visit to the last factory, various points concerning last tolerances and last normalization were discussed in depth. The present system of making and ordering a new last from MC is as follows:

(a) The MC last designer makes one half pair of medium size lasts in rough and supplies the last factory with the last bottom and profile templates;

(b) The last factory makes one pair of lasts which after going through a fitting trial in MC may be altered until a satisfactory fitting and look is obtained;

(c) After the last has been approved it will be signed by both MC and the last factory. Minőségi then supplies a full set of graded last bottoms and last profile templates to the last factory;

(d) The last factory grades the whole series of lasts (in MC's case mainly ladies one to eight with half sizes) from one medium size grading model (namely size four).

The main reason, according to technicians at the last factory, for the large tolerances is the following. As the three-dimensional last grading in the last factory differs from the plane grading of templates by MC, it causes the smaller sizes to gain more width on the last bottom and makes the larger sizes too narrow. This would be corrected by making three grading lasts for the series, but there is not enough last designing capacity available in the factory. The last factory considered that if three grading lasts were used, a tolerance of $\pm$ 0.5 mm in the last bottom could be achieved.

Although it is agreed that the above situation exists and to a considerable extent affects the quality standards of the lasts, the expert believes that the main reason for the large tolerances, especially in the length of the lasts, is caused by badly controlled finishing work of lasts after turning. During a brief visit to the last factory finishing department, both of the UNIDO experts agreed on the following:

(a) The work in the last factory is concentrated more on output than on quality;

(b) The skills of the finishers did not seem to be of acceptable standard;

(c) Not enough manual controls and checking against bottom and profile templates was carried out after grinding off the knobs in the last front and back and after various other finishing operations.

The above points were discussed with the last factory technical personnel and they agreed that the situation referred to exists to some extent. The reason was that the capacity of the factory was too small, and that the factory needed investment to remedy the situation. Secondly, it is very difficult to attract good and skilled workers to a factory which, according to plans, should probably move to another location in the country.

It was also pointed out that the machinery, although well maintained, started to show wear and thereby led to inaccuracies.

The raw material used for the lasts is mainly local beechwood of medium to low quality (the best quality is used for furniture). It is seasoned for one year, but the seasoning and drying chambers are old and do not function accurately. The synthetic lasts are made of polyethylene and the blocks are injected in Dombóvár and Pécs. The lasts are plated in another factory in Budapest.

A visit was paid to BMKI to discuss last normalization and to find out the present status of the normalization programme carried out by the Institute. The following information was obtained.

A last normalization system was introduced in early 1960 and adopted by a few Hungarian shoe factories. Other Hungarian shoe factories, for instance MC, have in some cases adopted their own normalization, or copy foreign lasts and have in their range different Western European standard lasts. This situation causes several difficulties for component-making, tooling and also for the consumer.

A new last normalization programme started in the late nineteen-sixties and is based on an extensive foot measurement programme (15,000 persons) carried out from 1968 to 1970. For this purpose the Institute developed a foot measurement device through a photometric system. A special device called a podograph was constructed, and the photos taken by this method are then analysed by an automatic analysing machine. This method is very interesting and would certainly find use in similar foot-measuring programmes, if adopted in other countries with UNIDO assistance.

The second step is to collect all lasts presently used by the industry and to analyse them and to combine these results with the foot measurement result for making a suitable standard last for the different groups (babies, children, ladies, men etc.).

The time schedule to complete this research work is as follows: children - 1977, men - 1978, ladies - 1979.

The last normalization standard worked out will then be introduced through the Bureau of Standards as a recommended industrial standard. This means that the shoe factories are still free to use their own or any other standard for their production. The government standard will only enforce sizing and marking and general quality aspects.

The last normalization research is not completed but the UNIDO expert team was informed that the last standardization will follow the usually applied norms, such as standardizing the back parts and the seats of the lasts, standardizing to one back height, and so on. It is interesting to note that the standardization to one heel height in a size range is not planned. The reason for this is that the last factory does not have the necessary capacity or skills.

On the basis of the foregoing, the following conclusions can be drawn and some preliminary recommendations made:

(a) The last factory needs investment to cope with the quantity and especially with the quality requirements of the expanding and modernizing shoe industry;

(b) There seems to be a certain lack of technical know-how in the last factory. It would therefore be of advantage if a technical know-how agreement could be worked out with a reputable Western last factory or some technical help could be obtained through UNIDO services. In this connection, the MLI has requested UNIDO to find a suitable specialist to undertake a mission in 1978. As mentioned earlier, it may be of advantage if the last factory would be amalgamated with a group of component makers so that the last factory's work can be closely co-ordinated with the manufacture of heels, insoles, out-soles and pre-moulded stiffeners;

(c) As the lack of skilled workers in the Budapest area is hampering the production of quality lasts, it should be decided as soon as possible to re-locate the factory, and an intensive training programme should then be put into effect;

(d) More manual work and controls should be introduced in the finishing of the lasts;

(e) The work on last standardization carried out by BMKI is based on a very broad research programme and is certainly well conceived. However, the expert has the following reservations:

(i) To collect for analysis all the lasts currently in use in the shoe industry and to use the results to create a medium standard may cause some deviations from correct fitting. It has been established that some of the lasts used by Minöségi do not follow good fitting standards, being for instance too low on the toe. It may be better if BMKI creates the standard lasts independently from the presently used lasts, or at least the errors in the present lasts must be taken into consideration in the analysis;

(ii) Standardization to one heel height in a range of sizes should be studied, and the last factory capacity and technical equipment and know-how should be geared accordingly;

(iii) If a standardization programme is carried out it should be enforced to a greater extent than just a recommended industrial standard. Otherwise, the same last problems will continue in future.

I. Machinery

The machinery in MC is, generally speaking, of quite good standard, and in some cases represents the most recent technology. This applies especially to some of the machinery selected for the "Katy" project, such as the Plastac and Bruggi equipment for, respectively, insole and leather unit sole making, and the automatic roughing equipment from the United Shoe Machine Co. (USMC).

To improve machinery standards further and to bring the technology of the various facilities to the same level, a proposal has been made for machinery investment on the basis of the list contained in annex VIII. This list has been discussed and modified on several occasions, and it now represents the collective work of MC and the UNIDO expert team. In most cases the machinery is selected to improve present quality standards and to reduce losses caused by sub-standard production. The machinery also represents a rationalization of present production technology and production methods, so as to save labour (especially skilled labour) in sensitive areas.

Closing department

After further study of the closing department machinery, it was decided not to recommend the computer-controlled sewing automats, and that the funds involved could be better utilized for other purposes. The four USMC NC-Riegel Automats A/ACB-A1 have been reduced to only two. This type of stitching automat opens up interesting new possibilities for the technical pattern maker to rationalize sewing department work. The machines are, however, so expensive that it would be better to start with only two, and to work out a suitable technology which could be expanded at a later date.

There is a need for KAEV stitching-room transporters, and a study made in the Szigetvár factory confirms that productivity improvements of 10% to 15% can be obtained when using this type of transporter with the MC type of shoes, i.e. shoes involving relatively limited production series and large variations in stitching technology and operation sequence between the various patterns. Two Wsk-Intermarking machines should be obtained. These machines would greatly rationalize sewing work by heat-embossing (with or without foil) a stitch mark to the leather upper simultaneously with the cutting operation. This method is suitable for genuine leather as well as synthetic uppers.

The upper-leather splitting machines used by MC have been subjected to serious wear and tear and cannot give an even splitting of larger pieces of

upper leather. It is therefore recommended that four new Fortuna-model UA splitters should be obtained. This machine is also suitable for contour and profile skiving. As MC is skiving their own toe puffs and will have to continue to do so for some time to come, it would be advisable to have special machines for this operation. To invest in special toe-puff skivers will increase capacity in this operation and also save the upper skiving machines currently used for this operation. MC also needs machinery for the manufacture of straps. It would be useful if a special department for the manufacture of straps could be started. Two Protos strap manufacture machines with thermocement, model 1641 G, are recommended for this purpose.

In addition to the above, 20 Albeko Interlining Presses, model 113P, are recommended. This is the cheapest press of the round-table type that the expert has been able to find on the market. It may be, however, that these presses can be made by MC mechanics. One "home-made" press is now on trial run. If fully satisfactory, this item will naturally be produced in MC. A total of 42 various types of stitching machines were recommended by the UNIDO expert team after a study of the new range of MC shoes and of the various recommendations given by experts from the Pfaff Machine Co.

Preparation Department

The production line for the manufacture of pre-moulded fibreboard counters, which was dealt with in previous reports, has not been covered in the machinery recommendations. It is instead suggested that the production of pre-moulded fibreboard counters should be carried out by a components factory. To save foreign currency, machinery investment should be made for a Welt-making Department producing the necessary welts for the leather unit soles made with Bruggi machinery. The total investment for this purpose would be Ft 2,855,300, including customs duties, handling and transport.

Lasting and Making Department

As MC is presently working with a three-machine lasting system, and will do so for quite some time in the future, it is advisable that the type of shoes manufactured, i.e. high-heel women's fashion shoes, should be tack-lasted at the joint. It is therefore recommended that eight sidelasting (microtacks) machines should be purchased. This would standardize the system and improve the poor results currently obtained from side-lasting carried out by traditional staple lasters.

One of the biggest problems with MC shoes is the poor roughing of the lasting allowance and this is certainly causing a bulk of the legitimate returns for sole bond failures. It is recommended that automatic roughing, which now works in the Szigetvár plant, should be introduced into the other plants. Annex IX shows that the total revenue loss incurred by MC plants as a result of roughing faults was about Ft 10 million in 1976. An investment of 7 sets of automatic roughing machines, combined with Morbach roughing machine model 14C, would cost about Ft 8 million. If the improvement amounted to only 25%, the machinery would pay for itself in 35 months.

J. Process time and inventory control

The inventory control record of MC shows that the total "work-in-process" inventory for the factories fluctuated between 15.6 and 7.5 days, averaging 11.2 days for the whole group.

This result, which compares favourably with most well organized Western shoe factories, is achieved by accurate planning and programming and facilitated by the large series and ample time allowed, by the domestic and USSR markets, from the date of order to the time of delivery. For instance, the USSR delivery schedule for 1978 is as follows:

Sept./Oct.1976:	First fashion and style indications received from Rasno Export, the USSR buying organization responsible for the import of footwear and allied products
Nov./Dec.1976:	Presentation of basic collection to Rasno
Feb. 1977:	Rasno review, suggested modifications and new ideas
May 1977:	Presentation of complete collection and receipt of orders for 1978 production and deliveries
July 1977:	Receipt of specifications for making up production plans
Sept. 1977:	Final production programme for the first half year of 1978

Under these conditions, it might be expected that the results would be still better, but the process time is lengthened by such factors as component flow between the different facilities and the unreliability of raw material supply.

The planning system, on which the comparatively good process times are based, depends on the large series and on the time allowed for material orders, deliveries etc. It is not suited for the Western type of fast-changing fashion

markets. It is not easy to suggest changes at the factory level to improve the present situation, as those required involve currently applied import and export procedures. It would be difficult for the Hungarian shoe industry to compete in the high-fashion footwear field with the Western countries as long as the shoe factories are restricted to working only with the central export-import system and their own marketing and purchasing departments are not allowed the freedom to work more independently. Until such time, the Western exports can only work on the standard bulk production lines where the competition is extremely hard and the margin of profit very limited. Naturally some type of "joint venture" projects with Western factories can be workable, but unless some organizational changes are made, even projects like the "Katy" project may prove difficult to manage to the satisfaction of the fast-moving markets.

K. Marketing

As the marketing aspects have already been dealt with in detail in the technical report of the team marketing expert,[3/] only a few observations will be added here.

The primary long-term objective of the project covered by this report is to help MC to increase its export potential to the Western countries and to make suggestions to maintain future development. The biggest difficulty hampering access to Western markets is the non-market-oriented management structure. There seems to be a certain reluctance to adopt modern marketing techniques, which would be necessary to assist the break-through into the sophisticated buyer-oriented markets. This is partly caused by the fact that the centrally-planned economy does not give full freedom of movement to the factories and that the product profile and quantities are decided at ministry level. However, central planning does not eliminate the importance of an active marketing organization at the factory level. For the local and the Council for Mutual Economic Assistance (CMEA) markets, the marketing department must, of course, work within the framework provided by central planning, but it is important that the central directives are harmonized and completed with the marketing department's own detailed work.

3/ E. Paschkuoz, "Footwear development and marketing" (DP/ID/SER.A/48).

With regard to exports in general and Western exports in particular, the fact that Tanimpex is formally in charge of all export activities, should not stop the development of independent export efforts. The management and marketing (commercial) department of MC should consider Tanimpex what it is, a foreign trade agency needing constant checking, pushing and all the assistance that an active marketing department can give. It should be realized by the Government, Tanimpex and MC that better foreign trade results can only be achieved by greater efforts on the part of the manufacturer. It cannot be expected that a central agency handling so many product lines can have active knowledge of each manufacturer's optimum possibilities and satisfactorily handle, alone and without active help from the manufacturer, the export field-work. By field-work is meant the representation of a company at foreign trade fairs, visits to the main customers or to potential customers, collecting information from material shows, fashion shows and plain window shopping in the leading shoe fashion centres. Firsthand experience and information is very much necessary in these activities and cannot be replaced by second-hand information from an agency. It is well known that a shoe sale may often depend on a certain change of the original model requested by the customer. Such a change request should as far as possible be dealt with on the spot. Only a well informed marketing man from the manufacturer can deal with such a change immediately. An agency representative must first make inquiries with the manufacturer, and as the line of communication is very long, the chance is that when a reply is received it is already too late for the sale.

With regard to general organization, the work of the marketing (today called commercial) department has already been outlined, and should have considerable influence on style development through a special range builder. It is very important that a well qualified person, with a good knowledge of shoe technology and design and working under the Marketing Director, should, in co-operation with Tanimpex, direct the work of range building. This person and his associates must work within the framework provided by the central authorities and the national parameters. But he must on the other hand give the range the individual "stamp" of MC and direct the range so that the special capabilities of the various MC facilities are fully utilized and that the price ranges are correctly balanced, i.e. each price range is provided with shoes which will give the maximum economic return of the product as well as the suitable aesthetic look required by the market in question.

In this and previous UNIDO reports, reference has often been made to the "Western markets". An attempt will be made to define this very vague term and to analyse export potential to this area. By "Western markets" the expert means the developed industrialized countries of Western Europe, the United States and Canada. Exports from Hungary to these countries are by no means free, but in many cases severely restricted by quotas or licenses, and in some cases protected by high customs duties.

With regard to the United States, the Katy project provides a framework for the export of two million pairs per year. This is, of course, not a large quantity for such a huge market, but to reach this volume of trade with a sophisticated market will mean many changes in shoe technology and many problems to be solved, which it is hoped will be achieved with assistance provided under the Katy project. On the other hand, Hungary has no trade agreement with the United States, and the 20% duty will make it difficult to compete with the most favoured nations subject to customs duties of only 8% to 10%. It should also be remembered that United States shoe manufacturers have for years asked the United States authorities for protection against imported shoes. There is at present a request to increase customs duties to 40% on all imported shoes exceeding the 1974 import level of 266 million pairs. This is of course a question of trade policy outside the scope of the report.

The Southern European countries such as Greece, Italy, Portugal, Spain, etc. may be regarded as competitors in the Western European markets. This leaves Austria, Belgium, the Federal Republic of Germany, France, Luxembourg, the Netherlands, the Scandinavian countries, Switzerland and the United Kingdom. The only large Scandinavian market is Sweden. However, the Swedish-Hungarian trade agreement provides only a very limited quota for footwear, which is fully utilized. The same applies to the market of the Federal Republic of Germany, which has traditionally been an important trading partner for Hungary. In fact, the older consumer groups will still remember the Hungarian handmade Budapest-style shoes as a top-quality footwear. In the case of Austria and Switzerland, no trade restriction exists. The market potentials are, however, quite limited. This limited potential should be better exploited and some serious marketing efforts carried out. This applies also to Belgium, Luxembourg and the Netherlands, countries in which the import of women's shoes is free and without trade restrictions.

The British and French markets are both very large and without trade restrictions for Hungarian shoes. The expert, however, although unfamiliar

with the French market, doubts whether the present type of MC shoes could find any possibilities there. A market study would have to be made to find out whether or not MC could produce a suitable shoe with economical returns for this market. On the other hand, the expert considers that some real possibilities exist on the British market. For instance, the British Shoe Corporation, with 2000 retail outlets and very limited manufacturing facilities, should be exactly the type of organization that MC could find an ideal trading partner. The type of simple court shoe currently produced by MC could hardly find any competitive position in this market, as it is already being manufactured by large English factories more cheaply and better than MC could manage. Most probably the right type of product to fit the British market under prevailing conditions would be boots and sandals. The British market might very well be able to use the type of shoes which now seems to be right for the Katy project.

With regard to the local market, the UNIDO team marketing expert suggested that it would be of great benefit to MC if one or two retail outlets were directly administered by them. This would seem to be a wise step to take, not only from the marketing point of view, but also in other respects, such as acquiring direct experience from consumer claims and returns.

L. General organization

There are usually many varying opinions about how a shoe factory should be organized, and certainly the local conditions, labour laws and administrative requirements play such a large part that no universal solution is available. The product profile, which greatly varies from factory to factory, is probably the most important single factor for determining which type of organization should be selected. The MC group of factories was reorganized at the end of 1975 and has functioned well under the strong leadership of the present General Director. There are, however, some improvements which can be suggested, and it is felt that the changes taking place in the buying habits of the local population as well as that of the other CMEA countries will have to influence the whole organizational structure of a company producing consumer goods. In this connection, the sellers market concept for consumer products such as shoes is gradually loosing ground to a strongly oriented buyers market.

The organization of a company such as MC, with several production facilities and sub-facilities, is certainly not an easy task, especially as the distance between the various factories is in many cases measured in hundreds of kilometres and the communications are not the best. A company of this type needs a very strong and efficient central organization and at the same time the factories need a certain amount of independence to be able to operate with maximum efficiency.

It is customary that a company of this type is organized so that the various production facilities are specialized in a certain product. With this type of organization the staff can learn special skills, which is very important in an industry relying on operator skills for quality. It cannot be expected, for instance, that a cutter who is used to working with corrected grain side leather can change overnight to cutting full-grain aniline leather in pairs or to working with delicate chevreaux material and obtain acceptable results. This type of specialization exists only to a limited degree in the MC group of factories. Greater specialization according to type of shoes, markets and price range would not only help in quality improvements, but also improve the machinery and manpower utilization factor. The work of the technologist and production planner would also be made easier.

Annex III contains a suggested organogram for the MC central organization, concerning which the following observations should be noted. It is usually felt that the General Director (GD) should be free from all routine work so as to be able to concentrate on the bigger issues. Certain control organs, such as the internal control department and the general organization and investment department, should, however, be directly under his supervision. As many of the MC production facilities are very large and need a highly qualified director, it is advisable to have them directly under the GD. This is how it also functions today.

The main difference in the suggested organization plan and today's organization (annex IV) is that the writer has increased the number of directors in the central organization from five to six. The addition is the Purchasing Director who is in charge of all material supplies as well as machinery supplies and equipment purchasing. In Western factories of the size of MC a special man at the director's level usually looks after the very important function of material supply. In Hungary many of the shoe industry problems are intimately connected with unreliable material supply

combined with quality fluctuations, and the content of raw materials is over 70% of the price of the shoe. It would therefore be logical to have a highly-qualified person devote all his time and effort to these problems. As this post requires contacts with foreign suppliers as well, it would be useful if the Purchasing Director has some foreign language knowledge and experience in the work of a foreign trade agency such as Tanimpex.

Another important difference between today's organization and the suggested organogram is that the Marketing Director (called today the Commercial Director) is made responsible for the product profile and range building. The easy trading days are clearly numbered, and no company can be expected to exist without meeting customer demands. Therefore the Marketing Department, which has direct contact with the customers, knows their wishes and is responsible for the sales result, must have the means to exercise its influence over the product range. The marketing work of this Department should be organized according to the recommendation of the UNIDO team marketing expert[4/], and the Department should have a Range Builder who, under the Marketing Director and with the help of the marketing specialists, is responsible for the product profile. The Range Builder's job is not only to co-ordinate the work of the Product Development Department and the Marketing Department; its real job is to work out the range request in detail and to supply the product development staff with clear instructions for each range by specifying the following: general type of shoe, price class, last, heel, sole, type of upper design and material, colours, decorations etc. This request should be supported by sketches, photos, cuts from fashion magazines, colour samples and material cuttings.

The Range Builder will take an active part in the work of the sample selection jury, co-ordinate the sales range and see to it that the sales force and marketing will have the samples in correct time with the necessary back-up information concerning prices, deliveries etc. The work of the Range Builder will involve extensive travelling and require some foreign language knowledge as well as solid know-how in shoe design, technology and materials.

A certain overlapping of duties has been noted in the present organization of technical development. For instance, the Central Organization and

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[4/] Ibid., annex V.

Development Department (directly under the GD), the Technical Development Department (under Product Development and the TD), and the Budapest factories' technical development services are all working on technology and technical development and sometimes on the same projects and problems. The job descriptions are not clear enough, nor is it clear which of the departments should initiate orders for spare parts, tools or implements for new machinery or technology.

In the suggested central organogram all the technical development work has been concentrated under the TD, who has the following main departments under his jurisdiction: Central Work Studies, Technical Services, Research and Development, Central Quality Control and Laboratory, Development of New Products.

The Central Work Studies Department would be responsible for production planning, including long-term plans (five-year plan) and the half-year production plans. Production programming will be concerned with the closer details of the plans and the utilization of the various facilities, so that the special skills of a production unit will be used for the right type of shoe. The method study, time study and technical norms as well as the incentive schemes are all under the Work Study Department, and it is hoped that the recommended MTM course will help this department to standardize technical norms and increase productivity.

The Research and Development Department is a newly-created main department which will take over a part of the responsibilities of the present Main Organization and Development Department and part of the work of the present Product Development Department. This department will then have full responsibility for development in machinery, technology and materials, and in particular for the following: new machinery and material evaluation, material norms, official norms and standards, new technology, chemical technology and technical literature. The responsibility of the department head is to follow up all new development in the sector of machinery, technology and materials, to recommend new machinery to be purchased, and after approval has been received through the Organization and Investment Department (directly under the GD) to see that the machinery is ordered correctly with all details including tools, spare parts and supplies needed for a trial production period of for example three months. The job of this department is also to deliver the purchased machinery or new technology in working order to the

production plants with the help of the supplier's installation technicians and its own factory mechanics. The job requires a well-qualified shoe technologist with a knowledge of languages, as visits to foreign trade fairs and technical symposiums will be necessary.

The Central Quality Control Department would be under the TD. The modern trend in organizing quality control is to keep quality control apart from production functions and often directly under the Managing Director. This is how the present organization functions, but not satisfactorily. This very important subject was dealt with in chapter II, section E. The Department for the Development of New Products would work as previously under the TD, but as already mentioned the Technical Development Section will be placed under the Research and Development Department for easier co-ordination. This department should in other respects be organized as suggested by the team expert in shoe design and pattern-cutting.[5/]

There is not much to say about the work of the economy and the administrative departments. It seems, however, that these departments employ a much larger number of people than what is customary in Western countries. This is partly caused by the different administrative requirements, but some administrative rationalization should be carried out to reduce present inefficiency. An Administrative Rationalization Section should be added to the General Organization and Investment Department, and the first job for the section should be to organize an internal postal service, a paging system and a typing pool. As there is no internal postal service, all written inter-departmental communications are delivered by hand by members of the departments concerned. This is a waste of productive time, especially as the distance between the departments can be hundreds of metres. By providing the different departments with in-and-out post boxes and having a postman make a few rounds each day, this problem would be solved. Considerable time is also wasted and sometimes important messages or international phone calls are delayed owing to the lack of a paging system. As the factory buildings are widely spread it is sometimes difficult to find a person in a short time by sending someone to trace that person. A system with signal lights or individual pocket buzzers would solve the problem. It has been noted that writing letters, memos etc. is often done by a technician or an administrator with very little typing skill, owing to the lack of an efficient typing pool. A central typing pool in the different facilities would rationalize much unproductive work.

5/ K.H. Longman, loc. cit.

III. SABARIA SHOE FACTORY

A. Background

This chapter summarizes the team work carried out in Sabaria Shoe Factory by the Organization Group and the Quality Control Group from 4 March 1977 to 15 May 1977. The findings and recommendations of the teams are presented in condensed form in this report and in the related annexes. More detailed material is available only in the Hungarian language.

Sabaria Shoe Factory in Szombathely is one of the 7 state-controlled companies with a total production of 5,414 million pairs 1976. The total production value exceeded Ft 1,000 million, and ranks thereby as the third largest Hungarian shoe factory. The total number of employees was 4,234, making a productivity of 1,278 pairs per person per year, which is below the Hungarian average and far below the normal Western European standard. The quality standard during the production year 1976 was also much lower than planned, and only 83,7% of production was qualified as first-class merchandise with a large percentage of shoes being returned as a result of customer claims. On the domestic market about 7% was returned from consumers, representing a value of about Ft 50 million.

As instructed by MLI, the expert visited the Sabaria Shoe Factory in early February 1977 and made a short survey of the factory's technical standard, product range and profile, and the general organization. A technical report on the factory was submitted to UNIDO, MLI and the General Director of the factory on 7 February 1977.

This report was discussed with the M of LI and the General Director, and a joint project was launched on 8 March 1977.

The expert was appointed team leader for the Organization Group and the Quality Control Group, the teams started to work on 21 March and had finished the first part of their task when this report was drawn up. A new organizational structure had been worked out in detail and an improved quality control scheme was ready for presentation. This report contains a summary of the main results, the details of which are available only in the Hungarian language.

On all of the issues dealt with, suitable compromises were reached whenever differences of opinion occurred. In two cases, however, a team member wished to place on record his dissenting opinion concerning the organizational structure of the quality control department.

B. Findings

1. Organization

The present organizational structure of the Sabaria Shoe Factory (annex X) is not functioning properly and needs urgent reorganization. The expert, in his report of 7 February 1977, made a general proposal for a new type of organizational structure at the Sabaria Shoe Factory. This proposal was discussed with MLI, and it was decided that the two Director posts suggested by the writer for the marketing and purchasing functions should be combined under one Director, namely the Commercial Director. Thereby the organizational structure at Director's level was defined, with a General Director to supervise the work and functions of the Technical, Commercial and Economic Directors. It was decided that the Organization Group was to establish the best possible organizational structure, without considering the current availability of personnel, and after the organization was ready, it would be decided what type of reschooling and new employment would be needed.

The Organization Department of the Sabaria Shoe Factory made a substantial contribution by working out the information flow, functions and sub-functions needed for the effective running of the plants. The Organization Group worked out the organograms and determined the functions, authority and fields of responsibility for the following posts: General Director, Technical Director, Commercial Director, Szombathely Factory Director, Körmend Factory Director and MEFO (annex X).

The following are the main changes from the present organizational structure:

(a) A new post of Commercial Director is created;

(b) The Commercial Director assumes the responsibilities for both marketing and purchasing;

(c) The Commercial Director is given the responsibility of range building;

(d) The quality of incoming raw materials is the responsibility of the Commercial Director and he will administer the material receiving operations. The functional control of raw materials rests, however, with MEFO (an objection to this function was recorded by a team member);

(e) MEFO will function under the Technical Director instead of the General Director (this was objected to by a team member).

2. Quality control

As quality must be built into the shoes and cannot be improved by ever so careful analysis or fault examinations by a separate department for quality control, it was suggested that the quality control should not be an entirely separate organizational unit, but should be intimately connected with production functions. It was therefore suggested that the following organizational changes should take place:

(a) The MEFO organization should work under the Technical Director and not under the General Director;

(b) The MEO should function under the Department Production Managers;

(c) Responsibility for the quality of incoming materials should be placed in the hands of the same person who is responsible for purchasing, i.e. the Commercial Director. The functional control should, however, remain with MEFO;

(d) The Laboratory should be connected with the Technical Development Department and not with quality control. It should, however, continue to service the Quality Control Department with quality control data.

The above points were discussed by the team, and after strong and well-motivated objections, it was decided not to adopt points (b) and (d). The MEO would therefore continue to work directly under the Factory Director and the Laboratory will, as before, belong to the Quality Control Department. The group is recommending, however, that the MEFO organization should be under the Technical Director, and that the responsibility for raw material quality, the administration of incoming material supplies and selection functions should be under the Commercial Director. With regard to MEFO, the main reasons for the suggested changes are the following:

(a) The GD should be disconnected from all routine work as far as possible;

(b) The TD is in charge of production and manufacturing as well as product development and production preparation. As all the above functions are intimately connected with the quality aspects, the TD should also have a direct access to quality control. The TD is the person whom MEFO must first alert in case of quality irregularities;

(c) The TD is the person with know-how concerning all aspects of quality, and can take the correct decisions for needed improvements. The GD is a top administrator and policy maker without deep technical knowledge, and should not be involved in detailed technical work.

In connection with raw materials and control, considerable importance was attached to the following factors:

(a) The Commercial Direotor is in charge of material purchasing, therefore he must also be responsible for the quality purchased. For this reason he must also have the authority to administer the raw materials receiving service and selection procedures;

(b) The Commercial Director is responsible for the time schedule for incoming raw materials. It is therefore also natural that he will administer the department selecting the goods.

(c) The Commercial Director deals with the commercial claims concerning raw materials. It is therefore logical that he will be able to check them directly.

The MEFO functions, authority and responsibility are described in annex X. All these points have been unanimously agreed upon by the quality group. A quality control training programme was prepared and the group recommended the implementation of the three courses as soon as possible. The courses are described in detail in annex XI.

Quality incentive schemes

The team studied the quality incentive scheme started in the Sabaria Shoe Factory in early 1977. Although the scheme was found rather complicated to administer, the team decided to recommend its continuation. The factory has all the information available to administer the scheme, and it would serve no useful purpose to discontinue a system which was approved by the trade union and introduced only a few months ago. A proper evaluation of the scheme should be made at the end of 1977 and a decision should then be taken concerning its continuation or alteration. A simpler alternative could then be introduced.

The cutting department leather saving bonus should be urgently changed from the current system to a simple system embodying the following features:

Saving in upper and lining leathers: 10% premium of material value up to a maximum of Ft 600 per month;

Saving in synthetic linings and upper: 10% premium of material value up to a maximum of Ft 400 per month;

Saving in component materials: 8% premium of material value up to a maximum of Ft 300 per month;

De-premium caused by material wastage to be carried over to the next period, but only up to 50%.

Transfer to another job of a cutter receiving de-premium during six consecutive months.

The system described above has not been so far accepted by the trade union.

Premium system for quality controllers

The premium system for quality control was discussed and the following system is recommended.

Cutting Department. If the cutting results concerning material faults is kept at the planned quality level (presently 95% to 98%), the cutting room controller receives a bonus of Ft 100 per month. If the quality is improved from planned quality level by 0.5%, the cutting room controller will receive Ft 150 per month.

Stitching room. If the stitching room faults are below 0.8% in the final grading, the stitching room controllers receive Ft 100 per month. If the stitching room defects exceed 0.8%, no premium will be paid. After a half-yearly control of claims and returns (consumer claims), the stitching room controllers will receive Ft 600 per half year if the stitching defects giving rise to claims are under 0.5%.

Finished goods control. With regard to inland commercial claims, if the final grading of the shoes does not deteriorate more than 5%, owing to inland commercial claims, the controller will receive a bonus of Ft 300/month. If the deterioration is between 5% and 10%, the controller receives Ft 100 per month.

In the case of exports, the controls carried out by the Soviet Export Control Organization (MERT) will be used as a basis for determining the percentage of shoes that have to be re-graded. Regrading rates of 15%, 20% and 25% will bring bonuses of, respectively, Ft 300/month, Ft 200/month, and Ft 100/month. The percentage is to be yearly adjusted according to company plan.

Super control. On the basis of quarterly checking commercial claims under 1%, 1.5% and 2% will bring, respectively, Ft 1000/quarter, Ft 700/quarter, and Ft 500/quarter.

Head of MEO. If MERT control is under 22%, the head of MEO receives Ft 150/month.

Raw material control. Quality controllers of raw material stock will supervise the premium for upper leather receivers. If all leather received is within the acceptable quality assortment norms, the material receiver will obtain

a premium of Ft 800/month. If quality deterioriation is less than 5%, the premium will be Ft 600/month, and if deterioration is 5% to 10%, the premium will be Ft 500/month. If there is over 10% deterioration, no premium is granted.

IV. RECOMMENDATIONS

A. Minőségi Cipőgyár

1. The whole approach to designing and pattern making should be fundamentally changed. The determination of designs and sales range should be ensured by the Marketing Department and not the Technical Department. A special "Range Builder" should work out the range request for the different markets. The Range Builder should work under the Marketing (Commercial) Director and develop the sales range according to directions from the central authorities and the market research results, and by utilizing the special capabilities of the various MC plants.

2. The Design and Pattern-making Department should be re-organized in accordance with the recommendations of the team expert in shoe design and pattern cutting.[6/] The design office and the technical pattern-making offices should be amalgamated in one department. The work should be organized so that a certain pattern making or design group will specialize for a certain product type, market, production plant or production conveyor.

3. All the designs should be properly studied by an experienced closing room technician before presentation to the jury. The technician will take the most rational and easiest closing technology into consideration, and together with the designer make modifications in the construction of the upper without changing the original appearance. It is of course the designer who has the final say concerning any changes of an aesthetic nature. The designer must, however, be aware of the importance of a construction simplification to the labour content and finally to the price of the shoe.

4. The lining assembly technology for the cheaper grade of synthetic shoe should be rationalized. Presently the lining assembly of the cheaper type of shoes takes the same amount of time as the more expensive type of shoes with leather linings. A suggestion has been submitted separately. The time-saving would result in about a 30% improvement in closing room output for this type of shoes.

5. The cutting room, when more machinery capacity is needed, should be equipped with conveyors and a "cutter's helper" should carry out the counting, sorting and bundling operations.

6/ Ibid.

6. The leather cutters should be organized into groups so that a certain group will specialize in the cutting of a certain type of material and shoe. It is very important that some type of leathers, such as full-grain aniline nappa, chevreau (glacé kid) and similar types, are cut in pairs. This type of expensive leather must be cut by a real specialist, and the specialization should continue down the line in the closing and lasting rooms. A special closing room conveyor should carry out the more difficult and sensitive work, and another conveyor should be specialized to work at a greater speed with simple technology for synthetic shoes. The same applies to the lasting room tracks. A system should be established whereby the design or pattern-making group already knows that this shoe is going to go through a particular-production line, and will know exactly what are the capabilities and special skills available.

7. The closing-room programming must be carried out in more detail. The programme should not only take into account the total closing-room time per pair or how many operations are needed to produce 1200 pairs in 8 hours, but also the operations involved and the availability of machinery and skilled operators for special work tempos.

8. An analytical training system for sewing machine operators should be introduced. UNIDO could arrange for an expert to conduct a course, subject to an official government request and suitable financing arrangements.

9. The following technical changes should be carried out in the stitching rooms:

(a) All shoe parts should be joined together without previous cement assembly. The stitching should follow marks from pattern prickers of matrix markings;

(b) All interlinings should be thermoplastic and joined to the upper by heat press;

(c) Vamp, regular and nylon-on-foam linings should be thermo-coated and assembled by heat press;

(d) Linings should be stitched in by hand-fitting without previous cement assembly;

(e) Stitch and trim machines should be equipped with original knives or spares from the machine manufacturer;

(f) Edge-inking should be done by spray gun and a special spray cupboard with revolving round table should be developed.

10. The following technical changes are recommended in the lasting and making rooms:

(a) The forepart lasting should be changed to hot-melt cements;

(b) Vamp length control should be introduced;

(c) Lasting should be made in pairs;

(d) Roughing should be carried out by wire brush;

(e) All strap shoes should be lasted with closed (buckled) straps;

(f) An instant lasto-meter should be ordered and used for checking of grain cracking on upper leathers.

11. The Central Quality Control Department (MEFO) should function under the TD and a daily spot check should be introduced, involving, at factory level, the participation of the Technical Manager, the chief of MEO, senior supervisors of all departments, and the chief of the Technical Department. In the main plant the TD and the head of Research and Development should also participate.

12. The work norms and standard times should be standardized in all the plants. An MTM system for work evaluation should be introduced, and the services of the "Deutsche MTM-Vereinigung" requested to hold a course for the technicians concerned.

13. The material and components, including lasts, should be carefully checked by the material receiving department and accepted only against the correct specifications. The production departments must be immediately informed of quality variations, if any. This is especially important with regard to upper leathers, and any variations concerning substance, physical strength etc. must result in corrective measures such as splitting, reinforcing or leaving out interlinings, depending on what would be the correct step to take.

14. Machinery investment should be completed in accordance with the machinery investment list given in annex VIII. With regard to long-term policy, development should proceed along the following lines:

(a) Cutting rooms. Capacity improvement in this department should be obtained by increasing the utilization grade of the present machinery through reorganization of the work place. An upper clicking press should not be considered fully utilized if not clicking at least at 2500 cuts in an eight-hour shift;

(b) Closing rooms. Careful investigation and practical trials should be carried out on the automatic sewing section. This should include the Automatic Control Bar Tacker from USMC and the automatic Controlled Stitcher, model A, from the same company. The automatic edge following system by

SATRA and that with geometric controls are also interesting developments, which in a relatively short time should be ready for production evaluation. At the present time, however, the above machinery, owing to its complexity, is not of real benefit to MC, but should be followed up and evaluated by the technical development section. The prices of this type of automatic machine with computer control are far to high, but it must be remembered that one of the items that have recently been going down in price is the electronic control and calculating device, and this trend certainly seems likely to continue. Of more immediate interest in the sewing section is the new type of integrated sewing station, such as the Pfaff 3826, which combines several operations such as back seam closing, rubbing and taping;

(c) Lasting and making. In the lasting and making rooms the long-term goal should be to change to a two-machine lasting system. This should be considered when the replacement of the present lasting equipment takes place in a few years' time. Whether the system considered in annex VI will be adopted, or a similar system at that time will be evaluated as a better alternative, depends entirely on developments in the near future.

15. Marketing efforts, especially in respect of the Western markets should be stimulated. Proper market research must be conducted, and it is important to determine the needs of the various Western European countries in terms of potential volume, trade restrictions, type of shoes and price levels, so that the Development Department can work out the suitable ranges. As a first step Tanimpex should arrange for the MC Commercial Director and Range Builder to visit one of the large British shoe chains. The object of the visit would be to obtain firsthand information of the English market, so as then to be able to make a suitable sample range.

It would be advisable to open one or two local retail outlets, which should be administered by the MC Marketing Department. These stores would give MC both valuable firsthand information about consumer needs and possibilities to deal directly with consumer claims.

16. With regard to general organization, the central management should be restructured along lines more orientated to sales and marketing, and the material purchasing function should be assigned to a newly-created post of Purchasing Director. This is not in accordance with prevailing Hungarian practices, and a Purchasing Director is regarded as an addition to the non-productive administrative apparatus. It must, however, be remembered that over 70% of the value of Hungarian shoes consists of raw material costs, and that the biggest difficulties in manufacturing have to do with the unreliable material supply. It is therefore necessary to entrust a highly-qualified director with this function. In the suggested organization plan, as the purchasing function is taken away from the present Commercial Department and only the sales and marketing functions are left, this department is called the Marketing Department,

and is headed by the Marketing Director. As this department is also responsible for customer relations and sales results, it has been given the range-building function.

The organization of the central management structure should be carried out by the MC's own organization department to greatest possible extent, although some outside help from the MLI organization department may be required. The organization department should also introduce some much-needed administrative rationalization.

B. Ministry of Light Industry

1. One of the biggest reasons for the relatively unsatisfactory quality of Hungarian shoes is the use of deficient raw materials and components. The large percentage of seconds and sub-standard shoes is also caused, to a large extent, by the raw materials and components situation, and the same applies to the size of the security reserve. The unreliability of the supply also causes production difficulties and delays and is the reason for the shoe factories' relatively high raw materials inventory level. This applies especially to upper leathers, and there is a need to remedy this situation as soon as possible. The continuation of the UNIDO project in the leather industry would therefore be advisable.

2. The quality standards of Hungarian lasts are not fully satisfactory and the tolerances are much too large. The last factory needs investment to cope with the quantity and especially with the quality requirements of the expanding and modernizing shoe industry. It would be advisable if a technical "know-how" agreement could be worked out with a reliable western last factory. Initially, a project should be launched with the help of UNIDO to show the factory the correct steps to be taken.

3. A project should be started to study, evaluate and formulate the possibilities and benefits of starting on industry for shoe component manufacturing. This project should study the possibilities of starting up a completely new factory for this purpose, and alternatively of amalgamating some of the existing factories in one group. The components to be manufactured should include: lasts, heels, unit soles, insoles, stiffeners (premoulded fibreboard counters).

4. Present customer-protection legislation concerning guarantee periods for footwear should be seriously reconsidered. The shoe industry should not be made liable to pay for claims that are not caused by faulty materials or workmanship. Normal wear and tear in this type of product should be the consumer's liability.

5. With regard to machinery investment policy, BMKI should draw up a long-term investment plan for the entire shoe industry. It is not a rational and economical policy to purchase the same type of machinery from different suppliers. It seems that no consideration is given to spare parts and service possibilities. This is a very important factor in a country where it takes a long time to obtain spare parts from outside sources. It would be advisable, when investing in a new production line or machinery system, to obtain a complete range of equipment from one manufacturer.

6. It seems that government policy concerning the economic development of the shoe industry is based only on one principal, i.e. increased production will bring increased revenue. Every year production is increased, and it is emphasized to the factories that the most important thing is to meet the production target. At the present stage of shoe industry development in Hungary, it would be better to put all the emphasis on quality improvements. Taking MC 1976 production as an example, it can be calculated that, based on present profitability (Ft 32 million in 1976), a production increase of one million pairs would bring an extra profit of only Ft 4.5 million. To achieve this result, heavy investment, labour recruitment and training would be necessary. On the other hand, a quality improvement of only 10% would bring in a Ft 9 million. increase in earnings. Such quality improvement should be easily obtained if a strong campaign is undertaken by the Government to improve factory controls and work discipline. This government campaign should motivate the factories and workmen to better performances by setting goals and offering incentive rewards.

7. The Fellowship Programme provided for in the project budget has so far not been carried out. The procedure should be accelerated so that the Fellowship Programme can be implemented during the last quarter of 1977 at the latest. Candidates' application papers should be forwarded to UNIDO as early as possible.

C. Sabaria Shoe Factory

1. The factory should be reorganized as soon as possible along the lines suggested in this report and its annexes. The reorganization programme could start almost immediately and be implemented during the second half of 1977. The company has most of the required personnel, barring a suitable person for the newly-created Commercial Director post. This is obviously one of the key positions with an essential contribution to make to the successful management of the company. The person holding this post not only needs the necessary commercial and shoe industrial know-how, but, as he will be dealing with both foreign buyers and suppliers, he should also have some foreign language knowledge. The company will probably need some help from the Ministry to find a suitable person. Outside sources can do very little to help in implementation and in the further detailed work needed for the reorganization. The company organization department under the guidance of the General Director is fully capable of handling this job.

2. The reorganization of the quality control system and department should be implemented as discussed in this report according to the following timetable:

Reorganization of the quality control department

	Timetable
Preparation of detailed quality control procedures	1977 (second half)
Re-editing of instructions for process control according to experience accumulated	1978
Implementation of the organizational changes suggested concerning MEFO, the Development Department and the Commercial Department	1977 (second half)
Organization of product process quality control	1977 (second half)
Reorganization of quality data information system	1977 (second half)
Consolidation of the whole quality control procedure by issuing detailed written instructions and co-ordinating the work with other departments	1978

Execution of the training programme

	Timetable
Decision on detailed training programme	1977
General course on quality control	1978-1979
Course on raw material quality control	1977
Course on process control	1977
Finished goods grading course	1978-1979

Incentive schemes

	Timetable
Introduction of proposed changes	1977

3. The factory will need further help from the quality control group to implement and introduce the proposed changes and to organize and assist in training. As soon as a final decision is reached concerning the implementation of the quality aspects, the quality control group should draw up a work programme for the continuation of the work.

In addition, a random, daily quality control system should be started for all production units. The main reason is to involve the Production Managers more in quality control and to create a forum for fast decision making at the level of manager or supervisor.

4. One of the biggest reasons for company revenue losses is domestic customer returns and claims. The faults are carefully analysed from the claim protocols, but the claimed shoes are not at any stage examined by quality control or the technical department. The claim protocols do not seem to give reliable information concerning the defects, and in some cases even give a totally wrong impression. A system should therefore be worked out to enable company officials to examine returned shoes.

Annex I

PROJECT PERSONNEL

International staff

J.J.A. Berg
K.H. Longman
R.C. Lucas
E. Paschkuss

Host country staff

Hegyi Sándor, MC
Schmel Ferenc, EMKI
Szepesi Ákos, MC
Vörös Ferenc, MC

Annex II

MEETING CONCERNING THE IMPLEMENTATION OF RECOMMENDATIONS

A meeting was held in the Ministry of Light Industry on 7 July 1977 to discuss the present report. The factory management had been asked to prepare a concrete programme to implement the recommendations contained in the report. The discussions concentrated on the practical measures to be taken to carry out the programme. The outcome of the discussions is given below, with each point referring to the correspondingly numbered recommendation in chapter IV.

A. Minőségi Cipögyar

1. It was agreed that the marketing activities of MC are to be intensified and that the export and home markets need a new type of organization more oriented toward marketing than toward production. The expert was asked to prepare a marketing plan for the Western markets, including suggestions for travelling, exhibitions and establishing contacts.

2. The proposal for reorganizing the Pattern-Making Department into specialized teams for various markets and types of shoes is under implementation. The centralization of all pattern making in one department cannot be carried out for practical reasons.

3. This recommendation has already been adopted and carried out.

4. The recommendation concerning lining assembly technology for cheaper shoes has been accepted and put into practice in the new range.

5. This recommendation will be implemented when needed.

6. It was agreed to continue the specialization of the various plants as recommended. It was, however, pointed out that some practical difficulties will prevent total specialization.

7. It was agreed that this recommendation would be implemented as from the third quarter of 1977, and the expert was asked to work out, with the factory technicians, a complete programme which could then be transferred also to other factories.

8. It was decided that the stitching machinist instructor course would be given by a UNIDO expert during July-August 1977. All financial and technical details were subsequently cleared.

9. All proposals were being implemented and would be fully operative as from the third quarter of 1977.

10. All proposals would be implemented and fully operational as from the third quarter of 1977.

11. It was decided that MEFO would continue to function under the GD and not the TD as suggested. The daily random quality control system would be introduced in all departments. The expert was asked to take part in its practical introduction.

12. The MTM course was to be launched and the standardization of rates and time norms carried out.

13. It was agreed that the checking of components and raw materials would have to be carried out more accurately and sub-standard components and materials would not to be accepted.

14. The MLI had approved the machinery investment list and the list was subject to the approval of the National Bank. It was agreed that machinery investment in future should follow the lines suggested in the report.

15. It was agreed that the shoe factories working for Western markets needed to increase their own marketing efforts. Although the implementation would take some time, MC would start preparing for such a change.

16. In the general organization the Commercial Department would be kept under one director only, and the marketing and purchasing functions would not be divided. The movement towards more a market oriented structure would be kept in mind, and the Commercial Department would be reinforced by giving it the range-building function. Administrative rationalization as discussed in the report would also be carried out.

B. Ministry of Light Industry

1. It was agreed that the UNIDO Leather Project should be continued and that UNIDO should be requested to provide an expert for this purpose. The MLI made known its views on the recruitment of an expert for this post. The post should become available in early 1978.

2. A special expert for development and assistance to the Hungarian last industry was required. The MLI would make a request to UNIDO to find a suitable expert for this purpose.

3. The MLI agreed that the Hungarian shoe industry should be based on assembly factory principles, and that a component and supply industry should be developed. This work should be carried out during the 1980-1982 period, and UNIDO assistance would be required. It was agreed that a know-how agreement or a joint-venture programme with a rsputable Western-European component maker would be an advantage.

C. Sabaria Shoe Factory

The work of the organization and quality groups was completed on schedule and the programme implementation was in progress. The expert was asked to concentrate on the following areas in his further work in Sabaria: daily random quality control procedure; checking and suggesting modifications to the present technology; assisting the range builders in devising a more homogeneous range for Sabaria.

During further discussions the expert was requested to address the Scientific Association for Leather and Shoe Industry concerning his experience in the Hungarian shoe industry. In addition, the Project Manager raised the question of the UNIDO Fellowship Programme, and requested that the fellowship candidate applications should be processed very urgently. A decision was taken regarding the third candidate for the programme.

Annex III

RECOMMENDATIONS FOR THE TRAINING OF SEWING MACHINISTS IN FOOTWEAR MANUFACTURE

(By R.C. Lucas)

The shoe industry has always had a major problem in producing the uppers required for the conventional leather shoe factory. This is largely due to the fact that the highest proportion of the major skills in shoe-making are concentrated in the department concerned with upper assembly. Furthermore the diversity of upper types and methods and machines used in this assembly can vary widely from factory to factory, making the transfer of labour from one factory to another a problem in itself. The only successful way to solve this problem is to introduce the best possible training methods with qualified instructors.

Training

Owing to the complexity of sewing skills and the present wide range of operations, which are constantly changing with new designs, materials and machines, it has been found that the most successful approach to training upper machinists is to use the Skill analysis method of training. This has the following four basic aims:

(a) To enable operators to reach the standard of output and quality of the experienced worker in the shortest possible time;

(b) To assist operators to acquire versatility in skills and thus become part of a flexible labour force;

(c) To encourage the development of individuals as far as their abilities will allow;

(d) To develop people as people and members of an industrial group.

Traditional approach to training

In the majority of industrial situations a systematic approach to training has not been adopted and the traditional methods persists. This merely involves placing the new person next to an experienced operative who is unable to devote sufficient time to the learner. This is known as the exposure method. The disadvantages of this approach are as follows: very long learning time; low quality with high percentage of rejected work; people leaving because they do not achieve expected earnings or job satisfaction, lose confidence in themselves, and become worried and frustrated; output and machine efficiency remain low and production losses are consequently excessive.

The exposure method also has the following weakness: possible bad instruction from untrained person; possible use of incorrect method; lack of systematic training programme; little opportunity for practice; distraction from the demands of production; worker is often told what to do and not how to do it, nor why it must be done in a particular way; little attention from the instructor/operator, with the burden consequently being placed on the new worker to learn the job for himself; no knowledge of results and no measure of the effectiveness of training.

Minöségi factories

All the MC factories suffer from the above-mentioned disadvantages or weaknesses of the exposure method. In particular, there are no standard methods; many bad habits exist; movements and machine control are limited through lack of practice; skill development is retarded through excessive use of fitting by adhesives; many single operations are performed by two people, reducing the responsibility for quality achievement; young people are being employed in boring and sometimes unnecessary operations with little future for skill development.

The latter represents the most serious challenge to be faced.

Essentials of skills analysis training

In modern industrial conditions more efficient methods of training are required than those associated with the traditional approach. To develop proper training it is necessary for a senior member of the company to decide what the training policy should be. To enable this policy to be developed, it is essential that an assessment of training needs should be undertaken. This assessment will determine which job systematic training is required for, how many people need to be trained in each job annually, and to what standards training should be given.

Once the jobs for which planned training is required have been determined, it is necessary to prepare written syllabuses of the skills and knowledge required to perform the job to experienced worker standard. In order to accomplish this task, it is essential to find out by detailed analysis what knowledge and skills are required. When the required needs are known, it is then necessary to formulate training schemes. These will show how the information is to be presented within the framework of planned programmes.

Skill and knowledge should be presented in a logical and systematic manner comprising induction, basic training, advanced training - including stamina building - and, where applicable, facilities for further education. It is essential that adequate measurement of progress by trainees is introduced specifying targets to be achieved at each stage of training. Records of progress are an essential feature of any training scheme, in order to assess the effectiveness and value of the training given.

When the syllabus of skills and knowledge required and the ensuing programme has been designed, it is necessary to have instructors to teach operatives. While instructors should be experts in the jobs they are teaching, it is also essential that they should have formal training in the methods and techniques of instruction. The success of training finally depends on the suitability of the trainees. It is therefore advisable to have a proper system of selection which will determine which candidates are likely to succeed.

The main elements of skills analysis training are therefore the following:

(a) Assessment of training needs;
(b) Analysis of skills and knowledge;
(c) Written syllabuses based on the analysis;
(d) Planned training programmes;
(e) Progress measurements and recording;
(f) Properly trained instructors;
(g) Careful selection of trainees.

The proposed course will fulfil items (b) to (f), whilst items (a) and (g) are the responsibility of management and personnel, although the instructors should be closely involved with these procedures.

What must be realized, however, is that while the course will provide the basis and techniques for building up individual skills analysis training methods and a basic form of sewing-machine training in terms of skills and knowledge, and while students attending the course will become completely familiar with these techniques, the actual individual operation and quality training, fault analysis and the programming of the basic skills to suit individual factory requirements will need to be established. These vary considerably, even within MC, and some co-ordination of training activities will need to be established to avoid duplication of effort and varying standards of quality and methods.

During the final week an attempt will be made to help prepare such specific programmes for individual factories, according to the operation requirements. However, this is a long-term and constantly-changing project that confirms the point made earlier of assessing these operations where training is urgently needed.

Need for preparation

Successful teaching depends largely on good preparation. The students will require time to prepare for a specific course according to the operation requirements. They will also need to extend their skill and experience in skill analysis, and this will have far-reaching effects as individual manuals are prepared for each operation. This can extend beyond sewing operations.

Co-operation

Co-operation will be required at all levels of management and in particular at supervisory level, where the greatest benefit is obtained from such a training system. However, it has been often found that at this level the greatest resistance is made, and this can so easily ruin the introduction of this form of training. The resistance largely comes from ignorance of the system and lack of adequate information as to the methods used. For this reason it would be extremely useful if all those likely to associate with this form of training could attend a special seminar where the course and methods used can be presented and discussed.

Off-the-job training

Since the number of demonstrations and the amount of knowledge is so great, the ideal way to run these courses is to have a room separate from the production line. This avoids the distractions of production and enables learning to take place more quickly. Essentially, one should look to a professional training centre where methods are being constantly up-dated and teaching aids in the form of quality charts, specifications etc. are being prepared to meet the ever more demanding styles, materials and methods. The room can be as close as possible to the production area to enable supervisory contact and ease the movement of materials. The ideal number of trainees, both in terms of what an instructor can handle and from the point of view of group psychology, is six. With regard to the size of the training room, this will be reflected in the number of trainees required and the number of operations in terms of machines to be trained on. It can be very advantageous to place in the training centre the machine the trainee will be

using in the factory, and then move it out when the training is completed. This would then avoid variations in machinery affecting the trainee's performance when transferred into the production line.

The area required per trainee is 6 m^2, and for the instructor, 12 m^2. The ideal shape is oblong, approximately 10 m x 5 m, with machines down either side. It may be decided to extend this room if more trainees are required, or if other machines are installed for training, e.g. skiving, folding, binding etc.

Equipment

The instructors are well aware of the basic equipment needed to run the course. However, consideration should be given to participation of the Shoe Institute or other qualified personnel within the company to help in the preparation of visual instruction manuals based on still photographs which show the detailed method and assist the learning process. During the course difficulties have been experienced in the variation of sewing-machine design. Wherever possible, standardization of machines will considerably help the learning process and eliminate many variables in teaching specific skills. These have been reflected in thread guides (steps should be taken to discuss these with machinery manufacturers); thread stands; treadle and presser foot lifter variations.

In all these respects there is an almost total lack of consideration for the operative of these machines used during the course. This has led to a noticeable drop of many seconds in expected performance, and of approximately 30% excess time required to perform them.

The use of a foot lifter as opposed to a knee lift on the posts is difficult to assess in terms of excess time, but the element of fatigue is definitely greater and the use of opposite movements of the feet is not a good thing, with yet another variation in the foot control of the machine. On the post machines, the treadle control is far too much to the right and not centrally positioned as it should be beneath the needle. All these factors lead to sitting in different positions from one machine to another, and are not conducive to good learning or working conditions. The standard fitting of an oblique base on post machines which tilts the machine towards the operator is also not included, and the position of the edge guide conflicts directly with the passage of the thread through the needle eye.

Re-training

The course will give details in preparing re-training programmes for operators whose performance is not up to the desired standard. Observations has shown that the therbligs of "reach" and "move" have not been developed to a highly skilled performance. It is known by analysing training development that these therbligs do not improve as rapidly as the stationary therbligs of "grasp" and "position". The following two factors are certainly contributing to this lack of skill development:

(a) Great efforts are being made particularly in one MC factory to maintain quality standards for the American market. It is a known training fact that where there is sole emphasis on quality this leads to lack of skill development and in fact reduce the quality level by imposing unrelaxed and unnatural movements. Here special training techniques need to be developed for individual operations;

(b) The pre-fitting of work reduces the fine development of feel and touch in the fingertips and eliminates the essential quick fitting-together of the parts.

Problems of the new system

One can appreciate the problems for the development of the new training system. The trainees must be trained to such a high standard that they influence the development of other operators. There is always the danger that unless management takes the necessary precautions, the trainees may have to return to the established system.

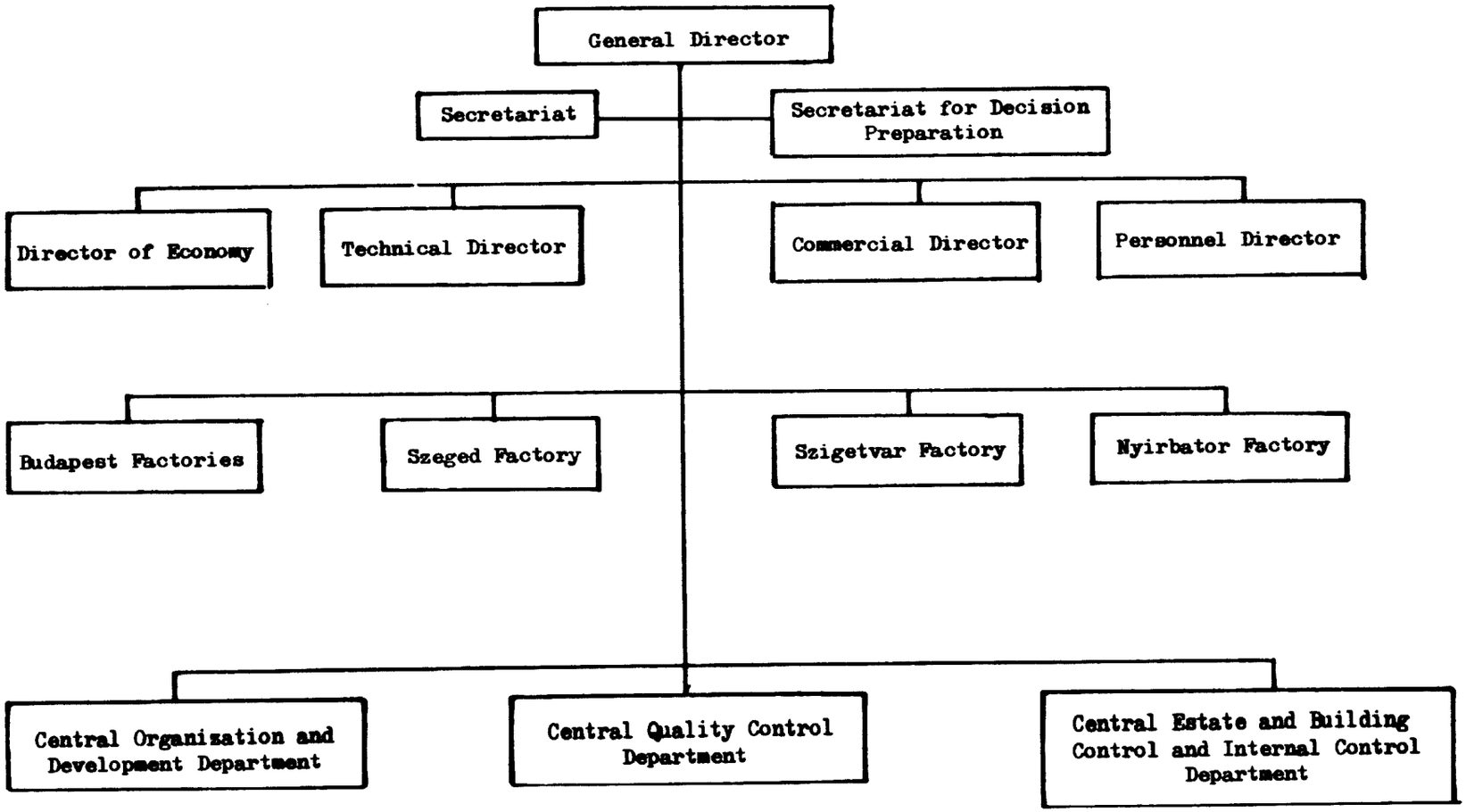
How far new training methods will affect the standard norms accepted for the job is difficult to say without a detailed study of the existing situation, but this is certainly an important area that management must take into account. To be successful the new training system will require the highest level of management support.

For the above-mentioned reasons the greatest benefits can be seen where such a system of training is introduced to an area where its labour has no traditional background inhibiting its development, and it is in these areas that new standards will be set and maintained. However, there is cause for concern even in these areas. For example, at Csenger completely "green" labour was seen being introduced to every conceivable bad method, which, if continued, was likely to lead to standards even lower than in established factories, where at least experience can serve as a guide.

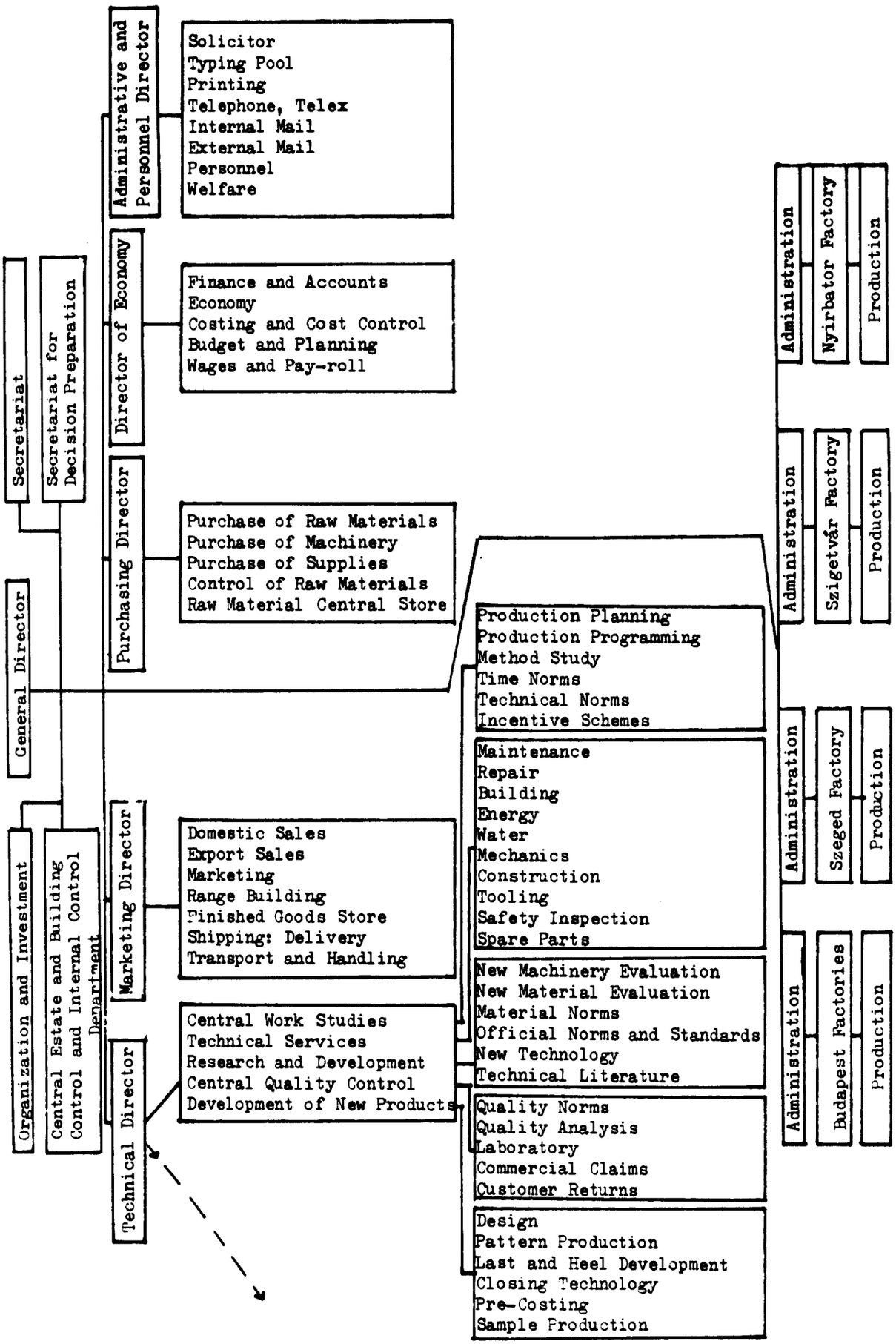
Annex IV

MINOSÉGI CIPŐGYÁR ORGANOGRAMS

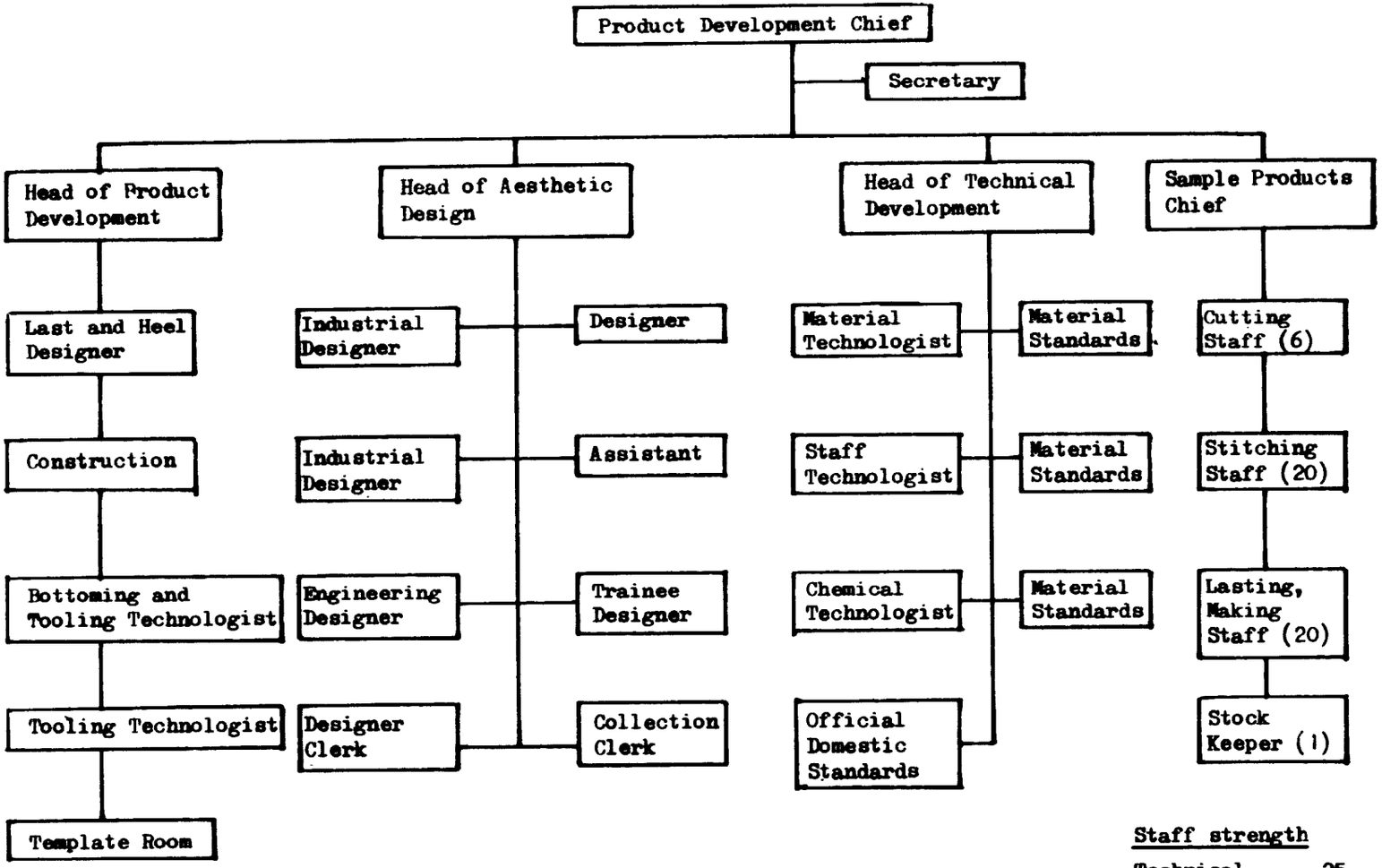
A. Present general organogram



B. Proposed general organogram



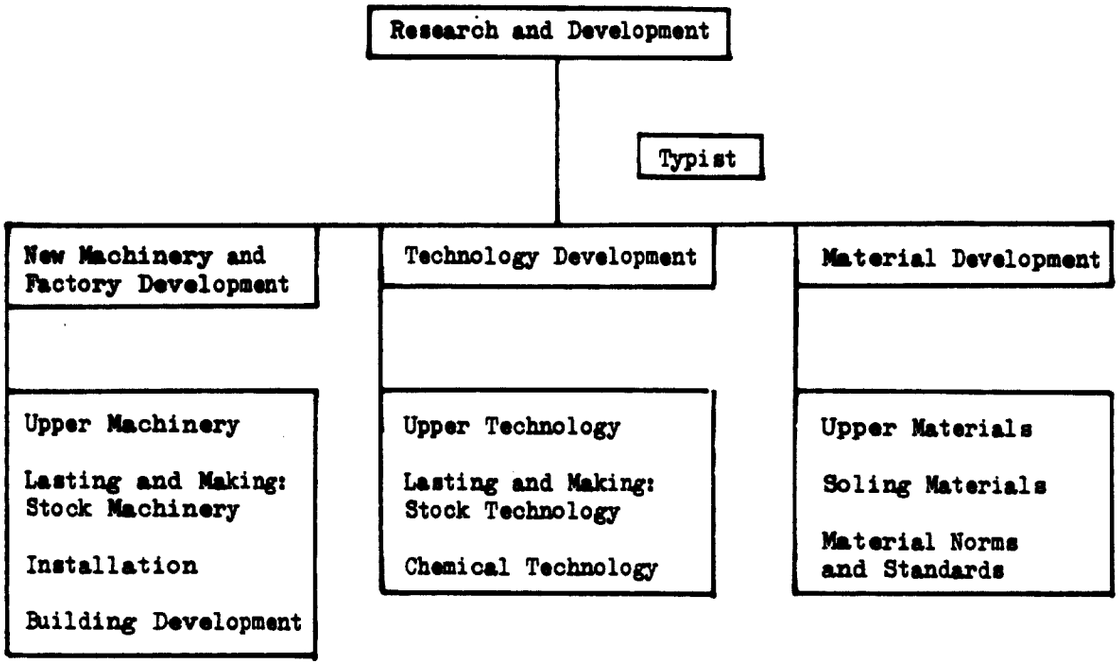
C. **Present product development organogram**



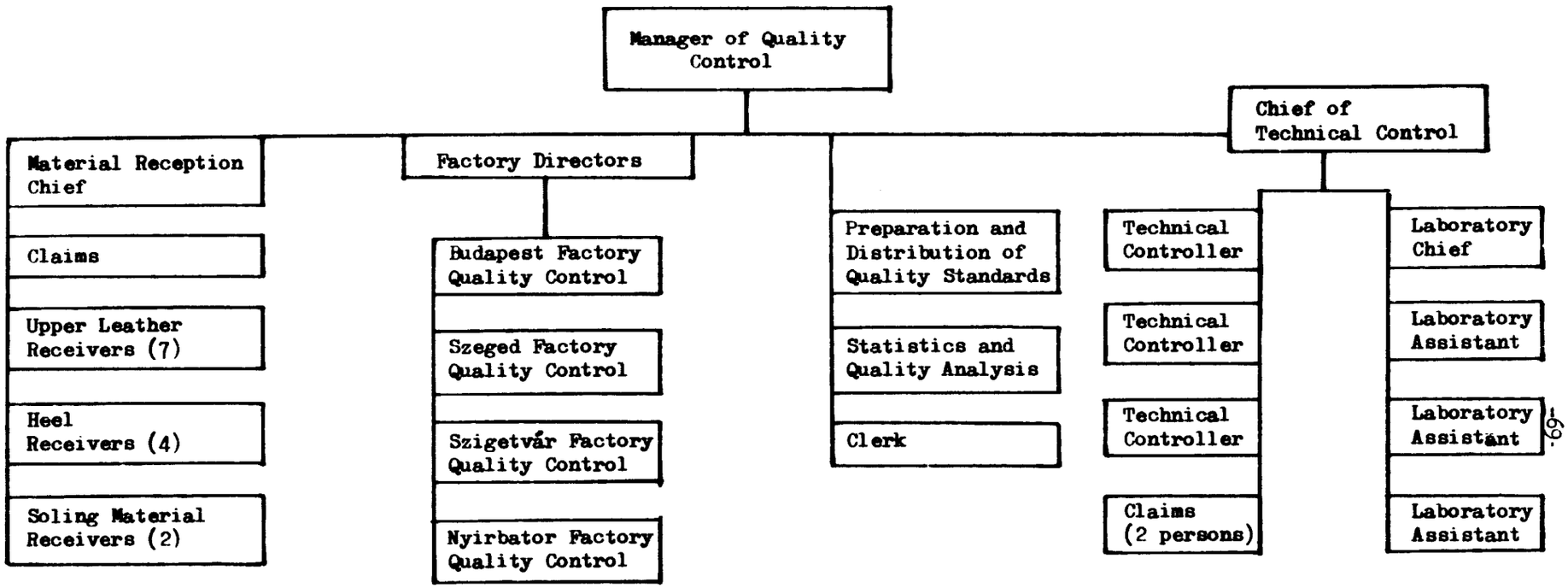
Staff strength

Technical	25
Administrative	1
Workers	54
Total	80

D. Proposed research and development organogram



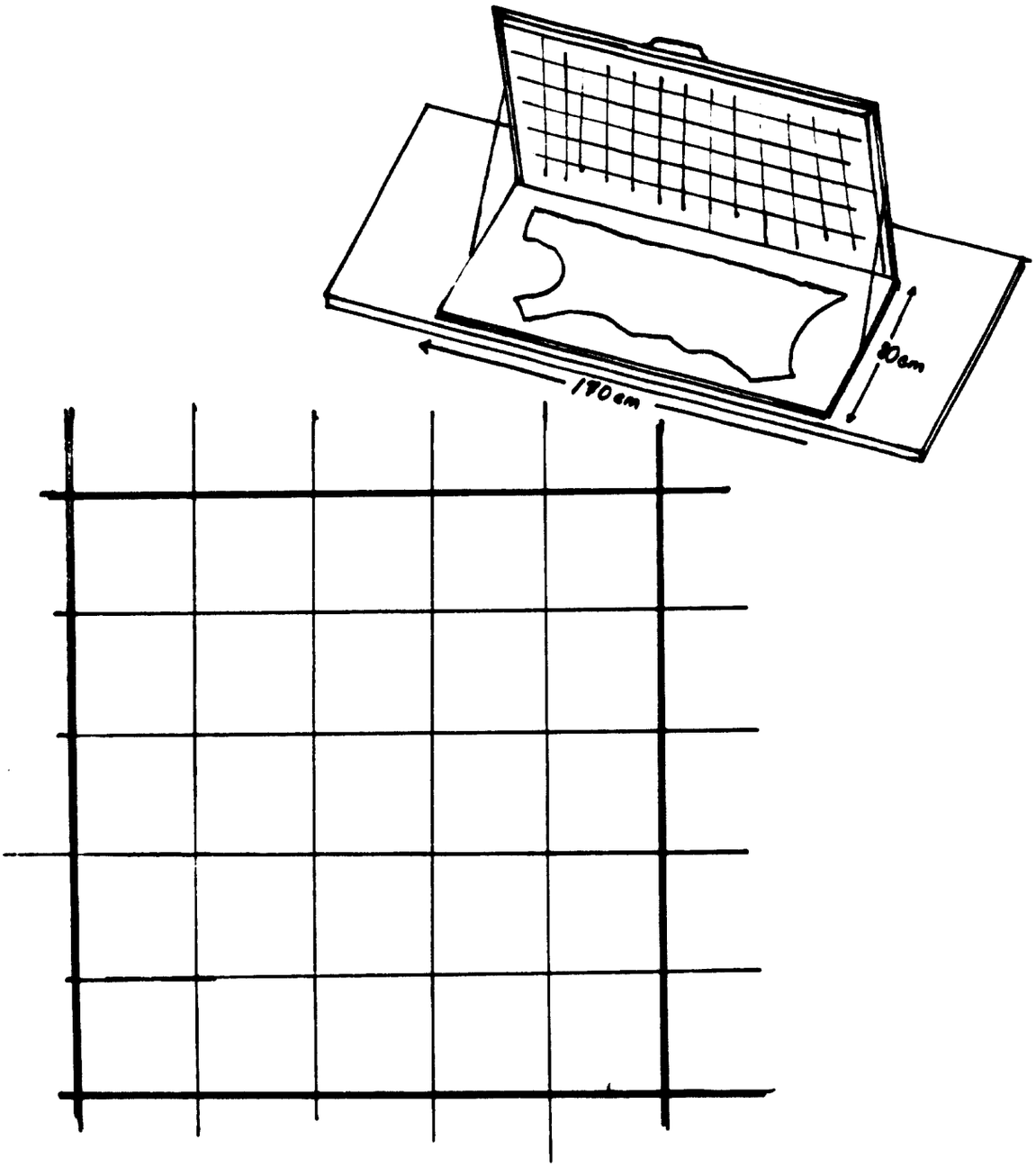
E. Present quality control organogram



Personnel	Number of persons
Technical	12
Administrative	2
Labour	19
Total	33

Annex V

SKETCH FOR LEATHER MEASUREMENT FRAME



Sketch for a leather measurement frame to determine usable percentage of upper leather. The frame is made of metal (aluminium) with a wire mesh. The steel wire every 10 cm is in red, every 2 cm in black.

Annex VI

LASTING-ROOM LAYOUT

Typical Minöségi Cipögyár production transporter

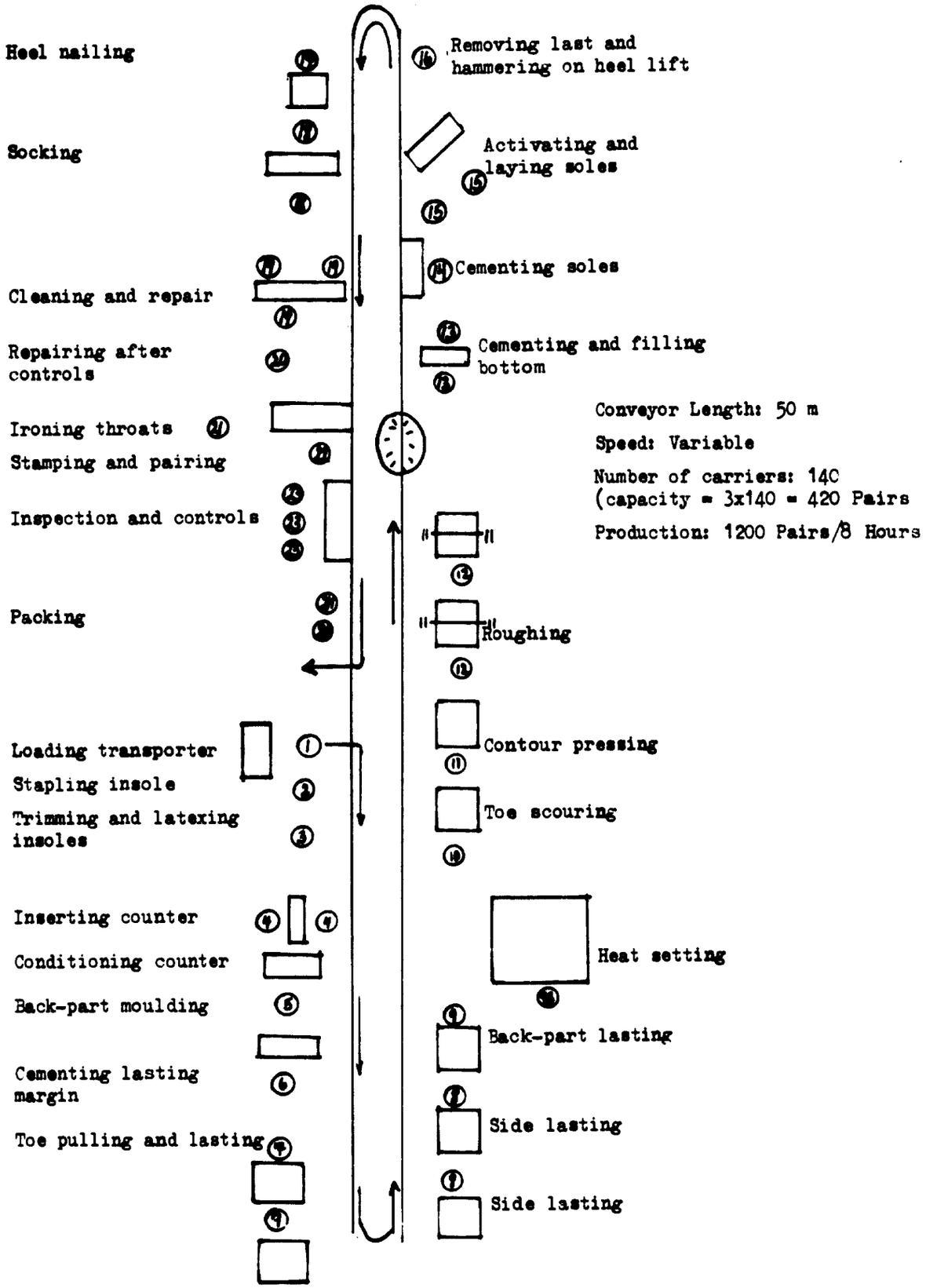


Table 3 shows the steps involved in the current MC production process and proposed technology improvements.

Table 3. Current MC production and proposed technology improvements

Operation No.	Name	Minöségi Cipögyar: Time (min/pair)	Minöségi Cipögyar: Workers required for production of 1200 pairs	Improved Technology[a]: USMC two-machine lasting (min/pair)	Improved Technology[a]: Workers required for production of 1200 pairs	Improved Technology[a]: Machine type and operational methods
1.	Conveyor loading	0.300	1	0.300	1	Hand as previously
2.	Stapling insole	0.279	1	0.279	1	As previously
3.	Trimming and latexing insole	0.392	1			Not necessarily with new technology
4.	Inserting counter	0.800	2	0.800	2	As previously
5.	Moulding of back-part	0.336	1	0.336	1	As previously
6.	Cementing lasting margin	0.400	1			Not necessary
7.	Toe pulling and lasting	0.797	2	0.640	2	USMC combined toe/side laster, model RA (750 pairs/hour)
8.	Side lasting	0.800	2			Not necessary
9. (a)	Back-part lasting	0.400	1	0.400	1	USMC machine No.5RB automatic heel seat laster
9. (b)	Heat setting	0.250	1	0.250	1	As previously
10.	Toe scouring	0.319	1			
11.	Contour pressing	0.336	1			Not necessary
12.	Roughing	0.800	2	0.400	1	BUAR automatic roughing machine combined with Morbach rougher for touch-up.
	Subtotal	6.209	17	3.405	10	

Operation		Minöségi Cipögyar		Improved Technology[a]		
No.	Name	Time (min/pair)	Workers required for production of 1200 pairs	USMC two-machine lasting (min/pair)	Workers required for production of 1200 pairs	Machine type and operational methods
13.	Cementing and filling bottom	0.800	2	0.800	2	
14.	Cementing soles	0.400	1	0.400	1	
15.	Pressing soles	0.800	2	0.800	2	
16.	Removing last	0.400	1	0.400	1	
17.	Heel nailing	0.362	1	0.362	1	
18.	Socking with cushion	0.800	2	0.800	2	
19.	Cleaning and repairs	1.200	3	1.200	3	
20.	Repairing wrinkles	0.340	1	0.340	1	
21.	Ironing throats	0.340	1	0.340	1	
22.	Pairing and stamping sizes	0.400	1	0.400	1	
23.	Packing	0.800	2	0.800	2	
24.	Services of reserve skilled operator	0.800	2	0.800	2	
25.	Services of reserve helper	0.400	1	0.400	1	
	Total	14.051	37	11.247	30	

[a] Operations 13 to 25 are identical in both the current and the improved technology.

Annex VII

QUALITY CONTROL

Tables 4 and 5 show the domestic and export market claims submitted in 1976.

Table 4. Domestic market claims in 1976

Defects	Number of pairs involved	Percentage of total defects
Material		
Yellowing of leather	557	0.3
Defect in patent leather	380	0.2
Breaking of synthetic material	542	0.3
Lining staining	461	0.3
Breaking of leather	584	0.4
Breaking of heel	1,574	1.2
Peeling-off of finish	103	-
Loose leather	-	-
Pipy grain	-	-
Colour difference	-	-
Counter defect	1,017	0.8
Tearing of vamp	2,946	2.1
Dry leather	6	-
Peeling-off of ink	498	0.4
Decoration defect	1,174	0.9
Breaking of toe	15	-
Zip defect	-	-
Lining delamination	111	-
Toe-puff defect	85	-
Sole breakage	2,250	1.6
Top piece breakage	2,489	1.8
Textile breakage	6,844	4.8
Total material defects	21,636	15.1
Technical		
Wrinkling of lining	29	-
Wrinkling of seat	7	-
Over-roughing	935	0.6
Sole bond failure	92,967	65.2
Different size	395	0.2
Different vamp length	-	-

Defects	Number of pairs involved	Percentage of total defects
Wrong pairing	-	-
Breaking of stitching	5,761	4.1
Breaking of straps	12,988	9.1
Different length of shoes	-	-
Platform defect	-	-
Joint differences	-	-
Sole positioning	-	-
Heel-cover yellowing	5	-
Counter wrinkling	-	-
Heel attachment failure	8,055	5.7
Breaking of quarter	-	-
Total technical defects	121,142	84.9
Transport damage	5	-
Unsummarized protocols	16,973	
Total defects	159,756 (or 5.22% of total domestic sales)	

Table 5. Export claims in 1976

Defects	Number of pairs involved	Percentage of total defects
Material		
Yellowing of leather	1,722	2.2
Defect in patent leather	4,217	5.4
Breaking of synthetic material	1,152	1.5
Lining staining	1,742	2.2
Breaking of leather	248	0.3
Breaking of heel	364	0.4
Peeling-off of finish	247	0.3
Loose leather	3,848	4.9
Pipy grain	-	-
Colour difference	469	0.6
Counter defect	319	0.4
Tearing of vamp	870	1.0
Dry leather	2,630	3.4
Peeling-off of ink	117	1.6
Decoration defect	1,261	1.6
Breaking of toe	1,138	1.4
Zip defect	157	0.1
Total material defects	20,495	25.8
Technical		
Wrinkling of lining	-	-
Wrinkling of seat	595	0.7
Over-roughing	8,200	10.4
Sole bond failure	8,703	11.0
Different size	12,835	16,2
Different vamp length	9,644	12.0
Wrong pairing	477	0.6
Breaking of stitching	3,587	4.6
Breaking of straps	1,041	1.5
Different length of shoes	1,163	1.4

Table 5 (cont.)

Defects	Number of pairs involved	Percentage of total defects
Platform defect	-	-
Joint difference	411	0.5
Sole positioning	6,015	7.6
Heel cover yellowing	320	0.4
Counter wrinking	-	-
Total technical defects	52,991	66.9
Transport damage	5,771	7.3
Total defects	79,257	

Table 6 contains a quality classification of MC shoe production in 1976

Table 6. Quality analysis of MC shoe production in 1976

Item		Pairs involved
Total production		7,321,002
Exports		4,282,181
First-quality domestic sales		2,567,574
Second-quality domestic sales		417,270
Rejects		53,977
Downgraded due to material fault		106,183
Downgraded due to technical fault		365,064
Operations or parts involved in defects arising at various stages of the production process		
(a) Closing		
Toe puff		7,901
Assembly		10,686
Top line stitching		14,195
Second stitch		1,247
Binding		1,024
Fancy stitch		3,839
Closing of quarter		21,643
Folding		13,173
Perforation		3,456
Trimming		2,915
Counter stitching		1,160
High-frequency welding		4,991
	Total closing defects	86,230
(b) Preparation		
Stock fitting		16,033
Other preparation defects		25,161
	Total preparation defects	41,194
(c) Lasting and making		
Back-part moulding		40,645
Toe lasting		46,722
Side lasting		28,640

Item	Pairs involved
Seat lasting	24,174
Over-roughing	28,172
Heel attachment	3,271
Cement application	11,959
Sole positioning	20,854
Wrong pairing	3,179
Damaged	30,024
Total lasting and making defects	237,640
Total technical defects	365,064

Table 7 shows the way in which upper and lining leather received in 1976 were disposed of by certain tanneries.

Table 7. Disposal of upper lining and leather received in 1976 by various tanneries

Tanneries	Inspected	Accepted		Downgraded		Total accepted		Returned to supplier	
	m^2	m^2	%	m^2	%	m^2	%	m^2	%
Upper leather									
Pécsi Bőrgyár	377,813	279,533	73.9	57,100	15.2	336,633	89.1	41,180	10.9
Stornyai Bőrgyár	295,105	188,755	63.9	49,169	16.8	237,924	80.7	57,181	19.3
Ujpesti Bőrgyár	76,789	44,257	57.6	7,126	9.3	51,383	66.9	25,406	33.1
Táncsics Gyár	41,303	24,401	59.0	6,661	16.2	31,062	75.2	10,241	24.8
Finombőrök Gyára	2,700	2,276	84.2	336	12.5	2,612	96.7	88	3.3
Debreceni Bőrgyár	11,113	4,974	44.7	2,557	23.0	7,531	67.7	3,582	32.3
T o t a l	804,823	544,196	67.6	122,949	15.2	667,145	82.8	137,678	17.2
Lining leather									
Pécsi Bőrgyár	77,493	68,694	88.6	6,715	8.7	75,409	97.3	2,084	2.7
Stornyai Bőrgyár	51,143	40,950	80.2	5,606	10.9	46,556	91.1	4,587	8.9
Diszmű Bőrgyár	388,883	295,602	76.0	58,028	14.9	353,630	90.9	35,253	9.1
Debreceni Gyár	7,852	6,194	78.8	1,319	16.8	7,513	95.6	339	4.4
T o t a l	525,371	411,440	79.3	71,668	12.6	483,108	91.9	42,263	8.1

Annex VIII

ECONOMIC QUESTIONS

A. Cost breakdown for various types of shoe

Table 8 shows the cost breakdown of one type of ladies leather shoe

Table 8. Ladies leather shoe of cemented construction with synthetic sheet rubber sole

Item	Cost (Ft)	Percentage
Upper leather	80.0	39.0
Lining leather	30.0	14.0
Insole	3.5	1.5
Outsole	8.0	3.5
Heel and top lift	18.0	8.0
Other materials	22.5	10.0
Total materials	162.0	76.0
Direct labour		
Cutting	0.95	
Bottom olicking	0.94	
Closing	6.46	
Lasting and making	3.66	
	12.0	5.4
Indirect labour, social cost, social assurance	5.8	2.6
Factory overhead cost on materials, labour, energy, machinery etc.	6.8	3.0
Central overheads on fixed assets, bank charges, management, technical development	17.0	7.6
Profit	12.0	5.4
Total	215.6	100.0

B. Investment plan

Table 9 shows the investment required in various factory departments.

Table 9. Factory investment project

Machine Description	Currency[a]	Price of each machine	Number of machines	Total cost of machines	Total costs in thousands of Ft[a]
		Closing department			
USMC Riegel Automat A/ACBA	S	273,500	2	547,000	1,249
WSK intermarking machine, model PP 33, with foil printing	DM	11,200	2	22,400	371
Fortuna UA upper-leather splitting machine (profile skiving)	DM	21,905	1	21,905	363
Fortuna VUR upper-leather splitting machine	DM	17,000	3	51,000	845
Fortuna toe-puff skiving machine, type 34 VK	DM	11,395	4	45,580	755
Protos strap-manufacturing machine using hot-melt adhesives, No. 1641G	DM	13,670	2	27,340	453
Albeko interlining press, model 113P	DM	3,140	20	62,800	1,040
One-needle stitch and trim machine, Pfaff 191-705/03-725/04	DM	5,333	24	127,992	2,120
One-needle stitch and trim machine for heavy work, Pfaff 491-755/03/ 725/04-940/51 BCL x 1.5	DM	7,000	4	28,000	464
Two-needle heavy decoration rope seamer, Pfaff 194-720/01-944/01 C x 2 with disengageable left and right needles	DM	6,600	4	26,400	437
				Total	8,097

Machine Description	Currency[a]	Price of each machine	Number of machines	Total cost of machines	Total costs in thousands of Ft[a]
		Welt-making department			
Heavy belt and strip cutter, Albeko 131	DM	26,600	1	26,600	441
Universal leather splitter, Fortuna type UAF-470	DM	41,470	1	41,470	687
Tools and equipment for Fortuna machine type UAF-470	DM	1,340	1	1,340	22
Strap end skiver, Albeko No. 95	DM	8,790	1	8,790	146
Cementing machine, Hestika No. 1016K	DM	4,020	2	8,040	133
Belt and strip cutter, Albeko No. 119	DM	7,960	1	7,960	132
Storm welt grooving machine, Albeko No. 79.R	DM	4,680	1	4,680	78
Scalloping machine, Albeko No. 63	DM	4,840	1	4,840	80
Welt notching machine, Albeko No. 108N	DM	8,995	1	8,995	149
Welt roughing machine, Albeko No. 349 X-60	DM	20,140	1	20,140	333
Exhauster, dust collecter, Albeko No. 792 A-60	DM	6,300	1	6,300	104
				Total	2,305

Machine Description	Currency[a]	Price of each machine	Number of machines	Total cost of machines	Total costs in thousands of Ft[a]
		Lasting and making department			
Counter tacking machine (side lasting), USM DVT Z-RA	DM	14,115	8	112,920	1,870
Automatic roughing machine, BUAR, USMC	S	319,000	7	2,233,000	5,091
Morbach roughing machine, model No. 14C	DM	10,832	7	75,824	1,256
Schablon making equipment for automatic roughing machine	S	21,400	2	42,800	98
Lining roughing machine, Schön 87R	DM	4,120	7	28,840	478
Heat and vacuum setter, Anzani Magic 3U	Lit	7,590,000	2	15,180,000	751
Heel-nailing machine, Morbach Nr. 21 NZ	DM	19,354	4	77,416	1,282
Exhaust and filter unit, USMC model No. 3-BUDC	S	36,800	10	368,000	839
Filter, Bruggi model AM/1	Lit	320,000	8	2,560,000	127
			Total lasting and making		11,792
			Total investment costs		22,194

a/ The following exchange rates are used in the currency conversions to Ft:

1 Austrian schilling (S) = Ft 2.28
1 mark (Federal Republic of Germany) (DM) = Ft 16.56
100 Italian lire (Lit) = Ft 4.95

Annex IX

DEFECTS CAUSED BY ROUGHING FAULTS[a]

Domestic returns		Pairs involved
Over-roughing		935
Sole bond failures, total of 92,967 pairs, 50% due to inadequate or poor roughing (estimate)		46,500
	Subtotal	47,435
Export returns		
Over-roughing		8,200
Sole bond failures, total of 8,703 pairs, 50% due to inadequate or poor roughing (estimate)		4,350
	Subtotal	12,550
Shoes graded second class		
Over-roughed		28,172
	Total	88,157

Revenue lost (defective pairs x Ft/pair)				
Domestic returns:	47,435	x	157.42	7,467,217.70
Export returns	12,550	x	154.44	1,938,222.-
Seconds	28,172	x	22.80	642,321.60
	Total revenue lost due to roughing faults:			10,047,761.30

Total investment for seven Buar automatic roughing machines and seven Morbach model 14C roughers is approximately Ft 8,000,000. This would make possible the following labour savings:

14 roughing machine operators
14 contour press operators
6 contour press mould makers
34 x Ft 30,000 = Ft 1,020,000 (wages)
34 x Ft 15,000 = Ft 510,000 (social costs)
Total labour savings = Ft 1,500,000/year

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a/ Source of figures: MC quality control records for 1976.

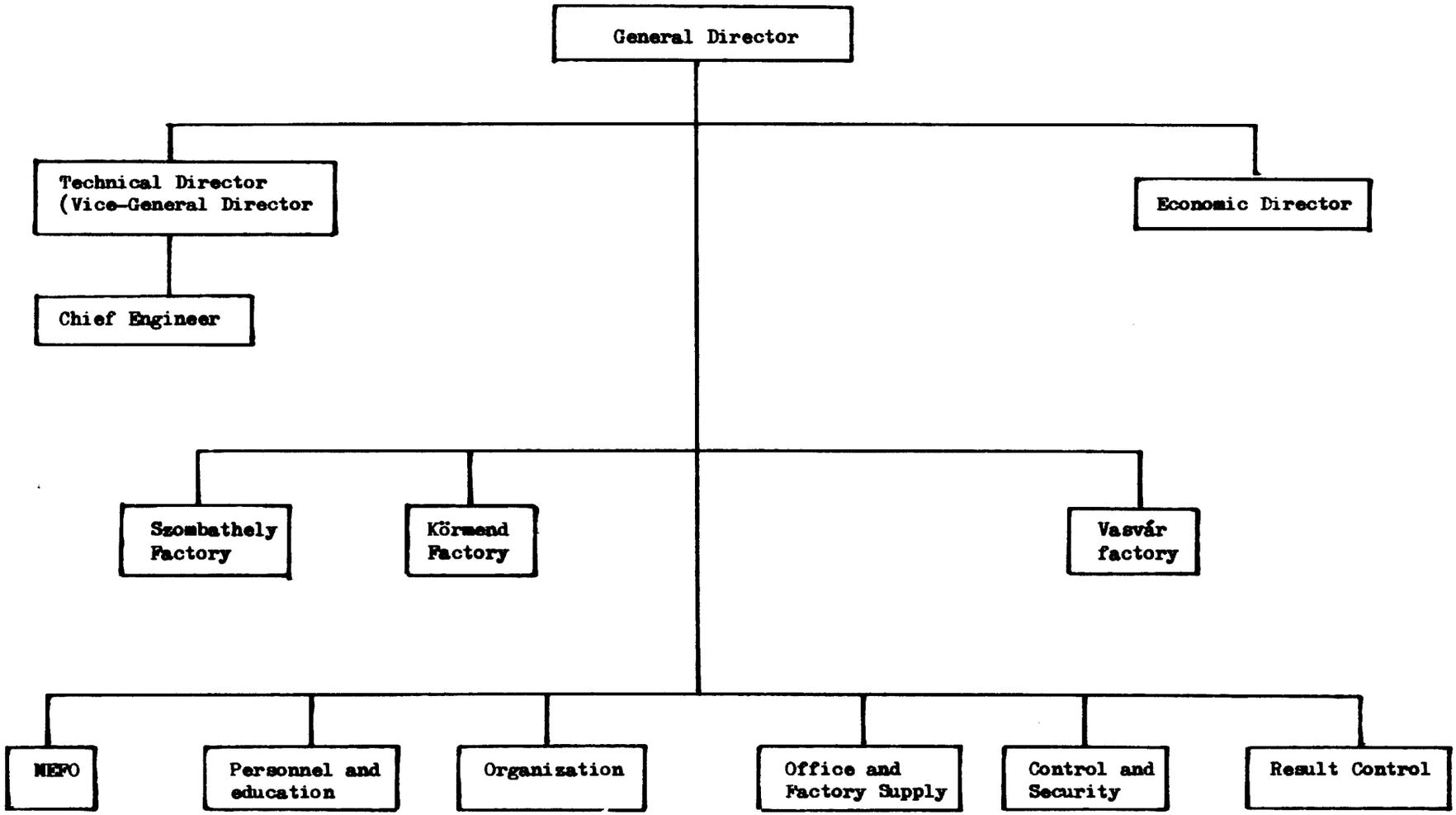
As the seven roughing units recommended in the investment plan will take care of only half of the MC production, only half of the yearly roughing loss has been taken into consideration in the pay-back calculation period below.

Improvement (percentage)	25	50	75
Improved income due to upgrading (millions of Ft)	1.24	2.5	3.75
Labour savings (millions of Ft)	1.5	1.5	1.5
Total savings per year	2.74	4.0	5.25
Pay-back period (months)	35	24	18

Annex X

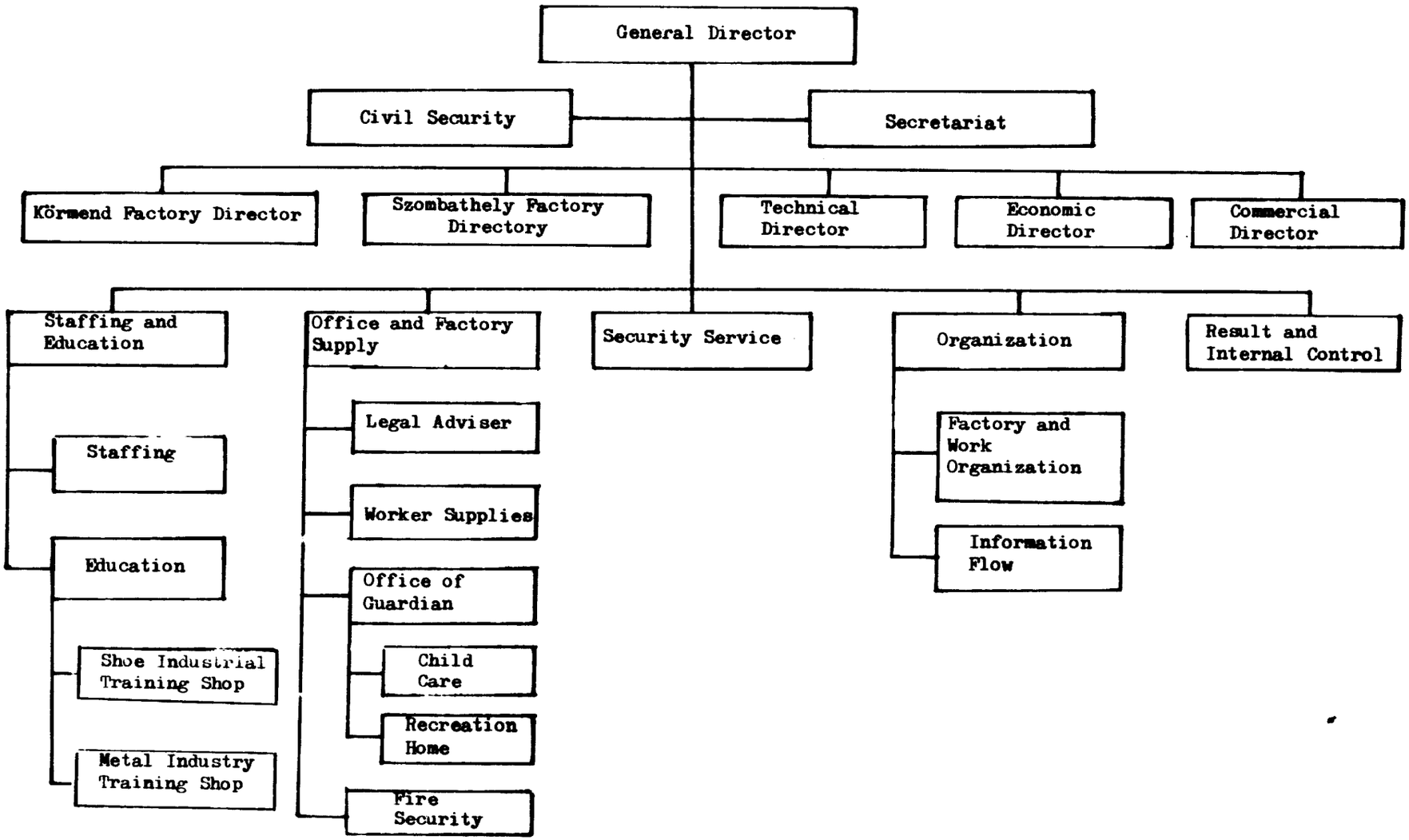
ORGANIZATION OF THE SABARIA SHOE FACTORY

A. Current organization



B. Proposed reorganization

1. General Director



The General Director is the chief executive officer of the company and directly under him are the personnel and departments shown on the above organogram.

Functions

(a) The General Director has the following functions in addition to those shown on the organogram:

Co-ordination of economic and social activities of the trade union, party and youth organizations

Representing the company in external activities and keeping contact with outside organizations

Forming company policy, strategy and tactics, and establishing company plans

Personnel administration

(b) The General Director also has the following functions through the main departments under him:

Staffing and Education

Selection, education and training of personnel for key-positions

International connections

Organizing special education and courses

Office and Factory Supply

Worker supplies (work cloths, lunches etc.)

Welfare services

Security Service

Civil defence

Organization

Overall system-orientated organisation activities

Result and Internal Control

Internal audits

Secretariat

Administrative work of top managers

Technical secretary

Authority

The General Director is empowered to perform the tasks indicated below.

(a) Negotiation, modification and termination of contracts with outside organizations, and in particular:

Approval of collective trade union agreements

Signing of agreements to join associations, institutes etc., and of original agreements with outside companies and institutes

Approval of long-term contracts with banks and of long-term and yearly co-operation agreements

Modification of company profils

Approval of export and import contracts, of participation in trade fairs and exhibitions, and of direct company sales policy

(b) Approval of company regulations, and more specifically:

General administrative rules

Organizational structure

Work rules and regulations

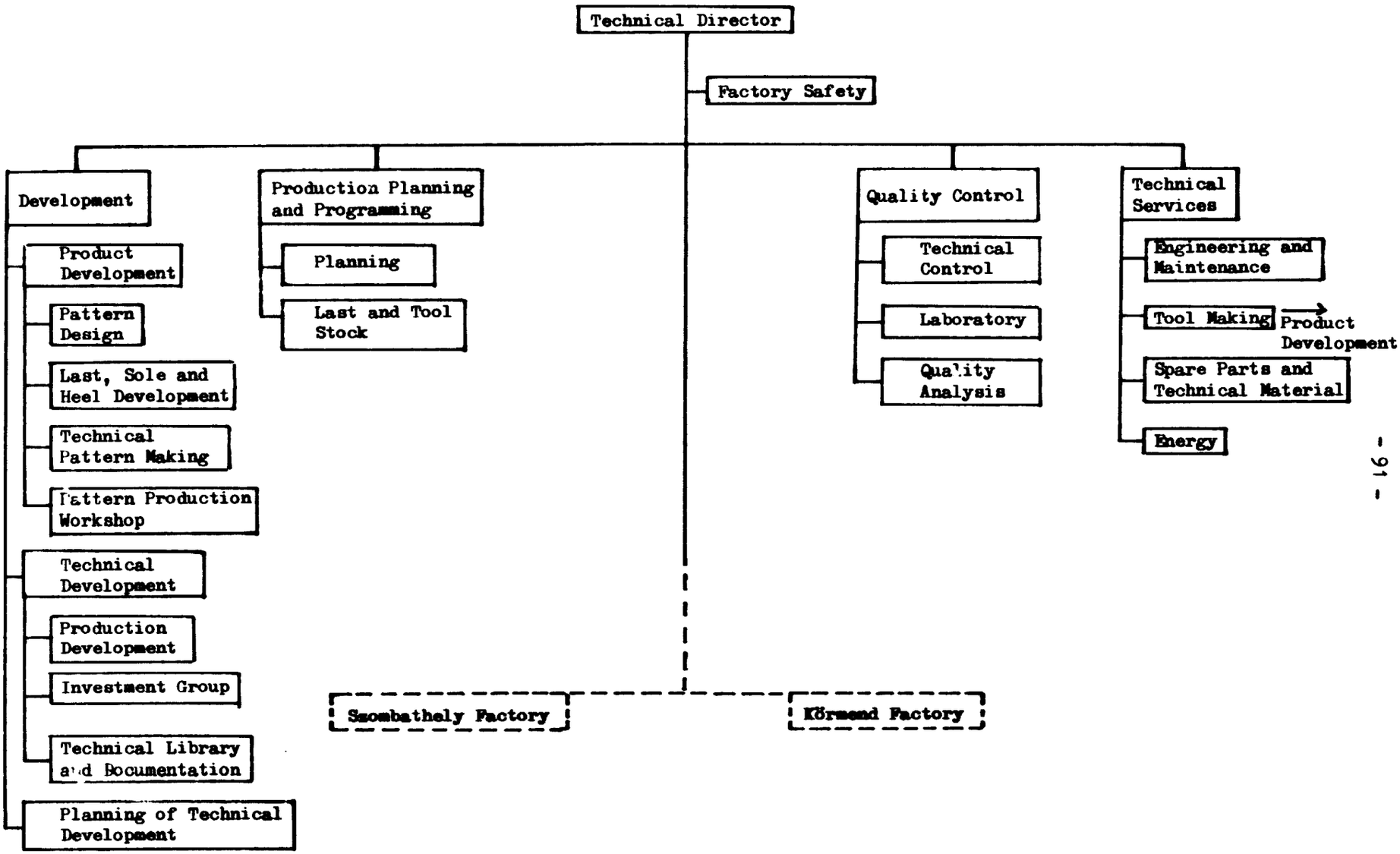
Rules for special activities and for the utilization of company buildings and equipment

Approval and modification of long-term company plans and company activities

Responsibilities

The General Director is responsible for the activities stated in the Articles of Association and for the effective running of the company in accordance with the Companies Law.

2. Technical Director



The Technical Director works under the CD and directs the departments and services shown on the above organogram. Under his functional control is the production of the Szombathely and Körmend factories through the facilities Directors.

Functions

(a) In addition to the functions shown on the above organogram, the Technical Director supervises the following activities:

Range building jointly with the Commercial Director

Co-operation with outside partners and within the facilities on matters relating to production flow

Co-operation and co-ordination between the central technical departments and the facilities

(b) Through the main departments under his supervision, the Technical Director has the following additional functions:

Development

Long-term and short-term planning of technical development

Compilation of development data (planning, raw material needs and documentation

Innovations and standardization

Production Planning and Programming

Production control

Semi-finished goods inventory control

Machinery disposition

Quality Control

Supervision and co-ordination of quality control, development, and analysis in all facilities

Defining the concept of quality in order to facilitate quality planning and development

Quality control of product development

Analysis of claims

Technical Services

Planning and maintenance of energy supply and buildings

Company-level co-ordination of power and water supply

Factory Safety

Labour safety and accident preventation

Personnel administration in the technical departments

Deputy of the GD in questions of civil security

Authority

The Technical Director approves decisions taken to ensure fulfilment of the functions of the departments under his supervision. This includes decisions relating to the following matters:

Sample manufacturing

Raw material norms and parameters

New technologies and production systems

Factory development (new buildings, layouts and machinery)

Half-yearly production programmes (jointly with the Commercial Director)

Co-operation contracts with outside partners (e.g. for the purchase of semi-finished goods from another factory)

Level of productivity and labour force needs (jointly with the Economic Director)

Methods and frequency of laboratory tests

Machinery distribution and withdrawal from use (jointly with the Economic Director)

Accident preventation rules and factory safety regulations adopted centrally

Responsibilities

The Technical Director's main responsibilities are as follows:

Execution of company plans in his field of work

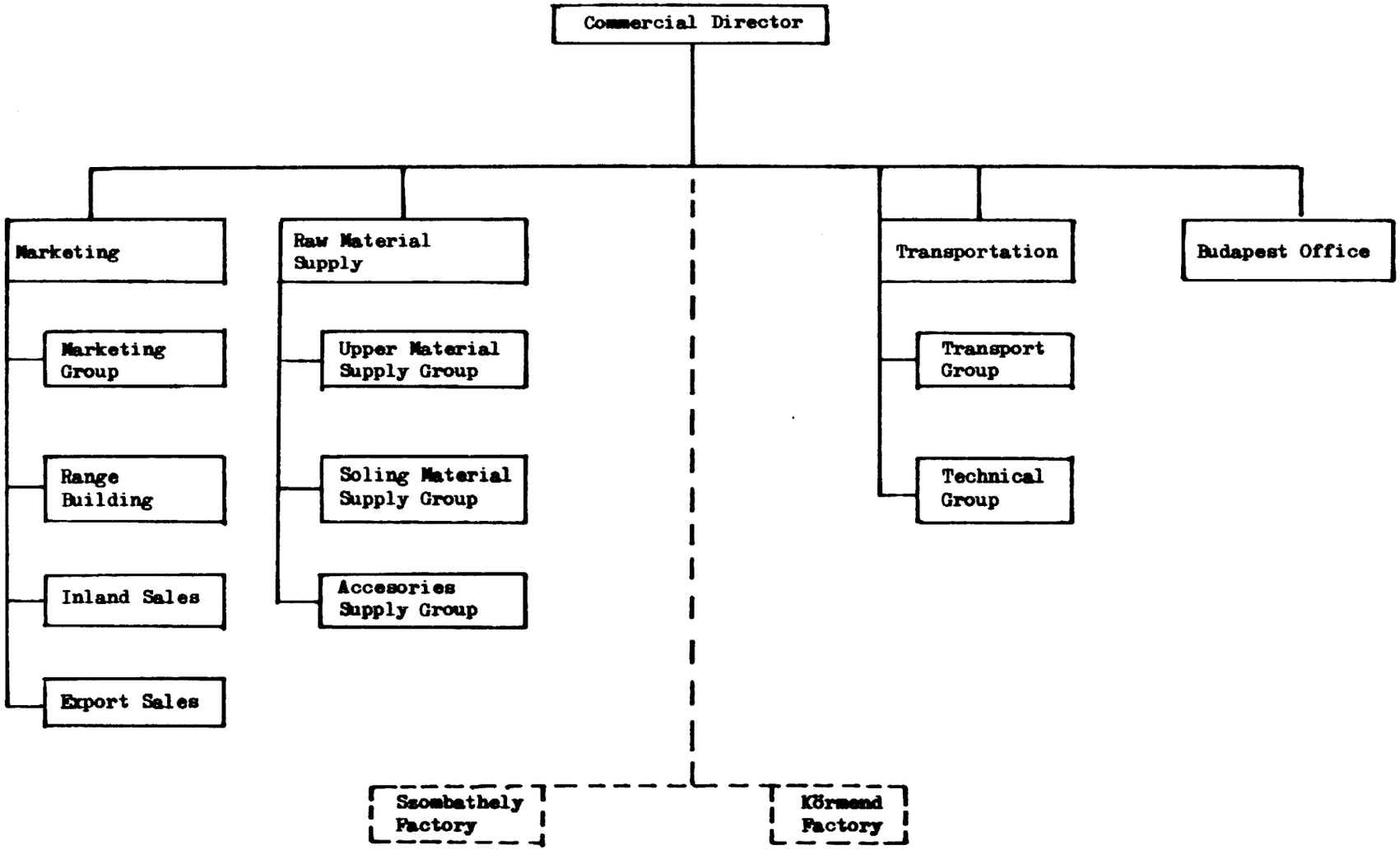
Establishment of an economic production range jointly with the Commercial Director

Effective usage of development funds and energy

Keeping cost norms and levels of materials under his control

Execution of investment plans inside the budgeted time and plan.

3. Commercial Director



The Commercial Director works under the General Director and directs the departments shown on the above organogram.

Functions

(a) In addition to the functions shown on the above organogram, the Commercial Director supervises the following activities:

Market research, gathering and analysing market information etc.

Creation of an economically balanced range for different price groups (jointly with the Technical Director)

Maintenance of stocks of finished goods

Raw material supply and storage

Quality control of raw materials

Shipment and delivery of goods

Personnel administration of his departments

(b) The Commercial Director also has the following departmental funotions:

Marketing

Long-term and short-term sales planning

Operative sales programming

Planning of finished goods stock levels

Fashion information

Advertising and sales promotion

Making of contracts and sales agreements

Commercial handling of claims on finished goods

Raw Material Supply

Raw material market surveys

Long-term and short-term planning of raw material supply

Contracts for the purchase of raw materials

Commercial handling of raw material claims

Transportation

Shipment of raw materials to the facilities

Supervision and maintenance of company cars and trucks

Making of shipment contracts with outside companies, forwarders and shipping agents

Budapest Office

Contacts with buyers and official bodies, such as the Fashion Institute, government ministries etc.

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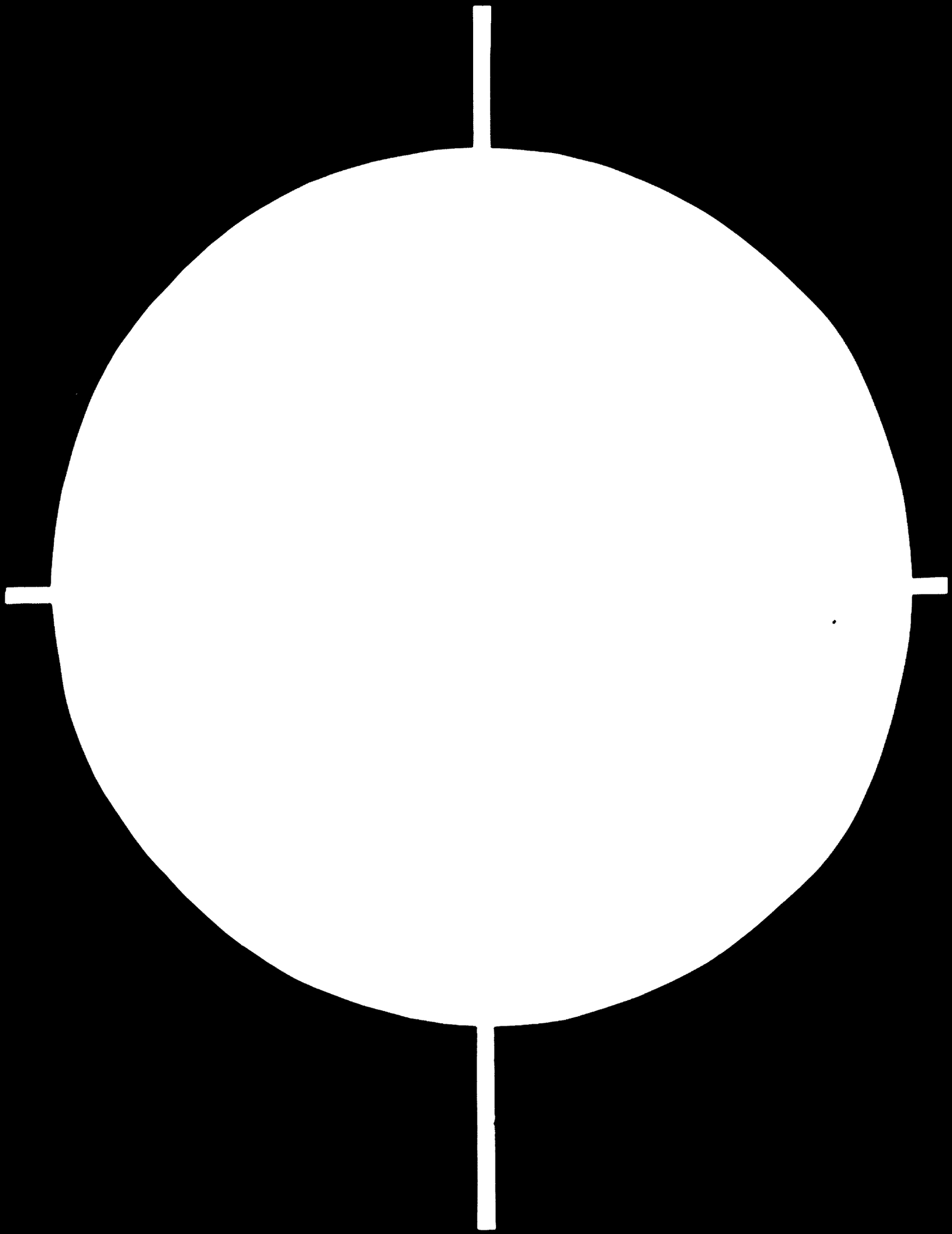
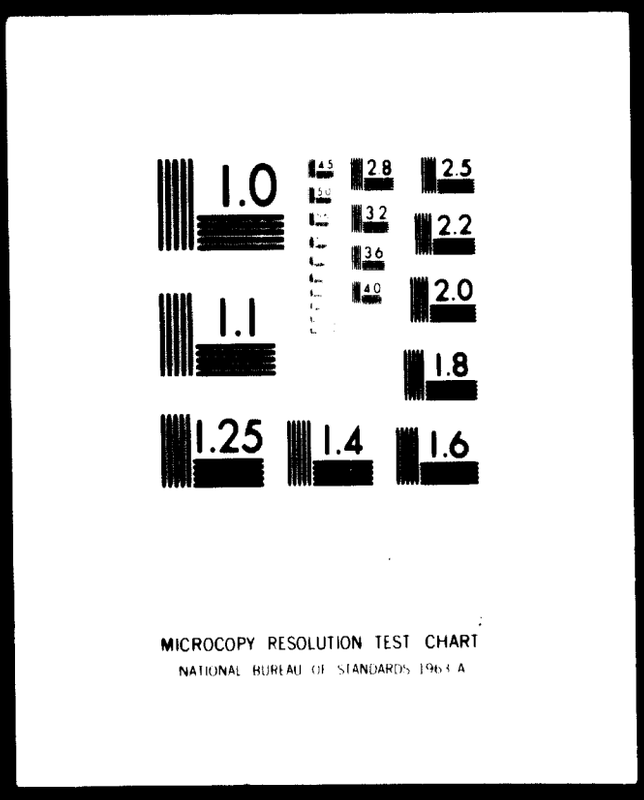




Authority

The Commercial Director approves decisions taken to ensure fulfilment of the functions of the departments under his supervision. This includes decisions relating to the following matters:

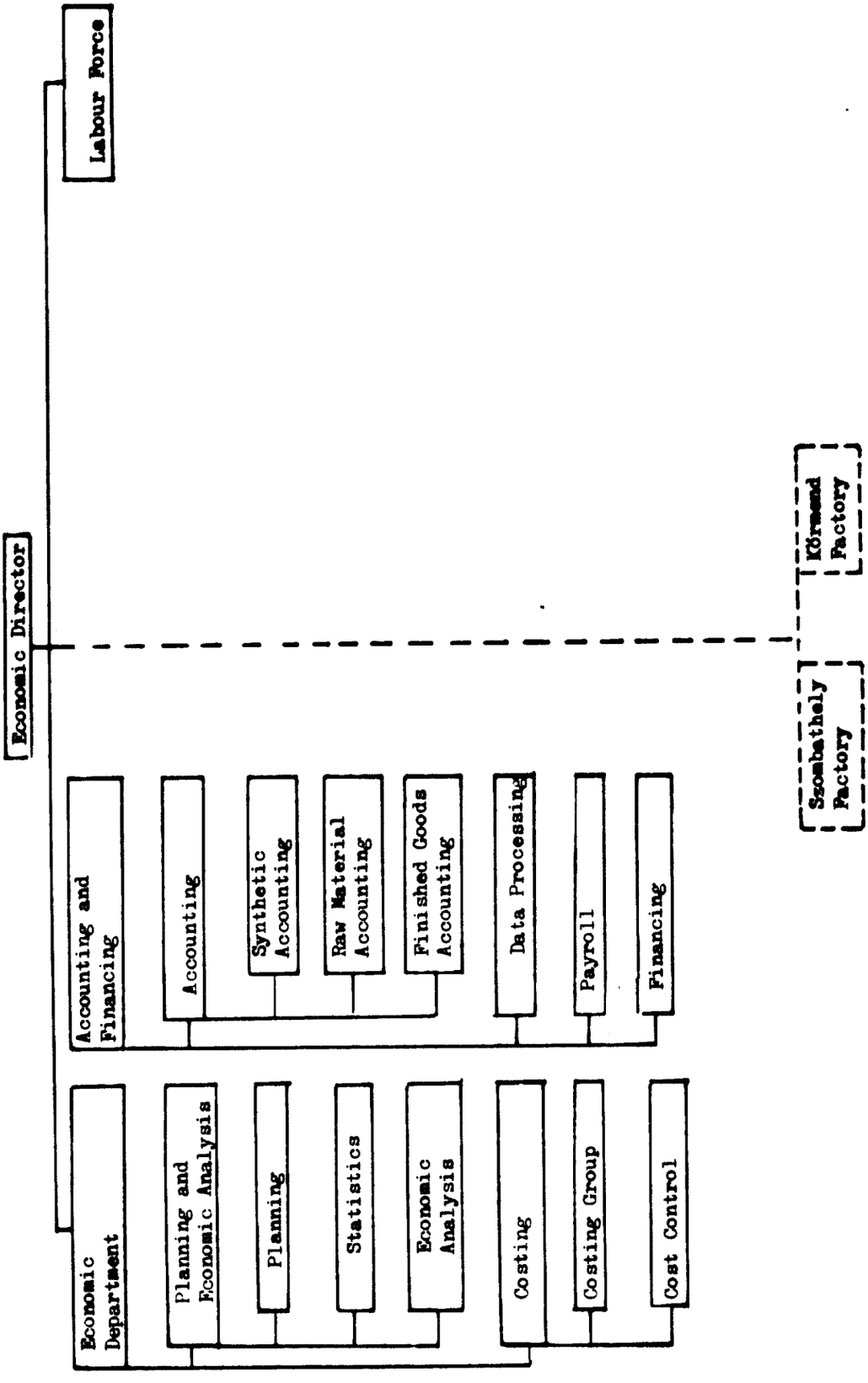
Half-yearly production programme (jointly with the Technical Director)
Price deductions and rebates
Production profile and range (with jury)
Raw material prices and price increases
Import levels and types of raw materials to be imported
Inventory levels for raw materials and finished goods

Responsibilities

The Commercial Director's main responsibilities are as follows:

Fulfilment of company plans in the commercial field
Range building
Purchase and sales contracts
Maintenance of planned stock levels
Quality of raw materials

4. Economic Director



The Economic Director works directly under the General Director and directs the departments shown on the above organogram. Under his functional direction are the Directors of the Szombathely and Körmend facilities for administrative purposes.

Functions

(a) In addition to the functions shown on the above organogram, the Economic Director controls the following at company level:

Economic co-ordination

Credits

Information supply

Personnel administration of his departments

(b) The Economic Director also has the following functions through the main departments under him:

Economic department

Long-term and short-term budgeting

Working out cost policy

Company and factory level budgets and accounting

Preparation of rules and regulations for cost control

Economic analysis of company activities

Accounting and Financing

Drawing up contracts with banks

Directing the physical inventory and control of inventory levels

Working out norms for physical stock and financing

Drawing up rules for selling of fixed assets, machinery or materials

Drawing up quarterly and yearly balance sheets

Labour Force

Negotiating trade union contracts

Control of salary levels, proposal of salary increases

Working out incentive schemes

Recruitment planning

Co-ordination of time norms within the factories

Authority

The Economic Director approves decisions taken to ensure fulfilment of the functions of the departments under his supervision. This includes decisions relating to the following matters:

Company level planning and budgeting methods

Costing and pricing

Short-term agreements with banks

Stock levels (financial aspects)

Manufacturing plans (economical aspects)

Financial conditions for short-term and long-term commercial contracts

Data-processing development

Implementation of new data-processing methods or systems

Company economic rules and regulations

Purchase of equipment for data processing

Responsibilities

The Economic Director's responsibilities are as follows:

Economic planning and budgeting methods

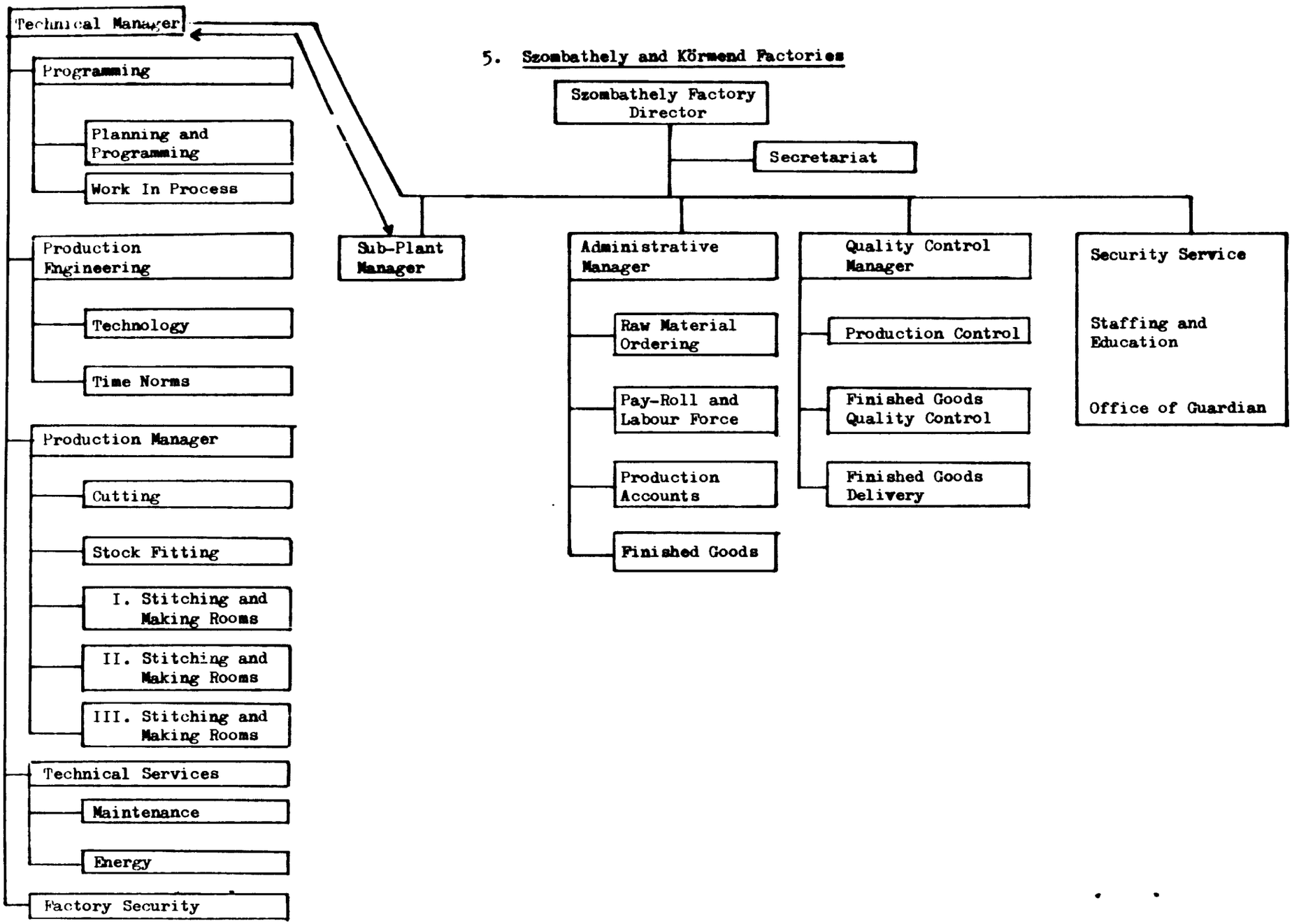
Costing policy

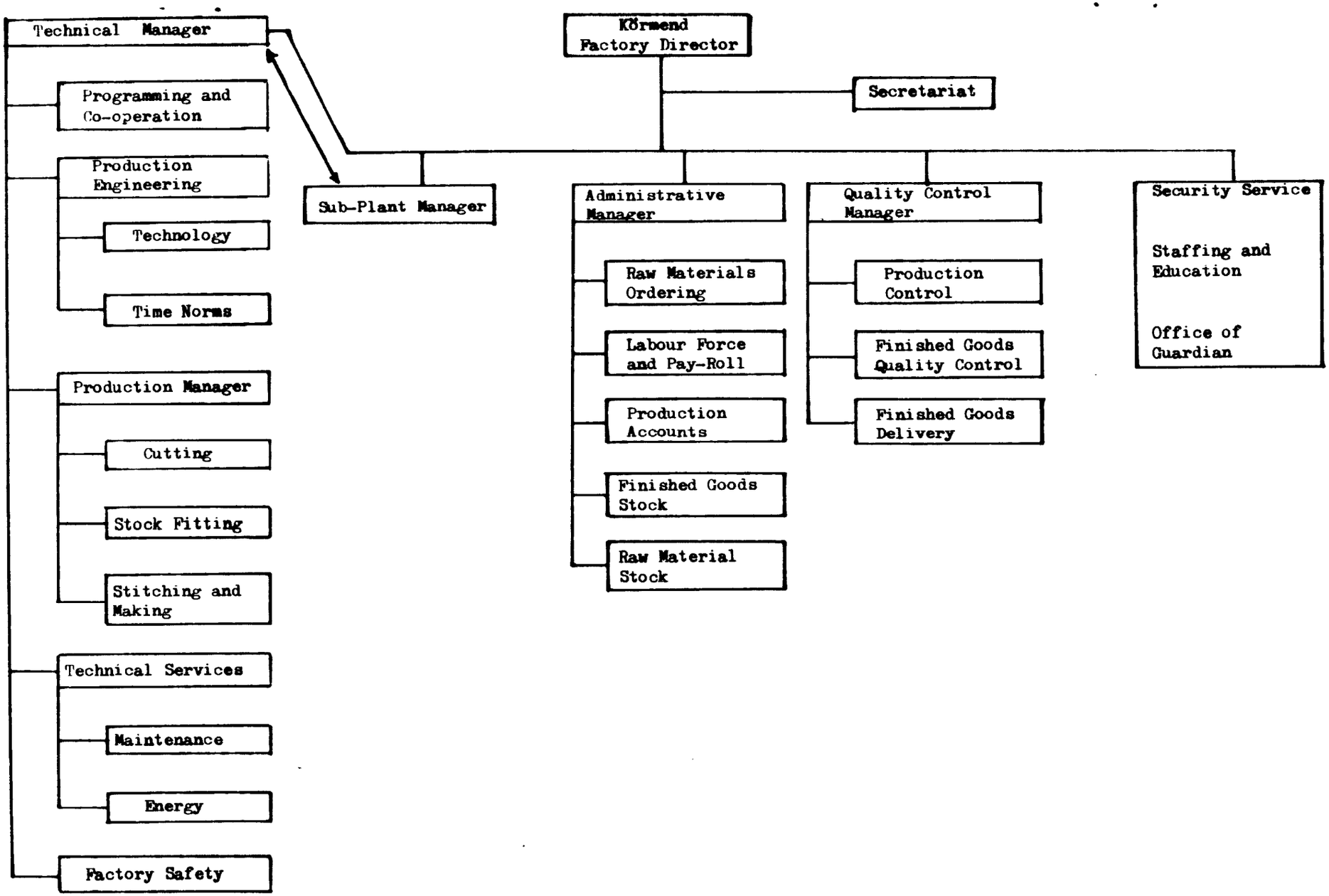
Preparation of costing and stock norms

Financing and accounting

Maintaining wage norms and levels

5. Szombathely and Körmend Factories




Technical Manager
Programming and Co-operation
Production Engineering
Technology
Time Norms
Production Manager
Cutting
Stock Fitting
Stitching and Making
Technical Services
Maintenance
Energy
Factory Safety
Körmend Factory Director
Secretariat
Sub-Plant Manager
Administrative Manager
Raw Materials Ordering
Labour Force and Pay-Roll
Production Accounts
Finished Goods Stock
Raw Material Stock
Quality Control Manager
Production Control
Finished Goods Quality Control
Finished Goods Delivery
Security Service
Staffing and Education
Office of Guardian

The Factory Directors work under the General Director. The Technical Director and Economic Director supervise, however, production and economic administration through the Factory Directors. The organizational units shown on the above organograms function directly under the Factory Directors.

Functions

The functions of the Factory Directors, in addition to those shown on the above organograms, are the following:

(a) To organize and direct the factory activities in accordance with the factory rules and regulations and the company law, and to ensure the effective running of the factory;

(b) Co-operation with the party and trade union organizations;

(c) To carry out the following tasks through the organizational units direct under him:

Technical and Administrative Managers

To fulfill the factory production plans in quantity and quality

Development of factory productivity

To organize the stock controls of raw materials and work in progress, and to maintain established levels

To direct cost control, information processing and distribution

Personnel administration of the work force

Effective use of the labour force

Other special activities

Quality Control Manager

Co-operation with outside quality control organizations

Collection, analysis and distribution of quality control data

Quality control of semi-finished goods and components from outside suppliers

Staffing and Education

Development and training of key workers

Organization of special courses

Office of Guardian

Defence and security of factory property

The Factory Directors have the authority to approve decisions or take actions to ensure fulfilment of the functions of the departments under their supervision. This authority covers, for example, decisions and action relating to the following matters:

Functions, authority and responsibilities of the technical and administrative managers

Factory-level orders issued in accordance with company-level rules, regulations and instructions

Proposals for long-term and short-term factory plans

Rules and regulations proposed by the managers

Quality norms of the different production departments

Work safety and accident prevention

Bonus and premium distribution and incentives

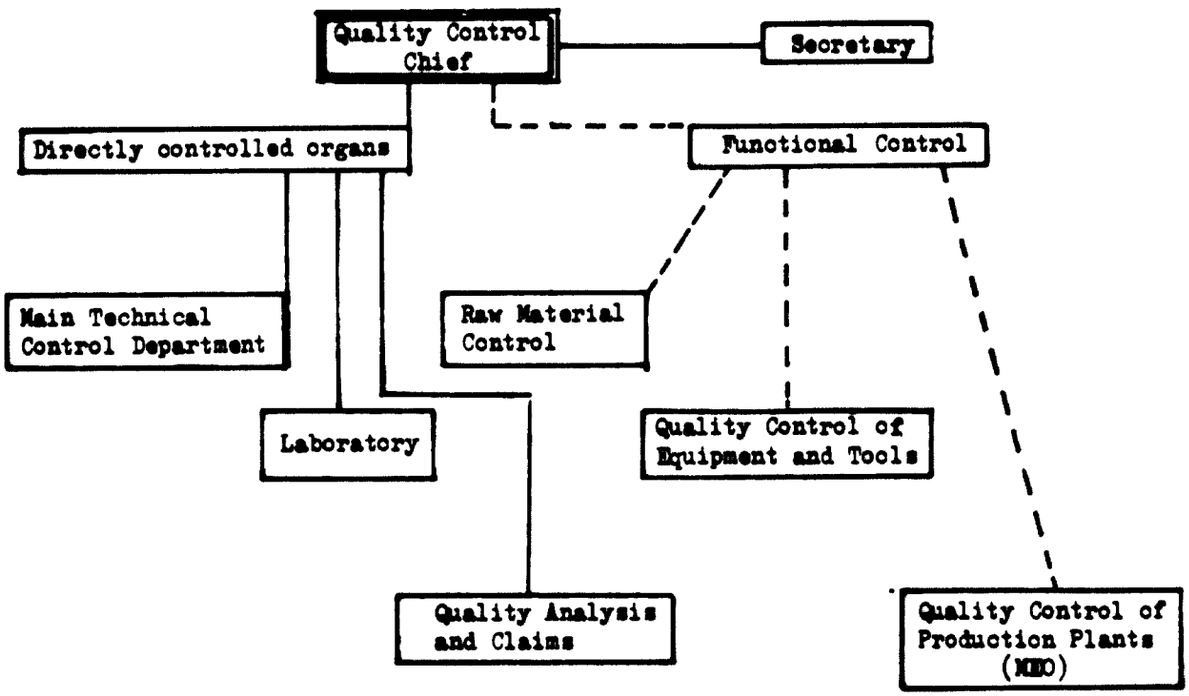
Use of factory funds

Rules for inventory control

Salary and wage increases

Qualifications of key-personnel

6. Quality Control Department



The Chief of the Central Quality Control Department (MEFO) works under the Technical Director and the departments under his direct or functional control are shown on the above organogram.

Functions

(a) The functions of the MEFO Chief, in addition to those shown on the above organograms, are the following:

Long-term and short-term quality planning and policy formulation in co-ordination with other departments

Development of quality control methods

Contact with institutes and other outside quality control bodies

Organizing quality control at company level and making suggestions for quality improvements

(b) The MEFO Chief also has the following functions through the departments under his supervision:

Main Technical Control Department

Collection and distribution of quality documentation

Company, shoe industry and national standards

Counter samples

Technical control of product development and production preparation

Quality control of basic and final ranges

Control of production documentation

Quality Analysis and Claims

Export control

Examination and acceptance or rejection of claims from commerce and consumers, and recommendations for corrective measures

Analysis of quality documentation relating to production preparation, product development and finished goods

Laboratory

Laboratory tests of incoming raw materials and components and of finished goods

Chemical tests for cements and glues

Development of chemical technology

Manufacture of finish dyestuffs

Authority

The MEFO Chief has the authority to perform the following tasks:

Personnel administration of organizational units directly under him

Issuance of instructions and adoption of decisions with regard to organisational units under his functional control

Control, discussion, and data gathering with all functional units in connection with company-level quality control activities

Taking decisions concerning company rules and regulations in his field of activity

Stopping production in case of defective quality

Establishing range quality levels and rejecting unsuitable models from the range

Responsibilities

The MEFO Chief is responsible for the effective performance of duties and for all activities carried out or neglected in his department and field of work.

Annex XI

STAFF TRAINING PROGRAMME

A. General course for technical and administrative managers

Subject matter	Time (hours)
Defining the concept of quality Science of quality Manager's function concerning quality	2
Organisation of the quality control system; content of quality control; social functions of quality control; quality development in different departments	2
Quality regulations and legislation, guaranty periods, consumer protection, quality aspects in commercial contracts	2
System of regulating technical aspects of quality; standards in the new economic management system	2
Connection between quality and price; costing rules; connection between quality and price in socialist and capitalist countries	2
Methods of quality control	
Quality control rules	
Quality control equipment	
Analysis of defects	
Conditions of quality control	
Laboratory tests and use of laboratory results	
Selection of samples for quality control	
Analysis of products and product documents	
Raw material quality control	
Production process quality control	
Finished goods quality control	
Analysis of claims from commerce and consumers	6
Gathering and analysing quality control information; mathematical and statistical methods	4
Total	20

Suggestion for a basic training course for the control of finished goods

Rules and regulations for the control of finished goods and the analysis of claims
Rules for the grading of finished goods
How to settle claims
Quality certificates
Method of analysis and decision on claims

B. Basic course for raw material quality control

Subject matter	Time (hours)
Company level quality control system	2
System and rules for raw material quality standards and quality instructions	4
Required quality levels for raw materials	6
Methods of quality control in laboratory and by visual inspection	6
Categories and classes of quality and quality grading	4
Working procedure for raw material quality control	2
Total	24

Company level quality control system

(a) Theory of company level quality control to cover all aspects of company controls;

(b) Organizational structure of the quality control department;

(c) Place of quality control organization in the company organization structure;

(d) Information system and flow of quality data.

System and rules for raw material quality standards and quality instructions

(a) National and industrial raw materials standards;

(b) Company raw materials quality rules:

(i) System of raw material standards applied by the company and BMKI;

(ii) Quality control of shipments in raw materials contracts (specifications, counter samples);

(iii) Instruction papers and their function in quality control.

Quality levels necessary for raw materials

Upper and lining leathers

Synthetic upper and lining materials

Upper and lining textiles

Sole leathers and other soling materials

Soling slabs, sole plates and unit soles

Fibreboard materials

Textile-based counter and toe-puff materials

Heels and heel covers

Filling materials

Secondary materials, nails, eyelets, rivets, shanks etc.

Stitching materials, needles, threads, bindings, tape etc.

Chemical materials, cements, dyestuffs, solvents etc.

Methods of quality control in laboratory and by visual inspection

Physical properties

Touch and handle

Surface quality

Workability in production process

Wearing properties

Properties for various climatic conditions

Ageing

Storing of raw materials and stock control

Selection of samples for laboratory testing

Categories and classes of quality

Content of quality categories

Classification of upper and lining leathers

Classification of leathers according to purpose or use

Textile materials
Synthetic soles
Fibreboard materials

Working procedure for raw material quality control
Outside controls (development)
Factory controls
Control results
Quality claims and their handling

C. Basic course for process control of semi-finished goods

Subject matter	Time (hours)
Company level quality control system	2
Quality standards and norms used, with technical descriptions	4
Cut materials, process controls of semi-finished goods, finished goods controls, sample selection for testing	12
Control norms and rules	2
Result analysis	4
Total	24

Company-level quality control system
Basis for company-level quality control
Structure of quality control
Quality control purpose and role
Information flow in the quality control system

Quality standards and norms used, with technical descriptions
Standards applied to footwear

Quality planning, article and material cards and technical descriptions

Quality control technical norms file

Laboratory and visual controls of cut materials, and semi-finished and finished goods

(a) Cut materials and components:

(i) Checking of measurements and accuracy;

(ii) Surface control of leather;

(b) Process control of semi-finished goods:

(i) System of process controls, work places to be controlled;

(ii) Parameters to be controlled by instruments, equipment used;

(iii) Comparison against counter samples, selection of counter samples;

(iv) Operations to be checked against written instructions;

(v) Operations with limited control possibilities;

(vi) Controls which can be performed in laboratory, sole bond control and control of seams;

(vii) Sample selection, control frequency and quantity of samples.

Norms and rules for the quality control

(a) Control norms:

(i) Suitable work place;

(ii) Quality instructions and counter samples;

(iii) Control equipment and apparatus;

(b) Rules applying to the workers;

(c) How to handle faults and defects.

Result analysis

(a) Information from the controllers:

(i) National standards and defect nomenclature;

(ii) Summary of defects;

(iii) Use and completion of the forms;

(b) Evaluation of quality information:

(i) Classification of the seriousness of the defect (defects to be corrected immediately and those with long-term solutions);

(ii) Defect classification according to PARETO (statistical system selecting when and where corrective action is necessary);

(iii) Suggestions for correcting various defects.

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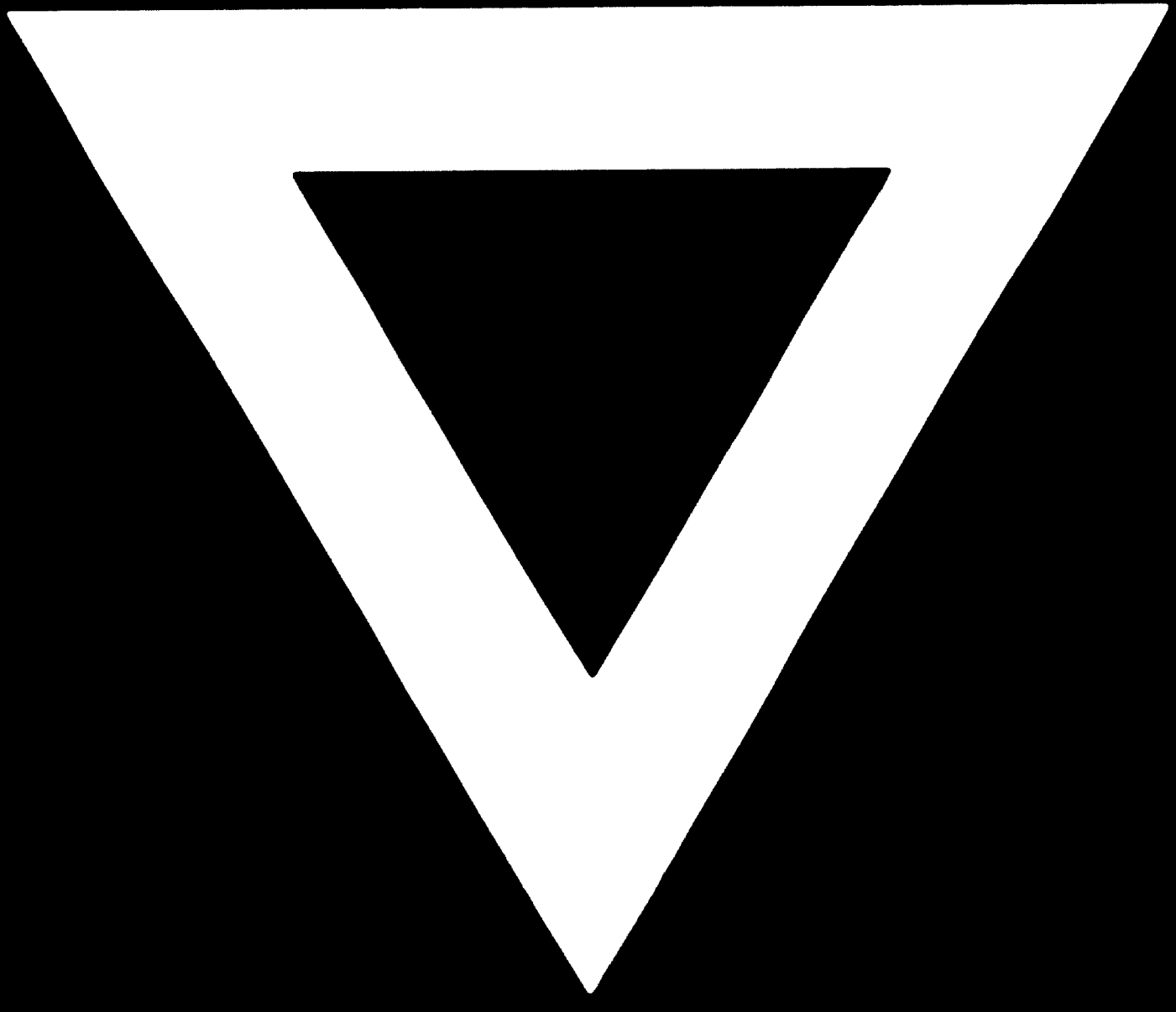

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