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LEATHER TECHNOLOGY CENTRE

DP/CPR/83/004

THE PEOPLE'S REPUBLIC OF CHINA

China.

Technical Report: Management seminar in leather goods manufacturing*

Prepared for the Government of the People's Republic of China
by the United Nations Industrial Development Organization
acting as Executing Agency for the United Nations Development Programme

Based on the work of Hans Steen, Expert in leather goods production

United Nations Industrial Development Organization
Vienna

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* This report has been reproduced without formal editing.

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ABSTRACT

The United Nations Development Programme (UNDP) set up the project "Leather Technology Centre" (DP/CPR/83/004) to assist in promoting the further development of China's leather industry. The executing agency for the project is the United Nations Industrial Development Organization (UNIDO).

The Leather Research and Training Institute is situated in Shanghai. In October and November 1984, UNIDO assigned an expert in leather goods manufacturing to Shanghai for six weeks. In accordance with his job description, the expert's duties were as follows:

The expert will be attached to the Ministry of Light Industry through the Shanghai Leather Corporation and will work in close co-operation with the National Project Director. The expert will specifically be expected to:

1. Provide information on the marketing of various types of leather goods, such as handbags, travel goods and small leather goods, on the international markets;

2. Conduct training in basic designing/pattern-cutting for bags, travel goods and small leather goods and provide training exercises for the same;

3. Conduct training in technology improvement including preparation of cutting patterns, working patterns, cutting dies; prepare training modules and recommend tools and auxiliary materials for the production of high quality articles;

4. Conduct training in process technology, cutting-value calculations and pre-costing and provide information on quality control.

The expert should carry out a seminar on "Management training in leather goods production" and also prepare a technical report, setting out the findings of his mission and recommendations to the Government on further actions which might be taken.

A. INTRODUCTION

The leather industry and the related industries such as shoes, gloves and leathergoods are important factors in the Chinese economy. It is estimated that the Chinese leather industry provides employment for approximately five million workers.*

China is predestined to become one of the greatest producers of leathergoods for the world market.

The growth of prices in cowhide, calf, goat and sheep skins opens a new market for pig skin and ready-made goods. China is the largest producer of pig skins.

Based on the FAO Production Yearbook 1981, Vol. 35, livestock availability and hides and skins production in China are as follows:

Data for 1981

	Livestock population 1981 (1000 heads)	% of total Asia	Hides and Skins (slaughterings) potential recovery (1000 pieces)	Offtake Rates in % (calculated)
Cattle	53,410	14.72	11,278	21.1
Buffaloes	18,854	15.99	3,014	16.0
Goats	82,284	30.30	23,638	28.7
Sheep	105,200	31.40	22,031	25.7
Pigs	300,000	-	187,000	62.3
Actual recovery of pig skins (D. Winter Pigskin study)			50,000	

* Statistics from the Leather Research Institute Shanghai including about one million in leathergoods production.

Potential leather production (theoretical)

(in million square feet)

If all potentially available hides and skins were tanned

Bovine leather	227.82 million square feet
Buffalo leather	60.88 million square feet
Goat skin leather	94.55 million square feet
Sheep skin leather	135.16 million square feet
	518.41 million square feet
Pig skin leather	500.00 million square feet
Grand total	1,018.41 million square feet

The situation of the Chinese leathergoods industry in the world market today is generally defined as follows:

1. Image

   - Poor quality of material
   - Low level of workmanship
   - Unequal quality of material and workmanship
   - No fashion sense, wrong colours
   - Cheap, poor in styling.

2. Resources

   All resources for leathergoods production are available in China.

   - Raw materials
   - Workers, skilled and non-skilled
   - Additional materials such as metal fittings, silk, chemicals, paper, cardboard, etc.

The development of the Chinese leathergoods industry needs Government and international support. The UNIDO Management Seminar for Leathergoods Production is one of the first steps in this direction.

B. FINDINGS AND RECOMMENDATIONS

China is predestined to become one of the most important producers of leathergoods in the world and is able to meet an increasing domestic demand.

The development of the Chinese leathergoods industry is realizable with:

- a minimum of investment;
- a return on investment in the shortest time; and
- with potential in export markets.

Government and international support is the primary condition because the change in the international leathergoods market is taking place now.

1. Seminar

The Seminar on leathergoods production is to be seen as one of the first steps of management training in the Chinese leather goods industry.

- The seminar was helpful for the participants;
- It should be repeated with prepared and translated files and exercises;
- Design and pattern-making should be separated; with a two-week lecture for leathergoods designers only;
- The methods of quality control and cost control should be explained in a separate seminar for selected production managers and accountants only; and
- Participants of suitable background should be selected.

2. Enterprises

Very hard-working skilled workers are able and prepared to manufacture quality leathergoods for the world market. When adequately trained and properly guided, provided with good tools and materials, they can produce goods suitable for export to the most highly developed countries.

With modern organization and machinery, the production will increase at about 30 - 100 per cent after a few months.

3. Machinery in enterprises

After the visit to different leather goods enterprises in China, the machinery can be classified as follows:

- the domestically-produced machinery is not up-to-date;
- the machinery cannot be used for the production of quality leather goods;
- the sewing machinery should be changed (garment machines).

(i) Cutting area

- mechanic swing-arm cutting presses
- deformed cutting pads
- no precise cutting dies
- damaged cutting dies
- lack of die drawers

(ii) Skiving area

- lack of splitting machines
- skiving machines without speed regulations or stopmotors
- lack of special attachments
- stone-rollers instead of rubber or pp-rollers.

(iii) Sewing area

The sewing machinery cannot generally be used for quality leather goods (except for some imported machines in Beijing No. 1).

- no machines with compound feed or unison feed
- lack of arm machines
- no post machines
- rough and too wide drop feed
- lack of special attachments

(iv) Assembling

The demand for machinery in the assembling area is low. Up to 90 per cent of all operations will be made without any machinery. However, for middle or high quality, some machinery is necessary, for instance:

- glueing machines

- folding machines
- embossing presses
- other special machinery, according to the products.

4. Organization and Productivity of Enterprises

- the organization of labour is not up-to-date
- with some modern machinery and better organization, the productivity will increase about 30 - 100 per cent after some few months
- the quality control is insufficient and one reason for low prices and losses in export
- the Chinese leather goods industry has the ability to become one of the most important producers of leather goods. The costs of modernization are lower than the losses in exports which are the result of poor quality.

5. Demand of Machinery

During previous years and up until today, in Europe leather goods factories have had to close due to the growth of labour and administrative costs. Also an increasing demand for qualified workers in industries with high technological standards than needed in leather goods production is expected. The machinery of closed-down factories is available from time to time, however, it is usually very quickly sold.

Used machinery costs between 30 - 50 per cent of European domestic prices. The advantage is not only the lower price in itself, there are many other reasons to purchase complete used machinery from a closed-down factory, because most different expensive attachments and "know-how" are included.

For example:

- "know-how"
- special attachments
- tools
- cutting dies and patterns
- production plans
- production methods
- calculations (material and labour).

The above is available only when purchasing a complete plant with the above services included in the purchasing contract and will not be available from sellers of used machines who collect machines from different factories, prepared for different unknown products.*

Today, the Chinese leather goods enterprises make losses in exports. The author is of the opinion that these losses are higher than the costs of training, education in quality, knowledge and teaching of skills.

6. Joint Venture

Joint venture agreements with Western companies are helpful but with a risk of dependence and problems in locating reliable partners. The rich resources of the country in raw materials, workmanship and skills is a solid base of development for the Chinese leather goods industry.

* In September 1984, China bought a complete factory for the production of refrigerators - brand "Bauknecht" - for the price of only DM 10 million. (Shanghai)

C. SEMINAR REPORT

1. Marketing

The difficulty for a speaker in a country such as China is to explain the difference between the domestic and export markets.

The following themes were covered:

(a) The market

- planned market
- open market
- buyers market
- sellers market

(b) Supply and demand

- the world market in leathergoods: products and producers; volume; and proposals.
- purchasing power
- different demand in Western countries: qualities; sizes; and prices.

(c) Western production

- volume
- productivity
- outlook
- growth of imports
- decline of Western production

(d) Channels of distribution and customers

- wholesalers
- mail-order houses
- warehouses
- retailers
- manufacturers

(e) Calculation and trade margins

- retail price = market price
- retailers margin
- wholesaler margin
- shipping costs
- insurance
- FOB price

(f) Advertising

- the most important trade journals and magazines in Italy; France; F.R.G.; U.K.; and the U.S.A.
- how to protect a brand or trademark.

(g) Fairs in Europe

- Semaine du Cuir, Paris
- Mipel, Milan
- Offenbach
- Others

The group of observers was very different and changed during the lectures

It was important to check the level of knowledge and understanding of the participants. For example, the understanding of the Western market economy, countries' marketing patterns, was not familiar to the course participants.

Therefore, it was necessary to explain, step-by-step, the function of Western markets, the demand, the different ways of distribution, costs, taxes, incomes, wages and so on.

In different examples, it was shown how to meet the increasing customers' demand in China, which is expected in the near future.

The decline of Western production will be forced by rising prices of cowhides, calf, goat and sheep. China is able to enter the market with pigskin of good quality of leather and workmanship.

As additional information, the participants received a number of different trade journals.

After the first week the understanding was checked in a prepared exercise with some prepared questions.

2. Machinery

(a) Lecture about machinery

The lecture on machinery and metalware consisted of:

(i) Demand of machines

- small goods, fancy goods
- handbags
- travel goods
- suitcases

(ii) Producers of machines

- brochures and catalogues
- average prices

(iii) Use of machines

- how to handle the different machines
- sewing speeds
- needles, producers and sizes
- special machines for different operations
- how to make cutting dies

(iv) Metalware and frames

- brochures
- different types of frames
- fashion and colours of frames and fittings
- producers

Leather goods production is a trade without high technology, and most important is the practical knowledge, because the price of the produced goods is according to the quality of workmanship and material.

The demand in machinery for the production of goods in genuine leather is small, compared to the shoe manufacturing or others.

(b) Demand of machinery

(i) Cutting area

- tools for making cutting dies

- swing arm cutting presses
- carriage beam cutting presses
- large size cutting presses
- paper cutter
- tables, knives, racks, trollies, container
- belt cutter

(ii) Skiving area

- skiving machine
- splitting machine

(iii) Embossing

- for reptile leather goods - polishing machine; top gloss embossing press; and heater
- other embossing plates are used in smallgood production - ornamentic plates (gold and blind plates); stamping and cutting plates.

(iv) Sewing area

The machinery has to be prepared for the different kinds of leather goods:

- flat bed compound feed sewing machines
- flat bed unison feed sewing machines
- post machines with compound feed
- arm machines with unison feed
- Two-needle machines with unison feed

Machines without needle feed or machines with rolling feed or pressar wheel are not useable because the leather will be damaged.

Very important in the sewing area is the use of the different special attachments such as:

- guides
- tubes for handles etc.
- heat-marking attachments
- embossing attachments

The sewing area needs maintenance, good equipment and qualified well-trained workers. This is the basis for efficiency and productivity.

(v) Assembling area

The assembling area - except suitcases and belts - needs only a few machinery which are:

- glueing machines for water soluble glues
- glueing machines for neophren glues
- tools, stones, knives.

For suitcases, the equipment is specially for preparing the following products:

- soft suitcases
- pressed suitcases
- fibreglass moulded suitcases
- etc.

(c) Training

In Europe a skilled worker for leather goods needs an apprenticeship of three years. This education includes a special knowledge in making handbags, smallgoods and basic training in pattern-making, except sewing.

The manufacturing of leather goods in real leather needs skills and careful handling. It is possible to train many workers in special operations in the shortest time. The conditions for specialized training are:

- flowing production
- division of labour
- specialization of operations
- concentration in styling
- quality control

In the assembling area most operations are fully manual. The main investment is the training of workers.

(d) Estimate

Average percentage of operations without machinery for leather goods production in genuine leather:

- Smallgoods	70 - 80 per cent
- Handbags	60 - 90 per cent
- Belts	30 - 40 per cent
- Suitcases	20 - 30 per cent

For example, in Appendix I, page the estimated demand for machinery is shown for 100 people for the production of:

- Smallgoods US$ 100,000
- Handbags US$ 150,000
- Suitcases US$ 350,000 *

For PU/PVC/Cotton/Nylon, the production of travel goods and bags in these materials is easier than with genuine leather. However, here the investment is larger in machinery and organization than in training of skills.

The competition of other countries with a high standard of design and fashion; quality of workmanship and material; marketing and advertising; and productivity and technology, only allows entering into the market with slim profit margins. A high percentage of raw materials are not available on the domestic market.

3. Planning of an Enterprise

- Organization
- Calculation
- Controlling

In these lectures the participants received basic information about systems of organization as follows:

(a) Responsibilities of:

- general management
- production management
- accounting
- sales management
- delegation of responsibilities

(b) Production planning

For example, the calculation for handbags was given comprising:

- demand of materials
- operation plan
- production costs
- price calculation

* The prices are average prices in the F.R.G. 1984 and they do not tally with quotations which UNIDO has available.

According to this calculation, the participants worked out the demand for:

- workers
- machinery
- premises
- overheads

with the assistance of the speaker.

(c) Calculation

The lecture was split into three parts:

- calculation of material and waste
- calculation of labour times
- calculation of overhead costs

(d) Material and waste

As an example, the drawing and measurements of a handbag were given. The following details were explained:

- stock organization
- stock forms
- production order forms
- waste control
- methods of waste calculation and waste control

(e) Calculation of labour times

The operation plan, for example, contains all operations of the handbag shown and the main operations in handbag manufacturing, such as:

- cutting
- skiving
- sewing
- assembling

Methods of time measurement as a basis for planning, piecework and calculation was another theme of this lecture. The participants received information on precalculated systems, such as:

- MTM
- Workfactor
- Basic motion times

and systems of measurements such as:

- Refa
- Bedaux
- Work study

In the second part, the participants worked out, as an example, a time study followed by timetables using the system of interpolation. The timetable was used to ascertain labour times for different operations.

(f) Controlling

The participants received information about different systems of controlling, such as:

- cost controlling
- calculation of additional costs percentage
- direct costing systems

The result is to be found in a calculation system.

(g) Production systems

According to the different kinds of leather goods, for example, small goods; handbags; and suitcases, the participants learned how to plan a factory in different systems, such as:

- flowline system planning
- production planning with different constructions (flowing of material)

and how to calculate the demand of floor space and how to set up the machinery according to the production programme.

The second week exercise was a summary of these lectures. This part was very difficult for the whole group. Most of the observers were very interested to learn more about these important themes because the available time was too short for detailed lectures and the necessary exercises.

4. Quality control

The price of leather-goods is decided by the level of quality in material, workmanship and design. A good quality control system is the guarantee for an equal standard and the best insurance against losses.

The lecture covered the different quality control systems as well as the methods of practical organization.

For example, the speaker, who has long experience as an official appointee to the F.R.G. courts, explained the costs and losses caused by quality claims settled through arbitration.

The delivery conditions may include quality control agreements which may cause problems for the producer if he is not well informed about the consequences and if the definition of features is not clear.

Explained systems:

- AQL (Acceptable Quality Limits)
- EOQC (European Organization for Quality Control)
- DGQ (Deutsche Guarantee for Quality)

How the implementation of a quality control system in a leather-goods factory has to be done was explained in an exercise.

5. Design

In agreement with the Chinese counterpart, the lecture about design was concentrated on a system of design "Logic Design", as set out below:

- how the design has to meet the technical resources
- design in accordance with the production programme
- design instructions, pattern-making, how to work out cutting dies, etc.
- the decimal number system in design
- the logic of production and design

The participants worked out different styles including handbags, smallgoods, and travel goods, with good results. The best layouts were presented to Ms. Wang Ziuying, Vice Director, Member of Council, Ministry of Light Industry, who is responsible for the Chinese leather industry in the Beijing Ministry.

Ms. Wang explained that her Ministry will check the possibilities of Government support to expedite the development in the Chinese leather goods industry.

6. Controlling

The expert explained in one lecture the function of cost controlling systems. This lecture was to provide basic information only, as cost controlling needs knowledge of accountancy and economics. Following this lecture, most of the observers understood the connexion between calculation, costs and results.

A tight control is the condition for good management and this theme should be taught intensively as the participants knew nothing about cost controlling systems.

The delegation of responsibilities to the factories is a risk without cost controlling systems and it is the expert's opinion that China should concentrate intensively on management training.

7. Seminar statistics

In agreement with the Chinese counterparts' recommendations, the Seminar was concentrated within a three week programme as follows:

-	1st week	Marketing Machinery
-	2nd week	Planning Organization Calculation
-	3rd week	Quality control Design

Once weekly, on Saturday, the comprehension of the lectures was tested in lessons with prepared and unprepared answers.

In the second and third week, the observers were asked about the usefulness of the lectures.

2nd week result

Questions and answers in percentages.

Please classify:	Helpful very	middle	not
1. The lecture in general	41	51	8
2. Could you obtain new information	38	45	17
3. Is the Seminar interesting	31	55	14
4. Is the information usable at your factory	3	41	56
Total result (average)	28%	46%	24%

3rd week result

Please classify:	Helpful very	middle	not
1. The lecture in general	60	34	6
2. Could you obtain new information	43	43	14
3. Is the seminar interesting	52	39	9
4. Is the information usable at your factory	17	34	49
Total result (average)	43%	38%	19%

The ratio of the answers to question 4. is according to the background of the listeners.

No. of Participants

First week	54	
Participants in 1st exercise	29	
Participants in 2nd exercise	23	
Participants in 3rd exercise	27	
Certificates issued	25	(47%

Results of exercises

The achievements of the seminar are well demonstrated by the replies to the questionnaire.

- Very good 40%
- Good 35%
- Poor 25%

D. TRAVEL REPORT

Date		Contacts
September	Briefing Vienna	Mr. Buljan Mr. Schmel Mr. Leite Ms. Tobin
	Travel Obertshausen (FRG) - Vienna - Obertshausen	
3 October	Flight Frankfurt - Karachi (Pakistan)	
4 October	Stopover Karachi - Visit of the UNIDO assisted Leather Products Development Centre	
5 October	Flight Karachi - Bombay - Beijing	
6 October	Arrival Beijing (It was not possible to confirm a flight to Shanghai due to a defect in the CAAC computer)	Mr. Liu Guanglu Ministry of Light Industry
7 October	Beijing - Sunday Meeting with Mr. Liu Programme for China: - Beijing - Shanghai (It was not possible to confirm the flight to Shanghai due to a defect in the CAAC computer)	Mr. Liu
8 October	Beijing - Monday Briefing UNDP Beijing (Mr. Sissingh was not not on duty due to illness). CAAC Shanghai fully booked, no flight was available that week. Earliest train on 10 October.	No contacts Mr. Liu Interpreter
9 October	Beijing - Tuesday Train Beijing - Shanghai confirmed. Meeting with Mr. Zongyuon, Director and General Manager, Ministry of Light Industry, Beijing	Mr. Zongyuon Mr. Hu Mr. Liu Others
10 October	Beijing - Shanghai 20 hours travel to Shanghai	
11 October	Arrival Shanghai - Thursday Hotel transfer Pick-up of unaccompanied baggage Appointment with Mr. Liu, Leather Research and Ms. Goa	 Mr. Liu Ms. Goa
12 October	Shanghai - Friday Conference with Mr. Shi Ziangli Director, Senior Engineer, Shanghai Leather Research Institute	Mr. Shi Mr. Liu Ms. Goa Others

	Seminar Programme Training discussions	
	Factories:	
	- Shanghai Leather goods Factory No. 2. small goods, low quality low standard, 500 employees	Mr. He Mr. Yang Mr. Wang
	- Shanghai Leather Case Factory Suitcases, other cases, 1,500 employees	Mr. Ding Mr. Wu
	Official dinner	
13 October	Shanghai - Saturday Visit to Leather Research Institute Definitive programme: - draft - materials - translation - copies - room	
	Meeting with Shanghai Leather Product Corporation	Mr. Wang Others
14 October	Shanghai - Sunday Preparation of Seminar	
15 October	Shanghai - Monday-Friday Management Seminar Leather goods Production - marketing - machinery Institute workshop - pattern - small goods - bags	
20 October	Shanghai - Saturday Exercise I Other activities during the week: Meetings with: - Mr. Fuchs, Farbwerke Hoechst (tests, finish of pigskin, finish of snakeskin)	
	- Shanghai Leather Corporation Visit of the premises of the planned pilot factory in Shanghai	Mr. Shi Others
21 October	Shanghai - Sunday Preparation of 2nd week	
22 October	Shanghai - Monday-Wednesday Seminar 2nd week - planning of production plants (small goods; handbags; travel goods; suitcases; flowline systems; and process technology)	
	- controlling (organization; direct costs; indirect costs)	

	- calculation (cutting value; labour times; production planning; systems of calculation; pre-costing)	
25 October	Shanghai	
26 October	Training	
	- Basic design (small goods; bags; travel goods)	
	- Decimal number system (organization; cutting dies; styles; logic design)	
27 October	Shanghai - Saturday Exercise II Institute workshop - making of first samples of specially-prepared pigskin leather (handbags; small goods)	
	Visit to metalware factory	Mr. Shi Others
28 October	Shanghai - Sunday Preparation of 3rd week	
29 October	Shanghai Seminar 3rd week	
30 October	Monday - Thursday Quality control systems: - AQL - EDQC - DGQ	
31 October	Shanghai - Wednesday Quality control in leathergoods	
	- conditions for quality standards	
	- systems of quality control (cutting area; skiving, splitting; sewing, assembling; shipping).	
1 November	Shanghai - Thursday Final exercise	
	- quality control - logic design - decimal system - waste calculation - cost contolling - price calculation - how to prepare a fair	
	Institute workshop	
	- making of pattern and samples (Handbags; small goods; pigskin and snakeskin)	
2 November	Shanghai - Friday Final lecture:	
	- results of final exercise - certificates - tea party	

3 November	Shanghai - Saturday Workshop Leather Institute - finishing of handbags - pattern and cutting of handbags in newly prepared pigskin	
4 November	Shanghai - Sunday Paperwork	
5 November	Shanghai Workshop of Leather Institute - practical advising (finishing of last three samples; design of packaging; design of logo)	
6 November	Shanghai Handover of samples for presentation and final conference; Minsitry of Light Industry, Beijing	
7 November	Travel Shanghai - Beijing	
8 November	Beijing Debriefing UNDP Conference with Messrs. Liu and Shi F.R.G. Embassy	 Mr. Sissingh Mr. Liu Mr. Shi Dr. von Sydow (Counsellor Agriculture)
9 November	Beijing Conference Ministry of Light Industry with Ms. Wang Ziuying, Vice Director Leather Department, Member of Council Visit to Beijing Leather goods Factory No. 1 (1,500 employees making suitcases, bags and small goods, an expanding factory developing towards Western standards)	 Ms. Wang
10 November	Travel Beijing - Zürich	
11 November	Vienna	
12 November	Vienna - debriefing	Mr. Berg
13 November	Travel Vienna - Obertshausen	

APPENDIX I

ESTIMATED PRICE OF MACHINERY - SMALLGOODS

	Used DM	Pcs.	Total DM	New DM
Cutting area:				
- Swing arm electronic cutting presses	5,000	5	25,000	70,000
- Cutting dies and drawer	1,000	5	5,000	20,000
- Skiving machine	2,500	2	5,000	16,000
Embossing area:				
- M + K press/embossing press	16,000	1	16,000	26,000
- Other snake	8,000	1	8,000	12,000
- Embossing plate I			1,000	3,000
" " II			1,000	3,000
" " III			1,000	3,000
Assembly area:				
- Sieve printing and sieves		1	1,000	7,000
- Turnover machine		1	2,500	7,500
- Stroke machine		1	1,500	2,500
- Folding machine		1	3,000	10,000
- Special tools		1	3,500	3,500
- Glueing machine	900	4	3,800	16,000
- Strip folder			200	400
- Arm machines	2,000	10	20,000	40,000
- Special attachments	300	10	3,000	5,000
- Other unforeseen			5,000	5,000
- Replacement parts			5,000	5,000
- Machine inspection			15,000	-
Total			130,500	276,900
Commission 10%			13,000	-
			143,500	276,900
Shipping - Packing FOB			8,000	6,000
TOTAL		DM	151,500	282,900
Equivalent in US$		US$		100,000

ESTIMATED PRICE OF EQUIPMENT FOR LEATHER HANDBAG PILOT FACTORY

60 - 100 WORKERS

	Used DM	Pcs.	Total DM	New DM
Cutting area:				
- Large size cutting press - hydraulic, 100 tons	60,000	1	60,000	150,000
- Swingarm cutting press - 18.5 tons, large arm	5,000	5	25,000	75,000
- Paper cutter		- domestic -		
- Strap/belt cutter	7,000	1	7,000	15,000
- Rivetting machines:				
different types	3,000	2	6,000	24,000
different types automatic	6,000	2	12,000	40,000
- Skiving machines	3,500	1	3,500	8,000
- Skiving machines	2,750	3	8,250	21,000
- Splitting machine (new)			40,000	40,000
- Glueing machine - white glue	1,000	2	2,000	7,000
- Glueing machine - neophren	1,000	4	4,000	15,200
Sewing area:				
- Flat bed needle feed	1,000	10	10,000	25,000
- Flat bed walking foot	1,400	3	4,200	,000
- Arm machine	1,800	6	10,800	21,600
- 2 - needle	2,500	2	5,000	9,000
- Replacement parts			10,000	10,000
- Inspection/maintenance			20,000	
- Unforeseen expenses			10,000	10,000
Total		DM	183,750	479,800
Commission 10%			18,375	-
Shipping - packing FOB			15,000	10,000
Total amount		DM	217,125	484,800
Equivalent in US$		US$		165,000