BEST PRACTICES TO REDUCE THE NUMBER OF ACCIDENTS IN THE FURNITURE INDUSTRY
Health and safety are one of the major concerns of both employers and workers in the furniture industry. This is why in their work program 2007 the social partners of the European Social Dialogue Committee Furniture decided to include a specific action to promote the subject.

The action decided upon was an event addressed to the national employers and workers organizations in the furniture sector that would present best practice cases in accident reduction campaigns in the furniture sector.

Information on existing or past and by preference successful campaigns was solicited from all the national employers and workers organizations in the furniture sector in the individual EU countries.

At the same time an inquiry on the frequency of accidents was combined with available statistical information.

During the preparatory work, the project partners already made some interesting observations.

In the first place they had to come to the conclusion that there are actually very few sector safety campaigns even though the furniture sector in the EU employs some 1,200,000 persons.

A second very sobering observation has been that even in a sector as the furniture industry which does not have very dangerous production processes, every year, apart from a large number of less serious injuries, several dozens of deadly accidents are to be regretted.

A third important conclusion has been that the economic cost to the sector largely passes the one billion Euro level.

Initiatives to reduce the numbers of accidents are clearly more than necessary.

The best practices identified are presented in this booklet.

In a joint opinion, the social partners expressed their appreciation to the European Commission for the support which made this initiative possible.

It is the hope of the project partners that the increased awareness will result in new and additional safety programs in the furniture sector.

Bart De Turck
FAR project manager
UEA secretary general
ACCIDENTS IN THE EU FURNITURE INDUSTRY

1. Number and frequency of accidents

The EU furniture industry is a labour-intensive industry. In the EU 27, more than 110,000 small & medium-sized companies (SME’s) employ almost 1.2 million persons (of which 315,000 in the new member states). The production value of this industry reached almost 100 billion Euros in 2006.

It is estimated that more than 100,000 workers are injured in the furniture factories all over Europe leading to days of absence and consequently to lost of productive days. The gravity of accidents is variable and leads to probably almost 1% of lost working days. This generates costs for the furniture manufacturers and for the society.

The harmonized data on accidents at work are collected in the framework of the European Statistics on Accidents at Work (ESAW) managed by Eurostat. The data refer to accidents at work resulting in more than 3 days’ absence from work (serious accidents) and fatal accidents. The indicators used are the number and incidence rate of serious and fatal accidents at work.

The incidence rate of serious accidents at work is the number of accidents at work resulting in more than 3 days’ absence per 100,000 persons in employment. The incidence rate of fatal accidents at work is the number of fatal accidents at work per 100,000 persons in employment.

The national ESAW sources are the declarations of accidents at work, either to the public (Social Security) or private specific insurance for accidents at work, or to other relevant national authority (Labour Inspection, etc.) for countries having a « universal » Social Security system.

According to Eurostat, 1,008,622 accidents (at work) occurred in the manufacturing sector in the EU15 in 2004 (last available year). The standardized incidence rate of accidents (SIRA or number of accidents per 100,000 workers) is 3,564 in the manufacturing industry. In 1999, the SIRA was 4,471; this represents a decrease of more than 20%. All the EU15 countries recorded a decrease in the SIRA.

The “Other manufacturing industries” (recorded under NACE 36) witnessed 69,263 serious accidents in 2004. The SIRA was thus 4,105 or 15% more than the average in the total manufacturing activities. Contrary to the manufacturing sector as a whole, the “other manufacturing industries” only recorded a slight decrease in 2004, after a series of annual increases.

The furniture industry is one major industry in the “other manufacturing industries” accounting for 75% of the employment in the “other manufacturing industries”. A linear proportionality gives some 52,000 accidents in the furniture industry in the EU15 countries. This conservative estimation (furniture industry accidents are mixed with accidents in the industries of jewellery, of musical instruments and of games and toys) does not include “not serious” accidents (less than 4 days of absence) and accidents in the 12 new member states.

If the EU15 SIRA of 4,105 is applied to the 315,000 persons employed in the furniture industry in the new member states, the total number of accidents in the new member states should be estimated at more than 16,000.

All in all, more than 68,000 serious accidents should have been reported in the furniture industry in 2004. In average and annually, in the 10 years to 2004, 41 of accidents were fatal in the furniture industry.
2. Types of accidents

Many of the furniture SME’s have limited resources and occupational health & safety – OSH – advanced knowledge, especially in the new member states. The range of risks for workers in the sector is quite wide.

The most typical kinds of accidents are:

- Contact with moving machinery: sawing, bending, cutting, sanding, coating, use of electronic tools
- Struck by moving, including flying/falling, object
- Struck by moving vehicle
- Strike against something fixed or stationary
- Injured while handling, lifting or carrying
- Slips, trips or falls on same level
- Falls from a height of which:
  - up to and inc 2 metres
  - over 2 metres
  - height not stated
- Trapped by something collapsing/overturning
- Drowning or asphyxiation
- Exposure to, or contact with, a harmful substance
- Exposure to fire
- Exposure to an explosion
- Contact with electricity or electrical discharge
- Injured by an animal
- Acts of violence
- Other kind of accident
- Injuries not classified by kind

3. Costs

It is difficult to estimate the total costs of accidents in the furniture sector. Costs include costs for individuals, for the employers and for the society and the economy.

According to the European Agency for Health & Safety at work (OSHA), some 4.5 million accidents are annually recorded and 146 million days are lost or an average of 32.5 days per accident. The total annual costs of accidents are estimated at 20 billion Euros or 137 Euros per lost day.

For the furniture industry, more than 2.2 million days were lost in 2004 or almost 2 days per employee.

Accidents related with woodworking machines represent the majority of accidents in the furniture factories. Segur-Mad (Seguridad para Maquinas del sector de transformados de madera or safety for machinery in the woodworking sectors) is a project developed by two Spanish associations (AIDIMA – research institute specialized in woodworking and furniture and AIMME – technical institute specialized in metal-processing) and the Union de Mutuas ( ). Its objective is to put a self-assessment manual at the disposal of the technical personnel and the workers in furniture and woodworking factories. The manual allows companies to self-assess various types of machines used in the production and assembly facilities with a reference to basic safety requirements.

A sheet is then produce to take action (if needed) to increase their safety level and consequently to reduce the number of accidents whilst using machines. Segur-Mad has identified the machines and equipments widely used in the furniture sector. For each of them, Segur-Mad sets minimal safety requirements. These requirements are fixed by various pieces of legislation not only referring to machinery but also to health & safety.

1. The self-assessment tool

A questionnaire by type of machine is available. It can be used a self-assessment tool. The companies of the sector can thus evaluate the conditions of their machines at the technical level and at the utilization level. The questionnaire contains two parts: one related to minimal safety requirements that reduce or eliminate 17 types of risks; the second part consists of questions related with way the machines are used by the personnel.

1.1. Questionnaire on minimal safety requirements

1.1.1. Self-assessment questionnaire

A standard questionnaire is used for each machine. The questionnaire is a double one. Part one covers 17 different types of risks:

- How to power on
- How to power off
- Pick up and exhaust devices
- Stability
- Risk of mechanical contact with mobile devices
- Outbreak or breakage of pneumatic elements or of pressure
- Lighting
- Equipments with high temperature
- Sources of energy identified & separate
- Signalization
- Fires & explosions
- Electrical risks
A double approach is proposed.

a. Risk analysis
The company may prefer to concentrate on some types of risks. It can answer to the question(s) related to a specific risk (e.g., electrical risks). Each answer is weighted (from 2 to 10), a higher weight is given to positive answers that significantly reduce the risk. Ideally, a company should reach a compliance rate of 100% for each type of risk (maximum cumulated of positive weighted answers divided by the cumulated weights of all answers). In case of negative answer(s) (nil is then given), the final compliance rate can be very low and the company must take specific actions to reduce the risk(s). It should give priority to a positive answer/compliance to key questions with the highest weight.

b. Machine-by-machine analysis
Segur-Mad has identified 22 types of machines used in the furniture manufacturing. What is proposed is, for each machine that is used in the factory, to answer to all the questions related to the 17 types of risks. A weight from 2 to 10 is given to positive answers and nil to negative ones. A compliance rate of a specific machine is then calculated: weights of positive answers are added and they are divided by the sum of weights of all answers. If the compliance rate is not 100%, the company can take actions in order to reach compliance. Priority should be given to questions giving higher weighted answers.

1.1.2. Guide for the application of the self-assessment questionnaire
To answer the questions, Segur-Mad proposes a step-by-step guide that gives clear indications on how the minimal safety requirements should be complied with. It gives clear indications on what is the legal requirement and asks the company to compare its situation with the legal one.

1.2. Questionnaire for machinery and equipment safety when used by the workforce
This questionnaire covers 16 actions related with the use of a machine or of equipment.

- Assembly/installation
- Accessibility
- Stability
- Proper uses
- Initial verifications
- Use of protective equipment
- Machine limits
- Protection against projections & radiations
- Machine mobility
- Special working atmospheres
- Cleaning & maintenance operations
- Maintenance controls
- Out-of-order machinery
- Use of hand-tools
- Manual contacts with the machine
- Handling of wood and wooden products

For each answer, a guide gives indications on how to answer positively or negatively. If the answer is negative, the guide provides the company with best practices to obtain a positive answer.
2. The sheet

For each type of machine, a safety sheet is available. The objective of this sheet is to contain relevant information on machine safety, including recommendations. Each sheet is clear and simple and can be used by the workers of the sector.

Main aspects considered:
- Proper use of the machine
- Picture of the machine
- Protection equipment
- Pick-up & exhaust equipment
- Power on/off
- Limits for use
- Accessories used with machine
- Specific risks
- Individual protective equipment
- Verifications
- Obligations
- Prohibitions
- Maintenance instructions

Samples of sheets

1. Training

The British Furniture Manufacturers Federation (BFM Ltd) has run health and safety training courses for members for a number of years. Initially, generic training programmes were adapted for use, but subsequently the organisation has developed its own externally accredited training courses to ensure sector specific training of a practical nature.

BFM H&S courses which have been accredited by City and Guilds are:

- C&G Manual Handling Train the Trainer course
  This is the only nationally recognised train-the-trainer course for manufacturing and service industries. Attendees are trained to a level whereby they can deliver a short in-house training session (e.g. 1-3 hours) as well as being able to conduct manual handling risk assessments. A range of topics are covered including:
  - The scale of the problem
  - Anatomy – how the spine and discs work and how they are damaged
  - Principles of safe lifting
  - Manual handling legislation and risk assessment
  - Training techniques
  By the end of the course, participants will be able to design and deliver training sessions in manual handling issues and conduct manual handling risk assessments.

- 2 day Certificate in Health and Safety Management
  Furniture manufacturers and the wider woodworking industry must keep abreast of an ever increasing body of legislation and best practice regarding health and safety issues. This course provides a practical overview of the management of the main problem areas in terms of:
  - Legal requirements
  - How to conduct relevant risk assessments
  - What is considered industry best practice

- 1 day Noise Management in Furniture
  This course is designed to give managers in the woodworking industry a basic grounding in the subject of noise. They will be introduced to the units of measurement, legal requirements, conduct of noise surveys, control hierarchy and the use of hearing protection. The course will enable managers to better understand noise survey reports and the options available to them for the control of noise.

- 1 day Control of Substances Hazardous to Health
  Wood dust and solvents are common hazards in the woodworking industries. Work by the Health and Safety Executive (HSE) showed that around 2/3 of woodworking companies are exposing one or more employee to above the legal limit of wood dust and only 1/3 of sites have the required hazardous substances risk assessments. This 1 day course is designed to enable managers to identify, evaluate and control the hazards posed by substances such as wood dust and solvents.
BEST PRACTICES AT THE COMPANY LEVEL:
THE CASE OF THE FOURNIER GROUP

Fournier is a French group of companies specialized in the production and the sale of furnishings for kitchens, bathrooms and storage. The group employs more than 1,000 people divided over several production sites, and its business figures exceed 200 million Euros.

1. Context

Fournier has determined that the majority of accidents occurring on production sites were related to the maintenance of tools and materials at worksites, primarily at workshops for assembly and shipping.

Management thus decided to implement best practices in workshops where these risks are the highest.

2. Objectives

The objectives of the actions implemented are to:

1. Find preventive measures adapted to the risks connected to maintenance operations.
2. Develop security communication, especially following accidents, and improve training and access to the workstation.
3. Develop management’s security culture to make them the drivers in this area.

3. Types of practices

Four practices are to be adopted and implemented:

Risks connected to maintenance:
- Installation of supportive devices for maintenance and lifts at worksites.
- Integration of these concerns in the industrial plan. Association of human factors experts with the different projects to define future workstations.
- Installation of warm-up exercises on assuming workstations, introduced by two pilot workshops with a kinesitherapist.

4. Communication

- Drafting security flashes after significant accidents or incidents. Disseminating this to all unit managers who then communicate it to their teams.
- Objectives: make all employees aware that the risk of accident exists, even if few accidents occur in their workshops, and implement preventive measures at all sites and not only at the place of the accident.

4. Other initiatives:

- Development of a H&S certification scheme approved by the Associating of British Insurers. Companies have to meet a number of criteria with regard to their H&S management system and the degree of progress against key pieces of legislation is assessed. Those that demonstrate a genuine commitment with continual improvement over time, are certified. All companies receive an initial review with a subsequent report with requirements or recommendations for action over the following year.
- Monitoring: BFM has purchased its own monitoring equipment for the conduct of noise surveys, personal exposure to dust surveys and local exhaust ventilation testing. This equipment is used by BFM’s H&S consultant with members paying a fee which is a fraction of the normal market price.
- BFM is currently discussing the development of a best practice guide on local exhaust ventilation for woodworking operations. This will be in conjunction with the Health and Safety Executive – the UK’s H&S regulatory body.
- Woodworking Information Sheets: published by the Health and Safety Executive, this set of 40 sheets provides guidance on key industry woodworking issues – available at www.hse.gov.uk.
- BFM has written a number of guides on solvent reduction. Whilst these were principally aimed at environmental improvement – they also generate H&S benefits.
5. Training

- Creation of a new orientation and integration program for temporaries along with temporary agencies.
- Installation of an e-learning security module for all agency temporaries and company employees.
- Installation of one day security training for all employees, especially allowing them to understand their role in security matters.

6. Management

This is a matter of involving the management and the temporary management of the production units in order for them to effectively disseminate the security message:

- Drafting of a report in case of accident including immediate measures and corrective actions.
- Systematic integration in the workgroup of evaluation of the risks of their units.
- Implementation of a PRAPE training module (Prévention des Risques liés à l’Activité Physique en Entreprise) (Prevention of Risks connected with Physical Activity at the Company) intended for the supervisors in order to sensitize them to the risks connected to maintenance and TMS (Muscular-skeletal problems).

**BEST PRACTICES AT THE COMPANY LEVEL: THE CASE OF THE FOURNIER GROUP**

**Accident report**

A report is to be drafted in case of accident including immediate measures and corrective actions.

**Security steering committee**

Installation of a security steering committee meeting every two months co-hosted by the production manager and the security manager.

**Security Steering Committee at FOURNIER**

1. Objectives of the security committee
   - The objective of the security committee is not just to create an additional meeting.
   - It is not intended to substitute for the Health, Safety and of the Working Conditions Committee (COSCT) or the monthly CHSCT security meetings.
   - The objective is to make the management actors and drivers of security matters aware of the roles of each actor and of the need to work together on these subjects.
   - The purpose of the meeting is to bring together the different actors of prevention in the project groups.
   - It is not intended to substitute for the Health, Safety and of the Working Conditions Committee (COSCT) or the monthly CHSCT security meetings.

2. Organization and functioning
   - The security steering committee is presided over jointly by the security manager and the production manager who coordinate the meeting.
   - It meets every two months.
   - The duration of the meeting is less than two hours.
   - This security management meeting allows adopting the security policy in favor of the group.

3. The members of the security committee
   - The following serve on the security committee:
     - The security manager
     - The production manager
     - The nurse
     - The maintenance manager
     - The engineer manager
     - The workshop manager

4. Sample Agenda
   - Review of indicators/objectives
   - Analysis of accident specific work-related diseases
   - Analysis of injuries
   - Decision on corrective and preventive actions to perform
   - Report of security audits
   - Presentation by the workshop manager of significant actions in security matters
   - Monitoring of the arrangements of workshops (construction site) with a plan of action for musculoskeletal problems and the professional illness

5. Information Security Letter
   - The security committee intends to communicate positively on security.
   - The meeting report produces a security information letter distributed by the security manager.
   - A meeting topic is chosen every 2 months.
PREVENTION OF OCCUPATIONAL ACCIDENTS IN BELGIAN INDUSTRY

I. GOVERNMENT

1. The legislator imposes a certain number of obligations on the employer.

The employer must for instance:
- Take out compulsory insurance to cover, better than the compulsory health insurance, the medical expenses and loss of income caused by an occupational accident;
- Become affiliated to an external industrial medicine service;
- Appoint a head of safety in the company;
- Set up a consultation body in the company;
- Conduct an annual risk analysis;
- Draw up an annual report;
- Notify a certain number of authorities and draw up a detailed report in the event of a "serious" occupational accident.

1.1. What does the legislation mean by "occupational accident?"

An occupational accident is any accident suffered by the worker during or because of the performance of work, and causing bodily injuries.

An accident on the way to or from work (i.e. the 'normal' way from home to work and vice-versa) is deemed equivalent to an occupational accident. In the context at issue this type of accidents does not fall under the scope of the project.

An occupational accident therefore supposes:
- A sudden event;
- One or more external causes;
- The existence of an injury (which need not necessarily entail incapacity for work; but medical expenses must be incurred. Damages caused to prostheses or orthopaedic devices are deemed equivalent to occupational accidents, without bodily injuries having necessarily occurred);
- A cause-and-effect connection between the event and the injury;
- That the accident occurred during the performance of the contract of employment.

1.2. Compulsory Law - Insurance

Every Belgian employer is required to take out occupational accident insurance. This is coverage taken out in the private sector, outside social security. The amount of the premium depends in particular on the company's sector of activities and five-yearly statistics on occupational accidents. The law was recently amended and a "no-claims" account introduced, providing for a reduction of the premium of up to 30% for a company that has few if any occupational accidents, and an increase in the premium of 15 to 30% for a company with "bad" statistics. The Law insurer assumes the medical expenses (inclusive of prostheses and orthopaedic devices) for the accident (better than health insurance), and supports up to 90% of the worker's loss of income (compare health and incapacity for work insurance: maximum 60%).

1.3. Measuring is knowing

The employer must declare to his insurers EVERY occupational accident, however minor. He must draw up an "accident sheet" for each accident that has caused at least four days of incapacity for work.

All the information on occupational accidents is collected at national level and classified per sector of activity, so that it can be used for policy ends.

The national statistics may be consulted by the general public on a government website.

1.4. Risk analysis

The employer is required to conduct a systematic risk analysis in his company, and draw up an action plan for eliminating "neuralgic" points.

1.5. Prevention adviser

A prevention adviser must be appointed in every company that employs at least 20 people. In an SME with fewer than 20 workers, the business manager must assume this task. In larger companies (and this size depends also on the sector of activities), the prevention adviser must have undergone specific training. For large companies (Wood & Furniture > 200), the prevention adviser must also have university-level education. The prevention adviser must have the possibility of performing this task with complete independence. To guarantee this independence, he enjoys legal protection against unjustified redundancy. The role of the prevention adviser is not purely "voluntary", however, because he is civilly liable in case of a serious accident.

1.6. Compulsory social dialogue

In companies with at least 50 workers, the employer must organise company elections every four years with a view to creating a "welfare committee". This committee has a right of information and of opinion on all matters to do with welfare. In a company that does not have a committee, this task can be performed by the shop stewards' committee. The members of the committee may be assisted by the external occupational medicine service.

1.7. Compulsory affiliation to an (external) occupational medicine service

The industrial physician's tasks include advising the company on occupational health and safety. His role has in recent year been extended to cover welfare aspects (stress, etc.).

2. Government as inspector

The government has appointed inspectors that can perform specific inspections in the event of a "serious" occupational accident. They also have the power to verify whether the employer has complied with the relevant legal regulations. These inspectors are vested with the widest inspection powers, have access to all the premises of the company, can draw up a report, impose fines and, in the most serious cases, go as far as to order the closing of the company. This specific inspection power in case of serious accident has been in force since 1999 by virtue of what is known as the "Seveso" Directive. The companies that carry out dangerous activities or use dangerous materials must obtain special "authorisation" from the State.

3. The government as "instructor"

The government organises the training courses for prevention advisers and safety coordination at construction sites. The level of these training courses depends in particular on the size of the company and its sector of activities. The government services can be consulted by everyone who feels the need to do so.

The government's site, www.belgium.be, contains not only the regulations on the matter, but also puts at the public's disposal publications, materials, practical tips and best practice cases.
II. SOCIAL DIALOGUE

In Belgium, the social dialogue is conducted at three levels: at the company, sector, and national level. The national level deals with “general interest” matters that go beyond the level of sectors, or sectors, through supplemental conventions, social issues for companies that do not fall under a specific sector or a sector that has no regulations on the matter. At sector level, the social partners negotiate collective bargaining agreements that serve as ‘minimal’ or ‘general’ standards for companies in the sector. In certain matters, they conclude “framework agreements” that are used as a ‘mould’ for companies who need them. Every two years, the social partners enter negotiations on issues they want to settle for a two-year period. The collective agreements are registered by the government services and can be declared to have compulsory force so as to be made applicable in all companies of the sector, even those which are not affiliated with a recognised employers’ association. Traditionally, issues concerning safety at work are broached, and although the stakes are not necessarily the same, these matters are not treated in an “antagonistic” manner. We shall cite a few examples.

III. BEST PRACTICES

Example I: A “safety” service for companies in the sector

A “safety consulting” service was created in 1978 to help companies in the sector and prevention advisers in the performance of their tasks, i.e., to:

- Conduct the risk analysis;
- Draw up reports on commissioning machinery;
- Draw up personalised instruction sheets;
- Provide advice on drawing up global prevention and action plans;
- Organise awareness-raising and training seminars for the “chain of command;”
- Define warning and alarm procedures in case of fire.

It is all but impossible to measure the direct impact of these actions. Safety and prevention were then at their initial stages and only large companies had the financial means and the personnel necessary to obtain “in-depth” information on their legal obligations and to devote a sufficient number of hours to the problem of safety at work. Consultancy for SMEs consequently constituted a major advantage for them.

Example II: Safety sheets

In the 1980s, the social partners met in joint “workgroups” to adopt joint actions on safety at work. At first, this workgroup paid particular attention to the lesson of wood. In the 1990s, “safety sheets” came into being in cooperation with a number of wood machinery manufacturers. These sheets contain a description of the machine and how it works, but also draw attention to aspects on how to use it safely. These sheets were promoted and distributed in companies and schools.

Example III: A checklist to facilitate the annual risk analysis

To enable companies in the sector to comply optimally with the legal requirements concerning the annual risk analysis, the joint “safety” service drew up what is known as a sector list of possible “neuralgic” points and actions that can be associated therewith.

Example IV: Orientation for young workers

The legislator requires the employer to organise a minimum “orientation” programme in the company, including on safety. The “minimum” to be provided is set out in a list drawn up by a national collective bargaining agreement. Noting that many young people have an occupational accident in the year they are taken on, the social partners agreed to prepare an orientation brochure sample (downloadable from a website). So, even the smallest company can meet their legal obligations on the matter by providing young people with a pleasant brochure to read, without having to conduct expensive studies. The “safety” workgroup did not stop with the minimum legal requirements, but also included a chapter on “safety” in the brochure. The brochure is currently in the finishing stage and will soon be accessible on the websites of the social partners. So each time an employee is taken on, the employer will be able to provide him or her with a copy.

Example V: The “experience fund” project

In 2007, the federal government gave the sectors the possibility to draw up a contract with it geared to improving the employability of “senior citizens.” The sectors and their companies will receive financial aid when they invest in initiatives “to measure” and improve the employability of those aged 45 and over, and to provide them with advice and guidance in managing the end of their career. These investments can be material (improving the workstations, organisational (part-time work) or geared to promoting the involvement of senior citizens in the orientation and guidance of new recruits, in particular concerning “safety” (“training of a safety coach”). In a few weeks, the Wood Furniture Sector will sign its agreement with the government. An initial awareness raising and training phase will get under way on 1 January 2008. In a subsequent phase, individual companies will have to undertake actions to “manage” age better in the years to come.

To conclude, we underscore the necessary conditions and most appropriate means for enhanced security in companies:

1° Information and awareness raising;
2° Awareness raising of employer and employees;
3° Influencing cost.

Enhancing safety in other companies more successfully requires compulsory standards and well as a volunteering attitude and responsible individuals. A legal obligation without inspection goes unheeded; an inspection without sanctions will not work, and dialogue without moving to action and without “passion” on the part of the partners is a dialogue of the deaf.
MACHINERY OPERATOR’S LICENCE TO FURNITURE INDUSTRY

In Danish: Maskinkørekort

1. Idea

Training is an effective tool for accident prevention. This example is based on the idea that “safety starts at school”.

2. Organisational background

The social partners (the employer federation Træets Arbejdsgiverforening and the trade union TIB) of the Danish wood industry have a long tradition for social dialogue on the issue of Occupational Health and Safety (OHS). A standing committee is established and man power from both of the social partners has been delivered, leading to an effective tradition of activities including training, campaigning, work shops, brochures and company visits. Accident prevention has been a key issue due to the fact that furniture industry has been a high risk sector. Actually, the work has been successful; after heavy increases the rate of accidents has been decreasing for more than five years.

3. Short presentation of the MOL system – www.maskinkorekort.dk

Quite often, accidents at work are related to lack of instruction and training. By the MOL (machinery operator’s licence) the social partners of the furniture industry have introduced a model to qualify workers to work with machinery in the furniture sector. By using the system, the workers will be aware of the importance of safety a work. This in turn, increased production and decreased the expended concerning absence from work.

The MOL system is a web based training tool that is targeting both companies and the vocational training centres of the industry. In particular, the concept is suitable for instructing and training of young workers and new comers of the industry.

At the web site, you may find all relevant information about health and safety and the use of machinery. By detailed description, illustrations and small video sequences you may learn how to use the machinery safely.

The users of the tool are also able to test their knowledge and to fulfil theoretical and practical tests. The theoretical test is carried through directly on the web site. If you pass, a certificate can be printed directly. If you do not pass, you have to continue learning about safety when using the machinery. A special test is targeting safety.

The practical part of the test has to be carried out at the work place in a company or the vocational training centre, under surveillance of a qualified instructor.

When the theoretical and the practical test have been approved, a certificate to the specific machine is printable from the web site.

The web site includes the following:

- General information about occupational health and safety
- Specific information about noise, personal protective equipment, design of the machines, brakes, shielding etc.

Example of an illustration concerning shielding of machinery

- Information about possible exposure to chemicals when working with machinery in the furniture industry
- Information of how to use the machinery, including check lists concerning start, normal used and maintenance of the machinery.
- Information on 22 different machines, used in the sector (general information about the single machine and how to use it, and information about testing of skills)
- Information on 7 types of tools to be used by the machines (use, maintenance, grading etc.)
- Terms used in the trade and formulas (former)
- Links to the web site (on safety and distributors of machinery and tools)
- A quiz

In order to get the full benefit of the web site, the user must lock on with a pass word. This is also necessary in order to get the chance to do the tests.

The original (Danish) version of the web site may be seen at www.maskinkorekort.dk

4. Experiences

The MOL system has been used since 2004. The general experiences are very positive, though we must realise, that the system is used more as an element of vocational training at training centres, than in private companies.

The system benefits from the fact, that it has been developed by the social partners, teachers at vocational training centres and producers/distributors of machines and tools. In an evaluation of the initiative it has been concluded, that the MOL is a strong tool for the enterprises, leading to a good and effective instruction of the machine operators. [BST Thy, Mors, Salling, Evaluation p. 4] The costs of developing the MOL system were all paid collectively by the companies of the sector via the national OHS insurance system. The social partners of the furniture industry of Norway have taken the initiative to transpose the Danish model to Norwegian conditions. Also in Sweden, the social partners have shown interest in the Machinery Operator’s Licence.

For further information about the MOL system, please contact BAT, e-mail: bat@batkarretel.dk
**1. Idea**

The aim of the project is to support small companies to introduce a systematic approach to OHS work. On top of accident prevention, the project is also focusing on other OHS issues, including well-being at work. Using a social dialogue based approach (at company level) to the improvement of OHS, proved to be very effective.

**2. Organisational background**

Together, the social partners (Trä-och Möbelindustriförbundet, Skogsindustrierna och Skogs- och trälacket) and the insurance company AFA Försäkring have initiated this project on accident prevention.

The social partners have been initiating projects on Occupational Health and Safety (OHS) for years, often together with the AFA, which is the administrator of accident and health insurances agreed upon by collective agreements. Local health services are also part of the project.

**3. Short presentation of the project: Brush up safety**

The risk of wood workers to get injured by an accident at work is 10 times higher than the average of workers in Sweden. Based on this alarming fact – and the derived higher absence from work – the social partners have agreed to initiate a project on safety prevention. Bad press was also a driver for the partners’ commitment to get involved in the initiative.

The project, which is targeting SME’s, is aiming to make the safety work of the companies more systematic. The intention is to make the activities as concrete for the companies as possible – and to include both management and all workers of the companies included.

In order to “recruit” companies to the project, an OHS professional of the sector paid a visit to a group of companies which might be interested in joining the project. The fact that the social partners at regional level were involved in the project was leading to a higher commitment of the companies involved. At the same time the project was a good opportunity to improve the relations between the representatives of the social partners involved.

The “brush up safety” work starts by assessing the safety situation at work. The most serious problems are pointed out and focused upon. On top of assessing the safety when working with the machinery and doing safety rounds at the work place, all workers have been filling in a questionnaire asking questions about work and the time away from work. Via the questionnaire is made evident, that the companies need to improve the OHS work, among other things.

The introduction of the “systematically OHS work” has been beneficial. To get the OHS work structured and to become familiar with new routines, has been important for the companies. The training (workshops) helped the companies to target OHS problems and to approach them on a more holistic manner than before.

The workers must be committed and need to accept their responsibilities in relation to safety at work. After finalising the action plan of the project has underlined the importance of approaching safety prevention commonly in order to gain success. The workers must be committed and need to accept their responsibilities in relation to safety at work. After finalising “brush up safety” as a project, the involved companies are able to continue the OHS work themselves – at a higher and more competent level than before. As part of the project a holistic action plan is developed by all involved furniture companies, putting the challenges together and on paper.

**4. Experiences**

So far, approximately 30 companies have been part of the “brush up safety” activity. The costs of the project has been 200.000 SEK, including regional conferences, information material, travel expenses and some external advice. 25% of the expenses have been used for general OHS actions. The project has been financed by the insurance institution AFA.

The benefit has been a quick step forward with respect to systematic OHS work of the companies. The absence from work caused by work related issues, including accidents at work, has decreased, even during the time the project was running in the companies.

The introduction of the “systematically OHS work” has been beneficial. To get the OHS work structured and to become familiar with new routines, has been important for the companies. The training (workshops) helped the companies to target OHS problems and to approach them on a more holistic manner than before.

Even though improvements of some of the companies may be recognized as small for OHS professionals, the steps has been important of the involved companies. This is caused by the fact that initiating a process of improvement often starts with small steps. Knowing that the companies are in compliance with the OHS act, and that they will be able to pass thorough inspections of the authority, is an important benefit for some small companies.

The project is used actively by the social partners to increase the attention of SME’s to the issue of accident prevention, and to the fact that improvements of OHS should be based on a common approach between management and workers within the companies.

For further information about the brush up safety, please contact:
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- Lennart Gunnarsson, trade union official, e-mail: lennart.gunnarsson.fk@skogstrafacket.org
1. Preamble

Studies of industrial accidents carried out in connection with public preventive safety services in various parts of Italy and in the Val D’Elsa of Siena in particular, have shown that the use of machine wood-finishing tools, even in application of the so-called “Machine Directive” (Directive 89/392/EEC), was the factor most frequently involved in accidents or related situations causing the most serious accidents over the medium or long-term, particularly, during the years immediately following the adoption of the Directive.

Among the machine tools, circular saws and milling machines were observed to account for a great proportion of all accidents, with particular reference to shaping machines, due to the seriousness of the injuries reported, often causing disability as a result of the loss of body parts.

These machines, due to their versatility and the variety of finishes which they are able to perform, are very common in handicraft businesses and small undertakings, for this reason, a preventive safety programme directed at the identification of the risks involved, as well as any possible preventive safety systems, is of major importance to all such undertakings and employees.

For the above mentioned reasons, a study was performed to identify accident preventive safety measures to be implemented with the involvement of worker representatives and workers employed on these machines.

1. The study

First of all, steps were taken to ensure the project involvement of all employer associations representing companies performing wood finishing tasks, as well as of all trade unions representing the workers most frequently concerned. Following the initial meeting, which included a presentation of the project and during which the participation of a maximum number of associations and trade unions was obtained, another meeting was held; this time of worker safety representatives elected by the workers from the individual companies. At the latter meeting, in addition to illustrating the problem of accidents occurring in businesses in the sector and supplying useful information to the above mentioned representatives for the performance of their own role, the draft project hypotheses were illustrated and then discussed. The worker representatives were invited to gather preliminary information within the companies, in such a way as to constitute a sample of the working situations to be examined and integrated into the programme. Thus defined, the businesses, inspections were held in each of the companies concerned, with the participation of the representative, employers and workers employed at the machines being the object of the study.

The inspection was the occasion for gathering information on the machines present in the business, their characteristics, the presence or absence of particular working procedures and the dynamics of the accidents occurring during machine utilisation over the past few years and/or any hazardous situations which had not yet caused any accidents. The inspection was also an opportunity to obtain the involvement in the study of the workers employed by the individual finishers. The study was carried out applying the “feedback” method. The workers employed at circular saws or shaping machines in the same businesses, as well as the handicrafts entrepreneurs themselves, were invited to participate in various working meetings during which the participants were divided into small groups.

Two meetings were held for workers employed a circular saws, and another two meetings for workers employed at shaping machines. It was considered preferable to hold twice as many meetings in order to enable to meet the participants and gather information, from a not overly-numerous group of workers (6 - 7 persons) at all times, thus encouraging everyone to participate and contribute.

The working phases for each type of machine were identified preliminary to commencement of the meeting. For each of the working phases concerned, the sequence and method of execution of the individual operations were discussed with the users. Discussions of the methods of execution was introduced accompanied by proposals drawn up by ourselves, based on the results of the inspections held in the company.

For each of operations concerned, the methods of execution, knowledge required of workers for correct execution of the operation, as well as the risks involved and any possible intervention of the necessary accident prevention measures, were discussed and described.

During the group meeting, the technician utilised the sheet reproduced in Fig. 1, enabling the notation of the findings of the discussion group and any comments from the participants.

The work performed in the working parties has revealed sets of problems principally relating to (see annexes: • the technical standards and topics covered by the standardisation work; • machine designers and manufacturers; • the application, in the various work places, of better working practices in relation to these machines, as well as other related information from the workers on the safe use of these machines. Problems were also noted in connection to both the information presented in the utilisation and maintenance manuals and the circulation of information from the manufacturers to the users, and vice versa.

3. The findings

The findings were presented locally, to other companies in the sector, in addition to the companies having participated in the study.

In summary, the principal results were found to be as follows:

• the involvement and participation of the social actors, trade unions and employer associations, from the initial planning of the study, permitted a more conscious participation of the same employers and workers in the successive initiatives, creating that enhanced sensitivity with respect to the problems of industrial accident preventive safety which was reflected in the later initiatives and activities.
• the involvement of the worker safety representatives in the selection of the “sample” companies in which to carry out the study and as a go-between between the workers and the researchers and between the
• the participation of workers trained in the use of the individual machines, including the artisans them- selves, in the working phase and related risk analysis working parties related to the working phases has per- mitted the discovery of important information on the ergonomics of the said machines, the problems- encountered by the workers due to machine design defects; the manner in which they deal with the risks involved in the various types of finishing and the contents of the training courses to be completed by work- ers prior to being assigned to this type of machine;
• the definition of preventive safety programmes relating to the risks connected with the use of such machi- nes intended for
• machine designers and manufacturers;
• manufacturers, user companies and workers, with particular reference to worker training, the quality of the user and maintenance manuals and the circulation of information among these persons, manufactu- rers v. users on the safety of the individual machines;
• the mechanisms and methods to be utilised based on experience gained in the practical use of those machines, as well as any useful suggestions on how work station safety and the related technical stan- dards might be improved.

Tab. 3. Summaries of problems observed during a comparison of individual machines.

<table>
<thead>
<tr>
<th>Proposals and information – Circular saws</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tools management and maintenance (sharpening) handling and methods of installation.</strong></td>
</tr>
<tr>
<td><strong>Handling pieces of excess weight and dimensions.</strong></td>
</tr>
<tr>
<td><strong>Falling objects during machine use (work plan dimensions).</strong></td>
</tr>
<tr>
<td><strong>Evaluation of the ergonomic congruity between working surface heights and distances in the working area.</strong></td>
</tr>
<tr>
<td><strong>Procedures for the avoidance of accidents involving third parties, requiring specific worker training</strong></td>
</tr>
<tr>
<td><strong>Precise definition of transversal user methods guide. Requires specific worker training</strong></td>
</tr>
<tr>
<td><strong>Evaluation of the minimum dimensions of the materials to be cut (interference between the guide and the protective safety feature)</strong></td>
</tr>
<tr>
<td><strong>Usability of the protective device. Zero cutting visibility. Adequate lighting</strong></td>
</tr>
<tr>
<td><strong>Prohibition of the performance of private jobs with the protective safety feature installed on the divider knife. Requires specific worker training</strong></td>
</tr>
<tr>
<td><strong>Declaration of noise produced under working conditions. Sensitisation to the use of adequate tools and tool maintenance (sharpening)</strong></td>
</tr>
<tr>
<td><strong>Auxiliary cleaning intakes (carcinogenic wood dust)</strong></td>
</tr>
<tr>
<td><strong>Definition of safety procedures for particular tasks (sloping cut, interrupted grooving). Requires specific worker training.</strong></td>
</tr>
</tbody>
</table>

4. Conclusions

One major element consequent to the development of the study has been an awareness of the safety problems invol- ved in using the machines in question, by both the employers and the workers assigned to work on these machines having participated in the various working parties.

The employer and worker safety representative associations also played a major strategic role in some key phases of the study:
• definition of the selection of companies in which to carry out the study;
• participation in the company inspections together with the employers (or managers),
• dissemination of the results throughout the production department.

These representatives assumed a major role in the subsequent phases of concrete preventive safety implementation programmes arising from the study of the individual companies in which they worked and throughout the sector.

Other elements making the study possible included:
• the positive social context, in a restricted and homogenous territorial environment, in which the proposed study was considered important;
• the sensitivity in facing the questions of industrial accident prevention by the trade union organisations, as well as among employers and related associations;
The involvement of laboratories in the identification and prevention of risks arising from the use of circular saws and shaping machines.

The following table, Table 2, shows a reduction in industrial accidents related to the use of circular saws and milling machines.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Circular saws</td>
<td>51</td>
<td>73</td>
</tr>
<tr>
<td>Shaping machines and milling machines</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>Surface polishers</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Band saws and other types of saw</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Planing machines</td>
<td>9</td>
<td>43</td>
</tr>
<tr>
<td>Pushers</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Other machine tools</td>
<td>66</td>
<td>62</td>
</tr>
<tr>
<td>Total number of accidents</td>
<td>167</td>
<td>261</td>
</tr>
</tbody>
</table>

The data shows a reduction in the number of industrial accidents related to the use of machine tools for the finishing of wood in businesses in the Val d’Elsa, where the project was implemented. Although the verification of the effectiveness of the methods utilised for gathering the contributions from the users for the identification of limitations and proposals for improving the working conditions at the specific machines in use may not yet be clearly apparent, the results obtained and summarised in Tables 1 and 2 above are nevertheless appreciable.

The present study therefore permits the formulation of a “good practices” proposal to supply concrete cognitive elements and ergonomic suggestions related to the various persons involved in relation to industrial accident prevention and improved working conditions.

In every industrial district identified, an “Observatory” could be established consisted of representatives of the social forces concerned, the public bodies responsible for industrial accident prevention and possibly the manufacturers of the machines, which would be the object of monitoring and/or by representatives of their Associations. Such an observatory could activate preliminary studies on the phenomenon of industrial accidents relating to the machines in question, for the identification of the “working occasions” having caused accidents, using the findings of the inquiries conducted by the industrial safety supervisory bodies.

Following an identification of the machines found to require the adoption of special preventive safety intervention, it becomes possible to activate experiences for the gathering of preventive safety information directly from the workers using the machines in question, using the “feedback” method.

The “Observatory” in every industrial district having initially activated the study would then gather and analyse the work done by the working parties, the data on industrial accidents, the findings of any possible studies and inquiries conducted in this regard either by the public services and will draw up observations and proposals on that basis to be sent to the persons and bodies concerned with preventive safety and to the social forces.
FNV Bouw would like to contribute to the FAR project with a sector initiative on machine safety. Recent (2005-2006) inspections of the Labour Inspectorate in the joinery industry have confirmed the suspicion of social partners that most accidents are machine safety related. In the period of 2000 up to 2005 there were more than 450 accidents with (permanent) damage in the complete wood and furniture industry (55,000 workers). That is almost 2 accidents every week!

After a longer period of joined activity in the field of health and safety, due to a so called ‘Arboconvenant’, social partners decided in 2006 to produce a DVD with safety instructions. Main thought behind this project was the knowledge that employers and workers in the joinery industry are usually not the ‘reading type’. It was thought that visual and practical information would have better results than written theory.

The Dutch title of the DVD is “Kijk uit wat je doet”; this means something like “Watch out what you’re doing”. It contains eight short movies; one with general safety instructions, and seven with safety instructions on several machines. The movie contains instructions for band sawing machines, circular sawing machines, surface planning machines, CNC controlled machines, tenoning machines and a combinations of tenoning machines and surface planning machines. The instructions are sometimes very basic and therefore easy to use in practice.

The DVD will be distributed and used in the regular vocational training. We also brought it to the attention of all education advisors in the sector. And to all the companies in which trainees combine their vocational training with job-experience. Furthermore it was sent to the 800 member companies of NBvT, the Dutch employers organization in the joinery industry. And union-members can get a copy of the DVD on request. Last but not least, the DVD was sent to the Labour Inspectorate so that they can use it in their inspections. In total there are 5000 copies available. The total costs of this project were approximately 40,000 Euros.

Because the DVD has been released in April 2007, we have not been able to evaluate the effects yet. But the first reactions are very positive.