Improving the procedures for the selection and use of PPE at work[1]

Safety is not adequately integrated into productive systems in the early stages of design, and operating conditions are far from satisfactory in EU workplaces. Environmental and prevention measures (both health & safety and organisational) are not sufficiently taken into account.

The choice of Personal Protective Equipment (PPE) should be the last preventive measure to be taken for risk reduction. That means that the users of PPE should be those workers who are exposed to the technologically *unavoidable* higher risks (extreme conditions, high-risk specialised tasks, short-term temporary tasks, etc.), which could be countered by the use of PPE.

A double process

Under European legislation on design/manufacture and use, products (like machinery or PPE) are subject to two different approaches based on Articles 100a and 118a of the Treaty of Rome. Directive 89/686/EEC on the approximation of the laws of the Member States relating to PPE has its counterpart in Directive 89/656/EEC, which sets minimum requirements for the use of PPE.

More than 150 standards have been ratified by CEN on the basis of Directive 89/686 from a program of 244 mandated standards, and the Commission has drawn up a *"Guide for the categorisation of PPE"*[2] to assist in the certification procedure. Commission Communication 89/C328/02 gives *"non-exhaustive information for evaluating PPE"* under Directive 89/656. Assisted by different institutes, the Commission has prepared nine instruction sheets on the selection and use of PPE[3] as well as a PC-based tool. Finally, just last year, CEN was mandated[4] to produce a feasibility study on guidelines for PPE use.

Could this double process be made more efficient?

Workers, as the end users of PPE, bear the brunt of any failings in the application of both rule-making processes. A fault in the design of a CE-marked product may arise as a result of an incomplete risk assessment or inadequate harmonised standard. If this product is not detected by the notified bodies or by the Member States' market control system, an unsafe PPE which does not meet the essential health and safety requirements laid down in the directives, will be placed on the market.[5] This means that employers can buy them and workers have to work with them. What is more, unmarked PPE is still in circulation.

The system for establishing conformity is in need of evaluation. The Commission must evaluate the results of its own directives without delay. Product conformity and the reliability of Notified Bodies must be controlled by Member States. Some of the Member States have made

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[1] This article is based on Andrea Tozzi's paper presented at the 4th Seminar on Personal Protective Equipment in Europe (2-5 December 1997, Kittila, Finland).

[2] EC Commission, 8 January 1996.

[3] EC Commission, *"Draft version of brochures providing information on the selection and use of PPE"*, Luxembourg, 1992.

[4] EC-DGV, *"Mandate to CEN and CENELEC for a feasibility study on the need and proposed form of a guide to the selection of Personal Protection Equipment"*, M249, 19 November 1996. The TUTB takes part in the CEN working group. It started at the end of January 1998 and its report is due at the end of the summer.

[5] The question also arises whether the essential health and safety requirements in Directives 89/392 and 89/686 are sufficiently exhaustive.

appreciable efforts in this field, but the practice should be more widespread and effective throughout the EU. Co-operation between Member States and the European Commission must be improved. Manufacturers who conscientiously fulfil the requirements must not suffer from unfair competition. Furthermore, workers and their trade unions could contribute to public authorities' programs and targeted campaigns for market control by reporting problems and abnormalities when using PPE.

Employers and their staff may also not make the right choice of CE-marked PPE. For a number of reasons: an incomplete workplace risk assessment by the employer, failure to consult workers on the tasks performed, purely economic considerations disregarding the need for protection, or a lack of information from the PPE manufacturer. If the wrong PPE is chosen, it may not protect workers properly from specific hazards. It might also be unsuitable for other hazards, cause discomfort, stop other preventive equipment from doing its job, or add new risks inherent to its use.

Employers and their staff could also misuse PPE by disregarding the sequence of risk-reducing measures indicated in Article 3 of Directive 89/656/EEC, failing to co-operate with workers when choosing procedures, not making sufficient allowance for individual characteristics, lack of information, training which fails to take sufficient account of workers' own perceptions of risk and of PPE effectiveness [6], features which are not adapted to the work task (i.e., equipment which is unsuitable for long periods), or poor maintenance.

Finally we must consider the limits of the research into PPE. Are the performance classes defined in view of user needs[7]? Do the laboratory methods for testing the performance of PPE accurately describe risk exposures at workplaces? How are new and safer concepts integrated into the design of PPE[8]?

Recommendations for drawing up guidelines

Guides for the selection and use of PPE already exist, e.g., those drawn up by the CEN (only one of which is a harmonised standard)[9], public institutes[10] or employers' associations[11]. But they all focus mainly on products. Not all the hazards, tasks or productive sectors are dealt with.

- First, we need to define a **target user** for the guide (or guides). Normally, guides are written for the employer or health and safety staff. This needs to be looked at more closely if we are not to end up producing either over-specialised or over-general guidelines. So we must

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[6] R. Graveling, *"Ergonomics and effective personal protective equipment"*, 13th Triennial Congress of the IEA, 318:320, 1997.

[7] A. Mayer, *"The application of risk analysis to the choice and use of personal protective equipment"*, 3rd Seminar on Personal Protective Equipment in Europe, Saariselkä, 42:47, 1996.

[8] J. Eklund, *"Welding visors - the acceptance of an invention for reduction of carbon dioxide retention"* – 13th Triennial Congress of the IEA, Tampere, 315:317, 1997.

[9] CEN/CR 529:1993, *"Guidelines for selection and use of respiratory protective devices";* CEN/EN 458:1994, *"Hearing protectors - Recommendations for Selection, Use, Care and Maintenance-Guidance Document"* cited in *O.J*. No. C359 of 16 December 1994; pr EN ISO 2801, *"Clothing for protection against heat and flame - General recommendations for selection, care and use of protective clothing"* (ISO/DIS 2801:1996).

[10] Steven M. van der Minne, NNI, *"PPE-Guidance Document on European legislation, certification and standardisation"*, 1997; Ph. Huré, *"Les appareils de protection respiratoire - choix et utilisation"*, ED780, INRS, 1994. HSE, *"A Practical Guide for the Selection, Use and Maintenance of Respiratory Protective Equipment"*, draft, 1997. A. Damongeot, *"Les protecteurs individuels contre le bruit (PICB). Performances, choix, utilisation"*, Cahiers de notes documentaires, 155, 169:179, 1994. K. Van den Broek, *"Mieux connaître les équipements de protection individuelle (yeux, voies respiratoires et tête)"*, ANPAT, 1997.

[11] The Association of the British Pharmaceutical Industry (ABPI), *"Guidelines on the selection, use and maintenance of respiratory protective equipment in the pharmaceutical industry"*, 1995.

identify the procedure for choosing the PPE in enterprises (differentiating between large companies and SMEs), answering questions like: who decides on the PPE specifications? who is responsible for ensuring the correct use of the PPE? Finally, we must bear in mind that it is no longer acceptable for workers not to be involved in this choice. Their experience must be taken into account from the beginning of the guide design.

- According to the **survey** carried out by the European Foundation for the Improvement of Living and Working Conditions, not all sectors, tasks or types of occupation have the same level of risks. These factors must also be taken into account, for example when setting priorities. **Data** on PPE use or misuse could also be obtained from surveys carried out by trade unions or public authorities. Research should also be undertaken in specific sectors or types of occupation.

- It is vital to be mindful of the **real tasks and procedures** in order to be able to identify the correct choice and use of PPE. The company risk assessment is an essential starting point. But this means that the different parties (employers, staff and workers) must have a proven input into describing the working procedure[12]. Even this is sometimes not enough, and a direct inspection from an independent source (labour inspector, worker's consultant) could add essential, otherwise hidden, information.

- **Manufacturers and buyers** of PPE exchange information on the products' usability. It would be useful if they set their knowledge down in writing for all the interested parties.

- Finally, the users' country and **cultural characteristics** are important factors in risk communication. To avoid misunderstanding, they must always be taken into account.

Conclusions

PPE often only represent the most 'achievable' compromise between safety and well-being, between available knowledge and health protection requirements. Unfortunately, it also often represents a compromise between health and production goals.

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The proceedings of the 4th Seminar on Personal Protective Equipment in Europe, which took place 2-5 December 1997 in Kittila, Finland, will be published in July 1998 by the Ministry of Social Affairs and Health, Tampere. (Price: 100Mfi).

[12] R.Villatte, *"Des lunettes ergotoxicologiques pour les CHSCT"*, Santé et Travail, 4, 61:66, 1992.

PPE in the re-organized CEN

All the CEN Technical Committees concerned with PPE now form part of a sectoral coordination with a rapporteur, Alain Mayer of the INRS[13] (France). Working with a small panel of experts (known as the "Advisory Nucleus"), the rapporteur sets PPE standardization guidelines and priorities for submission to the CEN/BT.

The rapporteur liaises with CEN/BT; he suggests new work topics and tracks work in progress. He is appointed for two years and is unfunded. The other functions in the new organization are handled by:

- the CEN Project Manager and his assistant for the sector - they foster more effective contacts with the CEN structure;
- the CEN consultant for PPE, E. Korhonen of the FIOH[14], providing expertise on the development of standardization under the Directives and European Commission mandates, and assisting the Technical Committees concerned.

The Advisory Nucleus consists of representatives of CEN, the Commission, EFTA[15], manufacturers (ESF[16], FESI[17]), consumers (ANEC[18]) and trade unions (TUTB). The employers will also be invited to take part.

[13] National Institute for Research into Safety.

[14] Finnish Institute of Occupational Health.

[15] European Free Trade Area.

[16] European Safety Federation

[17] European Federation for the Sports Industry

[18] European Association for the Coordination of Consumer Representation in Standardization

CEN proposals for guidelines to PPE selection

The CEN working group carrying out a feasibility study on the need for guides to PPE selection reported at the start of July. The working group consists of national experts and two trade union experts (LO-Norway and the TUTB). The study was ordered by the Commission following the opinion of the Luxembourg Advisory Committee of 27 November 1996. It evaluates guides already in use in some Member States and examines priority sectors where a guide is most needed.

The group concludes that three types of guide are needed:

- **A general guidance regarding all types of PPE** to help firms put in place PPE management systems (risk assessment, selection and use, training, maintenance, etc.). This could be done by CEN in close cooperation with the Technical Committees involved in PPE and the two sides of industry.
- **Guidance by professional sector or type of activity** particularly important to SMEs. These would cover all risks in a particular occupational field or area of activities. They would allow for differences in national guides and different technologies. A structure would be set up to draft them. The two sides of industry will be invited to take part in the work with specific support. Some existing national guides may be used as a template.
- **Guidance by type of PPE** to describe the risks addressed by the different levels of protection and set guidelines for residual risk assessment so as to determine the appropriate level of protection. The Technical Committees concerned may produce these guides as technical reports.

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PPE selection for work with pesticides in Denmark

PPE selection for work with pesticides came onto the agenda in 1986 in Denmark in tripartite discussions between the Danish Working Environment Service, the employers and the unions. Three years' negotiations resulted in a decision tree for choosing PPE by reference to pesticide hazard levels, mixing methods and use. What was needed was a simple method usable by relatively-uneducated farm- and forestry-workers.

At the same time, the Danish Working Environment Service published a brochure of the different types of equipment available and the technical terms. The findings are that pesticide users find the decision-tree easy to use.

The Danish scheme was presented by Jesper Lund-Larsen, SiD (Danish General Workers' Federation) to the 4th Seminar on Personal Protective Equipment in Europe (2 to 5 December 1997, Kittila, Finland).