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07677

United Nations Industrial
Development Organization

Distr.
RESTRICTED
UNIDO/IOD.107
9 July 1977
English

DEVELOPMENT OF PRODUCTION OF IMITATION FURS AND THEIR PRODUCTION
FOR CLOTHING PURPOSES

Mission report

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

Based on the work of G.F. Golden, expert in imitation fur products

id.77-3849

2 - AUG 1977

Explanatory notes

References to dollars (\$) are to United States dollars.

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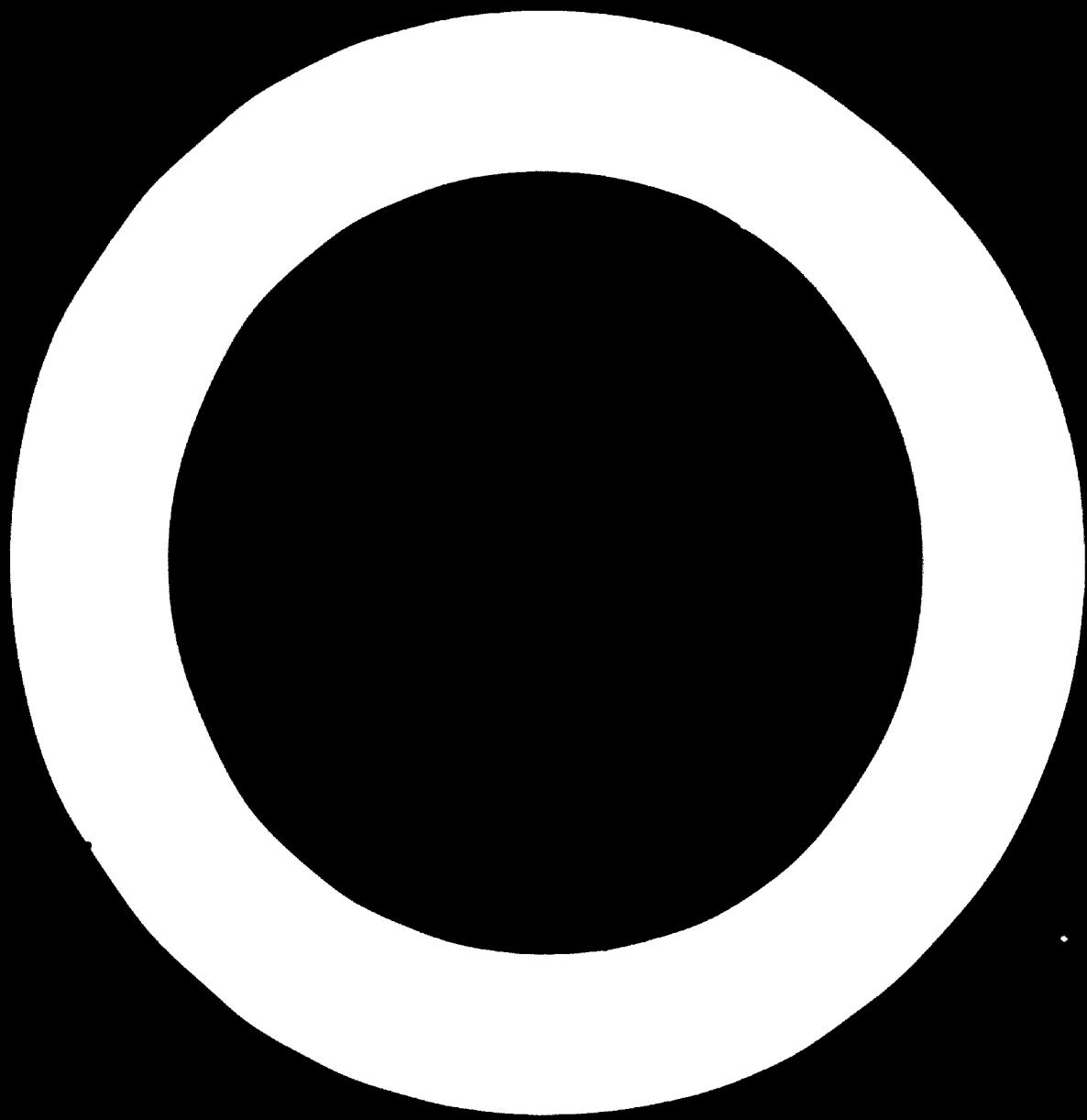
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ABSTRACT

This is the second report by the expert assigned to the United Nations Development Programme (UNDP) project for the "Development of Production of Imitation Furs and their Production for Clothing Purposes" (SI/HUN/74/808); his Intermediate Technical Report was presented in March 1977. The United Nations Industrial Development Organization (UNIDO) was the executing agency for this project.

The project was for a duration of one month starting on 28 February 1977. The expert spent two weeks in Hungary and two weeks in the United Kingdom researching the price of machinery. The total initial cost of machinery for this project would be approximately \$690,000-\$750,000, for an initial production of 800,000 linear metres.

The expert recommended that the production of simulated fur fabric should begin as soon as possible. Excess production should be exported. He also recommended that the services of a consultant be obtained prior to establishing the unit and the consultant be involved in the design of the factory. Key personnel should be trained at the machinery manufacturer selected to equip the unit.



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INTRODUCTION

The Ministry of Light Industry of the Government of Hungary, following discussions on the Intermediate Technical Report presented in March 1977, requested that a complete feasibility study be made of the project. The feasibility study should cover not only the cost of machinery to produce saleable fabric but also such factors as labour requirement; manufacturing costs of typical qualities; and raw material costs. After presentation of this study, the Ministry will decide whether to proceed with the complete project.

Meanwhile, the following decisions were made based on the recommendations of the Intermediate Technical Report:

- (a) The new project will be based only on the circular knitting method of producing simulated fur fabric;
- (b) The initial unit should have a production capacity of 800,000 linear metres;
- (c) The simulated fur fabric plant should be established at Habselyem Kotottarugyar, Budapest, where there is spare capacity on the present stenter.

The total initial cost of machinery for this project would be approximately \$690,000-\$750,000. The initial production would be 800,000 linear metres which could easily be increased to 2,500,000 linear metres by obtaining more knitting machines. When the production reaches 2,500,000 linear metres, the purchase of a suitable stenter could be justified.

Based on a production figure of 800,000 linear metres, the machinery required for the initial unit would add \$0.086-\$0.094 per linear metre if the machinery is written off over a 10-year period. This could be reduced to \$0.054-\$0.056 per linear metre when a production of 2,500,000 linear metres is achieved.

The initial simulated fur fabric unit is designed to have labour force of 24 people. The knitting department will operate on a three-shift basis. The finishing department will work only a normal day shift. Between 1-1½ days per week would be worked on coating the fabric on the stenter, the remainder of the week would be spent on the finishing of the fabric.

I. FINDINGS

All the machinery manufacturers and raw material suppliers state that any price quoted for the purpose of preparing this feasibility study should be noted as current. If, for any reason, there is a long delay before proceeding with this project there could be significant alteration to any price quoted.

At this stage no decision has been made by the Ministry of Light Industry or the expert as to which machines will actually be used in the final unit. Therefore, in the case of the knitting machines the manufacturers or their agents have been requested to submit quotations.

For the finishing equipment, three of the manufacturers whose equipment is in general use in high-pile factories, have been contacted for current quotations.

In order to produce a current costing for the manufacture of the required quantities, current prices for fibre dyeing, sliver production yarn and coating materials have been obtained in the United Kingdom.

Labour requirements for the project are based on the assumption that trained labour will be available. However, by (a) utilizing the training services provided by the machinery manufacturers chosen to supply the equipment for the project; and (b) employing an expert in this field for 18-24 months, in accordance with Recommendation E7(d) and (e) of the Intermediate Technical Report, key personnel would be able to produce good quality fabric in a relatively short time.

II. CONCLUSIONS

The suppliers contacted would only give prices to the border of their own country, therefore, precise costs can only be calculated when the selection of machinery suppliers has been made.

All prices have been converted to United States dollars, although each manufacturer would finally determine the currency required to purchase the machines.

Circular-knitted pile fabric equipment

There are only four major suppliers of circular knitted pile fabric machines in the world. Production capacities of each machine vary but, in general, lower capacity tends to go with slightly cheaper prices.

Because of the variation in production capacity, the number of machines that will be required to produce single colour simulated fur fabric may vary from four to five.

For the Jacquard fabric production, three machines are recommended for the present needs of the project. The unit would cost between \$152,000 and \$162,000. The single colour knitting unit would cost between \$190,000 and \$240,000. The required extraction and blower units would cost between \$20,000 and \$21,500.

Essential spare parts, excluding items that need replacing at very frequent intervals, sufficient for the first five years of regular production would cost between \$32,700 and \$40,500.

Finishing equipment

For the purposes of this part of the study, only essential finishing equipment has been considered. Special effects machinery has not been included, although such attachments as those for the shearing machines, to give specialized sculptured effects on the pile face, have been included. The equipment quoted should provide a continuous finishing line that could handle the production from at least 24-30 knitting machines without any further investment in finishing equipment.

However, it is not possible to reduce the amount of equipment for the relatively low production because only by using a continuous finishing system can satisfactory results be achieved. A discontinuous or batch system causes excessive pile distortion, which only produces sub-standard fabric.

The equipment for finishing consists of one shearing machine for rough shearing prior to coating, two combined polishing and shearing machines and one polishing machine, together with the necessary extractor/flock collecting units and spare parts. The total cost including installation charges, would be approximately \$171,000.

It is also necessary to have a suitable machine to produce Sherpa or lambswool effect and the cost of this would be approximately \$7,200-\$20,500, depending on the degree of automation desired for the final project.

As it is recommended that modifications be made to the existing stenter rather than purchase a new machine, a cost of some \$50,000 must be allowed for the coating head and coating equipment necessary to produce the desired result. At this stage, it is not possible to get any manufacturer to give quotations for these particular modifications, as they all state that they need to have a firm commitment that they will be engaged to carry out the modifications, as they would have to make the equipment specially for the particular stenter in Habselyem Kotottarugyar.

Inspection and making-up equipment

Inspection and making-up equipment, which may possibly be obtained inside Hungary, has not been directly costed, but it is estimated that some \$50,000 would cover the cost of such equipment.

Sliver knitting equipment

The cost of buying dyed and treated fibre in sliver form, ready for use on the sliver knitting machines, would be approximately \$3.50-\$3.75 per kilo. (See Recommendation 8 of the Intermediate Technical Report.) It is difficult to arrive at a set price because of the wide variety of fibre blends that could be used. However, the bulk of the fibres used, especially in the initial stages, will be 3 denier 30 mm bright, semi-dull or matt acrylic fibre and this was used as a basis for the calculation. This is a complete price for the dyer to purchase the fibre, dye to a range of shades, after-treat, blend and sliver.

The cost of suitable backing yarn for all fabrics except dark shades would be approximately \$2.90 per kilo.

Acrylic resin for coating would be approximately \$0.75 per kilo.

The approximate cost of three different fabrics with an initial production 800,000 linear metres, would be as shown in the following table.

Table. Approximate costs of light-, midium-, and heavy-weight fabrics

	Cost of production ^{a/} (£)	Ex-factory (UK) price (£)	Percentage gross profit ^{a/} (%)
<u>Light-weight fabrics</u>			
Finished weight 460-480 g per linear metre			
Single colour	2, 106	2.39	13.48
Jacquard (2-4 colour)	2, 192	3.10	41.42
Sheared (Sherpa) fabric	2, 106	2.75	30.58
<u>Medium-weight fabrics</u>			
920-950 g per linear metre finished weight	4, 350	6.00	37.93
Single colour			
<u>Heavy-weight fabrics</u>			
1,500-1,600 g per linear metre finished weight	6, 190	10.00	61.55

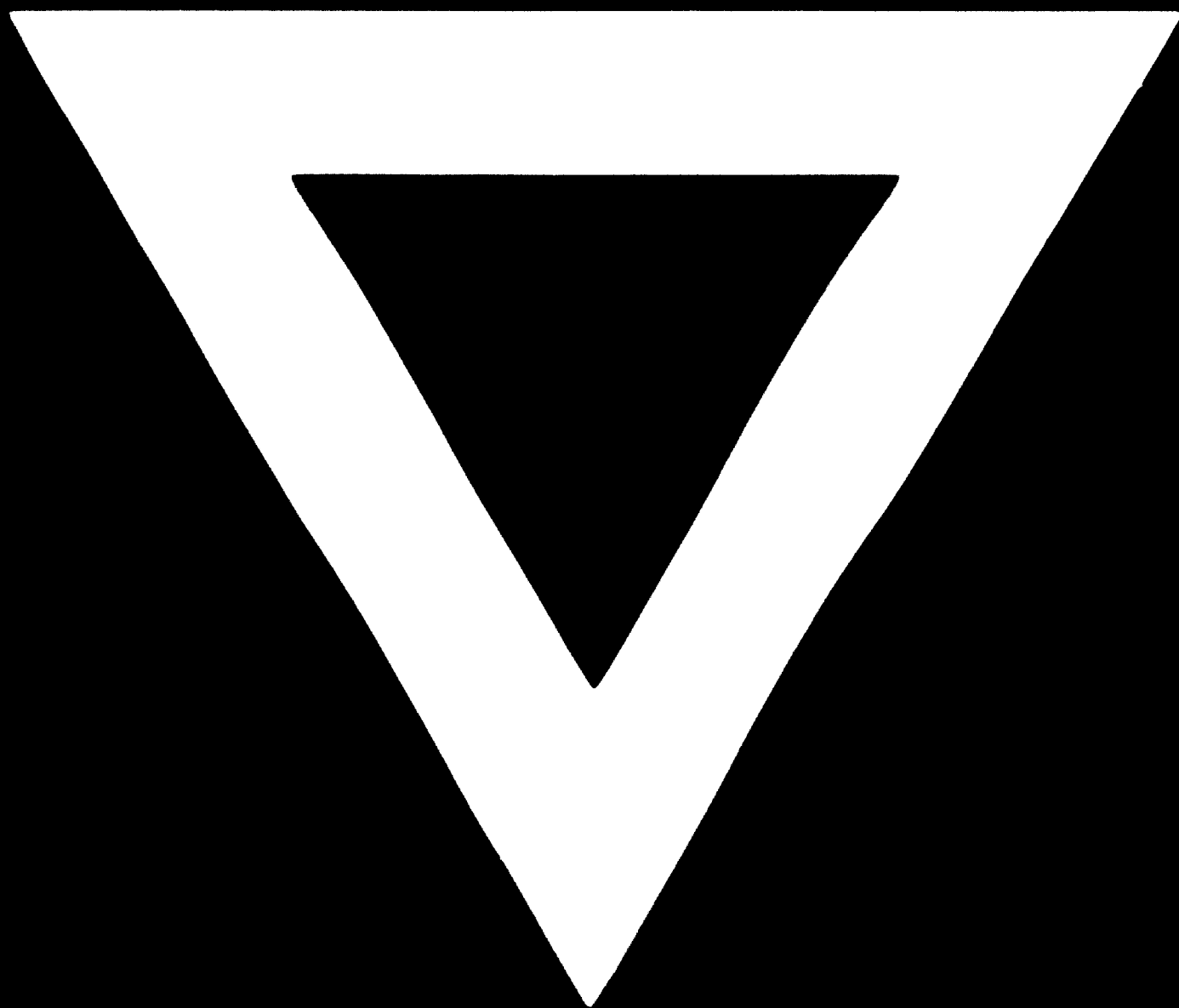
^{a/} Labour costs and overheads are not included, as these are not known to the expert.

The initial simulated fur fabric unit is designed to be run by 24 people. This includes the knitting department running on a three-shift basis, and the labour in the finishing department being available to run the stenter approximately 1-1½ days only, and the remainder of the week working, days only, to finish the fabric.

II. RECOMMENDATIONS

1. Production of simulated fur fabric should begin with the minimum of delay.
2. Agreement should be reached with a suitably qualified consultant to supervise the whole project for 18-24 months. Such an agreement should be made prior to establishing the unit and before contracts are signed for the purchase of essential machinery.
3. The excess production of the unit should be exported, preferably in garment form.
4. Consideration must be given to the possibility of expansion from the outset, which should prevent the need to move essential machinery.
5. In order that the unit may be readily increased in size, particularly in the knitting department, the consultant should be involved in the design of the factory. In this way it will be possible to eliminate problems arising from the handling of this extremely bulky fabric.
6. Key personnel must be allowed to spend some time in the factories of the machinery manufacturers selected to equip the unit.

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