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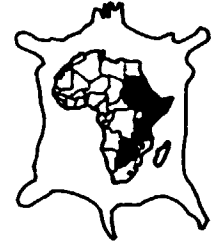
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REGIONAL AFRICA

LEATHER AND FOOTWEAR INDUSTRY SCHEME (RALFIS)

US/RAF/92/200/11-55

TECHNICAL REPORT*

on a mission to Kenya, Zimbabwe and Sudan
05 April - 30 May 1994

Based on the work of

Mr. Horst Ruppert, Shoe Machinery Engineer

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Agro-Based Industries Branch

* This report has been reproduced without formal editing.

INTRODUCTION

It was necessary for the expert to visit three countries during the period of the assignment which were Thika (Kenya), Bulawayo (Zimbabwe) and Khartoum (Sudan).

The duties were as follows:-

1. Supervise the installation work of the footwear equipment at TPCSI in Thika, Kenya, including pattern-making equipment (excluding equipment). Train local mechanic in maintenance of the machinery and assist in training operators in the use of the equipment from machine technical point of view. (Time required about 4-5 weeks).
2. Supervise the installation of the footwear upper making equipment in TPCSI in Zimbabwe (the exact location is not yet decided). Train local mechanics in maintenance procedures and assist in training operatives in the use of the machinery from machine technical point of view.
3. To check the installation (installation is carried out by the equipment suppliers engineer) of UNIDO delivered equipment in the HSLTDC, Khartoum South, Sudan and report to UNIDO project management of the findings (time required about 2 days).

The assignment was completed within the specified time. However various problems arose and some of the machines have not arrived up to the time of the expert's departure. Those problems and machines are specified in the general report and findings.

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A. Currency

Value of the local currency during the period of mission

Kenya Shilling	60.20 = US\$1
Zimbabwe dollar	7.98 = US\$1
Sudan	215.00 = US\$1

B. Explanatory Notes

UNIDO	-	United Nations Industrial Development Organisation
CTA	-	Chief Technical Adviser
LIZ	-	Leather Institute of Zimbabwe
G & D	-	G & D Shoes (George & Denise Shoes)

SECTION I - KENYA

TRAINING AND PRODUCTION Centre FOR THE SHOE INDUSTRY (TPCSI) THIKA

1. CURRENT SITUATION/FINDINGS ON DATE OF ARRIVAL, 5 APRIL 1994

- Construction people were still busy with painting work, water installation, laying of tiles, etc.
- No transformer, no 3-phase electrical installation from outside to the Centre.
- The installation of compressed air supply was not started and purchase of materials was also not completed.
- Electrical installation in the machine hall was up to 75% finished as per former layout, but must be changed according to the newest layout.
- The doors are too small in width, approximately 750 mm. According to the drawing of the building, they must be 900 mm open size. For example, the pattern grading machine must be partly dismantled to pass through the door.

2. MACHINERY

Only few machines had arrived at the Centre from Bruggi, i.e.

- a) Die making machine
- b) Eyeletting machine
- c) Upper folding machine
- d) Back seam trimming and taping machine
- e) 9 cases with shoe lasts from Fagus

All other machines at this time are still awaiting clearance at the Mombasa port.

On 08 April 1994, the Juki sewing machines and machines from Torielli arrived at the Centre except the machine for moccasin shoes and the strap cutting machine.

3. INSTALLATION IN THE WEEK FROM 11-16 APRIL 1994

- The construction of the compressor house outside the main building has started
- The pipes for compressed air supply were installed and also the temporary 3 phase electrical connection.
- The final electrical installation will take some time since the tables were not ready.

4. ACTIVITIES

The consultant worked together with the three local engineers:

Mr. Charles Ooko	Electrician
Mr. Joseph G. Kariuki	who was on training in Italy and Germany
Mr. Albert M. Kinyua	who demonstrated keen interest at this time

UNPACKING AND ASSEMBLING OF MACHINES

All machines were unpacked, the Juki sewing machines finally assembled and all machines placed on site according to the new layout.

Stickers regarding needle system and needle size were prepared and put on every sewing machine.

Some machines were partly dismantled to demonstrate and explain to the engineers how to repair and adjust them.

All electrically-driven machines were individually on three phase connected, tested and disconnected.

All instruction/operating manuals in english language are available. Bruggi and Torielli provided only one copy of these manuals instead of two as instructed in the UNIDO purchase order.

All machines arrived undamaged although some were a little rusty and in dirty condition.

Consignments expected from Bruggi, Juki and Torielli include spare and wear parts.

All Bruggi machines were connected on 240V but should have been 415V.

Partly pneumatic operating machines had non standard (different sizes) or air fittings according to the ones available in Kenya.

Bruggi machine 1065/F 84 backseam trimming and taping machines

The spare parts instruction manual and electrical diagram do not correspond with the machine and switch box.

Transformer at the electronic panel does not work at all. Mr. Ooko, the electrician, would like to settle this matter directly by fax with Bruggi.

JUKI Postbed Sewing Machines PLH 981-B, PLN 986B24

The bobbin winder in connection with the belt protection does not fit into the safety device/cover. This problem was directly settled by fax to Juki Europe in Hamburg. Juki will send the necessary parts and sketches to UNIDO Vienna for onward transmission to Kenya.

The local engineer is informed about this matter and will take care of it after the parts have arrived.

RECOMMENDATIONS

The following recommendations are made in view of improving and developing the activities for the newly installed equipment used in the Centre in order to serve or help the shoe industry and small shoe units in the future.

Spare Parts Stock

It is important to organize and maintain a reasonable spare parts stock in the Centre to keep the present machines in good working condition. The necessary facilities e.g. cabinets, lockable with different sizes of drawers and shelves to keep the parts in correct order, also standard plastic bags etc must be provided. The spare parts (metal) must be oiled and kept in sealed plastic bags.

The consultant prepared samples for:

- | | | |
|----|--|---------|
| 1. | Spare parts stock card | Annex 2 |
| 2. | History of repair card | Annex 3 |
| 3. | Requisition and issue slip
for maintenance store room | Annex 4 |

Maintenance Budget

The maintenance department should prepare every year a maintenance budget to be handed over to the management.

Without the necessary funds, maintenance of the institute will hardly be possible. The budget should include parts to be bought locally if available, as well as those which must be imported.

It should include estimated cost of work which is beyond the competence of the Centre's maintenance staff and which should be performed by local specialized workshops, like motor rewinding, air conditioning repair, electronic circuit, etc. It should include materials and additional things.

Sewing Machine Adjustments

According to the job, it is very important to select the correct sewing thread. It is wrong to adjust a sewing machine according to the sewing thread which you just find somewhere in a shop. A good smooth and strong quality twisted thread according to the type of the sewing machines should be obtained. The correct sizes of thread and needle for each machine can be found in the instruction manual.

It is necessary to have colour and sample cards from the different sewing thread manufacturers on hand to make the right selection.

The selection of sewing thread can only be made by an expert in the sewing section and not from anybody in the office.

Selection of Good Quality Materials and Supplies

In order to keep the machines and equipment in good working condition as well as to upgrade the skills of the operators/instructors, technicians/trainees, adequate materials and supplies must be available.

Cleaning and Care

The technical management and the technical staff must be very much concerned about constantly keeping the Centre's facilities clean and in good condition. Good smooth cleaning cloths, equipment and if necessary, some solvent etc must be on hand.

Use of Adhesives, Paint, Chemicals, etc.

To keep and use adhesives in small quantities, it is a MUST to have small containers WITH COVER on hand. The Centre's staff should give special attention to correct sealing of the containers because of evaporation.

Small brushes must also be provided for application of adhesive on the materials and not using the fingers. After using the implements they must be properly cleaned with special solvent/chemicals etc. Adhesive, paint, solvent, chemicals can only be used on DETERMINE TABLES and not on tables of sewing machines or anywhere in the sections.

Machine Operations

A systematic and continuous operation of the machines is necessary since this is the best way to have competent instructors, operators and maintenance specialist and to keep the machines in good working condition.

It is very important to use the correct oil and grease for the different machines. This can be found in the instruction books/manuals. All oil and grease must be free from acid, resin, etc. There must always be a determined quantity of different and requested kinds of oil and grease in the maintenance workshop or store on hand.

Every machine must be run for a short time once a week even the ones that are not used for production.

Through a good enthusiastic approach and using their own initiative, the responsible people, the technical chief of the Centre and his counterparts must be interested and maximize the use of all of these machines to upgrade their own training methods. Building-up experience and getting more practice in handling the machines in the correct and perfect way.

Should outside people from the industry visit and use the machines in the Centre, responsible instructors must supervise the operation of these machines.

For a training Centre which will give lessons and training to trainees and trainers and will teach them how to do a perfect job, first of all, the instructors must be able to handle and manage every operation in their responsible section 100%.

The Importance of the Equipment

Once the Centre's equipment is completely installed and in working order, it would require a specialized section to ensure the maintenance and preventive maintenance of the Centre's equipment. Apart from the training, which was possible and given on several machines to the national engineers (in spite of the shortage of the facilities at this time) they need to have further training on actual use of the machines.

In other words, they have to become effective machine operators as this is the only way for them to actually understand the machine principles and be able to solve efficiently and rationally the various machine problems which they may encounter.

The consultant worked out some guidelines for the maintenance and up-keep of the Centre's equipment and facilities. (Annex 1)

GENERAL RECOMMENDATIONS

For future purchases of new machines/installing new centers.

1. Pneumatic Operating Machines

Also if machines coming from different suppliers:-

- a) All the air main connections/inlets must be standardized, must have the same diameter 9 or 11 millimeter inside the tube/hose, if there is no special instruction given by the suppliers.
- b) Every machine should be provided with at least a length of 6 metres pneumatic hose outside the machine cover for the main connection.

2. Electrical Installation

- a) The question came up on whether all machines should be provided by the suppliers with standardized electrical plugs and sockets of only one type. Instruction should be given through UNIDO.
- b) The electrically-controlled machine with contractors relays and timers should be changed to international standards to ease availability of spares because most of the machines have different electrical gadgets.
- c) The consumable spares such as some fuses should always be sent with the machines and always available in the stores as part of spare parts.

3. Covers for the Machines

As the building is new, still partly under construction and dusty and also for the future:

It is recommended to have good dust proof clothing or plastic immediately to cover the machines from the dust etc.

4. Sewing Machines

At least one (for two needle machine) two reels/spools of sewing thread should be sent with every machine for testing.

5. Stamping Machine

At least one roll of foil must be sent with the machine for testing.

6. Packing of Machines

The seaworth packing cases should have 90 x 90 m for wooden beams under the case. Many of the machines were delivered in light packing cases which were partly broken during transport.

7. Forms

If possible, UNIDO should prepare forms which must be filled in by the machine suppliers about the electrical pneumatic specifications of the machine etc., when the purchase order is placed. Those specifications should be sent to the responsible persons for installation to help select and purchase installation materials. (Annex 5)

NOTE:

The final electrical installation cannot start until all tables between the machines are completely finished.

No bench for the maintenance workshop is available.

Impossible to mount the small machines in the designs section on benches, because the benches are not ready.

Until 30th April, end of the mission, the last consignment of machines from Mombasa did not arrive at the Centre, i.e.

- a) Upper ironing machine
- b) Back part moulding machine
- c) Pneumatic shoe last fitting machine
- d) Strap cutting machine

Since the expert arrived at the Centre, the work progress and results were slow and the results of the mission were not as satisfactory as expected.

TPCSI in Thika - Kenya

After the expert left the Centre on 30 April 1994, he is no longer responsible for any changes/modifications in the installation of power/electrical and compressed air supply.

SECTION II - ZIMBABWE

30 April - 20 May 1994

ASSIGNMENT TO TRAINING AND PRODUCTION Centre (TPCSI) IN BULAWAYO

As Monday, 2 May 1994 was a national holiday, work began the following day.

CURRENT SITUATION/FINDING

The full consignment of Juki sewing machines had already been delivered to the training Centre. Prior to the arrival of the consultant, the stands and machines had been unpacked and assembled. However, this was unfortunate as many of the stand-machines parts had been placed on the wrong stands/machines and also incorrectly fitted.

It must be emphasized that the Juki Machine Company had inserted all the screws, parts etc. in a box which is attached to each machine head. Extra time was required to dismantle the machine stands, sort out the correct parts, and to assemble correctly.

Listed information in relation to details regarding the machine, motor, pulley V belts, etc., was not available. The information was obviously mislaid. The Juki consignment included wear spare parts, instruction manuals and spare parts books. However, it must be stated, that the electrical installation for the sewing section was completed.

Torielli machines arrived at the Training Center on 6th May.

Floors must be tested for support of weight for swing arm clicking presses and band knife splitting machine.

ACTIVITIES

The Expert worked together with one national engineer, Mr. Steven Chivandire, who was trained in 1993 by Juki Europe in Hamburg, Germany, and two trainees, Mr. Frances Nyika and Mr. Mathias Musungapasi, who demonstrated a keen interest to learn during the presence of the expert.

UNPACKING AND ASSEMBLING OF MACHINES

The Juki sewing machines have been unpacked and assembled before the arrival of the Expert. Unfortunately, many parts were placed on the wrong stands/machines. Therefore, it was necessary to dismantle partly the stands and reassemble the machines correctly.

Some of the problems noticed while assembling the PLH 981, PLN 986 machines were similar to those encountered in Kenya. The bobbin winder wheel is too large in diameter and consequently the belt cover does not fit the wheel. In effect, this lower part of the cover could not be used.

All Torielli machines arrived undamaged, but some were in rusty condition.

Torielli Band Knife Splitting Machine

Unpainted parts of the machine were very rusty. Unfortunately, the machine was not sufficiently oiled or greased for sea transportation. It was not necessary to dismantle the machine partly for the cleaning process.

The consignment of Torielli included wear spare parts, but with only one instruction spare parts manual for every machine instead of two according to the UNIDO purchase order.

All machines were electrically connected and tested.

The following Bruggi machines were not delivered during the time of the mission: upper leather edge folding machine, eyeletting machine, back seam trimming and taping machine.

Training of Counterparts

The Expert during the visit spent a considerable amount of time training the local counterparts in machine details; the functions of the various parts; and in the process and working structures. Some of the machines were partly dismantled for practical demonstration to the mechanics. This was carried out in spite of the fact that many of the facilities were not available. However, they need more training on the actual use of the machines.

During the visit, the Expert also defined some guidelines necessary for the maintenance and upkeep of the equipment and facilities. (ANNEX 1)

Maintenance Workshop

It was necessary to have in the Centre a small workshop or corner provided with a workbench, lockable drawers, vice and reasonable tools like open wrenches, allen keys, small hammers, different kind of pliers, screwdrivers, etc., which should be on hand for the mechanics because the maintenance of C & D is too far away from the Centre.

RECOMMENDATIONS

The following recommendations are made in view of improving and developing the activities for the newly installed equipment used in the Centre in order to serve or help the shoe industry, and smaller shoe units, in the future.

Spare Parts Stock

It is important to organise and maintain a reasonable spare parts stock at the Centre to maintain the present machines in working condition.

The necessary facilities should contain lockable cabinets, with different sizes of drawers and shelves to keep the parts in correct order, and standard plastic bags etc. must also be provided.

The spare parts (metal) must be oiled and maintained in sealed plastic bags.

The consultant prepared samples for:-

- | | | |
|---|--|---------|
| 1 | Spare parts stock card | ANNEX 2 |
| 2 | History of repair card | ANNEX 3 |
| 3 | Requisition and issue slip for maintenance of store room | ANNEX 4 |

Maintenance Budget

The maintenance head should prepare each year a maintenance budget. It is also necessary to ensure that the finance is available. The budget should include parts to be bought locally if available, as well as those which must be imported. It should also include estimated cost of work which is beyond the competence of the Centre's maintenance staff and should be performed by local specialised workshops. Such items include motor rewinding, air-conditioning repairs, electronic circuits etc.

Sewing Threads

It is necessary to ensure that the specified threads are available. The manual instructions card specifies the type of thread and needle required for each machine. Those instructions must be adhered to.

It is necessary to have available colour, and sample cards from the different sewing thread manufacturers. This will assist management in choosing the correct types of thread.

The selection of sewing threads should be made by the expert in the sewing section rather than the purchasing office.

Selection of Good Quality Materials and Supplies

In order to keep the machines and equipment in good working condition as well as to upgrade the skills of the operators and/or instructors, technicians/trainees, adequate materials and supplies must be available.

Cleaning and Care

The technical management and the technical staff must be constantly concerned about keeping the Centre's facilities clean and in good condition. Good smooth cleaning cloths (never use cotton waste) equipment and if necessary, some solvent etc. must be on hand.

Use of Adhesives, Paint, Chemicals etc.

It is necessary to ensure that small containers are available for the use of adhesives, paint and chemicals. The staff must ensure that the containers are sealed when not used so that evaporation does not occur.

Small brushes must be used when applying adhesives to uppers/materials, and fingers are not to be used. When the operation is completed, it is necessary to clean the brush with the specified solvent. Tables should be available for the adhesive operation. The sewing machine bench should not be used.

Machine Operation

It is necessary to constantly make use of all machines each week to ensure that they are maintained in a good working condition. It is important to ensure that the specified oils and grease are used. The items are specified in the instruction books/manuals. Oil and grease must be free from acid, resin etc.

A stock of the specified oils and grease must always be available in the stores and maintenance shops.

It is important that the instructors use the machines on occasions to ensure that their ability to operate the machines is maintained. This is necessary for training purposes.

When people from the industry visit the Centre, to operate the machines, it is important that the supervisor supervises the operation.

It is necessary to ensure that the trainers are capable of operating each machine efficiently.

The importance of the Equipment

It is necessary to ensure, when the machines have been installed, that there is available a specialised group of mechanics. They must be capable of ensuring that the machines will be maintained in the proper condition.

They also need to be trained in the art of operating the machines. Consequently, they will be capable of understanding the machine principles, and to solve any problems that occur.

GENERAL RECOMMENDATIONS

In relation to future purchases of new machines (electronically controlled etc.), it is suggested that the following recommendations are considered:

Regarding Juki Sewing Machine Type PLW-4-6 (with automatic thread trimmer and under edge trimming device) it is proposed that:

1. All types of sewing machine with vario stop motors, electronic control box and additional equipment, should be completely assembled, adjusted, tested and delivered by the supplier to the customer. Obviously, this is not occurring at the moment.
2. The machine should be ready for final assembling in a factory, after the machine head has been mounted on the table. At this stage, it should only be necessary to insert the plugs in the sockets which unfortunately was not possible.
3. It was necessary to solder the supplied cable to the specified pins in the plug. It is also unfortunate that the instructions for this particular part of the machine, were available in German only. For English-speaking countries it is necessary to ensure that the instructions should also be available in English.
4. This type of machine had earlier been delivered to the Leather Institute of Zimbabwe. Unfortunately, neither the engineers at G & D or the technician from the Juki agency at Bulawayo were capable of assembling the electrical system in this machine. It was necessary for the UNIDO expert to perform the assembling process during the mission.

SECTION III SUDAN, 22-26 MAY 1994

ASSIGNMENT TO NATIONAL LEATHER TECHNOLOGY Centre IN KHARTOUM

As it was Gurabani holidays from 18-24 May 1994, it was arranged with the local technicians not to work on 22 May 1994 but on 23/24 May for half days only. Factories, institutes, etc. were closed during those holidays.

CURRENT SITUATION/FINDINGS

Installing of machinery

All machines for the pattern making section

- pattern cutting shears
- binding machine
- punching machine
- vice

were not mounted at a bench, but lying in the storeroom.

All other machines were placed on site and electrical power connected.

The back part moulding machine is placed between the pulling-over and lasting - and the tacks-side lasting machine as there is no sufficient air tube/hose on hand to place the machines correctly on line.

It is absolutely necessary that all pneumatic operating machines should be provided from the suppliers with 6 meters of air tube/hose outside the machines with suitable clamps.

The capacity of the present compressor is not big/strong enough to provide sufficient compressed air for the pneumatic operating machines.

It was necessary to clean all machines (unpainted parts) perfectly from packing grease/oil etc. There was no machine that was properly cleaned and because of the dust and grease, eventually the machines became partly sticky creating a lot of problems.

Pulling-over and Lasting Machine

Switch panel, spare parts catalogue, electrical/hydraulic diagrams etc. It is unfortunate that the instructions for these particular parts of the machine were available in Italian language only. For English-speaking countries, it is necessary to ensure that all instructions should also be available in English.

Tacks Side Lasting Machine

There are no tacks available for this machine. Nothing was sent in the consignment for testing and demonstration. No metal plated last was available at this time.

Band Knife Splitting Machine

The machine must be partly dismantled for the cleaning process and also to demonstrate to the technicians how to change the band knife or make adjustments etc.

No instruction manual was sent with the machine. It is absolutely necessary to have this book on hand for adjustments, change of band knife, etc.

Pneumatic Upper Toe Moistening Machine

The steam supply at the right hand station of the machine has not functioned since its installation. The technician from Bruggi knows about this problem. Did he take any action/inform UNIDO about this matter? The problem must be in the water valve or electronic panel. No spares for these parts are available.

Tools for the local mechanical engineers

The mechanics should be provided with all necessary usable tools, pliers, small hammers, screwdrivers etc and also a work bench with a suitable vice.

It was very difficult and partly impossible for the expert to solve more unexpected difficulties (repair work of sewing machine etc) in this short and limited time but the main problems were settled.

CONCLUSION

Considering the importance of the maintenance units in the three Centres, Kenya, Zimbabwe and Sudan (also the industry) and the fact that the maintenance unit staff is still inadequately experienced, it is recommended that a continuous assistance program in form of consultation be implemented in the future.

INTERNAL MEMO
UNIDO PROJECT

MEMO FROM : _____
TO : ALL STAFF MEMO NO. _____
COPIES TO : C.T.A. UNIDO
SUBJECT : EQUIPMENT AND FACILITIES MAINTENANCE GUIDELINE

Herewith are, the guidelines for the maintenance and upkeep of the Centre's equipment and facilities:

1. Equipment/Machines

1.1 Operations

- 1.1.1 Only duly authorised person/s shall be allowed to operate the machines. Said permission shall be given by the Unit Heads concerned and/or the Centre Technical Chief.
- 1.1.2 No person/s shall be allowed to operate the machines outside of the regular hour i.e. from _____ a.m. to _____ p.m. unless duly authorised by the Centre Technical Chief or during extended classes.
- 1.1.3 All machines shall be operated/ran once a week even though they are not used in training
- 1.1.4 In case of machine breakdown or any abnormal malfunction in the course of operation, the Maintenance Unit must be immediately informed. Avoid attempting to open any machines or do repair work by yourselves.

1.2 Safety

- 1.2.1 All machine operators must strictly observe the following safety and preventive measures while operating the machine/s.
 - a. Observe proper machine operating procedures. Consult the Maintenance Unit and/or any manuals of operation.
 - b. When motor does not run and/or display any peculiar/abnormal sound of motion after switching it on, switch off motor immediately and inform the Maintenance Unit.
 - c. Before switching on any machine, always check the following:
 - (i) Screws and other attachments are properly secured/tightened or in place;
 - (ii) mechanisms/attachments are properly adjusted in a level of which they are free from any harmful contact against each other or with the operator.

- d. Avoid wearing loose clothes while operating the machines. Operators should be properly protected. Protective masks and goggles should be used, if items are not available, any protective substitutes should be worn.
- e. Ladies, or for that matter, gentlemen sporting long hair are required to dip their hair or wear protective gear.

1.3 Preventive Maintenance

1.3.1 Cleaning

- a. All machines should be cleaned each time after use. Always put back the protective covers of the machines.
- b. All machines should be wiped clean or dusted daily.
- c. General cleaning of the machines with the use of brush, rags and diesel fuel should be done once a week.
- d. No adhesives/paint/chemicals shall be applied on the working benches, tables and machines as well as other forms of alteration/vandalism/damage to other fixtures.

1.3.2 Lubrication

- a. Observe proper lubrication instruction (see manual or refer to the Maintenance Unit).
- b. Lubrication should be done once a week.

1.3.3 Attachments/Accessories

- a. All machine attachments and accessories should be kept and maintained by the respective Units concerned. Until such time that storage cabinets are provided for that purpose, they shall be kept and maintained by the Maintenance Unit.

2. Building and Facilities

- 2.1 Each Unit is assigned their respective areas of responsibility for maintenance and upkeep. Cleaning of the respective workshops should be done daily before leaving the Centre.
- 2.2 A general cleaning of the Centre and its surroundings shall be done once a month, preferably at the end of the week. The call for a general cleaning shall be issued by the Administrative Unit and everybody shall be required to participate.
- 2.3 The Centre's floor area and surroundings should be kept clean all the time. All litter, wastes and other trashes shall be properly disposed of.
- 2.4 Everyone is compelled to report any damage/replacements to the Administrative Unit for proper action.

The aforementioned guidelines shall be strictly enforced to prevent any unnecessary damage to property and accidents. All Unit Heads shall see to it that these guidelines are followed. Any violation or deliberate non-compliance shall be dealt with administratively.

For strict compliance.

SPARE PARTS

Stock No. _____
Quantity Unit _____

STOCK CARD

Machine Name. _____
Model No. _____ Trademark _____
Article _____ Minimum Stock _____
Description _____

Date received or issued	Requisition or issue order No.	From whom received or to whom issued	Quantity received	Quantity issued	Quantity on hand	Remarks

BALANCE CARRIED FORWARD

Spare parts inventory card.

MAINTENANCE DEPARTMENT

INV NO. _____

SERVICE HISTORY CARD

Name: _____
Model/Type: _____ M/C Ser. No. _____
Date installed: _____ Motor No. _____

Date	Job No.	Work Done	Mechanics	Remarks

Note: This card must be with the machine or equipment AT ALL TIMES.
HISTORY OF REPAIR CARD.

REQUISITION AND ISSUE SLIP

TO SUPPLY OFFICER:

Please furnish the following supplies for the use of:

NAME OF MACHINE

Model No. _____

Job Order No. _____

Issue No. _____

Date _____

Item No.	Quantity	Description	Part No.

Requested by:

Issued by:

Approved by:

Maintenance Manager

Requisition and issue slip for Maintenance

List of Machinery and Equipment	Supplier Type	QTY	KW PG	Phase	KW	Comp. air bar	Remarks	
Cutting								
1. Upper leather cutting press (16 tons)	Torielli	116SE	1	1.0	3	1.0	Power supply 1 phase 240V 3 phase 415V	
2. Lining and component cutting (25 tons)	Torielli	125SE	1	3.0	3	3.0		
3. Hand cutting tables (tables to be made locally)					3			
4. Strap cutter	Torielli		1	1.0	3	1.0		
Upper preparation								
5. Upper leather splitting machine	Torielli	326T 40	1	3.0	3	3.0	This list is just a sample and should be filled in from the m/c supplier if the order is placed.	
6. Upper leather skiving machines (two)	Torielli	105	2	0.4	3	0.8		
7. Counter/toe-puff skiving machine	Torielli	125	1	0.8	3	0.8		
8. Cementing machine	Torielli	83	1	0.5	3	0.5		
9. Hand cementing (power pen and/or brush)			-	-	-	-		
10. Upper folding machine	Bruggi	5100	1	3.5	3	3.5		
11. Hand folding								
12. Stamping machine	Torielli	481/EC	1	0.35	3	0.35		
13. Sort and bundle						1		
Sewing								
14. Flat-bed single needle machine	Juki	DDL5600R	4	0.5	3	2.0		The list will be of help to the subcontractors for electrical and compressed air installation etc.
15. Flat-bed zig-zag machine	Juki	LZH1290	2	0.5	3	1.0		
16. Seam reducer	Bruggi	5101	1	1.0	3	1.0		
17. Double needle post-bed	Juki	PLN986B24	3	0.5	3	1.5		
18. Single needle post-bed	Juki	PLH9815	4	0.5	3	1.5		
19. Eyeletting machine	Bruggi	5102	1			1.5		
20. Cylinder-arm binder	Juki	DSC245	2	0.5	3	1.0		
21. Quality control, sort and bundle								
Moccasin								
22. Moccasin forepart ironing machine	Torielli		1	1.5	1	1.5		
23. Moccasin backpart ironing	Torielli	85G20	1	2.0	1	2.0		
24. Moccasin laster	Torielli	151	1	2.0	1	2.0		

UNIDO

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

26 January 1994

JOB DESCRIPTION

US/RAF/92/200/11-55/J13104

3 February 1994

Post title Shoe Machinery Engineer

Duration Two months

Date required March 1994

Duty station Kenya, Zimbabwe, The Sudan according a detailed travel plan to be prepared.

Purpose of project

The project is the continuation of the Regional Africa Hides and Skins, Leather and Leather Products Improvement Scheme US/RAF/88/100. It is designed to continue the assistance to the development of the African hides and skins and derived products industry sector. This second phase of the programme is specifically intending to provide assistance in the areas of leather finishing for the local markets as well as for exports. It is providing inputs in the footwear and leather products industry development specifically in the view of creating more value added products. The project is designed following the "programme approach" for sectoral needs of ten African countries of the subregion .

Duties

The Shoe Machinery Engineer and the international and national experts team are under the technical supervision of the UNIDO CTA stationed in Nairobi and the ISED/Agro Leather Unit in Vienna. The *expert will be specifically expected to:*

1. To check the installation (installation is carried out by the equipment suppliers engineer) of UNIDO delivered equipment in the HSLTDC, Khartoum South, The Sudan and report to UNIDO project management of the findings (time required about 2 days).
2. Supervise the installation work of the footwear equipment at TPCSI in Thika, Kenya, including pattern making equipment (excluding cutting die making), cutting, upper preparation and upper stitching equipment. Train local mechanic in maintenance of the machinery and assist in training operators in the use of the equipment from machine technical point of view. (time required about 4-5 weeks).

3. Supervise the installation of the footwear upper making equipment in TPCSI in Zimbabwe (the exact location is not yet decided). Train local mechanics in maintenance procedures and assist in training operatives in the use of the machinery from machine technical point of view.

The expert will also be expected to prepare a short technical report after his mission, setting out his recommendations to the Governments concerned and UNIDO Headquarters for actions which may be taken.

Qualification

Mechanical engineer with several years of experience in installation and maintenance of all types of footwear equipment. Previous experience from developing countries is required and experience in international assistance work would be considered as an asset.

Language

English

Background information

This project is part of a regional programme for the development of the leather and leather product industry in ten African countries and is the second phase of the previous programme US/RAF/88/100 and associated projects. The programme provides the participating countries of the region with a leather sector development framework and is expected to be the vehicle to improve the performance of the leather and allied industries and to furnish the sector with a platform to achieve higher levels of added-value operations.

The first phase of the East-Africa programme US/RAF/88/100 is scheduled to be completed by end of 1993 in eight associated countries: Ethiopia, Kenya, Malawi, Somalia, The Sudan, Tanzania, Zambia and Zimbabwe as implementation commenced in 1989. A complementary project "Regional Tannery Rehabilitation Scheme" US/RAF/88/102 was included in the programme making the total IDF input US\$ 12,028,081 with special purpose contributions from six donor countries, namely, Austria, France, the Federal Republic of Germany, Italy, the Netherlands, Switzerland. The programme is a joint effort of three agencies UNIDO, FAO and ITC where UNIDO is the main executing agency. The implementation of the major components was near completion by end of 1993.

An in-depth evaluation of the programme has taken place during August/September 1991 and the results achieved by then were considered most encouraging. On hides and skins improvement, pilot schemes in target areas have been established and brought certain improvements, however realization of grading systems, financial incentives to primary producers and statistical intelligence needs further efforts and support. The rehabilitation programme has been successful in many areas of quality and productivity, laying the ground for subsequent rehabilitation and creation of leather finishing and leather articles capacities. The programme's related activities allowed diversification to assist private industry within the rehabilitation programme through pay-back arrangements in local currencies which has created a "revolving fund" with dual benefits: for modernization as well as approaching a certain self sustaining level for the industry to obtain financial means to permit it to continue with its own development work. The work has started to

catalyze the creation of industry associations and/or supporting the existing industry institutions with an anticipated key role in formulating realistic policies as well as direct involvement in the development work through operating the revolving fund in the sector's interest.

Based on the recommendations of the in-depth evaluation and requests from the participating countries as well as formal TPR meetings of the projects and programme a second phase to the programme has been designed.

At the regional level, the programme field headquarters is hosted by the Government of Kenya at Nairobi where the Ministry of Industry is acting as the government host agency and the supervision of the overall programme implementation is undertaken.

At the operational country level, the programme is coordinated by a network of national experts in the ten associated countries maintaining liaison with the competent Government counterpart Agency and the industry associations/institutions. With the emerging of the privatization programme, the industry associations as existing in Kenya, Zambia and Zimbabwe or being created in other countries are expected to play an active counterpart role in the implementation of the programme components and formulating its strategies in cooperation with the designated parastatal agencies.

Two of the leather institutes established in the subregion are expected to play a major role in the implementation of the programme:

The Leather Development Centre (LDC) - Nairobi, established in 1978 as a multi purpose institute to provide direct assistance to the Kenyan leather industry with testing facilities, machines and product development services as well as effluent analysis and demonstration of pollution control measures.

The Leather Institute of Zimbabwe (LIZ), Bulawayo, established in 1985 as a joint undertaking between the leather and allied industries in the private sector, and the meat and hides and skins corporations with a primary purpose to serve the hides/skins and leather industry for training, testing and demonstration needs where its physical and human infrastructures are being strengthened for wider service coverage to finished products industries.

The ongoing and future assistance programme aims at consolidating the work of both institutes in order to complement their functions and services to the industry subsectors, both at national and subregional levels.

The PTA Leather Development Centre, which is expected to start its operations in Addis Ababa, is expected to benefit also the programme and close cooperation between the LIZ-KIRDI/LDC and the PTA centre is foreseen.

At the international level the programme is establishing linkages with NGO's as ICT, ICHSALTA and IHATIS in conjunction with subregional seminars and the industry associations in the respective countries.

The implementation of the programme is carried out by UNIDO which is the executing agency. UN inter-agency cooperation agreements have been signed with FAO and ITC in their formal competence area. It is within this context that inter-agency implementation agreements are set with FAO on hides and skins improvement programmes and with ITC on export marketing programmes for the concerned subsectors.

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coming from overhead

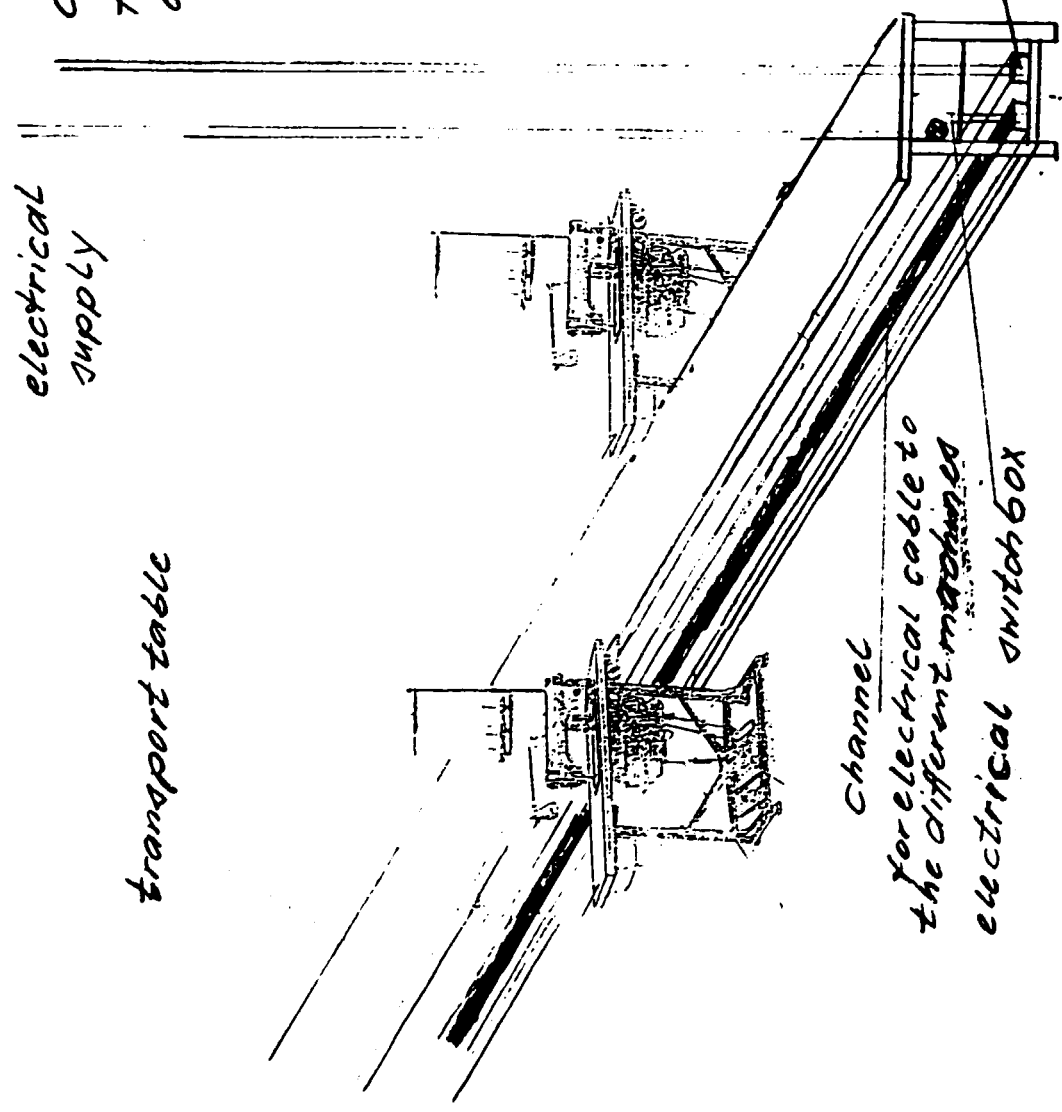
compressed air
for pneumatic
operating machines

channel for
pneumatic tubes/pipe

electrical
supply

transport table

channel
for electrical cable to
the different machines
electrical switch box



IMPORTANT NOTES FOR SEWING SECTION

1. Never start the machine unless there is a piece of fabric under the presser foot.
2. Make sure that finger, Take-up Lever and Belt guards are properly fitted.
3. Use the specified needle system only determined for this machine.
4. To remove the work always bring the Take-up Lever to its highest position.
5. Clean the machine regularly. Please use soft cotton materials, never use cotton waste.
- 5.1 Clean Hook and Hook raceway one everyday when the machine is in operation continuously, even more frequently.

For this purpose, unscrew the needle plate and remove the lint with a soft brush.

In addition, clean the machine thoroughly once a week.

6. When the machine displays any abnormal sound or motion, switch off the motor immediately and inform the maintenance staff.

PNEUMATIC OPERATING MACHINES

1. All machine should have filter/water separator oil lubricator and regulator gauge for adjusting the main pressure on the main connection of the machine.
2. The filter, if it is not automatically draining the water, must be emptied every day and cleaned once a week.
3. Through the lubricator, valves, pistons, cylinders, etc. will be oiled automatically.
4. It is absolutely necessary to use clean resin free oil and the grade which is given in the instruction manual.
5. Never increase the pressure if there is any/are faults in the operation sequence/cycle according to the diagram. Follow up the pneumatic or electrical diagram to find out the problem/faults.

INSTRUCTIONS FOR THE SERVICE UNIT OF THE COMPRESSED AIR

Why is a service of the compressed air necessary? Because the compressed air mostly contains condensed water, small rust particles of the piping system and staggers in pressure, depending whether the compressor is just before switch off or switch on. These disadvantages influence the reliable function of the compressed air-operated tools, pressure pistons, valves etc. Therefore, the installation of the service unit for the compressed air into the supply pipe is necessary.

IMPORTANT

When installing, please observe that the flow direction corresponds with the direction of arrow marked on the unit. This unit should be mounted near to the consumption place. The service unit consists of 2 parts which have to be installed in the following sequence: Compressor-Filter-Pressure Regulator.

COMPRESSED AIR FILTER

IMPORTANT

To be installed vertically and the condensed water level must be checked everyday.

Dirt, sand and condensed water are separated by means of the filter insertion. The transparent filter tray must be checked daily and discharged by opening the built-in drain plug, and that as soon as the condensed water level has reached the installed ring plate underneath the filter insertion. Once a week the filter insertion must be cleaned by gasoline.

The built-in stop-cock allows a closing of the supply pipe for cleaning the filter insertion or for any other inspection work on the compressed air system.

The utmost working pressure is 10 atm. at 50 degrees centigrade maximum.

PRESSURE REGULATOR OF THE COMPRESSED AIR

For example: There is a precision manometer of 0-10 atm. installed. When regulating the working pressure there is a certain air consumption necessary, i.e. a flow of compressed air is required to have the regulating vibrator reacted. Turning the grip wheel counter clockwise there will be a decrease of pressure in clockwise direction there will be an increase of pressure.

A service of the pressure regulator is not required provided that a compressed air switch is added.

**GENERAL INSTRUCTION FOR HYDRAULIC OPERATING MACHINES
INSTALLATION AND MAINTENANCE**

INSTALLATION

The machines should always be placed on a strong concrete floor using spirit level.

Reinforcement, in form of steel rods gross wise, in the final concrete floor is recommended.

The electrical part of the machine is installed to the electrical diagram/voltage given on the instruction manual.

If any difference in the voltage connection, and no special remark is given in the instruction manual please refer to the manufacturer.

Before switching on the machine, make sure oil in the tank and hydraulic oil is according to the specification which is given in the instruction manual.

All containers, funnels, jugs, etc. used for filling must be kept perfectly clean.

Fill the oil up to the marking level.

Please observe the direction of rotation of the driving motor/flywheel as per the arrow marked in the machine.

After a short test run, the machined may require a few more litres of oil to fill up other parts (valves, cylinders, pipelines etc.) in the machine.

MAINTENANCE

All newly developed machines are designed for self-lubrication of all rubbing surfaces and no particular preventive maintenance system is called for, except changing the oil once a year duly observing all the precaution while doing so.

At the same time, the oil filter, tank, etc. must be properly cleaned with kerosene or any other cleaning liquid. Do not use petrol or other inflammable liquids.

Never use cotton waste to clean the machine particularly the oil tank and filter.

The hydraulic pressure should never increase, if there is any fault during operation sequence according to the diagram.

Follow the hydraulic or electrical diagram to find out the problem/faults.

Don't make any adjustment on sealed valves. If there is no special instruction given in the manual, clarify with the manufacturer.

These valves should always be replaced with complete sets.

Never overturn beyond the maximum pressure which is marked in red colour on the regulator or is given in the instruction manual.