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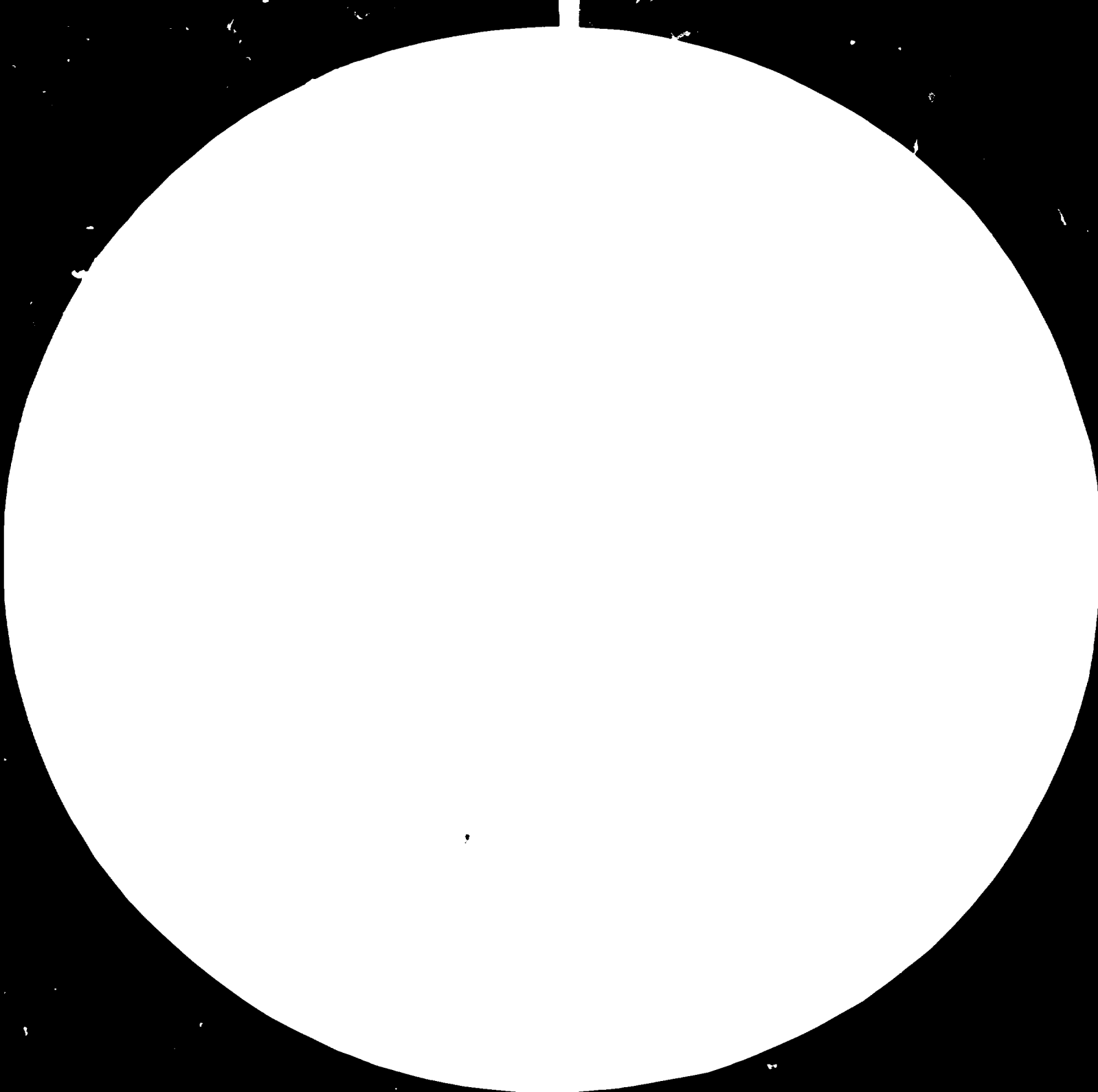

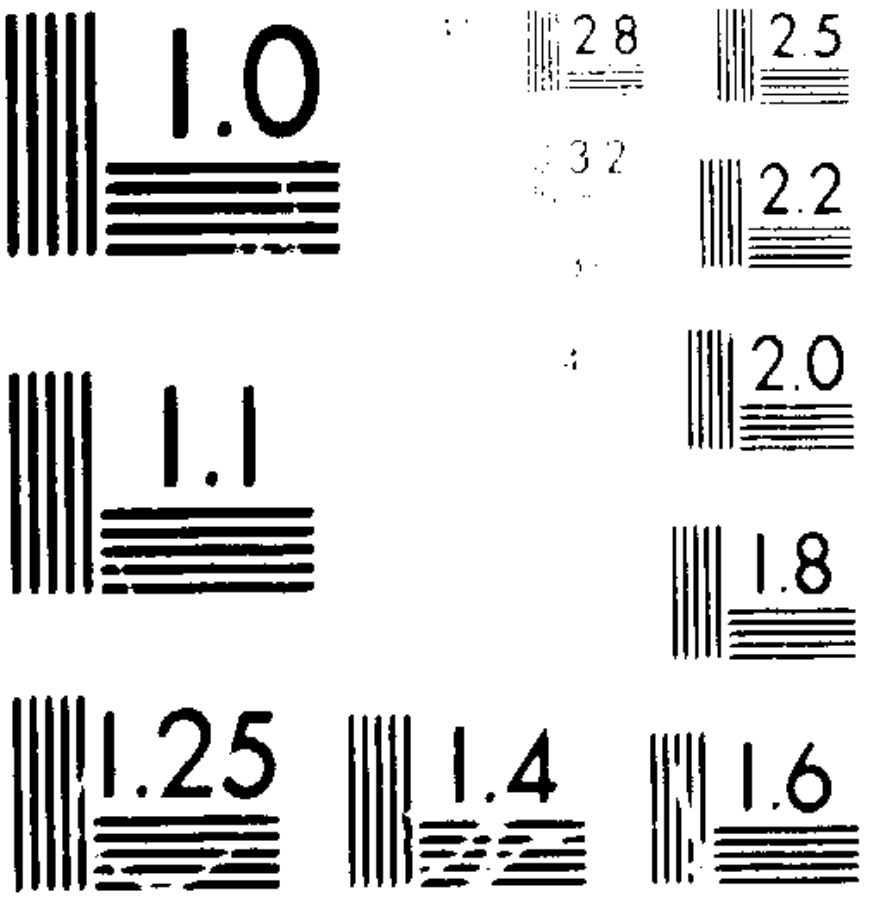
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LIMITED

UNIDO/IOD.340
29 February 1980

English

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

MILL MANAGEMENT

TF/HUN/77/002

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 Martin A. M. Minke, expert in mill management/knitting

United Nations Industrial Development Organization

Vienna

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CONTENTS

ANNEXES

1. Job Description
2. List of Counterparts
3. Characteristics of Mills
4. Work Programmes: Habselyem Kötöttárugyár
5. " " Vaci
6. " " Budapesti Harisnyagyár
7. " " Hodicot
8. " " B.F.K.
9. Summary Progress Report December 1979 Habselyem
10. " " " July 1979 "
11. " " " December 1979 Hosiery Mill
12. " " " " " Vac
13. Interim Report Vac. October 1979
14. Progress Report Vac August 1979
15. Summary Survey Report Hodicot December 1979 & B.F.K.
16. Monthly Report August 1979 Vac - On Cutting
17. Quality Level 1979 Final Products Habselyem
18. " " " " " Budapesti H.
19. Proposed Organisational Scheme on Quality Control in Sub Mills.
20. Project Documents
21. Papers Presented and Lectures
22. Proposal for an organisation scheme(Sample mill BFK)

SUMMARY

This final report on the expert's mission under Project No. TF/HUN/77/002/11-01/31.7.B.

during the first half of 1977
the first half of 1978
the entire year 1979

summarises the progress made by, and the actual situation in the mills selected by the Hungarian Ministry of Light Industry during the last year.

These mills are:

Habselyem Kötöttárugyár
Vaci " "
Budapesti Harisnagyár

The expert carried out surveys in two more knitting mills; in:

- [illegible]
- T.F.A.

Most significant progress has been made at Habselyem:

- The creation of the post of an independent Production Manager, as recommended.
- Production control on the sub-mills improved and resulted in 96% plan fulfillment in 1979.
- Fabric inventory in process, by better planning and allotment has been reduced by some 30% and approaches the goal of a reduction of 50% estimated by the expert as being obtainable (App.9a)
- On economising of material the company's management followed up the outlines, drafted by the expert and although the process of saving on material has only begun during 1979 the cloth consumption showed considerable progress in the third quarter. Annex IV shows a breakdown.

- On the expert's recommendation the new function of a commercial director has been appointed during the summer of 1979.

  This has a positive effect on range building, price setting, profitability of west export etc.

  The new commercial director contributes to give more shape to the company's policy, which has been ailing for too long a period.

- A marketing section has also been created, adopting some ideas put forward by the expert in 1978.

In detailed fields progress was slow and there is still a lot to be improved at Habalyem. The December progress report contains several recommendations for the future. See page 1 of the summary of the Habselyem July report (Apx. 10)

- In Vac the proposed and systematically worked out recommendations on the planning system has been put into effect as of the first quarter of 1980. The effects on production results will show later.
- However, the earlier implemented decade programmes for cutting and dveing were to some extent successful and contributed to less stagnation in dveing.
- On the expert's recommendation a factory manager has been appointed as of 1st December 1979 filling up the gap of indecision in the production area.
- The cutting waste programme made but little progress. The organisational preconditions missed up till now.

  The use of predetermined markers could be increased from 29% up to 59%.

  Cutting waste has been brought down from 22.7% in 1978 to 13.6% in 1979.

In Budapesti Harisnagyár

On the expert's recommendation decade planning for sizes on knitting machines for socks as well as for stockings and tights has been successfully implemented.

The company's yearly output raised by 22% since 1977, its productivity by 21%.

There is still a lot of progress to be made in planning per shade, assortment delivery to customers, the quality level and production organisation in some of the sub-mills.

For Hodiköt
and B.F.K., surveys have been carried out as recommendations put forward. Annexes 15 & 15/2

The summaries of the final progress reports made up in December 1979 are attached to this report.

Specific recommendations for each of the mills to be found in the December 1979 progress reports.

This final report contains furthermore a general vision on factors determining effective mill management.

Items affecting mill management are:

a. Marketing strategy, assortment policy

b. The urge for more export to often unknown western markets

c. The authority of the production manager in Hungarian mills

d. The functioning of planning and production control

e. Material supply

f. Quality level

Recommendations on these items are:

1. The organisational structure for the production area should be shaped according to basic technological characteristics.

   Thus there should be a separate production manager for flatknitting and for the jersey sector.

   These production managers should be given assistant production managers for each specific department such as knitting, dyeing and finishing and garment making. Annex 22 gives a sample of a hierarchical scheme.

   Planning and coordination is in the hands of a production director or a general production-manager.

   In case of applying the two technological fields, the knitting room should contain the two or more basic knitting technologies. Crisscrossing through the entire company (like in Budapesti Harisnyagyar) is strongly to be disregarded.

2. The authority of production management should be strengthened. It should be made responsible for its own efficiency, control of production, quality, waste and training and the means to set targets should be completely controlled by production management and not by other departments. (Chapter 4.5)

3. The functioning of production planning should be geared more to the most efficient use of manpower and machines rather then to individual customer orders or quantity achievements.

3. cont'd

The garment sections in knitting industry are disregarded too much and their planning requirements are to be clearly defined.

4. The garment sections need more attention in all respects, such as maintaining constant production lines, method study and efficiency.

The work supply should be organised accordingly. Several proposals have been put forward.

5. Material consumption is generally high. Mainly this originates from deviation of technological prescription, finishing quality and from cutting methods.

It is recommended to keep to the technological requirements in knitting, to improve dyeing and finishing methods and discipline and to modernise cutting methods. (annex 16) Generally, about 10-12% waste can be saved in all the mills.

6. The quality level needs to be upgraded. Since quantity achievements prevail over quality the mentality can only be changed by strong emphasis from the side of the government and the introduction of more modern quality control systems.

7. Marketing strategy is lacking in almost all the mills. Appointing marketing directors should be the first step. Habselyem was already successful (see annex 9, page 3)

Marketing should also result in better range building. Each company should develop ranges and collections which distinguishes from others.

7. cont'd.

West export requires fabrics with acceptable quality standards on western markets. It also requires models and model constructions on a much higher level than is now offered.

Western modelling technology is to be hired via the Hungarian Fashion insistitute.

Access to western customers should be more direct and more guidance by technical production personnel should be given during the negotiation. This is a necessity for knitwear, more than for apparel products.

8. The material supply is a major problem for the Hungarian industry. The organisation of the procurement of material, dyestuff etc. depends not entirely on the factories. However more stringent specifications of the required material is one of the things the companies should improve upon.

2. INTRODUCTION

2.1 Project Background and Summary Outline of Official Arrangements

In order to follow up the 1977 Project SI/HUN/75/814 and the 1978 Project TF/HUN/77/002/11-01 the Hungarian Government requested further assistance from the United Nations Industrial Development Organisation UNIDO for its knitting industry and, on a Trust in Fund Agreement. On 20 January 1979 the expert arrived in Hungary to continue his work under the 1978 Project, now numbered TF/HUN/77/002/11-01/31.7.B.

The expert's contract had a duration of 6 months, which was later extended for another 6 months up till January 1980.

The post title is: Expert in Mill Management (Knitting)

United Nations Industrial Development Organisation UNIDO was designated as executing agency and the Ministry of Light Industry as the government cooperating agency.

2.2 Objectives

The knitting industry has been extensively modernised over the last seven years and it has an important role to play in the development of industry in Hungary. It is expected to increase production of fabrics and offer a wide choice of products. The exportability to the industrialised countries is also to be increased.

There are currently nine large size knitting mills and four mills and cooperatives of medium size.

The aim of the project was:

a. to evaluate the recommendations on production organisation made in the previous year, in particular with respect to the organisational structure, productivity and product quality

b. elaborate on, and initiate the implementation of a programme of technical development and planning and production control.

The Ministry of Light Industry selected the following mills for carrying out its duties:

- Habselyem Kötöttárugyár
- Vaci Kötöttarugyár
- Budapesti Harisnyagyár
- Hódmezövasarhély Divat Kötöttarugyár (HODICOT)
- Budapesti Finom Kötöttarugyár (B.F.K.)

For each of the mills more specified work plans have been determined (attached as Appendices 4 - 8).

2.3 Economic Usefulness of the Project

The terms of reference date from 1975 and they originate from a period of technological renewal, whereafter the need for updating the organisation of production emerged.

In 1979 however, approaching a new economic situation, strong emphasis has been laid on:

- economising of material (saving on imports)
- quality (in view of exportability and saving on material)
- productivity

In particular in the second half of 1979 the expert's activities dealt with the preparation for action on the three above-mentioned items.

3. Project Activities

The main activities concerned the implementation of the expert's 1978 recommendations on production planning and control, in Habselyem, Vaci Kötöttárugyár and Buhar.

In Habselyem further evaluation of the structural organisation of production management was also a major issue.

In Hodiköt the expert was requested to assess the position of planning and production control, economic utilisation of material and manpower.

In B.F.K. the Ministry of Light Industry requested the expert to assess the entire organisation of the enterprise.

4. Findings

4.1 Organisational Structure of Production

The main recommendations laid down in the expert's 1977 report and urging for a reorganisation of the production sector, which should be made responsible for its own efficiency, waste, quality, orders and training, were followed up basically on the expert's recommendations.

The post of Production Manager was created in Habselyem and Vac and planning and control activities are since carried out by Production Management's own staff.

However, in some mills, the responsibility for vital items such as in-process control on quality, economising of material, setting uniform work standards, efficiency etc. is still not fully part of the function of the Production Manager.

This finds its origin in certain rules dictated by the Government.

In particular, the work standards, coupled to the wage level, escapes control by production management. This is to be regarded as weakening the functions of production management.

Efficiency therefore is not depending on the efforts of production management, but of general management while determining the yearly planned degree of utilisation of capacities. The Production Manager's duty is to fulfill those plans.

Decisions for productions departments depend highly on technical installation with respect to capacity and quality are made by the independent Technical Directors. They decide almost independently on the basis of capacities and less on quality and efficiency.

Therefore, Vaci Kötöttárugyár on the expert's recommendations made a major step in December 1979 by appointing a Factory Manager covering all responsibilities belonging to the production area, thus including the Technical Director's function as well as those of the Production Director.

Habselyem's newly appointed Production Manager changed the production organisation considerably, in particular in the better control over the garment making sub-mills in the countryside.

However, the new function could not be developed to the full extent of responsibilities as recommended.

Due to personnel reasons, in June 1979, Habselyem requested the postponement of further assistance to the Production Manager, and the expert thereafter worked at HODIKÖT.

Earlier in 1979 HODIKÖT had established a logical organisation structure for the production sector with full responsibility for all aspects, belong to 'production'.

The expert was to assist in the better functioning of the staff groups for production organisation and control in the second levels of one of the production lines (integrated production line of circular knitted fabrics and its final products).

4.2 Planning and Production Control

The present planning system is based on the flow of total sold quantities per article number for each quarter year. As an exception, export orders to the $ area are planned separately per customer.

As he did in the other mills, the expert recommended to plan monthly production portions, in order to enable a more refined planning and capacity balance and clearer defined purchasing orders. The production department then would derive decade production programmes for a close control on production.

At Habselvem decade programmes were implemented for the cutting department and sewing plants. Based on the better planning methods and the expert's recommendations on production items, production management was successful in establishing a better control on the sewing departments in the sub-mills.

The result is rather impressive, we refer to the summaries attached to this report as Appendix 9. Also the inventory in process has been brought down from 278 tons in June to 193 tons at the end of November 1979. (See Appendix 9a)

Further development of this system in the fabric manufacturing process, such as knitting and finishing has been postponed by Production Management.

At Vaci Kötöttarugyár as of January 1980 the monthly planning programmes throughout the production process from knitting up till make up of garments are implemented.

During the course of the year, decade planning programmes were implemented for dyeing and cutting. After the establishing of monthly programmes for all production departments the step towards decade programmes for all production departments will be not too complicated.

At Bu'har the self-implemented production planning of knitting machines per size of half hose and socks was along the lines set out by the expert and was successful for the sample machine groups. Further successful implementation will only follow after up-grading the technical training of machine operators, mechanics and other personnel involved with technical matters in the knitting rooms.

The recommended planning system for the fine guage machines succeeded soon after its implementation.

Planning per shade of both hosiery and socks was omitted because of unreliable supply of coloured yarn.

The latter problem applies also for other Hungarian knitting mills where coloured yarns are required on the first stage of the production process, knitting. This is in particular the case in flat-knitting, both on V-bed and on fully fashioned machines (flat sequential knitting and straight bar machines - system cotton).

At HODIKÖT after a survey in Oct./Nov. proposals were put forward for the most important items:

- economising of material
- increasing of quality
- increasing of productivity in sewing units

Around 10-12% materials can be saved without investments, representing around 20 million forints.

Quality should be increased, not only to decrease the number of rejects, but also to increase the percentage of first quality from 84 to over 90%.

Productivity should be increased in all departments by at least 5% and in sewing by 20%.

During the survey advice was given for the reorganisation of the central planning methods, which were put into effect as of December 1979 (first quarter 1980).

The B.F.K. survey in December 1979 and January 1980 contains findings and recommendations on:

- economising of material
- a better steering of supply to sub-mills for garment making
- a programme for improvement of the fabric quality
- a programme for improvement of productivity in one of the garment making units in the countryside.

4.3 Product Quality

Product quality increased by 3 points (Appendix 17) in Habselyem: it decreased in Budapesti Harisnagyár mainly in the socks and half-hose sector, due to extension activities and transformation of knitting equipment.

4.4 Marketing - Advice

At Habselyem, on the recommendations put forward by the expert, a Commercial Director has been appointed. This functions well and it is working much to the Company's benefit. Marketing activities have begun and as a part of it, product range analyses, according to a sample study, carried out by the expert in 1978 are applied.

4.5 Marketing in Hungarian Knitting Mills

All enterprises are selling to three markets:

a. the domestic market
b. the CMEA countries, chiefly USSR (15-30%)
c. hard currency countries (0-15%)

a. The main portion is sold to the domestic market through state-controlled wholesale organisations. The wholesale organisations objective is to secure a reasonable supply of goods to the population at price levels related to the centrally planned income levels of the population.

a. cont'd
It is more distribution than marketing. Delivery schemes are very broad.

The wholesale organisations seem not always aware of the real demand and the order system is not rational. This system requires an overhaul.

In some enterprises the modelling departments do their own market research. However in the most elementary way. Such enterprises are more successful than others in taking their share of the demand, certainly where overlapping assortments are offered.

b. Sales to the USSR are important and its portion of the total output varies from enterprise to enterprise (between 30 and 45% of the total volume).

Assortments are built up in close relation with the buying organisations. Orders are given for a whole year which forms the base of the capacity planning.

c. Export to hard currency countries is extremely difficult. Factories with informal contacts with 'western' customers however are reasonably successful. Many of the contacts with western markets emerge from any form of technical cooperation with western manufacturers.

Enterprises relying entirely upon the activities of the state-controlled import and export trade organisations do not make progress. They lack information about cloth, styling, quality standards and so on.

The Government is urging the companies to increase their share in exports to hard currency countries for good reasons.

On the other hand, with a production apparatus geared to markets with a lower quality and delivery scheme requirement, quick reaction on market demands of 'western' markets remain a cardinal problem at the efforts to increase exports to hard currency markets.

4.5 The Authority of Production Management

Some mills have weak, passive production managers. Some have stronger but clipped wings managers, a few have enough strong production managers.

In Hungary it is a common fact that in knitting mills production management has no direct control over setting targets for each of the production processes.

Usually production targets are determined in the 5-yearly and the yearly plans.

Direct production targets are only closer defined in the case of specific items, such as waste, routing and inventories in process. Such targets are then determined by either sub-offices of 'Technology' or 'Finance and Administration'. Only Production Planning and Programming are controlled by Production Management.

Control on specific goals and targets is performed by the departments which had given the instructions for them, and production personnel follow-up and report to the instruction given departments.

Usually the same standards as used for calculation reasons are also production standards. This is valid for waste, quality, efficiency and output. Margins are often considerable. Therefore, apart from the advise to unify Technical and Production Departments as has been put into effect in Vac, the expert recommended to establish a tactical group for production preparation under the production manager.

Its tasks should be (independent from calculation standards) to:

- set realistic standards on all production operations
- study and improve production methods
- control performances of all operations and processes permanently and advise production management on the outcome.

At present mostly work on these subjects is carried out by the organisation group under the technical director, who has no control over production processing.

Another kind of preparation is to be taken up by a group attached to Planning. In this case, production will use its services at preparing the next following production phase.

It has similar tasks as 'disposition' and presently it should replace this group where it exists, although it should not be under control of the production workshop to which it is attached now, but under the direct control of the central planning.department or its subsidiaries production programming groups. Planning preparation groups also coordinate each time two subsecuent production processes. Thus, they should belong to production planning and control.

In some enterprises our advice was followed up. In some the idea still struggles with competences.

In those factories where the Technical Director remains a sort of technical advisor and controls pure technical departments like technical repair workshops, technical investments and research and development, as a product of the latter all production standards are considered as belonging to his competence and Production Management will be witheld from setting up similar (seen as probably obstructing) groups.

In other factories - the expert has met two of them - the department for technology as well as production management are headed by one and the same technical director or a factory manager. This works out much more efficiently.

Another problem is the standard hours, which is mainly a compromise between wages, wage level and production standards by experience. Strong influence by unions also prevents tightening standards. Therefore, in most factories enormous productivity margins can be found in the sewing departments. Time study and method development are mainly a farce, since improvements cannot be carried out due to the domination of the compromise situation. Without outside assistance, as a carrier the situation is almost in a deadlock. Productivity reserves of 25% or more in sewing, some 10% in knitting and dyeing are laying idle. In some cases additional capacity is found in inefficient homework or in investing in more machines, in other cases capacity is just idling.

Therefore, setting production standards - specifically in methods and operator standards - for all production departments should belong to 'production'. Wages is another matter and could be under Administration or Personnel. Wages and standards should be unlocked in the entire knitting industry.

4.6 Mill Structure

Nearly all knitting enterprises have several country mills for the make-up of garments or other end products. These country mills are units of up to 1000 employees, mostly with a large number of so-called non-physical workers.

The need for more output and using the benefits of the industrialisation policy for the countryside, caused a drive for modern sub-mills to be installed, far from the central mill. In many enterprises the erection of sub-mills took place in a rather high tempo, and it has often been too much of an effort to dovetail these extensions in the structure of the enterprises. This struggle is still going on, and many mills still face problems emerging from it. Problems arose in heavy financial burdens, in supply of work, in production control and in quality and efficiency. Training skilled labour lacks a systematical approach.

Proposals for a better delegation of authority are put forward under 5.1.

The organisation in the sub-mills is to be improved. With a better supply of goods and a better internal organisation and a better utilisation of manpower in existing country mills they still have a potential for an increase of between 20 and 25% of the present output whereby we include a trend towards smaller order series and more models, which will lead towards lower production costs, of which many are related to the number of personnel.

The share of direct productive labour ranges from 50-54% in the selected mills.

4.7 Purchasing

Acrylics for Flatknitting are mainly purchased in Hungary. The spinning mills produce knitting yarns as a sort of by-product. There is no spinning mill specialised in knitting yarns and therefore B.F.K. as well as the other knitting companies depend on the 4 or 5 spinners, being basically spinners for weaving yarns.

Therefore, a regurlar supply cannot be secured. This effects the utilisation of capacity and the fulfillment of the production plan in a negative way.

Polyester yarns and blends for circular knitting face an even more difficult situation.
This is aggravated in recent months while gradually shifting over from western suppliers to suppliers in other socialistic countries. Yarn characteristics are different from spinner to spinner and this appears in the knitting room as machine setting problems and other adaptation problems, affecting quality.

The organisation of yarn distribution by the central buying organisations seem to be not flexible and in this respect, B.F.K. with a wide scope of yarn-types and counts, seem to have more problems than most of the other knitting companies.

4.8 Quality

In general, up till now, quality has been neglected (a law gives incentives on quantity only), which sets the Hungarian industry further back against the developments on styling and quality elsewhere in the world.

The outlook for the future is also not too bright and the mills have a rather limited exportability for products which can meet with international standards, for although the Hungarian knitting enterprises are equipped with mod[illegible]n to reasonably modern machines, and their processing is induced by modern development in western countries, in many cases, additional equipment and attachments necessary to meet the requirements for 'finesses' are lacking. In those cases where it is necessary for successfully operating on western markets, the enterprise should be allowed to have opportunities for additional investments. Of course this should be in line with the marketing strategy yet to be developed.

Process control should be more strict and production units for making up garments for western customers should not be muddled up with orders for the entirely different eastern markets.

The quality level of each mill is measured by the percentage of first quality output. The way this first quality is, is by the visible defects at the final control station of garment making and by the percentage of cloth defects, measured by the self control system of the workers.

Although this may give an indication of the quality level of a company, this is not a quality control system.

Under the prevailing circumstances, it was considered not to be urgent to introduce a more modern approach to quality control. However the following figures may show that an active programme on quality control is most important:

- losses in first quality production ranging from 5-8% with an exceptional 16% in one factory.
- second quality fabric 3 - 9%

see appendices on second quality of:

Budapesti Harisnyagyár
Habselyem
B.F.K.

RECOMMENDATIONS

5. Organisation

As the requirements of all the mills are different, each of them has to decide on the desired degree of organisation, particularly of production. It must be accepted that the production sector is responsible for its own efficiency, and control of production, quality, waste orders and training. To do this, the production sector requires its own staff and a planning department able to advise the production manager.

We propose to streamline the organisation schemes in the production sector for each technological sector a separate production manager has to be put in charge.

A scheme has been worked out for the B.F.K. company and is attached as Appendix 22

The production sector should not follow the guidelines laid down by the departments of finance and technology, it should also elaborate these guidelines and top management should set production targets. These guidelines will mean a major change in attitude towards production and such a change cannot be achieved at once.

Since the big era of technical investment is over and the technical director's position changed with it, it should also be considered whether the production manager would be better brought under the authority of the technical director. This would work out positively in all technical production matters such as responsibility for:

a. the application of technological predetermined production methods, standards and quality.

b. research and development would then be more geared to productionability.

Range building and modelling should then be attached to the marketing director's function.

The creation of this function has been proposed by the expert in previous years and in a few mills it has been put into effect.

The production manager should have his own responsibilities, also in the proposed position under the technical director.

Production management should have its own groups for production preparation, working out in practical details the data set by the groups for technology and product development:

- setting realistic standards on all production operations
- study and improve production methods
- control performances of all operations.

Since in many mills passive production management caused low realisation figures of production plans, these became a traditional level of realisation (experience data). Production management should show the courage to manage to set higher targets and delegate the authority to defined production section (profil leiter) in order to secure realisation.

5.2 Productivity

Productivity of the mills depend largely on the yearly PLAN set by the company's general management in common decision with production management, technical division and factory directors. Since huge reserves are hidden in the mills, it seems feasible to recommend to increase the utilisation of machines and manpower already in the plan stadium.

Capacity balance and bottleneck situations are to be straightened out by careful and detailed planning.

Bottleneck situations are merely a matter of technology and there the technical director has a responsibility.

5.3 Mill Structure

A higher degree of specialisation of the many country mills is necessary. This will increase their efficiency and facilitate the work supply.

5.4 Purchasing

Since knitting yarn is a by-product of spinning mills and the consumption of spun knitting yarn is to be estimated at some 7000 tons a year, there seems space for a specialised spinning unit for knitting yarn in Hungary.

Purchasing orders should be carried out by the central trade companies according to more detailed specifications of yarn and other materials.

5.5 Marketing

This is to be developed in all mills:

- on the domestic market the ordering system by the wholesale organisations is far from ideal and needs an overhaul.

- west export activities ask for more guidance with respect to technological and production technical opportunities. The knitting industry is to take further coordinated steps.

Some recommendations would help to increase those exports:

- develop a sound marketing strategy and abandon the slap happy approach.
- find ways to increase permanent market contacts for each product group.
- appoint 'product managers' or product coordinators in the enterprises, who deal with all facets concerned with marketing to western countries. This includes directing product development, order planning, coordination of purchasing problems, production progress and quality for the export orders as well as contacts with customers and the supervising foreign trade organisation(s).
- build up a trade mark for Hungarian products. Quality levels should be accordingly.

5.6 Production Planning and Control

In all mills the expert recommended to plan production in monthly portions and introduce the composition of planning lists for each group of items, fitting into sewing units, or knitting machine groups. This will bring a clear line into the short-term planning, which is now based on, and derived from groups of customer orders, grouped together according to article number,

without regarding the specific production lines. The proposed system has been implemented in Vac.

The expert also recommended the introduction of decade planning for the short-term planning. Because of lack of pre-planning and supply calamities this was only partly successful. However, this system in itself is sound and should be further developed after the previously mentioned step has been implemented completely.

5.7 Quality

- Quality control on material is to be further extended not only for the sake of claims but for controlled adaption in the production process.
- In plant control by supervisors, equipped with valid and detailed technological specifications.
- Quality control by an independent body should check the quality of production at all levels. The scheme of Appendix shows the organisation of quality control.

5.8 Economising of Material

Economising of material starts with the choice of the best available material. In the case of knitting industry this is yarn, dyestuff, chemicals, printing papers. Since yarn is the main component of the final product (about half the cost price) it requires utmost attention.

Recommendations:

- The yarn specifications for each fabric developed should be laid down in the purchasing orders. The situation where the central buying company acquires any yarn with only the same common basic data, such as count, basic chemical origin and a few more items should be abandoned. The texturising method, the number of filaments, the chemical composition etc. are most important facts for processing in knitting mills and it determines quality and material consumption.

- Knitting of a determined fabric quality should be performed on machines with the same guage (not mixing 10 and 20 n.p.i.!) and with the same number of needles as the sample fabric. The tension of yarn feed, the loop length and other vital factors should be regarded.

  The aim should be to secure the sample quality. This guarantees a most equal outcome after dyeing and finishing and it is the starting point for economising of material in the cutting room.

- The expert's report on cutting in Vac is representative of the situation in Hungary. This report, dated August 1979 is attached as Appendix to this report.

Annex 1

United Nations Industrial Development Organization
Request from the Government of the
Hungarian People's Republic

Special Industrial Services
Job Deseription
TF/HUN/77/002/11-01/ 31.7.B

Post title:	Expert in mill management /knitting/
Duration:	Six months
Date required:	As soon as possible
Duty station:	Budapest
Purpose of the project:	The Hungarian knitting industry has extensively modernized its production facilities and equipment during the last four years. UNIDO's assistance is requested to ensure optimum utilization of installed capacity, help out with organizational matters and advise on further technological development.
Duties:	The expert will carry out his duties in a Hungarian enterprise - Habselyem Kötöttárugyár - chosen by the Ministry of Light Industry. He is expected to: 1. evaluate and recommend improvements in the present situation in the enterprise, with respect to organizational structure, productivity and product quality; 2. elaborate on and initiate the implementation of a programme of technical development and organization of production. The recommended programme of work will be evaluated and then applied further in other enterprieses in the knitting sector.
Qualifications:	Textile engineer with experience in management of knitting mills.
Language:	English; German desirable.

Background information:

The knitting sector has an important role to play in the development of industry in the Hungarian Peoples Republic. It is expected to provide an impetus in the in creased production of fabrics and a wider choice of consumer-oriented products. There are currently eight large knitting factories and four factories and co-operatives of middle size. Statistics show that the production of the knitting industry has increased by fifty per cent in the last five years. The recent expenditures for the development of this sector should result in an even higher increase of production and more rapid product development.

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APPENDIX 2

List of Counterparts

Habselyem Kótöttarugyár	Talabér Gézáné January - June 1979
Vaci Kötöttarugyár	---
Budapesti Harisnyagyár	Mrs Kiss
Hodikot	Mr. Cenásey - November/December 1979
E.F.K.	Mr. Apathy December 1979/January 1980

Annex 3

The factories covered by the project were:

Budapesti Harisnyagyár, hosiery mill, with 2.000 machines.
Turnover 1977 was 1.155.000.000 forint.
It employs 3710 workers in 7 sub-mills.

Habselyem Kötöttárugyár, warpknitting mill for underwear.
Turnover 1977 was 1.109.000.000 forint.
It employs 4862 workers in 11 sub-mills and processes around 2000 tons of fabrics year which are converted into 26 mln garments.

Váci Kötöttárugyár; sports and leisure products on circular knitting machines with 2.620 workers and a yearly turnover of 941.700.000 forints.
There are 4 country mills for the sewing operations.

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Habselyem Kötöttárugyár

Programme January - July 1979

Background information

Habselyem Kötöttárugyár is an underwear producer with some 160 Warpknitting and Raschel machines. Additionally 18 circular knitting machines are in operation for the manufacturing of fabrics for leisure wear. The company employs around 5200 persons and has a yearly turnover of 1.0 billion Forints. Its export volume to the USSR is approx. 40 % of this total. Another 10 % is exported to countries with hard currencies.

The Mills Headquarters are in Budapest. There are 5 country mills with 11 sub-mills.

Workprogramme

The main objective for this enterprise is to give assistance to improve PRODUCTION AND PRODUCTION CONTROL. Subjects related were evaluated such as:

- managerial aspects; long term policy, technological development, marketing, etc.
- organizational structure of the production area;
- assortment policy.

The recommendations on these subjects were outlined in a report in July 1978.

The board of Directors adopted the recommendations on the improvement in the organizational set up and in the second half 1978 new staff in the production management has been appointed.

In a meeting with the General Director and Dr. Hajnal of the Ministry for Light Industry it was agreed upon that the expert will assist Management in the implementation of the new style programming department with respect to:

- the unification of the planning activities;

- the production programming and preparation of production orders;
- integrate the "operative planning group" into the department for programming and production control;
- its way of working, using the present data about progress control, its implications on the timely modifications of the programmes and reduce the interference in established production plans;
- programmes for cutting and finishing will have to be established.

The expert will assist in drawing up job description for the section heads in the Programming and Production Control Department.

Further activities are: assist in requiring and grouping marketing information for production programming and product development;
advise in quality control,
evaluate the department for Production Organization.

Alternatively the expert will work in Nabselyem and Vác on a 3/2 and 3/2 days a week base.

During June the expert will evaluate the progress on the 1978 recommendations on planning and quality control in the Hosiery Mill Budapest Harisnyagyár.

ANNEX 5

Vaci Kötöttárugyar

Programme January - July 1979

With reference to the recommendations made in July 1978 and the meetings at the Ministry for Light Industry on 13 September 1978 and 22 January 1979, the programme for the forthcoming 6 months will be as follows.

1. Implementation of the July 1978 recommendations; see also the Hungarian translation dated 17 August 1978.
2. Conducting the three installed workgroups responsible for the preparation and implementation of the recommendations with respect to the control of the manufacturing of fabrics, the production planning/programming and the organisation of the cutting room, including the distribution of cut pieces to the country mills.
3. Advise on product development, including market information and quality standards.
4. Advise on the quality control system.
5. Advise on the application of MTM system in various production departments.

In a meeting with the Production Director, Mr. Peregi, and the technical director Mr. Leyer on 23 January this programme was further evaluated.

It was recognised that vital conditions for a sound production control are to be improved.

Timely product development, based on market information should result in a timely presentation of the half-yearly collections to the trade partners.

The conversion of customer orders onto productions plans and purchasing orders for yarn and other materials should be brought back to earlier dates.

The programming of production orders and the progress control needs all attention. The expert envisages to implement an improved planning or production control system as of the third quarter of 1979.

ANNEX 5

Vac

Workplan (second half 1979)

1. Draft a 'model planning system'.

   a. Bring monthly production plans in line with the confirmed customer orders, at the same time considering permanent production lines; and completion of assortments sold;

   b. Synchronise the knitting programmes with the garment production plans, in order to achieve a permanently lower inventory of raw knitted material;

   c. Improve the utilisation of the GAF cutting preparation installation, while aiming at waste reduction for the entire cutting performances.

2. Improve the decade programmes further; including production control.

3. Advise on establishing an effective production management.

4. Advise on product development, including market information quality standards and the product profile.

5. Advise on the quality control system.

ANNEX 6

Work programme - Budapesti Hanisnagyár

Assist the company in:

a. Evaluating the function of production management and the self-implementation of production planning and control.

b. Establishing an effective quality control system.

Workprogramme HODIKÖT

During the expert's contract period, the Ministry of Light Industry in Hungary requested the expert to analyse the situation of the Subjects

Production Control

economizing of material

Quality

Productivity

in the integrated knitting mill HÖDIKÖT, and to give advice for improvement.

After a carefully prepared introduction the expert worked in Hodiköt during October and November 1979, during which period he analysed the above mentioned subjects and gave advice on the reorganisation of the planning department.

The company staff gave full support an implemented some major proposals.
For further evaluation of the main subjects a plan has been developed and discussed with Directors of HODIKÖT and officials of the Ministry.

The aim is to achieve:-

- Saving of material in cutting of 5 -7 %
- Increase the Quality of work, so that rejects will be reduced from 5 to 1-2%
  and product quality increase by 6 - 8 %
- Increase of Productivity in sewing of 20 % and in other departments by 5%.

Around 10 % material can be saved without investments, thus representing about 20 mln forints.

Although other subjects and organisational work in the flatknit and fully fashioned sector require attention, it was agreed that the sector circular knitting, with the highest production volume, will have to have priority and the action plan is therefore limited to this sector.

Annex 8

Workprogramme B.F.K.

Survey in the knitting company Budapseti Finom Kötüttárugyár

Subjects to be analysed are:

- The organisational structure
- Planning and production control
- productivity
- utilisation of material
- Production organisation and the relationsship between Headquarters and its supply of work to the submills
- the quality level.

Decembe r 1979

Habselyem Progress Report December 1979

Summary

During 1979 Directors and staff have put more effort than ever into better production performances.

The appointment of a high level production director, as recommended by the expert in 1978, resulted in a better co-ordinated production process, bringing the company's output to a record level.

The expert, in variable degrees of co-operation with direction and staff, has injected Habselyem with many ideas on organisational matters and pushed on higher quality, lower inventories and on material consumption.

Yet, hampered by adequate second level in staff functions to the production director, many subjects improved slowly in the production sector.

However, improvements are significant in:

- total output
- material supply, this year no more a disturbing factor
- production organisation in the sub-mills
- quality level of final goods and of finished cloth.

The organisational structure with respect to commercial and economical activities also improved considerably.

In other fields progress was slow:

- knitting quality
- the reliance on outdoor finishers and with it the quality of finished cloth. Their own finishing unit made but little progress.
- production planning and control stagnated, although a good start was made early this year. No further progress was made on monthly planning programmes and production order planning.

- economising of material was only successful insofar as the square meter weight was brought down and in cutting the markers were better composed.
  For 1980 an engineer for organisation and measures on lowering material consumption has been appointed and preparations have begun.

- shaping the function of production director was not completed. Emphasis is now on better performances of the country mills, including the securing of their supply. Control on the following subjects are still weak, or not performed by production management:

  1. Modifications of the production programmes.
  2. Control on inventories in process
  3. Material Consumption
  4. Technological and organisational production preparation (targets and production standards).

  The structure of the production management is not firmly established. The production director, directly reporting to the general director has no control over the groups involved with preparing production organisation, there is no central recording on production matters such as inventories in process, material consumption, quality etc. Apart from figures indicating the fulfillment of the plan and efficiencies, most of the data can be found in various departments under the technical director. This dualism requires to be cleared up.

  The ideal solution would be that the production sector should not report to the general director, but to the technical director, who then has to accept full responsibility for production as well.

- Dyeing and finishing is also a matter of the technical director. The envisaged manager for this section leaves the company by the end of the year, thus leaving again a gap in care, co-ordination and technological control on finishing.

The organisational structure of Habselyem improved considerably during 1979.

As recommended in the expert's previous reports, a commercial director has been appointed. At the end of this year a marketing section has been created and is making up its programme for the forthcoming year.

Due to consequent profit-maximalisation efforts, the most economical articles have been sold. This will be reflected in the company's profit level.

The commercial department, the well-functioning economical section and the modelling department, as well as other groups worked in good co-operation on this subject.

Yet there is an important role to play for the marketing section in order to establish target product groups and in shaping the still too much diversified assortment. In this respect we recall our reporting of 1978.

In an attempt to assist Habselyem on improving finishing technology, the expert introduced a foreign commission finisher in order to explore the possibilities of a form of transfer of technological knowhow. A report from the foreign partner is awaited.

This report contains several figures on efficiency, quality, targets on inventories, waste and also recommendations on ultimate goals on economising of material.

The principles on planning methods are explained again, and the expert regrets that he was held back from contributing to the further development of the planning system.

APPENDIX 9a

HABSELYEM

Inventory Development During 1979

Inventory as at 1st January 79		88.3	tons
Production, 1st half of 79		156.5	"
	total	244.8	"
Production for 2nd half 79		1,945.8	"
	total	2,190.6	"
Consumption 1.1 - 30.11		1,997.1	"
Inventory per 30.11.79		193.5	"
Broken down into:			
raw grey		78.0	"
dyed		115.5	"
		193.5	"
Inventory 1.1		244.8	"
" 30.11		193.5	"
	decrease	51.3	tons.

The position at 30th June 1979 was 278.000 kgs.

The decrease as of June is 18%.

Talabér Gézáné
term. igazgató

Although management looks well ahead in order to determine its future policy, it is not easy to recognize a coordinated and well-defined elaborated policy and goalsetting in practice and in the main departments. There are obvious targets set by government and other administrative bodies but each department works them out in their own way. Many times, vital problems, asking for integrated solutions remain stumbling blocks to parties concerned. A great deal of them are listed in the long and short-term work plan.

It is recommended to re-create a Department for Organisation under the General Director, but with concrete tasks in respect to coordinating the elaboration of plans for the realisation of the policies of each of the Head Departments.

Personnel problems in acquiring adequate staff could be better solved if the company policy were better and elaborately worked out in all departments. However, the present 'job securing' policy is an obstacle in many cases.

As stressed upon in the expert's 1977 and 1978 reports, product development is the weakest spot of Habselyem. In the previous years a great deal of effort was made in looking for new production lines which were in fact strange to the company's structure and knowledge. None of these came to fruition.

Meanwhile, the traditional products were not updated, and Habselyem now suffers from having outdated equipment, therefore the value of its output is low. In Chapter I it can be seen that the output per worker is less than one fifth that of similar West German knitting factories.

In order to upgrade the value of Habselyem's output, marketability and export ability, the expert initiated contacts for cooperation with a foreign finishing company for the transfer of technology and know-how. Furthermore, within the same plan of action he also initiated acquiring assistance from foreign stylists in order to inject marketable designs for west-export collections.

Summary contd. Habselyem July 1979

The renewal of the production management, which was recommended by the expert, manifested itself in a better controlled production process. The figures for the first half of 1979 confirm this - less second quality; higher (4%) efficiency in knitting; higher quality of fabrics sold (19%). The productivity in sewing was - based on the actually used standards - 97.2%, the commitments to customers were for 95% fulfilled, and more positive facts can be listed. Further steps should be taken, such as the reduction of inventory in process, reductions of waste percentages, increase of productivity in sewing etc. etc. For this, a plan of action on the short and long term is defined at the end of this report.

The implementation of the recommended programming system started in April, and the most significant results can be seen in the cutting programme. The sewing plant programmes, after a slow start, are maintained as confirmed. It is feared however, that the further continuation of the programme will not be without its problems. A start was made with the synchronisation of customer commitments and production programmes.

Better allocation of fabrics will depend on installing central storage and recording systems. This should result in a drastic reduction of fabric stock permanently.

Establishing a well-run 'organisational department' to serve the production department depends entirely on having available properly qualified personnel.

Recommendations are given for further integration of the customer orders into the programming system of all production stages and purchasing orders; this has to be worked out in the Autumn of 1979.

The economy of material is to be tackled thoroughly, including material handling and cutting. Foreign consultancy is to be acquired.

Recommendations are given on subjects such as the position of the purchasing department and increasing productivity of the garment making sections.

July 1979

1. Summary of the Dec. 1979 Progress report on Budapesti Harisnagyá

The expert had to assess the development of the performances of the self implementation by the factory of his 1977 and 1978 recommendations.

a. Planning

Decade programming proved to have been implemented and developed up to a certain degree. 15-20% of production was not according to the planning programme. The activities on this subject made slow progress in the sub-mills, where factory organisation is weak. The smaller production unit at the central mill is much better under control. Nagybátony with its less complicated production programme made good progress after a late start.

The Gyula plant and its subsidiaries Dobor and Szeghalom cause many backlogs in production. The firms new Technical Director has worked out a programme for training technical and production personnel on maintenance, preventing quality defects and operating methods. Since this is a pure technical approach, organisational matters and planning require simultaneous action. More attention is needed for the production organisation in make up (Szeghalom) and Doboz both causing delays in completion of orders.

A more active planning approach is needed and this report gives recommendations for further steps

An active programme is to be drawn up for higher productivity in Doboz, and a programme for improving organisation and assistance to Szeghalom has to be drawn up.

b. Quality

After a severe drop in quality level since 1978, the first signs of recovery appear. First quality output reached the same or higher levels in the third quarter in fine gauge products.
Half hose (coarse gauge) in the central mill shows a rather normal pattern.
Gyula production (half hose) , although equipped with older machines and a much more varied machinepark for various reasons caused the major drop in first quality output. There also knitting waste reached untolerable levels. The needle, sinker etc. consumption doubled for the single cylinder machines and increased with 30% for the double cylinder machines.

In Gyula technical personnel has been employed in establishing subsidiary plants in the town of Gyula and Szeghalom.
Technical skill and supervision weakened and the injection envigased by the programme for up-grading technical skill and know how as prepared by the new Technical Director will hopefully bring the quality and waste levels to normal proportions during 1980.

c. Productivity raised by 25% since 1977, which is a complement to the Genral Director.

d. The 1977 recommendations with respect to the streamlining of the production flow have not been put into effect. Instead, modernisation and regrouping of production phases into a less complicated crisscross pattern will ease up control on the production process and on the levels of quality.

d. Production control is weak, even has a passive approach on the production process. What actions are taken if for instance winding is poor? Here agian. the authority of production management is limited. We refer to our note about this Hungarian problem in our Final Report.

Dec. 1979

Vaci Kötöttárugyár

1.0 Assessment of the Company during 1979

The turnover increased by 2-3% against the previous year. Since the produced number of pieces decreased by some 17-18% the assortment has changed in favour of more valuable garments.

Due to mechanisation the amount of standard hours performed decreased with about 4.6%.

Annex I gives more details.

2.0 Progress on the Experts Work Programme

The expert devoted much time and effort to this mill. No counterpart was provided by the company which made it not so easy to advise on, and evaluate the programme.

Nevertheless, much progress has been made during the second half of the year, mainly in Planning and the organisation of Production Management.

2.1 Production Planning

As outlined in a note dated 30 May 1979 which is attached as Annex II, three steps in planning should be tackled.

Step 1: the preliminary capacity plan
2: monthly production plans, derived from the quarterly plans.
3: Decade programmes for the production departments.

After Step 3 was implemented earlier this year for cutting and dyeing, and, based on the rather largely worked out quarterly plans in December 1979 Step 2 has been implemented according to our recommendations in our interim report on Planning Methods and Production Control dated October 1979, and our supplement to it, dated December 1979.

This is a big step forward and it provides the planning data for each of the subsequent production phases.

Each of the production departments will as of now make its own detailed production plans.

When step 3 becomes actual again and the central planning office will give out production orders for each article number/fabric number, which are combined in decade periods.

Daily disposition will then compose production orders for each production phase. For the time being their methods will not change drastically, but order disposition will be performed according to monthly determined orders instead of quarterly quantities.

Backfeeding of progress data, order control and its co-ordination is still an unsettled matter. The expert recommended the introduction of planning boards and order progress charts.

Since the organisational structure of the planning department is not determined, no further progress could be made.

2.3 Factory Management

As one of the main achievements can be quoted that finally production management has been changed. As of 1st December 1979 a qualified person has been appointed as 'Factory Manager', unifying both Production and Technology.

This fills the gap and the atmosphere of indecision in the production area, which after the departure of the person in charge of production left in the middle of this year.

It is expected that the appointment of an active and competent 'Factory Manager' and the recommendations on

Planning
Production Control
Efficiency (sewing)
Cutting
Securing of Quality

will be evaluated and implemented.

2.4 Cutting Waste

Reports on this subject were issued in August and November 1979

Discipline in the cutting department increased somewhat and this resulted in a small reduction of waste.

Recommendations on systematic improvements by better markers for combined sizes, longer spreading lengths, selection of fabric pieces on width and so on were not followed up.

2.5 Reports

- Technical Report January - July 1979
- Interim Report on Planning and Production Control, October 1979 (its general recommendations are attached)
- Monthly reports to the enterprise and the Ministry of Light Industry of which the May, August and November reports are attached as Appendices II, IV and V.

3.0 Targets for 1980

Feasible targets should be:

- Completion of the planning system
- Savings on cutting waste by 6-8%
- Increase of productivity in sewing by 20-25%
- Increase of quality.

Reorganisation of knitting department should contain more emphasis on quality than on productivity since capacity is far beyond that of the garment sections, and quality improvements will have a direct effect on economising of material and the cost price of the company's garments.

Meanwhile, many projects are envisaged to be tackled in 1980 and onward. We wish the company success in achieving their goals, in particular since for a while it seems to intend to go on under its own steam.

GENERAL SUMMARY

This report analyses the present situation on Planning and Production Control and gives recommendations for further development of the programme.

Many subjects are intentionally not mentioned in this report, for instance, the yarn and auxilliary supply, detailed programming of sewing rooms, productivity, methods, saving of materials in dyeing and cutting, etc. etc.

The above-mentioned subjects belong also to the duties of the Production Management and there are many areas to be improved upon. However, we are convinced that first the production process has to be put into order so that it runs smoothly and without interruptions. These are the reasons why subjects mentioned before can only be tackled after production organisation is put into order.

We recommend that Planning should be based on monthly determined orders instead of the totals for a quarter. It is envisaged that out of the quarterly totals of orders, monthly units will be selected. These have to be fitted into the monthly capacity under consideration of the decided delivery times. Detailed programmes for each of the production departments will then be made in half-monthly units. According to our recommendations in the first half of this year, a detailed programme for half-monthly periods had begun for dyeing and cutting. However this operation started in the middle of the production process, and since the production of fabrics was not synchronised to it, many difficulties occurred. On the other hand the organisational structure was not geared to an effective co-ordination of the feedback of data and programme control. These programme control data are abundantly

available but the production management had no effective power. Our meetings with the Company's Director in June about this subject resulted in the fact that in the second half of this year some measures were taken to centralise the production management and the replacement of some persons. We were not consulted about this development but it seems that all efforts have been made to improve the preparation of production programmes, and to secure supplies to the various production departments. We feel it is most important that under the Head Production Manager the division between fabric production and garment-making is maintained in the future. The Planning Department should be strengthened and assist Production Management in the preparation and control of production. They should play a stronger role than at present in production control.

Unfulfilled production should not simply be carried forward to the next month, but after consultation with an active production manager action should be taken to increase output and to revise the actual situation, in order to prevent delays for the future. All emphasis should be given to structuring production management in the logical and effective way. Only then can the measures already taken and recommended measures for the future be made effective. We hope that this report will help the production organisation to be brought in line and to speed up the already started developments. We also think that this interim report should be followed up after a certain time, so that we may avoid the actual situation and to develop also other subjects important for an efficient production.

I Planning Method

At present the planning of the production departments is based on the sold quarterly quantities only in the case of specific monthly delivery times. Planning is based on fixed delivery times. Upon the recommendations detailed planning for dyeing and cutting has been implemented. Sewing departments receive only a broad outline of a half-monthly plan and this should be worked out in detail by the sewing department managers.

Progress Report Vaci Kötöttarugyär August 1979

Summary

During the first half of 1979 the expert visited the company 35 times.

Main subjects covered were:

- the implementation of a programming and production control system;
- the evaluation of the organisation of the cutting room.

Other subjects listed by the Ministry for Light Industry were given minor attention. These subjects were:

- advise on product development, including market information and quality standards;
- advise on the quality control system;
- advise on the application of the MTM system in sewing units where the Hungarian Institute for Textile [illegible] will implement such a system.

These subjects concern advice, and no mobile production organisation, investment matters and savings on imported material became more important on the priority scheme.

The initial work plan drafted in January 1979 is attached to this report as appendix 5.

In July, a half-yearly report was issued and forwarded to the Director and the Ministry. The contents of it are the main subject of this report.

After his arrival in January 1979 the expert found that his 1978 recommendations, [illegible] with a few exceptions, were not carried out.

This means that there was almost no base on which to get started. The newly appointed production manager for the garment sections had yet to establish her position.

Summary cont'd

The planning was not yet unified and the duties of the assistant production manager were not clearly defined.

The situation in the cutting room had even deteriorated.

Productivity remained unchanged.

The expert then started with the implementation of the decade planning for dyeing and cutting and later for the garment sections. This was successful. However, due to ineffective control and command the garment sections could not fulfil their targets and considerable backlogs were over-throwing the entire June and July production plan. Since June was the last month of the first half of the year, production had at any cost to be brought in line with customer orders as far as possible.

During that time production was learning patiently upon the decade system and despite problems originating [illegible] tion of the cutting room, the supply to the [illegible] could be secured.

Due to the overflow of the second quarter, the production plan for the third quarter was reconstituted several times and was ready more than one month late.

Meanwhile, production could be continued because of the rather large buffer of raw knitted fabric and accessories.

The situation in programming and cutting was taken up by the mill management and the following progress was made:

a. The former operative planning group, now carrying out the decade planning was brought under the command of the planning department as of August 1. This will ensure a better coordination between quarterly plans and decade programming. As an immediate result the administrative procedures have already been simplified for a great deal.

b. The planning department is concentrating on its basic duties and control of all activities now belonging to planning.

Summary cont'd

The expert continues his work on the planning system, in 2nd part 79.

The immediate objectives are:

- to bring the monthly production plans in line with the confirmed customer orders; at the same time considering permanent production lines.
- establish synchronised monthly programmes for knitting and make-up of garments in order to produce exactly the required amounts and to achieve 20% - 30% lower permanent inventories.
- dovetail the preparatory work for cutting with the monthly production plans while aiming at delivery of customer orders with complete assortments and economisation of the use of material

I. 2. Recommendations

We recommend to establish programmes for:

a. Planning and production control

- medium term
- short term planning

The main problems originate from insufficient planning and unreliable supply of material, where synchronisation is needed.

Production planning and control should be established not only in the Headquarters, but also - short term - for each of the technological product groups (profiles).

This would emerge a "department planning".

In particular planning and production control is needed in the production departments within the Circular knitting profile:

- cutting
- dyeing and finishing
- the sewing rooms

b. Production organisation

Programmes for increasing productivity and quality are to be established in;

- circular knitting
- cutting (with emphasis on economising on materi
- the sewing rooms

and in full fashioned knitting
and make - up of full fashioned garments

c. Most important subjects:

- economising on material
- productivity
- efficiency
- better control on supply and with it a dovetaile scheme for yarn dyeing.

d. Exportability

The exposrtability to markets of the industrialised world could be increased by:

- applying more improved technology in knitting and finishing,
- minor investments in make up of garments
- more direct contact with customers
- creating posts of " Product coordinator managers" (here: a mix of marketing, technology and economics), who should operate under the Sales Director.

1.3.0 Plan of action

It is recommended to draw up a plan of action:

Its contents should be:

1. 3.0 Immediate objectives

3.1 To revise the medium term planning system, including

a. balancing capacities with the supply of material,

b. establishing monthly workable production programmes for the integrated process in the circular knitting profile,

c. establishing an adequate system of production recording for both production control and linking the subsequent monthly plans smoothly,

d. establishing production programmes for the short term for each of the production departments, based on realistic standards.

e. reorganising the distribution of orders to the respective production departments,

1. 3.2 to reorganize the cutting room
in order to

- secure the planned supply to the sewing rooms
- increase the productivity
- reduce the cutting waste

1.3.3 to reorganise the knitting rooms
in order to

- increase productivity
- increase quality

1.3.4 to reorganise the sewing rooms
in order to

- increase productivity
- increase quality
- complete orders in assortment

SUMMARY OF THE SURVEY REPORT on B.F.K. ANNEX 15

B.F.K. is one of the nine companies under the Ministry of Light Industry. The main problems are:

- The centralised management system
- The high expansion of capacity

Based on the survey we would like to put forward the following recommendations:-

1. The organisational structure should be reshaped logically and should allow more decentralisation of authority. It should be avoided to shape the function to the personalities. Instead the function should be clearly defined and the right person should be sought for it.(Scheme on annex 22)

2. The financial structure of the company might need a closer look.

3. The ratio between direct productive labour and indirect labour now 55% should be improved.

4. The overcapacities should be utilised. Although in 1980 an attempt was made to increase the planned target by 18%, which undoubtedly will have a positive effect on productivity.

5. The model development needs rationalisation of the models while considering sewing methods and sewing quality.

6. The export to western countries should be developed. Steps should be investigated for the right approach to be made.

7. Quality level needs to be tackled intensively. In 1979 the total amount of rebates on quality was over 4 million forints and this was mainly caused by cloth defects. The appointment of a finishing expert will definitely have a positive effect on the reduction of seconds. At the same time the capacity bottleneck of dyeing and finishing will be solved which will secure the higher planned target for 1980.

8. The Mataszalka factory needs full support and coaching.

9. Debrecen factory needs a more independent position. In particular with respect to the supply of yarns. In this factory all attention should be given to quality and economising of material.

10. The centralised cutting room needs upgrading of its organisation since this is the focal point of the work distribution to three large garment making factories.

11. Measures should be taken on the economising of material. This will also involve better control on quality of the jersey fabric and finishing. If the right measures are taken, some 43 tons of yarn can be saved in one year. Outside expertise is highly recommended.

12. Production planning and production control should be geared more to the specialised sewing units and this needs an adaption of the system. A newly developed calculation system on a memory calculator PTV 1096 (Hungarian made) recently introduced in the planning system should be further developed for

department planning. This will increase the flexability of the planning system. It needs however a better organised feed backsystem of the production data for adaption of the monthly programmes.

The production planning system needs an in between list compiled according to fabric numbers for the fabric production and for the garment making part of production, a list compiled according to article numbers for each sewing line. The present base of planning and disposition on customer orders is not to be continued.

13. B.F.K. collections are similar to those of three or four other Hungarian knitting companies.
Since Modelling is basically strong, it would be a good idea if the thought would be given a chance to compose garments, where jersey fabric is matched with flatknitted pieces. (4.7)
In order not tomix up two technological sectors, the jersey sector should in such a case get the disposal of the necessary flatknitting machines.
Rakospalota could ultimately be added to the Zugló management and the production of flatknitted garments should than be given over entirely to Debrecen.

Budapest, 27 Jan. 1990

Monthly Report - August 1979 Vaci Kötöttárugyár

The Utilisation of GAF Markers and Cutting Waste

1. Findings:

a. Base for the GAF markers are the marker layouts produced by the Texonique system.

For all sizes of sold items a layout instruction is made per size, or, in some cases, per two combined sizes, and photographed. Each size is projected on two or three commonly known widths of fabric.

Markers on real size are produced according to the layout instructions and multiplied by the GAF system on heat seal paper. However, there is a limit to the making of heat seals:

- the department for technology determines for which size heat seals are to be made. The present rule is that at least 1000 pieces per size have to be manufactured in a given quarter. This quantity is derived from the accumulated customer orders for that quarter.
- for tubular fabrics, representing still 20-30% of the total cutting volume, chalk markers or hand in-lays on the spreading tables is the common practice. However a start was made to use heat seals for these fabrics.

b. The Heat seals

Due to single size markers, the lengths of the heat-seals is normally around 5.50m. However, there are many lengths of 3.50m and in only a few cases the lengths are over 6m.

Depending on the type of fabric, the height of the layers is predetermined. For lightweight blouse fabrics this is 12 cm, for heavier track suit fabric it is 15 cm.

c. Composition of cutting orders by 'disposition'

Taking into account the rules under 1b the disposition composes cutting orders of 200-300 kgs. For instance, an order for blouses of 1000m is approximately 320 kgs. On a 6.41m marker length this means around 160 layers, which gives an estimated height of 12 cm.

In the given circumstances this seems to be all right. However looking to the fulfilment of customer demands, the composition of cutting orders being based on the accumulated customer orders for an entire quarter does not regard the monthly confirmation of orders.
'Disposition' composes orders by subtracting the open sizes per colour from the quarterly ordered amounts of a given item.

If the quarterly system would be replaced by a monthly system, the possibility of working to monthly ordered and confirmed customer orders will be opened.
On the other hand the minimum of 1000 pieces per size can then not be maintained and the use of multi-size markers will become a must.

'Disposition' does not regard differences in fabric width and lists simply the arbitrary laid out fabric pieces by the store-room personnel. We observed piece-widths of 146 to 152 cms for a given cutting order for which the heat-seal width was 144 cm. This originates from the fact that there is no storage per fabric-width nor per dye-lot. Fabric pieces are stored there where there is space available without necessarily keeping the incoming dye-lots together. Therefore, fabric is laid out in a last-in first-out manner, in so far as it was stored in that order.

The result is:- extra cutting losses due to width variations within cutting orders
- the necessity to keep each fabric piece separated during the entire cutting process, in order to avoid mixing parts of different shades.

d. Fabric Pieces have a limited weight of approximately 20 kgs. This means that depending on the weight of the fabric, the piece length is either around 40m or 50m, causing many overlappings on the spreading tables. Moreover, each fabric piece has two ends, of which at least 30cm cannot be used and is simply waste.

A clear answer to the question of why fabric pieces cannot have larger lengths, for instance, up to 60 and 75m, could not be obtained.

e. Observations made in the cutting room

i. The cutting plan for a decade is rudimentary. The daily quantities to be cut are 1/11 from the total requirements for that decade. The realisation therefore is deviating of this basic plan for, in case of small daily quantities, more days are combined together.

The cutting plan is made up by the forelady. The planning department is inactive in this vital process.

ii. The spreading lengths are on average 6 to 10cm longer than the markers. On a marker of 5.50m and a spreading height of 80 layers, a 10cm over-length is an extra loss of 1.8%.

iii. For a 144cm marker width fabric was made available in widths varying between 146 and 152cm. Three of the 10 pieces had a width of over 146cm, giving an extra cutting waste for that particular order of 1% (accepting 146cm width as unavoidable allowance for the 144cm marker).

iv. The photocell for side-guidance of fabric spreading broke down during spreading. This was observed only after 20 runs. Extra side waste and time for re-adjusting the layers was the unavoidable result. No penalty exists for errors like this.

v. The markers generally contain a reserve of 1-1½cm of the total marker length. On a 5.50m marker, this means 0.18 - 0.27%.

vi. 30-60cm of the beginning end of each new fabric piece is not taken within the marker length. Since the piece ends are crumpled or unfit for use for other reasons, this means that from every piece of 50m, approximately 1m or 0.5% gets lost as waste. Increasing the piece lengths by 25% would reduce this waste to 0.16%.

vii. Fabric indications are written at the fabric ends with a special type of unwashable ink. The placing of these indications is often far out in the fabric and not at the extreme end, as desired.

viii. Tubular fabric should be slit open, even if this has to be done after finishing. Open width fabric results in half the spreading height and in more favourable in-lays. This means that a cutting order can be spread and cut at one time, and not - as observed - in two separate performances.

The waste percentages of tubular fabric is extremely high, in particular if large items are to be cut from it.

In addition to this aspect, the spreading personnel usually take a very large margin at the piece ends. Action to economise here is to be taken.

f. Multi-size markers

Multi-size markers have less marker losses than single size markers.

Multi-size markers will be a step forward in completing the size assortment for monthly confirmed orders.

Multi-size markers however, need more sorting and bundling space after cutting. In the present cutting room layout this aspect is not regarded and is a major hampering factor for establishing multi-size markers. It is even a setback for optimalisation of the present single size markers.

2. What is to be done?

a. Reorganise the storage of finished fabric pieces, Per dye-lot the fabric has to be stored separately.

b. All pieces should be labelled with the real width, length and weight.

c. Fabric should be laid out according to instructions of the disposition group. These instructions should contain the prescribed width, length and weight, quality group.

d. The condition for it is an up to date and detailed inventory recording system.

e. The disposition group should be given more detailed instructions to be used for the composition of cutting orders, such as the waste tolerances per item, using up final dye-lots, monthly confirmed customer orders, the decade plan for the cutting room and its intermediate adjustments, full information about the available fabric in all its details, etc.etc.

f. Introduce the use of multi-size markers. This includes:

that space for sorting and bundling has to be made available in the cutting room,
that apart from multi-size mothermarkers per decade, a number of markers have to be made for order remnants, left over from mothermarker cutting orders,
this has to be determined by 'disposition', which in this case cannot belong to 'cutting' any more, and should be subordinated to 'planning'.

g. Revise the status of 'disposition'.

h. Establish a decade plan according to cutting order requirements, taking into account the balanced cutting room capacity.

i. Set tightened waste standards per article number for single and multi-size markers.

j. Increase the weight of fabric pieces by at least 25%.

k. Slit all tubular fabric open and make markers for open width.

l. Instruct the spreading personnel in the cutting room for economising the use of fabric: keep to the marker length
smaller beginning ends
work more accurately

m. The incentive system should be brought in line with quality and waste standards; the quantity incentive should not be the dominating factor any more.

We recommend to read again the chapters on 'Cutting' contained in the UNIDO report dated June 1977.

3. Objectives

The main objective is to bring down the waste in the cutting room by approximately 6-8%.

Objectives contd.

At the same time a first step is to be made to bring monthly production orders in line with monthly customer orders, while taking into account deliveries of the full assortment in size and colour.

The third objective is to raise productivity in the cutting room by 5 to 10%.

4. The required time

The time required for it will be 14 man months.
The result in waste reduction will become in step, whereas the other objectives will only be fully fulfilled at the end of the operation.

5. Some remarks

Factory management was lucky in its choice of the new forelady in the cutting room. She seems eager to improve the general situation in her department. 'Housekeeping' improved considerably and the use of heat-seal markers has increased. However, she needs assistance, and this should not be postponed. She has to be prevented from sliding down.

This report contains several facts that can already be taken up by the forelady and other departments as of now.

The planning aspects also require continued attention. However, it seems to be more effective to bring the crucial cutting room into order first. Waste, organisation and productivity have priority. Also the reliability of the performances of sewing rooms require full attention. The planning system could be refined and brought up to date in a later phase and fully geared to the updated conditions of the production departments.

Habselyem

Quality Level of Final Products

The quality level increased considerably.

First quality products after final inspection; 3rd quarter: 94.3%

The October production showed even 95.7% first quality.

The figures for January - June were: 92.76%.

The main sources of rejects are:

	October	3rd Quarter	1st quarter
Finishing	1.7 %	2.98 %	2.8 %
Knitting	1.97%	2.57 %	1.9 %

October showed a lower amount of increase of the rejects shifted over to the fabric sales. (5618 kgs.)

The trend is downward:

August	8000 Kg
Sept.	6254 Kg
October	5618 Kg
November	1777 Kg

This means an improved qualitylevel of finishing!

Budapesti Harisnyagyár(Hosiery mill) ANNEX 18

QUALITY % TABLE 1

	1st qual. 1978	1979 1st qtr	3rd qtr. Quality			
		1st Qual	1st	2nd	3rd	4rd
Half Hose	97.2%	91.43%	91.89%	5.22%	1.85%	1.04%
Coarse Tights	89.6%	84.27%	87.13	9.28%	2.72%	0.87%
Stockings	98,8%	98.65	98.62	1.23	0.13	0.02%
Tights	92.9%	90.13	93.34	4.52	2.04	0.1%

Table 2 & 3

Apart from 4 th quality final products, there is a certain amount of knitting waste:

	1978	1979 (I-III Qurt)
Halfhose central mill	1.41	1.25 %
2 cylinder	3.61	3.98 %
Gyula plant, single cyl	5.03	6.17 %
2-cyl	5.90	6.71 %
Fine gauge hosiery		
Nagybatony plant	2.16	2.76 %
central mill	1.40	1.25 %
Pesztersebeth	3.84	2.75 %
Vihar utca (briefs)	0.93	0,88 %
Vihar utca (full fashioned pullovers)	4.92	4.81 %

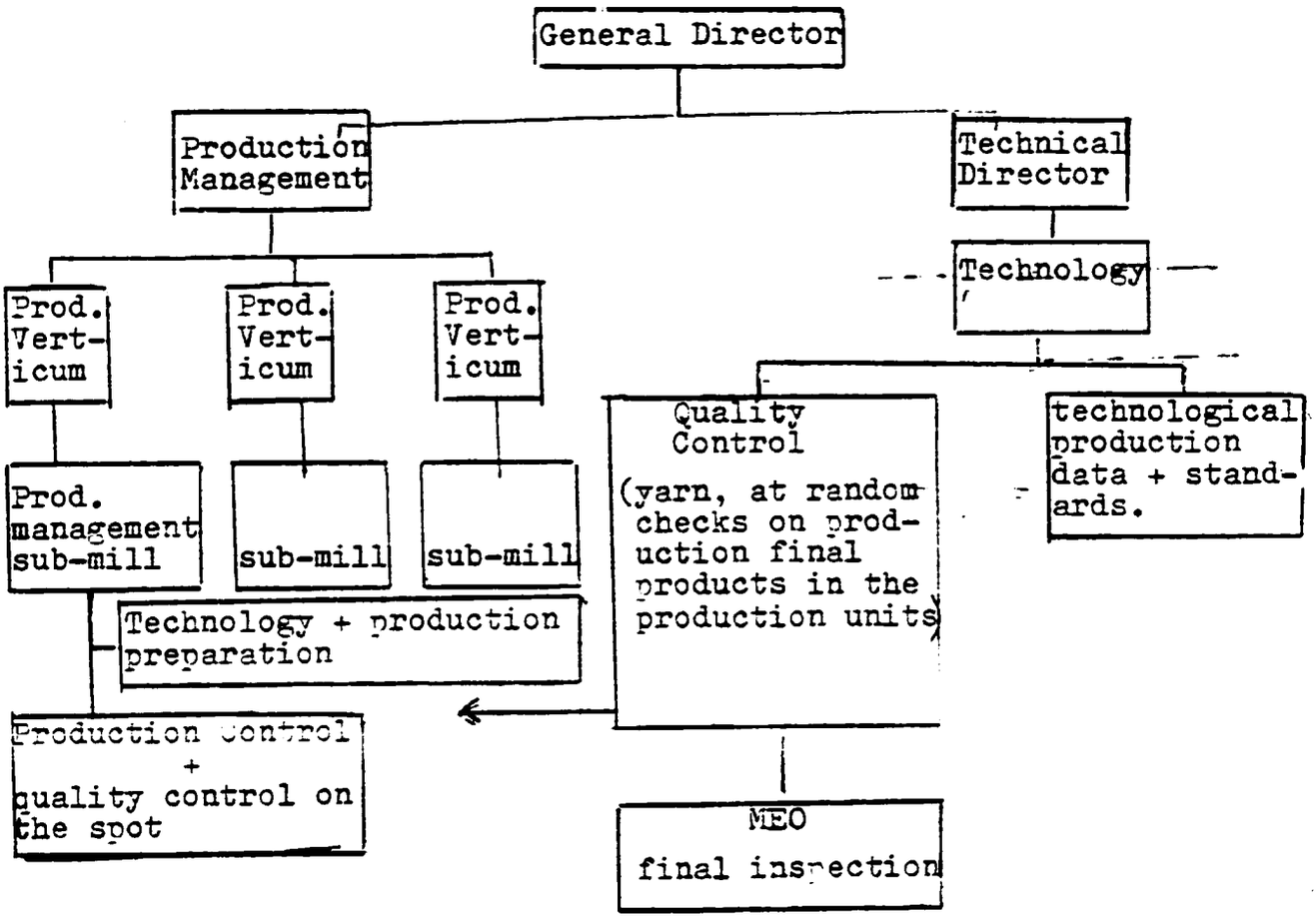
3) Needles, sinkers in mln Forint

	1978	1979
	2.6 d	4.01 d
	2.35	3.23
	5.15	4.48
	1.54	1.31
	5.03	4.10
	1.37	1.45

Waste(knitting) in total			
% of output:	0,36 %	0,52 %	Coarse machines (Gyula mainly).
	1.28 %	0,85 %	fine gauge machines
in value % of turnover	0.48%	0.44 %	(10 % improvement)

ANNEX 19

Proposed organisation scheme
Quality control in sub-mills



NB Quality control is part of the duty of production managers. Instructions on technology should be clear. Changes in technology and its standards should be authorised by technological staff and production preparation group under Production Managers.

Technology in HQ delegates authority to Production Managers of sub-mills.

UNITED NATIONS NATIONS UNIES

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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REFERENCE: OA 321 HUN 31

19 September 1975

HUNGARY: Increasing the Efficiency of the Knitting Industry (SIS)

Dear Mr Bloch,

We are enclosing herewith 2 copies of the Project Data Sheet for this project, which is a modified version of the unofficial request received by us from the Hungarian Embassy in Vienna by letter of 8 September 1975.

We should appreciate it if you would request the Hungarian authorities to expedite the formal submission of this request, and obtain clearance on our re-drafted version. If this is forthcoming we would be glad of your approval and signature on behalf of UNIDO.

We look forward to hearing from you further.

Yours sincerely,

Ljubomir Babić
Chief
Section for Europe and Middle East
Technical Co-operation Division.

Mr L. Bloch,
Deputy Director,
United Nations Development Programme in Europe,
Palais des Nations,
CH-1211 Geneva,
Switzerland.

cc: Dr Sömjén, National Committee
Mr Modránszki, Permanent Mission.

Received
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22 SEP 1975
ACTION

To

B/F - 26.IX.75

List of papers presented, lectures

1. Planning and production control in integrated knitting mills.

   Lecture for members of the Hungarian Institute of Knitting Technologists, March 1979.
   Audience 200.

2. "Mittel- und langfristige Marketing Strategie der Betriebe der Bekleidungsindustrie und die Marketing Tätigkeit"

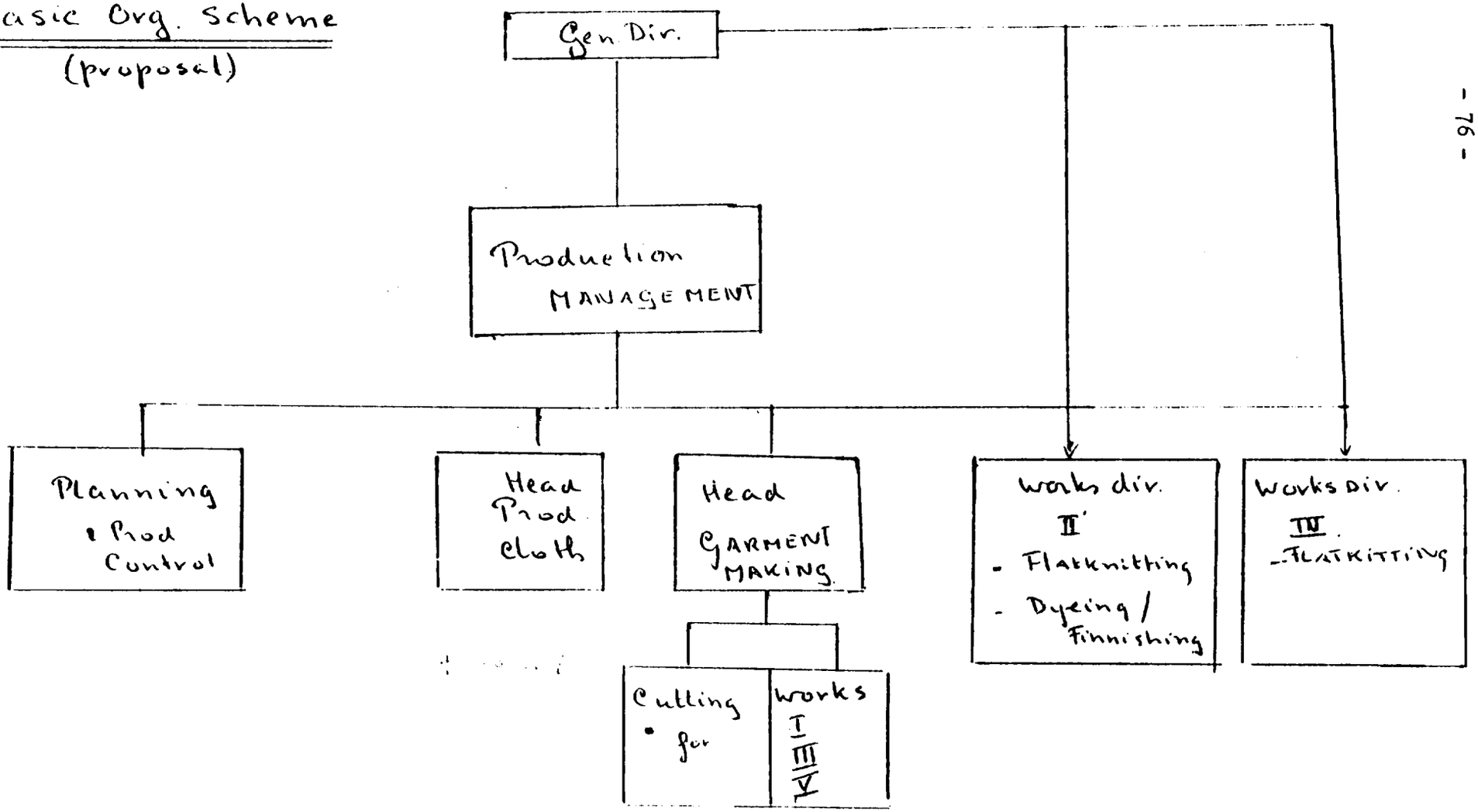
   Lecture for Hungerian Managers, invited by the Vice Minister for Light Industry in May 1979.
   Audience 100.

3. " Management and Organisation Development in Hungarian knitting mills".

   Lecture at the Hungarian International Textile Conference June 1979.
   Audience 100

4. In-plant lecture on the methods for planning and production control at Habselyem in March 1979

Basic Org. Scheme
(proposal)



Bp. Jan 1980