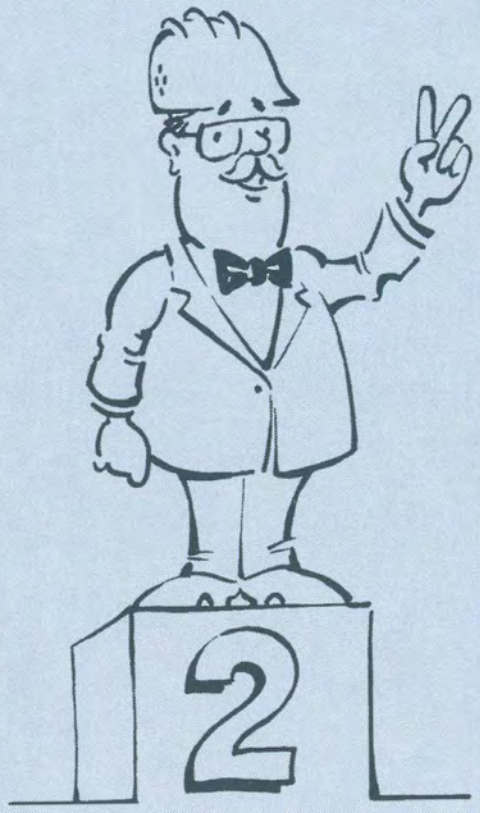
ISSA Prevention Series No. 2008 (E)

Ways to greater safety
Part 2

ISSA AISS IVSS

Safety audits



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The INTERNATIONAL SOCIAL SECURITY ASSOCIATION (ISSA)

has more than 300 members (governmental bodies and institutions) in over 120 countries, of which half are active in the field of work safety. The ISSA has its headquarters at the International Labour Office in Geneva. Its primary objective is to promote and extend SOCIAL SECURITY through-out the world.

It was with the objective of intensifying work safety in factories and plants of the chemical industry, including the plastics, explosives, crude-oil and rubber industries, that the

INTERNATIONAL SECTION OF THE ISSA FOR THE PREVENTION OF OCCUPATIONAL RISKS IN THE CHEMICAL INDUSTRY

was formed in 1970. Its chair and secretariat are located at the Berufsgenossenschaft der chemischen Industrie (Employment Accident Insurance Fund for the Chemical Industry) D-69115 Heidelberg

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Note:

A list of the publications issued by the ISSA Chemistry Section can be found at the end of this brochure.

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Preface

If commitment to increased safety has yielded results and has had a positive effect on your business as a whole, it is worthwhile asking whether further systematic safety work can lead to even greater success.

Safety audits have proven to be a successful method of systematic safety work and can be used to further enhance the safety of

- the workforce
- the installations and plant
- the environment
- the neighbourhood.

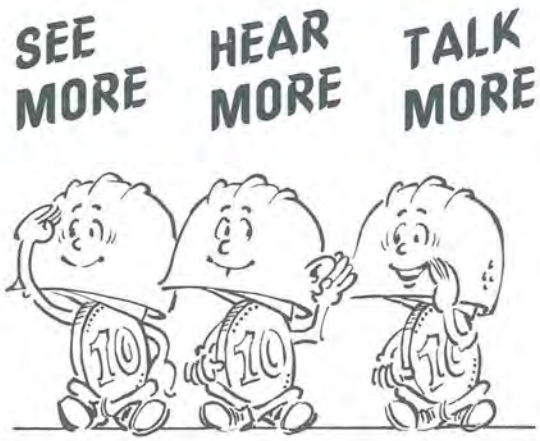
You will already have learnt from part 1 of the series "Ways to greater safety" that efforts to improve safety can also have beneficial effects on other areas of your business.

Part 2 is intended to stimulate your appreciation of safety audits, to highlight their benefits, to show how they are conducted and to explain that they can also bring rewards to medium-sized and smaller businesses.

Lauer
Chairman of the Board
of the Chemistry Section

Introduction

You will know by now that good safety means good business.



It is now important in all sectors of your business

- to see more
- to hear more
- to talk to each other more
- to develop more jointly
- to agree more jointly

or, phrased in simpler terms,

to achieve still greater successes through systematic safety work!

Safety audits bring you a giant leap closer to this goal.

What is a safety audit?

An audit in the business world is an investigation into the standing of a business, an enterprise or part of an enterprise. The result of the audit is documented.

The safety audit is a special kind of audit. Experience gathered by managerial staff and safety experts during tours of the plant, inspections, checks, training or similar activities is collected together and moulded into a safety audit.

Results:

- Weaknesses are brought to light
- Safety work is improved
- Other sectors also benefit
- Improved financial results

Safety audits are also useful in creating a "safety culture". A safety culture is a work environment in which safety is viewed and practiced as the joint responsibility of management and workforce:

- Prejudices against safety work are broken down in instances where the workforce has previously associated it with checks, inspections, increased workloads or simply a source of irritation
- The "team spirit" is advanced along with the common goal to improve safety in all sectors.

Consequently, a safety audit embraces more than merely the totality of all existing safety activities.

An example will help illustrate this point:

Vehicle inspections

Former procedure:

- Technical inspection based on mileage or time on the road

A safety audit also includes:

- Analysing the application conditions such as
  - suitability of design
  - suitable loading and unloading capabilities
  - easy control
- Requirements on personnel such as
  - suitability
  - experience
  - training and instruction
- Behaviour of personnel such as
  - working with the vehicle
  - complying with specifications

This simple example shows that a safety audit not only produces a technically faultless vehicle but

also provides information on safety organisation and on the safety behaviour of the driver.

It also supplies information on how to improve cost effectiveness, e.g. by

- adapting the vehicle to the given requirements
- organising the vehicle park
- optimum selection and use of personnel

If the information or proposals provided by the auditor are also followed up by deeds, this enhances not only safety but also the technology and organisation of the plant as a whole. The safety culture is also strengthened by the fact that e.g.

- production and vehicle park cooperate more closely
- organisation becomes more transparent in all sectors (e.g utilisation levels, weak points)
- the relationship between safety, organisation, quality and cost effectiveness becomes more apparent
- confidence in the performance of the vehicle park grows

The first step: a tour of the plant

There are many different ways in which to check a system. Safety audits are one of the most comprehensive.

Safety audits can be targeted at e.g.

- management
- organisation
- working procedures
- workplaces
- plant/processes
- environment

However, only the follow-up measures will actually yield success.

A safety audit must be well prepared. Do not take fright, however:

The first steps of the safety audit simply involve going into the plant, looking around, noticing and recording. Whether you do this as part of a regular inspection or as a specific tour of the plant is irrelevant. The only important thing is that you actually make a start.

Once you have gained your initial impressions, your goals will become more specific and your knowledge more detailed.

Time/reason

The type of plant inspection depends on the reason behind it and on your objective. It can be performed:

- either with or without being announced
- at regular intervals, e.g. monthly, or irregularly
- on a systematic or random basis, e.g. by drawing lots

- for special reasons, e.g.
  - installing new plant
  - commissioning new plant
  - conversion work, large-scale repairs or servicing

The reason behind a inspection and its objectives also determine whether and to what extent persons in charge are informed of planned tours of inspection:

- Where inspections are not announced, you can expect to see the plant in its true colours. The success of the inspection will be lessened, however, if the person responsible on site has little or no time at his disposal. It can also produce a feeling of disapproval or distrust in the auditor.
- Announced inspections on the other hand can lead to an artificial impression being created in the plant. In frequent cases, the plant will be given a thorough overhaul before the inspection and any obvious shortcomings remedied. Managerial staff and employees nevertheless feel themselves more of a team if the announcement is made in advance and do not feel so "overwhelmed".

The duty of the managerial staff to ensure safety in their fields of responsibility cannot be achieved by plant inspections alone, however.

Participants

The participation of the employer or a leading managerial figure in the inspections adds weight to the importance attached to work safety in the company. Plant managers, foremen and safety officers must also be involved.

Safety experts and company doctors are obliged to take part in tours of inspection. The works council (employees' representatives) must also be given the opportunity to participate.

Implementation

The participants of the inspection are informed of its content and primary objectives before it commences. Initial inspections will often provide no more than a general overall impression. As time progresses, individual points will assume more and more importance.

The key points of the inspection may involve:

- Site conditions
  - Is the plant clean and tidy?
  - Are all routes and escape routes marked and kept clear?
  - Is emergency equipment available (e.g. escape and rescue equipment, first aid equipment)?
- Machines, plant and installations
  - Is operating equipment appropriate and in good working order?
  - Is safety equipment provided? Is it suitable and does it function correctly?
  - Are the prescribed safety notices available and fitted correctly?

- Dangerous materials
  - Are warning notices correct and unambiguous?
  - Are dangerous materials stored correctly?
- Behaviour of the workforce
  - Are tools, aids, safety equipment and means of transportation being used correctly?
  - Is suitable clothing being worn?
  - Is the prescribed personal safety equipment being used?

Evaluation

The responsible member of staff maintains a log which details e.g.

- risks and inadequate attention to safety
- required safety measures
- deadlines for performing these measures
- the persons responsible for ensuring these measures are performed

The log helps the plant managers, works council (employees' representatives), company doctor and safety officers to monitor the execution and effectiveness of the agreed measures. Forms are best used for documenting plant inspections.

The principles of safety audits

Plant inspections provide the basis of all safety work conducted in the plant and are practiced in enterprises both large and small. If the information obtained is insufficient because it is neither detailed nor comprehensive enough, the inspection must be extended into a security audit. This may be necessary, for example, if activities or operating sequences extend over long periods or take place in stages at different locations.

Comparisons of the actual and optimum situations are employed to

- identify and assess shortcomings in safety
- propose improvements
- indicate ways in which such improvements can be implemented

Auditors ascertain whether a plant or section of a plant meets the required standards in terms of safety, environmental protection and reliability.

You can make your plant safer and thereby more successful if you identify yourself with this task and show that you view it as a key means to success.

Time, reason

Safety audits can be performed regularly at defined intervals or as and when special needs dictate. Such instances may include:

- Excessively high accident levels
- Increased insurance premiums
- Sickness levels too high
- Changes in the law
- Changes in the production sequence
- Introduction of new dangerous substances

Everyday operating problems or identified shortcomings in safety can also prompt a safety audit, e.g.:

- Personal safety equipment is not being worn
- Existing protective footwear leads to complaints
- Routes are not being kept clear
- Operating malfunctions have dangerous consequences

Even the desire to enhance safety in general can prompt a safety audit.

In practice, a good way of gathering experience is to start with smaller audits of limited duration and then to switch over gradually to more extensive audits.

The right time to start your first audit is NOW!

Participants

Once the decision has been made to conduct a safety audit, the key question to be answered is "who will be the auditor and/or who has the skills to make a good auditor?".

The choice will depend on the objective, scope and orientation of the safety audit. The first simple audits of limited duration will generally be performed by managers from your own plant who possess the technical expertise required. Increasingly independent auditors will be needed, however, as the audit becomes larger and the tasks involved become more demanding. Safety audits which also extend to managerial staff can only be performed by very experienced experts who are entirely independent of management.

It may be necessary to employ a team of auditors if the task is very complex or extensive or if time is at a premium. In some instances, experts from various fields will need to be employed. A team should not consist of more than five persons, however.

What qualities should an auditor possess?

- Competence
  - Expert knowledge
  - Managerial skills
  - Experience in safety matters

- Personal qualities
  - Objectivity
  - Sociability
  - Empathy
  - Understanding
  - Patience
- Independence
  - Equivalent status
  - Liberty to make decisions
  - Freedom of action

Auditors must possess the necessary managerial experience. This also means that every good manager has the potential to become an auditor. And just as managers develop in line with the tasks entrusted to them, the auditor too will

- gather experience from each task he undertakes
- deepen his own knowledge
- involve other members of the workforce in safety matters
- use his safety audits to benefit the entire enterprise in all its facets - not just safety aspects

Make your best staff into auditors and success is yours!

Preparations

The following factors must be defined as precisely as possible when preparing the safety audit:

- Area of investigation
- Objective
- Type of audit
- Duration
- Auditor (team)

It is particularly important for you in your role as employer to identify yourself with the safety audit and to make quite clear that you are convinced of its success! This is the key part of your work. All other tasks must be initiated, implemented and resolved by the auditor or auditor team. You will, however, be required to take an active part again when it comes to implementing the auditor's recommendations.

The time required for safety audits can differ quite considerably and can range from a few hours to several days. In any event, it is essential to define the scope and objectives of each audit very carefully. Simple audits can often be defined verbally. More extensive studies should always be set out in an audit schedule.

A wide range of information and documentation is required for preparing a safety audit. The auditor or auditor team must decide which information and documents need to be provided. Here, too, the type and scope of the audit will depend on its objective and the experience of the auditor team.

The following may be important, for example:

- Waste disposal facilities
- Details of raw materials and consumables
- Number of employees and their training
- Production plans
- Inspection and maintenance schedules
- Site plans
- Organisational charts, number of employees per shift
- Piping and instrumentation plans
- Accident figures
- Descriptions of processes

Not all documents will be needed for all tasks. As the tasks grow in scope and the experience of the auditors increases, the information required will become more and more specific. The following sample letter to a works manager shows just how one experienced official requests "pre-audit information" for a management audit:

Dear Sir,

The following information is required for preparing the planned management safety audit. Please provide us with the following data and documents within the next two weeks:

1. Name of a responsible contact person for preparation and organisation of the audit.
2. Details of the various production units with names of the plant managers responsible for these.
3. Number of employees employed by the enterprise, subdivided into salaried staff, workers, casual workers, employees of other companies.
4. Details about the organisational structure of the enterprise and the individual production units, illustrated with the aid of organisational charts.
5. Compilation of all internal documents relating to work safety, e.g.:

- Work-safety programmes, specifications and regulations, circulars, instructions for using dangerous materials, safety data sheets
- Details of internal and external training activities
- Details of occupational medical examinations
- Documentation of instruction and training given to employees
- Documentation of internal inspection plan
- Servicing documents for fire-extinguishing equipment
- Alarm and loss-prevention plans for the individual production units
- General plans of the various production units
- Detailed plans of safety equipment
- Safety competitions

6. Details of the type and number of vehicles, trailers and construction machines owned by the enterprise
7. Statistics about accidents with and without failure times (including accidents requiring first aid) for the last five years together with details of causes, the background of each individual case, key sources of accidents and the counter-measures introduced
8. Detailed information about the personal safety equipment available to the workforce together with details of the regulations regarding the wearing of such
9. Details of other, general safety equipment available in the enterprise
10. Details of the number of people able to provide first aid, details of refresher courses and first aid equipment
11. Details of the number of safety experts and safety officers
12. Organisation manual or descriptions of the duties of the various members of the workforce

All the information gathered must be carefully checked and evaluated. Results and unresolved points can be compiled into check-lists. Test documents which are already available must be corrected and/or augmented. Lists of this kind facilitate the initial stages of the audit.

The check-lists will not always be equally comprehensive but, as the auditor's experience grows, will become steadily better.

The success of the audit depends very heavily on the check points being defined as precisely as possible (see "Examples", page 40).

Many institutions dealing with safety matters provide standard check-lists for different applications. If the lists cannot be used directly, they can at least be used as a basis for creating "customised" audit lists. It is therefore always worthwhile obtaining the advice of such institutions and requesting the relevant documents.

Safety audits must instil confidence and help promote the corporate image. A climate of openness is the prime necessity - even with small audits. Managerial staff, employees and works council (employees' representatives) must be notified fully and in good time as to the content, scope and objective of each audit. Management must call upon all employees to support the audit and help ensure its success. A safety audit is nothing secretive and therefore must create no impression of being so. After all, only a well informed workforce can identify with the goals of the audit and understand its benefits.

Implementation

A safety audit will often begin with a tour of the plant to provide the auditor with an opportunity to familiarise himself with the equipment and contact persons. The prepared check-lists provide a good basis for informed discussions and also help identify the strengths and weaknesses of the enterprise. Discussions of this type produce a flow of information which is often illuminating for the persons involved.

They may also highlight the need to conduct separate audits for certain plant equipment or areas of operation.

The auditors must always observe the following rules:

- Choose times when work activity is particularly intense, e.g.
  - high workloads
  - changes of shift
  - night shifts
  - troubleshooting periods
  - maintenance periods
- Collect facts
- React to supplied information, possibly dealing with it on the spot
- Corroborate supplied information or comments by facts
- Monitor sequences
- Endeavour to be objective
- Avoid criticism and justifications
- Provide time for discussion
- Note equipment, behaviour and attitude of employees

The following list of questions may be useful for assessment purposes:

- Are the prescribed safety measures adequate and appropriate? Are they such that employees are neither hindered nor impaired unnecessarily?
- Has everything necessary been done to ensure routes are kept clear and material flows optimised?
- Are the various areas of responsibility clearly defined and does proper coordination exist between them?

- Are suggestions by employees to improve work safety taken into consideration?
- Are operating instructions complete, adequate and easy to understand?
- Do employees possess the necessary know-how and experience?
- Are employees being asked to do too much / too little?
- Have any dangerous habits formed?
- Do superiors correct dangerous behaviour?
- Has the procedure in the event of malfunctions been defined and practiced?
- Does cooperation within the enterprise function effectively?
- Are employees' private problems taken into regard?

Safety audits are designed to highlight weaknesses in the enterprise. They are not intended to apportion blame. All conversations must be objective and never accusing. Audits must also locate the strengths of the plant and indicate ways to enhance these still further.

Selecting your auditors from your best staff will enable you to improve the "safety culture" of your enterprise through efficient and objective safety audits. What is more, all other operating parameters will be enhanced at the same time.

The success you achieve will be even greater if all managerial staff cooperate constructively with the auditors.

Evaluation

The actual safety scenario in the plant must be recorded and the results compared with the relevant safety regulations and/or in-house safety requirements. Positive findings must be emphasised just as much as any shortcomings which have been identified.

Proposals for improvements must be formulated by the team jointly and are to be agreed with the managerial staff concerned. The recommendations should preferably be supported by everyone. Solutions, recommendations and suggestions for improvements are set out in an audit report which must contain, in particular:

- Positive impressions and findings
- List of identified shortcomings
- Any corrective measures required
- List of priorities and immediate action
- List of points where no agreement could be reached
- Statements concerning any views not held jointly

Measures

An audit would not be worth the effort involved if the report were merely filed away in a drawer and forgotten.

Every effort must therefore be made to check that its recommendations are implemented. After the audit report has been submitted, a plan must be drawn up for implementing the recommendations. This plan also provides a simple check of whether recommendations have been put into action. Where recommendations have not been followed, the reason for this must be stated. If solutions other than those recommended have been adopted, the reasons for this must be stated. This must take the written form in larger plants. The following printed form provides an example of how the implementation of agreed measures can be checked very simply at regular intervals, e.g. every six months:

Safety audit at					
Section					
Auditors					
Deficiency	Action	Section responsible	Dead-line	Com-pleted	Comments

This check will be conducted no later than the next audit. This also adds to the store of knowledge and ensures the continued success of the work.

Safety audits are the answer for you, too, if you want to be even better. Your motto must be:

The practical side of safety audits

While there are many different kinds of safety audit, the preparation, implementation and follow-up are always similar.

The person in charge first defines the scope and goals of the safety audit. Just how thoroughly an audit illuminates the chosen area and adjacent fields and how successful the audit turns out to be will depend on the experience and expertise of the auditors concerned. The scope and goals of the audit may need to be modified in this regard.

As stated earlier, the decision to perform a safety audit is often based on special activities or events in the plant since these allow weaknesses to be identified with greater ease. They may include:

- Changes to workflows
- Changes to processes
- Repairs
- Changes to personal safety equipment
- Observations made during plant inspections
- Events involving damage
- Accidents

The reason for the audit often shapes the type of safety audit conducted. Depending on the objective, the audit will be known as e.g.

- technology audit
- process audit
- organisation/management audit

An accident, for example, can trigger a technology audit or equally well an organisation/management audit.

The benefits of safety audits can be utilised at any time. Safety audits should therefore be conducted on a regular basis - even if no specific reason exists.

Technology audit

Safety audit from the "Technology" aspect

The fact that the operation of technical equipment can always give rise to dangerous situations means that safety audits often commence in the technical sector. Technology audits can relate to e.g.

- Transportation vehicles (e.g. industrial truck)
- Technical equipment (e.g. packaging machine)
- Sections of the plant (e.g. filling department)
- Entire plant (e.g. paint factory)

Technology audits can be conducted during the planning stage, prior to commissioning or while an installation is in operation.

The audit can cover such questions as e.g.

- Are specifications and company standards observed when planning installations?
- Have changes to the installation been included in the planning documentation?
- Do the planning documents (building plans, design and installation drawings) correspond to the realities of the plant?
- Are workplaces of ergonomic design?

- Do installations conform with planning documents and specifications?
- Is the safety equipment used for the installation fully operational?
- Does the installation comply with specifications and company standards?
- Have technical shortcomings led to accidents?

Technology audits can be conducted by specialist engineers, managerial staff or safety engineers - these working either alone or in a team. The following list shows the sections which could constitute the object of an audit:

- Machinery
- Electrical installations and equipment
- Fire-protective installations
- Scaffolding
- Hoists and material handling equipment
- High-pressure cleaning systems
- Emergency showers
- Personal safety equipment
- Transportation systems
- Workshops

However, technology audits not only examine the technical aspects of the selected section or equipment, but also extend to encompass the widest possible range of associated factors. For example:

- Preventive occupational medical care
- Work permit procedures
- Operating instructions
- Adherence to test schedules
- First aid equipment
- Inspection programmes
- Noise protection measures
- Good order and cleanliness
- Condition of plant and equipment
- Training and instruction of employees
- Preventive fire protection
- Servicing and testing intervals

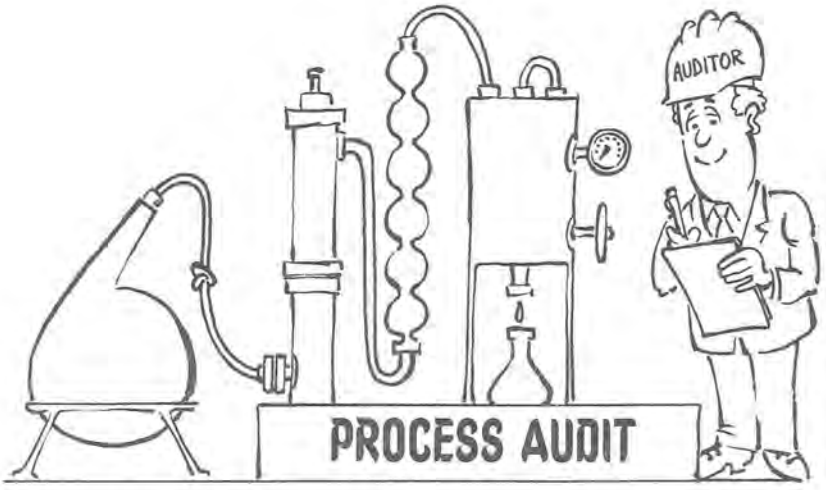
The auditors will decide during the course of the audit which other areas should be examined.

Process audit

Safety audit from the "Process" aspect

Process audits deal essentially with the functional and process safety of a complete plant or parts of a plant. Process audits can be conducted:

- During plant planning phases
- When operational or process changes are made
- On a routine basis
- Where special circumstances demand



The purpose of process audits is to detect, in particular, the effect which changes or errors have on processes, e.g.:

- Deviation from limit values
- Unwanted reactions
- Unwanted environmental effects
- Changes in quality

Process audits are conducted by teams made up of process and safety engineers, other specialist engineers and managerial staff.

Tests can encompass specific individual areas such as:

- Effluent systems
- Startup and shutdown regulations
- Operating instructions
- Waste disposal systems
- Flare systems
- Flow diagrams
- Gas measuring systems
- Communications systems
- Emergency blowdown systems
- Furnace operating characteristics

- Software reliability
- Process descriptions

Process audits are not restricted to the process itself. Other areas which are touched upon during the course of the process audit are also included e.g.

- Standard of personnel training
- Cleaning procedures
- Elimination of faults

The steps required for preparation, implementation and evaluation have already been discussed above and are the same for all types of audit.

Organisation/management audit

Safety audit from the "Organisation/management" aspect

An organisation/management audit examines the managerial qualities of superiors, the organisation of safety matters and the efficiency of safety work.

Organisation/management audits can be performed:

- At regular intervals (e.g. every five years)
- Where special needs dictate

Audits of this kind also provide information on:

- Safety awareness of management
- Formulation and implementation of safety work
- Status and quality of safety documents and documentation

Such audits cannot of course replace the day-to-day safety work of management.

Organisation audits generally begin with an examination of specific aspects such as:

- Application of safety regulations
- Work permit procedures
- Occupational medical care
- Training
- Operating instructions
- Alarm and loss-prevention plans
- Implementation and documentation of tests and checks
- Audits conducted
- Use of outside firms
- Use of personal safety equipment
- Flow of information and communication
- Maintenance programmes
- Good order and cleanliness

- Safety philosophy and objectives
- Accident studies
- Handling dangerous materials
- Traffic safety

Many other problems deriving from or relating to these areas are also discussed and resolved, e.g.:

- Fire protection policy
- Waste disposal programme
- Use of dangerous materials
- Noise reduction programme
- Environmental protection policy

The task of investigating specific areas is the responsibility of the managerial staff concerned (e.g. plant manager, shop foreman), safety experts or the relevant specialists. The works council (employees' representatives), safety officers and the workforce are to be involved depending on the task in question.

Concurrent studies into several specific areas which involve the top managerial levels are often termed management audits.

Management audits are particularly important for work safety since:

- They reveal the willingness of the managerial staff to improve safety standards
- They indicate that managerial staff are ready to set an example for others and have their own safety work subjected to critical analysis
- They help reinforce the involvement of top level managerial staff in safety work

Only independent auditors with appropriate qualifications should be employed for performing management audits:

If management

- is willing to talk about safety
- is convinced that the time required for safety matters is used to good effect
- is well prepared for the audit
- sees the auditor as a partner
- analyses the knowledge obtained from the audit
- introduces the agreed measures
- monitors the implementation of measures

an organisation/management audit can be the start of the road to success. What is important is that the first steps be taken along this road. The path it takes may differ very considerably - but it will always lead to the final goal.

Examples

As time progresses, experience gathered from earlier audits will be re-invested and built upon. This experience will also find its way into the make-up of check-lists. The following examples illustrate just how specific and comprehensive check-lists can become. These examples are so extensive that they can easily be adapted to actual requirements, i.e. they can be

- shortened
- modified
- applied in part
- adapted to other types of problem

"Protective footwear" audit

Personal safety equipment must always be provided by the employer and used by the employee if a risk of injury or a risk to the employee's health cannot be excluded by technical and other measures. The degree to which the prescribed personal safety equipment is used is also a measure of the "safety culture" which exists in the plant.

Consequently, safety audits should be used to determine the degree to which personal safety equipment in general or specific equipment in particular is used. Such audits constitute a mixture of technology audits and organisation audits.

Reason

Foot injuries were a common occurrence in one particular plant in question and levels were well above the average for comparable enterprises. Protective boots had been made available to the workforce but it was discovered that few people actually wore them. Even those who did wear them often did so reluctantly.

Participants

The employer requested a safety engineer to perform a safety audit in collaboration with the relevant plant manager and the works council (employees' representatives).

Preparation

In order to determine the possible causes, the whole issue of "protective footwear" was examined from the following aspects:

- Field of activity/place of work
- Obligation to wear protective footwear
- Ratio of workers actually wearing protective footwear
- Selection criteria
- Comfort
- Motivation
- Example set by superiors
- Safety awareness of workforce
- Satisfaction

A number of fundamental questions were also examined:

- What regulations apply within the plant for wearing protective footwear?

- Is protective footwear provided by the enterprise?
- How is it chosen?
- How are workers obliged to wear protective footwear?
- How do the workers see the situation?

Following extensive discussions, these questions resulted in the following check-list which served as the basis for the protective footwear audit:

Check-list 1
Protective footwear audit

Enterprise: **Date:**

Please answer the following questions conscientiously with either Yes or No. Add comments where you wish.

No.	A. Questions to management	Yes	No	Comments
A. 1.01	Has the type of protective footwear which must be worn been defined precisely?			
A. 1.02	Does the obligation to wear protective footwear extend to all areas of the enterprise without restriction?			
A. 1.03	Are there any reasons to restrict the obligation to wear protective footwear?			
A. 1.04	Are there areas where special protective footwear is required?			
A. 1.05	Is the wearing of protective footwear regulated by a plant directive?			
A. 1.06	Are workers employed for whom special regulations exist?			
A. 1.07	Are any regulations in place concerning orthopedic protective footwear?			
A. 1.08	Are there any notices reminding workers of the need to wear protective footwear?			
A. 1.09	Have there been any foot injuries in your section over the last three years?			
A. 1.10	– despite protective footwear being worn?			
A. 1.11	– because protective footwear was not worn?			
A. 1.12	– because the protective footwear worn was inappropriate?			
A. 1.13	– because protective footwear was defective or worn out			
A. 1.14	Is the protective footwear suitable for the given section or activity?			
A. 1.15	Do all workers wear protective footwear as a matter of course?			
A. 1.16	Do all superiors adhere to this ruling even if they are in the production units only briefly?			
A. 1.17	Has a person been appointed to ensure these regulations are obeyed?			
A. 1.18	Do superiors address the subject of protective footwear when giving safety instructions?			
A. 1.19	Are any measures adopted if workers give good reasons why protective footwear is not worn?			
A. 1.20	Do disciplinary measures exist if regulations are not observed?			
A. 1.21	Have there been instances of such cases?			

No.	A. Questions to management	Yes	No	Comments
A. 1.22	Is the number of such cases from the last three years known?			
A. 1.23	Are new employees told of the obligation to wear protective footwear?			
A. 1.24	Do these employees receive protective footwear when they begin work?			
A. 1.25	Are part-time employees also covered by this regulation?			
A. 1.26	Is protective footwear which has only been worn briefly reused?			
A. 1.27	If yes, are any hygienic precautions taken?			
A. 1.28	Is stocking of protective footwear managed effectively in economic terms?			
A. 1.29	Is protective footwear available at all times?			
A. 1.30	Have there been any problems with obtaining new supplies over the last two years?			
A. 1.31	Are the reasons for this known?			
A. 1.32	Are there any regulations governing the length of time protective footwear is worn?			
A. 1.33	Do you know the cost of the protective footwear used in your section?			
A. 1.34	Do you know how these costs have changed over recent years?			
A. 1.35	Have you checked whether the costs can be cut by an appropriate choice of protective footwear?			
A. 1.36	Do employees make any contribution to costs?			
A. 1.37	Is the footwear given antimicrobial treatment?			
A. 1.38	Are employees provided with any products for caring for the protective footwear?			
A. 1.39	Do any rules exist governing contaminated footwear?			
A. 1.40	Is protective footwear available in different widths?			
A. 1.41	Does every employee know where they can have their foot measurements checked?			
A. 1.42	Does an internal committee exist to deal with questions relating to the choice of protective footwear?			
A. 1.43	Are the members of this committee chosen wisely?			
	What criteria are important for selecting protective footwear?			
A. 1.44	- Protective effect?			
A. 1.45	- Comfort?			
A. 1.46	- Weight?			
A. 1.47	- Long life?			

No.	A. Questions to management	Yes	No	Comments
A. 1.48	– Appearance, style, colour?			
A. 1.49	– Areas of use?			
A. 1.50	– Conformity to standards?			
A. 1.51	– Repair, cleaning?			
A. 1.52	– Storage, price?			
A. 1.53	Are you familiar with the information sheet dealing with protective footwear?			
A. 1.54	Are the decisions of the committee binding?			
A. 1.55	When protective footwear is selected, is it tested for suitability (wear test)?			
A. 1.56	Is this test combined with a check-list *(criteria relating to wearing of protective footwear)*			
A. 1.57	Have the results of this test had any consequences?			
A. 1.58	Do you have any examples of this?			
A. 1.59	When orders are awarded to outside companies are they told of the obligation to wear protective footwear?			
A. 1.60	Is anyone responsible for informing persons from outside the company *(incl. superiors)* of the need to wear protective footwear?			

No.	B. Questions to employees	Yes	No	Comments
B. 1.01	Are you aware of the obligation to wear protective footwear?			
B. 1.02	Do you wear protective footwear regularly?			
B. 1.03	Are there exceptions?			
B. 1.04	Do all employees observe this obligation?			
B. 1.05	Do your superiors set a good example in this regard?			
B. 1.06	Do you make others aware if they are disregarding this regulation?			
B. 1.07	Can any consequences be expected if protective footwear is not worn?			
B. 1.08	Does your protective footwear fit well?			
B. 1.09	Is the protective footwear of appropriate weight?			
B. 1.10	Are there any problems *(pressure points, sore feet, discomfort)*?			
B. 1.11	Can you talk with your superior about these problems?			
B. 1.12	Does the superior help find solutions?			
B. 1.13	Do you consider the stock of protective footwear to be adequate?			
B. 1.14	Have there been difficulties in obtaining protective footwear at any time?			
B. 1.15	Does the company lay down a minimum period of wear for protective footwear?			
B. 1.16	Have you ever taken part in a test to try out protective footwear?			
B. 1.17	Are any care products provided for looking after protective footwear?			
B. 1.18	Do you care for your protective footwear regularly?			

All answers in the check-list which indicate shortcomings need to be followed up. Use the following table to compile a list of measures in the same order as the check-list in order to eliminate identified inadequacies. Do not forget to set deadlines for these.

No.	**C. Measures**	Section Responsible	Deadline	Com-pleted	Comments

For information purposes, the plants were provided with part A of the check-list "Questions to management" four weeks prior to the date set for the audit. The employer asked the managerial staff responsible to examine the various questions, to prepare answers and to have the necessary documents at hand.

Implementation

The team of auditors used an unannounced tour of the plant to gain an initial impression of the extent to which employees and managerial staff wore protective footwear. The team then conducted the audit at the appointed date. The "Questions to management" were discussed in group session. Individual discussions were employed to ask employees about the questions in part B of the check-list. The team compiled the results and agreed their written recommendations.

Measures

The following measures were adopted from the recommendations set forth in the protective footwear audit:

- Drafting of a plant directive on the wearing of protective footwear which was given binding force

Important aspects dealt with include:

- Definition of the areas where protective footwear has to be worn
- Definition of the types of protective footwear to be worn in each zone
- Measures to be taken when protective footwear is not worn

- Inclusion of all superiors in the regulation governing the need to wear protective footwear
- Definition of criteria for the selection and adaption of protective footwear
- Inclusion of the subject of "protective footwear" in all safety talks for a period of one year in order to ensure that all criticism can be heard
- Clarification of the supervisory obligations of all superiors
- Decision to conduct a follow-up audit after one year.

All in all, the very announcement of the safety audit was found to trigger an increase in discussions about safety, the importance of personal safety equipment and the advantages and disadvantages of protective footwear. This trend was reinforced while the audit was in progress. Today, the enterprise is very pleased with the results, but things could be even better. The activities which have been started must therefore be continued.

"Filling station" audit

A filling station is a self-contained business which stores and transfers large quantities of dangerous materials and employs a variety of technical equipment. As each one of us will be familiar with a filling station, it will be easy for us to understand the following questions which have been compiled to

check the safety measures in place at such an enterprise. They can be adapted to other businesses if need be.

Reason

The manager of the filling station is responsible for all aspects of safety. He must ensure there is no risk to employees, customers, the neighbouring area or the environment. Numerous statutes, directives and accident prevention regulations must be observed and a host of technical and organisational measures need to be applied.

Every filling station manager must ask himself the question:

What do I have to do to ensure safety?

The answer is:

Conduct an audit to ascertain weaknesses and then implement measures to remedy them.

Participants

The audit documents were compiled by a team of experts in such a way that they allow every filling station manager to check his own station and identify any safety shortcomings which exist. However, the station can also be checked by independent auditors, e.g. by representatives of the oil company,

who will also use the prepared check-list. Auditors will need to be used in the event that the filling station manager requires expert assistance.

Preparation

The check-list is subdivided into the following sections:

- Work safety, i.e. the implementation of technical and organisational safety measures
- Safety of persons and property, i.e. avoidance or minimisation of injury to persons and/or damage to property as a result of theft, burglary, robbery, vandalism and threats
- Environmental protection, i.e. observance of regulations relating to the pollution of air, water and ground, to noise pollution of the surrounding area and to the storage of refuse.

Each of these sections is subdivided in turn into:

- General
- Workshop, car wash, compressor and heat-generating room
- Vehicle forecourt
- Cash-desk area (shop) and ancillary rooms

The scope and content of the check-lists will depend on the legislation in force at any given time and must therefore be adapted to changing circumstances. The following check-list can thus only serve as an illustration.

Check-list 2
Filling station audit

Station: **Date:**

Please answer the following questions conscientiously with either Yes or No. Add comments where you wish.

No.	A. Work safety	Yes	No	Comments
	1. General			
A. 1.01	Are you aware that you are responsible for the safety of your employees?			
A. 1.02	Do you have a programme which safeguards the safety of your employees and customers?			
A. 1.03	Do you encourage your employees to improve their safety practices rather than criticizing their faults?			
A. 1.04	Do you demonstrate through your own actions that you take safety seriously?			
A. 1.05	Do you acknowledge good safety awareness on the part of your employees?			
A. 1.06	Do you give new employees thorough instruction in their work?			
A. 1.07	Do you inform your employees of new safety information immediately?			
A. 1.08	Are accident prevention regulations and other safety information accessible to employees?			
A. 1.09	Is there a directive which describes who must wear what personal safety equipment where and when?			
A. 1.10	Is the required equipment always available?			
A. 1.11	Is the personal protective clothing cleaned and cared for regularly?			
A. 1.12	Are all employees given instruction in safety at least once a year?			
A. 1.13	Have you drawn up regulations for handling dangerous materials?			
A. 1.14	Have personnel been given instruction in handling dangerous materials?			
A. 1.15	Have the measures to be taken in emergencies been compiled into an alarm plan?			
A. 1.16	Do personnel know how to handle fire extinguishers?			
A. 1.17	Have the fire extinguishers been positioned and maintained in accordance with regulations?			
A. 1.18	Have escape routes and safety zones been identified and are these kept clear?			
A. 1.19	Is the first aid equipment complete and accessible to personnel?			
A. 1.20	Is at least one employee at your station trained in first aid?			
A. 1.21	Are your personnel familiar with the recommendations for operating and servicing all installations and equipment?			

No.	A. Work safety	Yes	No	Comments
A. 1.22	Is the ban on smoking observed?			
A. 1.23	Do personnel respect the ban on alcohol consumption during working hours?			
A. 1.24	Do you give instruction on safety to outside firms working on the station's property?			
A. 1.25	Do you check whether the outside firms observe the safety regulations?			
A. 1.26	Do you or your personnel assist oil tanker drivers to manoeuvre?			
A. 1.27	Have you, your personnel and your customers remained free of accidents over the last 12 months?			
A. 1.28	Has the fuel delivery zone remained free of accidents over the last 12 months?			
A. 1.29	If an accident has occurred *(No. 1.27 or 1.28)*, did you investigate it thoroughly?			
A. 1.30	Did you instigate measures to prevent a repetition?			
A. 1.31				
	2. Workshop, car wash, compressor and heat-generating room			
A. 2.01	Are steps and ladders safe to use?			
A. 2.02	Is the workshop area clean and tidy?			
A. 2.03	Is the workshop equipment in perfect order?			
A. 2.04	Does hoisting and transportation equipment carry details of maximum loads?			
A. 2.05	Is hoisting and transportation equipment checked regularly?			
A. 2.06	Are all containers for dangerous materials marked accordingly?			
A. 2.07	Do regulations exist for handling batteries?			
A. 2.08	Have you checked that there are no sources of ignition near the battery charger?			
A. 2.09	Are welding, cutting and soldering units only used in compliance with special safety measures?			
A. 2.10	Is the heat-generating system serviced regularly?			
A. 2.11	Have all the electrical installations in the heat-generating room been checked and the main switches marked?			
A. 2.12	Are the operating instructions and the emergency off switch for the car wash clearly visible?			
A. 2.13	Are the car wash and the high-pressure cleaning unit serviced regularly?			
A. 2.14	Are the electrical installations in the car wash checked regularly?			
A. 2.15	Is all portable electrical equipment checked regularly?			

No.	A. Work safety	Yes	No	Comments
	3. Forecourt area			
A. 3.01	Are working and driving surfaces kept free of oil and grease and of snow and ice in winter?			
A. 3.02	Are stocks available of oil-binding agents and grit?			
A. 3.03	Are pump nozzles, hoses and hose retractors serviced and checked regularly?			
A. 3.04	Is pump equipment free of leaks?			
A. 3.05	Are the pumps' electrical systems and emergency off switches serviced and checked regularly?			
A. 3.06	Are leakage-warning and cathode-protection devices activated and fully operational?			
A. 3.07	Are dome shafts free of product residues and excessive quantities of water?			
A. 3.08	Is the area around the ventilation tubes (radius of around 2 m) free of ignition sources?			
A. 3.09	Are pump equipment and roof supports fitted with information and warning signs?			
A. 3.10	Is the station signposting *(company logo and price board)* in perfect condition?			
A. 3.11	Are the advertising and information signs fitted securely?			
A. 3.12	Have the service units been marked and checked *(e.g. tyre-pressure gauge)*?			
A. 3.13	Are danger zones clearly marked?			
A. 3.14	Are driving zones correctly marked?			
	4. Cash desk, shop and other ancillary rooms			
A. 4.01	Is the shelving in the cash-desk/shop area perfectly secure?			
A. 4.02	Are the aisles in the cash-desk/shop area wide enough?			
A. 4.03	Is an up-to-date list of emergency numbers clearly visible in the cash-desk/shop area?			
A. 4.04	Are the office, cash-desk/shop area and storeroom free of the smell of fuel?			
A. 4.05	Is the lighting in the shop and office adequate?			
A. 4.06	Are differences in floor height *(steps, thresholds etc.)* easy to discern in all rooms?			
A. 4.07	Are goods in the storeroom stored/stacked correctly and are they easy to locate?			
A. 4.08	Are toilets, washrooms and changing rooms in perfect condition?			
A. 4.09				
A. 4.10				
A. 4.11				

No.	B. Safety of persons and property	Yes	No	Comments
	1. General			
B. 1.01	Are regulations in place for the prevention of robberies and/or the behaviour to adopt in the event of such?			
B. 1.02	Are the personnel familiar with these?			
B. 1.03	Do personnel receive regular instruction in the behaviour to adopt in such instances?			
B. 1.04	Is a burglar alarm system connected up to a surveillance centre?			
B. 1.05				
	2. Workshop, car wash, compressor and heat-generating room			
B. 2.01	Have escape doors been fitted with self-engaging locks?			
B. 2.02	Are access doors secured with at least two internal bolts or additional locks?			
B. 2.03	Are glass surfaces and glass roof domes protected by internal meshing?			
B. 2.04				
	3. Forecourt area			
B. 3.01	Are the pumps monitored by video camera to prevent customers taking fuel without paying?			
B. 3.02	Are the cameras fitted so that the licence number of the vehicle is clearly visible?			
B. 3.03	Are there notices clearly indicating that video cameras are being used?			
B. 3.04	Is a forecourt service provided e.g. to prevent such thefts?			
B. 3.05	Is an optical device *(red light)* provided on the pumps to indicate when they are in use?			
B. 3.06	Are refuse containers closed and/or located in a secure area?			
B. 3.07	Are rubbish baskets easy to check and are they emptied regularly?			
B. 3.08	Are portable pressure gauges secured by e.g. a chain and/or is the zone monitored?			
B. 3.09	Do fire extinguishers bear a clearly identifiable marking which assigns them to specific locations?			
B. 3.10	Are dome shafts, central filling pits and changeover chambers secured against unauthorised opening?			
B. 3.11				
B. 3.12				
B. 3.13				
B. 3.14				
B. 3.15				

No.	B. Safety of persons and property	Yes	No	Comments
	4. Cash desk, shop and other ancillary rooms			
B. 4.01	Are escape doors fitted with self-engaging locks?			
B. 4.02	Are access doors secured with at least two internal bolts or additional locks?			
B. 4.03	Are grilles on cellar windows secured on the inside to prevent their removal?			
B. 4.04	Are glass surfaces and glass roof domes outside the customer areas protected by internal meshing?			
B. 4.05	Outside the bullet-proof glazing of the cash area, are other areas fitted with laminated safety glass?			
B. 4.06	Is the cash area equipped with a safe in which cash can be deposited directly?			
B. 4.07	Are cash levels in the till kept as low as possible?			
B. 4.08	Is cashing up performed in the protected zone?			
B. 4.09	Is the cash desk monitored by video cameras?			
B. 4.10	Are electronic tags fitted to goods to prevent shop-lifting?			
B. 4.11	Are mirrors installed to help surveillance?			
B. 4.12	Are valuable goods placed within sight of the per-sonnel?			
B. 4.13	Are valuable goods counted when shifts are changed?			
B. 4.14	Is the height of the shelving in the shop limited to 1.20 m to assist surveillance?			
B. 4.15	Do notices clearly state that "in the interest of our customers" all shoplifters will be prosecuted?			
B. 4.16	Are only the first name and surname of the manager shown at the entry to the cash-desk area? *)			
B. 4.17				
B. 4.18				
B. 4.19				
B. 4.20				
B. 4.21				
B. 4.22				
B. 4.23				
B. 4.24				
B. 4.25				
B. 4.26				

*) His/her private telephone number may also be stated where filling stations are not open 24 hours per day.

No.	C. Environmental protection	Yes	No	Comments
	1. General			
C. 1.01	Do you know the volume of refuse produced by the station each year?			
C. 1.02	Does a plan of action exist for storing, treating and disposing of refuse?			
C. 1.03	Do you keep records on refuse?			
C. 1.04	Does the storage of refuse comply with legal requirements?			
C. 1.05	Have the methods of disposing of refuse *(poss. recycling)* been clarified?			
C. 1.06	Are there sufficient special refuse containers for empty oil cans?			
C. 1.07	Are drums provided for the different types of waste oil?			
C. 1.08	Does the alarm plan regulate the reporting and recording of accidents involving petrol and oil?			
C. 1.09	Has it been agreed that no fuel will be delivered between 22.00 and 6.00?			
C. 1.10				
C. 1.11				
	2. Workshop, car wash, compressor and heat-generating room			
C. 2.01	Do you use environmentally friendly washing and cleaning agents?			
C. 2.02	Do you have a programme in place to reduce water consumption and sewage levels?			
C. 2.03	Does the car wash door close automatically when the car wash starts up?			
C. 2.04	Are oil drums located on non-leak drip pans or floor pans?			
C. 2.05				
C. 2.06				
C. 2.07				
C. 2.08				
C. 2.09				
C. 2.10				
C. 2.11				
C. 2.12				
C. 2.13				
C. 2.14				
C. 2.15				

No.	C. Environmental protection	Yes	No	Comments
	3. Forecourt area			
C. 3.01	Are all forecourt surfaces in perfect order *(inspection of joints etc.)*?			
C. 3.02	If damage was ascertained, were ground samples taken?			
C. 3.03	Were the samples examined for hydrocarbons and aromatic hydrocarbons?			
C. 3.04	Was the area sealed properly after the sample had been taken?			
C. 3.05	Are the filling pits serviced by specialists?			
C. 3.06	Are the dispenser pits tight?			
C. 3.07	Are the petrol pumps located on non-leak drip pans or floor pans?			
C. 3.08	Are the dome shafts of the storage tanks tight and resistant to action by liquids?			
C. 3.09	Are fillpipe coupling, vapour recovery coupling and dipstick tube sealed?			
C. 3.10	Are central filling pits tight and resistant to action by liquids?			
C. 3.11	Are all cable ducts and pipe leadthroughs tight against liquid penetration?			
C. 3.12	Is the tank lorry discharge area connected to a gasoline separator?			
C. 3.13	Are the sludge trap and gasoline separator emptied properly?			
C. 3.14	Is the gasoline separator checked regularly to ensure it is working properly?			
C. 3.15	Is the gasoline separator covered by a service contract?			
C. 3.16	Are leak indicators functioning correctly?			
C. 3.17				
	4. Cash desk, shop and other ancillary rooms			
C. 4.01	Are the products sold in the shop as environmentally friendly as possible?			
C. 4.02	Are products containing dangerous substances labelled as required by law?			
C. 4.03	Is there a specified procedure for the return of goods whose "sell by" date has passed?			
C. 4.04	Are containers provided for the return of packaging?			
C. 4.05				
C. 4.06				
C. 4.07				
C. 4.08				

Results of the check conducted by a team of auditors from the oil company.

All answers in the check-list which indicate shortcomings need to be followed up. Use the following table to compile a list of measures in the same order as the check-list in order to eliminate identified inadequacies. Do not forget to set deadlines for these.

No.	**D. Measures**	Section Responsible	Deadline	Com-pleted	Comments
	1. Work safety				
A. 1.01 A. 1.02 A. 1.03 A. 1.04 A. 1.05 A. 1.06 A. 1.07	The filling station manager is of the opinion that everything relating to safety is the concern of the oil company and that he bears no responsibility. It is recommended that safety be covered to a far greater extent during training.	Oil company's training department	Every 3 years		First training within 6 months
A. 1.08	The safety information must be made accessible.	Manager	Immediately		
A. 1.10	Personal safety equipment must be made available.	Manager	1 month		
A. 1.12 A. 1.14 A. 1.15	No instruction is given. It is urgently recommended that a structured system for such be introduced.	Manager	Every 6 months		With support of oil company
A. 1.18	The blocked escape routes must be cleared without delay.	Manager	Immediately		
A. 1.19	All first aid given must be entered in a register.	Manager	With immediate effect		
A. 2.02	The workshop area appears untidy and dirty. It is recommended that personnel are assigned their area of responsibility in this regard, thus ensuring that everyone knows his job and that the "blame" cannot be pushed from one employee to another.	Manager	1 month		
A. 2.03	The grindstones of the grinding machine need to be perfectly rounded and a notice provided about the need to wear goggles.	Manager	1 month		
A. 2.11	The heat-generating room is being misused as a tyre storeroom. The tyres must be removed immediately.	Manager	Immediately		

No.	D. Measures	Section Responsible	Deadline	Completed	Comments
A. 3.14	The red/white marking posts have come away from their anchorings and must be repaired.	Oil company	1 month		
A. 4.02	The width between the shelving units does not comply with requirements. This will need to be remedied by removing the newspaper rack and placing it instead to the right of the cash desk.	Manager	Immediately		
	2. Safety of persons and property				
B. 1.01	Systematic use of the night switch and regular instruction on behaviour as per the information given in "Safety of persons and property" **"Don't give the filling station thief a chance!"**	Manager	With immediate effect		First training within 6 months
	Possibly use of a money security case which renders the contents worthless for anyone gaining access without authorisation. The case can be either fixed or mobile, and can thus also greatly reduce the risk of theft during transport. NB: Currently undergoing tests	Oil company	After conclusion of test		Oil company to inform of test results
B. 1.04	Installation of an alarm system which is connected to a security company and ensures immediate assistance when needed.	Oil company	6 months		
B. 3.03	To increase the preventive effect, the signs indicating the use of videos must be made more eye-catching. They must also state that all thieves will be prosecuted.	Manager	1 month		
B. 3.06	To prevent them being used as depositories for incendiary devices and explosives, refuse containers and rubbish bins should be sited in a secured area or be fitted with locks.	Manager	With immediate effect		
B. 3.07	Refuse baskets must be emptied more frequently and regularly. Wherever possible, containers should be used so that the contents can be seen *(wire structure with inner receptacle).*	Manager	With immediate effect		3 times daily

No.	D. Measures	Section Responsible	Deadline	Completed	Comments
B. 3.09	To prevent them being stolen, fire extinguishers must be sited so that shop personnel can see them. The fire extinguishers on pumps 8 and 10 cannot be seen from the cash desk. To quickly determine whether they have been tampered with and/or to prevent them being exchanged unnoticed (use as unconventional explosive or incendiary device) they must be given a unique marking which links them to their assigned site.	Manager	1 month		
B. 3.10	Dome cover, central filling pit and changeover chamber can be monitored well from the shop. The central filling pit is to be fitted with a triangular or square lock to prevent it being opened without additional tools.	Oil company	6 months		
B. 4.01	The inside of the door to the storeroom is to be fitted with an additional bolt near the bottom and another in the top third. It must also be fitted with a self-engaging lock which ensures the door is always locked when closed.	Oil company	6 months		
B. 4.04	All roof dome windows in the shop building should be fitted with internal meshing to prevent easy entry *(not all have been secured appropriately).*	Oil company	6 months		
B. 4.05	The glass surfaces of the rest room at the rear of the shop building are to be fitted with at least shatter-retarding film *(A1)* and the door provided with a self-engaging lock. A "babyphone" can also be used to provide additional surveillance of the room during the period from 22.00 to 6.00 h.	Oil company	6 months		
B. 4.16	Remove the manager's private address and telephone number from the shop entrance. *(Displaying these details provides persons with the opportunity of attacking and injuring the manager at home.)*	Manager	Immediately		Only first name and surname are required

No.	D. Measures	Section Responsible	Deadline	Completed	Comments
	3. Environmental protection				
C. 1.01	Record the total quantity of refuse produced per year, broken down into – domestic waste and similar, – hazardous waste requiring monitoring, – residual substances requiring monitoring *(recycling).*	Manager	With immediate effect		The oil company's guidelines must be applied
C. 1.03	The refuse register is currently very haphazard and must be filled in conscientiously.	Manager	With immediate effect		
	The manager will be invited to selected information seminars on this subject.	Oil company	Every 3 years		First training within 6 months
C. 1.08	The procedure for combating, reporting and recording oil accidents must be incorporated in the alarm plan	Manager	1 month		
C. 3.01	The joint must be renewed in the area of lane 6.	Oil company	6 months		
C. 3.08	The masonry of the dome shafts must be renewed urgently.	Oil company	12 months		
C. 3.13	The sludge trap must be enlarged urgently and the overflow repaired.	Oil company	12 months		
C. 4.04	Containers must be provided for the return of packaging.	Manager	1 month		

Implementation

A filling station manager will require approximately two to four hours to assess the situation. It is important he sets the required time aside to perform the check in a single session.

A check by an independent auditor will take more or less the same time. The information obtained will be greater, however, since he uses his experience to pose additional questions and is more objective in his assessment.

Documentation/measures

All answers in the check-lists which indicate shortcomings need to be followed up. The measures which are required are to be compiled in the same order as the points in the prepared list "D. Measures" (see Example 2, page 59).

All violations of regulations must be remedied. Do not forget to state a deadline for this and to make persons responsible for ensuring the measures are carried out. Deficiencies which do not contravene existing legislation but only involve an increased risk (e.g. losses by theft) must be viewed with other criteria in mind (e.g. profitability). In any event, expedient solutions must be found.

The list of measures (page 59) shows the action which needs to be taken based on an audit conducted by a team from an oil company.

The future

You have read that safety audits bring increased success.

What do you think of this?

Perhaps you believe that this approach is exaggerated, too simple, too expensive, impracticable or not at all appropriate for you?

If this is what you think, then you are simply not yet receptive enough to the idea of systematic safety work! Why not take another look at part 1 "Success through safety"? It will help you understand the benefits which a systematic approach to safety can bring your business and show you just how easily you can reap the first rewards.

However, if you are already convinced that, by compiling questions in a simple yet systematic way, you can help

- arouse people's interest in safety matters and
- further enhance the "safety culture" of your enterprise,

you will certainly find safety audits a valuable tool towards this goal!


I'M KEEPING ON THE RIGHT PATH!
ISSA
Ways to greater safety
Part 3

Listed on the following pages are the specialist brochures which are currently available (June 1993) from the ISSA Chemistry Section. Please use reply card A for orders.

Additional brochures are currently being prepared. Please complete and return reply card B if you wish to be kept informed of new publications.

The Chemistry Section publishes reports on all the international symposia it organises. These reports contain the written unabridged versions of all speeches in the language in which they were held. These are preceded by abstracts in German, English and French. Please use reply card B if you would like to receive a free copy of the price list and the indexes of the reports which are still in print.

You can also use reply card B to obtain a summary of the various publications issued by the other 11 sections of the ISSA.

If you, your company or your organisation are interested in becoming a member of the Chemistry Section, you can also use reply card B to obtain further information and the relevant application forms.

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1	deutsch english français	IVSS-Sektion Chemie ISSA-Section Chemistry AISS Comité Chimie	– – –
2 D	deutsch	**Staubexplosionen** Diese Broschüre ist für die Sicherheitsfachkraft eines Betriebes und gibt Hinweise zum Erkennen möglicher Gefahrenquellen	DM 8,–
2 E	english	**Dust Explosions** This brochure is for the safety expert of a factory. It gives hints for the detection of possible hazards	DM 8,–
2 F	français	**Explosions de poussières** Cette brochure doit permettre aux fonctionnels de sécurité dans l'entreprise d'identifier d'éventuelles sources de danger	DM 8,–
2 I	italiano	**Esplosoini da polveri** Tali opuscoli sono destinati allo specialista per la sicurezza in un'impresa dando delle istruzioni per riconoscere eventuali focolai di pericolo	DM 8,–
3 D	deutsch	**Gasexplosionen** Diese Broschüre ist für die Sicherheitsfachkraft eines Betriebes und gibt Hinweise zum Erkennen möglicher Gefahrenquellen	DM 8,–
3 E	english	**Gas Explosions** This brochure is for the safety expert of a factory, It gives hints for the detection of possible hazards	DM 8,–
3 F	français	**Explosions de gaz** Cette brochure doit permettre aux fonctionnels de sécurité dans l'entreprise d'identifier d'éventuelles sources de danger	DM 8,–
3 I	italiano	**Esplosioni di gas** Tali opuscoli sono destinati allo specialista per la sicurezza in un'impresa dando delle istruzioni per riconoscere eventuali focolai di pericolo	DM 8,–
4 D	deutsch	**Regeln zum Staubexplosionsschutz an Maschinen und Apparaten** Diese Broschüre ist für den Fachmann zur Verhütung von Staubexplosionen	DM 8,–
4 E	english	**Rules for dust explosion protection for machines and equipment** This brochure is for the expert in prevention of dust explosions	DM 8,–
4 F	français	**Règles pour la protection de machines et des appareils contre les explosions de poussières** Cette brochure est destinée à l'expert en prévention d'explosions de poussières	DM 8,–
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6 E	english	**Storage of dangerous Substances** A Practical Guide, 1990 ISSA Prevention Series No. 2001 (E) ISBN 92-843-1036-9 ISSN 1015-8022	DM 15,–
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7 D	deutsch	**Gesundheitsgefährdende Stoffe am Arbeitsplatz** Eigenschaften und Schutzmaßnahmen, 1992 ISSA Prevention Series No. 2005 (G) ISBN 92-843-7050-7 ISSN 1015-8022	DM 15,–
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2 F		8,–		6 I		15,–		10 D		18,–	
2 I		8,–		6 Sp		15,–		10 F		18,–	
3 D		8,–		7 D		15,–		10 I		18,–	
3 E		8,–		7 E		15,–					
3 F		8,–		7 F		15,–					
3 I		8,–		7 Sp		15,–					
4 D		8,–		8 D		18,–					
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