

magazine

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Magazine of the European Agency for Safety and Health at Work

Preventing accidents at work



NEW TRENDS

GOOD PRACTICES

EUROPEAN WEEK 2001

Front cover photo courtesy of the Health and Safety Authority, Ireland

<http://osha.eu.int>

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

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Director, European Agency for Safety and Health at Work



Foreword

Accident rates at work have remained persistently high over the last decade. Most recent statistics show that almost 5 500 people in the European Union lose their lives at work each year and a far greater number are injured. As well as the human suffering involved, there is the economic impact. Every year, the direct insurance costs alone of workplace accidents are estimated to be €20 billion and 149 million working days are lost. Individuals, businesses and society all pay the price. So it is vital to stay on our guard against accident risks.

The positive news is that detailed long and short-term analyses have shed valuable light on the causes and incidence of these risks and, more crucially, indicated often powerful preventive measures. The challenge is to ensure that this information and good practice are disseminated and adopted as widely as possible.

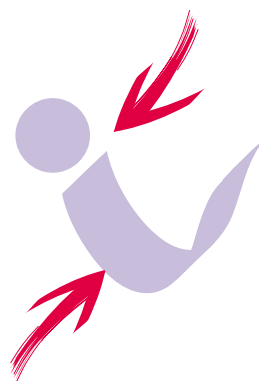
To facilitate this, the European Week for Safety and Health at Work 2001 focused on preventing workplace accidents. The Agency's determination to stimulate further advances in this field is underlined by the fact that we have joined forces with the Belgian Presidency of the EU to organise the Week's closing event. Held in the European Parliament in Brussels, it includes a major conference on the 'Prevention of work-related accidents: a different strategy in a changing world of work' as well as the second European Good Practice awards ceremony.

A number of the conference themes are explored in this magazine, dedicated to preventing accidents at work. In it you will find a wide range of authoritative articles on this topic, covering issues such as accidents and employability, the impact of the changing world of work and social partner perspectives. Many of these articles are founded on rigorous analysis, the bedrock of effective prevention programmes.

The European Week campaign has placed particular emphasis on small- to medium-sized enterprises (SMEs) because these continue to account for the lion's share of work-related accidents. This is also why the Agency has launched an SME funding scheme, financed by the EU and designed to encourage the spread of good OSH practice amongst this target group of businesses.

This magazine also unveils and analyses the findings from a study of over 20 successful accident prevention interventions across Member States, at a national, sector, local and enterprise level. Funded by the Agency, the study provides encouraging evidence that carefully orchestrated and targeted programmes can have a substantial impact on the incidence and severity of accidents. Crucially, many of the initiatives evaluated in the study hold 'universal' lessons that could be fruitfully applied to other countries, industries and individual companies.

It is essential to continue to combat the continuing long-term risks of work-related accidents that can have a damaging and even disastrous impact on people's lives. These risks can be rationally pinpointed, assessed and reduced and we hope the information contained in this issue will contribute towards further progress in this arena.



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PROFESSOR JORMA SAARI

Topic Centre on Research: Work and Health, Finnish Institute of Occupational Health

Accident prevention today

One accident is too many

Despite improvements in occupational safety over the last decade, around 5 500 people lose their lives each year through work-related accidents in the European Union. More than 75 000 are so severely disabled that they can no longer work. Moreover, major surveys have found that people experience more physical problems at work than before, dispelling the often fashionable belief that new technology has eradicated difficulties such as manual lifting of heavy objects.

” *It is a basic human right to return home safely from work.*

prevention regimes. It is a basic human right to return home safely from work; nobody should be killed or harmed in occupational accidents. Until we reach this position, there will still be work to be done in the field of accident prevention.

Part of the problem is that people tend to underestimate long-established risks, such as falls, and overestimate the new, for example workplace violence. Both need to be recognised and controlled.

Major socio-economic developments are also changing the scale and pattern of accidents and risks. Transportation, for instance, is expanding tremendously, conveying much larger volumes of people and goods. In addition, all systems are getting bigger and more complicated. Technological advances might have reduced the probability of accidents in these environments, but if one does occur, the potential scale of a catastrophe is markedly higher.



Scaffolding in the European Parliament construction site in Strasbourg.

This evidence, together with scores of other statistics and studies, firmly underlines the need for even more rigorous accident

High costs of accidents

At an individual level, the personal costs of an accident, emotional and financial, can be high. As well as the pain and mental distress, it can cause a major life change. Injury insurance systems aim to protect the injured and their dependants but compensation varies significantly from country to country.

From a corporate perspective, accidents disrupt production, thus increasing costs and sometimes undermining the organisation's reputation. Demands on public services, such as health care, also increase.

The net effect of occupational accidents is a significant national economic loss. Depending on the country, costs vary from 1-3% of gross national product.

These costs ultimately fall on all citizens, both taxpayers and consumers. The question is: Are we really willing to continue to pay this high price? This is essentially a question of political will, as the economics speak for themselves: more effective accident prevention would not only reduce costs but also boost productivity.

Accident prevention and scientific research

The science of accident prevention started during World War I, focusing both on human safety and the control of various harmful 'energies' in the workplace. In the late sixties, the emphasis was on the systematic interaction of people, machines and the work environment. This so-called 'systems approach' greatly advanced the understanding of effective prevention. Major accidents have shown that it is not enough to analyse a single person or machine in isolation from the rest of the working community and other elements in the workplace. More recently, researchers have turned their attention to organisational and cultural factors.

Even if a person or a machine has characteristics that make them more vulnerable to accidents, a variety of factors determine the probability of an accident. Accidents do not necessarily happen where expected. For example, people can walk safely on slippery surfaces, but slip on a small spot of oil on the floor.

” *Accidents do not necessarily happen where expected.*

A false sense of security can prompt people to ignore risks. For example, a recent study showed that trucks very often tilt over on straight roads in good weather conditions and in broad daylight.

Adverse weather conditions call for better concentration and, consequently, do not produce as many accidents as one could expect.

The human element is important since people cannot cope with some conditions, especially the unexpected. Accidents by definition are unexpected and most people find it hard to manage unexpected situations (see example in box below).

On the wrong track

In a recent train accident, the driver did not slow down early enough while approaching a station. He was an experienced driver, who had driven passenger trains to this station countless times before. Passenger trains usually went to track number one, but this time his was deviated to track three. Unfortunately in this relatively unfamiliar and unexpected territory, he did not notice the signals and failed to slow down early enough, killing ten people, including himself.



Photo courtesy of the Health and Safety Executive, UK

The case of the train driver underlines how routines strongly influence the way people acquire information. We usually have too much information for a given situation and ignore those elements that do not normally affect the situation, based on previous experience. To avoid the risks of these presumptions, so clearly illustrated by the example of the train accident, we need to allow more time for decisions in situations that go against experience.

“A good safety culture is a work environment where all members of the organisation share a high safety ethic.”

Another important factor is that people behave differently in different settings. One of the contributing factors is an organisation's culture, more specifically its safety culture. The members of an organisation are

governed by a relatively similar set of values. This may be because organisations tend to recruit people who think in a similar way. It may

also be a relatively conscious development. A good safety culture is a work environment where all members of the organisation share a high safety ethic. Either fatalism or 'production-first' thinking leads to a negligent attitude towards hazards in a bad safety culture. Top management commitment is essential to promote a safety culture.

New approaches to accident prevention

Although significant progress has been made in accident prevention, our thinking needs to evolve to meet the demands of new work practices and settings.

Three interesting new ideas are emerging which practitioners could use:

- *Zero-accident vision:* Eliminating all accidents is not the direct goal here; instead the aim is to encourage people to think that all accidents are preventable. Too often people tolerate hazards and accidents because they believe these are either non-preventable or that a certain number are inevitable. Higher safety goals in organisations are a step towards greater adoption of the zero-accident vision. Promoting this vision is an important weapon in the battle against all-too-common fatalism.
- *Integrating safety measures across time segments and communities:* Safety efforts in society are usually organised separately according to life's time segments, such as work, leisure, home and travel, with different government departments often covering different elements. Yet a safe person at work does not become unsafe in traffic.

A more integrated approach to safety management would be more efficient and make better use of pooled information. The need for this is reinforced by the blurring of the traditional boundaries of where work is conducted, as more people 'telecommute' and work from home. The Safe Community Program, promoted by World Health Organisation¹, is an interesting new approach to this issue. The programme, which has produced positive results, is designed to improve safety across all of a community's activities, from travel and leisure to work.

- *Globalisation as a platform for accident prevention:* Generally, people tend to expect higher safety and environmental standards from global corporations than from local enterprises. In fact, many have already achieved lower accident figures, conscious of the need to preserve their global brand reputations. In this context, multinationals could be a valuable channel for exporting good practices to operations in other countries, or for setting common safety standards. They could also demand that their suppliers follow equally rigorous standards. The rise of the Internet and Extranet facilities makes it easier than ever before to rapidly disseminate and update these standards globally.

The value of more systematic records of accidents

Established safety management systems embrace hazard identification, risk assessment, implementation of prevention measures, monitoring and review. This holistic view of accident prevention has generated a vast reservoir of knowledge and information that is often not recorded and collated, undermining our ability to learn from experience.

In the future, more prevention-oriented record keeping is necessary. An American union of paper workers has recently proposed one interesting solution – a performance index. The system records all incidents, near misses, accidents, and potentially serious accidents. If the recommendations made on the basis of these recorded incidents are in place within 90 days, near misses and less serious incidents are not included in the index. A similar approach applies to potentially

serious accidents. Initially, they are marked as two incidents in the index. If the remedial action carried out within 90 days, they are recorded as one incident.

Performance-related safety initiatives like this could play an important part in pushing accident prevention up the corporate agenda by striking a chord with companies' increasing emphasis on performance-related incentives to sharpen their competitive edge.

REFERENCE

1 See <http://www.phs.ki.se/csp/>

DIDIER DUPRÉ

Eurostat

Statistics spell it out



Work-related accidents in the EU, 1998-1999

Recently released statistics from Eurostat¹ reveal the human and financial costs of work-related accidents, which remain at stubbornly high levels all across Europe.

During 1998, there were 4.7 million occupational accidents leading to more than three days' absence from work. This represents a fall in the incidence rate of 0.4% to 4 089 accidents per 100 000 people. Initial estimates for 1999 suggested the rate was on the rise again and would approach the level of 1996 (4 229). However, this would still represent a substantial improvement on the 1994 rate (4 539). The total number of accidents, including those which did not involve absence from work, amounted to 7.4 million, equivalent to 6 380 per 100 000.

The incidence of accident-related deaths at work fell by 3% to 5.0 per 100 000 people. Overall, 5 476 people were killed at work. A

further 3 100 fatal accidents occurred between home and work. Out of this total of nearly 8 600 work-related deaths, 59% were due to road or transport accidents.



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Fishing is the most dangerous economic activity

The fishing sector had the highest incidence of accidents: 2.43 times the EU occupational average. Other high-risk sectors included construction (1.41 times the EU average), health and social welfare (1.34) and agriculture (1.32).



© Yves Cousson-INRS, France.

SME rates remain high

In companies employing 10-49 people, the incidence of accidents leading to three or more days' absence from work was 1.26 times the average. The highest rates were recorded in transport (1.43 times the average of the branch) and construction and manufacturing (1.2).

Similar rates were found in companies employing 1-9 people, with manufacturing, construction and transport again leading the field (1.1-1.3 times the branch averages).

Newly-employed and young are most vulnerable

People employed for less than two years were 1.2-1.3 times more likely to have an accident than the average worker, irrespective of whether they had a temporary or permanent contract. In some sectors the figure was much higher. Staff in hotels and restaurants who had been permanently employed for less than two years were 47% more likely to have an accident, relative to their industry average. People temporarily employed in construction were 65% more likely to have an accident than other workers in their sector.

The risk of an accident for people aged 18-24 was 1.4 times the average. People working night shifts of at least 20 hours a week were 1.4-1.5 times more likely to have an accident.

Work-related health problems

In 1998 and 1999, some 7.7 million people suffered from work-related health problems each year, other than accidental injuries. For health problems linked to the main job currently held, the work-

related health problems prevalence rate is 5 372 cases a year per 100 000 employees. The prevalence increased with age, rising to 7 150 for the 55-64 age group.

A total of 53% of cases involved musculoskeletal disorders. These were most common in the health and social welfare sector (1.6 times the average), followed by construction and transport.

A total of 18% of cases were related to stress, depression or anxiety, 26% among cases leading to two or more weeks' absence from work during the year. In education and the health and social welfare sector, the incidence of these problems was twice the average.

Lung disorders affected 0.6 million people. The incidence in mining was twice the average.

Social and economic costs

Due to accidents at work, around 5% of people were forced to change their job or place of work or reduce their working hours. In all, 0.2% stopped working permanently.

Between 1998 and 1999, it is estimated that work-related accidents cost the EU 150 million working days per year. A further 350 million days were lost through work-related health problems. Together, the total 'bill' was 500 million days per year.

These are the stark statistics. Behind them lies the true cost of workplace accidents – the pain and suffering of workers and their families, the tragedy of wrecked lives. The challenge facing all those working in the field of accident prevention is to make Europe a safer place to work.



Scaffolding in the European Parliament construction site in Strasbourg.

Accidents at work with more than 3 days' absence from work

NACE rev1 Section (branch) Subsection or division (sector)	(Economic activity) Persons in employment 1998 (1 000)	Number		Incidence rate (number per 100 000 persons in employment)								Trend %		
		1998	1999*	1994	1995	1996	1997	1998	1999*			94-98	96-98	98-99*
Total - all branches of activity	136 150	4 678 586	4 850 120*	4 539	4 266	4 229	4 106	4 089	4 206*			-9,9%	-3,3%	2,9%*
of which (when specified) :														
Men				5 960	5 534	5 458	5 291	5 268	:			-11,6%	-3,5%	.
Women				1 936	1 864	1 924	1 865	1 890	:			-2,4%	-1,8%	.
18-24 years						5 751	5 613	5 725	:				-0,5%	.
25-34 years						4 390	4 210	4 179	:				-4,8%	.
35-44 years				:	:	3 766	3 696	3 678	:				-2,3%	.
45-54 years				:	:	3 558	3 548	3 543	:				-0,4%	.
55-64 years				:	:	4 063	3 671	3 602	:				-11,4%	.
A Agriculture, hunting and forestry	5 092	345 766	373 340*	6 496	6 123	6 771	6 647	6 790	7 510*			4,5%	0,3%	10,6%*
D Manufacturing	30 156	1 354 762	1 369 376*	5 071	4 962	4 660	4 607	4 492	4 546*			-11,4%	-3,6%	1,2%*
F Construction	10 375	830 873	883 045*	9 014	9 080	8 023	7 963	8 008	8 261*			-11,2%	-0,2%	3,2%*
I Transport, storage and communication	7 509	440 143	461 309*	6 139	5 790	6 018	5 937	5 862	5 999*			-4,5%	-2,6%	2,3%*
N Health and social work (estimated from the ad hoc module in the 1999 Community Labour Force Survey)										5 100				

* : Provisional estimation from 1998 ESAW data and national evolutions 1998-1999 for non-harmonised national data.

Fatal accidents at work

NACE rev1 Section (branch) Subsection or division (sector)	(Economic activity) Persons in employment 1998 (1 000)	Number		Incidence rate (number per 100 000 persons in employment)								Trend %	
		1998	1999*	1994	1995	1996	1997	1998	1999			94-98	96-98
Total - all branches of activity	136 150	5 476	:	6,09	5,9	5,18	5,22	5,03	:			-17,5%	-3,0%
of which (when specified) :													
Men				:	:	7,70	7,70	7,40	:			.	-3,8%
Women				:	:	0,76	0,82	0,84	:			.	11,6%
18-24 years				:	:	3,88	3,71	3,60	:			.	-7,3%
25-34 years				:	:	4,10	3,94	3,85	:			.	-6,2%
35-44 years				:	:	4,58	4,87	4,60	:			.	0,5%
45-54 years				:	:	6,28	6,00	6,12	:			.	-2,5%
55-64 years				:	:	8,31	8,94	8,06	:			.	-3,0%
A Agriculture, hunting and forestry	5 092	631	:	14,0	13,8	12,9	12,6	12,4	:			-11,4%	-3,9%
D Manufacturing	30 156	1 101	:	4,6	4,2	3,9	4,0	3,7	:			-19,6%	-5,1%
F Construction	10 375	1 330	:	14,7	14,8	13,3	13,1	12,8	:			-12,9%	-3,8%
I Transport, storage and communication	7 509	883	:	13,7	13,7	12,0	12,1	11,8	:			-13,9%	-1,7%

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KS-NK-01-016-EN-C

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catalogue N° KS-NK-01-017-EN-C



Courtesy of the Health and
Safety Authority, Ireland.

SOURCES AND NOTES ON METHODOLOGY

European Statistics on Accidents at Work (ESAW) – Eurostat

Under the ESAW project, all cases of accidents leading to an absence of more than three calendar days are included in the data. An accident at work is defined as a 'discrete occurrence in the course of work, which leads to physical or mental harm.' This includes cases of acute poisoning and wilful acts by other people but excludes self-inflicted injuries and accidents on the way to and from work (commuting accidents).

'In course of work' means whilst engaged in an occupational activity or during the time spent at work. This includes cases of road traffic accidents in the course of work. A fatal accident is defined as an accident which leads to the death of a victim within one year (after the day) of the accident.

Depending on the reporting procedure in Member States (insurance or non-insurance-based systems) the reporting levels for accidents at work differ. In general, the reporting levels are very high in the insurance-based systems and considered to be about 100%. The non-insurance-based system has only a medium reporting level usually ranging from 30-50 %, on average, for all branches of economic activity taken together. The data from the two sources, insurance-based or non-insurance-based data corrected according to the reporting level, are not strictly comparable.

Ad hoc module on health and safety at work in the 1999 Community Labour Force Survey – Eurostat

The Community Labour Force Survey is conducted each spring. It covers a representative sample of the entire population living in private households. The 1999 ad hoc module on health and safety at work involved interviews with more than 500 000 people in 11 Member States.

GETTING MORE INFORMATION

Eurostat is the Statistical Office of the European Communities. It publishes official harmonised statistics on the European Union and the euro zone. You can find more information on Eurostat's website at: <http://www.europa.eu.int/comm/eurostat>

An Agency factsheet *Work-related accidents in the EU – the statistical picture (1998-1999)* is available in all EU languages at: <http://agency.osha.eu.int/publications/factsheets/>

EUROPEAN WEEK 2001

Success is no accident



European Week adds weight to drive to cut work accidents

The drive to reduce the human and financial costs of work-related accidents was given a major boost by the 2001 European Week for Safety and Health at Work (EW2001), held during October in all 15 Member States and beyond.

Under the slogan 'Success is no accident', the campaign placed particular emphasis on the human and commercial advantages of lower accident rates at work in a bid to encourage more businesses to sharpen their OSH practices. Currently, there are over 4.5 million accidents in the EU that lead to three or more days off work, costing organisations around 146 million days in lost output. Direct insurance costs add a further €20 to the bill.



Anna Diamantopoulou, European Commissioner for Employment and Social Affairs

Launching the Week, Mrs Anna Diamantopoulou, European Commissioner for Employment and Social Affairs, commented: "The human and economic costs of work-related accidents make a compelling case for accident prevention to remain at the top of the European Community's agenda."

"Reducing work-related accidents is not just a moral imperative, there is a strong business case for doing so as well," added Mona Sahlin, Swedish Minister for Industry, Employment and Communications. "The most successful companies usually have the best accident prevention records." Reducing the risk of accidents at work is one of the principal factors in improving the quality of life, which was a central theme of the Swedish Presidency of the European Union.



Mona Sahlin, Swedish Minister for Industry, Employment and Communications



To combat these and other key hazards, the Agency produced an information pack in all 11 Community languages for the campaign, including four new factsheets, each providing important preventative advice. Over 1 million copies of these were distributed throughout Member States during EW2001. The new factsheets cover:

- **Preventing work-related slips and trips:** Slips, trips and falls are the biggest contributors to accidents in the EU across all sectors, from 'blue collar' activities such as construction, to office jobs. The factsheet not only spells out employers' responsibilities under European Directives, for example the need to ensure floors have no dangerous bumps, holes or slopes, but also provides guidance on managing these risks and, crucially, offers good working practice advice. This includes general floor maintenance as well as recommendations for improving lighting, stairways and outdoor spaces, all key factors. High stress is put on using appropriate, non-slip footwear.
- **Preventing vehicle transport accidents at the workplace:** Around one-third of all workplace fatalities, not to mention disabling injuries, are due to vehicles. A vital component for eliminating or at least reducing these risks is to identify potential hazard spots, particularly when vehicles are loading, unloading or reversing. Ideally, sites should be re-designed to avoid reversing. Pedestrian routes should also be segregated from road traffic. These are just some of the general recommendations made by the factsheet. There is also advice for vehicle maintenance and, equally importantly, driver safety, with a drivers' checklist and a special section on using fork-lift trucks, so often the root of vehicle-related accidents.
- **Accident prevention in the construction sector:** Did you know that construction workers are three times as likely to be killed and twice as likely to be injured as workers in other industries? These risks could be substantially cut through a combination of hazard assessment, 'good housekeeping', training and better personal protective equipment. The factsheet maps out the core risk areas – notably working from heights, excavating and moving loads –

and provides practical solutions to minimise the risks of an accident. The need to make workers more aware of these risks and preventative measures through training and information is also highlighted. In addition, there is a handy checklist for using scaffolding and ladders safely.

- **Successful management to prevent accidents:** Accidents don't just affect the individuals injured, they can also have significant legal and financial implications for businesses that have allowed them to occur by not complying with relevant EU health and safety directives. This factsheet starts by listing the key directives and then moves on to provide a framework for improving and managing OSH within the context of these legal obligations. Management commitment is essential, both in terms of setting clear OSH policies and providing the resources to deliver them. Employee involvement in developing practical safety standards and procedures is another pre-requisite, for example through works councils and other bodies. To steer organisations towards optimal OSH management, the factsheet offers a step-by-step guide to planning, implementing and auditing successful strategies, including the key points for conducting a risk assessment, a pivotal first step in the process. There is also a useful 'aide-memoire' checklist at the end to ensure businesses cover all the bases.

In addition to the factsheets, the Agency launched a special grant scheme (see box) aimed at spreading good OSH practice and risk awareness amongst SMEs, the largest source of accidents in the EU. The Agency also ran its annual 'European Week' good practice award scheme for innovative solutions for preventing accidents at work. Posters and leaflets encouraging businesses to get involved OSH initiatives were also produced, complemented by a regularly updated multilingual website (<http://osha.eu.int/ew2001>).

A new on-line service at the Agency's website (<http://osha.eu.int>) provides an electronic gateway, linking to a wide range of practical information covering almost every employment sector from the chemical industry to catering, and from manufacturing to mining.

Together, these and other support services enabled organisations across the EU to arrange a broad cross-section of events designed to highlight the threat of workplace accidents and provide practical solutions, stimulated by the Agency's network of national Focal Points. These ranged from special safety audits for businesses, training seminars and workshops to information campaigns and competitions

New funding to cut SME accident rates

A €4.5 million grant scheme has been launched by the Agency in a bid to reduce the disproportionately high number of accidents in small- to medium-sized enterprises (SMEs) in the EU.

Funded by the European Community, the scheme provides co-funding of between €25 000 and €200 000 for initiatives that encourage SMEs to adopt good OSH practice, either through training, information campaigns or the development of new health and safety practices, focusing on priority hazards. The grants cover up to 60% of the costs of national projects and up to 80% of the expenses of trans-national programmes.

The scheme was open to all organisations, including SMEs, and the grants were awarded in October. You can find full details of these, together with further information about the scheme, at the Agency's website: <http://osha.eu.int/ew2001/>

for developing and exchanging good practice. Initial reports indicate that an encouragingly high proportion of these events took place 'at source', at the workplaces themselves, with both managers and 'shop floor' staff often actively participating.

Although a formal audit of EW2001's impact has yet to be carried out – it had only just finished when this magazine went to press – all the evidence suggests that it could have been even more successful than last year's European Week, which focused on musculoskeletal disorders.



Good Practice Awards 2001

Innovative types of accident prevention

Slagteribranchens Arbejds miljøudvalg Slagteri- og Kødbranchens BST - Denmark
'Butchers say no to accidents'

Local Health Unit Enterprise of the Province of Sondrio - Italy
Safe crossing - protection of transit paths and dangerous areas in sawmills

Union Syndicale Artisanale Tarnaise - France
'Supporting microenterprises' - training and intervention programme

Prevention of slips, trips and falls

INDUSTRIAS SERVA S.A. - Spain
Safety at work now and always

Management of accident prevention

BGZ Wegvervoer - The Netherlands
Safety and health performance checker for road transport

Fenster Mersch S.A. - Luxembourg
Practical solutions in a small woodworking factory

Abbott Ireland - Ireland
Automating for safety - without creating maintenance problems

Accident prevention in construction, agriculture and fisheries

MiVeDi bvba - Belgium
Sea safety - accident prevention in the fishing sector

Unità Funzionale di Prevenzione Igiene e Sicurezza nei Luoghi di Lavoro Alta Val d'Elsa, Azienda USL 7 di Siena - Italia
Protocol for safe building renovation

ARBOUW - The Netherlands
Construction safety planning tool

Innovative training programmes for preventing accidents

London Borough of Greenwich - United Kingdom
Building site orientation training and colour-coding

The Finnish Road Administration - Finland
Roadworks vehicle safety - training programme for contractors involved in working on roads and in other transport areas

Zentrum für Umwelt und Energie der Handwerkskammer Düsseldorf Handwerkszentrum Ruhr - Germany
Healthy craftwork - online risk prevention tool

TITAN CEMENT Co S.A. - Greece
Training and staff involvement - in a long-term accident prevention programme

Accident prevention networks/partnerships

Hickson & Welch Ltd - United Kingdom
Employer and trade union partnership

ULSS (Local Health Unit) N. 6 "Vicenza" - Italy
Partnership working - in the metallurgical and mechanical sector using near-miss accident analyses

RHI AG (Radex Heraklith Industriebeteiligungs AG) - Austria
Using near-miss accident analyses

RIK OP DE BEECK AND KATHLEEN VAN HEUVERSWYN

Topic Centre on Research: Work and Health, PREVENT, Belgium

New trends in accident prevention

The changing world of work

The world of work is changing. Globalisation, downsizing, the trend towards a service economy, part-time work, temporary work, subcontracting, an ageing workforce – these have all played a part. What are the implications for accident prevention? Can the old strategies and structures cope with the newly emerging risks? How can we adapt our prevention strategies and what are the factors for success?

Prevention strategies can be divided into two groups. The first, on the basis of globalisation and the market-oriented economy, calls for marketing and the promotion of safety. The second, recognising how work organisation has changed and the level of knowledge has increased, opts for making managers and workers as responsible as possible.

Anticipating new risks

Work organisations are rapidly changing, calling for a dynamic approach towards occupational safety and health and accident

prevention. This can only succeed if there is a strong management commitment and a high level of employee involvement that incorporates accepting responsibility.

Information and participation

Information is an important element of management in general but especially so in the management of change. Information and communication campaigns can be very efficient in dealing with uncertainty and can help to improve job satisfaction and to avoid risks.

Global participation approaches¹ in risk assessment and prevention activities – with everyone involved – often have a positive impact on accidents at work. Participation in risk analysis and training has a positive influence on attitudes, which are often the bottleneck in accident prevention. The workforce can learn to look at its work activities in terms of safety. This can lead to the identification of hazards and risks at a very early stage, which in turn can help to anticipate new risks as working conditions change rapidly. In one supermarket chain, accidents fell by 50% after a participatory project.



Italian poster for the European Year for Safety and Health at Work

Performance measurement of prevention

The cost-benefit analysis of prevention is not easy. Nevertheless, it has been generally accepted that rapidly changing risks at work can be tackled effectively only when everybody in the company approaches them pro-actively. Prevention is being seen as the result of economic considerations and as an investment in a company's innovative capacity and future prospects². Management systems try to integrate performance measurement of prevention to achieve a higher safety level (see Box 1).

BOX 1

Performance measurement of prevention: 'Prevention share' scheme at Janssen Pharmaceutica, Belgium

Janssen Pharmaceutica used to have a reward scheme for units with a good safety record. Workers in departments with no accidents at all during a certain period of time received a present. However, not everybody was happy with this system, so Janssen developed a new evaluation system with different criteria, called 'Prevention Share'. Its basic principles were:

- **Pro-active performance measurement:** the focus and measurement of efforts to prevent accidents at departmental level (management, employee involvement, innovation and continuous improvement).
- **Safety, health and environment incentive programme:** promotion of safety, health and the environment and a positive appreciation of efforts to improve all these at departmental level.

The word 'share' was chosen because the value can go up or down. Scores are calculated using a clearly defined system. The share value equals a prize, which can either be a present for the department as a whole (for example a work of art) or a gift for an individual employee.

The project was very successful and generated a positive prevention culture within the company. Every department made a big effort and the accident rates dropped to their lowest-ever level.

Life-long learning

Efforts have to be made to increase people's ability to handle risks³. Life-long learning is becoming more important if employees are to sustain their employability as well as their health and safety. Temporary, fixed-term and part-time employees have less access to training and often perform tasks requiring fewer skills, so they have less opportunity to learn on the job. They are also less informed about the risks of their jobs. This poses a problem for OSH management and also for human resources management. Life-long learning can help to anticipate changes.

Here are some examples of integrated learning programmes:

- In the chemical industry, the organisation of targeted and mandatory safety and health training for all workers every year is common.
- Some certification systems (for example the VCA scheme – see Box 2) put the accent on repeated training and can help to promote life-long learning. Everybody must receive basic training regularly for certification to be renewed.



Courtesy of the Health and Safety Executive, UK

Promoting safety

Companies, governments, and sector organisations have been looking at other ways of promoting health and safety. Two important developments are the use of occupational safety and health (OSH) as:

- a criterion for purchasing products and services; and
- a marketing element for promoting the sales of products or services.

OSH as a purchasing criterion

Labelling and certification of products, goods, and services are intended to respond to these recent developments⁴. They were initially devised as marketing tools aimed at increasing productivity and competitiveness, but their positive impact on the safety and health of the workforce is undeniable (see Box 2). The same reasoning which lay behind labelling and certification inspired the development of management systems that integrate occupational safety and health into management strategy⁵.

BOX 2

VCA – Veiligheids Checklist Aannemers (Contractor's Safety Checklist)

This procurement system was developed in the petrochemical industry in the Netherlands and has now spread to other sectors and countries. The growth in contract work has led to the use of uniform requirements for contractor OSH training or OSH management systems (policy, objectives, procedures, strategy, accident rates, etc.) A third party has to carry out the certification or the initial approval. Part of its success seems to be the result of the system's simplicity and practicality and also because the large client companies participated in its development and used their OSH experience to define the criteria.

Marketing strategy

When it comes to safety, marketing techniques have rarely been used. As safety is not a product but a value, social marketing strategies can offer ideas to motivate people to change their attitudes, to show companies how improving safety can improve profits, and to convince politicians of the overall benefits of an integrated safety policy.

Globalisation provides an opportunity to promote safety. A company with a poor safety and environmental record puts its public image at risk. It is very bad publicity when negative effects of globalisation are splashed across television screens and newspapers.

The concept of Corporate Social Responsibility (CSR)⁶ can provide a structure for promoting safety; a lot of global companies have already shown their willingness to set high safety goals. Many have already achieved lower accident figures.

Multinationals are in a position to export good practices established in one part of their operations to other parts in other countries and to set common safety standards. Similarly, they may specify safety requirements for their procurement and contracting activities throughout the company. Details of how one branch has solved a particular safety problem can be passed on to others.

Company values

Companies which embrace social values and act conscientiously according to their mission statements seem to generate a positive outlook and a high level of employee involvement. A coherent policy - starting with a mission statement and realised through concrete initiatives, programmes and actions, both within and outside the company - can mobilise employee commitment.



Courtesy of the Health and Safety Executive, UK

This exercises a positive influence on the safety culture as a whole and even on the individual risk-avoiding behaviour of employees. The French Bouygues Group has produced a 'Human Resources Charter' and a 'European Social Charter' (www.bouygues.com). The company has lower-than-average accident rates.

Community approach

The idea of the 'community approach' is to change the attitude of the entire community in several domains at the same time (professional environment, private life, leisure activities, education etc.) in order to create a 'safety attitude'. Successful experiments using the community approach have been carried out worldwide. These concepts can be transposed to other cultures and are very useful for small companies.

Conclusions

Safety promotion and marketing can help to raise awareness among different groups of users, who are less familiar with safety matters and so have to be convinced of their own needs. Examples include:

- *employees and the general public* who should become aware of the importance of a 'safety attitude'
- *industry* should abandon the illusion that bad-case scenarios will not happen to them; and
- *politicians* need to be aware of their social responsibility for developing regulations.

More research is needed to validate the success of prevention strategies for coping with the changing world of work. We should therefore invest in research to learn from the past and to anticipate even more changes in the future.

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STEFANO BOY

TUTB (Trade Union Technical Bureau) Belgium

Trade unions and SMEs

Why the TUTB believes that unionised workplaces have fewer accidents

Despite the low level of accident reporting and the difficulty in using existing safety records of specific sectors, research shows that many small and medium-sized enterprises (SMEs) have rates of occupational disease and safety-related incidents/accidents exceeding the average rates for the whole of private industry².

However, it is believed that unionised workplaces have fewer accidents and the TUTB shares the view that the presence of unions in small and medium-sized enterprises could improve their health and safety performance.

The reduction of occupational injuries relies on a clear definition of working conditions and the implementation of risk prevention strategies. Isolated initiatives and schemes often do not reach a social objective. The TUTB argues that safety and prevention can only be achieved if such schemes are pursued and carried out based on a network of good communication between all parties (e.g. employers, employees, trade unions, and safety representatives), mutual help, and financial and cultural facilities.



Employee at screw conveyors, which are covered by mesh to prevent accidents.
Courtesy of Slagteribranchens Arbejdsmiljøudvalg Slakteri- og Kødbranchens BST, Denmark.

Conformity to safety standards and engineering adjustments to work equipment (e.g. fitting guards to machines) must be complemented by health and safety promotion. This can involve the definition of organisational strategies, the aim of which must be for SMEs to give health and safety a far higher priority.

As we see it

Tripartite co-operation has a crucial role to play in cutting the cost of accidents at work.

Here, four representatives of the EU's social partners describe recent initiatives aimed at improving workplace safety.

The Framework Directive contains specific provisions for training, information, consultation and participation of workers on health and safety matters. However, arrangements for worker representation in health and safety require more than the existence of a legal reference frame: the presence of a culture that will support it is essential too.

A long way to go

In general, the implementation of a health and safety prevention system in SMEs is still an unfinished process in most European countries. There are formidable obstacles to the improvement of health and safety conditions in SMEs. These include organisational factors, such as:

- limited access to information;
- few health and safety resources;
- shortage of skilled employees;
- difficulties in hiring staff dedicated to health and safety activities;
- lack of relevant training and competencies needed to implement strategies; and
- inability to identify occupational hazards and conduct surveillance.

” *Competence is often concentrated in the manager, forming an information bottleneck.*

reached and influenced by specific solutions to their health and safety problems. Even if SMEs come across essential health and safety information, other parameters intervene. One of these is ‘individualism’ – for example, where an employee leaves his firm to set up his own business. He may well have enough experience to run the practical side of things, but little idea of the duties of being an employer. Other factors include SMEs’ high level/degree of independence and a manager’s sense of personal responsibility. All these can run counter to acknowledging the value of health and safety information.

Competence is often concentrated in the manager, forming an information bottleneck. Very often the manager can think that because there have been no accidents in his own firm, the occurrence of accidents in SMEs is quite rare. Therefore he cannot grasp that ‘good health and safety is good business’; rather he may believe the exact opposite – that intervention in occupational health and safety matters can actually inhibit workflow and productivity.

” *The most important reason for not doing a risk assessment in the workplace is the misconception that the Framework Directive does not apply to SMEs.*

most important reason for not doing a risk assessment in the workplace is the misconception that the Framework Directive does not apply to SMEs.

There are also structural factors, such as diversity, insecurity, and a short and limited lifespan, which prevent SMEs from being

Finally, occupational health regulations may be confusing for many managers. In fact, it could be argued – on the basis of surveys conducted by the European SMEs Monitoring Centre – that the

The role of trade unions

The TUTB supports the idea that good workplace organisation is an essential prerequisite for the improvement of health and safety conditions. In SMEs more than anywhere else, it is an essential precondition for any integrated prevention policy covering all work-related factors that workers should become active protagonists of accident prevention. The Framework Directive recognises that the main way for employees to participate is through collective initiatives. In this context, trade unions have an important role to play in preventing accidents in SMEs.

The application of the Framework Directive has in general stimulated trade unions’ activities in health and safety matters, covering the whole range of workplace conditions. Today, trade unions feel that safety representatives integrated into the formal trade union organisation in the workplace may contribute towards achieving considerable improvements in health and safety matters.

On the one hand, the relationship between health and safety representatives and other employees is facilitated by the good communication skills which representatives develop and use as union members. The fact is that health and safety matters often involve managing technical solutions that are not easy to explain, and that need the right attitude if they are to be communicated effectively to fellow employees.

On the other hand, safety representatives integrated into trade unions may benefit from the support that those trade unions, at national and regional level, can give them. A key element in achieving this support appears to be the provision of information and training for workplace representatives.

In general, these safety representatives also have a wider view of workplace management. Good communication with employees means better recording of workers’ claims and needs, thus working towards a better strategy for planning financial intervention in health and safety matters.

Regional safety representatives in Sweden, the UK, Italy and Spain, together with union-sponsored ‘roving’ safety reps in the UK, have been introduced. They represent effective examples of support for representation in small workplaces. However, these initiatives should be extended to provide much wider and more stable coverage. Moreover, they are likely to have very limited impact without a genuine commitment from both employers and enforcing authorities to co-operate with worker representation in improving health, safety and working conditions in SMEs.

Finally, since there is no significant provision in the Framework Directive for promoting and supporting worker health and safety representation in small firms, the TUTB recommends influencing legislators to provide statutory measures promoting the development of institutions for workplace representation in health and safety.

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GETTING MORE INFORMATION

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IBEN POSNIAK

The Confederation of Danish Industries

Down to zero

Prevention of accidents at work – a common cause

You might ask why an employer organisation like the Confederation of Danish Industries is concerned with preventing accidents at work. We have several reasons; one is that the employers we represent think it is important to take care of their employees and to create an atmosphere that improves co-operation within their company. An important part of taking care of their employees is to prevent accidents at work.

That's the main reason why the Confederation has joined forces with the Central Organisation of Industrial Employees in Denmark and the Danish Working Environment Authority to launch a campaign to prevent accidents at work. The campaign – with the slogan 'Zero Accidents' – was launched on 9 March 2001.

Preventing accidents at work also makes good business sense, because accidents are expensive and they can also create problems with a company's image.

The Zero Accidents campaign

The campaign is the result of tripartite co-operation and it continues the Danish tradition of co-operation between employers' and employees' organisations and the Danish Working Environment Authority.

The target audience for the Zero Accidents campaign is managers of enterprises and safety committees. A safety committee has the right and the responsibility to act and make decisions relating to the firm's working environment, for improving it and for preventing accidents.

The role of management in preventing accidents at work is evident in much

„*‘one accident is one too many’*“

of the research done in this area. Many of the businesses that have reduced or even eliminated accidents at work have had pressure from outside sources, e.g. from the management of large concerns or the Danish Working Environment Authority. Some managers in other enterprises have started to tackle accident prevention by taking the view that 'one accident is one too many' and that accidents should not happen in their workplace.

The role of the safety committee is to underline the importance of preventing accidents at work. It represents management as well as employees and is therefore a trustworthy partner for both of these groups. Although the role of management in preventing accidents at work is vital, it is difficult to implement changes if the safety committee is not also engaged in this process. The Danish tradition of co-operation between management and employees in terms of safety and health is equally important in the prevention of accidents at work.

Two-part campaign

The campaign is in two parts: the first gets the message across with posters and stickers; the second promotes 30 methods for preventing accidents at work. The campaign was launched at a national press conference, to ensure it got a lot of publicity. This was mainly due to the posters with their shocking pictures and their amusing slogans as well as their more serious message about the numbers of accidents.

The posters and stickers were designed for a firm's internal campaign that could then be carried on with a longer-term approach to

The poll showed that most employees do not believe they will ever have an accident.

accident prevention using one of the 30 methods. The choice of pictures and titles for the posters was based on an opinion poll about accidents at work. The poll showed that most employees do not believe they will ever have an accident.



A poster from the Danish Zero Accidents campaign.

However, it also showed that most employees are afraid of losing their ability to provide for their family and of losing their health. We think that using these shocking pictures and amusing slogans is the best way of getting across the serious message about the number of workplace accidents in Denmark. The aim of this part of the campaign is to encourage people to think about accidents at work and to discuss how to prevent them.

The 30 methods of accident prevention are aimed at a more extensive way of preventing accidents. The methods cover many different aspects of accident prevention from the formulation of safety policies, documentation of safety systems and analysis of the safety culture to the drawing up of emergency plans. The broad spectrum of methods ensures that most businesses can find several to fit their culture and management systems and make it possible for them to work effectively to prevent accidents at work.

All 30 methods have been used successfully in a Danish or international context. This has been very important in the tripartite process because we intend that companies will use the methods and find them useful. The methods have been selected in a process involving close co-operation between the Confederation of Danish Industries, the Central Organisation of Industrial Employees in Denmark and the Danish Working Environment Authority.

Where's the Zero Accidents campaign now?

Since the launch of the campaign, each member of the tripartite group has spent a lot of time ensuring that enterprises within the

industrial sector know about the campaign. In co-operation with the Central Organisation of Industrial Employees in Denmark, the Confederation of Danish Industries is developing a training course aimed at safety committees.

The training is designed to change their attitude towards safe conduct at work, and to enable them to train both employees and management in this area. The training course will be developed using the concept that it is easier to change people's actions first, then their behaviour afterwards. Only then it might be possible to change their attitudes towards safer conduct at work and to encourage people to consider how they can take care of their own safety and that of others.

During the European Week for Safety and Health at Work, the Central Organisation of Industrial Employees in Denmark and the Confederation of Danish Industries organised 14 'open house' events, where enterprises opened their doors to others. At these events, companies described their experiences with, and ways of preventing, accidents at work. Some of them have already brought their accidents down to zero in line with the goal of our campaign.

The campaign will run for at least a year but we in the Confederation of Danish Industries will continue to focus the attention of our members towards the prevention of accidents at work. We are planning several forms of follow-up activities: a network of safety managers who will meet to discuss methods and ideas for preventing accidents at work; a training course aimed at safety committees and perhaps another round of open house meetings at different enterprises in Denmark.

JEAN-PAUL PEULET

General Secretary, CFTD (French Democratic Labour Confederation)

French social partners sign up for success

A new strategy for health and safety in France

The key social partners in France have reached a major collective agreement on health and safety at work. The negotiations, held at national level, involved the French Democratic Labour Confederation (*Confédération Française Démocratique du Travail – CFTD*) together with other key employers' and workers' organisations.

The agreement sets out a new strategy, which aims to modernise France's approach to occupational risks and accident prevention. The last time these issues were discussed was in 1975, so the successful outcome of the discussions marks an important turning point in the history of health and safety at work in France.

Why were negotiations needed?

Over the last few years there have been major changes in the way people work. For example, employees now have to be more mobile and to expect less job security. The proportion working in the service sector – now about 70% – has also increased substantially.

The occupational risks from working in this sector are not the same as those in the more traditional areas of industry. New risks have appeared, including the increased pace of work, stress, musculoskeletal disorders, harassment, work-related cancer, and risks from exposure to substances such as asbestos and solvents.

To address these new risks, it is essential to take into account the organisational – as well as the medical and technological – aspects of work.



Courtesy of ESSWEIN, France.

In recent years, these issues have taken a back seat compared with social concerns stemming from unemployment, so it is about time that they are once again receiving the attention they deserve. The CFDT understands this and has been actively involved in the success of the negotiations.

What were the aims?

These negotiations had three main aims:

- to give a new impetus to the prevention of risks within companies;
- to give employees of small and medium-sized companies better protection and working conditions; and
- to ensure that risk assessment is carried out in all workplaces and to improve co-operation and synergy between social partners and all organisations involved in the field of health and safety at work.

Revitalisation

”Trade unions have a key role to play in helping to revitalise risk prevention.

prevention plans, and on improving the monitoring of workers' health in high-risk fields. They should also review the frequency of medical check-ups and workplace-based occupational medicine.

Regional monitoring centres for health at work should be set up to encourage local initiatives for improving working conditions. These will support the multidisciplinary approach needed and which is

Trade unions have a key role to play in helping to revitalise risk prevention. Negotiations at sector level need to focus on establishing three-yearly accident

provided for in the 1989 Directive. This will bring together the occupational health approach (from the occupational medicine services), the technological approach (from experts from the statutory insurance system (*Ingénieurs des Caisses Régionales d'Assurance Maladie* – CRAM); and organisational expertise (from ARACT, the regional office for the improvement of working conditions).

It is now clearly recognised that issues concerning work organisation influence working conditions. Therefore it is very important that people with experience in this field co-operate with each other – using a multidisciplinary approach – to raise the standard of health and safety and working conditions to an even higher level.

SME focus

In France, just one third of all workers benefit from having a health and safety committee (*Comité d'Hygiène, Sécurité et des Conditions de Travail* - CHSCT) because this is only compulsory for companies with over 50 employees. The new agreement signed by the social partners enables companies to establish local committees - made up of trade unionists and employers - to give smaller businesses a forum for addressing health and safety.

Risk assessment

Risk assessment has been enshrined in European law since 1989. The CFDT deplores the fact that hardly anything has been done to explain it properly to companies and so a lot of them do not carry out risk assessment. This is unacceptable, because it is a good way of preventing risks - by anticipating accidents as opposed to following them up after they have happened. The new agreement enables companies to carry out risk assessment in collaboration with workers' representatives and in conjunction with occupational medicine, as well as with CRAM and ARACT.

The new agreement also strengthens the role of occupational medicine. It will focus on those employees who are most at risk, monitoring their health between check-ups. To alleviate shortages of medical staff, doctors specialising in other fields will be offered the chance of becoming occupational health doctors, after they have completed the relevant training.

Within the preventive system, the INRS (*Institut National de Recherche et de Sécurité* - National Research and Safety Institute) will operate in such a way that workers and employers share equal responsibility for managing health and safety.

The CFDT is confident that this agreement will revitalise risk and accident prevention. We believe that it sets out methods, structures and resources to enable health and safety organisations, social partners and public authorities to work together to improve employees' health, regardless of the size of the company for which they work.

GETTING MORE INFORMATION

You can find the text of the agreement and the CFDT's comments on their website:
<http://www.cfdt.fr/dexnego.htm>

Or contact: jpeulet@cfdt.fr

LUIS LOPES

UGT (União Geral de Trabalhadores) General Workers' Union, Portugal and Member of the Administrative Board of the European Agency

An important step forward



Portugal signs a tripartite agreement on accident prevention

The high rate of occupational accidents and work-related illnesses in Portugal has resulted in workers paying with their health and, very often, their lives. Occupational accidents or work-related illnesses affect workers and their families physically, economically and psychologically, but businesses and the country as a whole are also affected, if only economically.

This situation calls for concerted action from all sectors of society, not only in terms of motivation but also in terms of involvement and participation of all the social partners.

Consensus was reached by the social partners, in theory at least, in July 1991 with the signing of the *Acordo de Segurança, Higiene e Saúde no Trabalho* (Agreement on Health and Safety at Work). So far, this is one of just two agreements signed by all the social partners. Various changes in circumstances meant that the agreement was never fully implemented. However, this did not hinder the joint efforts of the social partners to proceed with drawing up strategic documents.

Their work resulted in the signing of the *Acordo sobre Condições de Trabalho, Higiene e Segurança no Trabalho e Combate à Sinistralidade* (Agreement on Working Conditions, Work Hygiene and Safety and Work Accident Prevention). It was signed in February this year at the Council for Social Dialogue in Lisbon following a lengthy and useful debate between the government and social partners.

The agreement has three basic aims:

- to reduce the number of occupational accidents and work-related illnesses;
- to raise awareness and encourage a culture of work-related risk prevention among employers and workers; and
- to modernise the business world by adopting measures aimed at improving conditions of health and safety at work.

The agreement is not an end in itself. Rather, it aims to be a stepping-stone on the way to transforming Portuguese enterprises into safer and healthier workplaces where competitive strength is based on ethical criteria and modern methods. To this end, it has set out two kinds of measures - short and medium-term.

Among the most important short-term measures are those which apply to sectors with a particularly high accident rate. These measures involve drawing up or improving specific rules on safety at work for the construction and public works sectors and for supporting supervision facilities and activities in the most seriously affected areas. Monitoring of this has already led to the setting up of training courses for new work inspectors.

Other measures

In addition, the National Council for Health and Safety at Work is being reactivated – a body in which members of the government and employers' and trade unions' associations are jointly represented, - and under which a prevention monitoring centre for will be set up. This centre will, among other things, monitor prevention policies, pinpoint priority areas for political and legislative measures, and identify and disseminate good business practice for risk prevention. It will also assess the economic and social costs of accidents and work-related illnesses, as well as the benefits resulting from a healthy working environment.

Similarly, a National Plan for Preventive Action is currently being drawn up. This will be a vehicle for a global risk prevention policy and will help to reduce the accident rate. It is one of the medium-term measures to take place over three years. Its important features include:

- the regulations governing the appointment of workers' representatives for the health and safety at work system in businesses;
- legislation specific to the agricultural sector (which also has a high accident rate);
- the restructuring of the way in which statistics of accidents and work-related illnesses are collected, to lend support to effective policies; and
- the introduction of modules concerning health and safety at work in the school curriculum, which will enable young people to develop preventive behaviour and awareness before they enter the job market.

To help companies adapt to the necessary changes, the agreement provides for the drawing up of adaptation contracts for businesses' prevention services. These will enable businesses in those sectors which enter into framework contracts to also enter into individual adaptation contracts within a maximum period of two years. A timetable for businesses to adapt to current legislation will then be introduced and details of the support to be provided for this adaptation will be given.

GETTING MORE INFORMATION

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Getting back to work

Returning to employment after an accident

Work-related accidents remain at high levels in the Member States of the European Union, often forcing individuals to leave the labour market, sometimes for long periods. Returning to employment, however, is frequently difficult. What can be done to ease this process and ensure they are fully re-integrated into the workplace? In this article, we look at the key ingredients for success.

Reintegration

There are two ways to reintegrate people back into working life after an accident:

- reintegration by the old employer (performing the original task or a new one) ; or
- reintegration by a new employer.

In a study of over 7 000 people who had been absent from work due to an accident, Nijboer et al¹ found that only 30% returned to work: 68% with the previous employer, and 32% with a new employer.



Courtesy of Industrias Serva, S.A., Spain.

Reintegration by the old employer

Individuals are often re-employed by organisations out of a sense of personal obligation. For example, if the individual had worked for the company for a long period of time or if the employer felt it was responsible for the original accident due to safety lapses. Frequently a new, full-time job is created, involving organisational changes, notably a redistribution of tasks amongst several colleagues. Although the job is full-time, it is often more flexible, incorporating, for example, longer or more frequent breaks, no overtime and lower productivity demands.

Reintegration by a new employer

According to Wevers and Cavé², reintegration by new employers follows the traditional trajectory: individuals apply for jobs via advertisements and other accepted routes, such as employment agencies, and their applications are judged by the employer using the same criteria that apply to everyone, although medical issues can raise doubts. For this reason, people are often taken on a trial basis first. Notably, most job applications are part-time. This is often because people are declared partly disabled and search for part-time jobs in order to accommodate their need for rest and further recuperation.

Factors influencing employability

The employability of people who have suffered accidents at work is broadly determined by three main factors:

- personal characteristics of the employee: age, gender, occupation, education, experience, type of contract/employment state, marital status, family responsibilities, personal health;
- workplace features: the specific work being carried out when the accident/disease occurred, working conditions, prevention practices in the company (training on the job and possible risks), size of the enterprise; and
- the accident itself: its causes, severity, and impact on the worker's health, employment and financial situation, including their pension and rehabilitation costs.

BOX 1

Key steps towards successful reintegration

- *Regular contact between the individual and the company during the period of absence:* this should include contact with the individual's colleagues, supervisor and the company doctor, paying particular attention to personal and psychosocial issues.
- *Involvement of qualified experts:* these can be either internal or external experts. They should act as 'disability' managers, providing a bridge between all relevant staff internally and the individual affected by the accident.
- *Early reintegration:* to increase the individual's confidence and avoid the risk of depression.
- *Social support from family and or friends:* increases motivation and personal well being.
- *Company support:* this should include training and possibly adapting the job to suit the individual's new circumstances.
- *Job-related rehabilitation:* pay special attention to specific work-related exercises during the vocational rehabilitation.

A recent study by the European Agency for Safety and Health at Work³ looked at the link between accidents at work and the impact on the individual's employability, based on 13 cases from four Member States. Although all the people in these cases returned to work, their reintegration was rarely smooth. Several problems either delayed or even temporarily stopped their full employment. To minimise or avoid these, the study suggested several solutions. These are summarised in Box 1.

Keeping in touch is vital

One of the most important factors for a smooth return and integration back into the workplace is to keep in touch with the injured person during their absence from work. This has been confirmed by several literature studies (Nijboer et al¹, Wevers and Cavé² and ACT (Arbeids consulting team)⁴ as well as the European Agency's recent study³.

The importance of social support, both at a corporate and personal level, is illustrated by the case study in Box 2. However, be aware that the relationship between the injured person and their employer can sometimes be difficult, with each party occasionally blaming the other for the original accident. Possible recriminations like these can delay or even prevent reintegration and need to be handled sensitively.

BOX 2

The importance of social support - an example

A crane driver had a major accident, leading to severe leg and back injuries, and confining him to a wheelchair. The insurance company wanted to give him a full disability allowance (100%). But the employer looked for a new role for him, with social and technical support. The employee is now a full-time logistics planner with the company. Moreover, the company learned from the accident and now pays more attention to safety.

Criteria for success:

- Strong social and technical support from the company, working with the individual to find the best solution.

Accident's impact on individual's employability:

- Despite his paralysis and 50% disability, the man started work again after two years, initially on a trial basis and now full time.

Bottlenecks:

- Both the employer and the injured worker had a hard job convincing the insurance company that a full disability allowance was not necessary; and
- The individual's emotional problems coping with life-long immobility.

How to improve reintegration at company level

There are two ways of doing this:

Establish fixed company procedures

This could facilitate a more fluent, rapid and successful reintegration. Particular care has to be taken to strike a balance between the need for formal administrative procedures and the personal and often very individual circumstances of the person injured. All the key players in the reintegration should be involved, with clear responsibilities, from occupational medical staff to the insurance company. A dedicated 'disability manager' should be appointed to co-ordinate these different components of the equation.

Provide corporate support services

If the employee can't do their original job, training for a new task should be provided. This should be supplemented by physical, task-related exercises that will enable the person to improve the functionality of the disabled part of their body if they need to use it to do the job. Where appropriate, their work environment should be adapted to suit their new situation. All these changes should be made in consultation with the individual to ensure the company capitalises on the employee's work insights and arrives at the most mutually beneficial outcome.

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GETTING MORE INFORMATION

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EUROPEAN WEEK 2001

Road to success

Agency joins forces with DG Transport to drive down transport accidents

Despite advertisements extolling the safety features of the latest vehicles to roll off the production lines, driving remains a hazardous business, not least for organisations that depend on vehicles.

Each year, several thousand people in the EU are killed at work in accidents involving vehicles. Some of these die on the road, others on companies' premises, for example when lorries reverse or loads fall off fork-lift trucks. And these are 'just' the fatalities. Many thousands more are injured.

As a European Agency factsheet (produced jointly with the Directorate General for Energy and Transport) points out, these risks – and their economic and human costs – could be substantially reduced through a more systematic approach to vehicle safety. The factsheet (*Preventing road accidents involving heavy goods vehicles*) says that the first step is to put together a preventive accident plan. In particular, each business should appoint a company safety officer with specific responsibility for vehicles. This role should encompass carrying out a risk assessment, training staff – especially drivers, and ensuring all vehicles and associated equipment are properly maintained, amongst other issues.

Ideally, the plan should be formulated in conjunction with both staff and the local authority. Drivers, for example, could use their expert local knowledge to point out black spots and other road problems, such as poor signage, where the local authority could make improvements to minimise the risk of accidents.

Within the overall framework of the plan, there should be set objectives for both the employer and the drivers.

As an employer, you should:

- Establish a written safety policy and instructions for drivers, covering issues such as the use of mobile phones while driving, safety belts and alcohol consumption.
- Check the driving histories of any drivers you employ.



© Yves Cousson-INRS, France.

- Provide safe, well-maintained vehicles.
- Ensure schedules give drivers enough time to obey speed limits and avoid peak-hour driving.
- Take into account adverse, seasonal weather conditions.
- Specify safe routes, preferably motorways.
- If possible, use trained personnel to do any loading and unloading, a tiring job in its own right.
- Adopt any local charter and codes for road safety.
- Turn your vehicle safety strategy into a commercial advantage: promote it to your customers.

For drivers, 'good practice' is well known, although not always applied. Issues they must bear in mind range from the need to take breaks and avoid alcohol to ensuring loads are evenly distributed. Staff should be reminded of these and other 'musts' through written guidelines. The factsheet provides a useful checklist.

Minimising the risk of vehicle accidents on public roads, however, is only part of the battle. Equal vigilance has to be applied to vehicle movements around companies' premises, a subject covered in *Preventing vehicle transport accidents at the workplace*, another Agency factsheet.

Designing a suitable traffic system is an important element in this. Wherever possible, for example, pedestrian and vehicle traffic should be segregated. Where this is not possible, ensure there are suitable, well-signposted pedestrian crossings. To reduce risks and potential confusion further, consider introducing one-way traffic systems. Sharp bends and other layouts that could impede the views of drivers and pedestrians should also be avoided. Corner mirrors can help overcome this problem.

These measures should be complemented by clear speed restriction signs, possibly supplemented by speed humps and other traffic 'calming' techniques. The edges of loading bays should also be well-marked and, if possible, fitted with a protective barrier.

Special care should be taken with fork-lift trucks, the source of many accidents. Suggestions for reducing the risks associated with these vehicles include:

- Fork-lift trucks should have flashing beacons, reversing lights and other devices to make them more visible to pedestrians. Similarly, people working near these vehicles should wear high-visibility clothing so the drivers can easily spot them. They should always make their presence known to the driver and never walk behind the vehicle.
- In busy and noisy areas, consider fitting 'beepers' and other audible devices to fork-lifts. Warning signals should be sounded before passing through doorways, turning corners or reversing.
- Drivers should always check that the way is clear before they reverse. Needless to say, they should also be fully trained and versed in the possible risks.
- Ensure there is adequate space and light for loading, unloading and manoeuvring forklifts.

You can obtain copies of this and other accident prevention factsheets from the European Week website: <http://osha.eu.int/ew2001/>



Making a difference

If we want to know how to prevent accidents, we must first know what causes them. And if our prevention programmes are to be successful, it is essential to involve all key parties, including employees.

The following 'case studies' show how a mix of analysis, monitoring, research – and a touch of creativity – can make all the difference in improving workplace safety.

The first describes an in-depth German study to discover the causes of slips, trips and falls in the meat processing industry. The project recorded information supplied by the accident victims themselves.

The next seven case studies spotlight accident prevention schemes from different European countries. They are taken from the European Agency's latest report *How to reduce workplace accidents*. You can find full details of the report at the end of the studies.

KLAUS SELGE

German Meat Industry BG

UWE KAULBARS and HEINZ SCHENK

BIA

7rips, slips and falls in SMEs

Analysing risks in the German meat industry

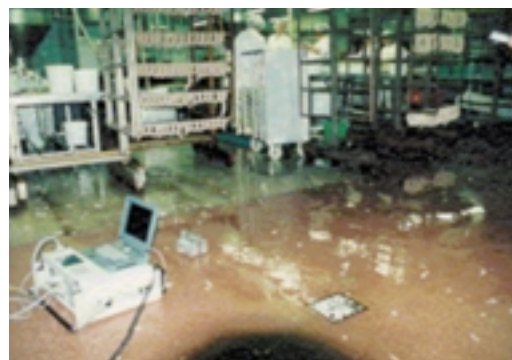
Accidents at work involving trips, slips and falls (TSFs) happen very frequently and the resulting costs are high, both for employers and employees. In certain types of small and medium-sized firms (SMEs), such as those in the meat processing industry, trips, slips and falls account for more accident benefit payments than other accidents.

If we are to devise suitable and effective preventive measures, we need to know what causes these accidents. We also need to analyse the risks in relation to the various work areas and the tasks involved.

Analysis

The accident insurers (BG) for the German meat industry association, and the Institute for Occupational Safety of the BGs (BIA) collaborated in an in-depth study of 95 TSF accidents. Using standardised criteria¹, the project recorded information provided by the accident victims and details of:

- the type of shoes worn;
- the friction coefficient of the floor where an accident happened; and
- the building (e.g. the size of the stairway and refrigeration room, and the type of lighting).



The photo shows the GMG100, a device for measuring anti-slipping properties, which was used to determine the friction coefficient of the floor at an accident site².



This photo shows a boot that was worn in one of the accidents. It was tested in the laboratory for its anti-slip properties.

Later on, a new method was used to analyse the relationship between the length of time an employee spends working in any one area—i.e. the degree of their exposure to different floor surfaces – and the frequency of accidents. This was then used to assess the relative risks of the different work areas for sales and production personnel, who each wear very different types of footwear.



The sequence of staff movements was automatically recorded over a period of one week in five small and medium-sized companies. The equipment needed to measure, record and analyse this was based on a personnel emergency warning device (see photo), which sends a radio signal to a central recording station giving the whereabouts of each member of staff.

Results

Analysis of the accidents showed that more than 53% of stairways had defects of some kind and that 80% were poorly lit.

The study of the friction coefficient of the floor surfaces showed particularly low values in the refrigeration rooms. The degree of slip resistance there was somewhere between 'unsafe' and 'very unsafe'. Similarly, a study of the footwear worn during the accidents showed that this often remained in use long after its recommended life cycle³.

The study comparing the time an employee spent working in one area with the accident figures showed that – relative to the former – staff from the sales department had more frequent accidents in the refrigeration room and in the production areas (see graph). The comparison between the length of time spent and the accident rate for production personnel showed that they were at higher relative risk

in the passageways and in the sales areas. This leads to the conclusion that the accident risk is higher after the employee has left their usual work area.



Suggestions for improvement

The study suggested the following preventive measures:

- Design new facilities so as to avoid stairways and stairway landings.
- Ensure that stairways are according to standard and adequately lit.
- Check that floor surfaces have been properly laid, using a device for measuring its anti-slip properties, especially during construction or renovation work.
- Reduce the frequency of staff movements between work areas with different types of flooring, and especially between wet and dry areas. This could be done either by reorganising the work, or by renovating a particular area. As far as possible, avoid the need for staff to leave their usual work areas.
- Footwear should be suitable for the type and condition of the flooring. A list of recommended shoes is available (e-mail: bia@hvbg.de). Discourage staff from rushing up and down stairways. Make employees aware of the risks involved by holding training courses and workplace safety campaigns.

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HOW TO REDUCE WORKPLACE ACCIDENTS

An Agency report

Steps to successful accident prevention

Deaths and injuries at work could be dramatically reduced if organisations systematically monitored accidents and involved all the main parties, including employees, in formulating preventive programmes.

These are two of the conclusions of a major study of 22 successful accident prevention initiatives in the EU, published by the European Agency for Safety and Health at Work.

How to reduce workplace accidents reveals that it is possible to cut accidents by, for example:

- company-based systems for highlighting danger spots, based on statistical analysis;
- prevention programmes involving all social partners, from employees to local authorities; and
- personal- and corporate-level incentives for bringing accidents down to zero.

Here are just seven of the 22 schemes in the study. You can find full details of the report at the end of the case studies.

On track for fewer fatalities

The next time you're hurtling along in a train consider this disturbing statistic: in Italy, it has historically cost the life of one construction worker to lay each kilometre of tunnel. On average, this is a figure that is probably echoed across most countries in Europe. However, a new approach to health and safety in major infrastructure projects like this could significantly reduce the number of deaths and injuries.

In fact, when this approach was applied to the construction of a high-speed rail link between Florence and Bologna, the number of fatalities stood at two after more than 50 kilometres of tunnel had been completed.

This dramatic improvement was due to a more unified approach to health and safety, involving both public and private sector partners, underpinned by collective agreements and a system to monitor accident and the health of workers on a real-time, 24-hour basis.

What made this achievement even more impressive was the scale and complexity of the construction project. During the building of the 78-kilometre rail link in the 1990s, there were 3 000 employees working at up to 40 sites at the same time, often performing potentially high-risk tasks, notably tunnelling, one of the biggest sources of accidents in these types of projects.

The success of the occupational health and safety programme hinged on three key elements:

A health and safety audit of all plans before construction began

The first stage of the audit involved setting minimum standards for the construction of the industrial buildings and the residential 'base camps' for the workers. This covered issues such as ventilation, micro-climates, lighting and room heights. Similarly, standards were set for the 92



Courtesy of the Tuscany Region, Italy.

tunnels that had to be built, with particular emphasis on plans for dealing with accidents, including rules for ambulance access and fire-fighting, amongst many other factors. Throughout the construction project, there were regular inspections to ensure these were enforced.

Special agreements between the local health authority and the companies involved

All the companies working on the link signed a special convention with Florence's local health authority. Under the terms of this, the authority provided 24-hour first aid, including personnel, and the businesses carried the costs. The emergency rescue service provided ranged from a 24-hour doctor to special dedicated emergency phone lines and heliports for rapid evacuation in serious cases. There were also nurses at four of the base camps, offering both accident support and general healthcare facilities and services. Everyone was fully trained.

The creation of an OSH monitoring centre

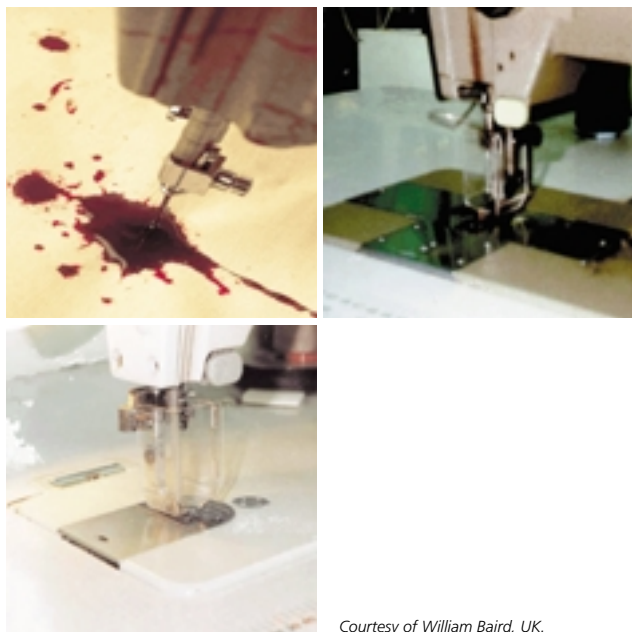
An on-site unit was established to provide real-time data on accident rates, workers' health and the progress of tunnelling including the number of employees working in each tunnel at any one time and the hours they spent there. This information, especially in terms of injuries, enabled the local health authority and all companies working on the rail link to update and, where necessary, change their OSH priorities to iron out problem areas. All enterprises fully supported and co-operated with the monitoring centre, a vital factor in its success.

UK firm sews up costly problem

Identifying solutions for companies that have a high level of accidents can often feel like finding the proverbial 'needle in the haystack'. But sometimes the answer lies in a simple, practical development, as a British clothing company discovered when it attempted to reduce the number of injuries its staff suffered from catching their fingers in their sewing machines' needles.

In 1995, there were around 500 of these incidents at the company, William Baird, costing it nearly €200 000 in civil compensation claims.

The problem was that the guard around each machine's needle allowed operators to run their fingers under the needle while



Courtesy of William Baird, UK.

manipulating the cloth they were sewing, often puncturing their fingers. In the UK's clothing industry, which employs 60 000 people, these accidents represent 25% of all injuries requiring first aid.

To resolve this difficulty, the company teamed up with one of the industry's main unions to develop a new guard that would not only reduce the incidence of needle injuries but also enable machinists to maintain their productivity levels.

A small team was set up to investigate the possibilities, including two union representatives, an engineer and a staff supervisor, ensuring all stakeholders' perspectives were taken into account. Based on a close study of how staff used their machines at a factory with the highest incidence of needle injuries, the team developed and tested several prototype guards, made from Perspex so the machinists could see the needle.

Initially there were a few teething problems in the trials. Some machinists, for example, found that the glare from the Perspex surface of the guard made it difficult for them to see the needle and direct its course accurately. To overcome this, lighting was changed and a small 'V' cut in the guard so operators could observe the needle but still not catch their fingers in it.

Eventually, an acceptable prototype was developed but another difficulty surfaced. The company used different types of sewing machines in its factories and the new guard design would not fit all of them. An outside engineering company was called in to develop a universal model, eventually successfully achieved, further underlining the need to involve a wide range of parties to arrive at an effective solution.

The union, meanwhile, launched a 'Stitchy Finger' campaign, highlighting the dangers of needle injuries and encouraging safety representatives across the UK clothing industry to have the new guard fitted. This drive was supported by a video, demonstrating the advantages of this innovation.

Although the new guard had to be modified later to win certification for a new sewing machine standard and achieve the blessing of the UK's Health and Safety Executive, its impact was significant. Until 2000, no one at William Baird's factories had a needle injury while operating their machines. Moreover, the concept has since been adopted by the industry as a standard solution, although with different designs for different companies in some cases.

Two key lessons emerge from this initiative. First, involve a broad cross-section of stakeholders, especially the people directly affected by the accidents, when designing a solution. Second, the solution does not always necessitate changing the behaviour of staff. Sometimes, the answer is a relatively simple technical alteration.

Agricultural accidents fall

Farming has one of the worst occupational safety records in Denmark, with roughly three times the number of fatalities as the national average. This gulf could be dramatically narrowed if a new technique piloted in one region of the country were extended more widely. In just six months, it managed to slash the number of accidents on farms by nearly 50%.

The pilot programme, which involved over 660 farms, was based on five key steps:

- First, every farm labourer in the study who had suffered an injury in the previous year needing hospital treatment was interviewed and their injuries registered.
- Next, an agricultural safety engineer spent half a day walking around each farm, with the farmer, to check how safely 66 major tasks were carried out on the premises. These ranged from milking and feeding to pesticide handling. A standardised scorecard was used to measure their performance. This covered the quality of the hardware used too. The farmer received immediate verbal feedback on any problems and risks, as well as advice about how to rectify these. At the end of the inspection, the farmer was also given a written report with recommendations for immediate and long-term safety actions.
- A few weeks later, the farmer and any of his employees aged over 18 attended a one-day safety course, run by doctors and psychologists. This incorporated a variety of elements, from group discussions about the risks highlighted on their farm and the workers' perceptions of these, to demonstrations of protective equipment. Someone from another farm who had lost an arm in an accident also described the experience and its impact on his life. A major aim of all these components was to raise awareness of the risks and importance of safety; one of the key roles of the psychologists was to use group pressure to encourage everyone to recognise these issues and change their behaviour.
- Over the following six months, each farm registered all accidents that involved hospital treatment.
- A second safety check at each farm was carried out at the end of this six-month period, following the identical methodology used in the first inspection.



Courtesy of Eurostat.

The study was generally viewed favourably by the farmers who took part and stayed with it: some dropped out due to work pressures or a belief that it was not relevant to them. Overall, 60% rated it positively.

More crucially, it led to a marked decline in the incidence of injuries, from 32.6 per 100 000 hours worked to 18.2 - nearly half the original number. Safety improvements that appeared to have the biggest impact tended to revolve around personal protective devices and more careful, systematic repair and maintenance routines, for example when connecting and disconnecting machines used in the field. There were no improvements in jobs that involved handling animals.

The researchers have yet to assess whether this sharp drop in accidents amongst the farms that took part is likely to be long-lasting or just a brief event. Further safety training might be required.

Can the lessons learned here be transferred to other countries? Generally, the researchers believe they can, but they highlight the fact that the farms studied were typically small, family-owned enterprises concentrating on a mixture of pigs, crops and dairy farming. Larger farms with different production focuses might need a different approach.

A step in the right direction

An Austrian campaign has reduced the number of accidents from falls at work by 10%, saving €6 for every €1 invested in the nationwide promotion.

Falls are the most common form of accidents among Austrian employees, accounting for 27% of all occupational accidents in the country and 41% of its disability pension costs, equivalent to around €55 million. They also have a substantial impact on companies' bottom lines in terms of sick pay, retraining, lost productivity and other costs.

Anxious to cut these costs, the Austrian accident insurance institution (AUVA) launched a major campaign designed to reduce the number of falls by 10%.

The main thrust of the campaign, 'Safety at Every Step', was to promote a risk management strategy through a combination of advertising, PR, awareness packs and training, aimed at both employers and their staff.

One of the biggest hurdles was to convince people of the dangers of falls – the most under-estimated risk at work in Austria. To help overcome this problem, the campaign focused heavily on the risks and consequences of falls, supported by detailed analyses.

Another difficulty was the fragmented nature of Austria's industry, making it hard to reach large numbers of people cost-effectively. In the country, there are around 220 000 businesses employing fewer than 51 people, but between them they represent 1.2 million workers.

AUVA's solution was to embark on a public advertising campaign, using eye-catching images – including banana skins – to highlight the risks. This was supported by response mechanisms enabling companies to request information and training packs, including transparencies, folders and sheets. This gave accident prevention specialists all the materials they need to train their employees to avoid falls. A key part of the training package was a strong emphasis on involving staff in formulating suitable procedures for their particular company. Particular stress was also placed on the importance of wearing non-slip footwear.



Courtesy of AUVA-HUB, Austria.

At the end of campaign, the incidence of falls had dropped by 9.3%, while the number of working days lost through these accidents declined by 4.4%, figures that AUVA believes are conservative estimates. Equally crucially, especially from AUVA's perspective, the cost of new disability pension entitlements fell by 5.7%. This saved the institution's members nearly €11 million. Balanced against the €1.8 million cost of the campaign, this equated to a cost-benefit ratio of 1:6.

If the savings gained by the companies themselves and other groups are added in, the total reduction in costs amounted to a staggering €23.5 million, producing a cost-benefit ratio of 1:13 - not a bad return by any company's standards.

The only slightly negative aspect of the whole initiative was that fall rates started to rise again after the campaign ended, suggesting that mechanisms are required to maintain awareness. Despite this development, the promotion provided concrete evidence that safety makes economic sense.

Greater focus reaps rewards

Targeting OSH inspections at businesses with above-average accident rates can have a much greater overall impact than the traditional 'scatter-gun' approach of trying to get everyone to boost their health and safety standards.

This is one of the main conclusions of a study of an innovative new scheme in Spain's Aragón region, currently being rolled out in other parts of the country.



Until recently, Aragón only collected 'global' statistics for occupational accidents. However, when it delved more deeply into these figures and dissected them by economic activity, it found that just 1.7% of businesses accounted for 32% of the accidents that led to a suspension of work in 1999. This equalled nearly 7 000 companies, employing more than 32 000 people or around 10% of the region's total working population. Together, these businesses had over 200 accidents during the year; individually, they surpassed the averages for their respective economic activities by 50% or more.

Similar, although slightly higher, rates were found in the following years, 2000 and 2001. Overall, 3% of business in Aragón were responsible for 40% of accidents between 1999 and 2001.

To combat this high concentration of accidents in such a small proportion of businesses, the region launched Programa Aragón, initiated by its Department of Economics, Internal Welfare and Employment. The aim of the programme is to make a serious dent in accident rates by targeting health and safety inspections and advice at the worst offenders in the region, by economic activity.

The scheme, which started in 1999, initially focused on companies that had at least four accidents a year and/or exceeded the average for their particular economic activity by 50% or more. Each of these organisations was notified about the seriousness of the situation, particularly in view of new legislation coming on-stream, and was paid a visit by health and safety inspectors, who pointed out deficiencies in each company's OSH management and made recommendations for correcting these. They also set deadlines for this work to be done. If the companies failed to meet these targets, they were called to a mandatory meeting to explain why and what they intended to do about it. If they reached their objectives, they would not be included in the next year's round of inspections.



In its first year of operation, 1999, Programa Aragón had a big impact: accident rates dropped by nearly 26% on average for the 677 companies involved, despite a 10% rise in the number of people they employed. The following year, when the selection criteria for businesses to be inspected was fine-tuned and widened (to at

least three accidents or 25% above the organisation's industry average), accident rates fell even further, by nearly 29% on average for the 1 163 companies inspected. Again, this was despite an increase in their workforce.

Inevitably, some companies did not meet their targets or deadlines. One problem here, as with most other companies, was that the technical advice offered was not necessarily enough on its own. Behavioural changes were also required. Or, to put it another way, there is often a lack of a preventative culture.

Nevertheless, Programa Aragón clearly demonstrates that substantial improvements in health and safety can be made through a more targeted, analytical approach. This also, of course, optimises OSH resources.

Keep your house in order with 'Tuttava'

The Tuttava methodology is based on the concept that an orderly work environment, where tools and materials are in the right place, fosters safe behaviour, leading to fewer accidents. Developed by the Finnish Institute of Occupational Health, it seems to work, encouraging more than 1 000 companies in Finland to apply it. At one shipyard it led to at least a 70% reduction in accidents.



From disorder to order

Courtesy of Tuttava-Centre, Finland.



Here are the seven key steps involved in implementing a successful Tuttava programme:

Form an implementation team

Set up an implementation team of between three and five people to co-ordinate and spearhead the programme. One of their first tasks is to put together core information about the programme's aims and processes. This should be distributed to everyone in the company so the entire business understands the programme and feels encouraged to participate.

Establish performance standards

Develop a list of ten good housekeeping standards, such as 'store materials on undamaged pallets'. These can be generated through brainstorming sessions, interviews with staff and walks around the company, amongst other approaches. A review of accident data and other performance-related information will help identify these. The standards should be 'SMART' – Specific, Measurable, Attainable, Realistic, Trackable.

Remove technical and organisational obstacles

Identify and remove hurdles that stand in the way of achieving your ten housekeeping standards. For the 'store materials on undamaged pallets' standard, for example, the solution is clear: identify and replace the defective pallets. Deadlines should be set for tackling each obstacle and individuals made responsible for these.

Create a 'good housekeeping' checklist

To help you review standards regularly, compile a series of up to ten questions for each standard with tick boxes, showing answers as 'correct', 'incorrect' or 'cannot be observed'. For the pallet standard, for example, the questions could include: Are the pallets undamaged? Have replacements been ordered for the faulty ones? Is there an achievable deadline for this?

Determine a baseline for your 'housekeeping index'

Before the programme is fully implemented, go on an inspection tour around the company once a week for 4-10 weeks, ticking the 'correct', 'incorrect' and 'cannot be observed' for each of the standards, as appropriate. The percentage of achieved 'correct' answers, as a proportion of the total number of questions, is the housekeeping index. This will form your baseline. Studies have shown this should be in the range of 50-60%. If not, adjust your standards. The aim, once the programme is implemented, is to improve on this percentage. Typically, it rises to 80-90%.

Train employees in the principles of Tuttava

Call a meeting of all staff affected by Tuttava and explain what it involves, how it will be measured, what the housekeeping index baseline is, what needs to be done and so on.

Provide feedback

Put up a large chart in a prominent place, showing the housekeeping index baseline. Each week, for 2-3 months, carry out an inspection to see how standards have improved or declined relative to this baseline and indicate these on the chart. After this, carry out inspections every three months, remembering to explain to new recruits how Tuttava operates.

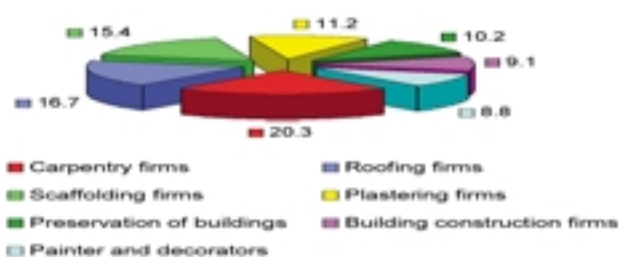
Germany puts its construction industry on the spot

A detailed analysis of accidents and their causes in Germany's construction industry paved the way for more effective regulations, leading to a 30% drop in the number of falls from heights.

In 1989, before the new regulations were introduced, 10% of workers a year in the construction industry had accidents. This was twice the national occupational average, costing the sector €1.3 billion in compensation and disability pensions alone. Moreover, the severity of their injuries meant that the average cost per accident was three times the national average.

To pinpoint where tighter regulations were needed, the country's institutions responsible for statutory accident insurance and prevention, known as the Berufsgenossenschaften, carried out on-the-spot investigations of all accidents involving falls in 1990.

Accidents involving falls in selected trades



Perhaps not surprisingly, they found that 37% of these types of accidents occurred in the roofing and carpentry trades. In both fields, protective equipment is relatively expensive, leading to ladders being used instead of scaffolding, for example. In addition, safety ropes are often not practically feasible due to the progressive nature of the work.

More significantly, a detailed analysis revealed that 30% of accidents involving falls occurred from roofs higher than 3 metres. To tackle this problem, new national regulations were introduced for construction workers operating at these heights. These stipulate:

- Suitable equipment has to be provided to prevent workers falling from roofs higher than 3 metres.

- If the nature of the work does not make the use of this type of equipment feasible, equipment has to be provided to arrest the fall.
- Safety ropes can only be used if suitably anchored and if fall-arresting equipment is not practicable.

The Berufsgenossenschaften's study also revealed that 42% of accidents from falls in the industry occurred when using ladders. This problem was addressed through further regulations. First, ladders could not be used for work 7.0 metres above ground. Second, several conditions were applied for ladders employed for jobs 2.0 metres to 5.0 metres above ground. These included:

- No one should work for more than two hours a day from these heights using a ladder.
- Not more than 10kg of tools and materials should be taken up a ladder.
- The articles must not have a surface area of 1m square exposed to the wind.
- Any work on the ladder should allow the worker to keep two feet on one rung.

The net result of these two new sets of regulations – for ladders and safety equipment on roofs – was a 30% decline in the number of accidents from falls for both the carpentry and roofing trades. The only downside was that the number of falls from ladders decreased by only 1%. This was largely due to the fact that the new regulations governing ladders required bigger changes to working methods, including the adoption of alternative forms of equipment to reach heights over 5 metres. Unfortunately, the alternative forms of equipment are not always suitable. Lifting platforms, for example, were introduced but it is often not possible to use these in confined spaces.

As the German initiative demonstrated, new regulations based on a detailed, first-hand understanding of the causes of occupational accidents, can clearly have a major impact. But other practical considerations, including the type of equipment used, also have to be taken into account. These should be supported by accident awareness campaigns and training.

GETTING MORE INFORMATION

The full report *How to reduce workplace accidents* is available in English on the European Agency's website at: <http://agency.osha.eu.int/publications/reports/workaccidents/> where you can download it free of charge.

The printed report *How to reduce workplace accidents* European Agency for Safety and Health at Work, 2001, ISBN 92-95007-42-5 can be ordered from the EC's Publications Office EUR-OP in Luxembourg (<http://europ.eu.int/>) or from its sales agents, price €13.

A factsheet *How to reduce workplace accidents* summarises the report and is available in all EU languages at: <http://agency.osha.eu.int/publications/factsheets/>

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"In order to encourage improvements, especially in the working environment, as regards the protection of the safety and health of workers as provided for in the Treaty and successive action programmes concerning health and safety at the workplace, the aim of the Agency shall be to provide the Community bodies, the Member States and those involved in the field with the technical, scientific and economic information of use in the field of safety and health at work".



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