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PRACTICAL PROPOSAL TO UPGRADE THE QUALITY IN THE FOOTWEAR AND LEATHER PRODUCTS INDUSTRIES*

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* This document has been issued without formal editing.

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Introduction

The modern concept of quality is fairly new in the leather goods industry, it is a fact that not so long ago quality was based on the "look, feel and smell" and naturally on a "brand" name.

The increasing competition has put more and more emphasis on quality in so far that a new vocation came into being, namely "quality management".

What started off as a final grading, i.e. a splitting of the goods into categories such as "first, second and third" or "perfects" and "sub-standards" and "rejects" is now outdated and regarded as a "post mortem" exercise.

The success of the japanese industry in shifting from cheap or copied products to suppliers of reliably produced, reasonably priced goods was believed to be due to the well-organized quality circles. The introduction of these quality circles into the western world was believed to be the answer to the tough competition from the "rising sun", however the vast difference between the two cultures is believed to be the reason why quality circles were of short duration. Nevertheless some very good idea's remained namely total involvement of the manufacturing organization, leading to the concept of "total quality management".

Total quality management which has the following objectives:

a) better profits through competitiveness;
b) more customer satisfaction - leading to brand loyalty;
c) motivation of the employees through involvement;
d) prevention of non-conforming goods;
e) a better utilization of humans and technical resources.

Today **quality** has become a reality, a measurable quantity, consisting of

a) the *quality policy*: the overall intention with regard to quality as formally expressed by top management;
b) the *quality management*: the overall management function that determines the implementation of the policy - independent from the production;
c) the *quality system*: the organizational structure, responsibilities, procedures and resources for implementing quality management;
d) the *quality control*: the operational techniques and activities used to obtain the requirements;
e) the *quality assurance*: all the planned and systematic action necessary to provide confidence that the product will satisfy the requirements.

I. The leather and leather products industry and ISO 9000

Reading the ISO 9000 standard manual is a mind boggling experience, mainly because of the terminology used. However, people in our industry find it difficult to relate to the requirements of their companies, as the standard manual was written for the engineering industry.

Nevertheless, ISO 9000 does provide the basis for a systematic approach to the management of quality procedures and practices.

There is no doubt that most companies have a system, so the query is "why should the company adopt iso 9000"?

1. Some customers may insist that iso 9000 be installed and that the company be certified before they will buy (*example:* government departments, big retail stores).

2. ISO 9000 may be used to shut the door for imports from developing countries, in order to protect their own industries.

In order to adopt the existing quality system or to introduce a system, it will be necessary to dispel the fears of bureaucracy and paper-shuffling that exists around ISO 9000.

The system relevant to the manufacturing industry is ISO 9000, the practical approach is shown in paragraph 5 below.

II. The leather, footwear and leather goods industries and eco-labelling

Not only is there a demand for quality products, but also an increasing pressure to produce eco friendly quality products.

It has to be taken into consideration that in the strict sense there is no absolute ecologically sound product which implies that all eco labelling systems will be relative.

Therefore it is very important that a clear set of criteria must be established. These criteria must be so defined that they are measurable against standardized methods.

Taking into consideration that footwear and leather goods are not producers of materials but rather the end user of another industry, it should be made permissible to use an eco label provided the materials used are eco friendly and provided the factory environment is eco friendly, i.e. No toxic solvents and products are used.

III. A practical approach to ISO 9000 for developing countries

1. Foreword

Whether or not a company will seek certification of their quality system, the policy and procedures outlined here are worth working towards.

2. ISO 9000

This international recognized quality system provides the procedures to ensure that the product wanted is achieved. It has nothing to do with the product itself nor the materials or equipment used.

For a manufacturing operation to function effectively all the time requires a system of procedures. If the procedures agreed upon are followed up by everyone and the written instructions are implemented then a product of compliance will result fulfilling the contractual requirements.

Therefore, everyone in the organization has to be involved and a culture change will demonstrate itself.

IV. Creating a quality system

1. Management responsibilities

1.1. Quality policy

The responsibility for the quality is the duty of top management, therefore the managing director will make a statement to this effect, sign it and display it in an appropriate place. Such a statement can read as it is demonstrated on *Fig. 1.*

The management team of SHOES AND CO. Is committed to produce and deliver on time at an acceptable price, footwear which will satisfy our customers.

The directors will ensure that all their employees will receive the necessary training. Suitable and well maintained equipment will be provided. Materials and components will be provided to the correct specifications, and on time.

The factory environment and personnel policies will be maintained at an acceptable standard according to current legislation and agreements.

Fig. 1

1.2. Staff organization

The easiest way to deal with this requirement is to draw up an *organogram* showing the inter-relationship of all the staff (*Fig. 2*). This will be further basked up by "job description". These should be kept simple and be clearly written and the personnel concerned should be involved in the preparation.

The *job description* should state the responsibilities and not how to do the job. The job description should be signed by the person in question - and his superior. *Fig. 3* and *Fig. 4* show an example of a job description made for a supervisor and for an examiner.

1.3. Inspection and control

The requirement here is to ensure that the people carrying out inspections and control are properly trained and have suitable and maintained equipment and tools (i.e. visual aids, samples, etc.).

1.4. Managing the system

Any system needs a person to be in charge. ISO specifies that a management representative shall be appointed. The person needs to have a fairly senior status in order to get things done. That person can and may have other responsibilities too, but he will have to report to the Managing Director directly.

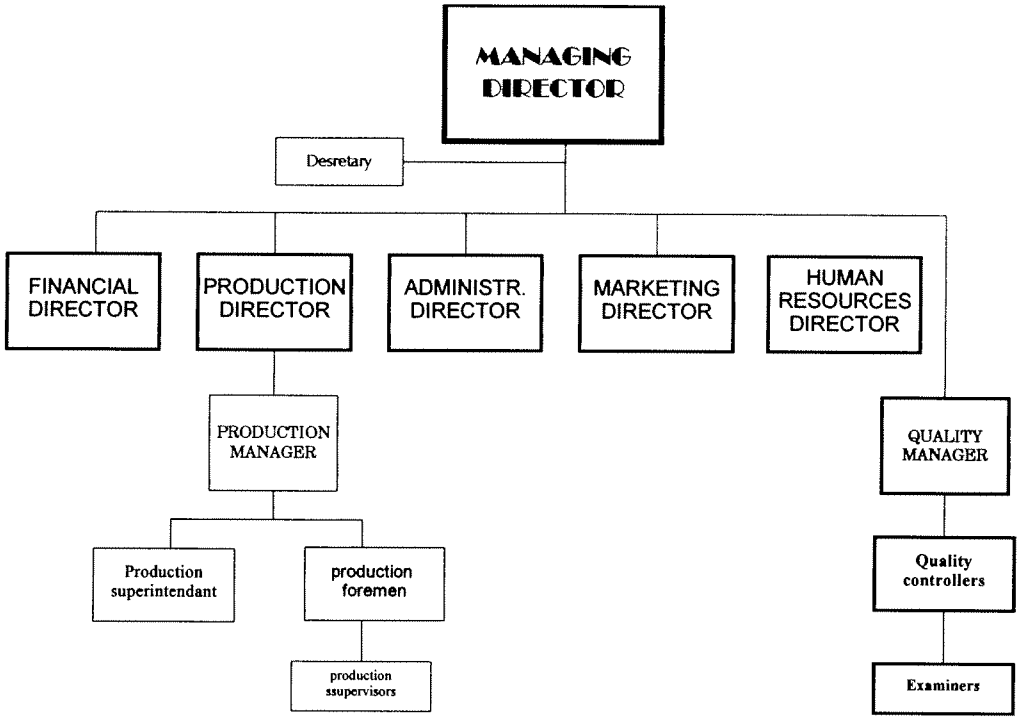

Fig. 2

JOB DESCRIPTION

Title: Examiner

Department: Quality

Function: He/She must be conversant with the applicable sections and is responsible to the quality manager. Their function is to inspect and detect defects and the recording thereof and to report any problems that may arise to the supervisors of their department. Should the matter not be resolved, to report the problem to the chief inspector in order to avoid it recurring.

Signature of incumbent *Signature of superior*

Fig.3

JOB DESCRIPTION

Title: Production supervisor

Department Dosing

1. *Responsibility:*
   Ensure that production and quality targets are achieved and maintained.

2. *Key performance areas:*
   - 2.1 Ensure that departmental production targets are achieved on agreed quality standards
   - 2.2 Ensure that equipment is in good state of repair
   - 2.3 Maintain discipline and productivity
   - 2.4 Recognize employees potential for training and promotion to higher skilled jobs

3. *Detailed duties and responsibilities:*
   - 3.1 Promote quality awareness amongst employees
   - 3.2 Act timeously on reports indicating a decline in quality
   - 3.3 Inspect operator's work on an hourly basis
   - 3.4 Liaise and report back to production foreman

Signature of superior *Signature of superior*

Fig. 4

1.5. Management review

One of the ways the management representative controls and manages the system is through the management review. This management review can be carried out several times during the year, but a minimum should be twice yearly. A simple way to organize and direct the review is through a working party consisting of about 4-5 people with others co-opted when necessary. To meet regularly is of the utmost importance and to work to a formal *agenda* (*Fig. 5*).

Items such as internal audits, customer complaints, faulty materials and components, process control records, re-work and returns, may be on the agenda. An essential part is that the discussions are minute and that, where action is required, the person responsible is clearly identified. Action points are reported on at the next meeting so that the loop can be closed. The systematic approach of the system is to help product quality improve and related costs reduced. The system makes provision for identification and rectification of a fault or problem.

Management review agenda

1. Apologies
2. Discussion on action points from last review
3. Review of all the quality audit reports, QA-12, for the previous 12 months
4. Review of all quality action requests, QA-03
5. Review of reports of third party quality audits
6. Review of craftsmen's training and skill records
7. Review of calibration records
8. Review of customer complaints
9. Review of master list of suppliers
10. Action points to be implemented as a result of the above review
11. Any other business
12. Date of next meeting

Fig. 5

2. Document the quality system

Companies intending to seek registration with ISO 9000 must have a quality manual that documents their quality policy, systems and procedures. Companies not intending to seek registration will nevertheless find it useful as it puts all documents together and easy to control and to update.

A *quality manual* will contain the following:

a) the quality policy statement;
b) details of who has authority and responsibility for implementation;
c) the organizational structure;
d) the review mechanism;
e) a system outline;
f) the procedures;
g) the work instructions;
h) an appendix with supporting documents.

The manual is best presented as a three tier document which is user friendly, easy to control and to update. Although the production of a manual is mandatory for registration, it is also a valuable management tool in its own right for the following reasons:

-- it is a means of informing all employees of their quality assurance responsibilities,
-- it is an up-to-date document that can be used as a training aid for new personnel,
-- it can also be a marketing tool as it is visible proof of the company's intention to produce footwear which is fit for purpose.

The copies of the manual must be numbered and the holder identified and recorded. The issue of individual sections and/or pages should also be controlled through a list kept by the management representative, this is to be able to up-date and to ensure that obsolete documents are withdrawn and disposed of.

3. Contract review

This is no more than an assurance that customer orders are received, checked and processed in an orderly manner. That all requirements can be met, that all materials are available. Should there be any questions raised about a particular order, checking with the customer is necessary.

This procedure should be handled by designated staff who are familiar with the product. It is immaterial whether the system is manual or computer based, so long as the results are noted and signed as an indication that any problems have been solved and that the order can proceed.

4. Document control

One of the criticisms being expressed by many people about the system is that it is paper shifting dominated. But, people are also surprised at the number of forms already in use and how many are daily added to the list. This requirement will control and formalize all existing forms and prevent any unnecessary forms from being produced, discard some or re-draft others.

The following is an example of documents in use:

- quality manual,
- work ticket,
- sample ticket,
- product specification,
- purchase order,
- master list of suppliers,
- reject ticket,
- re-work ticket,
- process control,
- inspection instructions, etc.

In order to be able to control, every document must be identified. The most convenient way is to have a prefix, such as "QA", followed by a sequential number. This number is best shown on the left bottom corner and the date on the right. All documents must be reviewed as part of the internal audit. If they require amendments, this must be authorized by the management representative. The master list must be kept updated and the new document identified by a revised issue status and date (see *Table 1 overleaf*).

5. Purchasing

It is essential to have good defined purchasing procedures as around 50% of the ex-factory price of the footwear accounts for materials and components. This requirement is a positive help as it requires the company to have the following:

a) a means of agreeing to a clear description of goods required,
b) an agreed method of placing and monitoring purchase orders,
c) a means of establishing supplier's reliability.

In the iso document they are formally listed as "assessment of sub-contractors" and "purchasing data". These are definitely essential elements of any well organized purchasing system, as good purchasing procedures will reduce the risk of:

- wrong specification,
- incorrect quantities,
- late deliveries,
- unreliable quality.

Many firms place orders verbally, this is acceptable but it is sensible to confirm in some form of writing. It should be signed by an authorized person. Order forms must have a consecutive number and must be dated. Copies should be filed for reference and follow up.

Table 1

Master List of QA Documents

Ref. No.	*Issue status*	*Document title*	*Re-issue status*	*Withdrawn*
QA-01	31.01.90	Quality manual	see QA-02	
QA-02	31.01.90	Manual amendment		
QA-03	31.01.90	*Not in use*		
QA-04	31.01.90	Management review		
QA-05	31.01.90	Laboratory manual	see QA-02	
QA-06	31.01.90	Technical code of practice	see QA-02	
QA-07	31.01.90	Leather testing report		
QA-08	31.01.90	Temperature and time report	13.01.91	
QA-09	31.01.90	Calibration records		
QA-10	31.01.90	Product specification		
QA-11	31.01.90	Corrective action request		
QA-12	31.01.90	Training records		
QA-13	31.01.90	Master list of QA documents		
QA-14	31.01.90	Master list of suppliers	12.09.91	16.06.92
QA-15	31.01.90	Quality monitor		
QA-16	31.01.90	Safety footwear production		
QA-17	31.01.90	Audit schedule		
QA-18	31.01.90	Change of procedure		
QA-19	31.01.90	Corrective action report status log		
QA-20	31.01.90	*Not in use*		
QA-21	31.01.90	Audit status log		
QA-22	31.01.90	Audit check list		
QA-23	31.01.90	Quality audit report		
QA-24	31.01.90	*Not in use*		
QA-25	31.01.90	Worn returns report		
QA-26	31.01.90	Work ticket and flimsies		

To place an order, an accurate and agreed specification and description of the article must be available. Compiling and agreeing specifications for all the materials and components that needs to be bought is a very important task in setting up a quality control system. Without specifications there are no standards against which to

- judge incoming goods,
- monitor the cost of materials and components,
- confirm that the footwear being produced is fit for purpose.

It is very important that this task is carried out thoroughly, how it is done is not so important, but the specifications must make sound judgment possible and must be devoid of unnecessary demands.

The specifications can be based on

a) acceptable quality standards in the leather and footwear industry compiled by UNIDO (see separate document);
b) guidelines compiled by an institute specialized in leather and footwear such as SATRA, CTC, PFI, TNO and others;
c) customer specifications;
d) a combination of any or all of them.

Whatever the source, the specification must be available and in a retrievable form for reference and updating. A special file for specifications may be a good idea.

Another important part of this requirement is the choice\of suppliers for the company to feel confident that they will consistently deliver goods to specification. It is at first acceptable to base a list of approved suppliers on past performance. It is, however, sensible to take a different attitude towards the most important suppliers by asking them to provide:

- a statement that they will supply goods to the agreed specification,
- confirmation that they will supply supporting date when asked for, i.e. a laboratory report from a recognized institution,
- details of their own quality assurance system.

Provision must be made for procedures to be followed when deciding to use a new supplier. As a minimum, new suppliers should be expected to provide a specification backed up by adequate test data from an agreed test laboratory.

6. Purchaser supplied product

If applicable the manufacturer shall ensure that these materials are inspected, stored and controlled in the same way as own purchased materials, but the onus on conformity to specifications is on the customer.

7. Product identification and tractability

It is not a requirement that a company should be able to trace every material and/or component from purchase to packing or from final customer. This does not mean that the ability to trace materials or finished footwear can be disregarded. Almost every factory would find it difficult and inconvenient to be without some means of identification.

How it is done is immaterial but the commonly used system of stamping the quarter lining or tongue lining with the following:

- style name or number,
- size-fitting-last,
- ticket number,
- in this way it will be possible to match,
- components and parts to the current batch,
- catch up with their fellow feet,
- operators to a particular batch (operators could put their name or clock number on the back of the ticket),
- a particular leather or component.

The system can be helpful in tracing nd dealing with faults attributable to leather or component quality and so help the control of the product. It should be seen as a bureaucratic exercise, but in fact it is a good example of how the requirement can be interpreted to suit the needs of the industry.

8. Process control

The interpretation of this requirement can be explained as follows (*Fig. 6*).

A company shall identify and plan the production processes which directly affect quality and shall ensure that these processes are carried out under controlled conditions.

The best way to start would be to consider how the company prepares for the production of a new range, assuming that it is in the normal manufacturing capabilities.

Production people must be involved at the various stages and asked to comment on any difficulties they may have experienced in producing bulk trials. It is advantageous to attach a special form to the sample ticket where these comments can be recorded the closing and lasting departments are of particular interest. The people involvement is important and not so much the method.

Meetings should be arranged to discuss the comments made on the form.

Fig. 6

Another important aspect of this requirement is a well-designed work ticket. Depending on the company's type of production the information provided on the ticket will vary greatly, most important is that all relevant information is present.

The purpose of the element is "to ensure that these processes are carried out on controlled conditions."

It is up to the individual company to decide which processes are special but they should normally include

- -- backpart moulding,
- -- heat setting,
- -- upper roughing,
- -- adhesive activation,
- -- sole attaching,

It is normal practice to display the *process control sheet* in a prominent place on or near the machine (see example on *Fig. 7*).

9. Inspection and testing

The only stated requirement here is a "final inspection" it is however quite normal for a shoe factory to have at least other inspection points:

a) goods inward;
b) process inspection points.

PROCESS CONTROL SHEET

Operation: Backpart moulding

Process control: Stuck-on backpart moulding
Operating conditions

Machine: Mod 33F/2RP *pre-heater mould*

Type of stiffener: All types

Temperature: 145°C ± 5°C

Control procedure:
The operating conditions shall be checked at least once each week by the quality controller. The reading shall be recorded on the process control record.

Non-conforming procedure:
if any of the settings differ from those listed above they shall be adjusted to the correct settings and re-inspected 30 minutes later if following re-inspection the readings are still incorrect the matter shall be reported to the QA manager or production director. Production will be stopped until the malfunction is rectified or by being instructed to carry-on by the production director.

The readings are recorded on WIM/011/9

Fig. 7

Goods inward

Incoming materials/components shall not be used until it has been inspected or otherwise verified (*Fig 8*). Therefore it is good practice to

- match the relevant documentation such as the delivery, note-purchase order-invoice,
- record the delivery,
- agree on which method materials and components need to be routinely or randomly tested or inspected,
- record the testing and inspection procedures to be used and display them prominently wherever possible.

In-process inspection and testing

There is no compulsory, classic inspection, unless the company chooses to do so as part of the quality plan. It is however advisable to do so, otherwise the company has to prove that it can achieve its quality objectives in another way. Besides this it is part of the prevention method of quality assurance by rectifying the non-conforments rather than reject at the end of the production process.

One way of drawing up a quality plan is by means of a flow chart as shown on *Fig. 9*. This is based on the inspection points in the production flow and incorporates the necessary documentation.

INSPECTION OF INCOMING UPPER LEATHER

A. The person responsible for accepting the upper leather shall ensure that:
- -- the leather is the correct type,
- -- the leather colour and grain is correct - *against sample*;
- -- the leather footage and grade is correct - *against order*,
- -- the substance falls within the specifications,
- -- the leather complies with the minimum specification as laid down - *refer to specification.*

B. If delivery is satisfactory he shall stamp and initial the delivery note as "accepted" and enter the delivery on the stock record.

C. If the delivery is no acceptable the following procedure must be followed:
- -- put the defective (unacceptable) skins to one side and mark "do not use",
- -- record total and reason on PROC/009/2,
- -- pass completed form on to the administrative director as soon as inspection is complete,
- -- await further instructions,
- -- if to be returned move goods to "hold area".

D. Accepted leather will be assessed before issuing to the clicker

The results will be recorded on WIM/011/5.

Fig. 8

Quality Inspection Point No. 3

A. The examiner shall ensure that:
- -- the number of pairs and sizes matches the work ticket requirements,
- -- the match-marking numbers are correct by pair and size,
- -- the inside stitching is correctly formed,
- -- the under-edge trimming is cleanly cut with no pleats or run-offs or skips,
- -- eyelets, buckles and trims as appropriate are correctly located and secured.

B. If the work is satisfactory the examiner shall initial the appropriate box of the quality inspection point stamp.

C. If any of the uppers are defective the examiner shall carry out the following procedure: *send the damaged upper, together with the re-work ticket QA-17 on which is noted details of the damage, to the repair hand.*

Fig. 9

The next step will now be to ensure the examiners are trained and are aware of the faults to look for. And the procedure for passing or rejecting the work including re-work. This information can be expressed in form of a flowchart as shown in *Fig. 10* and prominently displayed at the inspection point.

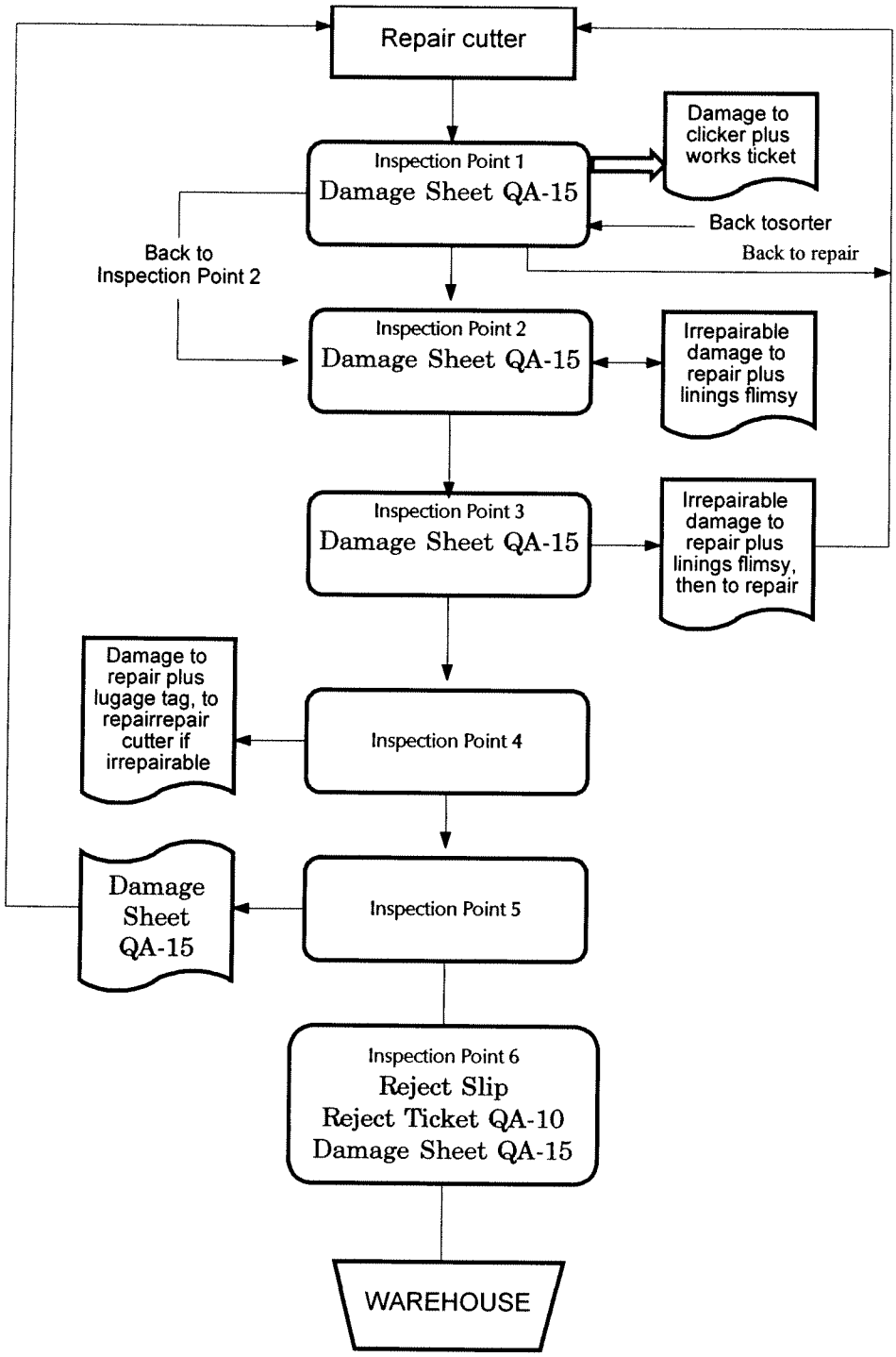

Fig. 10

Last, but not least, the operators quality responsibility must be well defined, discussed and\agreed upon because finally the quality is in their hands.

A typical statement with regards to operators' responsibilities is shown on *Fig. 11.*

Operator's quality responsibility

Each operator is responsible for checking the quality of the previous operation in addition to the quality of the issued materials and/or components. They are also responsible for ensuring that the quality of their work conforms to the company standards.

If any material, component, part finished footwear is considered to be of unacceptable quality the operator shall:

- stop any further work on the suspect item,
- show the suspect item to the relevant supervisor,
- the supervisor shall arrange for the replacement or repair of the rejected item if he agrees with the operator's judgment
- the procedure to be followed is as described in the section on non-conforming work for the appropriate department.

Remember the examiner is a useful information source and helps to ensure that the system is not viewed as being imposed from above.

Fig. 11

10. Final inspection

It would be very unwise to do away with a 100% final inspection. As with any other inspection point the quality requirements should be prominently displayed. An example is given on Fig. 12.

All rejects should be identified in some way that distinguishes them from the good quality shoes. The identifying must remain visible after boxing and further on so that there is no possibility of mixing them up with the regular production.

Reject review

It is very important to second and analyze the causes for rejects so that corrective action can be taken. One method is, to list common causes and to record by means of gate bars. The final inspection technique may include setting aside the day's rejects for the relevant supervisors and the manager to examine.

Reject record

Displaying the reject figures and percentages possibly on bar graph. Such techniques are part of the feedback which is an important aspect of any QA system and is required by ISO.

FINAL INSPECTION SHEET

Quality inspection point 7

Shoe room - *final examining*

A The examiner shall ensure that:

- -- the general appearance is attractive
  - -- colour match
  - -- grain match
  - -- shine
  - -- clean
- -- the linings are clean, not wrinkled
- -- the seats are smooth
- -- the sole edges are clean and undamaged (no excess wax)
- -- the quarters are neatly trimmed and stained where relevant
- -- the binding is not damaged
- -- the tab raws are secure
- -- no wrinkles on vamps and quarters
- -- eyelets, buckles and trims secured
- -- the bottom finish is clean

B If the work is satisfactory the examiner shall stamp the front of the ticket with his/her personal stamp

C If any of the shoes are faulty the examiner shall carry out the following:

- -- minor corrections they will perform themselves
- -- major repairs/corrections will be placed on a re-work rack the supervisor will take the necessary steps for correction
- - total unacceptable shoes will be rejected and recorded on the reject sheet. The quality manager will re-examine and take the final decision and record on document PROC/012/3

D Defects will be recorded on document WIM/009/12

Fig. 12

11. Control of inspection, measuring and test equipment

This point requires that a company should establish a system to ensure that testing and measuring equipment such as gauges, thermostats, taps, rubbers sticks used in the factory are capable of re-producing accurate, consistent, and verifiable results.

The footwear industry should have no problem to summarize; the following steps should be taken into consideration:

- -- decide on the measurements unit and accuracy limits (e.g. upper leather thickness is typically measured to 0.1mm),
- -- list all equipment available, with a description and name of supplier where applicable,
- -- note where the equipment is and who is responsible,
- -- decide on calibration checks,
- -- who should carry out the calibration and at what intervals,

- -- if carried out in-house, establish a procedure, this should be appropriate and traceable back to national standards,
- -- if calibration cannot be done in-house, then an accredited center should be used,
- -- calibration should be recorded.

Inaccurate instruments

A procedure should be established for dealing with inaccurate instruments. For example:

- -- examine last calibration record,
- -- depending on the degree of inaccuracy the management representative may decide on a shorter interval,
- -- check work-in-progress with new or re-calibrated instrument,
- -- check non-conformance material likely to be checked with faulty instrument.

12. Inspection and test status

This can be cross referenced to section 9 when work tickets are stamped with examiners personal stamp or any other identifying work at the various inspection points.

13. Non-conforming goods and/or products

What it basically means is that the company must prevent that materials - components - work in progress or finished footwear is being used or sent to the customer.

a) *raw materials* and *components* could have a "do not use" sticker and be kept in quarantine, this area needs to be clearly identified;

b) *cut pieces/uppers* could be identified by a re-work ticket;

c) *in-progress* shoes after the no-return point;
It may be simplest to let the shoes progress as normal and then final reject at final examining. A sticker or tag may however be used to I indicate that the fault has been detected and noted.

d) *finished shoes:* most companies have a way of positive identification or reject footwear which may include:
   - -- putting a sticker on the rejected shoe also indicating the damage,
   - -- branding or stamping the sole with an "R" or "S".

e) *documentation:*
   - -- clear instruction should be given for re-cuts,
   - -- documentation should provide for highlighting the cause of the fault,
   - -- evidence that the QMS has been followed.

14. Corrective action

The first reason for implementing a quality management system is to improve quality on an ongoing a basis. This can only be done if faults are analyzed and causes corrected. Therefore, corrective action is very important and most shoe factories probably do not take it in a very systematic manner. One must not forget customer complaints are an important element in this review.

A *quality panel* is a very good way to tackle this action under the leadership of the management representative and 3-4 other members according to the size of the company. They should work to a formal agenda, without being bureaucratic *(Fig. 13)*. If the quality management system is well organized all information is already available. The results of the panel discussion should be circulated and publicized.

Table 2

SUMMARY OF REJECTS

To: Managing Director
Cc: Production Director
Production Managers
Foreman

Week ending .....

Department	*Total products*	*Rejects*		*Remark*
		Total	*%*	
Clicking				
Pre-closing				
Closing				
Lasting				
Stuck/Lock				
Welts				
Making				
Finishing				
Assembling				
Other				
Shoe room				
TOTAL				

Quality panel agenda

1. Apologies
2. Discussion on action points from previous meeting
3. Discussion on quality items for previous quarter
   - -- audit report
   - -- customer complaints
   - -- quality action request
   - -- material/components returned
   - -- quality fault sheets
   - -- process control sheet
4. Action point to be agreed
5. Any other business
6. Date of next meeting

Fig 13

15. Handling, storage, packaging and delivery

A straightforward point and should cause little problems. Basically what is required is that material, work in progress and finished shoes are handled and stored to prevent damage:

- describe in progress technique i.e. racks, trolleys conveyors, etc.,
- raw material storage facilities, stock rotation,
- packing the footwear,
- protection during delivery.

If not efficient - correct!

16. Quality records

The requirement is that procedures are established and maintained for identification, collection, indexing, filing and storage. These records are necessary to demonstrate that the quality systems is working efficiently. However, a sense of proportion is necessary in view of the vast amount of paperwork already in use in most shoe factories.

Most of the documentation is already listed on the master list of documents, others may have to be added such as:

- customers orders, which may be signed to indicate that they have been checked and accepted,
- minutes of quality panels,
- purchase orders.

The next step is to decide how long to keep the records - broadly they can be split into two categories daily and system records and this will determine the length of storage.

Daily records - such as:

- inspection, incoming in process and final,
- process control data,
- re-work.

Some of these will be summarized weekly, other such as process control are there as record of action taken. These records should not need to be kept longer than the period between review.

System records will include:

- management review meeting minutes,
- quality panel minutes,
- internal and external audit reports,
- corrective action,
- customer complaints,
- suppliers rating,
- calibration data,
- data analysis,
- training records.

These records should be kept longer, not less than two years.

Most companies are accustomed to keeping records for a much longer period, training records should be kept for as long as a person is employed. Whenever possible all records should be kept on file in a central location, if not possible a cross-reference should be maintained.

17. Internal quality audit

This may be a cause for concern as most companies are not familiar with such a procedure. Basically it is a checking system to ensure that the procedures described in the manual are being followed. It is not necessary to determine why a procedure has not been followed during the audit, solution can follow later.

Auditors:
Auditing can be done by own staff, training can be organized by management representative, ensure that an auditor does not audit his/her department.

Frequency:
Every part of the quality system should be audited at least once a year. It is permissible to c carry out an annual audit of the whole system, it may however be more convenient to carry several part audits during the year. The management representative is responsible for the organization.

Table 3

Quality audit schedule

		January				February				March				
	Week:	1	2	3	4	5	6	7	8	9	10	11	12	etc.
4.1	Management responsibility													
4.2	Quality system													
4.3	Contract review													
4.4	Document control													
4.5	Purchasing													
4.6	Product identification and traceability													
4.7	Process control													
4.8	Inspection and testing													
4.9	Control of inspection measuring and test equipment													
4.10	Inspection and test status													
4.11	Control of non-conforming product													
4.12	Corrective action													
4.13	Handling storage packing and delivery													
4.14	Quality records													
4.15	Internal quality audits													
4.17	Training													

Carrying out an internal audit:
The auditor has to establish what should happen according to the manual; and then find out what happens in practice and record his finding. The classic manner is:

-- observe the procedure being carried out,
-- asking questions,
-- looking at a sample of the relevant records.

No quality system is prefect, certainly not at the early stages, so non-conformance must be expected.

Audit report:
Most auditors find it helpful to have a list of prepared questions on each clause of the system to ensure that each aspect is properly investigated. If a discrepancy is identified it should be noted on the audit report (*Table 4*) and cross-referenced to a corrective action request. This latter document is then handed to management representative together with the audit report for further action

Table 4

Corrective action required

No.: From: Department: To: Responsible person:	Date: Ticket No.: Pairs:
Fault/Finding: *Signed:*	
Cause:	
Corrective and preventive action: Date: *Signed:*	
Finding cleared date: *Signed (QM):* ..... Cost estimate:	

18. Training

The training clause requires that the company shall identify training needs and provide training for all activities affecting quality. How training is done is entirely up to the company. A record must be kept, the form is also entirely up to the company -- a computer based system is an alternative. A statement similar to one given in *Fig. 14* would be sufficient as a system outline.

The company employs experienced and highly skilled technician, supervisors and production operators. New and existing staff lacking an appropriate skill, will be trained, according to one of the following m methods or a combination of them where appropriate:

- in-house,
- outside consultants,
- technical college,
- distant learning - correspondence,
- release courses.

Fig. 14

19. Statistical techniques

Where statistics can make a positive contribution to the quality, then they should be used, it is however not mandatory. A statement to the effect may be made:

"The company shall use selected statistical techniques as and when they are appropriate"

The use of sample graphs to indicate quality records are acceptable and then a procedure should be written and incorporated.

V. How to go about it

1. A change of attitude is definitely needed

If convincing is needed, try to cost the present system of inspection routines and compare what the changeover to a quality management will cost.

Whatever the outcome, in order to improve the present position or even to maintain it, one will have to move away from current attitudes towards quality control and take up the managed approached within total quality management if one wants to survive the 90's.

2. To good news

Most companies have a large number of components of ISO 9000 already in place, they are not necessarily right, but sitting there waiting to be organized extended and improved upon and incorporated within the framework provided by ISO 9000.

3. Getting started

The first task is the document that exists in the company bearing in mind the requirements. This may be a straight forward task but nevertheless time consuming, and the help from an outside consultant would be helpful and cost effective.

Knowing now what the gaps are the company can put new procedure in place or better the one in use, and prepare a set of policy statements on how each part will be implemented.

As many people as possible should be involved, who are knowledgeable about how a procedure is carried out than just one person doing it. Obviously there is preparatory work to be done before the person's in question is asked to provide this information. One would obviously expect management to give adequate briefing on their intentions, if they do not, then they are getting off to a very bad start.

4. Process of assessment

In order to become a registered company ISO 9000 the company must be successfully assessed by an independent certification body.

5. Consultant

It is strongly advisably that and outside consultant be involved for the following reasons:

- -- an objective view of the company's quality system and future requirements is needed,
- -- somebody who is conversant with the ISO 9000 otherwise too much time will be lost in training somebody from inside,
- -- experience is brought in,
- -- must have knowledge of the industry, otherwise interpretation of the requirements will be difficult.