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EDITORIAL

Implementing the Community strategy as enlargement nears

Eighteen months on from the publication of the Community strategy 2003-2006 which sparked hopes of a rekindled Community health and safety policy, the slow beginnings of it are taking shape.

The Council has adopted a decision on a "new-look" tripartite Advisory Committee to be set up from 1 January 2004. The national tripartite delegations will be cut from six to three members, and the number of working group participants from five to three members per interest group, with one notable exception - the group monitoring health and safety in the extractive industries, which will have five members per interest group. The Council hopes this will preserve the knowledge base developed since 1957 by the Safety and Health Commission for the Mining and Other Extractive Industries (SHCMOEI), which will be invaluable in the impending enlargement. Mining is still a major industry in some of the new accession countries.

This cut in the number of each country's representatives on the Committee - which will expand from 15 to 25 Member States in 2004 - obviously has a direct impact on the trade union group, which will now have only one representative per country just as the Committee's workload increases. It will have an expanded remit, covering all workers in all sectors, and the range and number of directives concerned is vast.

The Committee should be playing more of a role as a forum for initiatives taken under the strategy by European and national public and private actors. It would be a forum for discussion, coordination and working out common priorities involving the social partners and the Member States. It should also be a platform where the outcomes of the European social dialogue and common body of laws and regulations are brought into play and joined up as the basis for improving working conditions.

Also of interest in connection with the strategy roll-out is the examination of the Commission report on the application of the health and safety directives, which is top of the Advisory Committee's work agenda. The report has been long-awaited, especially the analysis of

the application of the Framework Directive, which is the cornerstone of any common prevention policy. For the trade union group, the report will mainly be a way of checking how the Member States are managing to enforce the Directive's provisions, especially on setting up preventive services to cover all workers (extended scope of preventive measures which requires multidisciplinary expertise) and measures to ensure representation in health and safety for workers, especially in SMEs.

Some points of the Advisory Committee's work programme have found their way into the mid-term Social Policy Agenda review just published by the Commission : the Community's road map for social policy. It reveals that on the legislative front, the Commission means to codify existing individual directives - hopefully using the opportunity to plug the existing gaps - and simplify Member States' administrative follow-up. This clarification of the Commission's plans is helpful as enlargement nears. It is clear from the accession treaties that most of the new countries will have transposed the Community *acquis* (established body of laws and regulations) by the time they join the Union on 1 May 2004 - the date when the Framework Directive will apply in all the Union's then-25 countries !

But simply taking over Community legislation is not enough in the Commission's book. It has to be put into practice, which means allocating resources, especially in terms of knowledge of work situations and training of experts and other actors. This line of argument cannot hide to view the reality of some Member States' attempts to use their presidency to start rolling back the Framework Directive's requirements, possibly in the hope that a new composition of the Council will be more amenable to their demands. Given that some applicant countries have finally dropped their calls for a transitional period in light of the high "price" to be paid in the negotiations in terms of financing and market access, it is about time that all EU countries got firmly behind applying the prevention principles set out in the Framework Directive, and that means putting appropriate resources into doing it !

Marc Sapir,
Director of the TUTB

TUTB NEWSLETTER

THE EUROPEAN TRADE UNION TECHNICAL BUREAU FOR HEALTH AND SAFETY was established in 1989 by the European Trade Union Confederation (ETUC). It provides support and expertise to the ETUC and the Workers' Group of the Advisory Committee on Safety, Hygiene and Health Protection at Work. The TUTB is an associate member of the European Committee for Standardization (CEN). It coordinates networks of trade union experts in the fields of standardization (safety of machinery) and chemicals (classification of hazardous substances and setting occupational exposure limits). It also represents the ETUC at the European Agency for Health and Safety in Bilbao.

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The Machinery Directive, gains and challenges for the New Approach

Giulio Andrea Tozzi*

The European Commission set work going to revise the Machinery Directive in 1997. Much to the confusion of the Member State representatives on the Directive Standing Committee, it said it would not be going with the "very liberal" conclusions of the Molitor Group. The Commission's proposal came before the Council in January 2001 and began its passage through parliament[1]. Over 70 amendments were tabled. The Commission presented its amended proposal to Parliament and the Council in February 2003[2].

Is Europe a stalled technocratic system or a living and growing organism, getting a bold and imaginative grip on the many inconsistencies inherent in a complex social process ? Have the barriers to trade really come down ? Or have they just assumed another guise with required product safety standards that are still low and different in each Member State ? Does machinery, for example, move more freely now and is it safer than in the pre-Directive days ? Is there any way of implementing the Directive that goes beyond local interests to find a general consensus on the "right" way to interpret all its "mandatory" rules and the specific "voluntary" technical standards ? Is there agreement on the role of third-party certifiers : should they be given more independence or allowed more freedom of enterprise ? Why are some Member States so lukewarm about effective, consistent transnational market surveillance ? What determines the state of the art : technical development or protectionism towards strategic knowledge ? Do we foster user protection and their involvement in design, or go on making operators' lives less secure and cutting down workers' rights of participation in an unregulated market ?

On 13 and 14 June 2002, the TUTB called a meeting of machinery experts in the International Trade Union House in Brussels to present a research methodology on all these issues and discuss how to put it in place. The project fell into the following stages :

- forming a partnership between the players : European trade unions (the TUTB), government departments (French Ministry of Work, Finnish Ministry of Social Affairs), a public research institute (ISPESL in Italy) and a tripartite body (KAN, Germany);
- setting a common objective, i.e., collecting source data for a descriptive and comparative reality-check through a purpose-developed questionnaire submitted to institutional, social and technical experts in various States;
- open cross-checking with other partners not directly involved in the research on practical issues arising with the application of Directive, with special reference to woodworking machinery;
- producing deliverables in the form of suggestions to the Commission and Member States for setting up a "machinery system" that is more lined up with the Treaty principles.

A first version of the survey report by the TUTB's Stefano Boy, and Sandra Limou of Robert Schuman University in Strasbourg, was handed out to the workshop participants. The discussions launched straight into an assessment of how effective the New Approach Directive/standards system was and how far it was delivering improved, harmonized safety-by-design of machinery. The focus here was on the role of the certification bodies and the practical problems they have with manufacturers. The key importance of worker/union participation and the inseparability of market and social protection rules was stressed during the debates, along with the difficulties facing more effective market surveillance. It concluded with a review of gains and areas of uncertainty in the system in view of the ongoing legislative revision.

The June 2002 workshop was a major milestone in the methodology developed by the TUTB. Cross-checking the survey findings with other actors from different EU Member States bore out and expanded the scope of some of the conclusions. The final report *The Implementation of the Machinery Directive. A delicate balance between market and safety* explaining the approach in its entirety will be published in 2003[3].

Machinery Directive and harmonized standards

Hydraulic car lifts of the type used in garages are one of the few kinds of lifting equipment where work has to be done under the lifted load. The immense risk to the operator is clear to see. The weight of cars is not uniformly distributed : the heaviest part - the engine - is normally at the front. This means that a car lift must be able to withstand the load whichever way the car is driven onto it. This is what harmonized standard EN 1493 thinks - but not the market. Lighter (and cheaper) lifts, certified by notified bodies, are available where the user has to drive the car onto the lift in one specific direction. Loading the other way round - as is almost bound to happen one day - could cause the lift to collapse. In this particular case, the European standard is "sound", but manufacturers are placing machinery on the market that is

*SNOP - National Society of Prevention Practitioners, Italy

[1] See "Revision of the Machinery Directive", *TUTB Newsletter*, No 17, June 2001, pp. 5-11.
[2] COM (2003) 48 final, of 11 February 2003.
[3] See p. 8.

not up to prescribed safety standards, and third party certifiers are colluding in that.

Sometimes, the harmonized standard itself may be "unsound", so machinery manufactured to it will not satisfy the Directive's essential requirements. EN 692 on mechanical presses - challenged by France in 1997 - and EN 708 on agricultural machinery - on which the United Kingdom invoked the safeguard clause in 1998 - are cases in point.

In yet other cases, there is no standard, so machinery will be designed and placed on the market after going through the regulatory certification procedures, based on the manufacturer's own interpretation of the Directive's essential requirements. This is the general rule, and it is only through market surveillance that machinery not in conformity with Directive 98/37/EC[4] can be identified, modified and if need be, taken off the market.

Machinery on the special Annex IV list (which covers only about 5 to 10 % of all machinery placed on the market), must be certified by a notified body, sometimes after a type-examination.

Cases of non-conformity abound. For example, instruction handbooks are often not in the user's own language (Tuiri Kerttula, Ministry of Social Affairs, Finland), do not set out safe operating requirements and give no warning about residual risks (Uli Bamberg, KAN). But, disappointingly, we are still nowhere near having a common market surveillance strategy at European level.

Standards have to comply with the Directive's essential requirements, but often that is not made clear in the standard itself. As Emilio Borzelli (ISPESL), stressed, standards may go further than the Directive requires, either by adding advanced design details which, contrarily, permit a wide range of technological solutions, or by spelling out appropriate tests. But they can also fall short of the Directive by adding unnecessary restrictions on designers that do not improve safety and overly-vague tests that prevent them being assessed.

The level of standards for woodworking machinery is seen as satisfactory to very satisfactory (Uli Bamberg) especially by comparison with other standards (Emilio Borzelli), although they have their own shortcomings. A flawed standard that can be produced relatively quickly will often be preferred to no standard at all. But this means making provision to revise it if machines are found to be unsafe in use. Unfortunately, (Emilio Borzelli) standards bodies get no feedback from users that can kick-start this process. This issue will be considered elsewhere. The KAN made the useful suggestion that if there are no information channels, then at least testing should be prescribed as part of the design process (Uli Bamberg).

Standards may also clash. EN 708, EN 704 and EN 632 are cases in point. They set different dimensions for similar safety devices, notwithstanding the safeguard clause invoked by the United Kingdom against the first of them (Phil Papard, HSE). But they may also serve no useful purpose at all, adding nothing to the Directive's provisions or being obsolete when published due to long framing processes and technological advances. Finally, standards may be a major but daunting challenge for the safety assessment and harmonization of machinery control software, glossed over in Annex I (Tuiri Kerttula).

Some of the Directive's definitions (interchangeable equipment, safety components) and Annex I provisions may be unclear, incomprehensible as translated, at variance with national traditions, or clearly flawed (Pascal Etienne), like the requirements on emissions (noise, vibrations, pollutants, etc.), or may not match up with the Work Equipment Directive (Phil Papard). So, the Machinery Directive (article 3.4.3, Annex I) only requires that where there is a risk of self- propelled machinery rolling over, it must be fitted with anchorage points allowing it to be equipped with a rollover protective structure (ROPS) instead of requiring it to actually be fitted with ROPS as such or prescribing effective designed-in stability. This makes it the user's responsibility to evaluate the machinery and install safety devices if need be.

But there are also failings if not loopholes in the provisions of the Directive itself, and by the same token in the standards. Pascal Etienne (Ministry for Work) pointed out that this is especially so with ergonomics, which barely rates a mention in Annex I. The essential requirements and standards focus mainly on mechanical and electrical risks, although there is now a smattering of ergonomic design standards (Harald Riekeles, CEN). It is true to say that ergonomic considerations may be disparate and that as a subject area, ergonomics does not always come with an overall approach in terms of concepts and instruments that can be easily used by mechanical or electrical engineering designers with no special ergonomics training. The TUTB's guide (Ringelberg, Koukoulaki, 2002) on risk assessment for musculoskeletal disorders in machinery design could therefore be invaluable in helping lift these limitations so that the ergonomics input stops being thought of as just rounding off sharp edges on machines !

Even so, as Theoni Koukoulaki (TUTB) stressed, more deep-rooted resistance to ergonomics is often to be found stemming from the general lack of acceptance that final users must be part of the equipment design process, feeding in elements which in shop-floor practice have been found to ensure operators' physical and mental well-being.

Standards and legislation therefore stand in a wide variety of relationships to one another.

[4] Codified version of the Machinery Directive.

The contents of the standard will depend equally on the expertise of the standards developers, behind them the interests of each national mirror group, and also the dialogue with the CEN consultants mandated by the Commission to assess its compatibility with the Directive. But the final deliverable also depends on the involvement of each Member State, which checks whether the standard is in line with the Directive (and - it is well-known - with its own national interests). So, each country influences the interpretation of the Directive according to its own openness to trade, commercial interests or policy strategy.

The time taken by DG Enterprise to bring out the very useful guidance/comment documents on the Machinery Directive (1999) and the New Approach (2000) show the complexity of the issues which are holding back the process. No-one, however (T. Kerttula), feels that sound guidance on how to apply the Directive can be more effective than changes to the legislation.

Certification : the weakest link

For some machines - those in the Annex IV list - an expert third party is required to test a specimen and assess its conformity with the Directive (manufacturers rarely use the other two options offered by the Directive). The workshop participants were broadly agreed that the Annex IV list of machinery was inconsistent and flawed, and in need of revising. But there was no consensus (U. Bamberg) about the relevance of the module H procedure - total quality assurance - included in the draft revision of the Directive and stressed by Martin Eifel (DG Enterprise). Dietmar Reinert (BIA) also expressed strong misgivings about the system, querying the expediency of extending third party notification to non-Annex IV machinery.

Certification body assessments are generally acceptable enough, but in some instances examinations have been found to be scaled down or made easier because they are not profitable - the rates applied have to keep the organization competitive (or increase its market share). Another issue is that there is no time limit on the certificates awarded in most countries, so that solutions overtaken by developments may remain valid even when obsolete.

Notified bodies should be testers rather than consultants to clients, which is not always the case in some States. Their role is understandably quite difficult given the limitations of manufacturers, many of whom may not know how to translate the Directive into nuts and bolts (and not just for Annex IV machines) and therefore are after expertise more than certifications.

The Directive does not lay down a single compulsory procedure for approving notified bodies. Limits have been set and guarantees provided in some but not most countries (D. Reinert). Notification is hardly ever revoked, if at all, even in the event of repeated mistakes or evident dormancy - which may show that notification is used only as a benchmark for improved action in other areas.

The lack of consistency in the technical assessments made by these bodies was also mentioned. National coordinations and a European coordination of notified bodies have been set up to narrow the worst gaps, but D. Reinert (BIA) spoke for most workshop attendees in saying that because participation in these was voluntary, involvement remained at a very low level.

Social partner participation : a missing link

Social partner participation in running the system is very patchy, and there is often too little involvement by unions and employers, especially at national level. Manufacturers and employers - often lumped together under the same label - are coping, not always successfully, with changes in their own identity. Manufacturers are increasingly turning into support service suppliers, sub-assembly and quasi-machinery producers, complex system assemblers, or mere users of machinery control software. They are often at the borderline of where the Machinery Directive applies and so lack the minimum protection of a transparent set of rules. Franck Gambelli (ORGALIME) clearly described the hard choice between further undermining regulatory systems in order to "release" resources and developing the ability to plan sufficiently far ahead not to get bogged down in an unregulated, shambolic development.

For the workers, Laurent Vogel (TUTB) stressed the improvements made to work equipment by the New Approach. He emphasized the crossover between the "Product" and "Social Protection" Directives and criticized the failure to set up a systematic feedback of experience such as by requiring manufacturers to collect data on the use of their products.

Some national authorities have set up procedures with the unions to feed back workers' knowledge into machinery design, but such initiatives are still few and far between : the hazard flagging sheets operated by workplace health and safety committees in France; the work analysis methodology developed with woodworking machinery operators in Italy and Sweden; the tripartite body set up to monitor standards (the KAN) in Germany.

Information can also be fed back directly from the workface into European level discussions; the CEN Consultants would like to receive it (Detilloux). The case of truck mixers reported by the TUTB on information received from the Italian construction unions is a positive example which reignited the discussions on the standard before it was adopted by CEN.

Regrettably, trade union involvement in the national mirror groups is still too low and, in most countries, just nominal. Not only does the revision of the Directive not improve this - it makes it worse. L. Vogel pointed out the alarming fact that the Commission's proposal for a revision of Directive 95/16/EC has simply scrapped the recital stressing, albeit in very general terms, the need for employers and employees to have an influence on the standardization process. Also, nothing new has been added to article 5.3 of the Directive, which lays down national and European procedures for the social partners to monitor the standardization process[5].

A mixed pattern of market surveillance

The Machinery Directive has only been on the books for ten-odd years. It is quite a complex system to implement in full. Also, some countries with a well-established tradition of prevention, like Sweden, Denmark and Finland, joined the European Union after the adoption of Directive 89/392/EEC and so had no direct hand in framing it. But they still had to adapt very quickly to the new elements introduced into their systems. In Sweden, for instance, the Labour Inspectorate ran a large-scale campaign in 1996, two years after the Directive entered into force, to check how it was being implemented. Half of the 3,000 machines vetted were found not to be in regulation order (including 175 Annex IV machines), (Lennart Ahnström).

It is only recently that larger numbers of "new" machines have begun appearing in workplaces and accident reports have started coming in. The authorities that carry out preventive inspections and accident investigations have begun identifying various types of CE-marked machine that are dangerous and non-conforming. Official action in the field often leads to action by central government departments in charge of coordinating market surveillance (a term which does not feature in the present Directive, but is included in the proposal for a new directive). Also, the first cases involving manufacturers and their disputes with their purchasers over injuries caused by their products are now being decided.

The difference is that now Europe is supposed to operate as a barrier-free single market in which warnings and bans issued in one country should be immediately harmonized and disseminated to all EU countries. But the finding is that more often the issue is resolved by the national authority getting the manufacturer to make changes to all the machinery sold by him in-country without necessarily involving the rest of Europe, or worse, restricting action to the specific machine identified as dangerous !

The Directive does not require information on national approaches to be directly communicated to the other States, so a machine judged dangerous in one country could perfectly well be sold and used "as is" elsewhere. This is at odds with the rules of what is supposed to be a single market where safety is meant to be maximized and consistent and constraints minimized and identical everywhere in Europe !

It is clear, though, that the information and assessment procedure as laid down in the Directive - i.e. via the safeguard clause, which involves an assessment by the Commission and may require expertise - has created major hold-ups, because it is only after this extremely slow-moving procedure that information can be disclosed in all Member States. This means that several years may elapse before action is taken on machinery that meanwhile may cause other harm. The fact that only one case has gone through the procedure so far (Italian power presses seized by France) raises questions about the efficiency of the system.

The national authorities have taken initiatives, like the Machex network set up by SLIC (the European Senior Labour Inspectors Committee) to address the issues of safety of machinery in the workplace (L. Ahnström), or work out common practices for simpler administrative procedures (ADCO) on market surveillance - particularly essential with new member countries joining the EU (P. Papard).

The Commission, whose December 2001 consultative document on the New Approach put some pertinent questions, took a keen interest in the debate hosted by the TUTB (M. Eifel). Major resources need to be put into this area by States and the Commission's DG Enterprise as a matter of urgency. The recent Commission Communication (May 2003) aimed at improving the application of the "New Approach" Directives trails a series of steps in the right direction.

An incomplete score sheet

Fragmented and inherently poor data make it hard to give a full picture of what the Directive has done for health and safety.

Notwithstanding steady improvements, national and European accident statistics (Eurostat) remain patchy (e.g., most accident records have nowhere in them to specify what machine caused the accident) so that incriminated machinery cannot be identified.

The data also provide reactive information - notifications after accidents happen - rather than proactive safety assurances to prevent incidents occurring (near-misses are not accounted for). Does the fact that Germany has no record of accidents with band saws not fitted with emergency stopping devices - even though prescribed by the Directive - make this an unnecessary obligation ?

Accidents prove that there is a continuing risk from machinery, whether from misuse or poor design.

[5] The TUTB has joined with the Swedish SALTSA Programme to set up another research project aimed at taking stock of trade union participation in standardization work and proposing a methodology for a participatory approach by workers in machinery design. The project consolidated report will be published in 2003 and the next number of the *TUTB Newsletter* will be a special issue on the results of the seminar held in Brussels in June to present and discuss the report.

Useful information and particulars of the causes of accidents and the incidence of poor equipment design have been collected by the authorities in France and Italy, and through surveys in the United Kingdom, Sweden, Finland and Denmark. Successfully run market surveillance campaigns, and nascent cooperation between authorities signal major opportunities for improving the system (Pascal Etienne described a long series of such schemes).

Gains and challenges

Even though harmonization is clearly not being walked the way it is talked, the New Approach's regulatory and standards process has achieved undeniable results in design, and these were forcefully brought out at the workshop (Jean-Paul Lacore). Safety integration, the 3-step method, the complementarity between product design and operator safety are all concepts gaining wider acceptance among the new generation of designers, although not always as quickly as might be wished. More needs to be done to speed up this process through training schemes, some of which have already produced results.

But also (K. O. Hansen, Danish government representative), effective political agreements are needed to steer through the revision of the Directive and develop exchanges on its implementation through joint campaigns, inter-country exchange visits of inspectors, and ongoing dialogue with manufacturers.

The way to improve cooperation and avoid duplication of efforts, argued the KAN (U. Bamberg), is to set up a rapid information exchange system with immediate notification of emergencies, common databases on hazardous products, national and European cooperation groups for each Directive.

The twin-track approach (design-protection) is a locked-in gain for Europe's workers that trade unions want to see raised up to the international level as an original approach to which workers' representatives have been major contributors. The system's kingpin standard – EN 292 - has just undergone a long and arduous revision and will be published as a joint European and international standard (EN ISO 12100). It will be a litmus of how far the European model stands apart from or is part of the global trend to deregulation. Might not the real issue of debate be between the proponents of social regulation as the basis of the free market and advocates of purely voluntary rules underpinned by powerful international economic interests unimpeded by regional or social "barriers"? ■

TUTB publications

The implementation of the Machinery Directive. A delicate balance between market and safety

By Stefano Boy and Sandra Limou
To be published in 2003

This book reflects the findings of a European research project on the application of the Machinery Directive in four Member States - Finland, France, Germany and Italy. In the fourteen years since the Directive was adopted, there has been no comprehensive review of how it is being put into practice in EU countries. The project run by the TUTB at the end of 2000 with four national partners - the ISPESL (national OSH Institute) in Italy, the KAN (OSH and Standardization Commission), in Germany, the French Ministry for Work and the Finnish Ministry of Social Affairs and Health - was mainly informed by national reports based on interviews on key aspects of the Directive and how it is being applied that affect health and safety at work. It focused on one class of machinery - woodworking machines - to get matching information for comparative study. The report is also informed by the seminar held in June 2002, where it was presented to representatives of countries not covered by the research, manufacturers, employers, notified bodies, and trade unionists.

As well as taking a detailed look at aspects of how the Directive is being interpreted and applied, the report puts in the public arena a number of health and safety issues that demand a wider airing. It also gives insights as to how the stakeholders involved apply the Directive on the shopfloor.

The book means to inform the debate on evening up the balance between workers' health and safety and the constraints set by the free market in the equipment they use, especially how that balance is understood, works and changes all down the line from designer to user. This means seeing how the Directive squares the respective public sector (regulatory bodies) and private sector (manufacturers) roles with the legitimate health and safety demands of workers as those with the most immediate stake in seeing the law properly applied.

La directive communautaire relative à la conception des machines : pour un équilibre entre libre circulation des équipements et protection des travailleurs - L'exemple français

The Community Directive on Machinery Design : Matching free movement of equipment with worker protection - The French example

By Sandra Limou

Copublished by the TUTB and the Institute of Work in Strasbourg

2003, 128 pages, 15 €
Available in French

This book comes out of the TUTB's study on the application of the Machinery Directive in different EU countries started in 2000. In fact, it was the report on France that decided the TUTB to extend the scope of its research to Germany, Italy and Finland. The French study was done as contract research commissioned by the TUTB from the Strasbourg-based Institute for Work, which is part of the Robert Schuman University.

Transposing the Machinery Directive did not involve a radical overhaul of the French regulations, because its provisions closely reflected existing principles in the Act of 6 December 1976 requiring safety-by-design of machinery and equipment. Even so, applying the Directive in France has not been problem-free because its objectives - free movement of goods and ensuring a high level of worker protection - are at odds with one another.

This study was significantly informed by interviews with a range of those involved in implementing the Community legislation (machinery manufacturers, users, Ministry for Work officials, State-notified bodies responsible for conformity assessment of specific machinery, etc.). It singles out and analyses issues with interpretation and application of the Directive, and identifies where responsibilities lie under the Directive's essential requirements. Manufacturers and business owners/managers have a certain number of obligations and incur civil and/or criminal liability for infringing the regulations. The central role given to technical standards changes the traditional fundamentals of liability law, and the lack of case law leaves many hanging question marks. A final requirement for the Directive to work properly is public control of the market. This study reviews the provision made by the Directive, the French system of surveillance overseen by the Ministry for Work, and emergent cooperation at European level.

The report gives fresh insights into the scope of the machinery design Directive in France.

The new impact assessment of Commission initiatives : a tool for sustainable development ?

In June 2002, the European Commission published a Communication on a new approach to assessing the impact of its initiatives. From 2004, all new proposed legislation and non-legislative measures will have to be assessed for their economic, social and environmental impacts. The ETUC has repeatedly called for an aid to this kind of assessment. This article looks at what it will and will not do.

The new approach to the impact assessment (IA) of its proposals published by the European Commission on 5 June 2002[1] aims high. It will replace all existing impact assessment instruments with a single process which will gauge the impact of the proposed measures on sustainable development. From 2004, it will apply to all major Commission proposals[2].

The ETUC has repeatedly called for the Commission to bring in tools for assessing its proposals[3] to give the environmental dimension a more central place in the Lisbon process and encourage a shift in forms of consumption and production towards more quality in social and employment terms.

While it is too soon to tell how it will be implemented by the Commission departments, the new impact assessment process clearly represents a step forward in Commission practice. Coming into play at an earlier stage in the decision-making process, it should promote consistency in the quest for solutions that strike a balance between economic, social and environmental aspects. But it seems unlikely to inform the framing of policies that actively further sustainable development. The new procedure is far too unclear on the methods of analysis and consultation of interested parties, and could end up as a managerial tick-box exercise.

More coherent European policy development

The main idea behind the new IA system was to improve the quality and coherence of EU policies. The new system is meant to materially improve the Commission's existing impact analysis systems.

The probable impacts of measures will be identified at an early stage in the preparatory steps for the decision, rather than when the proposal is cut-and-dried. The idea is for the outcomes of the impact assessment to really inform the decision-making process. Alternative policy mix scenarios can be examined to deliver the objective set, such as to bring out, through an iterative process, the solution which "maximizes the positive or minimizes the negative impacts on all actors in society", by looking at the environmental, social and economic consequences simultaneously.

Assessments now done on a purely vertical basis by the directorate general concerned (impact assessment on firms, on the environment or on employment, for example) would change under the new approach in a bid to balance sectoral and horizontal aspects and encourage coordination between directorates. The analysis will take in the widest possible scope of the potential effects of the proposed measure, including outside the direct scope of its impact, looking at the economic, social and environmental aspects simultaneously.

One part of the impact assessment will be to identify the distributive effects of the proposed measure. This will mean identifying the "losers" and "winners", whether actors, social groups, economic sectors or geographical areas. Internal will be distinguished from external (non-EU) impacts.

The time dimension will be examined by balancing the short-term and long-term effects using discount rate methods in particular. The degree of irreversibility of decisions and the precautionary principle will also be taken into account.

Finally, the impact assessment is expected to identify the best trade-offs for the proposed policy option between competing economic, social and environmental objectives. This will involve quantifying the impacts in physical terms.

[1] Communication on impact assessment, COM 2002/276 of 5 June 2002.
[2] As part of the annual policy strategy and/or work programme, whether for regulatory measures or other proposals with economic, social and environmental impacts.
[3] "Making the economy work for sustainable development", joint position of the ETUC, EEB, Social Platform, 6 March 2002; ETUC Resolution on Europe and sustainable development, 19 and 20 November 2002; EEB, ETUC, Social Platform Joint Declaration to the 2003 spring European Council of 6 March 2003.

A limited contribution to policy-making for sustainable development

The second reason for bringing in the impact assessment system was to fulfil the undertakings given at the Gothenburg European Council on establishing a method for assessing impacts on sustainable development. The issue is about the ability of the IA system to frame policies that contribute to sustainable development, which is more than just putting economic, social and environmental impact assessments alongside one another. Three things at least raise question marks about this.

The first is the lack of effective integration between the "pillars". The impact assessment is done pillar by pillar (economic, social, environmental), without regard to the positive or negative synergies that may exist between performances of different natures. And yet the concept of "sustainability" refers to specific conditions that cut across economic, social and environmental issues (like equity within and between generations, protecting and conserving stocks of natural and human resources, reducing the material flows involved in the production of goods). Formal links between the different fields should be looked at, such as the interactions between the environment and the economy, by factoring social costs into prices or health impacts, or the impacts of an undertaking's social and environmental performances on its economic performance.

The second problem, linked to this, is indicators. The Communication offers a list of relevant indicators by category (economic, social, environmental) but none of them takes specific account of sustainable development issues. This finding is simply a reflection of the fact that the EU currently lacks indicators by which to assess progress with the implementation of the European sustainable development strategy.

The third problem relates to the ability that impact assessors have to identify mitigating measures intended to minimize the negative impacts of the proposed measures. For one thing, the Communication is completely silent on such measures : do they, too, need to be assessed for their impact on sustainable development ? Can an impact assessment alone gauge the full severity of potential damage independently of the actors concerned ? Also, there is not always a gain to trade off against every loss, particularly where irreversible processes are involved. Unemployment, for example, causes identifiable personal loss, but reskilling is not always accessible.

All this creates a risk that the impact assessment process will focus more on looking for mitigating measures than on exploring new opportunities for improving quality of employment, the state of the environment and economic development simultaneously.

Ideally, impact assessments should look at issues from a sustainable development angle : is trade in a given sector sustainable at present ? If not, why not ? What can the public authorities do to make it more sustainable ? This widens the scope : assessments should even be able to look at existing situations as a basis for the development of future policies or to cost out inaction.

For a more transparent process

The Communication says that "to show the different impacts, make comparisons easier and identify trade-offs and win-win situations" it is desirable "to quantify the impacts in physical and, where appropriate, monetary terms". Many costing tools may exist with which to assess environmental issues, but much more clarity is still needed on what can be concluded from them, and their limitations.

Arguably, economic assessment is first and foremost a form of parlance - and currently a predominant one - through which to express issues like the collective interest of environmental protection. The outcomes of economic calculation are predicated by a number of things which stem from convention more than economic theory : national differences in how certain risks (loss of life for example) are costed, the amount of knowledge gained from the assessment, trend projection scenarios and break probabilities, choice of the method of calculation, choice of baseline scenario, etc.

As a tool for mediation, economic assessment can help in making choices by helping the parties to achieve consensus on a set of criteria, through relevance testing of alternative solutions that the parties can agree on beforehand. Endorsement and acceptance of the conventions used for the calculation by all the parties are therefore essential if economic assessment is to be used as an aid to debate rather than a tool of administration and control.

In a number of scenarios, too, economic calculation alone cannot deliver social and environmental objectives. In uncertain (non-probabilistic) and

serious risk (like climate change) situations, the first thing is to identify target levels (of pollution, environmental limits) through more collective procedures (voting, consultations, democratic forums,...). Economic assessment can then help to determine the most efficient ways to achieve them.

Finally, scoping the impact assessment is a big issue, and one which must be reasoned and transparent. Sustainable development must encompass the global and local aspects at once. One issue often overlooked in impact assessments of European policies is : how far if at all does achieving the EU's objectives contribute to global sustainability, especially a fairer geographical distribution of world wealth, rights or natural resources ? Integrating this aspect into impact assessments requires a systematic analysis of all the positive and negative flows between the EU and the rest of the world generated by the measure concerned, including product full life cycles and both direct economic and non-commercial effects.

Participation by interested parties

As well as being an aid to decision-making, impact assessment is meant to be a communication tool which, through "consultations with interested parties will generate useful discussion".

However, the conditions and procedures of consultation as set out in the Communication will not deliver that aim. Looking just at the minimum standards for consultation according to the guidelines laid down in the Communication on consultation[4], the IA Communication fails to specify :

- at what stage of the analysis consultations should take place : before the assessment process, in the alternative scenario framing stage, or afterwards, to validate the outcomes;
- the scope of the consultations : collection of data and information, or validation of results;
- who exactly should be consulted : the document refers alternately to "interested parties" and "relevant experts".

The lack of a real strategy for consultation in the implementation of IA is a regrettable omission. Arguably, impact assessment should be seen more as an organized basis for discussion with experts and stakeholders designed to find trade-offs between economic, social and environmental objectives.

Participation by interested parties generally, and workers and their representatives in particular, could take place through an impact assessment steering committee. The idea would be to see that the impact assessment process reflects the sustainable development interests of the interested parties by going beyond a mere "external quality control" of data to actually shape the choices at the different stages of the assessment process : alternative scenario setting, scope of analysis, methods and criteria of assessment, etc.

Context and prospects

All proposals adopted by the Commission from 2004 onwards will have to be impact-assessed. Workers and their representatives at European level are bound to be involved in them, either through European level forums that they are involved in, or through sectoral representation. Effective participation by the unions in this process should not only get recognition for workers' rights and interests in sustainable development, but also further build trade union capacity for the assessment and management of sustainable development issues at both workplace and industry-wide level. ■

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[4] *General principles and minimum standards for consultation of interested parties* (http://europa.eu.int/comm/governance/suivi_lb_en.htm).

RF/Microwave Radiation Protection

André Vander Vorst*

Introduction

Radio frequencies (RF) and microwaves are *non-ionizing,* unlike much higher frequency waves above the visible range. The interaction of RF/Microwaves with cell tissue can be considered as the result of three processes :

1. Penetration by electromagnetic waves and their propagation into the living system.
2. Primary interaction of the waves with cell tissue.
3. Possible secondary effects of the primary interaction.

The word *interaction* is important. It signals that end results depend not only on the action of the field but are influenced by the reaction of the living system. Living systems have a great capacity for compensating the effects induced by external influences, including electromagnetic sources. While this is often overlooked, it is one main reason why conclusions derived from models must be approached with caution. *Physiological compensation* means that the strain imposed by external factors is fully compensated, so that the organism is able to perform normally. *Pathological compensation* means that the imposed strain leads to the appearance of disturbances within the organism's functions and even structural alterations may result. The borderline between these two types of compensation is not always easy to determine. There are immediate consequences :

*Guidelines for limiting the exposure provide protection against **known** adverse health effects.*
*Biological effects, on the other hand, **may or may not** result in an adverse health effect.*

Spreading industrialization and increasingly powerful equipment raise issues about the health risks firstly to workers, then to the general public. At the same time, rapid technological advances in electronics, electro-optics and computer science have set the stage for an unprecedented drive towards improving existing medical devices and developing new ones. In particular, advances in RF/Microwave technology and computation techniques have paved the way for new treatments and diagnostic methods. RF/Microwaves are presently used or under study for therapeutic applications in areas such as cardiology, urology, surgery, ophthalmology, cancer therapy, and others, and for diagnostic applications in areas such as cancer detection, organ imaging, and more [1].

Biological effects

Introduction

The main radiation mechanism consists of a *source field* that emits electromagnetic energy. Part of the incident energy is reflected by the body. The other part is absorbed and transformed within the biological system. It is associated with the *internal field*. The ratio between reflected and absorbed parts depends on a variety of parameters : frequency, body size, clothing, skin condition, etc. The physical laws of electromagnetic field theory, like reflection, diffraction, dispersion, interference, optics, and quantum effects must be used for explaining the observed phenomena. This is true for the whole spectrum of electromagnetic radiation. This article, however, considers only RF/Microwaves.

Other mechanisms exist : *bioelectricity* is extremely important in living bodies. It has to be taken seriously into account because a number of components are electrically sensitive : cells, cell membranes, nerve cells, nerve fibres, sheathed or not in the fatty substance called myelin, etc. Bodies are also equipped with a vast array of *receptors* that generate *electric potentials* : nerve impulses propagate in the living system.

A variety of subjects of interest have received attention : power absorption in living bodies, interaction with the nervous system, influence of extremely-low-frequency-modulated fields on cellular membrane channels, and molecular effects. Epidemiological studies have also been done. There is evidence that RF/Microwaves directly affect living systems, as indicated by *in vivo* absorption experiments. Evidence is also provided by *in vitro* studies, revealing effects at various frequencies and intensities, on a number of cellular endpoints, including calcium binding, proliferation, ligand-receptor-mediated events, and alteration in membrane channels. There is ambiguity, however, about the relative contributions of *direct* and *indirect* thermal effects, as well as the possibility of direct *non-thermal interactions*. European research in biomicrowaves was reviewed in 1993 [2], while a detailed discussion of microwave therapeutic medicine can be found in A. Rosen [3].

General review

Biological effects depend upon the internal electromagnetic field, which is the field *in the tissues*. This leads to the definition of the Specific Absorption Rate (SAR), expressed in watts per kilo (W/kg). It measures the power absorbed per absorbing mass. The size of the mass considered determines whether the SAR is

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defined on a local or an average basis. Thermal effects depend on the SAR spatial distribution. The value of SAR influences the *absorption* effects :

- 1 W/kg yields an increase of 1°C in human body, taking thermal regulation into account;
- corneal damage has been observed on monkeys for a SAR of 2.6 W/kg, at 2.45 GHz, while with drug pre-treatment the same damage was observed for SAR in the range 0.26 - 0.5 W/kg;
- retinal damage has been observed on monkeys for a SAR of 4 W/kg, in the range 1.25-2.45 GHz, with pulsed fields;
- SAR above 15 W/kg produces malformations, with more than 5°C temperature increase.

These are *thermal* effects. They are produced by energy transfer from radiation to matter, varying slowly with frequency, largely governed by dielectric loss, the loss being about proportional to the intensity of radiation.

Pulsed exposure produces a detectable effect at power levels smaller than at continuous wave (CW) : comparing CW and pulsed radiation indicates that pulsed radiation is more likely to produce biological effects than CW radiation at the same average incident power density.

The action on the *nervous system* has been a subject of great controversy. The number of experimental results has increased significantly in recent years [4], although the variety of experimental configurations and exposure schemes is so wide that quantitative conclusions are difficult to draw.

The question of *microwave syndrome* at low exposure-level was raised several decades ago in Eastern Europe. It involves a number of signs like headache, perspiration, emotional instability, irritability, tiredness, somnolence, sexual problems, loss of memory, concentration and decision difficulties, insomnia, depressive hypochondriac tendencies, etc. Evaluation is difficult because of the absence of a control group and lack of reliable dosimetric data. A recent paper supports RF sickness syndrome as a medical disorder [5].

Ion fluxes through *cell membranes* have excited great interest. The ions use specific voltage-gated channels to cross the membrane. Normally closed, channels open in response to action potential. Membrane thickness is 10 nm, while membrane potential is –90 mV at rest and may reach +40 mV. Hence, the membrane is submitted to an extremely high electric field, of the order of 1 to 10 millions V/m. Computer simulation on one cell has shown that : (1) there is a significant influence from GSM and DECT signals, (2) pulsed signals are more effective than CW, and (3) low-frequency components in the signal induce an opening probability of 60 % in calcium channels [6]. This computer model for one cell, however, is not sufficient to deduce whole-body consequences.

At the *molecular level*, there is experimental *in vitro* evidence of an increase of chromosomal aberrations in human blood when exposed to 0.5 mW/cm^2 and more [7].

There are indications that microwaves can affect the behaviour of *ear, eye, and heart*, as well as specific medical devices. Electromagnetic interference effects were detected at a distance of 10 cm from a pacemaker [8].

Frequency and amplitude *windows* have been observed in genetic, immune, haematological, and nervous systems, with reproducible window responses from extremely low frequencies to millimetre waves. The phenomenon is that a given effect may be observed for instance at low and high exposure-levels, but not in the intermediate range. In the millimetre range at high power densities, window effects have been observed on protein synthesis by mammalian cells over the ranges 38-48 and 65-75 GHz. Auditory effect by thermoelastic expansion is the most well-known window effect.

Effects on blood-brain barrier

The blood-brain barrier (BBB) is an anatomic/physiologic complex associated with the cerebral vascular system. It is a natural defence system that maintains the physiochemical environment of the brain within certain narrow limits that are essential for life. It functions as a differential filter that permits the selective passage of biological substances from blood to brain. For instance, amino-acids, anaesthetics, and glucose may gain access to brain cells, while carbohydrates, proteins, and most micro-organisms and antibiotics are excluded from brain tissues by the BBB. Unintentional opening of the BBB may subject the central nervous system to assault from extraneous micro-organisms. This might lead to cerebral oedema, increased intracranial pressure, and, in the worst case, irreversible brain damage.

This selective permeability has the disadvantage that agents and drugs that are effective in treating diseases in other parts of the body may not be able to gain entry into the brain to combat infection. The ability to selectively open the BBB suggests the possibility of using microwave regional hyperthermia to facilitate chemotherapy for brain tumours and the delivery of anticancer drugs such as methotrexate. This substance is the drug most often used for high-dose chemotherapy, with a BBB permeability, however, which is among the lowest for the agents used clinically.

A series of investigations of BBB-permeability changes at a very low level of microwave exposure has captured increasing attention. About thirty investigations into the effect of microwave radiation had been reported by 2002, divided about equally between those that showed increased permeability in experimental animals and those that did not, at high as well as at low SAR. The first investigations exhibited

changes at high SAR. More recent reports, however, using serum albumin leakage, suggest that exposure to microwave exposure can alter BBB permeability at SAR well below the maximal permissive level for cellular phones, for instance (which is 1.6 W/kg), including extremely low levels (0.016 W/kg). A reasonable line of inquiry therefore is whether, as a result of repeated exposures of the human brain to microwaves from cellularmobile phones, albumin and other toxic molecules might leak into and accumulate around and in the brain cells [9].

Non-thermal, isothermal, and microthermal effects

The possibility of non-thermal effects is a controversial issue. The *controversy* is not only scientific, but largely political and commercial. The idea that non-thermal effects may be caused by RF/Microwaves implies effects at possibly low or very low levels. Accepting or rejecting non-thermal effects is neither a minor nor a recent issues. As far back as 1971, Michelson and Dodge, comparing Soviet and Western views on the biological effects of microwaves, argued that : "The importance of the difference between the Soviet and Western views is readily apparent when it is realized that practical consideration of Maximum Permissible Exposure (MPE) is based on the acceptance or rejection of non-thermal effects of microwaves as biologically significant" [10].

It is important to note that temperature is not an electromagnetic parameter. SAR is proportional to absorption losses, and induces a temperature elevation : if there is absorption, there is a temperature rise. From a phenomenological point of view, electromagnetic theory cannot impose a constant temperature. Hence, it cannot investigate the possibility of non-absorption effects : when using electromagnetics alone; only thermal effects can be evaluated and other considerations clearly have to be taken into account, in which temperature is a parameter. This of course leads to thermodynamics, with its four parameters : volume, pressure, temperature, and entropy. Thermodynamics is able to investigate effects at constant temperature. In other words, *electromagnetics and thermodynamics* have to be used jointly in searching for *isothermal* effects, with energy and entropy being evaluated in combination. This, of course, seriously complicates the study.

Such phenomena, of course, are known to electronics. One typical example is *luminescence*, where there is conversion of heat into luminescent radiation, the heat coming from the thermal energy of the crystal lattice with an energy efficiency which can be greater than unity. As a result, there is a cooling of the lattice, often termed optical cooling. This can be explained by analogy with a heat engine transforming mechanical work into heat, *i.e.* more-ordered energy into less-ordered energy, and where the limit efficiency can be greater than one. Similarly, measurements on an interface between water and air as well as between human tissue and air exhibited what has been called the Saratov phenomenon [11] : at millimetre-wave exposure levels as low as 1 $\mu W/cm^2$, an interface response has been recorded at 0.4 and 1.0 GHz for exposure in three frequency ranges : 50, 65, and 100 GHz, respectively. This cannot be explained by electromagnetics alone.

On the other hand, the possibility of isothermal effects does not preclude "non-thermal" effects, which should more accurately be called *microthermal* effects [12]. The question is : *Is it possible for extremely weak electromagnetic radiation to have large biological effects ?* This refers to the possibility of trigger action by microwaves. Microthermal effects could occur in certain frequency ranges only, exhibit saturation at fairly low intensity, and possibly be overshadowed by thermal effects. Such theories have been posited [13]. One known example is the human visual system at low intensities with an energy gain of more than 10^6 for the light quantum to *trigger* the nerve impulse and where *energy is provided by biological system*. Considering for instance radial oscillations of cell*lmembranes* as a basic phenomenon yields resonance frequencies of about 50 GHz. Experimental results support this theory essentially in the millimetre wave region, between 40 and 150 GHz [13] [14] [15]. They are not conclusive, however, or the controversy would have been laid to rest.

It is worth observing that biological effects on living components or systems have been observed at power levels of exposure down to 0.1 $\mu W/cm^2$, *i.e.* 0.6 V/m. Two remarks are called for : one is that they have not been observed to be harmful, and the other is that such low values of field are very difficult to measure correctly without expensive equipment.

Epidemiology

Identifying links between *cancer* and environmental exposure of any kind is extremely difficult because of the absence of a single cause of cancer and for a variety of other reasons. Even if there was no link between mobile phones and cancer, thousands of users would still develop brain cancer each year, given the hundreds of millions of mobile phone users around the world. There is a consensus that RF/Microwaves do not initiate *carcinogenesis* by inflicting direct damage on the genome by any mechanism similar to the effect of ionizing radiation. There remains the possibility that RF/Microwaves could (co)promote neoplastic change or act indirectly. Epidemiological studies have resulted in conflicting evidence, with no statistical significance.

In vitro investigations on *genetic effects* have led to some positive results, showing a statistically significant increase of DNA alterations in mice and rats.

Out of four epidemiological studies on human populations exposed to TV/FM transmitted power, two

have evidenced a two-fold increase in leukaemia, for childhood and adult populations, respectively. The exposure level was a few μW/cm^2, *i.e.* an electric field of about 3 V/m.

Protection

From this short review, it can be seen that the picture is not clear-cut, especially given that guidelines for limiting EMF exposure provide protection against known adverse health effects while biological effects may or may not result in an adverse health effect. Let us be systematic.

1. The general social environment is that most people : (1) do want a mobile phone, (2) do not want phone masts close by, (3) feel concerned about mobile phone exposure, while (4) no-one worries about TV or FM transmitters, although the whole family of microwave frequencies produces the same biological effects.

2. In the present recommendations, two kinds of limitations are considered :
- basic restrictions that should be always respected;
- reference levels, that could be exceeded when the basic limitations are not exceeded.

The reason is simple. The basic restrictions are expressed in quantities which are internal to the body and are not measured, like SAR. On the other hand, the reference levels are expressed in quantities which are measured *in the absence of human beings*, like electric field. There are theories and estimations relating these two sets of quantities.

3. Only one biological effect of microwaves is well known : *heating*. The present recommendations, being based only on scientific evidence, are limited to heating processes. As an example, the Scientific Steering Committee of the European Commission stated in June 1998 : "As regards non-thermal exposure to EMFs, the available literature does not provide sufficient evidence to conclude that long-term effects occur as a consequence of EMF exposure", the conclusion being : "Therefore any recommendation for exposure limits regarding non-thermal long-term effects cannot be made at this stage on a scientific basis".

4. So far, the appropriate bodies in Europe have chosen to avoid recommendations not based on scientific arguments. This is a choice. Our opinion is that non-scientific arguments have also to be taken into account. Observations made by medical doctors on public health grounds, as in the recent Freibuerger Appeal, are a case in point [16].

5. The recommendations are based on one single source. They originally come from the World Health Organization (WHO), 1993. Today, they are essentially based on documents produced by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), with a main document in 1998 giving guidelines for limiting exposure to electromagnetic fields up to 300 GHz [17]. These inspired the European Council when drawing up recommendations for protecting the public from exposure to electromagnetic fields from 0 Hz to 300 GHz.

6. Accepting the possibility of *isothermal* or *microthermal* effects is a big issue : it implies an extra factor of about 100 on power level in the recommendations. This has financial and industrial consequences.

7. There are ambiguities in the basic texts. The WHO 1993 document [18] says on Page 21 : "In normal thermal environments, an SAR of 1-4 W/kg for 30 minutes produces average body temperature increases of less than 1°C for healthy adults", and on Page 23 : "A safety factor of 10 is introduced, in order to allow for unfavourable, thermal, environmental, and possible long-term effects, and other variables, thus arriving at a basic limit of 0.4 W/kg". Note that the document states that an effect is produced from 1 to 4 W/kg and calculates the protection from 4 and not from 1 W/kg. Starting from 1 W/kg yields a safety factor of 2.5 only, which is not much. Further down on Page 23, it says : "An additional safety factor should be introduced for the general population, which includes persons with different sensitivities to RF exposure. A basic limit of 0.08 W/kg, corresponding to a further safety factor of 5, is generally recommended for the public at large". This additional factor yields a total factor of 50 when starting from 4 W/kg and of only 12.5 when starting from 1 W/kg. Most documents refer to a safety factor of 50, based on 4 W/kg. The same discrepancy is found in the document ICNIRP 1998, on Pages 505, 507, and 509, respectively [17].

8. The safety factors for workers about the known effect of increasing the body temperature by less than 1°C for 30 minutes for healthy adults are 10 and 2.5, when starting from 4 and 1 W/kg, respectively. The corresponding safety factors for the general public are 50 and 12.5, when starting from 4 and 1 W/kg, respectively. The safety factor has to take into account the following :
- the temperature increase should be much less than 1°C;
- the exposure may be 24 hours a day and not 30 minutes;
- not all adults are healthy;
- the public is partly composed of non-adults (children);
- not all children are healthy; and
- there are "unfavourable, thermal, environmental, and possible long-term effects".

Are the safety factor values high enough? This is a question for health epidemiologists.

9. Some studies on BBB show an increase of permeability for serum albumin at an SAR of 0.016 W/kg,

i.e. 5 times less than the 0.08 W/kg value to which WHO and ICNIRP put the limit for general public.

10. Let us compare some reference levels at one specific frequency. Take the value for *900 MHz* for the *general public*, expressed in volt per meter, because this is the figure most often published for cellular phones. It should be remembered that the corresponding level for *workers* is 5 times higher in power, which is 2.24 times higher in electric field, because the electric field is proportional to the square root of the power. We have the following :

- WHO, ICNIRP and European Union recommend not exceeding 41.2 V/m;
- several European governments have adopted lower values, like Belgium (20.6 V/m), Italy (20 V/m, and 6 V/m for an exposure of 4 hours or more), Luxembourg (3 V/m), and Switzerland (4 or 6 V/m);
- in February 2003, Paris City Council reached agreement with operators not to exceed a value of between 1 and 2 V/m, depending on the ratio of output transmitted at 900 and 1800 MHz, respectively;
- effects on BBB-permeability have been observed at 0.016 W/kg, *i.e.* 18 V/m;
- considering the possibility of *isothermal* or *microthermal* effects implies an extra factor of about 100 in power, yielding 4 V/m;
- two epidemiological studies on TV/FM exposure evidenced a two-fold increase of leukaemia under 2 to 4 V/m exposure;
- the Belgian High Council for Health has recommended an extra safety factor of 100 to 200, yielding 4 to 3 V/m; and
- when asked, we ourselves have recommended not exceeding 3 V/m.

Conclusions

The situation is complex, because a number of arguments exist, not all of which lead to the same conclusions : there is quite a variety of recommendation levels. There are also ambiguities in the texts formulating the recommendations; these should be put right. One other ambiguity to be avoided is the claim that the recommendations do not address *long term effects*, because of the lack of conclusive scientific evidence, while recommending that employers should give particular attention to *any* effects concerning the health and safety of workers exposed to particular risks. There is also a fundamental difficulty in relying on a doctor or occupational health professional to establish that a health problem is the result of exposure to electromagnetic fields. ■

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Exposure of workers to electromagnetic fields : proposal for a directive

Ten years after the Commission published its proposal on the protection of workers exposed to physical agents, the Council is carrying on addressing each individual agent separately. At the start of 2003, a Council working party began its scrutiny of a Danish Presidency proposal for a directive specifically addressing the exposure of workers to electromagnetic fields and waves in a range between 0 Hz and 300 GHz.

As far back as 1993, when the first proposal was tabled, the Social Affairs Council had already recognized the risks related to exposure of workers to non-ionizing radiation. The VDU Directive (90/270/EEC), for instance, requires that radiation "shall be reduced to negligible levels from the point of view of the protection of ... health", while the Pregnant Workers Directive (92/85/EEC) requires the employer's risk assessment to take into account non-ionizing radiation which may cause foetal lesions and/or are likely to disrupt placental attachment.

International standards

The International Commission on Radiological Protection (ICRP), a private scientific society founded in 1928, has had a specific working party addressing health problems caused by non-ionizing radiations since 1974. Under the impetus of the UNEP[1], the World Health Organization published a joint document with the ICNIRP[2] in 1993 setting out recommended exposure limits for the protection of workers and the general public (fields ranging from 300 Hz to 300 GHz). The current Commission proposal is based on their activities.

Since then, the ILO has published two sets of guidance (Nos 69 and 71) on protection for workers, and the ICNIRP adopted a new version of its recommendations in 1998. It aims to provide tools for limiting the time-weighted exposure of workers to all electrical, magnetic and electromagnetic fields (frequency up to 300 GHz).

None of these documents include values for the performance standards of products or equipment, or exposure measurement methods. In Europe, the Commission mandated CENELEC to draw up standards that address these failings, in particular under R&TTE (radio and telecommunications terminal equipment) Directive 1999/5/EC, and to ensure mutual recognition of their conformity. CENELEC's work programme also includes a standard for the working environment and a safety standard for induction furnaces under Low Voltage Directive 73/23/EEC. But as the LV Directive makes no reference to the safety and health of workers, it is at best a dubious legal basis for these mandates.

A mounting public debate

The public debate on the health effects of electromagnetic fields in the range of frequencies mentioned has gained unprecedented momentum with the growing number and range of electromagnetic field sources, like TV, radios, computers, mobile phones, microwave ovens, radar and industrial equipment (induction furnaces), medical display equipment, etc. The public debate has focused on telephones, high voltage power lines and speed control equipment, fuelled by suggestions in scientific reports that exposure to electromagnetic fields (at low doses) may be harmful to health, leading to cancer, reduced fertility and memory loss (non-thermal effects). This led the Council to adopt a Recommendation in 1999 on exposure of the general public to electromagnetic fields which includes the ICNIRP's recommended values.

In line with the Scientific Steering Committee's advice, the Commission and Council did not refer to the precautionary principle, and went with international values that do not explicitly allow for non-thermal effects. The Council nevertheless asked the Commission to prepare a report within five years - i.e., in 2004 - with a view to revision of the Recommendation in the light of current scientific research data, including relevant aspects of precaution. The Commission's recently-announced publication of a joint health assessment for very low frequencies with the WHO in 2003, and on the effects of radio frequencies in 2005, tie in with this.

In 2001, an IARC[3] scientific working group concluded that extremely low frequency magnetic fields were "possibly carcinogenic to humans" (IARC Group 2B). Limited data show a possible causal link with childhood leukemia. The working group also concluded that static magnetic or electrical fields

[1] United Nations Environment Programme.
[2] International Commission on Non-Ionizing Radiation Protection.
[3] International Agency for Research on Cancer (vol (80) 2002).

and extremely low frequency electrical fields could not be listed in "Group 3".

Protection for workers

The current debates in Council are awaiting the conclusions of the Commission/WHO assessment. All those concerned are champing at the bit : the equipment-using general public, but especially so telephone and electrical manufacturers and network operators. The latter are apt to believe that protection for workers is mainly built-into product design standards, forgetting about the employer's responsibilities in the workplace (work organization, choice and maintenance of equipment, worker information,...) and cumulative effects - workers may be exposed to multiple sources of radiation.

As a result, some Member States are trying to throw the principles of the Framework and individual directives - coverage for all exposed workers above a threshold value, duty to perform a risk assessment and apply the ALARA (as low as reasonably achievable) principle, right to medical surveillance and, above all specifying exactly which health risks are covered and not covered - open to question.

The WHO reference standards must form part of employers' obligations that define the employment relationship. Technical standards for measurement must enable them to discharge their obligations in easily achievable conditions and comply with the Directive's principles. But a procedure for checking the standards mandated by the Commission from the standards institutions is also required. Only on those terms will the new Directive mark a significant step towards controlling the sources and exposure to electromagnetic radiations. ■

Marc Sapir, TUTB

Preventive services

One key aim of the 1989 Framework Directive was that preventive services should be developed that would be accessible to all workers, with a remit covering the vast sphere of preventive activities defined by the Directive.

The aim was part of a new, more holistic approach to occupational health and safety. International Labour Organization Convention No 161 adopted in 1985, in particular, showed that reform of preventive services was on more than just the European Community agenda.

The Framework Directive came into force on 31 December 1992. More than ten years on, we have tried to take stock of where preventive services now stand in the European Union. What we found was that the number of workers still not covered is very high, and has even risen in some countries. Multidisciplinary working is anything but established everywhere, and serious questions arise about what contribution these services can even make to a prevention policy to protect workers' life and health.

An account of all facets of the problem is beyond the scope of this report. Simply, starting from an examination of different national systems, it raises a number of issues that are both crucial and common to most EU countries. Issues around health surveillance will be addressed in more detail later. The situation of preventive services in the new accession countries will be examined in a workshop at the joint ETUC-TUTB Conference being held in Brussels in January 2004.

With this, the *TUTB Observatory on the application of the directives* means to step into the debate on the review of the application of the Community directives set to unfurl in the second half of 2003.

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Preventive services in the European Union – fighting a losing battle?

The 1989 Framework Directive imposes a strict liability to protect the health and safety of workers, laying down a series of obligations in the form of procedures and means to be put in place to achieve that end: participation by workers and their organizations in preventive activities, risk assessment, procedures for use in situations of serious and imminent danger, etc. The preventive services are intended to play a prominent part in all this. The Directive rightly points to the vast scope of preventive activities. The very concept of prevention means that expertise will often have to be drafted in to analyse and give a predictive judgement about the possible consequences of various aspects of working conditions. The Framework Directive may be less clear-cut in certain respects than International Labour Organization's Occupational Health Services Convention 161 and Recommendation 171, but there is a continuum between them. International labour standards are a useful benchmark for framing a coherent policy through which to deliver the Framework Directive's objectives.

When the Framework Directive was adopted, therefore, trade unions stressed its potential for giving impetus to preventive services reform, because nowhere in the EU did existing legislation fully address the Directive's aims, and assessments of existing services showed up obstacles to their attempts to really add to prevention in every country. Trade unions have consistently argued that preventive services reform must address four priorities: universal coverage, multidisciplinary occupational health services, setting up internal company provision first, supplemented if need be by externally-enlisted expertise, oversight of preventive service activities by workers and their organizations to ensure that they really contribute to prevention.

By and large, the 1989 Framework Directive's objectives for preventive services have not been met. What is most disturbing is that it is in the four most populous countries where, for different reasons, things have advanced least. Arguably, the United Kingdom has gone backwards. In France and Germany, little has really changed in ten years. Despite sweeping reforms in Italy, preventive services remain one of the weakest links in the new system - and could get weaker under the present Berlusconi coalition government's plans for a radical deregulation of workplace health legislation under the vaguest of parliamentary mandates[1]. Other countries have made real progress on some of the parameters examined (coverage, multidisciplinarity, operation as an established service). But serious queries arise about other factors (the priority given to an overall prevention policy, independence and relations of trust with the workers). Finally, bodies to collectivize the experience of these services remain under-developed in all EU countries, where they even exist (see article p. 36). A sort of heavily-fragmented prevention market is developing which does not really square with a coherent national policy.

Universal coverage ? For the 50% that are !

Workplace health issues affect all workers whatever their employment status, size of firm or industry segment. In all but a very few cases, self-employed workers are not covered by preventive services anywhere in Europe. The exceptions include some coverage in Finland, agricultural workers in France, and the activities of public preventive services in Italy. Generally, however, the states concerned have neglected this aspect of prevention activity. That also stems from one of the failings of Community legislation - the position of self-employed workers has only been recently addressed in a Recommendation[2], and we know from experience how little effect non-binding instruments have on national situations.

Among employed workers, the Community legislation excludes domestic staff, so that as a general rule they (overwhelmingly women) have no access to preventive services in the different member states.

Coverage of other employed workers is very patchy between countries. Estimates done for the Swedish SALTSA Programme research project on the quality of preventive services[3] on data collected in 2000 suggested that probably 50% of employed workers had access to preventive services in the European Community, with wide variations ranging between 25% and 95% according to country.

Some countries come close to universal coverage by requiring firms that lack a company preventive service with sufficient aptitudes to sign up to an external service. The Netherlands, Luxembourg and Belgium are cases in point. France limits universal coverage to occupational health services. Austria also has universal coverage in principle, which in practice extended to just over 70% of all workers in

[1] The Simplification Act passed by the Lower House in December 2002 and the Upper House in March 2003 writes the executive an effective blank cheque to roll back health and safety reforms on the guiding principle of making it "compatible with the essentials of business management and organization".

[2] Recommendation of 18 February 2003, *OJ*, L 53, p. 45, 28 February 2003.

[3] R.-M. Hämäläinen *et al.*, *Survey of the Quality and Effectiveness of Occupational Health Services in the European Union, Norway and Switzerland*, Finnish Institute of Occupational Health, Helsinki, 2001.

2003[4] compared to the estimated 55% in 2000. Coverage is still often fairly notional in small firms because the minimum service times of occupational health doctors and safety engineers are so low (1.2 and 1.5 hours, respectively) that many firms with under 50 workers simply use the preventive service set up by the industrial accident insurance system (AUVA)[5]. Medical examinations aside, there are few organized preventive activities[6].

Data for Spain show mixed trends: many firms, especially smaller ones, have no preventive service[7]; and most that do use an external service which has little impact on workplace prevention. Only medical examinations are relatively widespread. In 1999, the 4th national survey of working conditions reported that 24% of firms had no organized prevention activity, 52.3% had arranged medical check-ups, and 30.2% had done an initial risk assessment. More recent surveys reveal little further progress than that (see article p. 32).

Little significant progress has been made in the Nordic countries. Finland is near to achieving universal coverage (between 95% and 100% of workers, according to the source). Sweden has retreated from the 1980s when nearly 80% of workers were generally thought to have access to preventive services. Now, it could be more like 60%, but this is a very rough-and-ready estimate because the statistics on preventive service coverage in Sweden are quite inconsistent. The obtainable data put the figure in a bracket between just over 50%[8] to 72%[9] of workers. This surprising lack of certainty in a country with copious workplace health statistics, reflects the current lack of organization in services and linkages into a national prevention policy. Coverage in Denmark is estimated to be between 35 and 40% of workers. In the early '90s, plans were made to gradually increase achieve full coverage. Progress has been very slow. The only recent extension has been to the hospital sector. A deal had been struck in spring 2001 between the then-ruling social democratic party and two left-wing parties in connection with the budget vote to extend preventive services to all workers by the end of 2005[10]. The process was halted at the end of 2001 when a liberal-conservative coalition government took office with parliamentary support from the People's Party - a neo-liberal xenophobic grouping of extreme right wingers. General coverage of workers by preventive services is not an objective for the new government which has plans to roll back coverage in sectors where it is currently compulsory. Firms certified as pursuing a sound working environment improvement policy will be able to dispense with a preventive service. It is reasonable to assume that between a market for certification and a market for preventive services, workers' specific needs will not be a priority.

The United Kingdom paints the most disturbing picture[11]. The number of workers with access to a preventive service has fallen dramatically. Growth in the number of small firms, the spread of subcontracting under different guises and the privatization of public services have been major factors in this. The British trade union confederation (TUC) reports a fall in the number of workers with access to health and safety professionals from 12 million in 1992 to 7.5 million in 2002. In percentage terms, that equates to a fall in coverage from 50% to 30% of the national workforce. A survey done by the Institute of Occupational Medicine for the Health and Safety Executive throws the situation into stark relief. The survey focuses on selected functions, missions and tasks rather than organizational procedures. It claims that barely a seventh of workers (employed in 3% of all firms) are covered by occupational health activities relatively narrowly defined as including training, job engineering, risk factor measurement, health monitoring. 7.5 million workers (15% of firms) have access only to a sort of minimal service comprised of risk factor identification, risk management and information. Specialized health and safety staff are found in about half of firms that have organized prevention activities. The three most frequently cited professions are health and safety officers (in 45% of cases), general practitioners (29% of cases) and occupational health nurses (29%). The Health and Safety Executive's strategy for giving a new impetus to prevention in the United Kingdom does not have the development of preventive services as a priority. The government has so far turned a deaf ear to trade union demands for a legislative framework to make the use of preventive services compulsory, instead favouring employer self-regulation backed up by possible employer-trade union partnerships. In a political setting where the government feels it would be asking too much of employers to force them to investigate work injuries that have occurred in their workplaces, specific rules for preventive services seem a remote prospect (see box p. 23). This makes the European Commission's responsibility to ensure proper transposition of the Framework Directive even more essential.

[4] The estimate for 2003 is based on information supplied to the TUTB by Dr Erich Pospischil on 27 March 2003 that coverage is about 98% in firms with over 250 workers, about 85% in firms with 50 to 250 workers, and about 65% in firms with under 50 workers. But 80% of workers in Austria are employed in the latter group of firms.

[5] According to a letter of 2 April 2003 from the Central Labour Inspectorate to the TUTB, 35% of firms with under 50 workers have opted for this arrangement.

[6] Information supplied to the TUTB by Mr Michael Lenert of the Vienna Labour Federation, 1 April 2003.

[7] About a quarter of Spanish firms employing fewer than 10 workers have no organized prevention and a quarter have left responsibility for preventive services to the employer. Detailed data are supplied in the 4th national survey of working conditions done at the end of 1999 : http://internet.mtas.es/Insht/statistics/4enct_orga.htm

[8] S. Marklund (ed.), *Worklife and Health in Sweden 2000*, Stockholm, 2001, p. 65.

[9] Swedish Institute, Occupational Safety and Health, *Fact Sheet on Sweden*, March 2002, pp. 2-3.

[10] A. H. Riis & P. L. Jensen, Denmark : Transforming Risk Assessment to Workplace Assessment, *in* D. Walters (ed.), *Regulating Health and Safety Management in European Union. A Study of the Dynamics of Change*, Brussels, P.I.E.-Peter Lang, 2002, pp. 59-80.

[11] The figures in this paragraph are sourced from: L. Ponting, The sad case of occupational health provision in Britain, *Health and Safety Bulletin*, No. 311, August - September 2002, pp. 11-14.

The necessary aptitudes

The Framework Directive does not specify what aptitudes preventive services must have. It leaves that responsibility to the member states. Obviously, the Framework Directive has to be looked at as a whole, not separating off article 7 on preventive services from the other provisions, especially the very wide definition of the scope of prevention (article 6) and the need to ensure access to health surveillance for all workers. Logically, then, the necessary aptitudes should relate to the main disciplines involved in prevention. This is how the Directive was transposed in some countries (Belgium, the Netherlands, Spain), while multidisciplinary working was already an established practice in the Nordic countries[12]. There is a sort of recognizable common core of disciplines involved in occupational health - plus some paramedical specialities - comprised of safety, industrial hygiene, ergonomics and psychology. The precise designation of some of these disciplines may differ between countries and, so far, only occupational medicine has been the subject of Community harmonization measures for the recognition of diplomas.

Spain, however, is a case apart. Its regulations refer to a range of disciplines, but allow employers to choose just two to comprise a preventive service. The situation as regards training is also worrying. A report by the President of Spain's Economic and Social Council, Mr Durán, publishes evidence that training of specialists in hygiene, safety, ergonomics and psychosociology is nothing short of shambolic.

Austria and Portugal stand out among those countries that opted for a single preventive service - they only require preventive services to comprise occupational health doctors[13] and safety engineers. This narrow approach to multidisciplinary working has stopped other players like ergonomists, psychologists and industrial hygienists being given a precise status.

The only aptitude specified with varying degrees of precision by all states is occupational medicine, even though health surveillance is not always carried out by occupational health doctors[14]. But this is by no means organized into services covering all workers in many countries. It bears pointing out that the Community directives do not require health surveillance of all workers, but do make surveillance compulsory in certain circumstances (e.g., exposure to hazardous chemicals, workers using display screen equipment, workers at risk of injury from the manual handling of heavy loads, etc.) with the proviso that each worker should be able to receive health surveillance when they want it. Many countries fall far short of achieving these aims. Compulsory surveillance, especially of workers in insecure/casual jobs and in small and medium-sized firms, seems to be flouted wholesale in countries with no universal coverage by preventive services that include occupational medicine. On-demand access to health surveillance for workers is rarely guaranteed in firms with no compulsory surveillance obligation. Also, a dangerous lowering of standards has occurred in Italy, where doctors that provide health surveillance in firms (described as "competent doctors" in the Italian legislation) do not need to be qualified in occupational medicine since reforms introduced by Silvio Berlusconi's government at the end of 2001[15]. The really big problem, however, remains the weakness of the link between individual medical check-ups and a prevention policy which puts a priority focus on radical changes to collective working conditions.

Statutory occupational health nurse provision is also made in many countries. This is one of the most widespread specialities, but also one of the most disregarded in all preventive service activities, since is generally seen as purely a support function to occupational health doctors. Occupational health nurses were among the first workplace health specialists to set up a European organization: the Federation of Occupational Health Nurses within the European Union (http://www.stthl.net/fohney.html).

Some countries in their transposing legislation failed to specify the precise aptitudes that preventive services should have, thereby leaving employers free to decide what aptitudes their services should have, or even their independent experts not acting in coordination with others within one or more services. Ireland, Luxembourg[16], the United Kingdom, Sweden and Italy are cases in point. Sweden's transposition of article 7 of the Framework Directive requires no more than that the experts enlisted by the employer should have "sufficient competence"[17], whereas the Directive requires member states to define the capabilities and aptitudes they must have. As yet, the Commission has only instituted default proceedings against Italy, which was found to be at fault in an ECJ ruling of 15 November 2001 (see *TUTB Newsletter*, No 18, March 2002, p. 7).

[12] The regulatory framework played only a supporting role in the Nordic countries. The move towards multidisciplinary working was essentially a response to social demand, the general thrust of a national prevention policy, and support from public funds for improvement of the working environment. The lack of binding rules and regulations could put these gains on the line in Denmark and Sweden where the general context had radically changed.

[13] Occupational health doctors in firms employing at least 250 workers have the assistance of occupational health nurses. The number of occupational health doctors in Portugal is estimated at 1 000 to 1 200 (according to information supplied to the TUTB by Ms Claudia Matos of the IDICT in March 2003).

[14] In Germany, occupational health doctors (in the strict sense of doctors qualified in occupational medicine) account for under a third of all doctors involved in health surveillance of workers (4 112 out of 13 395 in December 2000).

[15] The specialities that enable doctors to be classed as "competent doctors" for workplace prevention now include insurance medicine, hygiene and forensic medicine. Might the latter be for carrying out post-mortem examinations on workers killed in accidents? See Order in Council No 402 of 12 November 2001.

[16] In Luxembourg, regulations specifying the aptitudes of preventive service staff are finally in the works more than 8 years after the legislation transposing the Framework Directive came into force.

[17] Swedish Work Environment Authority Guidelines on systematic work environment management, 15 February 2001. See in particular section 12.

Do work accidents need investigating ?

The answer seems self-evident. How can prevention plans be updated without factoring in the experience of work-related accidents and health problems? The Framework Directive itself says that reports have to be drawn up on accidents and submitted to the workers' representatives. In most Community countries, there is no question about the obligation to investigate work-related accidents and ill-health. Often, it has to be done with assistance from a (company or external) preventive service, and involve the workers' representatives. In Belgium, legislation[1] now provides that on top of the employer's internal investigation into serious work accidents, the labour inspectorate will also appoint an expert to produce a report which will be submitted to the employer and discussed with the workers' representatives. The cost of this indirectly comes out of the employer's pocket (it is paid for by the employer's insurer, who can claw it back from him).

At the end of 1998, Britain's Health and Safety Commission launched a consultation exercise on introducing a legal obligation for employers to investigate workplace accidents, dangerous occurrences and diseases. The idea won unanimous backing from trade unions and an overwhelming majority of prevention professionals. Aside from the obligatory knee-jerk complaints about any attempt to improve the legal framework of health and safety, employer opposition was not especially vehement. After the first consultation exercise which prompted 684 responses, a second round of consultations was held in 2001[2]. Obstructive as the delay was, the final result seemed to be in no doubt. After more than four years, the Health and Safety Commission made up its mind on 3 December 2002, but held off publishing its decision until 31 January 2003. The answer was no. The message is clear: British employers now know that they have no duty to investigate work accidents. Obviously, they can do if they wish, and guidance will be published to help such benevolent and inquisitive employers. An HSE survey claimed to show that, in any event, employers failed to see the value of such an exercise. The HSC's press release reveals that the political climate is what swayed matters: regulation of business is not on the agenda; preference goes to encouragement for "voluntary initiatives". The government does not want a tight regulatory hand to interfere with "business as usual".

This typifies the British authorities' strategy towards implementation of the Framework Directive[3]. The Directive's main provisions were transposed by copying out the wording, but the general mood of opposition to legislation that protects workers has effectively emasculated many of its provisions. What is the point in consulting workers on a report concerned with work accidents if the employer does not even have to investigate them? It is likely to be no more than a straight record of occurrences of no real value in prevention terms.

The estimated cost of the proposed measure was around £18 million a year (calculated by the HSE in 2001), i.e., under £1 per worker.

The General Secretary of the TUC, Brendan Barber, said that "until employers investigate accidents and near misses as a matter of course, the job will be left to (union) safety reps, HSE inspectors and, in the worst cases, public enquiries".

[1] Prevention (Improved Provision) Act of 25 February 2003, *Moniteur Belge*, 14 March 2003.
[2] The consultation document can be found at: http://www.hse.gov.uk/consult/condocs/cd169.pdf
[3] See D. Walters (ed.), *Regulating Health and Safety Management in European Union. A Study of the Dynamics of Change*, Brussels, P.I.E.-Peter Lang, 2002.

The failings of the United Kingdom's public authorities are partially offset by the system of accreditation and registration of health and safety professionals set up by private agencies[18]. The main professional body for this is the Institution of Occupational Safety and Health which groups together some 25 000 people classed into three groups by level of training and professional experience. The IOSH has grown considerably over the past 10 years. Other bodies also act as training certifiers. But none of this intervention by private agencies is enough to regulate the prevention market because employers are always free to employ people who do not meet the standards set by them. Also, voluntary organization of professions does not give sufficient guarantees of the independence of those concerned.

The freedom that Italian employers have to appoint the head and personnel of the preventive service unfettered by specific requirements as to aptitudes or approval has created a situation where most of these officials play only a backseat role due to lack of authority, means and sometimes capabilities[19]. This has emerged clearly from most of the surveys done in recent years. Company preventive services are certainly one of the weakest links in the Italian prevention system, and a vast unorganized market in external expertise has grown up separately to that of inter-company services. Mostly, it addresses immediate demands from employers, chiefly that of drawing up formal documents like the risk assessment plan[20]. It is questionable whether that will result in planned, integrated prevention. A national survey on the status of prevention stressed the problems faced by the heads of preventive services in the following terms: "preventive service heads feel deeply short-changed by what they do. They talk about the limitations and the difficulty of being front-line players in workplace prevention when they lack the power to take big decisions that have practical effects (...). Few heads talk openly about the organization of workplace protective and preventive services; their role is essentially administrative and technical, and their single overriding concern is whether the employer is complying with the law[21]".

Multidisciplinary or two-track working ?

Historically, prevention practices were long nothing more than offshoots of compensation for work-related risks. Workplace health was so bound up with the idea of occupational diseases that in many countries health surveillance was compulsory only where there was a specific risk of an occupational disease. Safety was about avoiding work accidents. Work organization, ergonomics, and a series of health problems with long latency periods or not resulting in incapacity for work were disregarded.

Most recent reforms have put a focus on multidisciplinarity in preventive services[22]. But not so in all countries. In Germany, in particular, the existing system was kept largely unchanged. Most firms must have safety engineers, and must entrust health surveillance to occupational health doctors. Obviously, linkages do exist between the two forms of intervention, but, by and large, prevention practice is not often found to be multidisciplinary.

The legislation passed in June 1994 to transpose the Framework Directive in Luxembourg preserves a two-track system[23]. Firms must have both a occupational health service for health surveillance, and a preventive and protective service for general preventive safety. While occupational health services' remit includes advising employers and employees on issues like hygiene and ergonomics, the only compulsory aptitude is occupational medicine. The Luxembourg legislation does not prevent company or external occupational health services from also doing the job assigned to preventive and protective services. It allows multidisciplinary services to be set up, but only after an operational needs assessment by the service. The non-health specialists cited as examples by the regulations are safety engineers, health engineers, ergonomists, psychologists and engineering technicians[24]. In practice, introducing a multidisciplinary approach is proving an uphill struggle. According to figures supplied by the Health Department in April 2003[25], the 7 occupational health services currently in existence have 45 full-time occupational health doctors, 10 nurses and 19 specialists in all other areas (9 safety engineers/technicians, 1 hygienist/toxicologist, 3 ergonomists, 4 psychologists, 1 interior designer and 1 physiotherapist).

Austria has gone down a different road. Where a single service has been set up, it must include both an occupational health doctor and safety engineer. But employers can preserve a two-track arrangement by enlisting a safety engineer and an occupational health doctor separately. This has not really helped create multidisciplinary practices. Rather, it is a means of facilitating cooperation between occupational

[18] C. Dyer, Getting the ticket, *Health and Safety Bulletin*, No 313, November 2002, pp. 15-20.

[19] Following the ECJ ruling against Italy, the government passed a legislative decree in June 2003 defining the capabilities of the service head and personnel. It is far from being universally endorsed. One main problem is that the decree preserves the "established situations" of most of the service heads and personnel who were already in place. Also, it requires only a fairly low level of skills for large and high-risk companies.

[20] A survey of small and medium-sized firms in Emilia-Romagna found that in 94% of cases, employers had contracted their risk assessment out to outside consultancies (see: Istituto per il Lavoro, *Salute e sicurezza in Emilia Romagna*, FrancoAngeli, Milan, 2001).

[21] L. Birindelli, E. Montanari, M. Sordini, Da soli si fa male. Il sistema partecipato di prevenzione e sicurezza sul lavoro, *Quaderni Rassegna Sindacale*, No. 4, Oct.-Dec. 2001, p. 153.

[22] This was not a new idea in the Nordic countries, where it had been brought in under a variety of guises in the 1970s.

[23] The Occupational health services Act of 17 June 1994, and the Safety and Health of Workers At Work Act of 17 June 1994 (both published in the *Mémorial* (Official Gazette), A-No. 55 of 1 July 1994.

[24] Grand-Ducal Regulation of 2 April 1996 on the personnel, premises and facilities of occupational health services (Official Gazette, A-No. 26 of 26 April 1996).

[25] Information supplied to the TUTB by Dr Steffes and Dr Goerens on 2 April 2003.

health doctors and safety engineers without really extending the scope of prevention to other disciplines. In practice, most occupational health doctors still provide their services on an individual basis rather than as part of a preventive service. Figures supplied by Dr Pospischil in March 2003 suggest that prevention provision currently comprises about 1 280 doctors, from 3 000 to 4 500 safety engineers and well short of a dozen industrial hygienists (trained in Germany or in the Nordic countries, there being no specific training in Austria). The figures for safety engineers are far from certain as they are often production staff for whom prevention is a small if not marginal part of their job. The number of ergonomists employed in workplace prevention is estimated at between 12 and 15. Also, while the Austrian Society of Psychology has 124 registered occupational psychologists on its books, it is hard to tell how many of them are directly employed on prevention in firms[26]. Neither ergonomists nor psychologists have official standing in the regulation.

Greece has also kept an essentially two-tier arrangement. All employers must appoint a safety officer regardless of the size of the workforce. In firms regarded as lower-risk, the employer can act as the safety officer subject to following a fairly cursory 10 hours' training. Also, firms employing at least 50 workers (with lower thresholds for special-risk firms) must make health surveillance provision by contracting an occupational health doctor. A service need not be set up for either speciality. The method of organization can vary from appointing an employee to contracting outside services. No overall data on the specific methods of organizing provision were available. Signing up to an external preventive service which will necessarily have both safety and occupational medicine abilities is only one possible method of organizing preventive services. In one region (Eastern Attica and the northern Aegean islands), nearly half the firms (196) that use a doctor contract individually for his services not as part of a preventive service, while 183 firms use doctors who are part of external preventive services, and 17 have doctors on their staff. For safety engineers, more than half (631 firms) contracted individual external provision, compared to 228 that used external preventive service technicians and 309 that employed one[27].

The debate in France on overhauling occupational medicine services has been going on for years. The solutions so far are nowhere near establishing multidisciplinary workplace provision. Unlike Germany, there is no regulatory framework governing the activities of prevention personnel other than occupational health doctors[28]. That severely limits their independence, the links they have with employee representation bodies, and puts them in a sort of legal limbo. No firm, whatever its size or risk potential, is obliged to have a company preventive service. On the other hand, occupational medicine services have been renamed "occupational health services" since they now include personnel who are not occupational health doctors. The predominant approach to multidisciplinarity is minimalistic. At 1 January 2002, occupational health services comprised 7 067 occupational health doctors (approximately 5 260 full-time equivalents) assisted by 5 182 medical secretaries and 3 747 nurses. Other than this, occupational health service personnel totalled 236 people, plus 1 534 clerical staff. The ratio of "other prevention personnel" (with specific skills not reported in the statistics and not defined by the regulations) to doctors clearly shows that the former play a purely incidental role. What is more, there are fewer prevention personnel than services, meaning that some "occupational health services" remain exclusively occupational medicine services. There are 180 personnel in a total of 363 inter-company services, and 56 personnel in a total 765 company services[29].

The current lack of movement in France stems from powerful lobbying by employers pursuing a double agenda which is a million miles from assessing prevention needs. One is the demand for zero cost reform, and a purely business management policy approach to multidisciplinarity, which means using least-cost subcontracting by having some occupational health doctor duties done by others for lower pay and without guarantees of professional independence. They also clearly mean not to forfeit their absolute control over company prevention specialists, who they can hire and fire at will, and can keep distanced from health and safety committee activities. This has exposed the current state of occupational health services in France to a welter of criticism. Government proposals have so far failed to address the crucial issue of company prevention specialists and restricted the debate on multidisciplinarity to just two aspects: the relationship between different public external agencies and the introduction of the odd technical assistant to occupational health doctors. The title of a recent article in the magazine *Santé et Travail* aptly captures this uneasy situation: "Multi-disciplinarity off the rails"[30]. The author summarizes the debates as

[26] Mr Michael Lenert estimates the number of psychologists at in the vicinity of 375. His figures include occupational and organizational psychologists.
[27] Data for 1 860 firms employing a total 68 120 workers supplied to the TUTB in March 2003 by Ms Katsakiori, KEPEK (occupational hazards prevention centre) safety inspector. The figures given are for the number of contracts signed by a firm with a doctor, whether self-employed or part of a preventive service. One doctor may obviously have contracts with several firms.
[28] The decree of 24 June 2003 published in the *Journal Officiel* of 26 June 2003 changes the situation somewhat. It was published after this article was written. It will be considered elsewhere, as its content nowhere near covers all the prevention experts currently working in or for firms.
[29] Labour Relations Department, *Conditions de travail. Bilan 2002*, restricted publication.
[30] I. Mahiou, La pluridisciplinarité dévoyée, *Santé et Travail*, No 42, January 2003, pp. 20-21.

follows: "it isn't happening. The draft order establishing multi-disciplinarity in the new occupational health services has drawn the combined fire of trade unions and occupational health doctors, all of whom fear seeing the independence of occupational health professionals challenged by a tightening of employers' control over what they do".

Italy has developed a cross between a multidisciplinary and a two-track system through a statutory differentiation between the preventive and protective service - which does not in fact have to be a service and whose personnel have no clearly defined aptitudes - and the "competent doctor" who is not and does not have to be part of a preventive service. Since the Order in Council of 12 November 2001, the "competent doctor" does not even have to be an occupational health doctor. But the separation is offset by a statutory requirement for regular relations to be established between the competent doctor and the preventive service, in particular through periodic prevention meetings which must be held at least once a year in firms employing more than 15 workers. Proposals recently put forward by craft industry employers would do away with the need for competent doctors to be informed about actual working conditions and restrict their role to individual health checks[31].

Finally, questions may be asked about how far multidisciplinarity exists in countries with no preventive services as such (United Kingdom, Ireland).

Case-specific, uncoordinated activities

The Framework Directive requires a coherent overall prevention policy to be developed. Part of that involves giving meaningful sense to the concept of service(s) used in heading of article 7. Arguably, two points should be taken up here:

- The main focus should be on setting up a company service. External services are to be enlisted only for things that a company service cannot do[32].
- Generally, the needs for (internal and external) expertise should be defined by reference to the requirement of a prevention policy. That means that external expertise should not be enlisted on an ad hoc basis, that linkages should be established between the different sources of expertise, as well as between the activities of company and external services. In particular, the evidence is that publicly- approved external services overseen by watchdogs that include trade union representation guarantee better conditions than the piecemeal provision of expertise and consultancy services by individuals or for-profit companies.

In many countries, size criteria determine whether company services are compulsory. The thresholds vary widely from 20 workers in Belgium to 500 in Spain (but 250 workers for high-risk industries). In Portugal, it is 400 workers (50 workers in a list of high-risk sectors). In Italy, it differs by sector from 10 workers in farm businesses to 30 workers in craft and industrial firms, up to 200 workers in other firms. Otherwise, the employer himself can assume the responsibilities of the company service, but unfortunately is not always required to have proper training[33]. Luxembourg sets the bar highest: a company occupational health service is only mandatory in firms employing at least 5 000 workers[34] (or 3 000 workers if 100 are subject to health surveillance due to working in safety-critical jobs or exposure to the risk of an occupational disease).

The Belgian regulations make a company service compulsory in all firms employing at least 20 workers, and supplementary assistance from external services must also be enlisted by any firm whose company service cannot fulfil all the regulation responsibilities and tasks. The unity principle is clearly established for company and external services alike, aimed at ensuring integration and permanence in the approach taken by services. The Netherlands, Finland, Denmark and Spain also have rules requiring external services to be approved or subject to other forms of control. The relationships between company and external services differ widely from one country to another.

There is a clear focus on company services in Belgium and Germany (only as regards safety), in contrast to the Nordic countries, where the emphasis is on external services, although their activities must be integrated into a comprehensive employer's policy to ensure health and safety (e.g., Sweden's rules on "internal control"). The Netherlands, Spain and France have put the focus on external services (essentially limited to occupational medicine in France). The lack of a specific regulatory framework in the United Kingdom means that most prevention professionals are not part of organized services. Unlike other countries, even external prevention provision mostly operates in large firms.

In many countries, there is evidence that a fairly unstructured and unregulated market in all kinds of

[31] Confartigianato, *Proposta di legge di modifica del DL 626*, Congress of Sirmione del Garda, 5 April 2003.
[32] The European Commission has taken a firm stance on this and put pressure on several member states in the informal pre-litigation stage of infringement proceedings to give priority to the setting-up of a company service. See in particular, the infringement proceedings against the Netherlands on this issue (case C-441/01). The Court has not yet published its judgement, but the submissions made on 16 January 2003 by Advocate General Mr Ruiz-Jarabo Colomer concur with the Commission's arguments.
[33] No training requirement in Belgium, very cursory training in Italy, etc.
[34] The Luxembourg legislation allows an occupational health doctor to be responsible for up to 5 000 workers, which is at odds with the threshold laid down in the Community Recommendation of 20 June 1962 by which an occupational health doctor should not be responsible for more than 2 500 workers, or fewer where the workers are exposed to particular risks.

expertise has been formed. External expertise is not necessarily consolidated in preventive services in Italy, France (apart from occupational health doctors), Germany (including occupational health doctors), the United Kingdom or Ireland. Even in countries where external experts operate through a clearly defined structure, the approval and control procedures for external services are not always satisfactory. So, in Portugal, the regulations require external services to be approved by the public workplace health agency - IDICT - but it has neither yet set the criteria or started to grant approvals. As a result, a vast market of about 400 different external services has grown up. The assessment of one of our Portuguese correspondents, Mr João Fraga de Oliveira, is that lack of effective public control of these services has meant that many unaccredited preventive services are now already operating, generally with a "business-driven" approach. There is no guarantee that they have either the human and technical means or the capabilities to provide good quality, regulation prevention services.

Spain has a two-tier market: one in preventive services, and one in other expertise contracted either by external preventive services or directly by firms.

Independence and workers' confidence

Preventive services must have full professional independence in how they do their job. That means that health protection must override all other criteria that the employer might seek to impose (profitability, health-based recruitment, absence controls, etc.). Independence does not mean taking a neutral stance half-way between employers and workers, because it is workers' lives and health that may be at risk. Also, workers' insights are key to identifying the risks and putting effective prevention strategies in place. As regards professional ethics, finally, it is important to bear in mind that in many circumstances (especially with respect to health surveillance), workers have no choice but to use these services, so their confidence is an essential element. A Dutch trade union publication asks the pointed question: should you be absolutely open with your occupational health doctor?

Independence means that there must be effective protection for prevention personnel against any pressure that employers might apply. Few countries have specific rules to protect against dismissal, suspension or retaliatory action by the employer[35]. This loophole has just been plugged in Belgium by new legislation[36] giving all prevention personnel in company and external services alike the same kind of protection as that already enjoyed by occupational health doctors. The grounds of dismissal must not infringe the independence of prevention specialists, and allegations of incompetence must be substantiated. The onus of proving good cause therefore lies on the employer. Control is exercised at several levels: a compulsory prior agreement by the workers' representatives, mediation by the labour inspectorate, judicial review. An employer who fails to fulfill the substantive and procedural requirements will be liable to pay the prevention expert compensation equal to two or three years pay (according to length of service).

In the French situation as it stands, prevention specialists who are not part of a "occupational health service" (the new title for occupational medicine services) lack any guarantee of their professional independence. In practice, almost all prevention specialists other than occupational health doctors are in the same subordinate position to their employer as any other unprotected worker.

Few countries have given any meaningful content to the idea of "balanced participation" by workers in the operation of preventive services. The idea of including this formula in the Framework Directive was to get something more than a simple procedure for information and consultation in which workers' representatives would only be able to give an opinion on decisions that the employer intended to take. The existence of widely differing labour relations systems and policy differences prompted the Community law-makers to adopt this cryptic formula for which each country was meant to replace the unknown quantity with substantive content.

Most member states did not go too far. The Luxembourg legislation refers to "balanced participation" but fails to define what it means. This is a drawback of implementation by copying out the wording of Community provisions. Only a handful of countries spelled out the rights of workers' representatives by giving them powers of control that go beyond mere consultation. For preventive services, different forms of co-decision procedures are found in Germany, Belgium and the Netherlands. While these do not necessarily extend to all decisions linked to preventive service activities or all firms[37], they nevertheless give workers' representatives a more effective way of

[35] External preventive services, furthermore, must be doubly independent: from the employer of the service, and from the employers of firms using the service. Experience teaches that pressure from business employers can undermine the employment status of the most proactive and honest prevention specialists in external services.

[36] Act of 20 December 2002.

[37] In Belgium, co-decision is found only in firms with a Workplace Prevention and Protection Committee (50 workers upwards) or a union delegation set up under an industry collective agreement laying down a workforce size or other variable criteria for establishing a delegation. In the Netherlands, co-decision is found only in firms with a works council (35 workers upwards). In Germany, the threshold for setting up a works council is much less restrictive (5 workers).

Two approaches to violence

An industrial psychologist tells of the difficulties he faced in a large European-scale bank, dealing with violence as part of the company preventive service. His survey found a direct link between the bank's business policy and the increased incidence of verbal and physical violence by customers. The bank had decided to rid itself of low income customers - chiefly the unemployed, pensioners on low incomes, etc. - who were judged unprofitable and too "costly" in staff time. Its sales department had asked branch managers to deliberately increase queuing times for service in targeted branches (in working-class districts). Staff reports reveal the contempt in which this type of customer was held: at one training session, sales managers caricatured elderly ethnic women. The prevention officer put in his report to management, stressing the linkage between this business policy and the rise in violence. He also described discontent among the staff of this privatised former public bank who had always seen themselves as having certain social responsibilities and were ready to take the necessary time to give customers proper information regardless of their "profitability". Some of the staff saw the new business culture as an affront to their professional dignity, making it harder for them to relate to customers. Management did not dispute the facts set out in the report, but politely asked the prevention officer to stick to his job: "set up staff training on how to deal with violence and stay off the other issues. If it comes to the point of needing extra security staff, we can think about that". The prevention officer nevertheless put his report forward to the health and safety committee where he received the backing of the union reps. He has since been sidelined, assigned to purely administrative tasks, and allowed no contact with branch staff.

acting to block an employer's decision which does not address their preventive health requirements. In Belgium, an external service prevention specialist who has lost the confidence of the workers' representatives must be replaced at their request.

Preventive responsibilities. Creeping doubts...

Judged by the criteria of size of workforce covered and multi-disciplinarity, the Netherlands is well above the Community average. But it is probably the country where the activity of preventive services has brought most complaints from workers (see article p. 34).

The crisis of confidence in preventive services in the Netherlands is not just about that country's prevention system. It gives a clearer handle on problems encountered in different ways in all EU countries about the free-market perversities of a competition-based system where preventive services are sold to firms. In Holland, these misdirected for-profit approaches are tightly bound up with private quality control systems.

There are serious issues about the preventive character of what services do in Spain (see article p. 32) where most firms are affiliated to external preventive services set up by the insurance companies responsible for compensating work accidents and diseases (*mutuas*) resulting in large-scale outsourcing of preventive activities. The *mutuas* seem to favour individual medical checks at the expense of collective prevention. Also, since 1994, the *mutuas* have been increasingly involved in the management of incapacity for work due to ordinary diseases or accidents as a result of the privatization of certain social security activities[38]. The *mutuas'* preventive health and safety role and their role in absence controls are very apt to be in conflict, the more so as they are run entirely by the employers[39]. On top of that, the choice of a particular *mutua* to insure against work-related risks is purely the employer's decision, when that choice also to some extent dictates the preventive service chosen, because an employer who is affiliated to one *mutua* as his

[38] The workforce covered by the *mutuas* for the management of "ordinary" incapacity is estimated at 8.1 million in 2002 against 1.1 million in 1996, and 5.4 million in 1999 (*Gara*, 19 February 2003).

[39] A tripartite agreement reached in December 2002 provides changes to give the trade unions a role in running the *mutuas*.

insurance company cannot enlist the preventive service of a different *mutua*.

What Spain and the Netherlands share is having combined a market-driven approach with an insurance approach in which prevention is focussed on the highest short-term cost items.

In Spain, this insurance approach is supported by the *mutuas* which have set up most of the external preventive services and have now set out to capture new markets in the public health system[40]. In financial terms, workplace prevention is little more than a marginal activity for mutual insurance organizations (barely over 2% of their 2002 spend[41]), so it would be hardly surprising to find the organization of preventive actions governed by other priorities than occupational health.

In the Netherlands, services have generally come about in a different way, through the gradual transformation of inter-company occupational medicine services. But the insurance approach was given impetus by government policies which made cutting the absence rate the main political priority of workplace health reforms. In both cases, employers' direct demands clearly take precedence over a long-term prevention policy. But there is one difference. In the Netherlands, strong pressure from the employers to cut absence rates (which represents a high direct cost for them) has resulted in major perversities like health-based recruitment (greatly aided by contingent employment) and individual-focused rehabilitation and resumption of work which hardly goes back to the root causes of ill-health. In Spain, employers are mainly concerned to protect themselves against legal controls or proceedings: all efforts are focused on creating the impression of a working prevention policy, while in practice, preventive services are confined to what least affects work organization: individual medical examinations, boiler-plate risk assessments which have no bearing on reality, grandiose prevention plans that are never implemented (prevention plans may even simply be photocopied from firm to firm!).

Arguably, the Spanish and Dutch experiences are only the distilled expression of pan-EU trends. Sweden presents certain similarities, notwithstanding its different labour relations and public occupational health policy contexts.

Undermined and in a crisis of legitimacy

Changing patterns of work and the new approaches to prevention laid down by the Framework Directive have to some extent undermined preventive services from the outside.

The Framework Directive rightly focuses on the central responsibility of the employer. It gives him a strict duty to ensure health and safety and lays down a precise hierarchy of preventive measures. It also sets a very wide scope for preventive activities: work equipment, chemical substances, work organization, labour relations, eliminating monotonous and repetitive work, etc. It stresses the importance of participation by workers and their organizations in preventive activities. All these factors dramatically change the traditional role of preventive services. They entail a series of big changes in the preventive approach from tailored "risk by risk" technical or medical responses to an overall socio-technical approach which embraces all the things that make up work organization and the interaction between them. It holds out new prospects for prevention specialists, but at the same time puts question marks over the traditional foundations of their legitimacy as regards employers. Employers' readiness to admit the legitimacy of purely technical or medical expertise for specific risks (which is not the same as fully accepting its conclusions) is matched by their unwillingness to accept a critical analysis of all aspects of their management based on the dictates of workplace health. The case history reported in the box (see previous page) may seem anecdotal, but it is indicative of the way many prevention specialists are undermined.

Also, changes in the world of work are contributing to undermine preventive services. The spread of casualization, wholesale use of subcontracting, creation of inter-worker rivalries that set workers against one another are all imperative reasons for getting away from a technical approach and getting to grips with the firm's strategic choices. Against this background, employers are trying to downgrade the preventive service function to a sort of damage-limitation social support, focused on improved induction and training, coordinating certain preventive activities, etc. But that support function is not enough because it cannot challenge the deregulation of work that this onslaught on the work sphere by unbridled commercial competition represents.

[40] See F. Rodrigo Cencillo, Presente y futuro de las Mutuas de accidentes de trabajo y enfermedades profesionales de la Seguridad Social, *Cuadernos de Relaciones Laborales*, No. 14, 1999, pp. 69-97.

[41] According to J. Basterra ("Las mutuas controlan al 73% de los trabajadores ocupados", *Gara*, 10 June 2003), out of a total 2003 budget of € 7,143.4 million, 70% goes to compensating incapacity for work and other insurance benefits, 14.1% to health care, 7.2% to asset administration, 6.6% to administrative expenditure, and just 2.1% to workplace preventive activities.

Where an activity is contracted out at least cost, an induction meeting on health and safety can easily turn into disingenuous lip-service. At worst, the prevention specialist is being asked to help tighten the stranglehold on subcontracted workers by specifying requirements that they cannot possibly meet.

Generally, the following conclusions can be ventured. The employers' first strategy was mainly one of evasion, digging their heels in and opposing the Framework Directive's new reforms on the grounds of cost or curbing competitiveness. This was essentially a defensive strategy in that it had nothing new to offer but simply blocked change. Then the employers changed tack and counter-attacked by taking up arms on a number of new issues, admitting, to some extent, the deep-reaching crisis in preventive systems. The central plank of this new strategy is to lock workplace health into a framework which makes it completely subservient to their business objectives and raises the workplace drawbridge against all outside control. So it does not necessarily need to hold out against all reforms. This about-turn makes workplace health instrumental in consolidating the company pecking order, the dominance of customer firms over their subcontractors, and shuts the public authorities out of the "private" sphere of economic activity. Granted, neither of these two strategies is pursued all-out, but they can be found in combinations that vary with the specific features of the different national labour relations systems. What gives a measure of effectiveness to the employers' arguments is the real difficulty that the other parties (trade unions, public authorities) have in coming up with effective proposals for overall reform of prevention.

This brief overview gives the backcloth to a crisis in preventive services. But it is also an opportunity for the trade union movement to forge alliances with prevention specialists to work out a new joint strategy. It is a monumental challenge: can the preventive services continue to make an effective contribution to workers' struggles to stay healthy? ■

Suggested trade union priorities

The European Commission is due to submit a report this year on how the Framework Directive is being applied in the different member states. Trade unions will be looking to use the discussions on this report to renew the debate on preventive services. It may be helpful to set some priorities for that. The following suggestions are offered to set the debate rolling.

1. Ensure that all workers are covered by preventive services.
2. Ensure that service work on a multidisciplinary basis. This means that regulations as well as approval or control systems must lay down a clear, minimum level of professional skills. That means that prevention experts with different areas of expertise (occupational medicine, safety, industrial hygiene, ergonomics, psychology, etc.) must act on a regular basis as part of a unitary service, ensuring that their activities complement one another within an overall approach.
3. Coherent multidisciplinary working means creating a real two-way exchange between the expert knowledge of prevention specialists and the collective knowledge, priorities and insights of workers. This receptiveness to knowledge which generally goes unrecognized either by the different disciplines or the social division of labour in the firm is vital.
4. Ensure that company services and external services enlisted to provide expertise which the company service lacks work hand in glove. Particularly to be avoided is any buying-in of prevention activities as insurance against prosecution or to procure a compliance certificate.
5. Ensure that activities are prevention-centred and follow the hierarchy of preventive measures. That in particular means no short-termism aimed at cutting business costs more than improving working conditions. The lessons of countries where reducing absence rates is given top priority shows the real risk that exists of turning preventive services into health-based recruitment or policing services.
6. The linkage between preventive management by the employer and preventive service activities is a key issue for seeing that prevention criteria are given maximum importance in the general running of the business, but that they are not set in self-limiting terms that simply square with management's business objectives on all points.
7. Define health surveillance criteria that link in more effectively with prevention and avoid deflections of the system like genetic testing or more use of predictive medicine.
8. Ensure that prevention specialists are independent of the employer through effective protection measures (against dismissals in particular).
9. Provide continuing training and facilitate links between prevention personnel and research institutions.
10. Set up procedures for workers' representatives to oversee their activities. If external preventive services are used, strengthen the links between the workers' representatives in the user firms and the union representatives in the inspection bodies that cover these services.
11. Set up procedures for public control of these services, especially through approvals. Quality criteria must be set that allow for the public interest goals of these services and conflicts of interest between the ostensible customer (the firm) and the final user (the workers).
12. Ensure that prevention experiences are collectivised through a public occupational health policy.

Spain : preventive services well below par

No bother

At a trade union meeting on workplace health in Barcelona, a trade unionist safety engineer showed me a letter sent by a big preventive service to a car industry subcontractor firm. The letter began by reminding it of its statutory duty to evaluate risks and the criminal penalties for failure. It then offered its own services to carry out an evaluation in conditions which would cause minimal disruption to the proper running of the firm, and said that its technicians could inspect the workplace on a Sunday when the plant was shut. All for a reasonable fee... In the discussions, one labour inspector remarked that most risk assessments gave little practical information about firms, but that the external preventive service that had drawn it up was easily recognized from the amount of stock phrases and particular page layout generated by the computer program used.

The poor coverage of workers by preventive services in Spain is revealed by different surveys.

The Navarre workplace health analysis[1] reveals that 21% of workers in this Autonomous Community are covered by company services and 6.7% by external services as at 31 December 1999. Furthermore, only three of Navarre's 8 accredited external preventive services (covering 273 firms employing just over 10,000 workers in all) had sufficient staff to do their job properly.

A more recent nationwide survey done in 2001 looks at the situation in workplaces with the highest reported work accident rates[2]. The survey drew its sample for study (approximately 4,000 firms) mainly from firms employing between 10 and 250 workers, i.e., workplaces which under Spanish law must have preventive services. 30.8% of these firms had not set up a preventive service, and in 3.2% of them, the employer performed its functions. Most of the firms with no preventive service are found in the service and building industries, with a particularly high incidence among firms employing fewer than 10 workers. The most frequent solution is to sign up to an external preventive service (55.4% of firms surveyed), which in most cases has led to firms abdicating their responsibilities - only 2.4% of firms have both a staff health and safety officer and membership of an external preventive service. Looking at the duties performed, this survey bears out the trends identified by the national surveys of working conditions. Health surveillance (60.7% of firms surveyed)[3] topped the list, while barely more than 50% cited risk assessment. What is more, only a good third of firms (34.6%) had a prevention plan, while worker training was provided by only 30.5%. Even among firms with more than 250 workers, less than half had a prevention plan. There is a close correlation between prevention activities being carried out and the presence of workers' health and safety reps - of firms with no preventive provision, 76.2% also had no prevention reps. These are highly concentrated in the service sector - especially the hospitality industry - and the construction industry. Of firms that had undertaken all the prevention activities covered by the survey, 76% had prevention reps. Most of these were firms with over 50 employees.

But even where prevention activities were organized, they were often of dubious quality and arguably most concerned with simply "going by the book". The Asturian Institute of Workplace Health found that 45% of risk assessments done were incomplete. Of inspected workplaces in Navarre, only 17.5% had carried out a satisfactory assessment; nearly 40% had an inadequate one or none at all; in 13.5%, it had not been updated; and in 18% of cases, it did not cover all jobs. A statement by the Navarre parliament on the rising toll of workplace accidents stressed the failings of preventive services and said that in many cases, the prevention plans drawn up were designed only to achieve paper compliance and were neither followed-up nor updated[4]. A report by the government of Cantabria takes a similar tack, noting that one cause of the problem is that risk assessments are done by external preventive services with no proper information or coordination with the firms that they cover.

The situation is best summed-up by a recent trade union evaluation of the quality of external preventive services[5]:
"An underdeveloped culture of prevention, the failure of either the Mutuas or preventive services to set strategic priorities and the dependence of the other specialized agencies on employers, coupled to employers' failure to be proactive has produced a general consensus on the status of workplace risk prevention in Spain, characterized by the following:

- the outsourcing of prevention activity has led to prevention being seen as a product and an activity divorced from the company, requiring neither commitment nor involvement from the employer;
- poor quality, officialistic prevention activity. Little urge to find out in order to act properly and make the changes required to working conditions... That is reflected in particular by purely safety-focused risk assessments that disregard psychosocial, toxic or ergonomic risks; health surveillance that is unconnected with evaluation or prevention planning and limited to general health checks which do not cover occasional but regular activities connected to the main activity; prescriptive, routine training not relevant to the specific job; general preventive recommendations so as not to clash with the employer;
- little worker participation and involvement. Information supplied by workers is not used as an input to, or to evaluate the results of, prevention activities and prevention management. Workers are not recognized as able to come up with ideas, and they are not given training.

There are two issues of responsibility. For employers, it is about democracy and preserving their power in the firm. For technicians, the problem is a technocratic approach to prevention". ■

[1] Instituto Navarro de Salud Laboral, *Diagnóstico de Salud Laboral en Navarra*, Pamplona, 2000.
[2] INSHT, *Plan nacional de seguimiento de empresas con alta siniestralidad*, Madrid, 2001.
[3] Many surveys found no real link between health surveillance and working conditions. See in particular, N. Moreno, P. Boix, *Vigilancia de la salud de los trabajadores/as*, Madrid, 2000.
[4] Declaración política sobre siniestralidad laboral en Navarra, *Boletín Oficial del Parlamento de Navarra*, No. 36, 31 March 2001.
[5] J. García Jiménez, report presented to a conference organized by the Greek General Confederation of Labour and the TUTB, Piraeus, April 2003 (slightly abridged translation).

Sweden : throwing the baby out with the bath water ?

Sweden's multidisciplinary preventive services were for years viewed as a model for other countries. With substantial public funding and set up under a national collective agreement between trade unions and employers' organizations, they had developed exceptional expertise and operational capabilities. State funding also meant that their operations could be more easily integrated into national prevention policy which involved compliance with publicly-set criteria framed after tripartite consultations.

In the 80s, however, doubts began to set in. Swedish research had revealed that the development of preventive services could have a backlash. Employers talked down their own central responsibility, arguing that it was the preventive services' job to act on and solve problems. Over time, prevention came to have what the Swedes called a "side-car effect" instead of being integrated early on as a pre-requisite of all choices affecting work organization. Also, the status accorded to experts was apt to oust workers and trade unions and downgrade their experience and policy priorities. All these issues took place against the broader backcloth of changes in work and the emergence of types of risk that the experts were less on top of than the traditional risks related to work equipment or chemicals.

In the late 80s, a policy shift occurred[1]. In a bid to put the focus on the employer's responsibilities, the public authorities stipulated that management systems be put in place to better address workplace health problems. But the change came about in a political and social climate which was adverse to workers, so the clock was put forwards and back at the same time: the employers seized the opportunity to reclaim the initiative and tried to roll back real labour gains under the cloak of adding more efficiency to the prevention system. In 1992, the Swedish employers' confederation ripped up the agreements with the trade unions, including the compulsory membership of preventive services by firms in many sectors. On 1 January 1993, the state withdrew funding for preventive services. Within a matter of years, they found themselves on the horns of a dilemma. They had to continue operating without a specific regulatory framework, and they were completely dependent on the market - i.e., employer demand - for their funding. And employers were free to change preventive services or even do without one.

Within a matter of years, the preventive services had suffered heavy staffing cuts, down from about 10 000 to 7 000 personnel[2]. Coverage has also decreased. But it is mainly the essential purpose of preventive service activity that has been comprehensively thrown open to question. Profitability now dominates the preventive services' agenda. Many have changed the way they charge for their services. Instead of a flat-rate charge per worker, they now offer a "basic package" of services with bolt-on options. That is a response to employer preferences for short-term contract services and a reluctance to enter into long-term relations with a preventive service. In the words of B. Remaeus and P. Westerholm, "occupational health services then became free agents in an unregulated health market".

At the same time, the prevention system's other underpinnings have been weakened[3]. Between 1989 and 1999, the occupational health authority (which includes the labour inspectorate) suffered a 20% loss of staff. The number of workplace inspections was down by 30%. This latter figure, however, has to be seen in the context of a change in how inspections are done. There is now a big focus on systemic inspections of how firms manage workplace health issues, and these inspections rose from 1 000 in 1993 to 6 000 in 2000. The changes in employee representation are less well publicised - the number of registered safety reps fell from 100 000 in 1997 to 80 000 in 1999.

Concerned at rising absence rates[4], the Swedish government is considering a new impetus for preventive services. The question is whether they will be revitalized more with a view to promoting collective prevention or individual action to keep workers at work at any price in order to balance the social security books. The starting point of government proposals to improve health in working life, presented to Parliament on 20 September 2001, is a bid to cut the costs of sickness absence[5]. An eleven-point programme was proposed which puts "the focus on individuals". The government statement contains a series of measures targeted on different aspects. The role of the preventive services is addressed very conservatively, the aim being to develop new methods for the preventive services. But the focus seems to be more on research than the failings of the regulatory framework.

The main thrust of the government measures eventually passed in January 2003 seems to be to get to grips with the effects of poor working conditions. New rules and regulations on sickness absence to be put in place will make "part-time sickness absence" the norm (i.e., sick employees will continue working to the extent permitted by their impaired capacities). Both positive and negative financial incentives will be developed to put most of the cost burden of absenteeism on employers. The question is, however, "what will happen to slightly sick or disabled workers looking for jobs? With greater pressure on employers in the form of greater responsibility for the sick pay, is there a risk that such workers will not be recruited?"[6]. ■

[1] A general review will be found in: K. Frick, Sweden : Occupational Health and Safety Management Strategies from 1970-2001 in : D. Walters (ed.), *Regulating Health and Safety Management in European Union. A Study of the Dynamics of Change*, Brussels, P.I.E.-Peter Lang, 2002, pp. 211-234.

[2] Figures taken from B. Remaeus, P. Westerholm, Official Supervision and the Occupational Health Service in : S. Marklund (ed.), *Worklife and Health in Sweden 2000*, Stockholm, 2001, pp. 51-70.

[3] See K. Frick, *op. cit.*

[4] The number of people off work on health grounds was estimated at 14% of the working population in 2001.

[5] Regeringskanliet, *Budget Bill 2002*, Fact sheet on the Swedish Government's Budget Bill for 2002, presented to the Parliament on 20 September, 2001.

[6] A. Berg, Government proposes sick pay reform, *EIRO on line*, January 2003.

The Netherlands: the three rings of the prevention market and market controls

Preventive services (known as *Arbodiensten*) are mainly external provision. They have expanded rapidly and there is now coverage of almost all workers (98% in 2001, according to Ministry for Work figures). The number of specialists working in these services has also risen rapidly, as the table below shows.

	1994	1997	2000
Total workers (full-time equivalents)	5421	7291	9424
Doctors (occupational medicine and GPs)	1486	1846	2244
Other basic specialities*	369	695	832
Working conditions advisors**	-	251	359
Paramedical and emergency first aid staff	1286	1291	1650
Absence reporters	-	515	527
Clerical staff	1169	1785	2796

Source: Dutch Ministry for Work 2002[1]

* The other statutorily-prescribed basic specialists are in safety, industrial hygiene and work organization.
** Working conditions advisers include a range of expertise like ergonomics, industry specialists, company social workers.

About half of all specialists (47%) come from the medical or paramedical professions, 15% are miscellaneous specialists providing consultancy on working conditions, while clerical and other staff make up about 38% of the total. The number of occupational safety and health specialists employed by preventive services per 100 000 workers is 93 (figures for 2000). The average amount spent on preventive services per worker has also risen - from 92 euros in 1995 to 127 euros in 2001.

The picture could not look rosier. And yet there is growing unease among prevention professionals and workers alike. The gnawing doubt is whether these services are really preventive services trying to improve working conditions in order to protect workers' health and well-being. For the past fifteen-odd years, a debate has been rolling in Holland on the very large numbers of employees off work due to incapacity or invalided out of the labour market entirely[2]. The main thrust of government policies on occupational health has been to ease the cost pressures this placed on the social security system. Various options have been tried: forcing employers to shoulder part of the costs, pooling the cost burden through insurance systems, introducing financial incentives to cut absenteeism, getting prevention professionals to give it a priority focus. By and large, none of these policies has delivered the goods. Sickness absence and work disability levels remain very high. But at the same time, prevention activity has taken a series of hard knocks. The confidence that workers should have in preventive services has been undermined by the medical checks they carry out on workers who are on disability leave. Action to get sick and injured workers back to work quickly has taken precedence over improvements to collective working conditions. This deflection of the system has been made worse by the failure to set specific regulatory criteria for the activity and control of preventive services. Activities are largely specified by employers themselves on the basis of their contract with a preventive service. Quality control of services is privatized and based on certification procedures in which neither trade unions nor the labour inspectorate have a say. Conventional quality certification systems work at cross-purposes. While certification can have a positive impact on some things, like ensuring that the service has the necessary aptitudes or that work procedures have been clearly defined, it falls down by taking customer satisfaction as the main consideration. The reason is that the idea of a "customer" for preventive services does not really apply to health and safety provision. A set of contradictory and often conflicting demands are at work: the employer's demands driven by his short-term goals, workers' and their unions' demands, a more diffuse social demand about the priorities of workplace health policies. Third party certification is apt to give priority to employers' demands, and that detracts from the professional independence of prevention experts. That is the finding of Dutch researchers: "the delicate balance between client (mostly employers') demands and professional responsibility is disturbed by the unconditional dominant role of the clients in some quality assurance systems. In our opinion, the OHS-client relationship should be terminated when a persistent substantial difference in visions comes in serious conflict with professional integrity"[3].

The wording of the final sentence reflects the difficulty of achieving public control (by the public authorities) and social control (by trade unions) in the Dutch system by which to resolve disputes other than by simply walking away from contracts.

The under-reporting of occupational diseases illustrates this deflection in the system that puts the "customer" (firm)'s interests above those of a workplace health policy. In 2000, just under half of preventive service doctors had reported at least one occupational disease, and in 2001, both the number of

[1] Data from: Ministerie van Sociale Zaken en Werkgelegenheid, *Arbobalans 2002. Arbeidsrisico's, effecten en maatregelen in Nederland*, The Hague, 2002.
[2] See Geurts, Kompier & Gründemann, "The Dutch disease? Sickness absence and work disability in the Netherlands", *International Social Security Review*, vol. 53, no. 4, 2000, pp. 79-103.
[3] F. van Dijk, C. Hulshof, J. Verbeek, Good occupational health practice : concepts and criteria : Finnish Institute of Occupational Health, *Good Occupational Health Practice and Evaluation of Occupational Health Services*, Helsinki, 1999, pp. 22-23.

reporting doctors and the total number of reported diseases was even slightly lower. A survey was done in 2000 into the reasons preventive service doctors gave for not going ahead with procedures to get occupational diseases recognized[4]. Just under half of responding doctors said it would take up too much of their time (359 doctors out of 829 - 43.3%)[5]. This was the most common reply ahead of lack of information on cause (41%). In just under a quarter of cases (22.9%), it was to avoid legal proceedings against the employer. Around a fifth of doctors claimed no familiarity with the reporting criteria (22.9%), or that the preventive service in which the doctor was working did not usually report occupational diseases (19.9%)[6]. In the Dutch system, victims are not directly disadvantaged in that they do not lose out on benefit from the failure to report an occupational disease, because the social security system makes no difference between incapacity for work due to ordinary illness and an occupational disease. From a prevention policy standpoint, by contrast, under-reporting of diseases to a large extent conceals workplace health problems, which can only distort the assessment of the situation and priority setting. It says much that to assess the scale of work-related skin diseases, a surveillance system based on notifications by dermatologists had to be set up, and they report a higher number of cases than preventive service doctors[7].

The public authorities' abdication of responsibility is almost certainly made worse in the Netherlands by the features of the markets created. The preventive services market is clearly developing along oligopolistic lines. A small number of external services enjoy a dominant position: 5 services cover close to 90% of firms. The control market (through certification procedures) is moving towards even greater concentration: two certification companies (Lloyd's and DNV) hold a dominant position. That goes some way to explain the contrast between the development of a flourishing market in which quality is certified by minutely-detailed procedures and the growing dissatisfaction among those who actually use the system. That is compounded by the growing number of firms opting for third-party certifications, either of OSH personnel or the existence of an occupational health management system. Personnel certification covers a wide range of areas: aptitudes linked to prevention activities, like first aid; aptitudes regarding high-risk jobs like fork-lift truck driving, or aptitudes for working in jobs that involve hazardous exposures for workers or the environment (e.g.: certificate for use of pesticides). Certification of management systems are generally based on ISO standards. There is a specific certification for subcontractor firms - the VCA (Safety Certificate for Subcontractors). It is estimated that 37% of all Dutch firms already have one or more certificates. The link with subcontracting is clear to be seen in the particularly high percentages for the building industry, where 64% of firms have at least one certificate. The result of such approaches is often to allow customer firms to abdicate their responsibilities where subcontracting is involved. They simply check whether the firm has a certificate, not what it involves in terms of the actual quality of prevention and, especially, without assessing how far the conditions of subcontracting they are offering or imposing are consistent with occupational health. To date, the Netherlands is the only European country to have set up a complaints office for workers to submit their grievances against preventive services. And there appears to be no shortage of complaints!

The conclusion drawn by the Dutch research is disturbing: "in practice, the Dutch *Arbodiensten* hardly contribute to prevention at all, but are medical centres specialized in individual care and control. Over 90% of the contracts concluded with the OHS services consist either entirely or for their major part of sickness absenteeism guidance. The medical problems of individual workers are hardly ever converted into a preventive approach, aiming to improve working conditions in the workplace. The added value of the OHS services as compared to general practitioners is deemed to be very limited"[8]. ■

[4] Nederlands Centrum voor Beroepsziekten (NCB), *Signaleringsrapport Beroepsziekten 2001*, Amsterdam, 2001.
[5] More than one answer could be given, hence the total percentage above 100%.
[6] The *arbodiensten* have had a discretion to report occupational diseases since 1997; they have had a duty to do so since November 1999.
[7] NCB, *Signaleringsrapport Beroepsziekten 2002*, Amsterdam, 2002, pp. 31-37.
[8] J. Popma, M. Schaapman, T. Wilthagen, The Netherlands: Implementation within Wider Regulation Reform : D. Walters (ed.), *Regulating Health and Safety Management in European Union. A Study of the Dynamics of Change*, Bruxelles, P.I.E.-Peter Lang, 2002, p. 204.

A missing link: collectivization of the experience of preventive services

Tens of thousands of prevention specialists are at work in workplaces across the European Union every day - taking complaints from workers, analysing risks, developing preventive solutions. Often enough, they are unable to take preventive action because of decisions taken further up the line in the firm or in society. So their job becomes a damage limitation exercise without addressing the causes. Prevention experts soon come to learn that where occupational health is concerned, not even top-class professional qualifications are enough. They also need a fighting spirit and the ability to form alliances.

Employer pressure often ensures that the experiences of these prevention specialists stay dispersed. If they are to be kept working within the company's objectives, employers need their activities not to be collectivized but contained within a management system where occupational health goals will be accepted only so far as they are consistent with profit-making and the chain of command. There is constant pressure for preventive services, paid for by the firm, to become business services, an adjunct of human resource management and without full professional independence.

The most basic level of collectivization is just having a preventive service. This is nowhere near having happened in many Community countries, where employers bring in specialists, consultants and experts separately for what may be ongoing or purely one-off assignments. But more important than having prevention activities organized into services is getting a systematic exchange going on a bigger scale at sector, area, national and Community level.

Collectivization of prevention activities is a fundamental of any coherent policy on occupational health which enables various objectives to be delivered:

1. Exchanging experiences on problems and solutions gives prevention experts access to practical expertise that is not readily available within a single workplace or preventive service. The experience of networks of prevention specialists on replacing hazardous products by less dangerous ones is a good case in point. Such networks, set up on industry and national lines, then extended to other countries, have been behind the development of databases that have facilitated the substitution of organic solvents in the printing and construction industries - two sectors where the fragmentation of production activities between countless small firms would have prevented effective results being achieved without this pooling of knowledge.

2. Collectively-framed "good practice" is essential to withstand employer pressure. These rules combine scientific and technical validation criteria (best professional practice extracted from an analysis of what professionals do), with political and ethical criteria which let professionals do what they are meant to do - preserve the life and health of workers. The quality of preventive services is the focus of much debate at the moment. In many cases, quality is dictated by internal rules and procedures as well as a blinkered, short-term view of results (e.g., cutting absence or reported accident rates, etc.). The criteria may be even more questionable when they are based on the principle of "keeping the customer satisfied". The collective framing of good practice should not be a pigeonhole exercise for each specialization. Specific practice must be laid down for each profession (occupational medicine, occupational health nursing, ergonomics, industrial hygiene, etc.) but embodied in a set of best practice which is common to the different prevention specialists that also incorporates the insights and priorities of those that occupational health is all about: the workers.

3. Collectivization of the activities of "front-line" prevention experts is an immense resource for occupational health research. Networking the information generated by preventive service activities provides the necessary critical mass that the activity of one service alone will find it hard to develop. Occupational medicine conferences sometimes display an ingenuous enthusiasm for statistical programmes that enable general conclusions to be drawn from an activity confined to a specific workforce. The pooling of knowledge developed by many different preventive services, by contrast, enables properly-designed scientific work to be done. The SUMER survey which collected occupational exposure data for France and the ESTEV survey on ageing in work[1], are cases in point. Neither could have been done without the help of a large number of occupational health doctors. In most EU countries, there is still too wide a divide between occupational health research (whether done in centralized institutions or academic research centres) and prevention specialists. Demand for research may not always reflect the needs and priorities. It may come with priorities other than occupational health from the big institutional customers - the state and work-related risk insurers. Where employers are

[1] F. Derriennic, A. Touranchet, S. Volkoff, *Age, travail, santé : études sur les salariés de 37 à 52 ans : enquête ESTEV 1990*, Paris : INSERM, 1996.

involved in running research institutions, their demands may also be bad for the organization of research. The under-development of public research into hazardous chemicals compared to the state of the market, or the mania for genetic research that would enable a sort of eugenic selection of labour, are particular cases in point.

4. Collectivizing the experiences of prevention specialists is also central to public policy-making and performance assessment of health protection. Some issues cannot be addressed through prevention activities alone - they require policy decisions. Be it banning asbestos, child labour or limitations and controls on agency work and subcontracting, it is clear that prevention is locked into a political and legal framework that sets the ground rules for business. The inability to feed back their experience in order to call the public authorities to account is often a major frustration for occupational health professionals. Hundreds of thousands of risk assessments - of widely varying quality - are done each year in firms. What impact do they have on the setting of prevention priorities? How far do they really shape policy decisions? Health surveillance is carried out on a fairly large scale in EU countries, but there is an acute lack of overall data on occupational health. Most states manage no more than a handful of traditional indicators of dubious significance, like reported work accidents and recognized occupational diseases.

During the 70s and 80s, the collectivization of prevention activities delivered excellent results in the Nordic countries and Italy, but in different political and social contexts.

In Italy, the first moves were made by the trade unions and led to locally-organized public preventive services being set up. The CRD[2], a joint agency of the three trade union confederations, played a central role in collectivizing the practical experiences of workers and prevention experts alike. The waning fortunes of the labour movement in the 80s, epitomized by the defeat of the FIAT workers in 1984, also saw a reversal in collectivization. Nevertheless, there remains a real potential which went ignored by the reforms introduced when transposing the Community directives. These created a two-track system of public health protection services and a private market in company prevention specialists without really addressing the issue of internal consistency within the system as a whole.

Collectivization of experiences in the Nordic countries took place in a less adversarial climate and more socially homogeneous societies, supported by the creation of tripartite-run work environment funds. In Italy and the Nordic countries alike, these experiences have lost momentum but have not run entirely out of steam. The different guides published by the Conference of Regions in Italy are an object lesson in the collectivization of good prevention practice to support the implementation of the Community directives, for example.

Elsewhere, other arrangements have been put in place, many initiated by prevention specialists in a perceived need to get organized in professional associations and speak with a collective voice. Some focus more on framing common policy positions or demands, others on scientific research and exchanging professional experiences. Some initiatives, however, manage to bridge this divide and combine strands of thought from both camps. The French occupational health doctors action group[3] or the more exploratory debates among ergonomists in many countries[4] are cases in point. Some are trade union initiatives, like the Forums on health surveillance and quality in prevention set up in Spain by the ISTAS[5]. A word should be said about a number of schemes at European level, where single issue networks have been set up, like that on substitution of organic solvents in the printing and construction industries. At a more general level, there is also the "European Work Hazards Network"[6] which links together prevention specialists and trade union activists, and draws heavily on the experience of Britain's Hazards Campaigns[7], linking together dozens of grassroots and single-issue groups.

Collectivizing prevention activities means recognizing that preventive services, however they are organized and run, are public services because they bring an external requirement - occupational health - to bear through action in the workplace. To this extent, they are enablers of a public health policy that goes beyond the uncertainties and simplistic approach of promoting individual health through lifestyle changes. If the risk observatory that the Commission has flagged up in its Communication on a strategy for health at work forms part of a collectivization of the experience of preventive services and workers' health and safety reps, it could certainly usefully inform the framing of a Community policy that is responsive to changing realities and that acknowledges occupational health as a central issue of public health. ■

[2] The CRD or *Centro Ricerche Documentazione Rischi e Danni da Lavoro* was set up in 1974 by the three Italian trade union confederations. It published a magazine (*Medicina dei Lavoratori*) as well as a great number of books and brochures. It was wound up in 1985 after the breakdown of the unitary agreement between the three confederations. Its records are one of the most valuable sources of information on the struggle for occupational health in Italy from the late 60s to the early 80s. On the history of the CRD, see A. Grieco P.A. Bertazzi (ed.), *Per una storiografia italiana della prevenzione occupazionale ed ambientale*, Milan : FrancoAngeli, 1997.

[3] See in particular, Association Santé et médecine du travail, *Des médecins du travail prennent la parole. Un métier en débat*, Paris : La Découverte et Syros, 1998.
http://www.a-smt.org/ accueil.html

[4] See in particular the activities of the society of French-speaking ergonomists: Société des Ergonomes de Langue Française, SELF:
http://www.ergonomie-self.org/

[5] http://www.ccoo.es/istas/

[6] http://www.work-hazards.dk/

[7] http://www.hazardscampaign. org.uk/ and http://www.hazards.org/ index.htm

Recognition of occupational cancers in Europe

Jacques Brugère, Claire Naud*

Occupational cancers are estimated to account for 4 % of all cancers. Experts in many industrial countries agree on this rate, which equates to 8 % in males and 1 % in females. These percentages are most likely underestimated where bronchopulmonary cancers are concerned, 15 to 20 % of which may be linked to breathing in carcinogens in the workplace for smokers and non-smokers alike.

Occupational cancers in Europe are under-reported

The rate of cancers recognized as occupational diseases in European countries varies from 5 to 12 % of the workforce at the estimated rate of 4 %. The paucity of available data mask the real scale of the public health problem posed by occupational cancers, and their failure to command public attention is holding back prevention provision. Many medical and administrative policy-makers still see occupational cancers as a side issue. But of the two million cancers that occur among 450 million Europeans each year, around 100,000 are estimated to be work-related.

Many doctors in Europe lack awareness of the problems posed by occupational cancers, and more generally the links between health and working conditions. Doctors - and especially occupational health doctors, oncologists, specialists in the organs affected, and sickness insurance fund staff - have a key role to play in getting the work-related origin of some types of cancer recognized. Further training is essential. The key points are to reconstruct every step in the work history, identify periods of exposure to carcinogens at work, understand the procedures for reporting occupational cancers, and the individual, family and community stake in recognition.

Estimates and recognition of occupational cancers. Selected European data (1999-2000)

	Population (million)	New cancers/year	Estimated occupational cancers	Cancers recognized as occupational diseases	% asbestos-related cases
France	57.3	250,000	10,000	900	83
United Kingdom	57.5	241,875	9,670	806	82
Germany	79.1	367,641	14,700	1,889	75
Belgium	10.2	46,339	1,850	149	70
Denmark	5.1	29,657	1,180	79	76
Finland	5.2	22,201	890	110	-

Recognition and compensation in 13 European countries

At a Eurogip[1] European forum held in September 2000, bringing together Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Italy, Luxembourg, Portugal, Sweden and Switzerland, a simulation was done to compare procedures based on a case of lung cancer found in an asbestos worker suffering from asbestosis.

• A 50 year-old male former smoker. Gross pay € 2,500/ month. Off work for 8 months for lung removal and chemotherapy. Unable to return to work. Died 5 months later leaving a widow and 2 children aged 4 and 1, plus 4 children from a first marriage aged 23, 20, 18 and 17.

The compensation paid was to be analysed in light of the economic conditions in each country.

The results were :

- The disease is recognized as occupational in 10 of 13 countries, with some qualification in Greece, Italy and Sweden.
- Smoking as a contributory factor is taken into account in 3 of 13 countries (Austria, Italy, Sweden).
- It is fully compensated, except in Sweden.
- Temporary incapacity compensation for the 8 months off work ranges from € 23,000 to € 5,000, averaging € 16,000.
- The percentage permanent incapacity is 100 % in 7 countries, ranging between 60% and 85% in 6.

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[1] *Groupement de l'Institution Prévention de la Sécurité sociale française pour l'Europe* (French social security system prevention agency for Europe). Eurogip has just published three new reports on occupational diseases, one of which is an overview of work-related cancers in Europe, cf : www.eurogip.fr.

- The monthly benefit paid out for permanent incapacity varies between €700 and €3,375, averaging €1,800. For this, Denmark pays a lump sum of €39,375, and Switzerland makes an award.
- Funeral cost payments vary from nothing to €3,865 (average €1,470).
- Monthly widow's benefit ranges between €260 and €1,250, averaging €690. Denmark pays a lump sum to widows (€13,467).
- Monthly child benefit runs from €75 to €500 per child, averaging €250.
- The reckonable percentage of the victim's pay used to calculate beneficiary entitlements varies from 100 % to 50 % - average 80 %.

Wide gaps in Europe

The recognition criteria are based on schedules or lists of occupational diseases that differ widely between countries. The presumed cause principle is not accepted in all countries, and the conditions of application vary widely. Reporting procedures reflect two different systems. Where reporting is a medical responsibility, the focus is on prevention; where an individual responsibility, the focus is on the victim's rights. The amount of benefit paid out to victims varies between countries according to the reference pay and percentage of reckonable earnings. Permanent incapacity is calculated either by reference to impaired functional capacity, incapacity for work, or impaired earning capacity.

The activities of the French Cancer League

Brochures on occupational cancers were produced in 2000 and sent out to occupational health doctors, oncologists, radiotherapists and specialists dealing with the most prevalent occupational cancers, pneumologists, ENT (ear-nose-throat) specialists, dermatologists, urologists and haematologists. The Belgian Cancer Federation took this as a model for a more comprehensive brochure addressed to professionals. Both brochures set out to inform doctors about the point and procedures of reporting, prompt them to look into their cancer patients' work histories for potential contact with workplace carcinogens, advise them on reporting or referral to an occupational pathology service. An English translation of the French brochure has been sent out to the members of the ECL (European Cancer Leagues). The French League and Belgian Federation have put together a short brochure for general practitioners, and one for teachers in technical and vocational education.

The group of French-speaking pulmonary medicine and occupational health societies (*Sociétés de Pneumologie de Langue Française et de Médecine du Travail*) have set up joint training provision to encourage French pneumologists to look for a work-related cause in all patients presenting with lung cancer. The questionnaires are published and sent out by the League.

An informative website on occupational cancers is being set up in conjunction with Sylvie Platel, who runs the League's information and resource centre. It is addressed to cancer patients, their close relatives, and the general public, and aims to provide up-to-date information on all administrative, social, regulatory and legislative aspects of occupational cancers, as well as a discussion forum.

The European working group on occupational cancers set up by the French League includes various ECL member European Cancer Leagues and is run with assistance from Prof. Jean-Claude Pairon. It has been running for the past three years, and aims to carry the message to professionals that occupational cancers are not properly compensated in Europe, to draft joint texts, boost the reporting rate, and gain better recognition for occupational cancers and better compensation. ■

French Cancer League :
http://www.ligue-cancer.asso.fr/
European Cancer Leagues :
http://ecl.uicc.org/
International Union Against Cancer : http://www.uicc.org/

France : work-related cancers

France's National Health Watch Institute has just published a report by Ellen Imbernon on the estimated incidence of certain types of work-related cancer in France.

The report points out that occupational diseases take a big toll on public health and are a big source of social health gaps. Exposure to physical and chemical factors in the working environment is so high that about the half the social differentials in lung cancer mortality in industrial countries are thought to be due to occupational exposure; and the social status gaps are wide - 3 times more manual workers die of lung cancer than managerial staff. The share of occupational exposures to physical and chemical factors is about the same scale for bladder carcinomas, where work-related factors account for half the observed social differentials.

The report highlights the under-reporting of occupational cancers. Estimated under-reporting rates vary widely by type of cancer and type of exposure. Pleural mesothelioma and nasal carcinomas have the lowest rates of under-recognition (recognition rates are around 50 % of work-related cancers). Lung cancer recognition rates are around 20% (mainly asbestos-related lung cancer). About 10 % of leukaemias are recognized, and only 1 % of bladder carcinomas, with 7 just cases recognized out of a total number of work-related cancers of between 625 and 1,110 cases.

The full text of the report can be downloaded from URL :
http://www.invs.sante.fr/publications/2003/cancers_pro/rapport_cancer_pro.pdf

Trade unions and improving health and safety in small enterprises : the findings of an ETUC study

David Walters*

The full details of the project findings may be found in : *Working safely in small enterprises in Europe. Towards a sustainable system for worker participation and representation* (ETUC 2002).

Supported by:

European Agency for Safety and Health at Work

The level of work-related injuries, fatalities and ill health experienced in small workplaces is unacceptably high. This is not solely the result of undertaking more hazardous work, but primarily because the arrangements for health and safety in small enterprises are unsatisfactory.

The EU Framework Directive 89/391 demands from employers :

- health and safety arrangements in all enterprises focused on *risk management*;
- participative *risk management*, which involves both the creators of the risk and those that experience risks in acknowledging the :

- fundamental responsibility of the employer;
- requirement for competent support to evaluate and control risks; and
- rights of workers to be represented and engaged in this process.

However, the "structures of vulnerability" in which employers and workers in small enterprises are enmeshed means that they need additional support to comply with these requirements. Efforts to extend such support have resulted in national strategies to promote small workplace health and safety that involve the use of "push-pull" intermediary structures and processes as well as more traditional approaches to regulation. Such successful strategies emphasise the role of face-to-face contact in delivering health and safety actions. Worker representation has a role in such push-pull contexts — both to enhance workers' autonomous action in relation to their health and safety and to promote actions on health and safety by workers and their employers/managers jointly.

With these considerations in the mind, the ETUC undertook a project supported by the EU Agency for Health and Safety, to investigate and make better known the extent to which schemes of worker representation in health and safety act to promote arrangements for preventive health and safety in small workplaces. In doing so it aimed to increase understanding of ways in which trade union strategies could :

- promote greater consultation in health and safety;
- increase health and safety awareness amongst workers and owner/managers; and
- achieve tangible health and safety improvements.

Examples of representative participation in health and safety in SMEs were investigated in four countries : Italy, Spain, Sweden and the UK. Further insights were gained by reviewing practices in the woodworking industry across a number of EU countries. This article outlines some of the main findings of the project and comment on their significance for the health and safety of workers in small enterprises throughout the EU.

What works and why

While there are many approaches to operationalising EU-wide legal requirements for participative approaches to risk management in small enterprises, there are several factors that seem to promote their success and sustainability.

Trade union involvement : To be successful and sustainable on any scale, representative participation in health and safety in small enterprises requires support, and trade unions are the main source of this. They also play a major political role in instigating participatory approaches at the national, sectoral and regional levels.

Organisation at workplace level is fundamental to the trade union approaches in the study. Regional/territorial reps, regional/sectoral committees, and trade union regional or sectoral organisers do not take the place of worker organisation in small enterprises. A primary objective in all cases is *to instigate and support the development of worker organisation for health and safety at work*. This is evident, for example, in the approach of Swedish regional reps and that of reps in other schemes such as those in Italy and in Spain. In no case does representation from outside replace representation by workers. Therefore, although these initiatives stem from a recognition of the problem of organising for OHS in small workplaces, they are not alternatives to workplace organisation. An appreciation of this helps in understanding both the trade union strategy towards sustainability (through organisation inside the workplace and its support from outside by trade union/joint structures). It also helps explain the political hostility to these initiatives that is sometimes expressed by employers' peak organisations.

A legislative framework : While trade union involvement may be fundamental to the operation of schemes to increase worker participation in health and safety arrangements in small firms, there is little doubt that a legislative framework is enormously important in initiating and sustaining such schemes. Our investigation of experience in countries such as

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Sweden, which has long-established legislative provision, as well as in a country such as Italy, where legislative provisions are more recent, strongly support this. However, the need for legislative provision was also endorsed by comments from countries such as Spain and the UK where schemes are at present largely voluntary.

There are several reasons why a legislative framework is important. It sets out minimum legal requirements that parties involved with small enterprises must follow. It provides a useful framework for trade unions and employers to build on in their collective agreements. It raises the profile of the issue and provides a conspicuous marker for all small enterprise workers and employers to see. Legal support for small-firm workers' rights to representation strengthens their position and is an encouragement to act when otherwise fear of victimisation might prevent them from doing so. Moreover, the legitimacy that a legal framework can confer on regional/territorial reps and their support structures is a quite powerful factor in determining their acceptance by all.

The engagement of peak organisations and regulatory bodies : Trade unions have made considerable political and practical efforts to ensure the success of worker representation in OHS in small enterprises. At the same time, the engagement of employers' organisations (and the branches of them that represent small firms' interests) is crucially important. There is something of a paradox here, since at a political level, in all the countries studied, the peak employers' organisations tend to be most vocal in opposing schemes to increase small-firm worker participation in health and safety. Despite such opposition, where schemes are most effectively implemented, it is through a framework elaborated in agreements between trade unions and employer/small enterprise organisations (and sometimes other parties). Such agreements help to ensure the commitment of members, as well as providing pooled resources to support training and information. In our national studies, we also noted the extent to which representatives themselves enjoy access to regulatory agencies, preventive services personnel and other elements of support that involve such agencies.

Skilled representatives : Aside from the legitimising role played by legislation and by the engagement of employers'/small firm organisations in agreements on regional/territorial representation, there are several further reasons why representatives are able to develop positive relations with small firm owner/managers. Generally, regional/territorial reps are well-informed and useful sources of information and advice on health and safety matters. This adds to their legitimacy in the eyes of small firm owner/managers. Amongst their most important supports are training and experience. Most of the schemes we studied stressed the role of building workplace organisation for health and safety. However, they also attached significance to representatives being able to undertake inspection activities, and to make authoritative comments to owner/managers concerning improvements required. Thus, reps were committed to building worker organisation in small workplaces and long-term sustainable links between themselves and the workers in the small enterprises they visited. At the same time, they were capable of acting swiftly and exercising their rights to intervene where the situation warranted it. Their experience also meant that they were likely to have cultivated strong working relations with other actors, such as regulatory inspectors, and could engage with them as and when appropriate. All this lent further credibility to their role.

Trade union representatives and organisers that are engaged in representing the needs of small-firm workers do so in ways that are both structurally and socially different from those undertaken by more traditional forms of representation within workplaces. While there are fundamental principles that underpin all forms of worker representation, their practical application varies according to the nature of the social and economic situations in which it occurs. This means that schemes to represent the health and safety needs of workers in small enterprises must take particular account of the circumstances of such workers.

Our findings demonstrate clearly that communication skills are important, as well as the ability to function on many levels, not only in relation to employers and workers in small firms, but also with regard to regulatory inspectors, personnel of external preventive services, local media, and other social and economic interests. Training that takes account of these special needs is enormously important. Information resources provided by trade unions and/or the bilateral bodies that have been set up in a variety of regions and sectors are also important. Furthermore, support and co-ordination of the efforts of trade union regional/territorial representatives is vital to the success of their mission.

Acknowledging needs for different approaches : Our study indicated that there was no single "preferred approach" to representing small-firm workers' health and safety interests. Although versions of the Swedish model of regional health and safety representation are the ones most frequently adopted in EU countries, variation in the economic, regulatory and labour relations systems and cultures in different countries means that each national application has its own unique features. In addition, there are many other initiatives, such as health and safety advisory services for workers in the UK, sectoral/regional health and safety committees in Greece, trade union initiatives in Denmark and regional trade union health and safety observatories in France, as well as the roles of joint committees and bilateral structures

in some regions and sectors of Spain all of which suggest that there may be "horses for courses" according to local circumstances. It seems clear that a variety of approaches, each one taking account of the peculiar circumstances of the region/sector to which it is addressed, is more likely to reap better overall benefits than exclusive allegiance to the implementation of one particular model.

Resourcing : Whatever scheme is most appropriate to local circumstances, all have some degree of resource implication. This is a fundamental point and it cannot be ignored. If worker representatives are to participate in creating and sustaining health and safety arrangements in small firms, they can only do so effectively if they are properly trained, informed and their activities reasonably well co-ordinated. Setting up arrangements to effect such training, information and co-ordination requires resourcing. There is sufficient indication of the success of regional/territorial health and safety reps and other trade union initiatives in improving OHS in small firms to suggest that the resulting reduction in the cost of accidents is likely to be considerable and dwarf the costs of implementing and running such schemes.

The real problem is perhaps not the costs of schemes in absolute terms, but who is responsible for bearing them. Unless outlays can be connected to the savings they generate, they are unlikely to be popular with the agencies that provide them.

Constraints and obstacles : The "structures of vulnerability" of workers in small firms mean that the general and multifaceted lack of resources in small establishments limits development of management competency, information, training, and safe plant and equipment. They often result in restricted access of workers to the autonomous representation of their interests such as provided through works councils and trade unions, and there may be little experience of OHSM on the part of both workers and their employers. These vulnerabilities may be further exacerbated by the insecurity of work in many small enterprises, and the prevailing threat of unemployment, limited profitability and the large amount of illegal (and consequently unregulated) work and workers associated with them. Their negative effects are felt at a variety of different levels. They include achievement of compliance with the regulatory system, the development of strategies of self-interest, equating managing health and safety with profitability and undemocratic and autocratic social relations. All of which prevent workers from feeling able or willing to participate in any meaningful way in making and maintaining OHS arrangements.

It is against this challenging backdrop that trade union regional/territorial representatives and equivalents engage with small enterprises in order to improve participatory strategies for better health and safety performance. It would be surprising indeed, if under such circumstances there were no barriers or constraints to their effectiveness. The ignorance of employers about health and safety standards in such situations (and their paradoxical conviction that they are well informed) is well known. Their limited understanding of health and safety issues is often combined with limited education and a weak understanding of management in general. All this makes it extremely difficult for trade union representatives to develop the full potential of their role. Instead, as a result, regional representatives (or their equivalent) are often limited to undertaking inspections and investigations of specific breaches of legislative requirements, responding to the (often anonymous) complaints of workers about specific failures and informing employers of the need to address such matters. In this they are playing the role of a surrogate regulatory inspector. While it is no doubt necessary to do so when confronted by wilful or negligent breaches of regulatory requirements that pose a danger to workers, it is understandably difficult to fulfil the role of activating workplace organisation when primarily playing this role.

Furthermore it is not only employers who pose obstacles and constraints for the role of regional/territorial representatives (although it is likely they are the main source of such problems). Workers themselves may be resistant to engaging with health and safety issues. Regional/territorial representatives report difficulties with activating and building health and safety organisation in workplaces where there is none already. This is evident in most countries in the survey. Problems are attributed to a mixture of lack of awareness of health and safety issues and insecurity concerning their jobs on the part of small-firm workers. These problems are particularly acute in very small workplaces.

The way forward

The ETUC study confirms the important role played by trade unions in promoting and sustaining initiatives to achieve arrangements for representing workers and improving health and safety performance in small enterprises. It establishes the significance of trade union engagement in this process both at the macro-political level and in activating and supporting organisational arrangements at regional, sectoral and workplace levels. It demonstrates that there are a number of important supports that ideally need to be in place if such activities are to be successful. They include legislation and collective agreements that recognise the special problems of making health and safety arrangements operational in small enterprises and support and sustain efforts to achieve this through representational rights relevant to the needs of small-firm workers. This has been achieved so far only in a minority of EU countries and there is a strong case for extending such provisions much more widely.

However, we have argued that legislative rights and collective agreement alone are not enough. Other actors, as well as trade unions, in national health and safety systems and at EU level, need to be convinced of the important role to be played by participatory strategies in improving small workplace health and safety. This includes employers and their organisations, regulatory bodies, insurance organisations and professional bodies. While we hope that the ETUC study will help to raise that awareness, we recognise that much more needs to be done.

There is a role here for information dissemination at international, national and sectoral levels. Such information should make it clear that there are many different approaches to achieving better participatory arrangements for health and safety in small workplaces. They all require commitment from participants to supporting and sustaining them. Increasing understanding of the important role played by representative participation in OHS would be greatly assisted by more information concerning what works best in different economic national and sectoral situations. It would be useful to know in greater detail, for example, what techniques for activating workplace health and safety organisation in SMEs are most often deployed by regional/territorial representatives and their equivalents, as well as which of them are most effective and why. It would be helpful to have more information on the kinds of constraints and barriers that participatory schemes face and the means with which they have been successfully addressed. It is equally important to know what are the requirements for quality in the training provision that specifically addresses the needs of representatives engaged in such schemes.

Most of the schemes we considered are relatively new, indeed some are still in their pilot stages. Clearly it is unrealistic to expect answers to all these questions immediately. However, if such schemes are to be more widely adopted (and we think there is sufficient evidence of their success to warrant this) then this is the kind of information that would be helpful in ensuring that they are implemented appropriately.

We know from evidence in larger workplaces that trade unions and health and safety representatives make a significant contribution to improving health and safety performance. Participants and observers of the role of representational schemes in small enterprises described in previous pages believe them to contribute to improved health and safety performance in similar ways. There are strong theoretical arguments to support such a belief. However, there is considerable further scope to demonstrate it and while there are strong ethical arguments for worker representation, economic arguments concerning its success may hold greater sway amongst employers and those responsible for resourcing such initiatives.

The ETUC study shows some of the ways in which trade unions have engaged in addressing the issue and developing new approaches to their fundamental roles of activating, operating and sustaining worker representation in health and safety in small firms. It is evident that these are new dimensions for the role of trade union organisation in the changing world of work in which there are considerable challenges for successful outcomes. It is, however, clear that trade unions are making significant efforts to meet such challenges. ■

Partners in the ETUC project were : CISL, UIL and Sindnova in Italy, the TUC and South Bank University in the UK, CC.OO and ISTAS in Spain, LO in Sweden, the European Federation of Building and Wood Workers for the woodworking sector, the CFDT in France and the TUTB which provided expertise and coordination assistance.

More information on the project can be found on : http://www.etuc.org/tutb/uk/sme.html

Revision of the European Schedule of Occupational Diseases

There has been a European Schedule of Occupational Diseases since 1966. It was revised in 1990, but was still well short of including everything recognized by Member States as occupational diseases. So it was decided to revise it before the end of 2003.

The trade unions have set out their stalls - the proposed revision is a good idea, but not enough. They are particularly concerned by the Commission's decision to go with a Recommendation, which is a non-binding instrument. This kind of approach has not been shown to work well in practice.

Even more than forty years on since the first attempt to line up national practices through a Recommendation (1962), there remain yawning gaps between the Member States. A Eurogip survey published in December 2002 estimated the difference between the countries that recognize most and fewest occupational diseases as about 50 to 1. In 2000, France recognized 177 new cases of occupational diseases for every 100,000 insured workers compared to 3.3 for Ireland. Even more alarming is the setbacks occurring in many countries where spending restraints mean that the victims of many work-related diseases are going uncompensated. The main culprits here are Austria, Belgium, Finland, Italy and Sweden.

In its Community strategy for health and safety 2003-2006, the Commission serves notice of plans to promote benchmarking between States on the number of occupational diseases. It is hard to grasp the possible connection between that indicator and the reality of occupational health, given the wide gaps between recognition and compensation systems. A Recommendation is not the best way of bridging the gaps between national practices.

More details : http://www.etuc.org/tutb/uk/news&events2.html#arret25

Austria discriminates against Turkish workers

The European Court of Justice has found that Austria discriminated against Turkish workers over elections to employee associations ("Chambers of Workers").

"Chambers of Workers" are representative bodies whose members are elected by all employed workers from lists put forward by the different political parties. They play a strong role in health and safety. Workers who do not have Austrian nationality can vote but not stand for election. Austrian legislation extended eligibility to workers who are nationals of an EU country.

In this case, the Voralberg "Chamber of Workers" was defending the discriminatory legislation, arguing that employee representation should be equated with employment in the public service. Its arguments were dismissed by the Court.

A reference for a preliminary ruling had been made to the ECJ following a complaint lodged by a list, from which five candidates had been deleted on the grounds of being Turkish nationals. The Court held that the Austrian legislation which denied the right to be elected to Turkish workers was incompatible with the EU/Turkey Association Agreement of 1980. ■

Reference : Case C-171/01, Judgement of 8 May 2003.

Three ECJ rulings on the Framework Directive

The European Court of Justice handed down judgements on 22 May 2003 in proceedings against the Netherlands and Luxembourg for incomplete transposition of the Framework Directive. Both cases related to preventive services (article 7 of the Directive).

In the case against Luxembourg, the ECJ found that Luxembourg had failed to define the necessary capabilities and aptitudes for persons designated to carry out preventive activities. In the proceedings against the Netherlands, the Court upheld the Commission's argument that precedence should be given to the internal organisation of preventive activities and that enlisting external expertise should be only subsidiary.

By contrast, the Court threw out the Commission's irregularity proceedings against Portugal in a ruling concerning workers' health and safety representatives on 12 June 2003.

Portugal was the first Community country to transpose the Framework Directive by Decree-Law 491 of 14 November 1991. But most of the law's provisions - especially those on workers' health and safety reps - have gone largely unenforced.

The main problem is that while the 1991 Decree-Law made provision for training of workers' reps, the legislation on the process for electing these reps (in particular the practical organization of workplace elections) has not been passed, even though expressly provided for.

The Court found that the Portuguese government had not failed to fulfil its obligations under the Directive despite failing to give it practical application. No attempt was made to deny that only a very small number of firms had health and safety reps.

This judgement seems to be informed by a very formalistic understanding of States' obligations to apply Community law. ■

References : Case C-441/01, Commission v Netherlands, judgement of 22 May 2003; Case 335/02, Commission v Luxembourg, judgement of 22 May 2003; Case C 425/01, Commission v Portugal, judgement of 12 June 2003.

Spain : workplace health and safety management technical standards revoked

In 1996, the Spanish voluntary standards body (AENOR) adopted a provisional package of three standards – UNE 81900 – on workplace health and safety management. Spanish trade unions at the time inveighed against the practice of privately-adopted technical standards that essentially affect employment (see *TUTB Newsletter* No 6, 1997, pp. 18-20).

On 7 March 2003, AENOR's AEN/CTN 81 Committee reviewed the standards in light of recent experience, and decided to revoke them so as to avoid mix-ups. Issues of company workplace health and safety management are not a matter for unilaterally developed private technical standards but for legislation, trade union-employer agreements, and independent trade union action. Revoking these standards means that firms who put a workplace health and safety management system in place cannot base it on technical standards alone, and any certifications given under these standards will be irrelevant for the labour inspectorate and trade unions.

The voting was conclusive : 17 for revocation, 3 for a revision of the standards, and 2 abstentions. The standards revoked are the three adopted in 1996 plus a supplementary standard adopted in 1997:
- UNE 81900:1996 EX
- UNE 81901:1996 EX
- UNE 81902:1996 EX
- UNE 81905:1997 EX

The trade unions, the National Institute for Safety and Health at Work, representatives of the public authorities and the Spanish employers' confederation CEOE all voted for revocation. ■

Better protection for asbestos-exposed workers

The Council and European Parliament have reached agreement on the new directive on protection for workers against exposure to asbestos. The initial proposal was submitted by the Commission back in July 2001. The aim, after the asbestos ban, was to refocus protective measures on workers who remain most at risk - mainly

those involved in the maintenance, renovation and demolition of asbestos-containing buildings and equipment.

All told, the text goes much further than the previous provisions. The limit value for asbestos exposure is now set at 0.1 fibre per cm^3 as an 8-hour time-weighted average. Previously, the exposure limit was 0.6 fibres per cm3 for chrysotile and 0.3 fibres for other types of asbestos. The exclusion of workers in certain sectors has been dropped.

But the Directive is still badly flawed. The scope excludes self-employed workers, so employers can get round the Directive by having self-employed contractors do the work without needing to take the required preventive measures. And there is no shortage of lump labour in the building industry.

Other trade union demands - in particular on control procedures for contractors licensed to work on demolition and asbestos-removal, and keeping a register of asbestos-containing buildings - have gone ignored. The Directive's provisions on demolition and asbestos removal are a step back from ILO Convention 162 (1986), article 17 of which requires such work to be undertaken only by employers or contractors who are recognized by the competent authority as qualified to carry out such work and are empowered to undertake it. This is despite the fact that the issue of controlling the qualifications of asbestos removal contractors was brought up in the Council Conclusions of 7 April 1998 which provided the basis for drawing up the Directive of 27 March 2003. ■

The main documents on the framing of this new Directive can be found on the TUTB website : http://www.etuc.org/tutb/uk/asbestos.html

China : second world asbestos producer

Since 2000, China's asbestos output has exceeded that of Canada, and ranks second in the world only to Russia. With an output of 360,000 tonnes in 2001, China accounts for nearly 18 % of world production, compared to just over 5 % in the early 90s. While world asbestos production dropped sharply between 1990 and 1999 (from 4 million tonnes to just under 1.8 million), it now seems to have levelled off at around 2 million tonnes. Output is concentrated in two ways: among countries (six countries account for over 95 % of world production) and between a tiny number of firms with heavy political clout. The International Labour Organization reports that exposure to asbestos at work takes some 100,000 lives annually. ■

Sources: *US Geological Survey Minerals Yearbook*, 2001 and ILO press release, 24 May 2002.

Trade union conference in Greece

The Greek General Labour Confederation called a major trade union conference on health and safety at work in Piraeus from 3 to 5 April 2003, co-organized with the ETUC, TUTB and ELINYAE (Greek Institute of Occupational Health).

The conference was called to discuss trade union strategies on occupational health with a special look at how systems for the recognition of work accidents and occupational diseases had informed prevention policies in different countries. The idea was to consider ways of putting a bigger focus on occupational health and what role financial incentives - like accident- and sickness-related graduated social security contributions - might play.

It was an emotionally-charged time. On the morning the conference opened, six workers died in a serious accident in Corinth. The same day, industry strikes were held to protest against US and British aggression towards Iraq. The president of the Greek GLC connected the two events up. He reminded the conference of the founding values of trade unionism and stressed that the aggression against Iraq reflected the same disregard for human life as the way many firms were run. The foreign participants were able to see for themselves the strength of Greek popular opposition to the war.

Over 200 trade union activists attended the conference. As well as reports on the situation in Greece, a long series of reports were given on the EU countries (Ireland, Sweden, Belgium, France, Spain) as well as the candidate countries (Estonia, Latvia, Poland, Czech Republic, Slovakia, Slovenia, Romania, Bulgaria, Malta and Cyprus). This wide-ranging exchange of experiences enabled a number of common objectives to be worked out. Marc Sapir, Director of the TUTB, gave a summary of the works. ■

The sinking of the *Prestige*

The oil tanker *Prestige* which went down off the Galician coastline in November 2002 causing the umpteenth predictable environmental disaster again threw a series of issues into stark relief :

- the unsustainable nature of an economic development model based on the large-scale use of fossil fuels and their transport between continents;
- the systematic farming out of social, environmental and human costs in the carriage of goods;
- the nonsensicality of a shipping control system largely based on a private third party certification market ("classification" in the shipping industry has much in common with how notified bodies operate in the work equipment market).

What made the *Prestige* incident different was in showing up the Spanish government's political inability to get a grip on a situation which put its unchecked free market philosophy on the line, and how it was called to account by a spontaneous coming together of millions of people acting independently of any official guidelines, not just to clean the beaches before things got worse, but also militating for a different policy. To this extent, action around the Prestige probably paved the way for the political demonstrations of February to April 2003 against the war in Iraq, which were particularly strong in Spain. The trade unions were at the forefront. In both cases, protests against the unacceptable event went with a questioning of the deeper rationales of a socially unjust and environmentally unsustainable form of development.

By all accounts, the Spanish government is now getting its act together. As so often, a special commissioner has been appointed to deal with the situation. Step forward Mr Rodolfo Martin Villa, a prominent figure under the Franco dictatorship, head of the pro-Franco students association, and civil governor of Barcelona. Mr Martin Villa may not be an expert in safety of shipping, but he certainly knows a thing or two about sinking ships. As minister for "trade union relations", he tried to stop the doomed pro-Franco industry "trade union" from going under. That brief period of office was connected to the Vitoria slayings in March 1976 in which 6 workers were murdered by the police (see *Gaceta Sindical* of 7 March 2001) After this shining start, he redirected his talents as a private sector boss : in the energy sector, no less !

On 13 and 14 December 2002, a European trade union meeting was called in La Coruña by the UGT and the Comisiones Obreras (CC.OO - workers' committees) to work out common demands from the *Prestige* disaster. ■

The resolution adopted at the meeting is on the TUTB website : http://www.etuc.org/tutb/uk/pdf/prestige-en.pdf

EU and international labour standards

The European Union talks the talk about promoting international labour standards. But is it walking the walk ? Have relations with the International Labour Organization got better ?

On 27 May 1998, the Commission adopted a Recommendation calling on the EU States to ratify ILO Home Work Convention C177. At the time, Finland had already decided to ratify it (formally doing so on 17 June 1998). Since then, just two States have followed suit - Ireland (22 April 1999) and the Netherlands (31 October 2002).

By and large, the EU States are still undermining international labour standards by ratifying only the odd Convention that suits. The record on key Conventions on occupational health adopted since 1985 speaks volumes. Occupational Health Services Convention C161, 1985, has been ratified by just three EU States (Germany, Finland and Sweden). Asbestos Convention C162, 1986, - ratified by seven EU States (Germany, Belgium, Spain, Finland, Portugal, Netherlands, Sweden). Safety and Health in Construction Convention C167, 1988, - five (Germany, Denmark, Finland, Italy, Sweden[1]). Chemicals Convention C170, 1990, - ratified only by Sweden (in 1992, before joining the EU) was eventually also ratified by Italy in July 2002. Night Work Convention C171, 1990, has been ratified by two EU countries (Belgium and Portugal). Ditto Prevention of Major Industrial Accidents Convention C174, 1993 (the Netherlands and Sweden). Safety and Health in Mines Convention C176, 1995, fared better with 7 ratifications (Germany, Austria, Spain, Finland, Ireland, Portugal and Sweden). Only Italy has ratified Maternity Protection Convention C183, 2000, while Safety and Health in Agriculture Convention C184 has not been ratified by any EU country. The ratification rate for all these 9 occupational health Conventions is not even 25 % (29 for a possible total of 135).

Tellingly, four EU States have not ratified a single one of the health and safety Conventions adopted between 1985 and 2002. Step forward France, Greece, Luxembourg and the United Kingdom.

There are two main reasons for demanding ratification of ILO Conventions, particularly those on occupational health. The Community approach has everything to gain in consistency from supporting international labour standards. It is hard to see how social Europe can be developed in "splendid isolation" and the ILO labour standards help counterbalance attempts to commoditize labour by driving working conditions down. But ILO labour standards also often dovetail with Community provisions. Far from being an obstacle to the application of Directives, they make it possible to frame a more systematic policy. So, Convention C161 enables a more workable gloss to be put on the concept of preventive services, while some provisions of the Maternity Protection Convention plug loopholes in the EU's Pregnant Workers Directive (especially on breast-feeding). ■

[1] The special report on preventive services in this Newsletter shows how Sweden and Germany are far from applying the provisions of this Convention, which provides for multidisciplinary services to be set up and gradually made accessible to all workers.

No jail for corporate killers

It is rare in any EU country for employers responsible for work accidents - even fatal ones - to get convicted of crimes. The peculiarities of the British legal system lets those at fault for workers' deaths off virtually scot-free where the firm has a complex structure.

The fact that P&O management could not be prosecuted after the sinking of *Herald of Free Enterprise* in March 1987 just outside the port of Zeebrugge causing the deaths of 150 passengers and 38 crew rocked public opinion. The investigation revealed serious faults by senior management. But no prosecution could be brought. The incident sparked a series of proposals for reform, in particular creating a new offence of corporate killing which would make company directors criminally accountable for gross negligence that resulted in workers' deaths.

The Law Commission made a recommendation on this in 1996. It was widely expected that when Labour came to power in 1997, the legislation would be pushed through. Since then, over 2,000 workers and members of the public have died in work-related incidents. David Bergman reports that in the last ten years, only 11 companies have been prosecuted for manslaughter. And only four of these - all small firms with a very simple management structure - were convicted. Only 2 directors have ever been jailed for such offences[1].

Legislation on corporate manslaughter was referred to in the Queen's Speech in 2000 and in the New Labour manifesto in the run-up to the 2001 general elections. But after Labour's return to power - silence. Despite repeated commissions being appointed, the 1996 recommendation remained dead in the water. On 11 March 2003, a cross-party group of backbenchers called for the early passing of new legislation to do away with this near-immunity. Their move was backed by a powerful trade union campaign in which tens of thousands of postcards were sent to Tony Blair to remind him of his pledge to make directors criminally accountable for work deaths.

Finally, on 21 May 2003, the Home Secretary, David Blunkett, announced that a government bill would shortly be tabled[2]. After six years' fudging the issue, this first step is a result for unions and occupational health campaigners. But the government's sights seem to be set low. Companies found guilty of corporate killing may be fined, but individual company directors will escape prosecution. Various unions like the GMB (one of the biggest industry unions) and UCATT (the construction union) have slammed the restriction. The General Secretary of UCATT said : "In the most serious cases the penalty should include imprisonment for individual directors. If custodial sentences can be given for cruelty to animals or killing someone outside work, there is no reason why the same penalty should not apply to a death at work".

The employer's confederation, the CBI, by contrast welcomed the bill and praised the government's "common sense" in not targeting individual directors for prosecution. ■

For information, see :
http://www.hazards.org/postcard/index.htm
http://www.corporateaccountability.org/index.htm
http://business.unisa.edu.au/cobar/corpresp/case_studies/study3.htm

[1] Article in *The Observer*, 2 February 2003. http://www.observer.co.uk/business/ethics/story/0,12651,887010,00.html
[2] "Directors Escape Jail for Work Deaths", *The Guardian*, 21 May 2003. http://society.guardian.co.uk/crimeandpunishment/story/0,8150,960488,00.html

A bleak scoreboard for José-Maria Aznar

It reads like a battle toll : 1,831,938 victims, 1,104 dead. But the figures are those for work accidents in Spain in 2002, and they have reached an all-time high. The death toll is 8.1 % higher than 2001 and 12.2 % up on 1996. And these are just the official, reported accidents. The figures reflect the very high price being paid by workers for the insecurity and labour market flexibility demanded by employers and delivered by the Aznar government. Out of just over 14 million employment contracts signed in 2002, less than 1.3 million were permanent and most fixed-term contracts were very short : 80 % for under 6 months. The number of injured and dead contingent workers is well

above average, and building and services were the main contributors to the growth in accidents. Farming out hazardous work is another big issue, reflected partly in the very high accident rates in small firms. Trade unions want much tighter controls on subcontracting and more "blitzing" of the most accident-prone workplaces. Union pressure led to a tripartite preliminary agreement being signed on 30 December 2002, setting a tight timetable for legislation and other measures to strengthen prevention. Unions are also keeping up the pressure to stick to the timetable. On 27 February 2003, for example, workers at the big SEAT car factory in the Barcelona customs-free zone staged work stoppages after a fatal accident to a worker, José Roca Alarcón, employed by a subcontractor. ■

For information see :
http://www.ugt.es/slaboral/principal.htm
http://www.ccoo.es/sindicato/salud.html

Physical agents : New Noise Directive adopted

The first individual Directive concerning physical agents - Directive 2002/44/EC regarding the protection of workers against vibrations - was adopted on 25 June 2002 (see analyses in *TUTB Newsletters* No 17, June 2001, pp. 16 to 18, and No 18, March 2002, pp. 25 and 26).

The second directive - Directive 2003/10/EC on the protection of workers from the risks arising from noise - was adopted by the Council and the European Parliament in February 2003. It took 17 years to revise and replace the previous Directive 86/188/EC (see analysis in *TUTB Newsletter* No 17, pp. 13 to 15). The text sets exposure limit values (87dB (A)) and exposure action values (80 dB (A) and 85 dB (A)). It is due to be transposed into national legal systems by 15 February 2006. The deadlines for implementation have been extended for seagoing vessels (5 years), and the music and entertainment sectors (2 years). ■

Electromagnetic fields Directive before the Council

The third directive - on the protection of workers from electromagnetic fields - is currently on the Council table (see analyses on p. 17 and the article on p. 12 of this issue).

Self-employed workers : Council Recommendation

In February 2003, the Council adopted a Recommendation on improving the protection of the health and safety of self-employed workers. The social partners were consulted on the proposal for the Recommendation in early 2001.

The ETUC was unhappy about the choice of the proposed Community instrument, because Recommendations have only a very limited, non-binding scope. The ETUC argued for a more far-reaching and effective three-pronged approach :

- extending the employers' duties to all workers (including self-employed workers) whose working conditions are within his control;
- adopting general provisions through which to include health and safety for self-employed workers in risk assessments and planning of preventive activities where the use of self-employed workers is regular and foreseeable, and putting contractual relations between firms and self-employed workers in a framework of health and safety provisions; and
- Member States to lay down mechanisms to ensure health surveillance, information and training for self-employed workers.

The ETUC called for a specific directive on health and safety protection for self-employed workers (see : http://www.etuc.org/tutb/uk/news&events1a.html). ■

2003/134/CE - Council Recommendation of 18 February 2003 concerning the improvement of the protection of the health and safety at work of self-employed workers.

Social Dialogue launched on occupational stress

As announced in their work programme for 2003-2005, the European social partners held a joint seminar on work-related stress in February 2003 to look at the scope for starting up negotiations on the issue. The partners agreed to set negotiations going on a voluntary agreement.

The outcome of the talks will be reported in a future issue of the Newsletter. ■

The safety of work equipment.
User-oriented strategies for improving technical standards

TUTB-SALTSA Conference, 12-13 June 2003, Brussels

The conference and speakers' papers will be reported on in the next *Newsletter*, which will be a special issue, published in November 2003.

Joint OSH strategy for the enlarged Europe

ETUC-TUTB Conference, 30-31 January 2004, Brussels

See insert leaflet containing the first announcement and call for papers.

http://www.etuc.org/tutb/uk/enlargement.html

The gender workplace health gap in Europe

by Laurent Vogel

To be published in 2003, also in French as
La santé des femmes au travail en Europe : des inégalités non reconnues

This new publication from the TUTB puts a gender perspective on occupational health policies, illustrated by practical examples on knowledge output and action to transform working conditions.

The TUTB has engaged with the gendering of occupational health issues from the outset. Back in 1999, we published a book of case studies in Quebec under Karen Messing's editorship – *Strategies for Transforming Women's Work* – that linked the fight for occupational health with that for gender equality. That book was clearly an idea whose time had come. Its publication in six different languages speaks volumes for the interest it sparked.

Converging initiatives further underlined the importance of the gender dimension in occupational health. Three international congresses held on "Women, work and health" between 1996 and 2002 provided forums for thought-provoking and insightful debates between researchers from a wide range of disciplines, feminist activists and trade unionists.

At the end of 2000, the TUTB saw a need for an initial state-of-play report on EU countries. The aim was to take stock of a selection of key initiatives in research, preventive activities, trade union action and national policies. Despite the limited means available, our survey tapped a rich seam of information. A hundred and fifty individuals and institutions replied to our questionnaires and dozens more sent in reference material.

The gender workplace health gap in Europe draws on the findings of that survey. It falls into two parts. Part One offers a general analysis of the survey data, basic material to inform the discussion on trade union action, and a critical overview of Community policy. Part Two contains eight case studies on a wide range of issues, drawn from different countries. The case study topics are :

- wear and tear in ageing hospital staff;
- flexible work and mental distress among women call centre staff;
- working conditions of female check-out staff, women in male-dominated building trades;
- research into the working lives of Finnish women;
- key findings of the first German report on women's health;
- an analysis of female-dominated jobs exposed to hazardous substances;
- union action on achieving work-life balance in the motor vehicle industry;
- trade union initiatives on work intensity in the service sector.

Each case study exemplifies how a gender analysis can inform a better understanding of occupational health issues and more effective action to transform working conditions and promote equality. ■

Globalizing technical standards. Impact and challenges for occupational health and safety

Ed. Theoni Koukoulaki and Stefano Boy

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in French

The development of standards to fill out the European directives that ensure free movement for work equipment but also affect health and safety is now moving up to a more global setting. At the time when the European Union brought in its New Approach to technical harmonization, standardization was essentially a national exercise. Now, industrial production is almost without exception a European and international activity: in a globalized market with strong growth in international trade, manufacturers see international standards as a key to gain market access and boost trade.

This publication sets the European standardization process in its changing context where European standards are increasingly being framed at the international level. It sets out to exemplify some aspects of the current debates on how European and international standards, as developed in the ISO and IEC, can affect the health and safety of Europe's workers. ■

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- From CEN to ISO and back : opportunities and difficulties for application of the Machinery Directive, *by Ian Fraser*
- From EN 292 to EN ISO 12100 : developments in safe machinery design principles from 1985 to 2002, *by Jean-Paul Lacore*
- Machine safety-related control systems : opportunities and challenges for CEN and IEC, *by Maurizio D'Erme*
- Standards on mental workload - the EN ISO 10075 series : from ISO to CEN, *by Friedhelm Nachreiner*
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