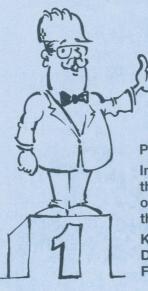


Ways to greater safety Part 1

Success through safety



Publisher:

International Section of the ISSA for the Prevention of Occupational Risks in the Chemical Industry

Kurfürsten Anlage 62 D-69115 Heidelberg Federal Republic of Germany

1994 ISBN 92-843-1061-X ISSN 1015-8022



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 throughout 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

Note:

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



Success through safety

Publisher:

International Section of the ISSA for the Prevention of Occupational Risks in the Chemical Industry Kurfürsten Anlage 62, D-69115 Heidelberg, Germany



Authors and contributors

Prepared with the collaboration of

Allgemeine Unfallversicherungsanstalt (AUVA), Vienna, Austria

BASF Aktiengesellschaft, Ludwigshafen, Germany

Berufsgenossenschaft der chemischen Industrie, Heidelberg, Germany

Deutsche Shell AG, Hamburg, Germany

Institut national de recherche et de sécurité (INRS), Paris, France

Schweizerische Unfallversicherungsanstalt (SUVA), Lucerne, Switzerland

The authors

- K. Bamberger, Ludwigshafen, Germany
- A. Gottschalk, Ludwigshafen, Germany
- Dr. A. Hinger, Vienna, Austria
- Dr. H. Hoffmann, Frankfurt, Germany
- Dr. H. Knies, Ludwigshafen, Germany
- W. Kunz, Vienna, Austria
- R. Littinski, Hamburg, Germany
- B. Ludborzs, Heidelberg, Germany
- H. Möhle, Cologne, Germany
- M. Monteau, Nancy and Paris, France
- D. Ramel, Lucerne, Switzerland

Design and illustration

- A. Gottschalk, Ludwigshafen, Germany
- T. Tauber, Ludwigshafen, Germany
- R. D. Wuthe, Weinheim, Germany



Contents

| Preface | 7 |
|--|----|
| Introduction | 8 |
| Success through safety – is there any truth in this statement? | 11 |
| Success is welcome! But isn't increased safety too costly? | 11 |
| Technical safety alone is no longer enough! | 14 |
| Are substantial improvements at all possible? | 15 |
| Invest wisely! | 17 |
| And this is how! | 18 |
| Who does safety work involve? | 22 |
| Safety as a corporate goal | 23 |
| Success through safety – your first steps! | 27 |
| Nothing ventured, nothing gained | 27 |
| We now set ourselves common goals! | 31 |
| Safety through good order and cleanliness | 32 |
| Talking about safety! | 35 |
| Learning from experience | 39 |
| Prospects | 43 |
| Publications by the Chemistry Section | 46 |



Preface

Advances in safety technology and a wealth of experience gathered in handling dangerous materials have succeeded in improving safety standards throughout all branches of the economy, and particularly in the chemical industry, over recent decades. Nevertheless, it has become increasingly evident of late that technical safety and the safe handling of dangerous materials are no longer sufficient in themselves to bring about substantial improvements in safety. Further reductions in accident numbers are possible, however, if employers and managers place working safety alongside production factors in their list of corporate goals and play a leading role in furthering this field of activity.

With the series of brochures "Ways to greater safety", the Chemistry Section of the International Social Security Association (ISSA) has set itself the task of making employers and managers more familiar with safety aspects and of thereby increasing safety at work.

Part 1 "Success through safety" shows how personal commitment, exemplary behaviour and only a small additional financial investment can have a positive effect on safety, production and many other areas. The Board of the ISSA Chemistry Section believes that anyone reading these brochures will quickly appreciate that "business is only good if safety is good" and will therefore opt for the success which increased safety can bring.

Lauer

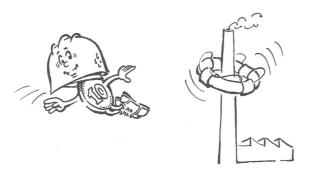
Chairman of the Board of the Chemistry Section



Not at all!

Successful businessmen have always been quick to appreciate that improved safety at work is not a luxury but rather a valuable tool which they can use to improve the performance of the enterprise in a host of different ways.

Accident prevention must not be seen solely as a legal obligation, but rather as an expression of moral obligation and sound economic reasoning.



It was back in 1880 that Werner von Siemens wrote these far-sighted words on the relationship which exists between the law, man's duty to his fellow man and economic reasoning.

As early as 1904, Dr. A. Wolfrum's book "Die Methodik der industriellen Arbeit als Teilgebiet der Industriekunde beziehungsweise der technischen Chemie" offered the reader not only technical advice, information and the benefits of his experience, but also dealt with the relationship between safety at work, social obligation and economic success:

Safer jobs – safer production

An industrial production site only earns the right to be such if it does not compromise the individual's physical integrity.

Safer jobs – low outage times

Inadequate equipment which takes no account of the people who use it is nothing more than a low-quality installation requiring continuous repair - manifested here as injuries to the workforce.

Safer jobs – good working milieu

Hygiene as a means of ensuring the overall well-being of the individual represents, in economic terms, an instrument for maintaining and moulding industrial success.



Yes, these statements, backed up by new experience, still ring true almost 100 years later:

Safety at work **not only** protects the workforce and is **not only** a moral obligation, **but also**

- enhances product quality
- increases the availability of both workforce and production facilities
- reduces losses through wastage
- improves energy utilisation
- enhances the enterprise's image
- improves the working environment and the commitment of everyone involved
- reduces damage to property and the environment

The saying still holds true today: Business is only good if safety is good!



Success through safety – is there any truth in this statement?



Safety at work naturally costs money. Indeed, safety at work costs a lot of money if you view the cost of safety in isolation.

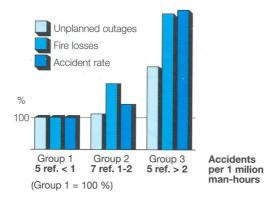
For experienced businessmen, however, this question can have only one answer - i.e. safety can never be too expensive! They fully appreciate that investments in work safety can also have beneficial effects in many other sectors such as

- reliability of equipment and products
- environmental safety
- work organisation
- team spirit

Experienced businessmen know that investments in safety pay dividends.

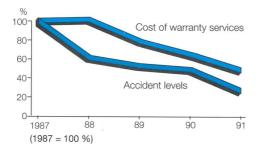
Examples of the benefits involved can be drawn from numerous companies:

 An industrial concern dealing in crude oil, for example, drew up a comparison of accident levels at its 17 European refineries and discovered the following results:



The chart clearly shows that refineries with high rates of accidents also suffer high losses in other areas.

 A comparison was conducted in a construction company with a workforce of around 300, accident trends being compared with the cost of eliminating faults (warranty services) based on turnover.



Within a period of five years, accident levels had been reduced to a quarter as a result of intensive safety measures and the cost of warranty services had halved.

These few figures are enough to illustrate the relationship which exists between good safety work and business success and help to underline the statement:

Business is only good if safety is good.

Work safety only involves high costs when viewed superficially. The costs take on an entirely different light if you consider that every activity in the field of work safety also exerts a positive effect on other sectors.

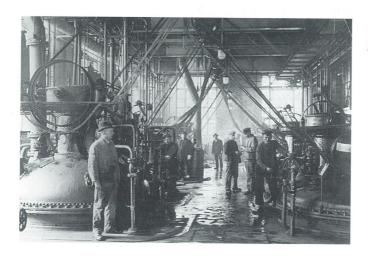
And the cost/benefit ratio becomes even more favourable if you make work safety

- your personal business
- the responsibility of your managerial staff

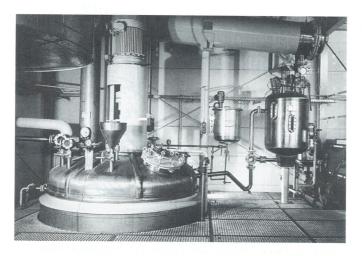


Take a few minutes now to familiarise yourself with a number of basic concepts for ensuring successful work safety.

Technical safety alone is no longer enough!



Motive power plant around 1900



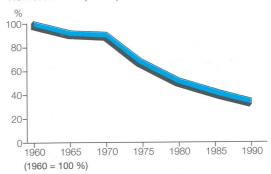
Modern plant

Major successes have followed from more than 100 years of experience in the safety sector, major advances in technology and a decreasing willingness on the part of the workforce to take risks as their prosperity has increased. This has been confirmed by trends in accident levels - a reliable yardstick for safety standards.

The number of accidents over the last 30 years has more than halved in the industrial sector as a whole and has fallen by around two-thirds in the chemical industry.

Accident levels

Work accidents reported per 1 million man-hours



ARE SUBSTANTIAL IMPROVEMENTS AT ALL POSSIBLE?



Yes, substantial improvements are indeed possible, since the drop in the accident curve over the years 1960-1980 was attributable essentially to advances made in safety technology. Over the last 10 years, however, inadequate safety technology has not been the most frequent cause of accidents and in many branches of industry now accounts for less than 10% of all accidents.

Studies reveal time and again that safety organisation and the involvement of the workforce in safety work are not as advanced as safety technology itself. Most accidents today can be traced back to inadequate organisation or poor management.

It is true that:

Substantial progress can now only be made through improved organisation and management!



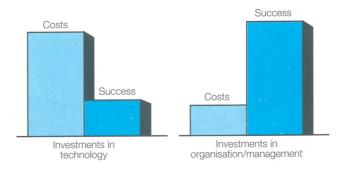
If the workforce

- are well managed
- are well acquainted with safety aspects
- apply their knowledge in practice

the number of accidents resulting from organisational or managerial mistakes will fall accordingly. In addition, shortcomings in technical safety will be identified and eliminated more quickly. Improvements will also be achieved in productivity and operating results.

Invest wisely!

Large sums have been invested in safety technology over recent decades and this trend will no doubt continue in the years ahead. When seen in terms of accident levels, however, investing in even higher levels of technical safety can frequently be less beneficial than investing in safety organisation.





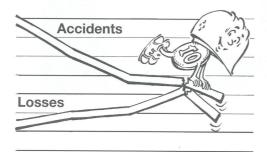
SAFETY TECHNOLOGY ALONE IS NOT THE ANSWER! The chart shows that even small investments directed at improving safety organisation can produce a far greater level of success than high investments designed to improve good technology even further. Indeed, increased investment in safety technology alone can even reduce safety standards since the trust placed in safety technology may often lead workers to underestimate the residual risks. Investment in safety organisation and management therefore have a key role to play.

The relationships between costs and sucess clearly illustrate the prime areas in which safety can be improved once the technical options hace essentially been exhausted.

And this is how!

Time and time again, improvements in safety have also been shown to have positive effects on

- the work environment
- production levels
- the company's image
- and many other aspects



THE NUMBER OF ACCIDENTS IS NOT THE ONLY THING TO FALL!

Organisational measures to improve safety will help improve production results since

- each plant is cleaner and tidier
- the number of disruptions to operations is reduced
- wastage levels are reduced
- the quality of products is enhanced

Safety, economic success and corporate image are indivisible!

Safety at work produces greater satisfaction and commitment among the workforce.

The workforce becomes more committed



Personnel involved in safety measures also become more involved in all other problems concerning the enterprise.

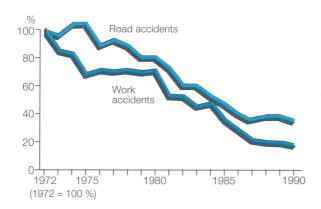
Employees who are aware of safety aspects

- think about their work
- examine operating sequences from the viewpoint of safety and production aspects
- identify themselves with the business
- pass on their expertise to others
- serve as role models for new workers
- work as partners with others
- make suggestions for improvements

A "safety culture" evolves over the course of time and has a positive effect not only on the safety of the workforce but also on the reliability of production and the quality of the products.

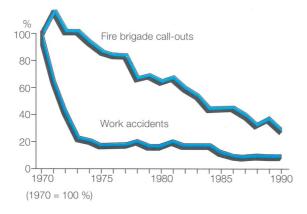
Examples taken from actual practice reveal that an increase in safety activity in the plant also has a very marked effect on other sectors:

 Intensive safety work does not stop at the factory gates. It also has an effect on the behaviour of employees in road traffic.



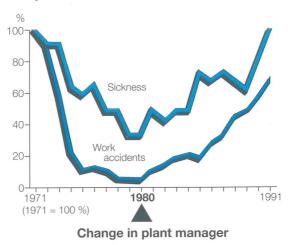
Fewer accidents – fewer working days lost – better results

 In a plant where safety work has been a managerial responsibility since the start of the 1970s, the sharp drop in the number of accidents was accompanied by a dramatic decline in the number of call-outs involving fires and gas leaks.



These figures show that the plant has become safer all round. It is also interesting to note that the cases to which the fire brigade is called out now involve much less serious damage/injury than was the case in earlier years.

 In another plant, the relationships between accidents, sickness levels and a change of management provide an excellent opportunity to reflect on the success of safety work:



Management can exert a significant influence on the work climate and is responsible for shaping the workforce's awareness of safety. Intensive safety work brought good results in only a matter of years. However, a change in plant manager quickly restored the situation to its former state.

SAFETY WORK IS REPAID MANY TIMES OVER!

Who does safety work involve?



Everyone of course – not just the experts!

First and foremost, the employer
followed by
the managers and executives at all levels
and
the entire workforce

Everyone contributes within the scope of their responsibilities and capabilities!



Safety as a corporate goal

Successful production and good safety work are indivisible. We therefore need to remember each and every day that:

"Business success and safety are corporate goals of equal importance."





It is not simply enough to be familiar with these relationships and to have good intentions. Each and every day must be accompanied by efforts to reach set targets and to define new ones.

Good intentions, as everyone knows from their daily life, are scarcely enough. Commitment and a systematic approach are essential - as are supervision and monitoring.



Would you, for example, be willing to go on a cruise where the captain only makes the course known at the start of the trip, designates the various duties and then goes ashore and leaves the crew to its own devices?

OF COURSE NOT!

Supervision is also necessary in the factory. Many managerial positions would otherwise be rendered superfluous! It goes without saying that managers are concerned about production data such as quantities and quality. After all, no business would allow faulty batches or waste to be produced negligently or even in-

tentionally. Quite the contrary - the operating procedures are a favourite area of discussion, employees are informed of decisions and checks are conducted on a day to day basis to ensure rules are being complied with.

SHOULD SAFETY ALSO FOLLOW THESE LINES?

Of course!

As in all other areas of business, you in your role as employer and superior should also be the driving force in safety matters.

Naturally, you do not need to do everything yourself. But you do need to signal the way and involve your managerial staff in the safety work. Your managers after all are not only responsible for quantities, quality and costs, but also for ensuring the safety of the plant and its workforce.

Ensure that the management methods which have proven successful in production are also extended to work safety.



IF YOU PUT NOTHING IN. YOU GET NOTHING OUT!

Just take goggles as an example. You have taken the trouble to buy them, the instructions for using them are also provided - any yet they are never worn.

Managers have always claimed that, despite reminders and warnings, employees never wear goggles.

Would managerial staff react in the same way if, for example, sacks were only half filled or colours were mixed incorrectly?



I WOULD QUICKLY SHOW HIM THE DOOR!



It clearly can, even if it is not possible to attain every desired goal immediately.

We humans are clever and adaptable beings. We make full use of our liberties, but are always quick to accept the rules of the game.

We are punctual, we create quality products and we are equally capable of performing good safety work.

Start right now by taking the first simple steps which will quickly bring you tangible results. The first move must be yours - the success it brings will make your subsequent steps far easier.

Just what form these initial steps can take is illustrated in the following section.



Success through safety – your first steps



NOTHING VENTURED. NOTHING GAINED

This saying is equally true in the safety sector. The most important thing to do is to take the first step and to follow it up logically and consistently.

The fact that improved safety work also brings greater success has already been touched upon. And this applies regardless of whether the safety measures are introduced in a small firm or in a large-scale established plant. Businessmen with experience of safety measures will know just how true this is.

A manager gives his view:

I was always in favour of safety. But when I heard that my commitment in the safety sector would also increase my business' success, I was keen to learn how to set about things. I took my time to get good advice. I naturally thought at first that I could simply hand over the whole task to a team of experts. However, I quickly came to realize that, while I would still need the services of





specialists from either my own company or advisory bodies, it was I who would have to take charge of things if the undertaking was to be a success.

Every superior knows that his own behaviour influences that of his workforce. Indeed, this wisdom has been captured in numerous proverbs handed down through the ages:

"Like master, like man"

"The apple never falls far from the tree"

Superiors must set an example which is both credible and convincing.

What do I mean by "set an example"?

Well, first I put into practice everything I already know about safety at work, i.e.

- I comply with regulations
- I always wear the prescribed safety equipment
- I use the prescribed routes
- I acknowledge good safety practices and
- I take action against violations of safety regulations



Make time for safety every day is my new motto.

Conferences, discussions, consultations, briefings and inspections make up a major part of my work. It is now routine for me to bring the issue of safety into every aspect of my job and I find it takes up virtually no more time.

My workforce has been quick to learn that I'm a "safety fanatic", as they like to refer to me. Nevertheless, they have adapted to the situation and have suddenly become far more aware of safety in both word and deed. Just how serious they are can be seen in the demands they make on me.



And that is something I value - since I also make demands on my workforce.



When I started to take a greater interest in safety it became apparent to me that, while my business was an average performer in its branch when seen in terms of production criteria, it fared less well than comparable businesses as regards accident figures and accident costs.

This realisation shook me into action. I now ask myself why I hadn't interested myself in this field much earlier and why I hadn't involved my workforce in safety work at a much earlier date.

We now set ourselves common goals!

We now set ourselves common tasks and goals and everyone is fully aware just how important it is that we strive for these goals together.

Together we look for solutions which will bring us to our goals in the most effective way possible. We take careful stock of our success and perform continuous checks of the progress we make along the way.

I have always been one to call my workforce together when problems occur in the plant. We discuss matters and I take the necessary decisions.

We now proceed in exactly the same way with work safety. Identified problems are discussed in meetings or special work groups and a solution worked out.



We never cease to be amazed at just how many operating problems we unearth and resolve, even though we "merely" came together to discuss safety.

With every day that passes, everyone involved is more convinced than ever that safety really does bring greater success.

S afety through good Order and Cleanliness



I have always enjoyed taking a tour through the plant whenever time permitted. My workforce knows that I am familiar with all the work sequences and will react immediately to any shortcomings in production. Nowadays, of course, every plant inspection also gives me the opportunity to examine safety aspects.

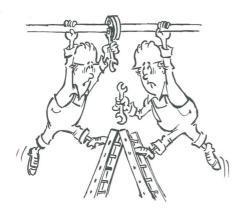
Everyone knows that I take safety matters every bit as seriously as I do material wastage or time wasting and that I pay particular attention to good order and cleanliness. My workforce seems to be almost embarrassed if I stop to correct some small matter or clear something away. In any event, my plant has become much cleaner.

It truly is a pleasure to take a walk around it.

Plant inspections

At 10 a.m. on the first Wednesday of every month, the chairman of our works council (employees' representatives), the safety officer and myself inspect a section of the plant we have chosen earlier by lot. There is always a certain amount of apprehension in the plant while waiting to see where the "old guy" will turn up.

Everyone now knows that the "old guy", in performing these inspections, is not looking solely for good order and cleanliness but is also interested in all other aspects of the plant.



We recently observed two fitters repairing a pipe. Their behaviour was anything but safety-conscious. They were literally "hanging" from the pipes. We naturally had a quick word with them about it. It turned out that organisational and technical shortcomings had also contributed to their behaviour.

As an immediate remedy we advised them to secure their ladders and use safety tackle.

A work group was established to look into safety aspects when working on pipes. As well as workshop representatives, it also included designers in order to ensure that any relevant safety aspects could be taken into account from the outset when planning and constructing new installations.

The following page shows a summary of the safety rules which the work group devised for working on pipes. As you can see, the measures involved generally cost very little but have a substantial effect. We are now using these safety rules to instruct our workforce and to monitor they are performing their work accordingly.

This then is the process we use to identify, record, discuss and resolve new problems.

These inspections give me the opportunity to see how my plant works and I have every wish to continue them. I have come to see that safety and production also profit from my inspections - and not "just" good order and cleanliness.

Safety rules for working on pipes

Dangers

Pipes

- May carry toxic, caustic or irritating substances
- May be hot or carry hot products
- May be under pressure or mechanical strain
- May contain residual products after emptying
- May be difficult to reach or located in high positions

Technical safety measures

Pipes

- Must be fitted so that at least brackets and flanges can be reached from safe standing positions
- Must be fitted with a sufficient number of shutoff and pressurerelief devices
- Must be marked so as to prevent any chance of mixups

Organisational safety measures

Work on pipes may only be started if

- Written work instructions are available which detail the required safety measures
- The work location has been clearly identified
- Shutoff, pressure-relief and cleaning or flushing operations have been performed
- A safe standing position has been provided/created
- The work has been discussed at the work location
- The personal safety equipment set out in the work order is used

Personal safety measures

Whenever work is conducted on pipes

- Protective goggles or a face guard, suitable gloves and closed work clothes must be worn
- Safety harnesses and ropes must be used for all standing locations which are not adequately secured
- Always open flanges below eye level and first loosen bolts which are facing away from the body
- Before removing the bolts, press the flanges apart and loosen seals

Talking about safety!

An on-going dialogue is essential in order to pass on information, promote safety and introduce safe practices.

Employees must be made familiar with safety matters and must be won over to them. We must show each individual worker just how important their contribution is to improving "our safety" and the success of our company.

Many possibilities exist within the plant for discussing safety. We also help by providing foremen with documents for discussion and instruction.

The discussions are structured to give every employee the opportunity to contribute. Our written documentation has been formulated in a language which everyone can understand.

It is important that

- information is passed on rationally and calmly
- everyone in the discussion has a chance to air their views
- praise is given where deserved

Our goal is to change the general behaviour of our workforce through continuous instruction. The regular Monday meetings which we have been holding for several years to discuss operational problems and to reach common solutions now also serve as a valuable source of information on safety. Superiors use these sessions to discuss safety matters with their teams, to agree measures and to report the group's results to the next level in the organisational hierarchy.

Our motto: Safety is everybody's business!



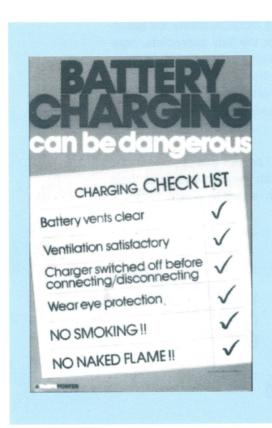
AT ALL LEVELS AND BY ALL MEANS

We work very intensively, for example, on informing new workers about safety. And this is also true of workers who have been assigned a new job or activity.

The introductory discussions are based on our "Safety rules for the instruction of new employees":

Safety rules for the introduction of new employees

- The new worker must be informed of his duties. These include the areas of competence of the various superiors, delimiting the various areas of supervision, authorised routes for persons, alarm plans, behaviour in emergencies, escape routes, emergency exits, first aid measures
- The new worker must receive particular instruction in the dangers which his work involves and the appropriate protective measures, prohibited activities and safety precautions.
- The new worker must be familiar with the special features of his job: prohibitions of employment, health suitability and the need for precautionary medical examinations
- The new worker must be familiar with the personal protection required for his job, must be provided with such and must know how to use it.
- Part-time workers and holiday replacements must also be informed.



Posters which formerly wandered around "homelessly" in the plant are now used with the specific aim of instigating and supporting discussions on safety aspects. We have compiled a number of basic principles for poster campaigns. Even the discussions for selecting the posters for a new campaign help to throw new light on safety aspects and to promote an awareness of safety. The monthly poster theme may be devoted to a change in a plant regulation, a new dangerous substance or an event which has involved either injury or damage.

Safety rules for poster campaigns

- We select a topical subject
- The campaign begins on the same day throughout the entire plant
- Posters on the selected theme are displayed at the key points in the plant
- All managerial staff are involved in the campaign (individual discussions, setting an example, checks)
- Accompanying measures are conducted, e.g. distribution of fliers, instruction, discussions
- Each campaign is limited to four weeks
- After a campaign has been completed, all the posters are removed and a new subject is started.

The steps we have chosen to increase safety are essentially informative in character. We fully appreciate, however, that not all safety problems can be resolved by discussions alone. We have therefore also adopted an approach to safety matters where employees are held responsible for the consequences of their actions.

Our workforce were quick to accept this approach since they were already familiar with the consequences their actions could have, e.g. with regard to quality or lack of punctuality.



Everyone knows that I, too, do not shy away from the consequences of my actions. And everyone is also aware that I will not tolerate violations of rules and regulations - not even safety regulations!

Learning from experience



We still have accidents – but they are becoming fewer and fewer!

This improvement has been aided by our systematic accident investigations and the intensive discussions which have been conducted in this regard. Furthermore, these activities have often led to technical or organisational measures being introduced to improve safety and production.

I am horrified when I look back at earlier "accident studies". I was only worried about matters which had involved major injuries or serious damage to property.

Every one of our workforce now appreciates that the actual gravity of the accident is merely a matter of luck. Studies into accidents therefore represent a major element of our safety work.

The initial step towards ensuring comprehensive accident studies was triggered by a minor accident to a worker in the main store - thankfully involving nothing more than scratches to his hand.

Results:

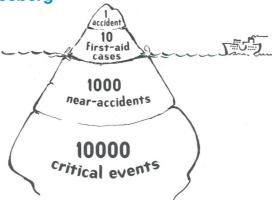
A 5-kg bale becomes dislodged from an unsecured pallet and falls from a shelf approximately 3 meters high.

Possible consequences:

- Bale just misses a worker
 - near-accident
- Bale grazes the worker
 - minor accident
- Bale hits the worker
 - major accident (not wearing safety helmet)

The discussions about this occurrence - held at all levels and in all workgroups - lead to the introduction of pallet securing devices and to the mandatory wearing of protective helmets. They also serve to illustrate the "iceberg theory".

Accidents are only the tip of the iceberg



- Activities after an accident are useful and necessary but by then the accident has already occurred.
- Activities must be introduced before accidents are allowed to occur. Prevention is better than cure.
- Identification of possible accidents and an awareness of accident risks leads to a reduction in the number of accidents - or even prevents them.

Fact:

Reducing critical events also reduces the number of accidents.

We are currently involved in compiling information on as many near-accidents as possible since we also wish to include these in our studies. Special forms facilitate the task of reporting such events.

The accident report procedure

| In-plant accide | nt report | No. 21/92 Consec. 43 | | | |
|--------------------------------------|----------------------|----------------------|-----------|--|--|
| This report must be submitted to the | | Date | Signature | | |
| plant manager with- | 1 Direct superior | 13/8 | 1 Man | | |
| in 3 working days | 2 Plant manager | 13.8 | Um | | |
| of the accident. | 3 Work safety office | 14.8 | Sem | | |
| | 4 Section manager | 15.8 | hors | | |
| | 5 Works manager | 15.8 | Ely | | |
| | 6 Work safety office | | | | |

It is very important that all employees and managerial staff are informed as quickly as possible about the incident, the results of the study and any measures which need to be initiated.

Every manager is responsible for discussing the information immediately with all members of his section and for taking the appropriate measures within his sphere of competence.

I too want to be informed of every incident within three days at the latest so that I can involve myself in the safety procedure.

Since technical measures are often neither necessary nor possible, comprehensive safety discussions are held in every case.

I firmly believe that my own actions have a positive effect on the safety behaviour of my employees, particularly if I always

- involve them in discussions
- resolve problems on the spot and introduce effective measures
- carry over know-how into comparable fields of work
- brief the managerial staff as to their supervisory duties
- fail to tolerate any situations or activities which are not safe

You would scarcely believe the discussions which have been provoked by a simple enquiry on my part. Furthermore, I never cease to be amazed at just how little time I need in this regard to make a positive contribution to the company's success.

Prospects

Taking that initial wavering step to improving safety often reminds me of how my own career started. I was called upon to learn a lot, to show stamina and to get over my knocks quickly. But then followed the success. I can now also see the successes we have achieved in the safety sector and I am sure that it will not end here.



My workforce and I now have those initial steps far behind us. While I must concede, looking back, that the steps we took may have lacked coordination, were not always thorough and, in some cases, were simply too large, we are pleased that we took them and have made great progress towards improving safety in our business. We have now decided:



Our "Guidelines for safety and environmental protection" will play a major role in us achieving this goal.

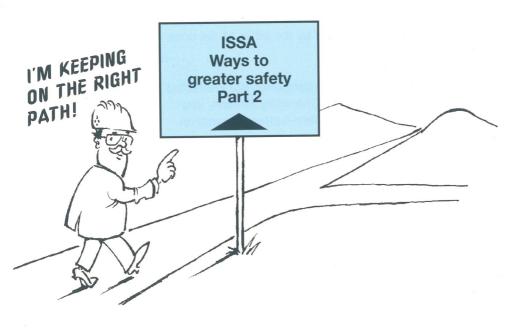
Guidelines for safety and environmental protection

- Business success, safety and environmental protection are corporate goals of equal stature.
- Safety and environmental protection always have priority where doubt exists.
- All accidents and environmental pollution can be avoided if every activity
 - is thought through in advance
 - is structured rationally and safely and
 - is executed with due care
- Only safe work is good work
- Regular safety discussions and continuous training are essential
- All employees, and in particular superiors, are responsible for safety and environmental protection

We are not necessarily looking to break new ground, but rather are interested in applying practices which have proven successful in other companies.

Perhaps this will initially take the form of more extensive safety inspections, work-flow studies or other methods for determining and combating risks. We have also considered safety competitions and other similar measures. The one key aspect we must bear in mind, however, is:

Keep talking about safety!



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.

| Bestell-Nr. Order Number | Sprache Language | Titel Title | | reis von st payment of |
|--------------------------|--------------------------------|---|--------|---------------------------|
| Numéro de commande | Langue | Titre | contre | paiement de |
| 1 | deutsch english français | ISSA-Section Chemistry | - | |
| 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 | 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 | 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,- |
| 5 D | deutsch | PAAG-Verfahren Risikobegrenzung in der Chemie Wesentlich überarbeitete Neuauflage 1990 ISSA Prevention Series No. 2002 (G) ISBN 92-843-7037-X | DM | 15,- |

| Bestell-Nr. Order Number Numéro de | Sprache Language | Titel Title | | zum Preis von against payment of | | |
|--|---------------------|---|--------|-------------------------------------|--|--|
| commande | Langue | Titre | contre | paiement de | | |
| 6 D | deutsch | Lagern von gefährlichen Stoffen Ein Kompendium für die Praxis, 1990 ISSA Prevention Series No. 2001 (G) ISBN 92-843-7036-1 ISSN 1015-8022 | DM | 15,– | | |
| 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,- | | |
| 6 F | français | Stockage des produits dangereux Guide pratique. 1990 ISSA Prevention Series No. 2001 (F) ISBN 92-843-2036-4 ISSN 1015-8022 | DM | 15,- | | |
| 6 I | italiano | Stoccaggio di sostanze pericolose Guida pratica, 1991 ISSA Prevention Series No. 2001 (I) ISBN 92-843-8036-7 ISSN 1015-8022 | DM | 15,- | | |
| 6 Sp | español | Almacenamiento de sustancias peligrosas Compendio practico ISSA Prevention Series No. 2001 (Sp) ISBN 92-843-3036 X ISSN 1015-8022 | DM | 15,- | | |
| 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,- | | |
| 7 E | english | Substances hazardous to health in the workplace Properties and protective measures. 1993 ISSA Prevention Series No. 2005 (E) ISBN 92-843-1050-4 ISSN 1015-8022 | DM | 15,- | | |
| 7 F | français | Produits dangereux pour la santé au poste de travail. Propriétés et mesures de protection. 1993 ISSA Prevention Series No. 2005 (F) ISBN 92-843-2050-X ISSN 1015-8022 | DM | 15,- | | |
| 7 I | italiano | Sostanze nocive sul posto di lavoro. Caratteristiche e misure di protezione. 1993 ISSA Prevention Series No. 2005 (I) ISSN 1015-8022 | DM | 15,- | | |
| 7 Sp | español | Sustancias nocivas en el puesto de trabajo Caracteristicas y medidas de proteccié 1992 ISSA Prevention Series No. 2005 (Sp) ISSN 1015-8022 ISBN 92-843-3050-5 | DM | 15,- | | |

| ☐ Ich bitte um Zusendung der umseitig vermerkten Broschüren gegen Rechnung an folgende Anschrift: | ANTWORTKARTE A REPLY CARD A CARTE-REPONSE A | ,0 |
|--|---|----|
| Please send the brochures listed on the reverseside to the address below and bill me for these publications: | | |
| Je vous prie d'envoyer à l'adresse suivante, contre facturation, les brochures indiquées au verso: | | |
| Anschrift / Address / Adresse | Sekretariat der IVSS – Sektion Chemie c/o BG Chemie | |
| | Postfach 10 14 80 | |
| | D-69004 Heidelberg | |
| | Deutschland Germany | |
| TelNr. | Allemagne | |
| Fax-Nr. | 6 + 6 + 2 + 9 + 8 + 7 m | |
| | I ANTWORTKARTE B | |
| | REPLY CARD B CARTE-REPONSE B | |
| | | |
| | | |
| | 9 | |
| | | |
| Anschrift / Address / Adresse | Sekretariat der IVSS – Sektion Chemie c/o BG Chemie | |
| | Postfach 10 14 80 | |
| <u> </u> | D-69004 Heidelberg | |
| , | Deutschland | |
| TelNr. | Germany Allemagne | |
| Fax-Nr. | | |

| Bestell-Nr. Order Number Numéro de commande | Exemplare copies nombres | zum Preis von against g payment of contre paiement de | Betrag Mamount montant | Bestell-Nr. Order Number Numéro de commande | Exemplare copies nombres | zum Preis von against Sayment of confre paiement de | Betrag A amount montant | Bestell-Nr. Order Number Numéro de commande | Exemplare copies nombres | zum Preis von against Ag payment of confre paiement de | Betrag M amount montant |
|--|--------------------------|--|-------------------------|--|--------------------------|---|--------------------------|--|--------------------------|--|-------------------------------|
| 1 D/E/F | | _ | | 6 D | | 15, — | 2,111 | 9 D | | 18, – | DIVI |
| 2 D | | 8,- | | 6 E | | 15, — | | 9 F | | 18,- | |
| 2 E | | 8,- | | 6 F | | 15,- | | 91 | | 18,- | |
| 2 F | | 8,- | | 61 | | 15,- | | 10 D | | 18,- | |
| 21 | | 8,- | | 6 Sp | | 15, — | | 10 F | | 18,- | |
| 3 D | | 8,- | | 7 D | | 15,— | | 10 I | | 18,- | |
| 3 E | | 8,- | | 7 E | 4 | 15,- | | | | | |
| 3 F | | 8,- | | 7 F | | 15,- | | | | | |
| 31 | | 8,- | | 7 Sp | | 15, — | | | | | |
| 4 D | | 8,- | | 8 D | | 18,— | | | | | |
| 4 E | | 8,- | | . 8 E | | 18,- | | | | | |
| 4 F | | 8,- | | 8 F | | 18,- | | | | | |
| 5 D | | 15, — | | 81 | | 18,- | | | | | |
| Gesam | t/Total | DM | | | | | | | | | |

| D | Ich möchte jeweils über die Neuerscheinungen der IVSS-Sektion Chemie kostenlos informiert werden. |
|---|--|
| D | Ich möchte über die zur Zeit lieferbaren Berichtsbände der von der Sektion Chemie durchgeführte Internationalen Kolloquien kostenlos informiert werden (Preisliste, Inhaltsverzeichnisse). |
| D | Ich bitte um kostenlose Zusendung mit den Publikationen der anderen IVSS-Sektionen. |
| D | Ich interessiere mich für eine Mitgliedschaft in der Sektion Chemie und bitte um kostenlose Information. |
| | |
| E | I would like to receive free information on the new publications of the ISSA Section Chemistry. I would like to receive free information on all currently available proceedings of the international symposia organized by the Section Chemistry (price list, tables of contents). |
| Ε | Please send me a free listing of the publication of all other ISSA-Sections. |
| Ε | I am interested in becoming a member of the Chemistry Section and would like to receive free information on this. |
| F | Je désire recevoir systématiquement, sans engagement de ma part, le signalement des nouvelles parutions du Comité Chimie de l'AISS. |
| F | Je souhaite recevoir gratuitement des informations (titres et tarifs) sur les actes des colloques internationaux organisés à ce jour par le Comité Chimie de l'AISS. |
| F | Je vous prie de me faire parvenir gratuitement le catalogue de publications des 12 comités AISS. |
| F | J'aimerais recevoir gratuitement des informations sur les modalités d'adhésion au Comité Chimie de l'AISS. |

| Bestell-Nr. Order Number | Sprache Language | Titel Title Titre | | zum Preis von against payment of | | |
|-----------------------------|---------------------|---|----|----------------------------------|--|--|
| Numéro de commande | Langue | | | paiement de | | |
| 8 D | deutsch | Sicherheit von Flüssiggasanlagen (Propan und Butan), 1992 ISSA Prevention Series No. 2004 (G) ISSN 1015-8022 ISBN 92-843-7047-7 | DM | 18,- | | |
| 8 E | englisch | Safety of Liquefied Gas Installations (Propane and Butane) 1992 ISSA Prevention Series No. 2004 (E) ISSN 1015-8022 ISBN 92-843-7047-4 | DM | 18,- | | |
| 8 F | français | Sécurité des installations de gaz liquéfié (butane et propane) 1992 ISSA Prevention Series No. 2004 (F) ISSN 1015-8022 ISBN 92-843-7047-X | DM | 18,- | | |
| 8 | italiano | Sicurezza degli impianti a gas di petrolio liquefatti (propane e butano) 1992 ISSA Prevention Series No. 2004 (I) ISSN 1015-8022 ISBN 92-843-7047-7 | DM | 18,- | | |
| 9 D | deutsch | Wege zu mehr Sicherheit Teil 1: Erfolgreicher durch mehr Sicherheit 1993 ISSA Prevention Series No. 2007 (G) ISSN 1015-8022 ISBN 92-843-7061-2 | DM | 18,- | | |
| 9 F | français | Améliorer la sécurité 1 ^{re} partie: Plus de sécurité, de meilleurs résultats 1993 ISSA Prevention Series No. 2007 (F) ISSN 1015-8022 ISBN 92-843-2061-5 | DM | 18,- | | |
| 9 | italiano | Le vie verso una maggiore scurezza parte 1 Più successo grazie a maggior sicurezza 1993 ISSA Prevention Series No. 2007 (I) ISSN 1015-8022 | DM | 18,- | | |
| 10 D | deutsch | Wege zu mehr Sicherheit Teil 2: Sicherheitsaudits 1993 ISSA Prevention Series No. 2008 (G) ISSN 1015-8022 ISBN 92-843-7062-0 | DM | 18,- | | |
| 10 F | français | Améliorer la sécurité 2º partie: Audits de sécurité. 1993 ISSA Prevention Series No. 2008 (F) ISSN 1015-8022 ISBN 92-843-2062-3 | DM | 18,- | | |
| 10 | italiano | Le vie verso una maggiore scurezza parte 2 Le revisioni (audit) die sicurezza 1993 ISSA Prevention Series No. 2008 (I) ISSN 1015-8022 | DM | 18,- | | |

AT LEAST ONE OF THE ISSA INTERNATIONAL SECTIONS ON THE PREVENTION OF OCCUPATIONAL RISKS COVERS YOUR OWN FIELD: DO NOT HESITATE TO CONTACT THE APPROPRIATE SECRETARIAT(S).



ISSA INTERNATIONAL SECTION for AGRICULTURE Bundesverband der Landwirtschaftlichen Berufsgenossenschaften Weissensteinstrasse 72 D-34131 KASSEL-WILHELMSHÖHE, Federal Republic of Germany



ISSA INTERNATIONAL SECTION for the CHEMICAL INDUSTRY
Berufsgenossenschaft der chemischen Industrie
Kurfürsten Anlage 62
D-69115 HEIDELBERG, Federal Republic of Germany



ISSA INTERNATIONAL SECTION for the CONSTRUCTION INDUSTRY
Organisme professionnel de prévention du bâtiment et des travaux publics (OPPBTP)
Tour Amboise
204, Rond-Point du Pont-de-Sèvres



ISSA INTERNATIONAL SECTION for EDUCATION and TRAINING Caisse régionale d'assurance-maladie d'Ile-de-France CRAMIF 17-19, place de l'Argonne F-75019 PARIS, France



ISSA INTERNATIONAL SECTION for ELECTRICITY
Berufsgenossenschaft der Feinmechanik und Elektrotechnik
Gustav-Heinemann-Ufer 130
D-50968 KÖLN, Federal Republic of Germany

F-92516 BOULOGNE-BILLANCOURT, France



ISSA INTERNATIONAL SECTION for INFORMATION Association nationale pour la prévention des accidents du travail (ANPAT) 88, rue Gachard, Boîte 4 B-1050 BRUXELLES (Belgium)



ISSA INTERNATIONAL SECTION for the IRON and METAL MANUFACTURING INDUSTRY
Allgemeine Unfallversicherungsanstalt
Adalbert-Stifter-Strasse 65
A-1200 WIEN XX, Austria



ISSA INTERNATIONAL SECTION for MACHINE SAFETY Berufsgenossenschaft Nahrungsmittel und Gaststätten Dynamostrasse 7–9 D-68165 MANNHEIM, Federal Republic of Germany



ISSA INTERNATIONAL SECTION for the MINING INDUSTRY OKD – Rozvoj a projektování (Ostrava-Karviná Coal Mines – Development and Projecting) Havlíckovo nábr. 38 CS-730 16 OSTRAVA 1, Czech Republic



ISSA INTERNATIONAL SECTION for PUBLIC HEALTH
Berufsgenossenschaft für Gesundheitsdienst und Wohlfahrtspflege (BGW)
Pappelallee 35-37
D-22089 HAMBURG, Federal Republic of Germany



ISSA INTERNATIONAL SECTION for RESEARCH Institut National de Recherche et de Sécurité (INRS) 30, rue Olivier-Noyer F-75680 PARIS CEDEX 14, France



ISSA WORKING GROUP on PERSONAL PROTECTIVE EQUIPMENT Centro Nacional de Medios de Protección del INSHT Apdo. Correos 615 E-41080 SEVILLE. Spain