

THE SOBANE RISK MANAGEMENT STRATEGY

Malchaire J.B.

Université catholique de Louvain
Occupational Hygiene and Work Physiology Unit
Clos Chapelle aux Champs, 3038,
B – 1200 Brussels
Tel.. 32 2 764 32 29
Fax 32 2 764 39 54
email : Jacques.Malchaire@uclouvain.be
web: www.deparisnet.be
www.sobane.be

INTRODUCTION

The framework European Directive (European Communities 1989) requires that the employer ensures the safety and health of the workers in all the aspects related to work by implementing the general prevention principles: avoid the risks; evaluate the risks which cannot be avoided; fight the risks at the source; adapt the work to workers ...

The application of these principles in the field raises many problems. One of them is the coordination between Occupational Health (OH) practitioners (occupational physicians, safety engineers, ergonomists, psychologists...) and the industry, in particular in small and medium enterprises (SMEs).

After a short review of some concepts, a strategy is presented that make it possible to avoid, solve or minimize the problems and organize effectively and economically the cooperation for a greater efficiency of the prevention.

This document is addressed not only to OH practitioners but also to the employers responsible for the implementation of prevention programs and to the workers who live this prevention.

CONCEPTS

1. Workplaces or work situations

By " workstation ", one generally understands, in a restrictive way, the place and conditions (noise, heat, dimensions, spaces...) in which an operator performs a stereotyped task. This concept is obsolete owing to the fact that, in the new forms of work organization, operators no longer work at a specific worksite day after day, but in a "work situation" where they interfere with workers from a set of workplaces. The expression *work situation* refers to all the physical, organisational, psychological and social aspects of the life at work, which can influence the behaviour and well-being of the worker and the efficiency at work.

2. Occupational Health practitioners and Experts

We will designate by *OH practitioners* the persons, such as safety officers, occupational physicians, industrial hygienists, ergonomists..., trained in safety and health at the work to recognize, prevent, evaluate and reduce the risks. The training and the competence of these people can be variable, but no distinction will be made here between the different types of practitioners.

We will call *experts* the people, coming in general from specialized laboratories, with qualifications and methodological and technical means to look further into a particular problem.

In general, however, these competences and means are limited to a particular aspect: electricity, toxicology, acoustics, mental effects, relational problems...

3. Small and medium-sized enterprises (SMEs)

Large companies usually have well trained internal OH practitioners and the social dialogue works rather well.

The situation is clearly different in the SMEs where 60 to 80% of the workforce reside and the rates of accidents and occupational diseases are about twice as large. A part-time internal OH practitioner is sometimes present, but is often isolated. These SMEs must rely on external prevention services to fulfil the missions that they cannot effectively accomplish in-house.

The methods of risk assessment and furthermore of risk prevention must be developed primarily for these SMEs, taking account of their limited means and qualifications in occupational health and safety.

4. Quantification vs qualification of the risks: measurements vs evaluation

A great number of methods are available to "assess" the different occupational risks. Many of them were developed by researchers whose responsibility and interest lie in the establishment of the general relations between constraints and effects, rather than in the solutions of problems in a particular work situation.

That is particularly the case for the environmental factors and the musculoskeletal problems (ISO 7933: 1991, Rappaport 1991, Radwin et al. 1994, Malchaire and Piette 1997, Occhipinti 1998). These methods are, most of the time, badly used, because difficult, complex and expensive.

From experience in the field, it should be concluded that the representative and correct quantification of the exposure and of the risk is very difficult and expensive and that the majority of measurements performed in industry have little value.

It is thus necessary to encourage the OH practitioners who are measuring systematically and the employers who are asking for such quantitative data, to think about the real interest of these measurements, their validity, their cost and to encourage them to "quantify" better and more validly, but advisedly, according to explicit objectives.

This conclusion is much the same as the standpoint of Goelzer in her Yant lecture in 1996, saying "*It is not unusual to see more attention given to exposure assessment and monitoring than to hazard prevention and control. The fascination exerted by sophisticated equipments and numbers is, for some reason, greater than the interest in designing pragmatic solutions to prevent exposure*". It is also similar to the point of view of the participants in the *Control Banding* workshop held in London in November 2002 (Anon). As underlined by Oldershaw (2002), "*A single simple personal sample may cost more than \$400: three quarters of the members states of WHO spend less than this per capita and per year in their health systems.*"

SOBANE STRATEGY OF RISK MANAGEMENT

The number of risk factors and the number of work situations are so large that it is impossible to study them all in details. Actually, it would be useless since, in the majority of the cases, prevention measures can be taken right away on the basis of simple "observations" by the people directly concerned and who know in details the work situations day after day.

A detailed analysis can prove to be necessary when the work situation remains unacceptable once the obvious solutions have been implemented, and the participation of experts become essential only in some particularly complex cases.

This procedure is adopted spontaneously and logically in most cases. Following a complaint, a visit (*Screening*) of the work situation is done and obvious problems are corrected. If it is not the case, a meeting (*Observation*) is organised to discuss it more in details and identify solutions. If it cannot be solved directly, an OH practitioner is called for help (*Analysis*) and, in cases particularly difficult to solve, one has recourse to an expert (*Expertise*).

This spontaneous procedure remains however non systematic and in general not very effective due to, mainly, the lack of efficient tools to guide these *Screenings* and *Observations* and the facts that, frequently, the problems are transferred by the people of the field (workers and their management) to the OH practitioners and the experts and that these specialists take full responsibilities of the studies and recommendations.

It is therefore necessary to develop *Screening* and *Observation* tools for the people of the field and ensure the complementarity of the partners.

This is the objective of the risk management strategy described below.

This strategy, called *SOBANE* (*Screening, Observation, Analysis, Expertise*), follows the criteria defined in table 1.

Table 1: Characteristics of the four levels of *SOBANE* strategy

	Level 1 <i>Screening</i>	Level 2 <i>Observation</i>	Level 3 <i>Analysis</i>	Level 4 <i>Expertise</i>
When?	All cases	If problem	In difficult cases	In complex cases
How?	Simple observations	Qualitative observations	Quantitative observations	Specialized measurements
Cost?	Very low 10 minutes per factor	Low 2 hours	Average 2 days	High 2 weeks
By whom?	People of the company	People of the company	People of the company + OH practitioners	People of the company + OH practitioners + Experts
Qualifications • work situation • health at work	Very high Low	High Average	Average High	Low Specialized

1. Level 1, *Screening*

The objective at this level is only to identify the main problems and solve immediately the simple ones, such as a hole in the ground, a container containing a solvent and left abandoned, a computer screen turned towards a window...

This identification must be carried out internally, by people of the company who know perfectly the work situation, even if they have little qualification in safety, physiology or ergonomics. These people are the workers themselves, their immediate technical management, the employer himself in the small companies, with an internal OH practitioner, if available, in a medium-sized or large company. The tools must be simple and quick to understand and use and must be adapted to their industrial sector.

The method at this level 1, *Screening*, must seek to identify the problems in all work circumstances, and not at a given moment.

2. Level 2, *Observation*

A problem unsolved at level 1, *Screening* must be studied more in details.

The method must still be simple to understand and implement, quick and inexpensive, so as to be used as systematically as possible by the workers and their technical staff, with the cooperation of an internal OH practitioner when available.

The objective is again to lead these people to discuss the problem in order to identify prevention solutions as soon as possible. As at level 1, the *Observation* requires an intimate knowledge of the work situation under its various aspects, its options, the normal and abnormal operations. The depth of the study at this level 2, *Observation* will vary according to the risk factor and according to the company and the qualifications of the participants.

The method should not require any quantification and therefore any measurements, so as to remain applicable even when these qualifications and techniques are not available.

3. Level 3, Analysis

When the *Screening* and *Observation* levels did not allow to bring the risk to an acceptable value or when a doubt remains, it is necessary to go further in the *Analysis* of its components and in the search for solutions.

This stage requires the assistance of OH practitioners who have the necessary qualification, tools and techniques. These will often be external OH practitioners, intervening in close cooperation with those who conducted the stage 2, *Observation*, (and not in their place), to bring to them the necessary qualification and means.

The method can use more sophisticated terms and concepts. It can require simple measurements with common instruments, measurements however made with explicitly defined objectives of confirmation of the problems, investigation of the causes and optimisation of the solutions.

4. Level 4, Expertise

In particularly complex situations, a study at level 4, *Expertise* might be required, with the additional assistance of an expert. Sophisticated or specific measurements will sometimes be necessary to optimise appropriate solutions.

The *Déparis* method presented hereunder intends to fulfil the needs for the *Screening* level. The methods for the *Observation*, *Analysis* and *Expertise* levels were developed and validated with regard to noise (Malchaire et al. 2000), thermal environments of work (Malchaire et al. 1999), lighting (Malchaire et al. 1998), whole-body vibration (Malchaire et al. 1998), hand-arm vibration (Malchaire and Piette 2001) and musculoskeletal constraints (Malchaire and Piette 2002). Additional methods were developed in the context of an European research project for the following aspects: chemical agents; biological agents; safety (falls, slips ...); fire and explosion hazards; electric safety; machines safety and work on VDU.

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